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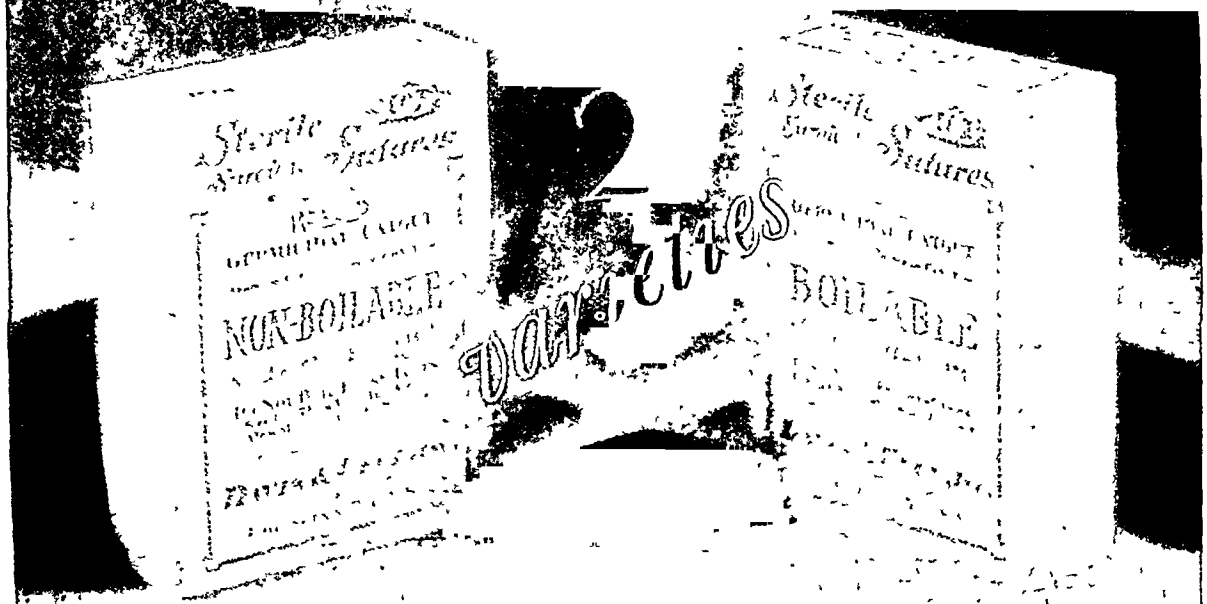
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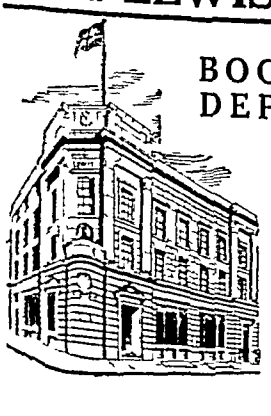
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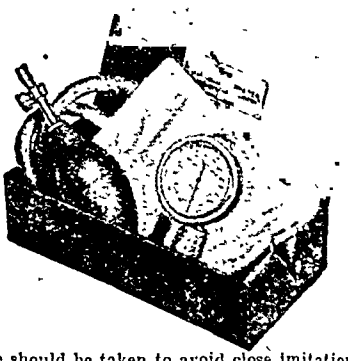
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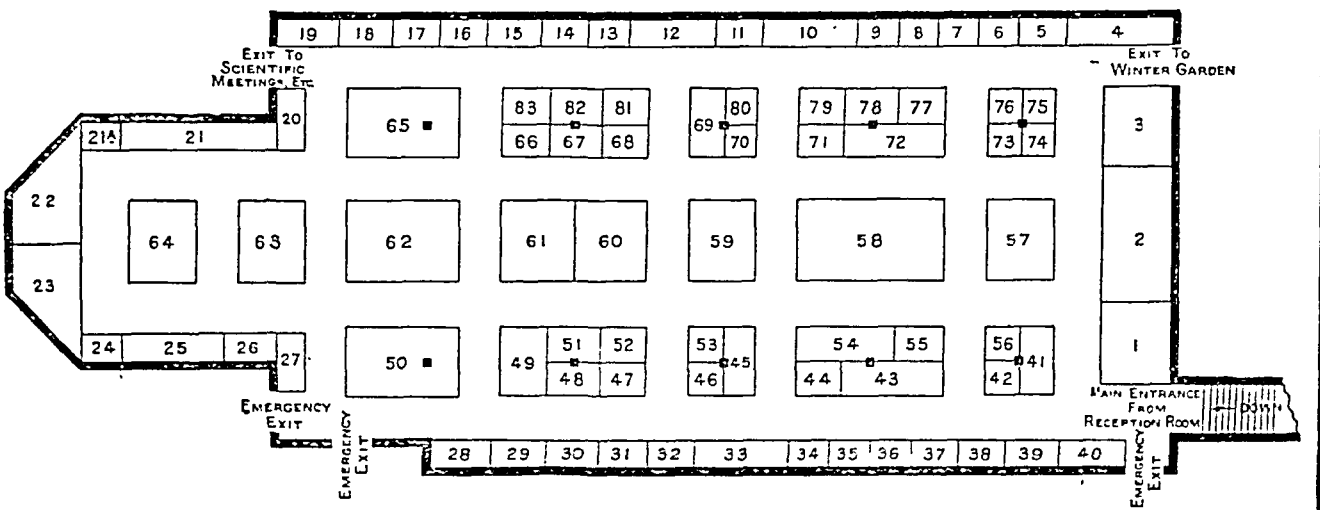
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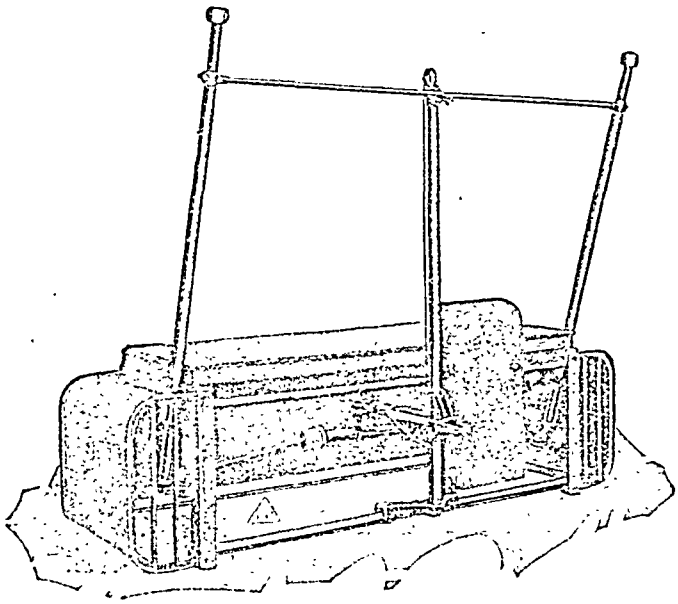
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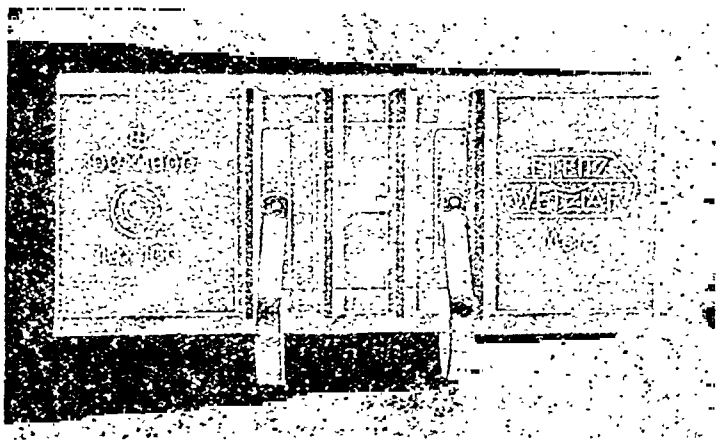
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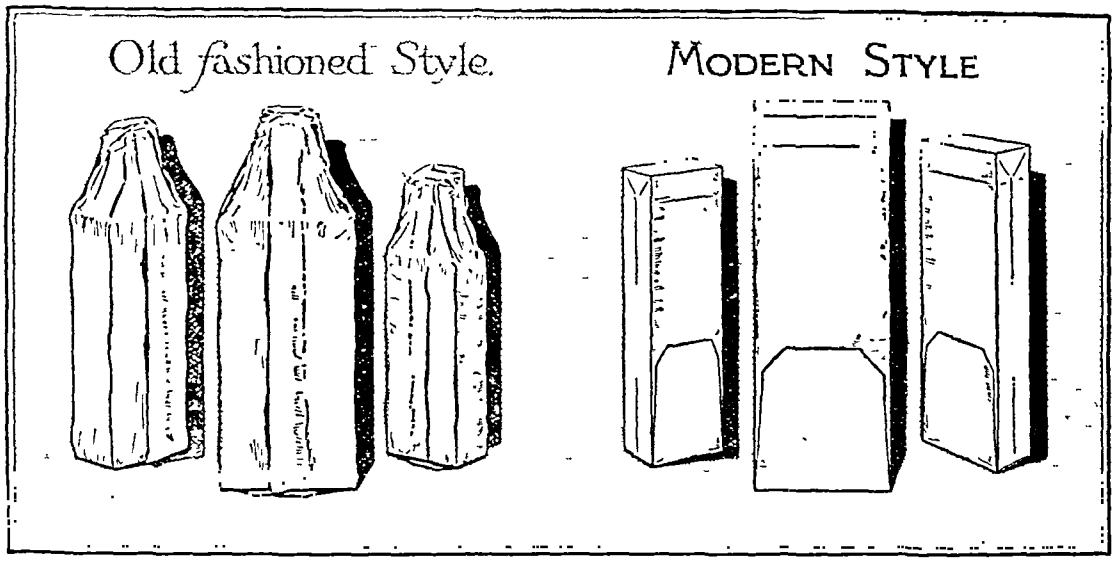
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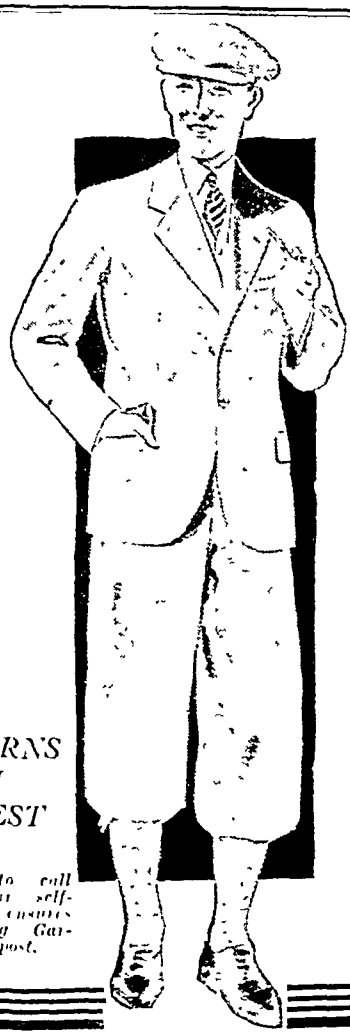


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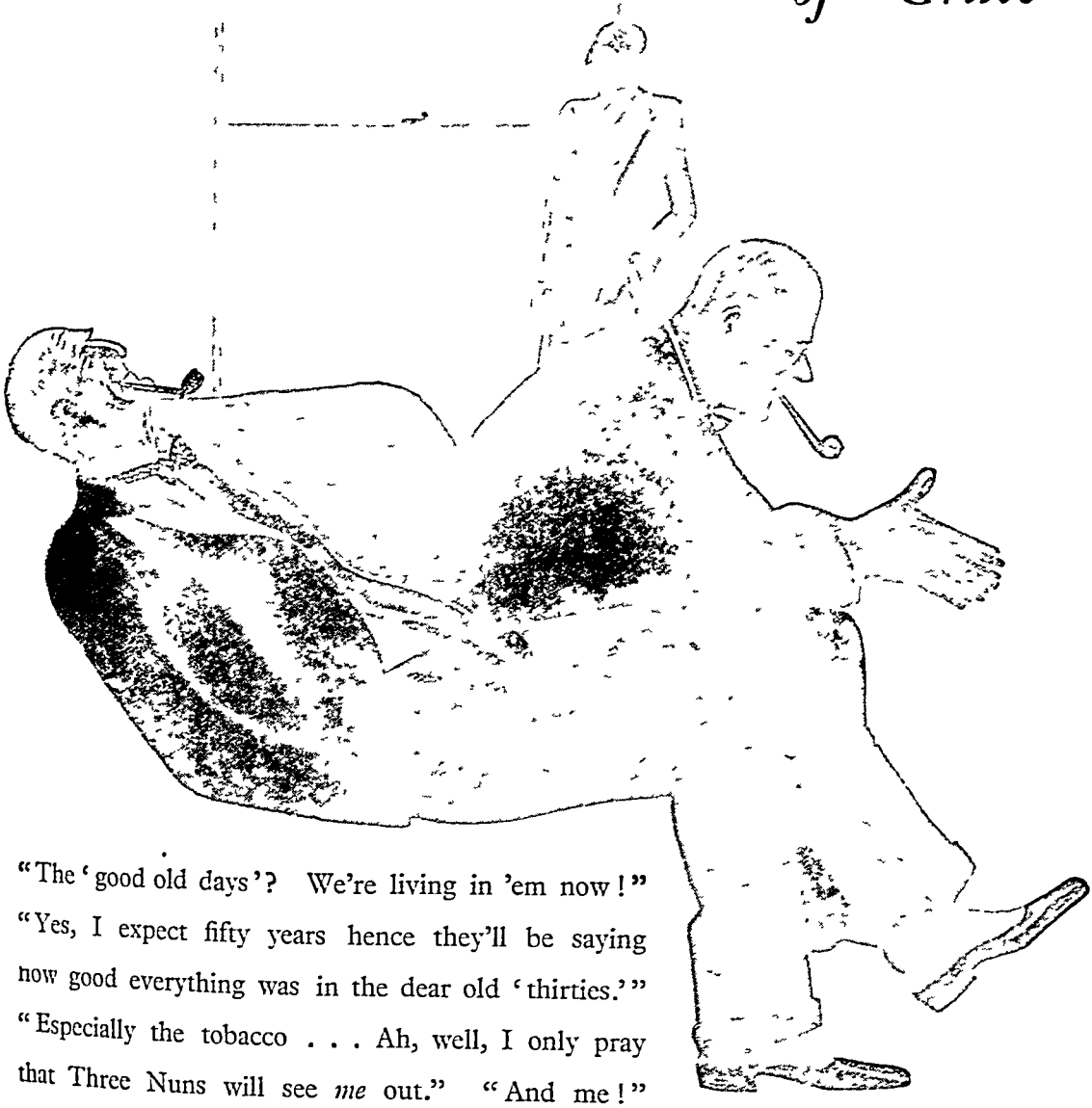
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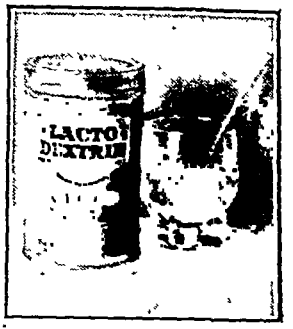
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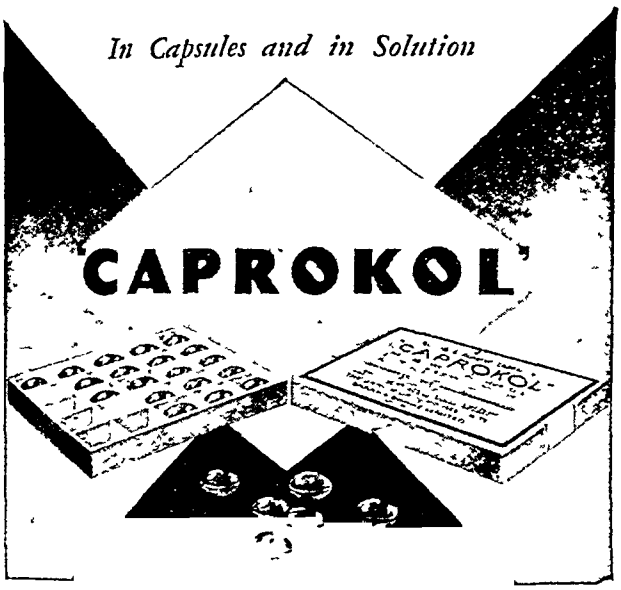
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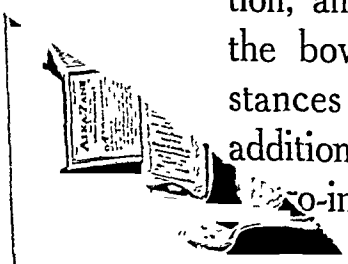
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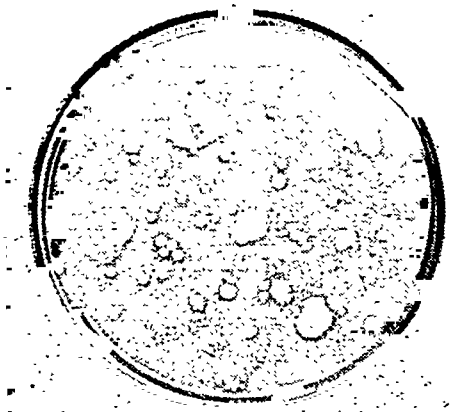
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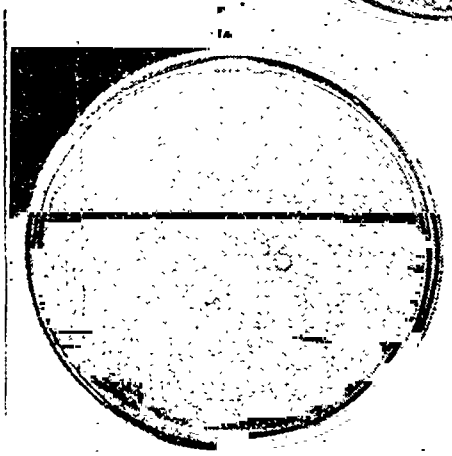
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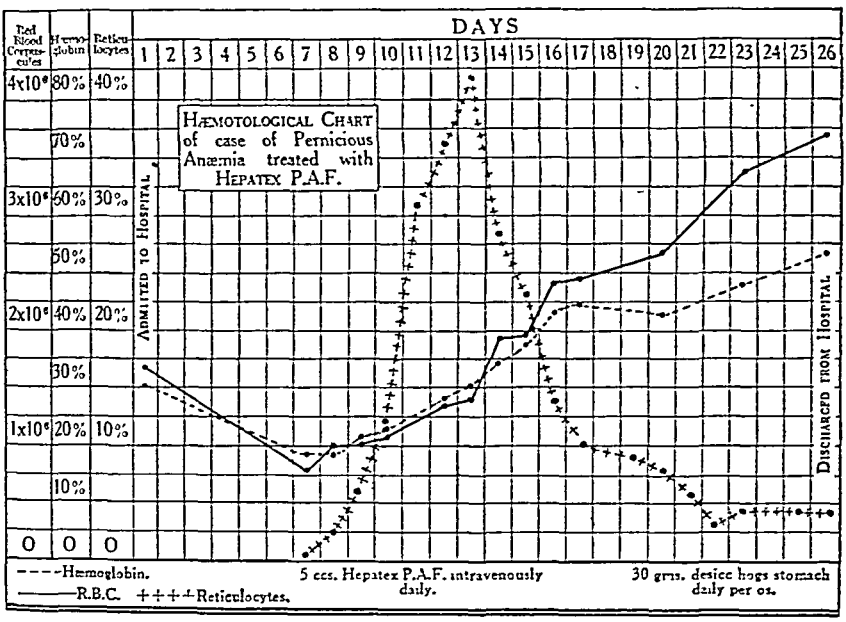
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THE
British Medical Journal
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LONDON: SATURDAY, JULY 4th, 1931

An Address
ON
STATURE AND POSE
THE PROBLEM OF UNEQUAL LEGS*

BY

ERNEST W. HEY GROVES, F.R.C.S.
PROFESSOR OF SURGERY, UNIVERSITY OF BRISTOL

"Which of you, by taking thought, can add one cubit unto his stature?"

I suppose that if this question was propounded for our answer to-day we should devote ourselves almost entirely to a consideration of the possibility of provoking endocrine stimulation of the pituitary gland. A cubit is the distance from the tip of the elbow to the tip of the middle finger, and is about 18 inches in a full-grown adult. The true acromegalic giants, such as Charles Byrne, John Hunter's famous trophy, may be more than two feet taller than an average adult, and if we knew how to add to the bulk or to increase the activity of a normal pituitary gland such an addition to the stature of a growing adult might easily be made.

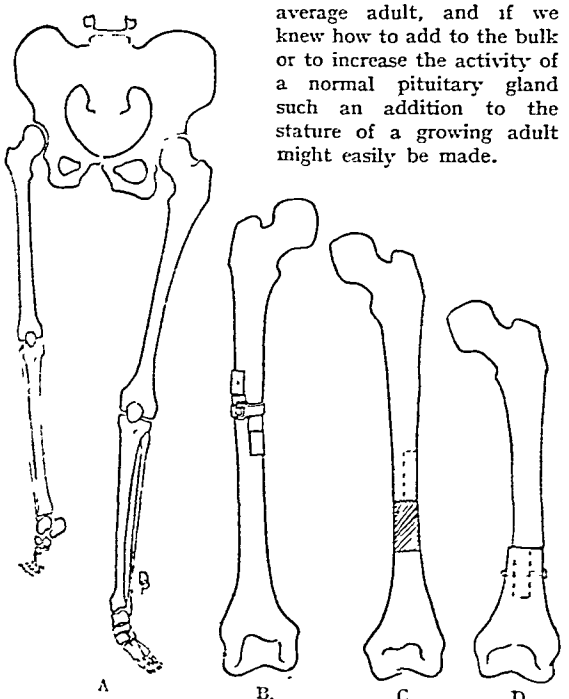


FIG. 1.—Shortening of the leg due to infantile paralysis. A. Outline of the limbs showing intrinsic shortening of right femur. B. Method of lengthening femur; step-cut and grafts. C. Method of lengthening femur. D. Shortened femur after impaction. (In the actual case the peg is made from the lateral half of the femur, whereas in practice it is formed from the posterior half.)

A man's height depends chiefly on the length of the spine, the femora, and tibiae. The length of the spine is made up of the thickness of twenty-four vertebral bodies (cervical, dorsal, and lumbar) and of twenty-three intervertebral disks, but the total length of the vertebral column will vary with its curvature. Any marked variation from the normal affecting the stature is always

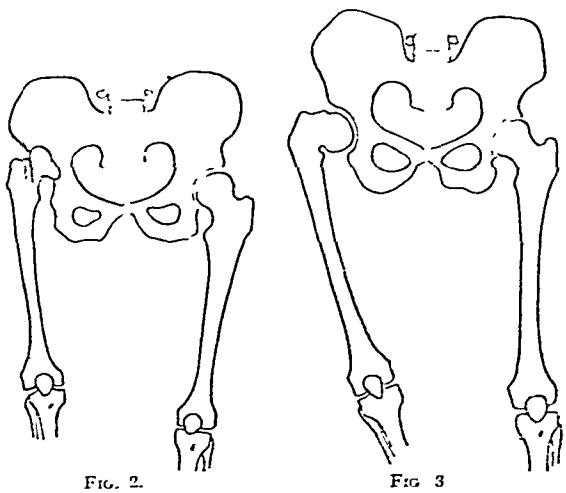


FIG. 2. FIG. 3

FIG. 2.—Congenital dislocation of the hip in an adult.
FIG. 3.—Coxa vara with characteristic adduction deformity.

in the direction of shortening. Thus in the classical case of Sir James Paget's first patient with osteitis deformans, the man, who had been an officer in the Guards, 6 feet 2 inches in height, became so bent and bowed in later life that he measured only 5 feet 8 inches. It is commonly believed that a young adult can actually, but temporarily, increase his height by about a half to three-quarters of an inch simply by remaining recumbent for about a week. This attitute is supposed to allow each intervertebral disk to increase in thickness by a fluid accommodation in its nucleus pulposus. This half-inch may be of vital importance to a man measuring 5 feet 11½ inches, if he wishes to enter a regiment of the Guards.

I do not propose, however, to discuss these rather fascinating questions of general skeletal growth or of spinal length, but to devote myself to the very important and practical problems of the balancing of a patient on legs of unequal length, or alternatively of making those legs equal.

This problem presents itself in four common groups of cases—namely, malunion of fractures (usually of the femur); faulty ankylosis of the hip-joint after infective arthritis; poliomyelitis; and congenital dislocation of the hips. In these cases there may be actual shortening of a bone such as the femur. It may have been broken and then united with several inches of overlap, or in the paralytic cases (Fig. 1, A) the femur may have failed in its normal growth. The shortening may be due to the dislocation of the hip—congenital (Fig. 2), traumatic, or pathological—the head of the femur lying one or more inches above the level of the acetabulum. Again, shortening may be caused by the adduction or varoid angulation (Fig. 3) in the shaft or neck of the femur or actually in

* An address delivered before the Royal Free Hospital Medical Society.

the hip-joint. The shortening effect of this deformity is due chiefly to the fact that in order to achieve parallelism of the legs, the pelvis must be tilted up on the affected side.

Before discussing the best way of treating a case in which the legs are of very unequal length, it may be

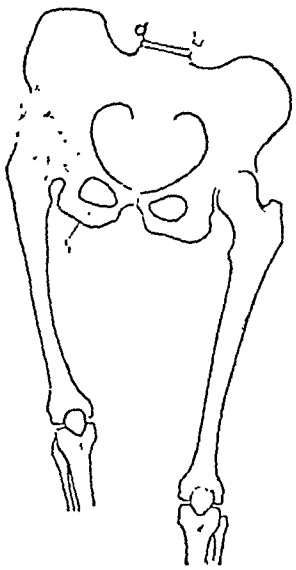


FIG. 4.

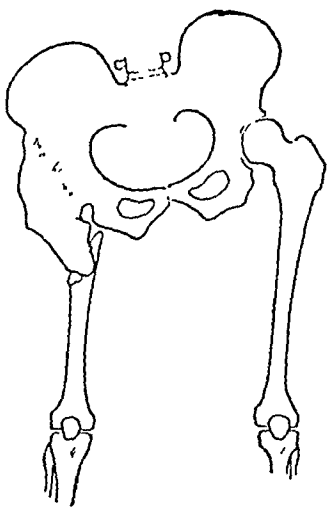


FIG. 5.

FIG. 4.—Ankylosis of hip in marked adduction.

FIG. 5.—*Bifurcation osteotomy, which, by correcting the adduction deformity, effectually lengthens the leg in condition shown in Figs. 2, 3, and 4.*

useful perhaps to say a word about prophylaxis. There is no pious precept so often repeated, and yet so often ignored, as that "prevention is better than cure." Probably gross deformity could have been prevented by timely treatment in more than half the cases which present themselves. At the present day there is no justification for allowing a fracture of the femur to unite in such a way as to cause an appreciable shortening. In this connexion it should be borne in mind that callus union is soft and plastic, and that if a femur is half an inch short at the end of six weeks, it will probably be an inch shorter at the end of six months, owing to the yielding of callus to pressure or to the increase of an angular deformity if insufficiently splinted. The greatest crippling deformity, however, is produced by the slow, insidious, infective arthritis of the hip if vigilance is relaxed in the early days. The thigh becomes flexed and adducted, and, when fixed in this position, the effective length of the leg is reduced many inches by the tilting of the pelvis necessary to get one leg in the same line as the other (FIG. 4). All that is required is to fit the child on to a proper frame in the early months in order to secure a much smoother and less painful course for the disease, and to prevent any crippling deformity.

TECHNIQUE OF DIRECT LENGTHENING OF BONES

While it may be unnecessary to dwell at length on the technical details of methods of bone lengthening, I should like to give a short review of commonly advocated methods in order to indicate their relative advantages and disadvantages.

The Use of Transfixion Pins

The use of rigid transfixion pins seems to me to be almost an essential element for any effective method of skeletal traction. I use only two sizes (3/16 inch by 6 inches, and 1/8 inch by 4 inches), and in rare cases when I have to deal with a child's olecranon or a phalanx I improvise a small pin from a steel knitting needle. I would always carry out the transfixion under a general anaesthetic, not because the pain of perforating the limb cannot be abolished by local injection, but because under a general anaesthetic a strong traction of 200 lb. or more can be used for a few moments; another reason is that during the first hours of traction (by 40 or 50 lb.) the muscles will be fully relaxed. When the pin has perforated the limb a pulley-bearing clamp is fixed on it; with a pulley block at the foot of the bed this allows a strong and steady traction to be exercised by a weight which may be multiplied up to four times according to the number of pulleys used. Thus with a 10 or 15 lb. weight, a 40 or 60 lb. pull is obtained. Such a powerful traction will, of course, necessitate raising the foot of the bed and also fixing a counter-extension perineal band round the opposite thigh, this being tied to the bed head.

I would urge that this use of the transfixion pins affords the maximum of simplicity combined with efficiency. The so-called ice-tongs callipers, which have rightly been discarded, gave no advantage which compensated for the real danger of their slipping or dragging if used for any effective weight extension.

Hawley's Table

Transfixion pins, however, can be utilized in other ways. Hawley's table, of which there have been many modifications, is in my opinion a necessary part of most of the traction operations or fracture methods, enabling one or both legs to be fixed at any angle and pulled upon by a very powerful screw appliance. The efficacy of this screw traction will be greatly increased if one or more transfixion pins have been passed through the limb and the screw pull applied directly to the pin. The desired amount of traction and lengthening can be fully maintained by a plaster bandage, applied while the patient is still on the table. Thus in a neglected or malunited fracture of the femur, with 3 inches of shortening and angulation, a pin was passed through the supracondylar region of the femur, and the leg, pulled out to full length on a Hawley's table, put in plaster; the transfixion pin being left in place three weeks and then removed without disturbing the plaster. The possibility of combining the use of a Hawley's table with transfixion pins opens up very great chances of rapidly and completely correcting certain deformities and of lengthening shortened legs. In many cases of malunited fracture with much shortening



A. B.



C.

FIG. 6.—Case of ankylosis of the hip in adduction. A Before bifurcation operation. B After bifurcation operation. C Five inch-raised shoe worn before operation.

a careful choice will have to be made between the two methods of (1) full or immediate lengthening done by a Hawley's table and fixation by plaster over transfixion pins, and (2) gradual traction by weight and pulleys. Probably in a difficult case the maximum of efficiency and accuracy will be obtained by first breaking down the malunited fracture, then applying skeletal traction for six to ten days, and lastly giving a final adjustment on the Hawley's table and fixing in plaster.

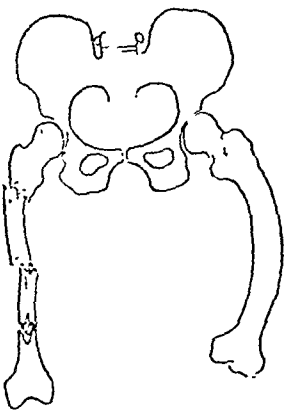


FIG 7.—Gross curvature of the femora due to rickets, treated by multiple osteotomy.

Double Transfixion Apparatus

Another appliance for lengthening bones is the double transfixion apparatus, which I designed, and used frequently in 1914 and succeeding years. Its principle depends on the transfixion of the broken bone at two points near the extremities. The projecting ends of the rigid steel pins are engaged in a frame, consisting of side bars and a circular band, which allows distraction to be made by a screw action and fixation in any relative position of rotation of one fragment upon another. This apparatus, or one similar to it in principle, has been invented independently and described by many surgeons, and it appears in most of the large works dealing with the treatment of fractures. I never use the apparatus now, because I find that the combination of skeletal traction with the Hawley's table, followed by plaster fixation, gives just as good results with much less pain to the patient.

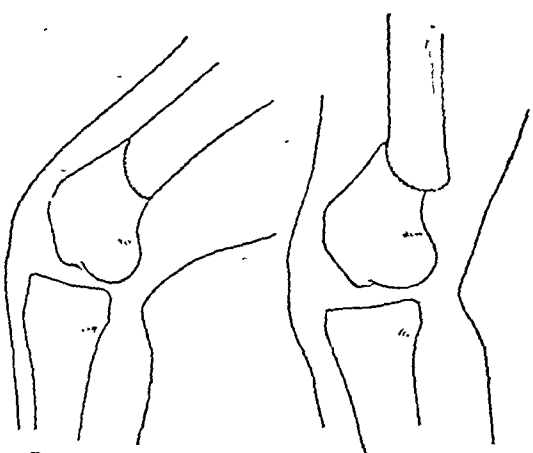


FIG 8.—Contracture of the knee causing shortening, treated by curved osteotomy.

The Wire Method

The modern vogue for skeletal traction now rather favours the use of taut steel wire, generally known as Kirschner's wire, though many surgeons have suggested its use and invented a technique for its application. The essentials of the wire method are as follows: A rigid piece of hard, rustless steel wire, 1 to 2 mm. thick and about 30 cm. long, sharpened at one end, is held in a motor or other mechanical drill stock, and is made to pierce the leg; this it does with great ease and rapidity. To prevent the wire from bending under the pressure, it is held in a collapsible concertina clamp. When the steel wire has traversed the limb, including the bone, its two projecting ends are engaged in a very strong steel horse-shoe clamp, one end being screwed tightly and the other remaining loose. The loose end is then pulled as tight as possible by a special steel screw, which is fixed in this taut position. Weight is now attached to the horse-shoe and traction carried out in the ordinary way. It is claimed for this method that it is never followed by a septic bone sinus. But there are two arguments against it: one is that if it is used for the application of a heavy weight, it is likely to be dragged through the bone, especially if this is at all decalcified; the other is that the technical difficulties of the method hardly justify its use in any except very large fracture clinics. In the method of its application it complicates the use of skeletal traction.

THE LENGTHENING OF AN UNBROKEN BONE

So far I have considered only the question of increasing the length of a broken bone, which usually consists in restoring it to its original measurement; but in many cases of marked inequality of the legs, especially in poliomyelitis and tuberculous hip disease, there may be a possibility of lengthening the short leg. This problem involves several considerations beyond the merely mechanical one of bone lengthening. The short leg in these cases is nearly always under-nourished, with poor blood supply, weak muscles, and slender bones. As the limb is therefore ill adapted to plastic operations, it is much wiser, in my opinion, to shorten the sound leg rather than attempt to lengthen the weak one. The patient, however, may readily consent to any operation on the "bad leg," but will be very reluctant to have the good leg interfered with. In such circumstances what are the possibilities of the method? Various ingenious appliances have been designed for bone lengthening, all of them having the essential design of a double transfixion apparatus with external screw distraction rods. I am not convinced that there is any apparatus that will produce more favourable results than can be obtained by immediate traction on a Hawley's table, or, better still, by skeletal traction making a steady pull on the divided bone. The femur must be divided either by a long oblique division or by a shaped osteotomy. If immediate lengthening is made, suitable bone wedges are placed in position and the bone united by a band (Fig. 1, B). If continuous traction is used, a transfixion pin is passed through the lower end of the femur and weight traction carried out while the knee is kept flexed. The actual limit of such lengthening of the bone is about 10 per cent.

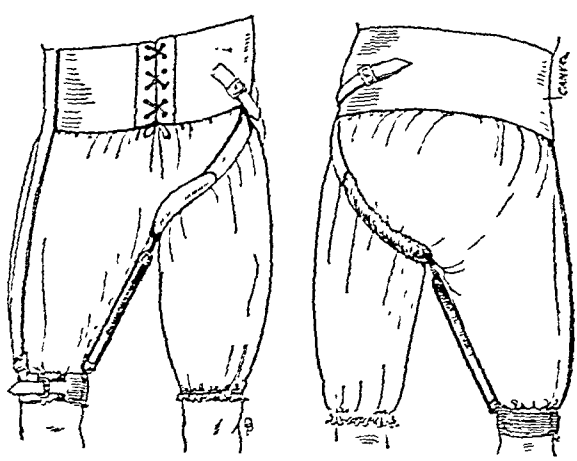


FIG 9.—Ambulatory abduction splint to be worn for six months after bifurcation osteotomy.

—that is, about one and a half inches to a fifteen-inch femur, so that at the end of a rather difficult and hazardous procedure the maximum gain is not very great.

THE LENGTHENING OF A CURVED BONE

Apart from bones which have been shortened by malunited fractures, there are many cases of legs shortened and deformed by curving of the bones or by contracture of the knee. Such conditions result from various types of rickets and also from infection or paralytic conditions of the knee with flexion contracture. A grossly distorted femur usually has two pronounced curves (Fig. 7), one outward just below the trochanters, and the other forwards, below the middle of the shaft. The best operative correction of this double deformity is a double or triple osteotomy followed by continuous weight traction. The osteotomy should aim at splintering the bone obliquely at the points of maximum curvature, and is best done by a hammer and chisel. When both femora are affected, as in the case depicted, I think it is wiser to deal with one leg at a time, allowing sufficient interval (about six months) for the first leg to become firm and sound before touching its fellow. In the case of a contracted knee-joint which is free from intrinsic adhesions and allows of flexion but cannot be fully extended (perhaps by 20 degrees), it is easy to restore complete extension to the joint without interfering with its mechanism (Fig. 8). A curved osteotomy is performed just above the condyles, the curved cut being as nearly as possible parallel to, and concentric with, the curve of the condyles. This is done by means of a band-saw or a fretsaw through two lateral incisions just behind the quadriceps muscle. When the bone has been divided, the knee can be fully straightened and put up in this position in plaster.

SLIPPED FEMORAL EPIPHYSIS AND EARLY COXA VARA

There is, I think, a mistaken notion held by students and practitioners that coxa vara, resulting from a slipped epiphysis of the head of the femur, is a condition that should be left alone until growth is at an end, and then corrected by an osteotomy. This view is certainly quite wrong. The slipped epiphysis can be corrected by manipulation within several weeks of the onset of the deformity, and, at a later date, when the neck of the femur is being remoulded to form a coxa vara, it can still be fully corrected by a single operation which will result in a perfect hip, six months only being required for the correction treatment. If full growth is allowed to occur, with the establishment of coxa vara, the patient is incapacitated by a crippled condition for years, and operative correction is merely palliative. Within a few weeks of the occurrence of slipping of the epiphysis, correction can be done by forcible manipulation, the leg being put up in full abduction with internal rotation in a plaster spica. At a later stage an operation is necessary to divide the femoral neck, and then, when complete restitution has been carried out, the head of the bone is fixed by a bone nail driven into it from the trochanter.

THE BIFURCATION SUBTROCHANTERIC OSTEOTOMY

The shortening and deformity in many unequal legs are due to a faulty relation of the bones at the hip-joint, either actual dislocation or more often adduction with flexion deformity by which the pelvis has to be tilted up on the diseased side in order that the legs may be parallel. It is the general rule that in dislocation, arthritis, or ankylosis of the hip, the limb becomes fixed in adduction and flexion, so that to the real deficiency is added a much greater functional shortening—unfortunately called "apparent." Thus the affected limb in cases of faulty ankylosis of the hip and in congenital dislocation is often 4 to 6 inches off the ground in the standing position (Figs. 2 and 4). This apparent, or as it should be called, functional shortening, is measured by taking the length from the upper border of the symphysis pubis to the tip of the internal malleolus. It has always been recognized that this great functional shortening due to adduction and flexion of the hip should be corrected by a subtrochanteric osteotomy. In recent years Lorenz has elaborated the idea that this osteotomy should aim, not merely at altering the angle of the femur, but at making a sort of fork at its point of contact with the pelvis. This is known as the bifurcation osteotomy (Fig. 5). I have done this operation many times, but I am doubtful if the making of a fork at the top of the femur really achieves much more than the old-fashioned simple osteotomy. Three things are gained by a subtrochanteric osteotomy in these cases of adduction deformity of the legs. In the first place, by abducting the femur and fixing it in this position the pelvis will come to be tilted down on the diseased side when the legs are parallel. Thus functional lengthening will be made to counteract real shortening. In a typical case (Fig. 6) the diseased leg is 1½ inches shorter than the sound one, and the adduction deformity makes the pelvis 2 inches higher on that side than on the other; there are therefore 3½ inches of functional shortening. After osteotomy and abduction the anterior superior iliac spine is brought down to a level 1½ inches below its fellow, and this exactly counterbalances the 1½ inches of real shortening, so that, as the patient stands, the two legs are apparently of the same length, the pelvis being inclined downwards on the side of the diseased limb. In the second place, the axis of the femur comes to lie under the line of weight of the body, instead of lying quite outside it. In other words, the weight of the body is transmitted direct to the femur instead of hanging on to its side. Thirdly, there is provided a wide area of contact between the pelvis and the upper end of the femur by which the body weight is transmitted. The operation is a very simple one. The femur is cut down upon through an internal incision over the base of the great trochanter, and the bone is divided by an oblique saw-cut, which runs downwards and backwards. When it has been completely divided, the shaft of the femur is forcibly abducted and then pushed in towards the symphysis. The degree of abduction in which the leg is fixed must be decided upon beforehand, and is determined by the amount of tilting of the pelvis which has to be corrected or over-corrected. The body and leg are fixed in a plaster spica, which is maintained for six weeks and is then renewed as a short spica down to the knee for another six weeks. Then for six months the patient must use either a walking calliper splint or some form of ambulatory abduction splint. For the latter I have found the appliance illustrated by Fig. 9 very useful. It is very light and can be worn outside the underclothes concealed by the dress or trousers. It is very important to provide in this way against the occurrence of adduction, which is liable to be brought about by the excessive pull of the adductor group of muscles acting on the bone while it is still soft.

LENGTHENING THE LEG BY THE EQUINUS POSITION

One of the most natural attempts to make good a shortened leg is by walking on tip-toe, and this attitude is therefore assumed by every patient who has a short leg. How far should this practice be allowed or encouraged? It is quite certain that it is unsatisfactory for a patient always to walk on tip-toe with the heel off the ground. The attitude involves constant strain on the calf muscles with consequent fatigue, and this will be all the greater as the muscles are already weakened by partial paralysis. The heel, therefore, must be supported by raising that part of the boot. In an adult foot measuring 7 inches from the heel to the ball of the great toe, the following

angles of tilting will be associated with the corresponding *raising* of the heel—namely, 15 degrees tilting with 1½-inch heel; 30 degrees with 3½-inch heel; and 45 degrees tilting with 5-inch heel. But even if the heel of the foot is supported by a raised heel of the boot, the pose of the foot is not very satisfactory, because the calf muscles are thrown out of action to an extent measured by the degree of tilting of the foot, and the patient loses spring and resiliency of step. Probably 15 degrees of tilting is the maximum advisable, representing a gain in height of about an inch, since the other shoe must have a heel of at least three-quarters of an inch. Both instrument makers and surgeons, however, have gone much beyond this limit, and have tried to convert the foot into an extreme equinus position. A special type of boot is widely advertised in which the heel is 5 or 6 inches off the ground, the equinus position being masked by making this elevation of the heel inside the boot. Such an appliance does disguise the deformity, but it does so at the expense of the muscular balance of the leg. In the same way the Mikulicz operation, by which the os calcis and astragalus are removed and the rest of the tarsus and metatarsus brought into a straight line with the tibia, results in a gain of about 5 inches in the length of the leg, but the limb, in consequence, is much less useful for walking than an artificial limb would be. There is an interesting specimen in the Museum of the Royal College of Surgeons representing the leg and foot of a girl, aged 18, on which the Mikulicz operation had been performed by Sir William MacCormac. The patient had infantile paralysis with paralytic equinus, and the leg was amputated by Sir John Bland-Sutton owing to the pain and uselessness of the limb, in spite of the fact that perfect bone union had occurred in good line. It may therefore be laid down as a definite rule in dealing with a weak, short leg, that a plantigrade position of the foot should be preserved, or certainly not departed from by more than 15 degrees of tilting.

SHORTENING OF THE SOUND LEG

For equalizing the length of legs another valuable device, which I think is not resorted to as often as it might be, is the shortening of the longer leg. In the majority of cases we are considering, whether tuberculous hip disease, infantile paralysis, or congenital dislocation of the hip, the long leg is strong and has good sound bones with perfect muscular and vascular supply. In such a leg the femur may be shortened with perfect impunity by 25 per cent. of its total length—that is, in the adult about 4 inches. I have done this operation in various ways, by taking a piece right out and uniting the shaft over a peg, or by a "step-cut" operation, but I now use an impaction method, which is much simpler than either of these (Fig. 1, C and D). If, for example, 4 inches is to be taken from the femur, the bone is exposed by a lateral longitudinal incision in its lower part about 6 inches long. The muscles are divided between the rectus and the vastus externus, and the bone is sawn through about 2 inches above the condyles. The shaft is brought out of the wound and 2 inches are cut off. The remainder is removed by a longitudinal saw-cut 2 inches in length, passing from side to side, the anterior part being cut away, leaving the posterior part of the femur, including the linea aspera, sticking out. This is trimmed by the saw and chisel into a peg about half an inch thick. The lower fragment of the femur is bored by a twist drill of suitable diameter, and the upper fragment is then impacted into it, and fixed in place by a single transverse ivory nail. It is very remarkable how the slack of 4 inches of muscle is taken up within a few months and the full muscular power of the leg regained.

Two examples will suffice to illustrate the possibilities of this method.

CASE I

A woman, aged 25, had a long-standing infantile paralysis with dislocation of the hip on the same side. When she came to me the left leg was 5½ inches off the ground, caused partly by tilting of the pelvis and partly by insufficient growth of the leg, which was encumbered by a heavy apparatus consisting of a calliper splint and high boot. I did three operations. First, the left flail foot was stabilized by a partial tarsectomy (Naughton Dunn's operation), so that she could get firm plantigrade stance without irons; secondly, an osteotomy was performed below the left trochanter, so as to bring down the pelvis on the left side, lengthening the leg by 1½ inches and allowing her to support her body weight direct on the femur, instead of hanging it on to the capsule of the dislocated joint; thirdly, six months later, the right femur was shortened by 4 inches, thus bringing her two legs to the same length. She can now walk on limbs of the same length, and for the first time in her life she can wear an ordinary pair of shoes.

CASE II

A man, aged 30, who must have had osteomyelitis of the upper end of the right femur in childhood, came to me wearing the largest "surgical" boot I have ever seen. It was 9 inches high at the heel and weighed 7 lb. He was sent to me for amputation, and it was obvious that an artificial limb would have been much more serviceable to him than the horrid boot. He had, however, an adduction and flexion deformity of the hip-joint, and this would have had to be corrected even if an amputation had been done. He gladly consented to a series of reconstructive operations, by which his own foot and leg have been preserved. An osteotomy was performed below the neck of the left femur, and the leg put up in abduction. This gained 2 inches for the functional use of the leg. The right leg was shortened by 4 inches, and his two legs are now within 3 inches of the same length. He was so pleased with this result that he is now trying a boot raised 3 inches at the heel and 1½ inches in the sole, postponing for the present a possible bone-lengthening operation on the left femur.

As the result of the active campaign that is being carried out to-day for the treatment of crippled children there are fewer of these cases of adult gross deformity than formerly; but there will always be a sufficient number to make the problems involved of great practical importance.

A CASE OF PERNICIOUS ANAEMIA RESISTANT TO TREATMENT

BY

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A civil servant, who had always lived a temperate life in this country, at the age of 52 noticed that he was becoming pale and rather easily tired, and a year later, on account of these symptoms having become worse, he spent a month at a convalescent home on the South Coast. Shortness of breath and palpitation on exertion began to trouble him; sleep did not come easily at night; and six months after returning home his doctor told him that he was suffering from pernicious anaemia, and prescribed from a quarter to half a pound of liver daily. He did not seem to make any progress, however, either for better or for worse; and after six months' treatment with liver daily he was admitted to hospital under my care.

He was then 54 years of age, a well-nourished man, 11 st. 10 lb. in weight, with fairly considerable subcutaneous fat. His skin and mucous membranes were pale, the former possessing the slight lemon tint so typical of pernicious anaemia. He had been treated for an appendix abscess at the age of 48, but had had no other illness before the onset of the complaint from which he was now suffering. His appetite had always been good, and he had not suffered from vomiting, diarrhoea, or from troublesome constipation.

A haemic murmur was audible at the base of the heart, but nothing further of note could be made out on examination of his chest. The liver was not enlarged, and the spleen was not palpable below the costal margin, nor was the splenic dullness found to be increased on percussion. He complained of slight tenderness on deep palpation in the left iliac fossa, where, through a resisting abdominal wall, a small though rather indefinite sausage shaped mass seemed just palpable along the course of the colon. On inquiry he stated that for some years he had passed at varying intervals a little mucus on defaecation, especially if he had allowed his bowels to become constipated. Examination per rectum revealed a few small haemorrhoids only. His teeth were all artificial, his tongue was moist and clean, smooth, but free from any soreness, and he did not admit to having suffered from a sore tongue previously. No enlarged glands were present anywhere, his arteries were not thickened, and the Wassermann reaction of his blood was negative. Blood examination on admission to hospital (April 25th, 1930) revealed the typical picture of pernicious anaemia, as follows:

Red cells, 1,030,000 per c mm ; white cells, 2,000 per c mm ; haemoglobin, 28 per cent. ; colour index, 1.4 , platelets, 61,000 per c.mm. Red cells well stained and filled with haemoglobin, showing marked variation in size and shape ; numerous megalocytes and microcytes present, and an occasional megaloblast ; reticulocytes found only after prolonged search. Polymorphonuclears, 45 per cent. ; eosinophils, 1 per cent. ; lymphocytes, 46 per cent. ; large mononuclears, 8 per cent.

The patient was then put to bed and given, in addition to the ordinary hospital diet, half a pound of lightly cooked liver and one orange daily for the next two months, and his blood was examined regularly at weekly intervals His general condition remained much about the same, and any improvement that occurred in his blood was practically negligible. On one occasion only the reticulocytes rose to 2 per cent. ; on all other occasions they were much fewer, and found only after prolonged search At the end of two months' liver treatment examination of the blood showed (June 20th):

Red cells, 2,070,000 per c mm. ; white cells, 4,200 per c mm , haemoglobin, 38 per cent , colour index, 0 91 ; platelets 42,000 per c mm Red cells well stained, with some variation in size and shape, some larger and others smaller than normal, but no nucleated reds obvious. Reticulocytes found only after prolonged search.

In view of the fact that the patient had had from a quarter to half a pound of liver daily for the six months before coming into hospital, and that, after admission to hospital, two months' treatment with half a pound of liver daily produced an increase in the red cell count of only one million per c mm (the highest count being no more than 2,070,000 per c mm), with less effect on the other constituents of the blood and with practically no effect on the reticulocytes, it was concluded that the case was resistant to liver therapy. (The changes in the blood occurring at weekly intervals during the two months when the patient was undergoing liver treatment in hospital are shown in the first part of Chart 1) The liver was thereupon stopped, and the patient given desiccated extract of stomach tissue in the form of ventriculin for the next three and a half months. The contents of three tubes of ventriculin (= 30 grams) were given daily in one dose, and the blood was examined regularly at weekly intervals. A week after the treatment with ventriculin was commenced the examination of the blood showed (June 27th):

Red cells, 1 670,000 per c mm. ; white cells, 2,000 per c mm , haemoglobin, 33 per cent , colour index, 0 99 , platelets, 31 000 per c mm Red cells well stained, with some variation in size and shape, some larger than normal and some smaller, but no nucleated reds seen , reticulocytes found only after prolonged search.

About two and a half weeks after starting on the ventriculin treatment the patient began to pass a little blood (approximately half an ounce) in the stools, and also some mucus This continued almost every day for a fortnight. He caught a cold, herpes appeared on his lips, and his general condition seemed to get much worse. This was confirmed by the blood examination, which showed (August 22nd):

Red cells, 720,000 per c.mm. ; white cells, 2,200 per c mm ; haemoglobin, 21 per cent. ; colour index, 1.4 , platelets, 13,680 per c mm. Red cells well stained, with marked variation in size and shape; numerous megalocytes and microcytes; no nucleated reds seen, and reticulocytes found only after prolonged search.

On account of this very serious deterioration in the patient's condition it was decided to resort to blood transfusion, and two days later he was given about ten ounces of blood intravenously. There was some general reaction immediately following the transfusion, but five days later he seemed rather better, his colour had improved, and blood examination revealed (August 29th):

Red cells, 1,220,000 per c mm. ; white cells, 1,600 per c.mm. ; haemoglobin, 22 per cent. ; colour index, 0 9 , platelets, 24,000 per c.mm. Red cells well stained, varying in size and shape; many megalocytes and microcytes present, no nucleated reds seen, and reticulocytes found only after prolonged search.

His cold improved, and the passage of blood in the stools ceased after the transfusion, but a little mucus continued to be passed. He was given a second blood transfusion (11 oz.) a month after the first, and shortly before the end of the course of ventriculin, and no general reaction followed. At the end of the three and a half months' ventriculin treatment blood examination revealed (October 3rd):

Red cells, 1,420,000 per c.mm ; white cells, 3,600 per c.mm. ; haemoglobin, 34 per cent ; colour index, 1.1 ; platelets, 29,820 per c mm. Red cells well stained, with marked variation in size and shape ; megalocytes and microcytes present ; no nucleated reds and no reticulocytes found after prolonged search.

The weekly blood examinations failed to show that the ventriculin had at any time produced even the slightest improvement in the blood, and reticulocytes were always difficult to find. The changes in the blood, as they occurred at weekly intervals during the three and a half months when the patient was undergoing ventriculin treatment, are shown in the second part of Chart 1.

It was thus obvious that the ventriculin treatment was useless, even though it had been reinforced by two blood transfusions ; and as previous liver treatment had also failed, the case presented a difficult problem. The presence of tenderness and of an indefinite small sausage-shaped mass palpable with difficulty in the left iliac fossa, associated as it was with the passage of mucus and some blood in the stools (even though small haemorrhoids were present), added to one's anxiety lest a carcinoma be present. Radiological examinations after a barium meal and a barium enema showed on one occasion some indefinite narrowing at the site, which a subsequent investigation did not confirm.

After consideration it was thought, on the whole, probably wiser to clear up the question by exploratory laparotomy. This was done (October 9th) by my colleague Mr. Lambert Rogers. Some adhesions were found round the caecum (the appendix had been removed six years previously), but no tumour was present in the colon or elsewhere, and none of the other viscera showed any abnormality. The abdominal wound healed quickly, except for a stitch abscess, which continued to discharge for about three weeks Twelve days after the laparotomy, and twenty-one days after a blood transfusion, examination of the patient's blood showed (October 21st):

Red cells, 2 200 000 per c mm , white cells, 3,900 per c mm , haemoglobin, 41 per cent , colour index, 0 9 ; platelets, 37 000 per c mm Red cells well stained, marked variation in size and shape , megalocytes and microcytes ; no nucleated reds, and reticulocytes found only after prolonged search

Ten days after this the blood count was (October 31st):

Red cells, 1,140 000 per c mm ; white cells, 4 200 per c mm , haemoglobin, 30 per cent , colour index, 1 3 ; platelets, 31,200 per c mm. Films no change from preceding examination.

Koessler, Maurer, and Loughlin,[1] as the result of observation and experiments on rats, suggested that chronic vitamin deficiency (A, B, and C) might play a part in the production of pernicious and other severe anaemias, and that vitamin A in the diet was essential to blood regeneration. It was therefore decided to try multiple vitamin therapy in this case.

The patient was given vitamins A and D in the form of radiostoleum, half a drachm twice a day, vitamin B (also A and E) as bemax, half an ounce once a day, and vitamin C in the form of one orange—later increased to two—daily. In addition, of course, he was receiving ordinary diet. This was kept up for over three and a half months (November, 1930, to February, 1931).

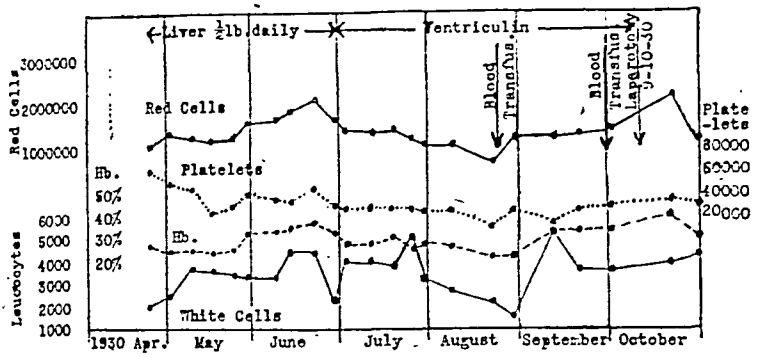


CHART 1.—Showing the changes in the blood occurring while the patient was undergoing treatment with (*a*) liver and (*b*) ventriculin.

The day before the multiple vitamin therapy was begun the blood count was:

Red cells, 1,730,000 per c.mm.; white cells, 3,400 per c.mm.; haemoglobin, 30 per cent.; colour index, 0.9; platelets, 25,000 per c.mm. Red cells well stained, marked variation in size and shape; megalocytes and microcytes; no nucleated reds present, and reticulocytes found only after prolonged search.

Weekly examinations of the blood thereafter showed that from the beginning of the multiple vitamin treatment the red cells, haemoglobin, leucocytes, and platelets steadily increased for the next two to two and a half months. The haemoglobin, leucocytes, and platelets reached their highest limits exactly two months after the treatment had been commenced, and the red cells two weeks later. Blood examination at the end of two months' vitamin treatment showed (January 9th, 1931):

Red cells, 3,500,000 per c.mm.; white cells, 5,400 per c.mm.; haemoglobin, 73 per cent.; colour index, 1.05; platelets, 174,000 per c.mm.; reticulocytes, 0.8 per cent. Red cells well stained and showing variation in size and shape, a few tending to be larger than normal, and others definitely microcytes.

At the end of two and a half months' vitamin treatment the blood showed (January 23rd):

Red cells, 3,840,000 per c.mm.; white cells, 3,200 per c.mm.; haemoglobin, 69 per cent.; colour index, 0.9; platelets, 92,000 per c.mm.; reticulocytes, 0.7 per cent. Red cells well stained, but still marked variation in size; megalocytes and microcytes present.

The progress of the patient was thus far exceedingly satisfactory. At no time since the onset of his illness had he felt so well. The red cells, haemoglobin, and platelets had increased more than ever before, and on only one previous occasion had the leucocytes reached the same level. The reticulocytes, however, were always scanty; once only did they reach 1.8 per cent. Further satisfactory progress, however, was not maintained. The road to recovery had apparently reached its peak, and now began to decline steadily and rapidly. The multiple vitamin therapy was persevered with for another month, but the number of red cells and platelets, and the amount of haemoglobin, rapidly diminished; the blood examination made a few days after stopping the treatment showed that a lower level had been reached than at any previous stage during the administration of liver, ventriculin, or of vitamins. The blood examination was as follows (March 6th):

Red cells, 1,150,000 per c.mm.; white cells, 3,000 per c.mm.; haemoglobin, 27 per cent.; colour index, 1.1; platelets, 21,850 per c.mm.; reticulocytes, 0.8 per cent. Red cells well stained, marked variation in size and shape; megalocytes and microcytes; no nucleated reds.

The patient was now given liver extract (= 1/2 lb. liver) and 30 grams (three tubes in one dose) of ventriculin daily; but he got worse, gradually sank, and, in spite of a blood transfusion (14 oz.), succumbed fourteen days later with a terminal broncho-pneumonia. On the day before death blood examination showed (March 20th):

Red cells, 660,000 per c.mm.; white cells, 1,100 per c.mm.; haemoglobin, 20 per cent.; colour index, 1.5; platelets, 7,800 per c.mm.; reticulocytes, 0.2 per cent. Red cells well stained, varying in size and shape; many megalocytes and a few microcytes present; no nucleated reds seen.

The changes in the blood as they occurred at weekly intervals during the three and a half months when the patient was undergoing multiple vitamin treatment, and up to the date of death, are shown in Chart 2.

COMMENTARY

This case presented the general appearances usually seen in Addisonian pernicious anaemia. It was that of a well-nourished man having a smooth skin with lemon-yellow tint, languid and rather indifferent to the progress of his chronic disease. The blood picture—with megalocytes, microcytes, and poikilocytes, high colour index, leucopenia, and no abnormal white cells—was also characteristic. Erythroblasts were found only once, but the case was not one of aplastic anaemia. The post-mortem examination revealed findings typical of pernicious anaemia; there was a marked hyperplastic, and not aplastic (atrophic), condition of the marrow of the long bones, and a well-marked haemosiderin reaction was obtained in the liver, spleen, and kidneys.

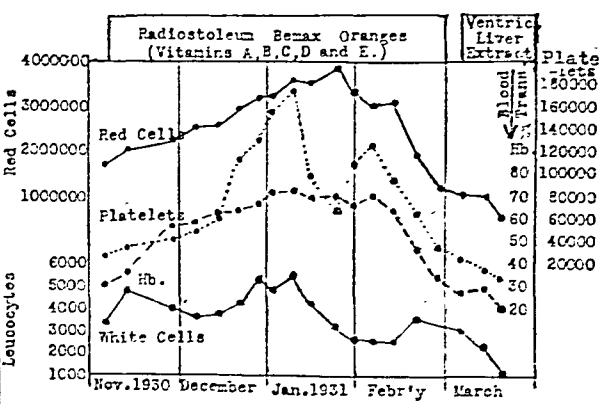


CHART 2.—Showing the changes in the blood occurring while the patient was undergoing treatment with multiple vitamins and, at the end, ventriculin and liver extract.

An unusual feature of the case, however, was the presence of hydrochloric acid in the stomach contents. Fractional test meals were examined about a month after the course of liver treatment was begun in hospital, and also a few days after the beginning of ventriculin treatment. Both showed similar findings. The free HCl

and total acidity followed more or less normal curves. Free HCl went up to about 30 (N/10 NaOH) one and a quarter to one and a half hours after partaking of the meal, and the total acidity to 55. There was no odour in any of the samples, and no blood, bile, or lactic acid ; starch was present up to one and a half hours, and resting juice amounted to 10 c.cm.

Throughout the long courses of treatment with liver, ventriculin, and multiple vitamins, reticulocytes never exceeded 2 per cent., and usually they could be found only after long searching. Under treatment with multiple vitamins the patient, for the first time, showed steady and marked improvement, which reached its maximum degree (3,840,000 red cells per c.mm.) at the end of about two and a half months. At this point, however, in spite of continuation of the treatment, he quickly relapsed, and died a month later with a red cell count of 660,000 per c.mm.

The case, therefore, was resistant to liver therapy and to treatment with desiccated extract of stomach tissue. Although a marked improvement took place under treatment with vitamins A, B, C, D, and E, it was not maintained ; and knowing the tendency of the disease to show periods of natural remission even without treatment, one cannot avoid the conclusion that this may be the explanation, and that vitamin deficiency *per se* is not an essential factor in the causation of the disease. For two weeks before he died he was given both liver extract and ventriculin, but without effect. On three occasions also the other forms of treatment were reinforced by blood transfusion, but the progress of the disease was not influenced thereby.

SUMMARY

(1) A case of Addisonian pernicious anaemia, which resisted treatment by (*a*) liver and (*b*) desiccated extract of stomach tissue, is recorded. (2) Treatment with multiple vitamins (A, B, C, D, and E) was tried, and improvement took place for two and a half months, but was not maintained, and relapse ensued. (3) Liver extract and desiccated extract of stomach tissue were then given, but the relapse progressed and ended in death. (4) Blood transfusions also did not influence the condition. (5) The improvement which took place under multiple vitamin therapy may have been but a natural remission of the disease, and so vitamin deficiency *per se* may not be an essential factor in its causation.

REFERENCE

[1] *Journ. Amer. Med. Assoc.*, 1926, lxxxvii, 476.

SUBACUTE BACTERIAL ENDOCARDITIS FOLLOWING REMOVAL OF SEPTIC FOCI

BY

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The eradication of septic foci, particularly in connexion with teeth or tonsils, is advocated in all textbooks of medicine. Such advocacy belongs to the realm of elementary teaching, for it is realized that a large number of cardiac patients owe their death to the supervention of subacute bacterial endocarditis, and it is presumed on reasonable grounds that infection in such cases derives from teeth or tonsils. Yet the removal of septic teeth or tonsils in cases of chronic heart disease does not constitute quite so simple a problem as appears on the surface. This is amply demonstrated by the following cases in which subacute endocarditis supervened upon removal of septic foci—teeth (two cases) and tonsils (one case)—in circumstances which leave no doubt that the fatal issue was the result of removal of these foci.

CASE I

A man, aged 39, was seen by me on June 24th, 1925. He had been informed twelve years previously that he had well-compensated mitral regurgitation. From this he had experienced no symptoms whatever. In the middle of January, 1925, he consulted a dentist, who extracted five teeth under local anaesthesia. A week later six more teeth were extracted. Shortly after the extraction he noticed small red spots on his fingers. These were attributed by him to the effects of the cocaine used in the extractions. Soon afterwards he noticed stiffness of his calves and thighs. On April 25th he developed sudden loss of power of his right arm and leg, without loss of consciousness. When I saw him strength had returned to his limbs, but a number of petechiae were noted on his fingers. These were, he stated, similar to the earlier spots. His temperature showed an evening rise varying from 99.4° to 101°, while his pulse rate varied from 90 to 120. Examination showed the presence of mitral regurgitation, without enlargement of the heart. Blood culture yielded a growth of *Streptococcus viridans*.

The next event in the case was the appearance of tender nodules on a finger, on the right arm, and on the right buttock. Crops of petechiae appeared from time to time in various parts. On July 25th sudden pain was felt in the right shoulder. This lasted for two days, and was followed by a shower of petechiae in the region of the right clavicle and scapula. More tender nodules were observed on the left wrist, left leg, and buttock. On September 20th, 1929, intense pain was experienced in the back of the head. This was followed by unconsciousness and, in a few hours, by death.

CASE II

A male, aged 21, had a history of rheumatic fever in childhood. A year after this infection he was able to indulge in vigorous exercise without discomfort. After a time he hunted, and rode in point-to-point races with considerable success. In July, 1929, he obtained his degree, but failed to pass the medical examination for the British Army. Until this time he was quite unconscious of the presence of any defect in his heart. The result of his medical examination caused him considerable surprise, and he thereupon consulted a London cardiologist, who found a valvular lesion, and advised removal of tonsils, which were, he found, in a septic condition. The tonsillectomy was followed by pyrexia, and ten days later the patient returned to Ireland. On the evening after his return he had a violent pain in his right hip, and was then seen by Dr. Drennan, who has kindly permitted me to publish this case. Examination revealed a good deal of sepsis in the throat, swelling and tenderness of the right hip, a temperature of 103°, and a pulse rate of 120. An aortic diastolic murmur was heard.

After some days the throat condition improved and the swelling of the right hip subsided. The temperature came down, but failed to reach the normal, and for some weeks there was an evening rise towards 100°. Pain and swelling attacked a number of joints, and with this a progressive anaemia became apparent. Six weeks after his return to Ireland I was called to see the patient. The throat was still septic, the temperature was 102°, and the pulse rate 120. The patient looked extremely pale, almost ashen ; a few petechial spots were seen on the legs, and there was considerable sweating. The heart showed moderate enlargement, with aortic and mitral regurgitation. Blood culture yielded a pure growth of *Streptococcus viridans*. The course of the infection after this date followed the lines previously exhibited. Remissions occurred in which the general condition improved and the temperature fell, though never reaching normal. After each remission an exacerbation was ushered in by joint-pains, weakness, increased pyrexia, and sweating. Cardiac enlargement became more marked, and anaemia more profound. After seven months death ensued from cerebral embolism.

CASE III

Male, aged 53, suffered from a sudden attack of auricular fibrillation in September, 1927. He came under the care of Professor T. G. Moorhead, who has kindly permitted me to record his case. During a period of eighteen months after his initial attack of irregularity, repeated attacks occurred of paroxysmal fibrillation with some flutter. The heart showed moderate enlargement, with a systolic murmur maximal in the mitral area. Complete examination failed to show any cause for the irregularity. His teeth were carefully examined by a dentist in November, 1928, and were pronounced sound. Early in 1929 the patient began to suffer from some discomfort with his teeth, and a general deterioration of health was noted, as evidenced by considerable loss of weight, with increasingly frequent incidence of fibrillation. In April, 1929, he consulted a London cardiologist. His teeth were *x*-rayed and two roots were condemned. Removal of all his teeth under local anaesthesia was recommended. In May, after an abortive attempt to improve the condition of pyorrhoea which then existed, two teeth were removed without difficulty, the only anaesthetic employed being cocaine, which was simply painted on the gums. On June 27th another tooth was removed. This extraction proved difficult, and some novocain was injected into the gums. Following the extraction the gums continued to bleed for three days. The bleeding ceased after application of adrenaline. On July 1st a purpuric eruption occurred all over the body. On the next day there was pronounced haematuria, and oozing of blood was noted all over the surface of the palate and from the gums. Haemostatic serum and antistreptococcal serum were administered and the bleeding ceased. Four days later there was haemorrhage from the stomach and bowel, and, from this on, the patient was mildly pyrexial. Blood culture was negative. At this time I saw the patient in consultation on two occasions. No marked change was noted until August 14th, when he was apparently much better and able to go for a drive. On the next day he was not so well, and was again feverish. Haematuria once again appeared, and there were more purpuric spots. Two days later it was noticed that the left arm was paralysed. Half an hour later the left leg was paralysed, and still later the left side of the face. Towards evening there was severe haematemesis, after which the patient sank into coma and died.

COMMENTARY

It will be seen that in two of the cases recorded above there was no symptom or sign of endocarditis until the removal of septic foci. The first patient had experienced no disability whatever from his heart lesion, and consulted a dentist because of trouble with his teeth. The second patient was led to consult a cardiologist because of rejection for the Army. His valve lesion had not interfered with indulgence in strenuous exercise. The third patient had presented a number of symptoms before the removal of teeth, but the terminal illness was closely associated with an extraction. I feel justified in including his case in this paper in spite of negative blood culture, as the circumstances associated with his death point the same moral as the other cases.

Many interesting problems arise from consideration of these cases. If proof were needed that infection in subacute endocarditis may derive from teeth or tonsils, such cases would supply the necessary evidence. Paradoxically, then, they emphasize the importance of removal of septic foci, but they stress the need for great caution. Removal of more than one or two teeth at a sitting in patients with disease of the heart is clearly unwise. Unless there is a definite periapical abscess it would seem equally unwise to risk dissemination of infection by removing teeth which are very firmly fixed and require much manipulation. General anaesthesia should on *a priori* grounds be preferred to the use of local anaesthesia. Preliminary vaccination with an autogenous growth from the gums or tonsils seems a rational procedure. Careful supervision of teeth in patients with disease of the heart should obviate the necessity for wholesale extractions. Crowning of teeth in such patients and the preservation of dead teeth are both to be condemned. It is better to sacrifice a comparatively useful tooth at a stage when its removal is unattended with danger, than to preserve it in a condition in which it is likely to become severely infected and a source of danger whether it be left or removed.

THREE GENERATIONS OF INHERITED DENTAL DEFECT

BY

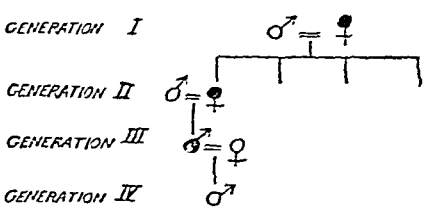
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Congenital absence of certain teeth is a relatively common condition which sometimes occurs in family groups, but gross suppression of the majority of the teeth in members of three consecutive generations of the same family is rare.

Recently a woman attended an infant welfare centre with her only grandson, a boy 8 months old, who had six teeth already erupted. Mention of these teeth led the woman to volunteer the statement that her own two widely spaced teeth were the only ones she ever possessed. These peg-shaped teeth, occupying the place of the lower central incisors, appeared when she was about the age of 7, and are still strong and sound, being implanted in firm gums, which, she says, have always been capable of dealing unaided with all kinds of food except nuts. During childhood, complete closure of the mouth was impossible owing to hypertrophy of the gums, but it was not until she reached the age of 19 that, goaded by her companions' constant teasing on account of her toothlessness, she sought advice at the local hospital. Two "levelling" operations ("for double odontoma," she says) took place, after which the gums shrank to their present normal proportions, and she was able to close her mouth naturally.

Her memory regarding the results of *x*-ray examination then and later is vague; but apparently when she was 19 a few rudimentary teeth were said to be present, and again, twenty-seven years later, when she was in another hospital for gynaecological treatment "almost a full set of teeth" was found. Operation on the mouth was then suggested, but she would not agree to this as her bite was satisfactory, and her enunciation clear and unusually



good. She is one of a family of four, all the others having normal dentition. Her age is 46, but her appearance is that of one twenty years or so older. She is stout and florid, and her abundant dark hair is going grey. "A complication of disorders"—the graphic phrase of some former biographers—might sum up her past and present health, for she has never been strong, having suffered from "chronic bronchitis, gall-stones, appendicitis, and displaced kidney," and having had, eight years ago, after several curettages, a major gynaecological operation, of the nature of which she is unaware.

THE FIRST GENERATION

The mother (Generation I) of the above patient, who died at an advanced age, was one of a family of eleven children, and was "the only one with bad sight or anything the matter with her teeth." She had "no teeth until she was grown up, and then two came right under her tongue." She was short-sighted, a good speaker, and photographs show the usual edentulous sinking-in of the lower part of the face such as occurs after multiple extractions or in old age. History farther back is unobtainable, except that the family, on each side, has been country-born and bred for many generations, and has always been used to an ample diet containing fresh milk and vegetables. Despite this woman's appearance, no Semitic element is known on either side of the family, and the living members now under consideration are of good intelligence and physique.

THE THIRD GENERATION

The third generation consists of the only grandson of the old couple, a young man, father of the infant first mentioned. At the age of 15 he had no erupted teeth, but now, at the age of 23 years, he is teething, and has at the present date two more teeth than has his 10-months-old son. His gums are still enormously broad, but evidently are much reduced following an operation done when he was 15. At that time localized pain and inflammation round the ? second upper right molar induced him to go to the dental hospital, where a local abscess was evacuated. *X*-ray examination, when he was 9, and in a children's hospital, "as he was not very strong," is said to have shown "few teeth in the jaws, and these only stumps," but six years later a full set of unerupted teeth was found to be *in situ*. Soon after this he was referred to a general hospital, where, after another *x*-ray examination which corroborated the above, he says both gum and bone were "chiselled off" and four teeth set free. Reference to an early photograph shows the inability to close the mouth prior to the operation, as happened in his mother's case; no such disability was present afterwards.

The right upper molar referred to juts out on the outer aspect of the maxilla at an angle of 35 degrees or so, and around it inflammation occurs occasionally, but to a less extent than before. The visible teeth are odd and asymmetrical in shape, though not at all Hutchinsonian; they are very broad proportionately, probably because they are only partly erupted, though strong and fairly firmly set. As far as their oddity allows descriptive enumeration, all the incisors seem to have erupted except the left upper one; the right and left lower canines are present, as is the left upper one. Behind the canines the gum in the lower jaw is less thick than in the upper jaw. The patient's enunciation and bite are now excellent, and he is an expert whistler.

A COMMON EYE DEFECT

Common to this family there is an eye defect to which, curiously, they have given little attention or treatment. The baby's grandmother has always had extremely defective sight, and has been almost blind for the last four or five years, dense bilateral corneal opacity being now present. She says she "brought this into the world with her," and apart from some treatment at the age of 9 or 10 years, its course has been unchecked. A year ago she was prevailed on to attend hospital, and was then told the damage was irreparable. She is active and handy in her house, though she leaves machining and hand-sewing to her son; she peers—though she can see neither the printed page nor a human face—closely at all she handles, declaring herself benefited by the use of strong concave glasses purchased from a hawker for a relative now deceased. Her own mother, possessor of the "two teeth under her tongue," had, she says, "exactly the same kind of eyes as mine," with very defective, untreated sight; and her father, a venerable old man by his photographs, always had poor sight, and went blind when he was 47. Both these old people had abundant hair. Her son, father of the baby in Generation IV, has a slight degree of bilateral keratitis with defective sight, for which he wears glasses, "fours or fives," obtained "from a young gentleman at the door" (who supplied the other glasses mentioned). He has neither had, nor desired, any other form of treatment. The infant, whose head and face show extreme asymmetry from whatever aspect they are regarded, has an alternating squint. He is well grown, but some developmental genital defect is also present, for neither testicle is descended, and the scrotum is absent, or almost so. He plays happily in his cot, and is already quickly responsive to the sound of a piano or band, but he is considered by his grandmother to be "not at all well," owing to teething.

COMMENTARY

The available bibliography illustrates the heritability of similar dental defects, either fixed from one generation to another, or variable; and also an association with certain epiblastic defects, not present in the family under consideration. This family differs also from Thurnam's case (*London Med. Chir. Soc. Trans.*, 1848, p. 71) of two cousins, each of whom had only four teeth and was the subject of congenital alopecia, the scalp hair being represented by lanugo only. He also quoted additional cases. Danz, according to Michelson (Ziemssen's *Handbook*), saw two adults who had never had either hair or teeth. Another condition of congenital absence of cutaneous appendages is known in which teeth, hair, and sweat glands are all either rudimentary or suppressed. Such subjects, with their undeveloped alveolar processes and normal development of the upper part of the face and head, suggest in their features a curious resemblance to a foetal skull, and are apt to become severely distressed in hot weather owing to heat retention, and inability to reduce their body temperature by sweating. A small family group of two persons who appear to correspond to the above type has been recorded by Dr. Jean Smith, in two successive communications in the *Proceedings* of the Royal Society of Medicine (1929, xxii, 649; January, 1931, xxiv, 323); two brothers showing this dental defect, along with absence of sweating and a tendency to attacks of pyrexia (apparently from insufficient heat loss in absence of sweating), and scanty hair. The special value of her records lies in the *x*-ray picture accompanying the second record, to which reference may advantageously be made. She alludes to Clouston's account in the *Journal of the Canadian Medical Association* (1929, xxi, 18) of a French-Canadian family in or near Quebec in which 119 of such cases are said to have occurred throughout six generations. Apart from this family group she states that she had only succeeded in tracing the record of fifteen similar cases in the literature. Thadani, however, reports (*Journ. Hered.*, 1921, xii, 87) a Hindu Amil community in India, in which a toothless type of man occurs. The men are not only toothless, but bald-headed and extremely sensitive to heat. The evidence, as far as it goes, indicates that the character is male sex-linked. Anodont females are not at present known, but if daughters of a toothless father are married to a normal man their male children are toothless, and they seem to be known locally as bhudas, or old men. Crosman (*Journ. Hered.*, 1927, xviii, 368) cites from Guildford in 1883 a not dissimilar type of case, in that of an edentulous woman without teeth or hair. She had a son in the same condition.

He married a normal, and of their children six were normal and two others had several undeveloped teeth. A normal sister had eighteen children, one of whom was without teeth or hair. Fürst (*Arch. f. Rass.- u. Gesells.-biol.*, 1905, xvi, 310) describes another case of anodontia.

Any possible connexion of rickets in the etiology of this condition need not be considered here, as a hereditary genetic defect displayed in three successive generations cannot possibly be due to such or to any other form of malnutrition or vitamin deficiency.

From all the foregoing cases this family group is essentially different, in that the primordia of the teeth are not suppressed, being present in the gums even when dentition is either greatly delayed or never completed. Sweating is normal here, and the hair is as abundant in all the affected members as it is in ordinary members of the general community. It is just conceivable that as the teeth are epiblastic appendages, and the corneal epithelium and the lens itself are also epiblastic in origin, the eye defect in this family and its inherited dental condition may be associated characters, joined or linked together in the process of heredity. Whether this is so or not must at present be left an open question, though the association itself is certainly suggestive.

I have to thank Dr. Veitch Clark, the medical officer of health, and Dr. Maude Duckworth, at whose infant welfare centre under the Manchester Corporation the infant was seen, for permission to publish notes of the above case; and to acknowledge to R. R. Gates's *Heredity in Man* (1929) my indebtedness for references to the literature.

HEREDITY AND DUPUYTREN'S CONTRACTION

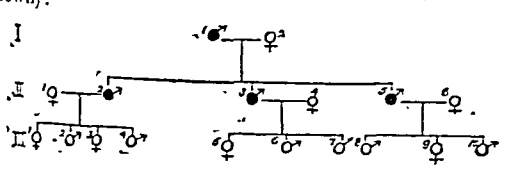
BY

J. S. MANSON, M.D., D.P.H.

FORMERLY ASSISTANT SURGEON TO THE WARRINGTON INFIRMARY

The hardening and contraction of the palmar fascia, resulting in flexor contraction of the fingers named after Dupuytren, has been known for many years to have had a hereditary factor in its etiology. This factor has been thought usually to be of a gouty nature, influenced by occupation. It is rare to come across three brothers affected with the deformity, whose father was also affected, and whose mother was affected by double-bent little finger at the proximal interphalangeal joint, but whose other fingers were normal.

The father died at the age of 73, and the mother at the age of 63. All the affected followed different occupations. The father was a grocer, and the brothers were a baker, clerk, and general labourer, their present ages being 72, 70, and 68 respectively. There is no history of gout in the family. The pedigree is as follows (a female infant in Generation II, who died in infancy, is not shown):



Description of Members of Pedigree

I 1: Both hands affected; third and fourth fingers contracted; began at about the age of 50.

I 2: Both little fingers (fourth) bent at proximal interphalangeal joint; said to be from birth. Other fingers unaffected.

II 1, 4, 6: Unaffected.

II 2: Both hands affected; right first and fourth fingers, noticed first at the age of 57; left first, second, third, and fourth, noticed first at the age of 37, after receiving injury to second finger.

II 3: Both hands affected; noticed first about the age of 40. Right first, second, and third fingers; left second and third fingers. Both fourth or little fingers are bent at the interphalangeal joints similar to his mother's.

II 5: Both hands affected; began at the age of 48. Right third and fourth fingers; left second, third, and fourth fingers.

III 6: Died in infancy.

III 7: Died, aged 23, unaffected.

III 1, 2, 3, 4, 5, 8, 9, 10: All unaffected—ages from 41 to 33.

It will be observed that there is some slight variation in the degree of deformity. II 2 and II 5 have the greatest deformity in the left hand, while in II 3 it is the right hand which is most affected. In all three the fourth or little finger is affected, and it is difficult to decide whether the maternal character as well as the paternal is shown, or whether the maternal factor has reinforced the paternal factor so as to produce the very marked deformity in all three brothers.

So far the deformity has not appeared in the third generation, but this generation has hardly yet reached the age when it begins to be noticed. The late period in life—advanced maturity—when the deformity appears and continues to progress, illustrates the potency of the hereditary factor which lies dormant during childhood, adolescence, and maturity.

There may be other defects or diseases appearing late in life which have a hereditary basis, but are not so easily recognizable clinically as Dupuytren's contraction. Owing to the difficulty of disentangling and analysing the various factors these defects or diseases are attributed chiefly to environmental causes.

Senescent hereditary defects or diseases are more difficult to study with the completeness of those occurring in earlier years, because many members of families do not live long enough for the defect to appear, and develop to such a degree as to be recognizable.

DISSEMINATED ENCEPHALO-MYELITIS FOLLOWING SPINAL ANAESTHESIA

BY

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Although spinal anaesthesia was introduced by Bier of Bonn in 1889 the method has been generally employed only since the discovery of stovaine in 1904. Toxic effects at the time when stovaine was on trial, and its known action in lowering the blood pressure and depressing the cardio-vascular and respiratory systems, discouraged many surgeons for a time from the employment of spinal anaesthesia. For many years it has been successfully used by those aware of its dangers and of the technique of administration; and in a large field of surgery it now appears to be the anaesthetic of choice. Those who employ this method have recorded series of thousands of cases without any immediate ill effects or sequelae, and the majority of deaths which have occurred under spinal anaesthesia have been due to the state of the patient prior to operation, shock, cardiac disease, and to loss of blood, etc.—conditions which would make the operation more hazardous if performed under chloroform or ether.

Headache, paraesthesiae, and even pain in the trunk and limbs, not uncommonly follow spinal anaesthesia. More rarely paralysis of an ocular muscle occurs, but recovery is usually complete within a few weeks. More

serious affections of the nervous system are very rare; but there are records in the literature of such varied neurological sequelae that I would submit the description of two cases where the onset of symptoms appeared to be too closely related to spinal anaesthesia to be entirely unconnected with its administration.

CASE I

Mrs. N. W., a healthy woman aged 38, had a hysterectomy performed for fibroids in August, 1929; the tissue was subsequently examined histologically, and there was no evidence of malignancy. Spinal anaesthesia with stovaine was employed.

Four days after the operation, from which she otherwise made an uneventful recovery, she noticed that her right arm was useless and weak, so that she had difficulty in feeding herself.; within the next few days she complained of weakness in both legs and some dimness of vision. These symptoms became more marked, and finally all the limbs were completely paralysed and flaccid. The onset of the complete paralysis was associated with headache and delirium, which persisted for about a fortnight; she had diplopia and such deficient vision that she was unable to recognize those in the room. There was retention of urine and faeces. Improvement was gradual over a period of months. She recovered the use of the left arm, and although the right remained very weak, some degree of movement was possible at all joints. Vision was restored to such a degree that she was just able to read large print; and although her right arm showed ataxic movements at the onset of her illness, both inco-ordination and tremor passed away. Both lower limbs remained completely paralysed, but without sensory loss, although paraesthesiae, burning, and a feeling of weight were present in each. The pupils were equal, central, and circular, and reacted both to light and on convergence; the arm-jerks were present and not exaggerated; the abdominal reflexes were absent on the right side and very sluggish on the left. There was no spasticity of the lower limbs, but both knee jerks were exaggerated; the ankle-jerks were present and equal, and the plantar responses were flexor. Speech was little impaired, while intelligence was unaffected; no emotional disturbance persisted. There was no diplopia, but nystagmoid movements were noted in the horizontal plane. Retention of urine and faeces has persisted since the onset of the cerebral symptoms and the general paralysis.

The above represents the clinical picture when she was seen by me with Dr. Alexander of Darvel nine months after her operation, and Dr. Alexander informs me that now, some twenty months after the onset of her symptoms, very little further improvement has taken place. She is bed-ridden, with almost complete paralysis of both lower limbs; the right arm is still weak; sphincter control has in a small measure been regained. Before the operation she had enjoyed excellent health, was the mother of two healthy children, showed no evidence of syphilis, clinically or serologically, and had never previously experienced even transient nervous symptoms. As in the other patient, there is no history of any familial disease.

CASE II

G. Y., aged 35, had an operation for left inguinal hernia under spinal anaesthesia with stovaine in August, 1929. The wound healed by first intention, and the recovery from a surgical point of view was uneventful.

During the first few days following the operation a change in his speech was noted in that it became thick and deliberate, with occasional mispronunciation of words; and at the same time the left hand became clumsy, so that he was unable to fasten buttons and carry out fine movements, though there was no objective paralysis. There was no sensory loss, but the arm and leg felt numb; and, though there was delay in commencing micturition, catheterization was never required. He had slight transitory dimness of vision, but no ophthalmoscopic changes were detected. Later the left leg became weak and stiff, and he dragged it when walking, and with this stiffness there was associated a feeling of heat in the whole limb.

When seen by me six months later he appeared a well-built man with healthy organs. There was no evidence of arterial degeneration, and the blood pressure was within normal limits. Both legs were weak, especially the left, and when walking the latter limb was stiff and dragged slightly. The deep reflexes were exaggerated in both limbs, especially the left; ankle and patellar clonus were elicited, and on the left side the plantar response was indefinitely extensor. There was no intention tremor, diplopia, nystagmus, or emotional disturbance, but though Romberg's test was negative he had some difficulty in walking heel-to-toe. There was no sensory loss and no astereognosis.

The left arm showed more weakness than could be accounted for by the fact that he was a right-handed man, and he was definitely clumsy in carrying out fine movements with this hand. There was no obvious muscular atrophy. The abdominal reflexes were very sluggish on the right side and absent on the left.

Lumbar puncture gave a clear fluid under increased pressure; protein was increased; sugar was normal; no organisms were seen; and there was only one cell per c.mm. The Wassermann reaction was negative in the fluid and also in the blood, while the colloidal gold curve was 0022110000. He has since made slow but continuous improvement.

The only sequel of spinal anaesthesia, apart from headache and paraesthesiae, which I had previously seen was diplopia from paralysis of an ocular muscle; but meningomyelitis after anaesthesia has been described by Donovan, Beretervide, and Richniewski,[1] and a degenerative myelitis has been recorded by Nonne and Demure.[2] Trophoneurotic disturbances have also been observed; and Devraigne, Suzor, and Laennec[3] had a case where quadriplegia followed anaesthesia. Post-anaesthetic confusional insanity, epileptiform seizures, double optic atrophy, and vitiligo have all been recorded as sequels of spinal anaesthesia.

Considered from the point of view of the nervous systems alone, both cases which I have described could be diagnosed as disseminated sclerosis; and even with their post-operative onset, I am aware that many would still consign them to that dumping-ground of neurological diagnosis. But from the onset of the symptoms so soon after spinal anaesthesia, which we know can be occasionally followed by the most varied nervous symptoms, I consider that their relationship to the anaesthesia is more than merely fortuitous.

REFERENCES

[1] Donovan, Beretervide, and Richniewski: *Rev. Soc. di Med. Int. y Tisol.*, 1928, iv, 67.
[2] Nonne and Demure: *Wien. klin. Woch.*, 1928, xli, 1002.
[3] Devraigne, Suzor, and Laennec: *Bull. Soc. d'Obstét. et de Gynéc.*, 1927, xvi, 316.

HYOSCINE AMNESIA IN LABOUR, WITH OR WITHOUT CHLOROFORM

A RECORD OF THIRTY-FIVE CASES

BY

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I started using this treatment as a result of reading the article on hyoscine amnesia in labour by Dr. D. R. Jennings in the *British Medical Journal* of November 2nd, 1929. The cases were not selected, except that no patient who was suffering or had suffered from albuminuria was treated.

Van Hoosen's dosage, as quoted by Jennings, was employed, with only slight modification in a few cases—that is, three doses of 1/100 grain of hyoscine hydrobromide hypodermically at half-hourly intervals, and thereafter 1/100 grain every two hours as long as labour lasts.

In twenty-one of the cases chloroform was also given in the second stage. This is the present practice of the Leeds Maternity Hospital, and I think that where birth occurs about the time when the third injection is due it

may ensure a case being a complete instead of only a partial success.

ANALYSIS OF CASES

Of the 35 patients, 24 were primiparae and 11 multiparae, their ages varying between 18 and 40 years. There was one poorly flexed occipito-posterior position, which called for manual rotation and forceps ; 6 other patients had low forceps deliveries ; 27 cases were normal ; 1 was not in labour. The incidence of forceps deliveries is high, but the series is not large enough to generalize on this point. In one case the indication was contracted pelvis.

RESULTS

Five patients had fewer than three injections, and had little or no amnesia ; in these cases the treatment was started too late to be effective. One patient had five injections before it was realized that she was not in labour. Of the remaining 29 cases, 19 are classified as excellent results, 3 as good, 3 as doubtful, and 4 as unsatisfactory.

Four Unsatisfactory Cases

In the first two of these the treatment was faultily carried out.

Case 12.—1-para, aged 28. Six injections. After the sixth dose, was seen by a doctor who was unfamiliar with the low delirium commonly present in these cases, became alarmed at it, and stopped the treatment. The baby was born six hours fifty-five minutes after the last dose, and the patient consequently remembered all the last part of the labour.

Case 21.—1-para, aged 23. Five injections. Time from first injection to delivery, eight hours fifteen minutes. Sixth injection was due one hour before delivery, and was forgotten. She remembered some of the later stages and the administration of chloroform, which was given at the end of the second stage.

Case 25.—1-para, aged 34. Four injections. Time from first injection to delivery, three hours ten minutes. Comatose after second injection to the end. No chloroform. Remembered the terminal pains.

Case 30.—1-para, aged 25. Eight injections. A case of primary inertia. Treatment stopped after eleven hours, very little advance having been made in spite of thymophysin 1/2 c.cm. The baby was not born until twenty-four hours forty-five minutes after the last dose.

Three Doubtful Cases

Case 4.—5-para, aged 31. Three injections. Time from first injection to delivery, two hours. No chloroform. Soon after delivery would not believe that the baby was born. Remembered three injections. Later she said she remembered one pain at the birth. Very much pleased with the treatment.

Case 20.—6-para, aged 33. Two injections. Time from first injection to delivery, 55 minutes. No chloroform. Treatment begun too late. One hour after delivery remembered the birth, but one and a half hours later had forgotten it.

Case 24.—8-para, aged 30. Three injections. Time from first injection to delivery, one hour thirty minutes. Terminal chloroform. At first said she remembered the final pain, but later was surprised to hear that the baby was born.

Three Good Cases

These patients had very fair amnesia, and were pleased with the treatment, but there was a memory island in each case ; they cannot therefore be classified with the " excellent " results.

Nineteen Excellent Cases

By " excellent " I mean that after one (two cases), or two (fourteen cases), or three (three cases) injections the patient had no recollection whatever of subsequent pains. The only satisfactory judge of the results of this treatment as far as the amnesia is concerned is the patient, and any case not coming under the above definition is omitted from the " excellent " list. It is necessary to have a high standard. Case 25 cited was in coma for the last two and a half hours of labour, but said she remembered the last pains, and so is labelled unsatisfactory. A typical comment from one of the " excellent " cases, a 2-para who had had a previous unrelieved labour, was: " I never felt any pain at all: it was wonderful." The number of injections received by the " excellent " cases was as follows:

3 (10 cases).
4 (3 cases).
5 (1 case).
6 (3 cases).
7 (1 case).
8, one being only 1/200 grain (1 case).

Of these patients, six received terminal chloroform, according to the present practice of the hospital ; seven were anaesthetized for forceps application.

It is interesting to note that in one of the nineteen (Case 22, a 1-para, aged 24) treatment was stopped after the third injection, owing to her extreme violence ; the baby was born three and a quarter hours later. In spite of this amnesia was perfect.

Thirty of the patients were confined in the Leeds Maternity Hospital, and five in private houses or nursing homes.

THE BABIES

Our experience corresponded with that of Jennings. All the babies were born alive, and all breathed and cried at once, and gave no subsequent trouble while under our care, except three.

Case 1.—This baby was born with a caul, and was consequently cyanosed. Its colour became pink within a few minutes after clearance of the air passages and a warm bath ; subsequent progress was normal. The cyanosis cannot be attributed to hyoscine (three injections).

Case 3.—The baby breathed normally at birth, but both mother and baby were drowsy for several days. The baby required a good deal of coaxing when feeding during this period. This condition may have been due to hyoscine. Both were normal before discharge from hospital (three injections).

Case 4.—The baby had a hare-lip. It was cyanosed at birth, but was quite normal as regards colour, breathing, and crying twenty minutes later, having been immersed in a warm bath.

Much exaggerated adverse comment has been made on the condition of the babies after twilight sleep. Even with the older morphine-hyoscine treatment I have never seen a stillbirth occur without some adequate reason for it apart from the drugs, and when hyoscine is used alone even the occasional oligopnoea (a condition of no serious moment) seen with morphine-hyoscine is not encountered. When one also bears in mind that asphyxia and stillbirth are by no means unknown in normal deliveries, apart from the use of drugs, it is quite unjustifiable to say, when a patient asks for twilight sleep, that it harms the baby.

CONDUCT OF THE CASE AND APPEARANCE OF THE PATIENT

I agree with Jennings that treatment should not be started before regular pains are present. As a rule I have not given the first injection in a primipara before the cervix is three fingers dilated.

I have not come to any conclusion about the maximum safe dose. The highest dose given in this series was 8/100 grain, without ill effect. Greenwood[1] gives details of a case in which he used 1/10 grain safely, with morphine.

I agree also that most patients remember receiving the first two injections. Whether the treatment accelerates labour I am doubtful. The time of the onset of labour and the time of the beginning of the second stage are points which it is almost impossible to determine accurately. However, Case 30, the patient with primary inertia already quoted, was the only one in which labour was not completed within thirteen hours of the first injection. I am therefore reasonably satisfied that hyoscine does not delay labour to any appreciable degree.

A doctor, or a nurse who is familiar with the treatment, should stay with the patient all the time. External stimuli should be excluded as far as possible. If there is a light it should be kept shaded except when urgently required. The attendants must be absolutely quiet, and refrain from disturbing the patient beyond what is necessary. I have not used the memory test on this account. The effect of the injections usually becomes obvious after the second. The patient begins to sleep between pains; she usually lies quiet. When a pain comes she shows that she feels it, and tosses about. She mutters like a delirious person, but as soon as the pain goes she stops, maybe in the middle of a sentence, and falls asleep at once. Some patients become very restless, or attempt to get out of bed. A few lie comatose even during the pains. Coma, great violence, or a slowing down of the pains are indications for prolonging the interval between injections. Undue wakefulness calls for a shortening of the interval. The pupils soon become dilated. In most of our cases the pulse rate rose, in some to over 120. Often it fell again as labour proceeded, and always within a few hours of the birth. The rise may be explained by the restlessness or by the effect on the vagus. The bladder should be carefully watched. The patient soon becomes thirsty, and asks for a drink, especially in the first few hours; this should be given. Some patients cannot see well owing to paralysis of accommodation for twenty-four hours or so after the birth. It is important not to omit the last injection, even if the child is about to be born; otherwise the worst pains may be remembered, and the whole labour reconstructed by the patient from them. Additional help, as Jennings says, may be required at the time of delivery. The "obstetric helper" is a useful appliance for keeping the patient in position in the later stages. Our experience did not bear out Jennings's observations on the expulsive pains. These were as a rule remarkably strong, and the abdominal muscles certainly played their part.

With practice it should be possible to obtain a much higher percentage of complete successes than has been obtained in this series, and I have no doubt I shall do so. I have dwelt on the less satisfactory cases because, as experience, they are more valuable than those that are perfect. I hope that others will be encouraged to use the treatment; the success, demonstrated by the patient's gratitude, is a great reward for the trouble involved.

I offer my thanks to the other members of the honorary staff of the Leeds Maternity Hospital for permission to use the treatment on their patients; to Mr. A. J. C. Latchmore, who performed most of the forceps deliveries, and was of great assistance in the management of the cases; and to those students of the Leeds School of Medicine who gave their help in compiling the records on which this paper is based.

REFERENCE

1 Greenwood: *Scopolamine-Morphine Semi-narcosis during Labour.*

PHIMOSIS AND CIRCUMCISION

BY

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LATE HONORARY SURGEON TO THE DERBYSHIRE HOSPITAL FOR SICK CHILDREN

Circumcision is an operation performed with great frequency. It is obviously bad surgery to perform any operation without definite indications, and probably no operation, with the possible exception of tonsillectomy, is frequently advised upon more slender grounds than that of circumcision.

The term phimosis implies such a narrowing of the preputial orifice that the foreskin cannot be retracted over the glans. A foreskin which can be easily and completely retracted without effort is very rare indeed. Phimosis may be of several degrees:

1. A pin-hole preputial orifice smaller than the urethral orifice. This is the only degree in which obstruction to the urinary stream is possible. Apart from cicatricial contraction resulting from inflammation (vide infra) it is very doubtful whether phimosis ever produces urinary obstruction. It is reasonable to suppose that healthy and distensible skin will allow the rapid dilatation of the orifice by the ordinary stream to the required size.
2. A match-head orifice.
3. A wide preputial orifice with adherent prepuce (crowned glans).
4. Coronal adhesions.

Any of the above conditions may be associated with a long, lax prepuce.

Popular indications for circumcision include restlessness, straining during micturition, and enuresis. Congenital stenosis of the terminal urethra is a condition which should be borne in mind, for in such a case it is of course futile to attend to the phimosis and overlook the urethra. If circumcision has any effect on enuresis it is probably a psychical effect, which would equally result from any operation.

DILATATION AND RETRACTION OF THE PREPUCE

This procedure is safely carried out and is eminently satisfactory in infants. In older children it may be unsatisfactory owing to the undesirability of carrying out manipulations over any period of time.

Technique.—The only instruments required are a fine probe and a pair of Spencer Wells artery forceps (not too blunt). The first step is the complete separation of the prepuce from the glans. The prepuce is grasped between the thumb and fingers of the left hand and retracted as far as possible. The probe is then inserted (care being taken not to enter the urethra) and swept right round the glans. This manipulation also serves to stretch the preputial orifice slightly. If the prepuce cannot now be retracted, the point of the artery forceps is inserted into the orifice and pushed up as far as it will go between the prepuce and the glans. The blades are then gently separated for a few seconds. It will now be possible to retract the prepuce, exposing the urethra and part of the glans. If complete retraction is not possible the artery forceps are inserted again, care being taken not to split the prepuce. In very resistant cases it is well not to attempt complete retraction at one sitting, but to leave it for a week. When the foreskin has been completely retracted the smegma in the trough round the corona is wiped out, the glans smeared with sterile olive oil and the prepuce drawn down. The preliminary separation of the prepuce from the glans is important, as otherwise the point of the forceps will be found merely to carry the orifice inwards without penetrating it. The mother is instructed to retract the foreskin daily as far as possible, *but not to leave it back.* Nevertheless in a few cases paraphimosis will occur. This, as a matter of fact, may serve a very useful purpose if it is not neglected too long. One often finds after paraphimosis that the foreskin is quite lax and retracts easily. The child is seen every week for a few weeks. The foreskin is retracted, and the glans, having been smeared with olive oil, is brought down again. In two or three weeks' time it will be found to retract very easily. As soon as there is no danger of a paraphimosis it can be left back altogether.

INDICATIONS FOR CIRCUMCISION

The indications for performing circumcision may be grouped as follows:

1. Cases that come from a distance and cannot attend regularly, unless the prepuce can be very easily retracted and is unlikely to cause further trouble.
2. Some boys over 12 months old.

3. Most patients over 3 years—always excepting those cases of "crowned glans" or cases with only marginal adhesions round the corona.
4. Recurrent dermatitis and fibrous thickening round the preputial orifice.
5. Balanitis if persistent. One sometimes sees cases of purulent balanitis put down for circumcision and when the child is sent for some months later the condition has completely cleared up.
6. Repeated paraphimosis.
7. A few cases of unsuccessful stretching. These cases are very rare in infancy, and are almost invariably due to lack of interest on the part of the mother.

Hypospadias is an absolute contraindication. All the available skin may be required for an operation of the Mayo or Russell-Duplay type.

The question naturally arises, "Why, in the absence of actual obstruction to the urinary flow, should the infant's prepuce be interfered with at all?" The adhesions between foreskin and glans which are so common in infancy do certainly tend to disappear as the child gets older, and the foreskin may retract perfectly easily. This is the ideal to which nature does not always attain. A permanently retracted foreskin or a foreskinless organ is more hygienic than an organ in which the glans is more or less covered up and in a moist condition.

The physiologists state that the function of the prepuce is to cover the glans and protect it from vicarious irritation. It does not appear, however, that contact with the outer world does it any harm or that the circumcised races are any less fertile than the uncircumcised. In the event of subsequent urethral infection the absence of the glans covering is certainly an advantage from the point of view of both diagnosis and treatment.

Circumcision without an anaesthetic is a somewhat barbarous procedure, and any anaesthetic is a potential danger and entirely undesirable in an infant unless it is absolutely unavoidable. The enormous number of entirely unnecessary circumcisions that are done in infancy is nothing less than deplorable. It is thoroughly bad surgery to remove anything, whether it be a foreskin or a tonsil, unless one has definite reasons for doing so.

CONCLUSIONS

1. Circumcision is never necessary in the newly born as a primary procedure—and very rarely necessary at all.
2. Dilatation and retraction of the foreskin in these cases is easily and rapidly carried out; it requires no anaesthetic, and is extremely satisfactory.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

HAEMORRHAGE AND DEATH FROM A GASTRIC MYOMA

Innocent tumours of the stomach are not common, and death as the result of one of them must be a rare phenomenon. Eusterman and Senty[1] estimate that malignant tumours of the stomach are seventy-eight times as common as innocent tumours. Of the latter they find that myomata are the commonest. Haemorrhage is stated to be a rare complication; pyloric obstruction (due to the ball-valve action of a polypoid growth), intussusception of the stomach into the duodenum, strangulation, and malignant hyperplasia being more frequently met with. These writers record haemorrhage in ten cases out of twenty-seven described, but not to the extent of causing death in any one. Miodowski in 1901 recorded a case of a woman, aged 51 years, who had been ill with marked abdominal pain and melaena for six weeks, when she died from a recurrent haemorrhage from the ulcerating surface of a polypoid gastric myoma. This case bears some resemblance to that about to be described.

[1] Eusterman and Senty: *Surgery, Gynecology and Obstetrics*, 1922.

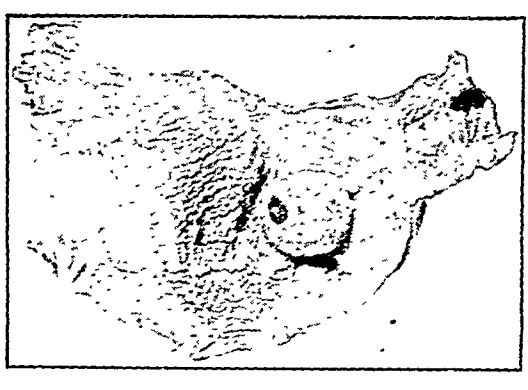
Clinical Notes of Case

A woman, aged 54, was admitted to hospital on July 22nd, 1930. She stated that she had enjoyed normal health until six months prior to admission, when she suddenly vomited about a pint of bright red blood. This did not recur; but for ten weeks after her stools were dark and tarry. During this period she became progressively paler. She remained in this condition until four days before admission, when she became very faint, and the dark stools reappeared. Apart from one attack of haematemesis she had never vomited. There had never been any abdominal pain or discomfort or nausea at any time, and her appetite had remained good throughout her illness.

On physical examination she was found to be very pale but well nourished. Her pulse rate was 120, and her temperature subnormal. There was slight rigidity of the upper half of the left rectus muscle, and the stomach was made out to be dilated. A haemic murmur was heard over the precordium, otherwise there were no physical signs of note. The melaena persisted and became more marked until her death five days after admission. Blood count: red blood corpuscles, 2,600,000 per c.mm.; white blood corpuscles, 5,600 per c.mm.; haemoglobin, 25 per cent.

Post-mortem Findings

At the post-mortem examination a soft spherical tumour, about the size of a tangerine orange, was felt in the lumen of



the stomach, projecting from its lesser curvature by a sessile base. There was a large quantity of altered blood in the stomach and in the whole of the intestinal tract. All other organs were normal.

Pathological Report

I am indebted to Dr. J. B. Duguid, acting professor of pathology in the University of Wales, for the following pathological report: "On the anterior wall of the stomach, about midway between the greater and the lesser curvatures (see photograph), and about one and a half inches from the pylorus, there is a spherical tumour projecting into the lumen of the stomach. This tumour is about one and a half to two inches in diameter, and attached by a base about one inch in diameter. It is covered by mucous membrane except at two points: one at the summit of the outgrowth, and the other near the base on the cardiac side. At these two points there are punched-out ulcers with slightly overhanging margins. Each one is about a third of an inch in diameter, and about a quarter of an inch in depth. Their internal surfaces are ragged and necrotic, and at the base of the former there are two patches of haemorrhagic discoloration representing the points of origin of the haematemesis. The ruptured vessels cannot be seen by the naked eye. Histologically the tumour is a leiomyoma of entirely typical structure."

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Reports of Societies

TREATMENT OF INOPERABLE CARCINOMA OF THE BLADDER

At a meeting of the Section of Urology of the Royal Society of Medicine on June 25th, with the president, Mr. S. G. MACDONALD, in the chair, Mr. R. OGIER WARD opened a discussion on the treatment of inoperable bladder carcinoma.

He said that there were no means by which it could be decided that a bladder growth was operable—that is, curable by operation—with the accuracy obtainable, for example, in gastric cancer by careful investigation and later exploration by laparotomy as to the extent and relationships of the growth. Fortunately, in bladder carcinoma, the determination of the presence or absence of glandular involvement or secondary deposits had not the same immense importance as in the treatment of cancer elsewhere, for the reason that operative excision of the primary growth was always, in the speaker's opinion, the best treatment if it could be carried out. In the squamous-celled ulcerative growths and the nodular infiltrating type of carcinoma—he was not speaking of papillomata for the moment—the most important thing to decide, assuming that the patient was judged fit enough to survive the operation, was the practicability of removing the entire growth from the bladder, with a reasonable chance of non-recurrence. There was no simple palliative operation for carcinoma of the bladder which gave results in any way comparable with those obtained from colostomy in rectal cancer. Broadly speaking, he regarded as definitely inoperable (using this word now without special reference to cure) those bladder growths which were found on bimanual examination to be fixed; also, if a simple rectal examination revealed a hard mass more or less continuous with the prostate, it was most unlikely that an operation could be performed. Size alone was not a contraindication to excision. If the cystoscope revealed any useful margin of healthy mucosa surrounding the neoplasm, then, subject to the conditions just mentioned, he thought that in very many cases of infiltrating bladder cancer excision was possible and useful, even when it could obviously give no hope of cure.

Radium had its place in treatment, but if one believed excision to be the best procedure, it followed that in the case of growths which were ulcerative and infiltrating, radium would be used only when there already existed considerable and indeterminate extensions of the disease, both into the walls of the bladder itself and the tissues outside. From 1927 until the end of 1930, Mr. Ogier Ward said, he had treated by radium forty-three cases of bladder growths and had followed up most of them. Out of fifteen patients treated by radium applied at open operation twelve had almost certainly died, and he did not know that any of them had lived for more than twelve months; the other three had to some extent benefited. In these fifteen cases there were very extensive growths, so that the failure of radium in this respect was no evidence as to its general value in treatment. At the Radium Institute he had had opportunities of treating bladder growths with seeds containing radon, which he had introduced through a cystoscope. The method, though of limited application, had more practical value than might at first be supposed. He had often inserted ten or twelve seeds with fair accuracy, and occasionally had used as many as thirty at one sitting. The seeds were 6 mm. in length and 1.1 mm. in diameter, with an average strength of 1.3 to 1.7 millicuries, and the radon was contained within a minute sealed capillary glass tube in a platinum case 0.3 mm. in thickness, which provided a supporting sheath as well as screenage. This method had been employed in eight patients with ulcerative and with nodular infiltrating carcinoma; in all of them excision was impossible. Of this number four or five had died, none were cured, and three had benefited, one only slightly and two definitely. One of these, which he described in detail, showed quite remarkable improvement. In this case seeds had been passed through the prevesical tissues down to the deep aspects of the growths seen with a cystoscope; the exact position of the point of the introducer could thus be seen and controlled with accuracy. Nine cases of villous carcinoma had been treated with radon seeds, and of these five had so far shown no recurrence. Nine cases of vesical papilloma had also been treated. The average age of these patients was just over 60, and their growths were all of a doubtful nature. In four cases it appeared possible that a cure had been effected, while two more seemed to have benefited. To sum up, if it was agreed that, when possible, infiltrating growths should always be excised, then radium as a means of treatment for these would be used only if such an operation could not be carried out. The results then aimed at would be only palliative, and seeds introduced through the cystoscope might be useful for this purpose. He thought also that in dealing with villous carcinomata and papillomata, operable as well as inoperable, there was a place for this form of treatment.

Mr. Ogier Ward briefly considered other forms of treatment for inoperable bladder growths: diathermy; deep *x*-ray therapy; cystotomy (only usefully employed to prevent attacks of clot retention in the bladder); and total cystectomy with transplantation of the ureters. This last was a palliative measure which might afford relief, although it was a suggestion unlikely to be accepted by the patient until all hope of cure was past. He concluded with some remarks on the section of nerve tracts, designed to relieve the terribly severe pains suffered by patients in their latter days. The simplest method was the operation practised in selected cases by Cotte of Lyons, for the relief of dysmenorrhœa and some other female pelvic disorders—namely, the division of the presacral nerve. Recently, at the clinic of Professor von Lichtenberg, Mr. Ward was shown a case of prostatic carcinoma rather far advanced, which had infiltrated the bladder wall and surrounding tissues. Division of the presacral nerve was carried out, and the constant pain which had been radiating down both sciatic nerves was entirely relieved. He himself had performed this operation in three cases within the last month. The exposure of the tissues lying over the body of the fifth lumbar vertebra was probably easier in the female than in the male, but such difficulty as was met with was chiefly due to the amount of extraperitoneal fat with which the hypogastric nerve plexus and the presacral nerve were surrounded and the proximity of the inferior mesenteric vessels. In these three cases he had succeeded in excising a length of nerve tissue varying from 1/2 inch to 1¼ inches. The outstanding feature of the results was that the urgency and frequency of micturition had been markedly reduced. He also mentioned the method of chordotomy as one which had been employed for the relief of very severe pain due to pelvic lesions, and seemed to be ideal for hopeless cases of bladder growth. In this operation, which was rather more severe than the one just mentioned, the neighbourhood of the ninth dorsal segment of the spinal cord was exposed by laminectomy, and both antero-lateral tracts divided; these contained the spino-thalamic tracts, which conducted sensations of pain, heat, and cold. This operation should result in almost certain relief of pain for the remainder of the patient's life.

Mr. KENNETH WALKER expressed his pleasure at the choice of this difficult subject for discussion, as the

sufferings of patients who had inoperable carcinoma of the bladder were frightful, and everything possible must be done to relieve their agony. His experience of radium needles in these cases had been discouraging, though he had not often used radon seeds. He concentrated on the relief of the patient's pain. To this end, division of the presacral nerve seemed to be a method worth pursuing. He related the case of a doctor in whom chordotomy was successful in freeing him from pain; he had carcinoma of the prostate, which later extended to the bladder. The disadvantage of the operation of chordotomy was that it was a severe and separate operation; it could not be carried out at the time of the exploration. There were severe cases of pain in which it was difficult to know where it originated, and possibly division of the presacral nerve would not always relieve pain. He supposed that one would be safe in operating in all cases in which the complaint was of pain on micturition only, not of persistent pain apart from micturition.

Mr. FRANK KIDD said that his impression was that the pain in these cases was due chiefly to spasm of the bladder wall rather than to pressure on nerves deep in the pelvis. That was the reason why cutting of the hypogastric nerves relieved pain—that is, by relieving tension. Real progress in these distressing cases in future would be along the lines of implantation of the ureters into the rectum; he was trying to improve the technique of this operation so that it could be done quickly. Removal of the bladder would not then be such a serious operation.

Mr. CYRIL NITCH said that he had had fourteen cases in which transplantation of the ureters had been done, in seven of them for practically inoperable carcinoma or other malignant growth of the bladder. In the carcinoma cases he had done it in the hope of being able to perform total cystectomy. The seven patients who had had bladder carcinoma had all died, while the other seven—that is, the non-malignant cases—had recovered.

Mr. E. W. RICHES thought that two main types of growth must be recognized; the first and the less common was the flat epitheliomatous ulcer, and the other more common type was characterized by hypertrophy. The first of these caused earlier metastasis than the second. Some believed that the papillary type, which gave local recurrence, was non-malignant, but section of such cases showed invasion of subjacent tissues, or transgression of basement membrane, and he regarded the condition as carcinoma. Prognosis and treatment differed in the two types. The flat type was more amenable to radium than the other.

Mr. J. P. ROSS said that division of the presacral nerve was a more selective type of operation than chordotomy, as it was clear that, if successful, it would relieve the bladder pain without interfering with sensation in the rest of the body. Chordotomy, on the other hand, removed sensation from all parts below the level of the nerve section, and it might be a disadvantage to give a patient anaesthetic legs. As the operation produced a certain effect in cases of severe pain which could not be relieved by any other means, it had a definite place in surgery.

Mr. JOCELYN SWAN said that in the papillary form of carcinoma one could do much more by extensive diathermy through a suprapubic opening than with radium. He had had a number of cases in which on opening the bladder he had found a large growth, of which he had been able to remove the fungating portion by diathermy, and then remove the base by the endothermy knife, transplanting the ureter as was necessary. In some cases he was content to do extensive diathermy to the whole base of a papillary carcinoma, and he had been surprised at the extent to which this relieved both pain and haematuria. He had reserved radium for the infiltrating epitheliomatous types of ulcer in the bladder. In his earlier work with radium he was disappointed, because he had caused more pain than the patient had suffered before, and there had been extensive sloughing, which had continued for some time. That had been because he had used too heavy a dose. Now that he used lighter doses the pain was not so great, but the results were less good. He had transplanted the ureters in several cases of inoperable malignant disease of the bladder, and in two cases particularly the relief of pain had been marked, but the malignant disease had remained, and the patients had died eventually of metastasis from the carcinoma, not from ascending nephritis. In transplanting ureters it was better to do one at a time. In several cases which had secondary deposits he had used the radium "bomb," but could not say that he had seen a good result.

COLOUR VISION: YOUNG'S THEORY

The Thomas Young Oration, entitled "Young's theory of colour vision," was delivered by Sir JOHN H. PARSONS, F.R.S., before the Optical Society on June 11th.

Sir John Parsons began by remarking that although Thomas Young was well known as the founder of a theory of colour vision, his contributions to the theory were limited to two or three short paragraphs, and there was no evidence that he himself attached much importance to them. He was the first who, starting from the well-known fact that there were three primary colours, sought for the explanation of this fact, not in the nature of light, but in the constitution of man.

Although the three-component theory, as developed by Clerk Maxwell, Helmholtz, and others, accounted well for many of the facts of colour mixture, it had also to account for other phenomena of vision, such as visual acuity, the luminosity curve, hue discrimination, simultaneous and successive contrasts, and colour blindness. Recent work by Hecht and others had succeeded in solving many of these phenomena. The determination of the luminosity curve, which physicists still persisted in calling the "visibility" curve, had been the subject of such accurate investigation that it could now be regarded as one of the soundest scientific data in the whole realm of vision. Dalton might be regarded as initiating the scientific study of colour vision, and later work by Seebeck and Clerk Maxwell strongly supported the view expressed by Young that cases of colour-blindness were reduced forms of normal vision. On this theory the neutral points of the spectrum as seen by protanopes and deuteranopes were excellently explained by the points of decussation of their two remaining curves. The fact that yellow was psychologically as distinctive a colour as red, green, or violet, and physiologically showed no evidence of composite character, was long regarded as a strong argument against the trichromatic theory until Hecht proved conclusively that the sensation of yellow could be experienced by fusing binocularly the sensations produced by appropriate red stimulation to one eye and green stimulation to the other.

Research since Young's day had done nothing to bridge the gap between the physiological and the psychological response, but considerable progress had been effected by Holmgren, Kohlrausch, Lucas, and Adrian in elucidating the physiological response itself. The results of these workers on the photo-chemical reaction of the visual purple, and the accompanying changes in electrical potential of the retinal structures, all tended to show that the fundamental phenomena of vision manifested themselves in the retina. Finally, the researches of Pieron, especially those on colour responses to black and white stimuli, and those of Allen on induction effects as shown on the persistency curves resulting from previous stimulation of the retina by monochromatic light—all these had a distinct confirmatory bearing on Young's theory.

Reviews

INJURIES AND SPORT

Dr. C. B. HEALD describes his new book, *Injuries and Sport*,[1] as a general guide for the practitioner, and this it may fairly claim to be. It is interesting and important, as, curiously enough in this sport-loving land, so far as we are aware, the claim made in the preface—that this is the only work of its kind written in English—is justified. As such it should prove of real value to medical men in hunting districts or in charge of public schools, sports clubs, etc., who are constantly called upon to treat minor, and occasionally major, injuries. It is as a guide to the discrimination between these that the book will be found most useful, because the description of each region is wisely divided into two parts—diagnosis and treatment—and Dr. Heald emphasizes more than once how fallacious is the common idea that an injury to soft parts is less serious and disabling than one to bone. We have the feeling that this is an honest book, which attempts to show exactly how far physiotherapy can go in the treatment of injuries, and at what stage more drastic surgery is called for. In this respect the book is singularly free from errors, and the potentialities of operation are frankly recognized. A curious exception to this rule is the complete lack of recognition of operation as an almost certain cure for recurrent dislocation of the shoulder.

We read the various sections on electrotherapeutics with great interest. The author has a wide knowledge of this branch, and, wonderful to relate, makes no effort to wrap up this knowledge in mediaeval mysticism. On the contrary, he describes the various currents in simple language, and, furthermore, tells how they may be produced with simple and inexpensive apparatus, and employed by, or under the direction of, the general practitioner. Further still, he explains in simple words the supposed action of each current and the consequent physiological indications for its use. In this latter connexion the inclusion of an introductory chapter on the physiology of repair is intelligible. At first sight it would seem to have a better place in a student's textbook—which, frankly, this is not. The busy practitioner has passed that stage, and has absorbed the teaching if he has forgotten the details ; but, as anyone attached to a medical school must feel, the point cannot be stressed too often that intelligent treatment of injury is impossible unless the practitioner visualizes the pathology of the affected structures at all stages of treatment.

In the Air Force Dr. Heald had large experience of the immediate treatment of serious injury. This part of the book is excellent, and so also is the chapter on the factors modifying recovery from injury—a true branch of orthopaedic "medicine." Some people, perhaps, will consider that treatment by anodal galvanism is unduly stressed, and that Dr. Heald claims too much for this method. It is said that the results are not commensurate with the trouble involved. In the opinion of the present reviewer this is not so ; and, in any case, it is made clear that the trouble is very small. The employment of other forms of electrotherapy is a less controversial subject. In the section on massage, local hypnosis (after the teaching of Lucas-Championnière and Mennell) is advocated as a routine treatment for injuries. The successful employment of this method depends, as does all hypnotism, so much on the personality of the therapeutist that, in our opinion, it is not suited to general use, however efficient it may be in the hands of the expert. In Part II, which is a regional description of the methods advocated in Part I, modern uses of splints and plaster are well described, in addition to physiotherapy, and the synopsis in Appendix II is a welcome innovation.

The preface indicates, and the whole book elaborates, the importance of team-work in the treatment of injuries, as is true of all modern therapeutics, and Dr. Heald may be congratulated on his balanced view of the relative merits of the methods at our disposal. The book is well printed, and illustrated by excellent photographs, both of treatment and of the actual ways in which injuries occur in the field. We can especially commend the diagrammatic index, which is conveniently found at *both* ends of the book.

[1] *Injuries and Sport : A General Guide for the Practitioner.* By C. B. Heald, C.B.E., M.D., M.R.C.P. London: Milford, Oxford University Press. 1931. (Pp. xxiv + 543 ; 380 figures. 25s. net.)

LABORATORY DIAGNOSIS

There is now no lack, either for the graduate or undergraduate, of textbooks on laboratory diagnosis. Dr. DANIEL NICHOLSON of Winnipeg is the author of the latest work[2] on this subject. In the preface he explains that his aim is not only to give in detail the indications, methods, and interpretation of useful tests that all medical men should be able to perform, but also to outline the principles and interpretation of tests which can only be carried out adequately in a large and specially equipped laboratory. Dr. Nicholson is obviously an enthusiast, both as a laboratory worker and as a teacher, and his whole heart goes into this book, which is written in a highly individual way. It is not unfair to say that the influence of the neighbouring United States of America shows strongly in this book, and here in Britain it would be absurd to expect the general practitioner to attempt by himself many of the laboratory methods described as suitable for his unaided performance. The practitioner who likes to do most of his own laboratory work will, however, delight in this book, and it is, indeed, chiefly for such men that it has a special appeal. Chapter XIV, on the equipment of a simple home-made clinical laboratory, is excellent, even though the only sources of purchase of laboratory supplies given are not even Canadian, but in Pittsburgh and Philadelphia! For the established laboratory worker and the physician already well trained in laboratory methods this work is useful, but it has no advantage over many others that are already available. The author, like all of us, has his decided preferences for some methods, but on the whole his choices are good. Certainly there is never any lack of clearness in the author's mind about what should be done in given clinical circumstances. The book is not likely to have a great sale in Britain, but we wish it every success in Canada and in the United States. The author, who is a member of the Royal College of Physicians of London, must be well aware that the circumstances of medical practice here differ from those with which he is now most familiar.

[2] *Laboratory Medicine.* By Daniel Nicholson, M.D. London: H. Kimpton. 1930. (Pp. x + 433 ; 108 figures, 1 plate. 28s. net.)

PERIPHERAL VENOUS PRESSURE

Whereas arterial blood pressure readings have long been a matter of routine, the estimation of peripheral venous pressure,[3] on which Professor MAURICE VILLARET and his collaborators, Drs. F. SAINT GIRONS and L. JUSTIN-BESANÇON, have brought out a monograph, has not become popular in ordinary practice, and, indeed, seems unlikely to rival that of arterial blood pressure, although the literature on the subject, as shown by the authors' bibliography of seventeen pages, is far from scanty. There are two main ways of taking the pressure in the peripheral

[3] *La Pression veineuse périphérique. Étude physiologique, clinique, et thérapeutique.* Par Maurice Villaret, Fr. Saint Girons, et L. Justin-Besançon. Paris: Masson et Cie. 1930. (Pp. 318 ; 17 figures. 38 fr.)

veins: the indirect method described by a number of writers, such as Hooker and Eyster, Oliver and von Recklinghausen, in which the veins are compressed by a measured weight; and the direct method, after Stephen Hales and François-Franck, in which the intravenous pressure is estimated by means of a trocar introduced into the vein. The latter gives far more accurate results than the indirect method, which is chiefly useful when a number of estimations are made on the same person at different times and so can be compared with each other. Professor Villaret's phlebopiezometer, invented in 1920, shows that the normal intravenous pressure at the bend of the elbow taken in the horizontal position is 13 cm. of water in men and 12 cm. in women, pressures above 14 cm. being hypertensive and below 11 cm. hypotensive. The physiological aspects of blood pressure in the peripheral veins are discussed at length, and attention is directed to the factors influencing it, such as the state of the ventricles of the heart, the arterial blood pressure, the small vessels and capillaries, and the veins. It is only in comparatively recent times that investigation has been undertaken to elucidate the influence of venous pressure in the superficial veins on the circulatory system—for example, on the activity of the heart, and the relation between the pressure in the splanchnic vessels, such as portal congestion, and that in the superficial veins. The account of the condition of the peripheral venous pressure in various diseases is rich in personal observations, and the results are recorded under the headings of cardiac disease, obstruction of the superior and inferior venae cavae, portal and pulmonary venous obstruction, cyanosis, diseases of the blood-forming organs, acute infections, and so forth. This monograph is a most useful source of reference.

AN AMERICAN EXTRA PHARMACOPOEIA

We have received the fifteenth edition of POTTER'S *Therapeutics, Materia Medica, and Pharmacy*.[4] This edition, like its recent predecessors, is edited by Dr. R. J. E. SCOTT. In its scope the volume somewhat resembles the well-known *Extra Pharmacopoeia* of Martindale and Westcott, for the preface states that "the work is intended to serve as a compendium of information regarding both official and non-official drugs and preparations. It is not to be inferred that the mention of any drug or preparation necessarily carries with it any endorsement." A reasonable selection has been exercised to avoid devoting undue space to obsolete drugs, but on the whole the volume is encyclopaedic rather than selective.

The book is divided into two main sections—namely, materia medica and therapeutics—and in addition there is a smaller section devoted to pharmacy, prescription writing, incompatibilities, etc. The materia medica section resembles the *British Pharmaceutical Codex* in its general scope and arrangement. In the case of each drug an account is given of all its important preparations, and this is followed by a short article on its physiological and therapeutic action. In the therapeutic section the disorders and diseases are arranged alphabetically and a list is given of the chief remedies that are recommended by standard authors. The only disadvantage of this method is that in the case of some diseases considerable sections of the pharmacopoeia are reproduced—for example, forty remedies are mentioned for pertussis, thirty-seven for asthma, and thirty for scarlet fever. It seems doubtful whether the practitioner is likely to be greatly helped by being presented with such an embarrassingly wide choice.

The introduction contains an interesting sketch of the history of therapeutics. Incidentally the author points out a fact that is often forgotten—namely, that Hahnemann made a serious endeavour to establish a rational system of therapeutics based on experimental evidence. Unfortunately he made broad generalizations from certain observations whose significance he misunderstood, and in the end the sound fundamental conception was hidden beneath a superstructure of absurdities. This tragic ending to the first attempt at systematic pharmacology undoubtedly delayed the development of scientific therapeutics for the greater part of a century.

THE CARE OF THE CHILD

The Child and His Home[5] is a characteristically American production. It is by Dr. H. W. HURT, who is described as "Director of Research for fourteen committees at President Hoover's White House Conference on Child Health and Protection." His book is said to be "based upon the important conclusions reached at that conference," and to contain "practical contributions to child culture from modern research." It is dedicated to President Hoover as "the visioned proponent of that gift within Democracy's power—a chance for every child." It is prefaced by the nineteen sections of "The Children's Charter," which appears to be the result of the conference referred to, and which embodies, in a somewhat grandiose manner, what we in this country would regard as the ordinary claims of childhood to consideration and to help in the home, the school, and the community. It appears that at this conference a number of people formally pledged themselves to secure "for every child these rights regardless of race or colour or situation wherever he may live under the protection of the American flag." This is all to the good, and may have been necessary in the conditions of the United States of America, which, from some of the facts given in this book, seem in certain respects to be appalling; but in Great Britain these needs have now been universally recognized for many years, and practical steps have been quietly and progressively taken to supply most of them. The "important conclusions" which call loudly for the "child culture" of the "citizenry" are that the environment of a sensible and normal family life is good for a child, that parental responsibility is great and should be properly exercised, that due attention should be paid to diet, health, and recreation, that he should be suitably and carefully educated, protected from accidents, and cared for if he is physically or mentally defective. These are here accepted as commonplaces, and, though a large number of facts and statistics about American life and conditions are given in Dr. Hurt's chapters, they result only in generalizations which are of scarcely more practical value than those set out above. It is, of course, interesting to know that "census records tell us that one marriage in six ends in divorce," and that "samplings show one child in three in broken homes"; that "a family living in one room as contrasted with four rooms meant five inches less in height and 12.9 pounds less in weight"; that the population consists of a conglomerate of negroes, Asiatics, and the various races of Europe in such and such proportions; that urban churches average so many more members and spend so many more dollars than rural churches; that "the motion picture purveys visual and auditory representations to a world audience of 225,000,000 a week," and so on. We know that all these things, and many other things that Dr. Hurt tells us, of which these are a fair sample, have their bearing,

[4] *Therapeutics, Materia Medica, and Pharmacy*. By S. O. L. Potter, M.D., M.R.C.P. Fifteenth edition, revised by R. J. E. Scott, B.C.L., M.D. New York. Philadelphia: P. Blakiston's Son and Co., Inc. 1931. (Pp. xv + 997. 8.50 dollars.)

[5] *The Child and His Home*. By H. W. Hurt, Ph.D. New York: Minton, Balch and Co.; London: G. P. Putnam's Sons. 1931. (Pp. xiv + 260. 10s. 6d. net.)

direct or indirect, on child life. But the volume as a whole can scarcely be said to be very helpful, and this is not compensated for by any merits of style or presentation.

HALLIBURTON'S "PHYSIOLOGY"

Only two years elapsed between the publication of the eighteenth and nineteenth editions of the ever-popular *Handbook of Physiology*,[6] with which the late Professor Halliburton identified himself for so many years. When reviewing the previous edition (*Journal*, 1929, i, 815) attention was drawn to the remarkable history of this work since its first appearance as Kirkes's *Physiology* in 1848. The last two editions, with which Professor McDOWALL has been associated as joint author, portray clearly the change in the general outlook of physiology during recent years; the old anatomical basis is now receding into the background, while the body as a whole has to be "considered more from the point of view of physiological processes rather than of the functions of isolated organs." A new chapter on sensation, bringing together various topics hitherto scattered, illustrates an advance in co-ordination which breathes the spirit of modern times. One surprising discovery is that the present edition is slightly smaller than its forerunners, much of the detail of the histology of the connective tissues and descriptions of elementary electrical apparatus being now omitted. The index has been completely revised, and one change which will be greatly appreciated by students is the use of bold type for those figures which have to be committed to memory in preparation for examinations. A few new illustrations have been added. The whole volume can be commended, not only as an up-to-date review of physiology, but also as a most helpful introduction to its clinical application.

NOTES ON BOOKS

The seventh volume (*Magenkatarrh-Nasenkrankheiten*) of the New German Dictionary of Practical Medicine,[7] edited by Professors GEORG and FELIX KLEMPERER, contains the following articles by well-known authorities: gastric catarrh, by Professor F. Kauffmann of Berlin; cancer of the stomach, by Professor I. Boas of Berlin; surgical treatment of gastric and duodenal cancer, by Professor H. von Haberer of Cologne; gastric neuroses, by Professor Gerhardt Katsch of Greifswald; malaria, by Professor P. Mühlens of Hamburg; manic-depressive insanity, by Professor Hans W. Gruhle of Heidelberg; measles, by Professor R. Degkwitz of Greifswald; massage and therapeutic gymnastics, by Dr. F. Kirchberg of Berlin; diseases of rectum and anus, by Dr. Max Marcus of Berlin; foot-and-mouth disease, by Professor H. Hetsch of Frankfort; mediastinal diseases, by Dr. W. Beck of Berlin; meningitis, by Professor E. Le Blanc of Hamburg; menstruation and its disturbances, by Professor R. Schröder of Kiel; miliary tuberculosis, by Dr. Gustav Liebermeister of Düren; anthrax, by Professor Hetsch; diseases of the spleen and haemolytic jaundice, by Professor G. Klemperer and Dr. Paul Radt of Berlin; morphinism and allied alkaloid addictions, by Dr. P. Wolff of Berlin; mumps, by Dr. W. Keller of Heidelberg; muscular rheumatism, by Professor F. Schultze of Bonn; myelitis, by Dr. Eugen Pollak of Vienna; myopathies, by Professor Hans Curschmann of Rostock; myxoedema, by Professor A. Gigon and Dr. O. Merkelbach of Basel; food intoxications, by Professor Schwarz; food intoxications of bacterial origin (paratyphoid, botulism, Bang infection), by Dr. Hans Schulten of Hamburg; and diseases of the nose, by Professor G. Finder of Berlin.

A small book on the clinical aspects of the thermal waters of Dax[8] has been prepared by Drs. LOUIS and RENÉ LAVIELLE, with a preface by Professor BABINSKI. Here will be found an account of the methods of treatment carried out at Dax, and the indications and contra-indications for the "cure."

The fifth issue of the *International Health Year Book*[9] is considerably larger than its predecessor (see *Journal*, February 1st, 1930, p. 205), as it contains particulars of the health progress of eleven more countries. The same arrangement of the vital and nosological statistics is adopted as in the previous volume. The section devoted to the United Kingdom is divided into three parts, relating to England and Wales, Scotland, and Northern Ireland respectively, in each of which details are given of vital and public health statistics, the prevention and treatment of infectious diseases, and public health activities.

The small book by ETTIE A. HORNIBROOK on *Restoration Exercises for Women*[10] purports to prescribe a series of general exercises for the preservation and restoration of woman's body, with special exercises for the feet; and with an appendix on diet in constipation. Exercises are also described for use during pregnancy. Mrs. Hornibrook takes for her models the dances of certain savage peoples, considering that "the best thing for us to do is to adopt a system of exercises based on native dances, because these dances are themselves the concentrated form of the natural movements of fishes, lizards, birds and mammals, bipeds and quadripeds." Without admitting the validity of all the author's contentions, we think that there is something in the notion. At any rate, the exercises described and recommended are likely to be beneficial. The dietary for constipated persons should also be useful, even if constipation is not to be credited with all the dire effects which the author and some others attribute to it.

The first volume of the forty-first series of *International Clinics*[11] contains clinical papers by Professor Lewellys F. Barker of Baltimore, and the members of the medical department of Emory University, Atlanta, Georgia, a section on the clinical applications of biochemistry, and short articles dealing with recent progress and important developments in medicine, obstetrics, paediatrics, and surgery by the editor and others.

The fifty-fifth volume of the *Transactions of the American Gynecological Society*[12] provides a full record of papers and discussions in the scientific sessions of the annual meeting held in May, 1930, at Hot Springs, Virginia, under the presidency of Dr. Charles C. Norris of Philadelphia. The text is illustrated by reproductions from photographs.

We welcome the tenth issue of the French Medical Annual,[13] edited by Dr. CAMILLE LIAN, with the assistance of thirty-four contributors, who are the same as in the previous year (see *Journal*, June 14th, 1930, p. 1098). The summaries of recent work are concise and clear, but are mainly based on French contributions to medical literature, while foreign publications, particularly British, receive comparatively little attention. An index for the issues 1926-30 inclusive is appended.

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[6] *Handbook of Physiology*. By W. D. Halliburton, M.D., LL.D., F.R.S., and R. J. S. McDowall, M.B., D.Sc., F.R.C.P.Ed. 19th edition. London: J. Murray. 1930. (Pp. x + 842; 4 plates. 18s. net.)

[7] *Injuries and Surgical Klinik*. Herausgegeben von Prof. Dr. G. Klemperer. Siebenter Band. Berlin und Wien: Urban & Schwarzenberg. 1931. (Pp. 795; 154 figures, 2 plates. By C. B. Heald, C.B.E., Cambridge University Press. 1931. Bound, R.M.40.)

[8] *Dax: Médical et Thermal*. Par Drs. Louis et René Lavielle. Préface de M. le Professeur Babinski. Paris: N. Maloine; Dax: P. Pradeu. 1931. (Pp. 139; illustrated. 6 fr.)

[9] *International Health Year Book, 1929* (Fifth Year). Reports on the Public Health Progress of Forty Countries and Colonies in 1928. C.H. 838. Geneva: League of Nations; London: G. Allen and Unwin, Ltd. 1931. (Pp. 1,504. Paper, 24s.; cloth, 32s.)

[10] *Restoration Exercises for Women*. By Ettie A. Hornibrook. Foreword by Sir Arthur Keith, F.R.S., M.D., F.R.C.S., LL.D. London: W. Heinemann (Medical Books) Ltd. 1931. (Pp. xi + 95; 22 figures. 5s. net.)

[11] *International Clinics*. Edited by Henry W. Cattell, M.D. Philadelphia. Vol. i, forty-first series. London: J. B. Lippincott Company. 1931. (Pp. viii + 307; illustrated. 12s. 6d. net.)

[12] *Transactions of the American Gynecological Society*. Edited by Floyd E. Keene, M.D. Vol. 55. St. Louis: The C. V. Mosby Company. 1931. (Pp. lvii + 302; illustrated.)

[13] *L'Année Médical Pratique*. Publiée sous la direction de Dr. Camille Lian. Préface de M. le Professeur Emile Sergent. 10me année. Paris: R. Lépine. 1931. (Pp. xxii + 636. 26 fr.)

British Medical Journal

SATURDAY, JULY 4th, 1931

THE COLONIAL MEDICAL SERVICES

Thanks partly to the film industry, but chiefly to the poster activities of the Empire Marketing Board, the early prejudices against the Tropics created in the mind of the general public by the title of Stanley's *Darkest Africa* have been replaced by bright pictures of cocoa groves and banana plantations, and a lively appreciation of the political significance and economic importance of the increasing dependence of the Home Country upon the development of the food resources of our colonial Empire. With the enormous economic expansion of our tropical Dependencies and the material improvement of conditions of life therein, colonial Governments have felt an increasing sense of responsibility for the welfare of the native peoples, and in recent years have sought to provide many of those services which at home are supplied by municipal and private enterprise. There have been ever-increasing calls for the protection from disease, not only of human life, but of stock and of crops. This demand has led to a great increase in the staffs of the medical and scientific departments of the colonial Services and for a higher standard of personal and professional qualifications, so that to-day the colonial Services rank among the premier Services of the Empire, and call annually for over a thousand candidates for medical and scientific positions of great interest and responsibility.

The need for specialized training which Manson foresaw when he advocated, a quarter of a century ago, the creation of special schools of tropical medicine has since been realized in other directions, notably in the creation of the Imperial Institute of Entomology, the Imperial Mycological Institute, the Imperial Institute of Tropical Agriculture, and in the recent institution of the Imperial Agricultural Bureaux ; while the Lovat Committee on the reorganization of the Colonial Veterinary Services recommended the establishment in London of a post-graduate school of tropical veterinary science on the lines of the London School of Hygiene and Tropical Medicine. But of recent years there has been increasing realization of the fact that further advance in the control of tropical diseases is largely dependent upon fuller recognition that much tropical disease is disease in the Tropics ; that the fundamental principles underlying the control of disease at home and in the Tropics are the same, and that the practitioner and medical officer of health at home should learn something regarding those diseases which prevail in the Tropics and which, with the ever-increasing facilities for rapid transport, may come at any moment under his notice.

Appreciation of what science can do for economic expansion is not, however, in itself a sufficient basis for the development of scientific services, and facilities for special training will be fruitful only in so far as they afford access to a field of practice calculated to attract candidates competent for the twofold task of enlarging the common stock of knowledge and giving it practical application. To this end work itself must not lack interest, and should be varied enough to afford scope to diverse types of ability. Economically, it must offer a general standard of life not inferior to the average enjoyed by the main body of the profession, with opportunities for advancement comparable to those attached to other branches of practice. Ethically, there must be no infringement of professional standards and no lay interference in the discharge of professional functions ; and, on the material side, adequate equipment must be available for the efficient performance of allotted duties. Failure in any one of these respects will inevitably react upon the supply of recruits. Now, as in Manson's day, tropical practice is not lacking in intrinsic interest, and "in all pathology there is no such field for fruitful original research and discovery as tropical medicine," nor is there any specialty of which it can be said that the Tropics provide no field for its practice. On the other hand, scientific medicine is not an indigenous growth in the Tropics, and the effective economic demand necessary to the development of private practice has been to a great extent lacking for obvious reasons. The main burden of the provision of medical services has therefore fallen on the colonial administrations, and it is not unnatural if from time to time there has been a failure to adjust service conditions to legitimate professional demands. The consequent difficulty in recruiting has given the British Medical Association its opportunity to explain those demands, to indicate methods of meeting them, and to assert the fundamental unity of the interests of those in practice over-seas and at home. The manner in which it has done so is described in the special *Colonial Medical Supplement* which we publish to-day.

The story of the activities of the Association on behalf of the profession over-seas in the past will, we feel sure, be read with interest and gratification by members of the Association at home. Those abroad will recognize more fully, perhaps, the peculiar difficulties in which the Association has often had to act in maintaining their rights and privileges, and it is to be hoped that our *Supplement* may lead to an increased appreciation of the effectiveness of the support which the Association can give through the weight of professional opinion it can mass in support of those of its members who are faced with special problems, either as members of a Government staff or as medical officers employed by commercial enterprise.

UNEQUAL LEGS

We print this week Professor Ernest Hey Groves's lecture on stature and pose, which he gave to the Royal Free Hospital Medical Society on a recent occasion. The valuable lessons he teaches resolve themselves into practical advice as to the best ways of correcting inequality in the length of the lower limbs from whatever cause it may arise. Even at the present time,

when the treatment of tuberculous joint disease has so much improved, and prevention of deformities in general has made such strides, there are, unfortunately, many limbs which, had early orthopaedic treatment been available, would be equal, or, if not quite equal, much less disproportioned than they are. Gant's introduction of subtrochanteric osteotomy of the femur, more than half a century ago, put into the hands of surgeons a means of correcting many short limbs resulting from ankylosis of the hip in an adducted and flexed position, but the number of cripples still hobbling about on high cork boots is evidence that full advantage has not hitherto been taken of Gant's operation. This is probably due less to want of enterprise in surgeons than to the reluctance of patients, who probably have had long experience of operations, once more to occupy hospital beds and undergo the procedures made necessary by the incompleteness of their original treatment.

Professor Hey Groves prefixed to his lecture a question quoted from the Sermon on the Mount. The question was, of course, a rhetorical one, for although when stated in Hebrew standards of measurement, the increase implied may seem modest, when translated into inches it is at once evident that an increase of eighteen inches in height would transfer the average man into the ranks of the greatest known giants. But the question, "Can a man add an inch or more to his stature?" is nowadays not a rhetorical one, and demands an answer in the affirmative. The lecturer's choice of subject was a peculiarly happy one, for the pioneer of osteotomy for ankylosis of the hip in a vicious position was undoubtedly Frederick James Gant, surgeon to the Royal Free Hospital. We say advisedly "the pioneer" because, although William Adams preceded him in the introduction of osteotomy of the neck of the femur, his method was not found applicable to very many cases of ankylosis. The great superiority in principle of Gant's operation consisted of the choice of a site below the insertion of the ilio-psoas, so that the difficulties of correction and the likelihood of recrudescence of deformity were very greatly diminished. Gant's paper, which was a really epoch-making one, was read at the Annual Meeting of the British Medical Association at Cork in 1879. Its title was, "On subcutaneous osteotomy below the trochanters."[1] Subcutaneous surgery has now lost its importance, but the principle upon which Gant's operation was devised applies with equal force to osteotomy through an open wound.

The lecturer classified cases of short lower limbs into four main categories, due to (1) malunion of fractures, (2) faulty ankylosis of the hip-joint, after infectious arthritis, (3) poliomyelitis, and (4) congenital or pathological dislocation of the hip. Of these the second is far the most important in its frequency and the severe degrees of shortening which characterize the vicious attitude. Some surgeons would add a fifth category for the results of operations on the knee-joint in childhood, which too often are followed by many inches of shortening in adult life. In the first four of these categories the actual shortening due to defect of osseous tissue seldom exceeds two or three inches, but the effective shortening (often called "apparent," but which Professor Hey Groves prefers to call "functional") may amount to more than seven inches in cases of faulty ankylosis. If this disproportion in length were the only ill effect it would be serious enough, but unfortunately it is only by the production of serious distortions of the spine and pelvis that contact between the sole of the foot and the ground can be effected when the knee is extended in such a case. The minimum ideal at which orthopaedic surgeons of to-day aim is such an end-result in all cases of infectious hip-joint disease that the shortening, if any, shall be only that caused by inevitable destruction of bone; that the femur shall not be adducted, but rather, if fixed, then fixed in slight abduction; and that flexion deformity shall be absent. The maximum ideal, rarely achieved as yet, but still always held in view, is a complete restoration of all the functions of the joint without alteration in length. When these ideals are realized the work of the bone and joint surgeon and the sufferings of patients will be much diminished. But surgical tuberculosis may be eliminated before that comes to pass.

It will be noted that Professor Hey Groves deprecates the practice of producing a factitious temporary talipes equinus as a means of compensation for a short limb; at most he would admit a raising of the heel so as to produce plantar flexion of the ankle of fifteen degrees beyond the right angle. The disadvantages of digitigrade gait are indeed, as he argues, demonstrable, but something must be allowed for aesthetic considerations. Many a woman would prefer—and does prefer—to walk awkwardly with a factitious talipes equinus of 45 degrees beyond the right angle, with all its disadvantages, if by so doing she can escape the clumsy high cork of the usual surgical high-boot. Two-inch heels placed far forward under the soles of shoes, and thus further exaggerated in effect, seem to be deliberately chosen by many thousands of women who suffer from no inequality of the limbs, and who would not admit that they suffer from any disturbance of the muscular balance of the leg as a result of what from anatomical and physiological points of view are preposterously absurd shoes. Many of them, as years pass, will have to pay the price of pride, in the pain which as yet they do not feel, but they are not open to arguments based on anatomical and physiological principles.

[1] *British Medical Journal*, 1879, ii, 606.

SURGICAL RESEARCH

The annual report of the Conservator of the Museum of the Royal College of Surgeons of England contains matter of unusual interest. It is no secret that Sir Arthur Keith has long aspired to see the College take the lead in advancing the knowledge on which the practice of surgery is based. That he has not been content to rest on the mere aspiration is abundantly

evident in the present report. Last year saw the first step in the project in the shape of an installation of laboratories, and the provision, with the help of generous friends of the College, of several scholarships. During the current year the scheme which the Council has taken in hand may be said to have advanced by leaps and bounds. The next step was to provide research workers with a fully equipped biological station where animals could be maintained in the best conditions—that is to say, in the country. The accomplishment of this costly project seemed to be remote, when a benefactor appeared with the offer of a gift which Sir Arthur Keith rightly describes as the most beneficent that any surgeon has ever made for the advancement of his own profession. Mr. George Buckston Browne, F.R.C.S., on learning of the scheme, expressed his sympathy with the movement, and offered to convey to the College a sum sufficient to cover the building, equipment, and endowment of a station such as the Council had in contemplation. To that end he most generously offered to give £50,000 at once, with a promise that the gift should ultimately reach the sum of £100,000.

It will be remembered that Mr. Buckston Browne purchased Darwin's house and estate at Downe, restored and endowed them, and handed them over as a gift to the nation. Thanks to his further liberality thirteen acres adjoining the Downe property have now been purchased, and the foundation stone of the new biological station to be built thereon and called the Buckston Browne Surgical Research Farm, will be laid by the President, Lord Moynihan, on Wednesday, July 8th, at 4 p.m. The building will include suitable animal houses, experimental laboratories, and operating theatres, and a residential block for the accommodation of research workers and the official staff. The social aspect of the scheme has been insisted on by Mr. Buckston Browne, and comfortable residential quarters are to be provided with that end in view. It is stated that the institution is to be staffed, not by men who take up research as a profession, but by those who have devoted or propose to devote their lives to surgery, and desire to elucidate particular aspects of their work by animal experiments. To secure unity of effort the supervision of the work carried on at the College and at the research farm will be entrusted to the Conservator of the Museum. The scholarships at present available were referred to in last year's report; for the completion and ultimate success of the scheme a capital sum is required which will provide an annual income of £2,500 for scholarships.

Little space remains in which to mention the activities of the various departments of the Museum during the past year, but visitors will have the opportunity of inspecting the additions, which will be on view in Room 1 from July 2nd to 25th. Among these medical men will be more especially interested in the numerous additions to the pathological section, many of which are singled out in the report of the pathological curator, Mr. Cecil Beadles, F.R.C.S., as being of unusual interest.

GEOGRAPHICAL DISTRIBUTION OF DEATHS FROM CANCER IN ENGLAND AND WALES

In the current number of the *Annals of Eugenics* Dr. Percy Stocks and Miss M. N. Karn make a valuable contribution to the study of the regional distribution of cancer.[1] The data used by them were the deaths at ages in the two sexes from cancer (all sites) and from tuberculosis during the period 1921–26 in the counties of England and Wales. The rates of mortality were carefully standardized, allowance being made for differences of age distribution *within* each quinquennial age group, and also for varying proportions of urbanization in the county groups. It follows that the large differences in rates of mortality which are shown on the well-executed maps—for instance, the high rate on males in a north-western nucleus, which includes Cumberland and most of North Wales—are not due to simple statistical differences in the nature of the populations exposed to risk. The authors then seek, by means of the calculus of correlation, to determine how far inter-local contrasts are explicable by local variations of diagnosis, and how far other, more fundamental, causes are in operation. They conclude that, although varying efficiency of diagnosis, certification, and treatment plays a part, it certainly does not account for the whole of the diversity. "In order," they say, "to account for the bulk of the local and regional correlations between cancer rates, it must be assumed that there are factors at work tending to cause cancer deaths at earlier ages in certain localities or regions than others. The nature of these remains obscure." This memoir, which confirms and considerably extends the results published by Greenwood and others in the League of Nations Report,[2] should encourage statisticians to give further attention to the subject. The statistics of cancer are beset with so many pitfalls that few statisticians care to tackle them. Dr. Stocks and Miss Karn show that, difficult as it may be to reach clear-cut etiological conclusions, accurate statistical analysis may yet lead to results of real importance.

SCHISTOSOMA SPINDALE

Serological investigations into parasitic infections of man and animals have produced only three outstanding diagnostic tests—for dourine in horses, and for hydatid and bilharzia disease in man. Others, including tests for trichinosis, are under investigation, but so far none have reached a stage suitable for general diagnosis. This does not mean, of course, that the diagnosis of parasitic infections is more difficult than that of bacterial infections; alternative methods are more satisfactory in many cases—blood smears, faecal examinations, and so on are applicable to many. Nor does it mean that investigations on the host reactions of parasites have not been extensively carried out. It is true that there are fewer parasitologists than there are bacteriologists, and consequently the volume of work must necessarily be smaller. It is true, also, that animals are less amenable to laboratory experimentation than are plants, and so progress is necessarily slower. Nevertheless, a considerable volume of work has accumulated. Much of this has been in the domain of comparative pathology, an instrument which has always been of the greatest use in this branch of medicine. The latest publication on

[1] *Annals of Eugenics*, vol. iv, Parts III and IV, May, 1931, p. 341.
[2] Société des Nations. C.H. 333. Geneva, 1925.

comparative parasitology bears out this contention. It is a study on *Schistosoma spindale*, a bilharzial parasite of the buffalo and goat in India, by Dr. N. Hamilton Fairley, Colonel Mackie, and Dr. Jasudasan.[1] Like *S. mansoni*, this species lives dominantly in the portal and mesenteric veins, with ova deposition in the entero-colon and liver. The liver, in both cases, bears the brunt of the portal toxaemia, and filters off the circulating ova and toxins from the mesenteric veins, causing a bilharzia cirrhosis, and, perhaps, a tendency for the production of hepatic carcinoma so often associated with the disease. In *S. haematobium*, on the other hand, the adults inhabit the pelvic plexuses of veins, with ova deposition in the bladder and ureters, while the lungs, owing to the venous connexions of the pelvic plexuses, are implicated instead of the liver. In *S. mansoni*, verminous thrombosis is rare; in *S. spindale* it is by no means uncommon. The ova in this species are less toxic than those of *S. mansoni*, and lesions in the intestine are therefore less marked. The human schistosomes will easily infect monkeys; not so the bovine species. The parasite begins to develop in the monkey, but either because of some obscure anti-schistosomal immunity response, or because of some inherent unsuitability of the blood, development is arrested after ten days, and the parasite dies. Apparently after this recovery there exists a condition of enhanced refractiveness, during which the schistosomes entirely fail to develop; but within three months the normal partial susceptibility is re-established. The biological tests for the schistosomes are group tests, and any species of mollusc which harbours mammalian bilharzia cercaria may be used for antigen manufacture. In India 20 per 1,000 snails were found to be infected, compared with 180 per 1,000 in Egypt; and the best time for collection was found to be during the cold season in both countries. The authors have elaborated a standard diagnostic technique with this antigen and complement fixation, which gives a high percentage of positive results with goats. The test promises to become of importance in clinical pathology.

DURATION OF LABOUR

An investigation is being conducted in Finland with a view to determining the duration of labour in normal primiparae and secundiparae, and to define the effect of a preceding abortion, or premature labour, on the length of subsequent labours. The first part of the report[2] on these subjects has been compiled by Dr. A. M. Ritala, and is published as a Supplement to vol. xi of the *Acta Obstetricia et Gynecologica Scandinavica*. This deals solely with the duration of normal or second labours in women between the ages of 20 and 24. The duration of the first and second labours of the same woman was observed in 513 cases. An equal number (1,718) of cases of first and second labours make up the material on which the report is founded; in all of them the conditions were normal. Ritala has come to the conclusion that the previously recorded studies on the duration of labour are incomplete, and that the information contained in obstetrical textbooks is so inaccurate and defective as to be misleading; he enters into a long statistical argument in illustration of this contention. Among his more important findings is the fact that some difference was clearly noticeable in the duration of labour in different parts of Finland. Thus, in hospitals in the west and south of that country labour was definitely shorter than in the east and north. National idiosyncrasy was also apparent, the duration in Russian women being generally shorter in all stages than in the case of Finnish women. Again, at the Helsinki Maternity Hospital the length of the second stage of labour is significantly less than it was forty years ago. Ritala laments that no reliable comparison could be made with other countries in view of the fact that the standard error of the arithmetic mean has not generally been calculated when compiling statistical records. He suggests, with a view to clearing up the situation, that much more careful statistical standardization is necessary in the first place. Moreover, the material used for such study should be as homogeneous as possible. He recommends, for example, that as regards duration of the first stage, the cases should be classified on the basis of frequency of pains at the beginning of labour—what he terms "regular" cases (with a ten minutes' interval between the pains as the limit) being distinguished from "irregular" cases. He suggests, also, that the time of the active expulsive pains should be described in records of the duration of labour as the second stage. He could find no ground for prophesying with certainty the length of a subsequent labour on the basis of the duration of a previous one. His results point, however, to the conclusion that a first full-length labour, following an abortion between the first and seventh months, will have the characteristics of a primiparous labour, being longer than in the case of the two-para. On the other hand, a first full-length labour which ensues after a premature labour, terminating between the eighth and the tenth month, will have the general characteristics of a two-para labour.

THE TRUDEAU SANATORIUM

In November, 1876, Dr. E. L. Trudeau, with a growing family and his strength sapped by tuberculosis, removed to the then tiny village of Saranac Lake. Gradually winning back his health, he set himself to provide accommodation and assistance for fellow sufferers whose means were inadequate to sustain the whole cost of the long treatment. In 1884 he founded for them the sanatorium which bears his name, and this has been followed by a group of other buildings round it. A training centre for nurses was opened in 1912, and four years later an endowment fund, the Trudeau Foundation, was established to foster research into the problems of tuberculosis, and to promote the giving of instruction. There has just been issued the forty-sixth report of this great and growing organization, which now comprises a sanatorium of 185 beds, a training school for nurses, a post-graduate institution, a system of research fellowships, two laboratories, and a department for statistical investigations. It is announced that during the year ending September 30th, 1930, a record number of patients (525) were treated, and 336 were discharged.

[1] *Indian Medical Research Memoirs: Studies in Schistosoma spindale* Parts i–vi. By N. Hamilton Fairley, M.D., D.Sc., F.R.C.P., Colonel F. P. Mackie, M.D., M.Sc., D.P.H., F.R.C.S., F.R.C.P., I.M.S., and F. Jasudasan, L.M. and S. Calcutta: Thacker, Spink and Co. 1930.

[2] *Studien uber die Geburtsdauer in Finnland.* Von A. M. Ritala. *Acta Obstetricia et Gynecologica Scandinavica* vol. xi, Supplementum I. Helsingiae: Typis Espressit "Mercator." 1931. (Marc. Fenn 80; Coron. Suec. 8.)

A new nurses' home was completed, and opened. Printed together with the report is the twenty-sixth medical supplement, giving clinical details and a condensed record of those patients who have been discharged during the year under review. Under the present system all cases with cavities are radiographed every six weeks; if continued improvement with contraction of the cavities is not observable within three months, the advisability of performing pneumothorax is seriously considered. If this operation fails, phrenicectomy becomes a probability. It appears that 25 per cent. of the smaller cavities disappear under enforced rest, when occurring in connexion with tuberculosis of recent origin, as is the case in the majority of patients admitted to the sanatorium. In the laboratory attention is being directed to the biological study of the tubercle bacillus; three non-pathogenic acid-fast organisms have been "dissociated," and as the result of their cultivation on spinal media it has been shown that the subsequent development of pathogenicity in them depends to a large extent on the medium used and its gaseous environment. The chief difficulty encountered has been the stabilization of the various types of colonies obtained by dissociation. The annual report concludes with reprints of twelve papers by members of the Trudeau Foundation which had previously appeared in medical periodicals. The May issue of the *Journal of the Outdoor Life*, a monthly magazine published by the National Tuberculosis Association of America, is devoted almost entirely to the many lines of activity at Saranac Lake. It contains a reprinted lecture by the late Dr. E. L. Trudeau, describing the history of his great achievement. Illustrations are provided generously to indicate the various improvements that have been made during the last fifty years, and the usual reference appears to Robert Louis Stevenson's residence in the village in 1889.

LADY OSLER

With a skilful touch Mr. Arnold Muirhead tells the story of Grace Revere Osler's life[1] from the happy days of youth with her charm and loveliness, natural dignity, and withal love of healthy fun, to the dark days of the war, followed by her brave widowhood and death on August 31st, 1928. Born in 1854 of an old Boston family of Huguenot extraction, she married, in December, 1876, Samuel W. Gross (1837–1889), the able son and successor of S. D. Gross, "the emperor of American surgery" of Philadelphia. Her acquaintance with Osler, begun in the city of brotherly love, culminated in a traditional unconventional proposal on the day Osler's first edition of his *Medicine* was published; he is said to have called on Mrs. Gross, then staying with mutual friends in Baltimore, and to have said with reference to a big red book under his arm, "There, take the darn thing! Now what are you going to do with the man?" How she cared for him, shielded him, and enabled him to devote all his energies to his life's work in the bright days at Baltimore, and at Oxford until the war, is pleasantly sketched. Then the clouds began to gather: anxiety for their only son and his death at the front, her double bereavement, and her courageous life in the house while the famous library was being prepared for its home in McGill University, Montreal. The first boxes for the transmission of the books arrived two days before her death, so she was spared the sight of the emptied rooms, which, though she had furthered in every way possible, she dreaded. "With her passing many felt that a chapter in their lives and in the life of Oxford had ended." This affectionate tribute recalls the influence of a husband and wife who in two continents had the love and admiration of the medical profession in a degree never equalled and unlikely to be surpassed in the future.

[1] *Grace Revere Osler: A Brief Memoir.* By Arnold Muirhead. Printed for private circulation at the Oxford University Press. 1931. (Pp. 56; frontispiece.)

NEW YORK POST-GRADUATE MEDICAL SCHOOL

In accordance with the agreement between the New York Post-Graduate Medical School and Hospital and Columbia University, by which the former now becomes the post-graduate school of medicine of Columbia (see *British Medical Journal*, February 28th, 1931, p. 363), Dr. Nicholas Murray Butler, president of Columbia University, has set up an administrative board of post-graduate studies in medicine, on which members of the governing body of the university, the undergraduate medical school, and the post-graduate school of medicine are represented. Under the terms of the affiliation this board will have general oversight and control of all post-graduate instruction in medicine offered by the university, whether at the medical centre, the post-graduate medical school, or elsewhere in the city. The trustees of Columbia University have appointed Dr. Edward H. Hume as director, and Dr. Alan R. Anderson as associate director of the post-graduate school. This incorporation of the New York Post-Graduate Medical School into the teaching system of Columbia University as its post-graduate school of medicine, distinct from the undergraduate school, fulfils, after some forty-nine years, the ambition of those who resigned from the Faculty of the New York University upon the refusal of the trustees to grant them a separate building for post-graduate instruction, and organized early in 1882 the post-graduate school and hospital. Dr. D. B. St. John Roosa, the leader of this small group of pioneers, and first president of the institution he helped to found, pointed out in his inaugural address that while organized temporarily as an independent undertaking, this type of medical education ought to take its place among other forms of professional instruction within a university. "The time will come," he said, "when this institution will be included within a great university." His prophecy was fulfilled on July 1st, 1931.

BRITISH MOSQUITO CONTROL INSTITUTE

Apart from their fundamental importance as vectors of various kinds of tropical disease, mosquitos sometimes render life almost intolerable; and in this respect their activities extend from the Equator to the Arctic Circle. It is accordingly gratifying to note that the institute established at Hayling Island in 1920 is more active than ever, as the report submitted by the director to the annual meeting in December, 1930, shows. The mosquito control work was initiated in 1920, but the present institute was not built until 1925. It has many branches of activity. It supplies advice relating to mosquitos and their control, both by visits and by

correspondence, and applications for this advice continue to increase. It collects and identifies mosquitos sent in, conducts experiments on various methods of control, provides hospitality for visiting entomologists, and so on. It also performs important educational functions by providing short courses of instruction, maintains a teaching museum and a library, prepares instructional diagrams and photographs, and, in the person of its energetic director, Mr. J. F. Marshall, gives lectures and demonstrations at various meetings. The institute is doing useful and serviceable work in preserving the health and the comfort of the community; it receives no funds from official sources, and has a quite inadequate income. Scientific bodies as well as individuals may become members for an annual subscription of a guinea.

We greatly regret to announce the death of Mr. E. B. Turner, F.R.C.S., the senior member of Council of the British Medical Association, whose work for the profession and the Association, as Chairman of the Representative Body and in many other capacities, had earned the gratitude of all members. An obituary notice will appear in our next issue.

ST. MARY'S HOSPITAL

NEW MEDICAL SCHOOL AND PATHOLOGICAL INSTITUTE

The foundation stones of the new medical school and pathological institute buildings attached to St. Mary's Hospital were laid by H.R.H. The DUCHESS OF YORK on June 30th. This is the first stage of a great scheme of rebuilding to which the hospital has set its hand. It is hoped before long to begin building a new nurses' home on an adjoining site, to provide accommodation for 500 nurses, and to set free existing buildings, which will be used for providing beds for paying patients. By the transference of the inoculation department to new premises, also, thirty additional beds will be available, which it is proposed to use as maternity beds. When the scheme of rebuilding is complete it is claimed for the hospital that it will have a range of modern buildings comparing favourably with any hospital in London. The school of medicine and the inoculation department will constitute a roughly triangular block to the east of the main hospital, with frontages to Praed Street, Cambridge Place, and South Wharf Road. They are being built to the designs of Sir Edwin Cooper, and will be five-storied buildings, of striking appearance, and surrounding a dignified quadrangle. Old-fashioned and inadequate accommodation has hitherto hampered the work of the Medical School, which has outgrown its present premises. The new development has been made possible by some outstanding donations, including £63,000 from Lord Beaverbrook and £25,000 from the late Lord Revelstoke. For the inoculation department also it was very necessary to obtain a permanent and more commodious building, to which the Earl of Iveagh has generously contributed £40,000. It was stated, however, that no less a sum than £300,000 is required to complete the developments and extensions.

The Duchess of York was received on arrival by Lieut.-Colonel H. E. Verey, chairman of the hospital, Dr. C. M. Wilson, dean of the Medical School, Sir Almroth Wright, principal of the Institute of Pathology and Therapeutic Research, and the architect. After members of the board of management and the medical staff had been presented, Colonel VEREY gave an address of welcome, in which he referred to the association with the Royal House which St. Mary's had enjoyed since 1845, when the Prince Consort laid a foundation stone of the hospital. The Duchess, with a mallet formerly used by Queen Victoria, then laid the stones, first of the medical school, and then of the pathological institute, and a prayer of dedication was offered by the BISHOP OF KENSINGTON.

MR. BALDWIN ON ENDOWMENT OF MEDICAL EDUCATION

The Right Hon. STANLEY BALDWIN, M.P., delivered a brief address. He said that many laymen failed to realize that it was barely a quarter of a century since the medical schools of this country were dependent on the students' fees for their very existence. Now they derived a portion of their income from grants, but for many years to come the building of medical schools, and largely the running of them, as well as provision for research, would depend to a great extent upon the gifts of the public. With all the generosity they showed to hospitals, the public were unaccustomed to give money for the purpose of medical education and for scientific research. Yet the training of future generations of medical men and women rested with the schools, and upon what was done in those schools depended the standard of accomplishment in medical practice. Mr. Baldwin instanced the insufficient facilities in London for the training of medical students in obstetrics. It was true that the London County Council was contemplating the addition of obstetric beds to municipal hospitals, but such hospitals had no schools. If it was possible to give extra facilities in any kind of hospital, these ought to be given preeminently to hospitals which trained students. The new developments at St. Mary's, Mr. Baldwin continued, had been made possible by the generosity of a few men of vision, but it was necessary to secure the interest of the general public in the functions which hospitals discharged in respect to medical education, no less than in their more obvious task of aiding the sick and injured. He referred to the great work done by Sir Almroth Wright, whose department would now have a new and more worthy home. He described Sir Almroth as being in the apostolical succession of Jenner, but he was sure that he would be the last to deny that there were potential Almroth Wrights in the raw material from which medicine was drawing its future practitioners, and it was to discover and encourage that talent that an appeal was made for the endowment of research. The medical profession made a stern demand on its pupils; for seven years a man must maintain himself, or be maintained by his family—a great thing to ask in these days. Exceptional men did not come from any particular class of the community, and one way of obtaining them was by means of medical and research scholarships.

Dr. C. M. WILSON, dean of the Medical School, in proposing a vote of thanks to the Duchess of York and to Mr. Baldwin, said that the hospital was indebted, not only to the donors mentioned, but also to the authorities of London University for a liberal grant and for a spirit of understanding, which made it a pleasure to work with them. The new buildings would be valued, not only for the material advantages they supplied, but because the spirit of service in an institution was fostered by a beautiful environment. The fame and fortune of a school were not in bricks and mortar, but in the traditions which were absorbed by its students. Sir ALMROTH WRIGHT, in seconding the vote of thanks, paid a tribute to all who had worked with him during the last thirty years. After the ceremony the operating suites, wards, and laboratories of the hospital were inspected by the very large company who attended.

THE DIPHTHERIA DISASTER AT MEDELLIN

[FROM A CORRESPONDENT]

In the medical field as elsewhere we learn much from each other's errors; it is of importance that the full history of all accidents in medicine should be available. The publication is therefore to be welcomed of the full and frank details of the mistake which at Medellin, in the State of Colombia, South America, led to the deaths of sixteen children.[1]

Diphtheria of a virulent type had been present in the district. In 1928, 45 of 105 patients died; in 1929, 68 of 109; and in 1930, 30 of 271. In consequence it was decided to test children by the Schick method and to immunize them with formalinized diphtheria toxin—that is, formol-toxoid (Ramon's "anatoxine," also called "vaccin antidiphtérique"). A number of children were tested, and all went well until the immunization of a group of children at Las Salas Cunas.

On October 7th, 1930, forty-eight children, mostly between the ages of 2 and 7, all of whom had given a positive Schick reaction, received their first injection. Formol-toxoid prepared locally was used, and all injections were made subcutaneously into the scapular region. The first injection of 0.5 c.cm. was given on October 7th; seventeen days later 1 c.cm. was given, and three weeks later, on November 14th, a third injection of 1.5 c.cm. For this third injection a bottle of toxin was used in error instead of formol-toxoid. Its minimum lethal dose was, when freshly prepared, 0.002 c.cm. At the time it was injected into the children the m.l.d. was found to be 0.004 c.cm., the children thus receiving about three hundred and seventy-five times the amount of toxin that would kill a guinea-pig.

From accounts subsequently collected, it appears that many of the children were seriously ill during the night—that is, within some twelve hours of the injection, which had been given about 2 p.m. The first alarming accounts reached the doctors concerned on the afternoon of November 15th, about twenty-four hours after the injection, when one child died during the afternoon. Antitoxin was then collected, and a party of doctors set out through the town to visit all the forty-eight children in their homes. The difficulties were great, for the addresses of many of them were not known. Between 5 and 7 o'clock that afternoon about fifteen children were traced and all given between 8,000 and 12,000 units of antitoxin. Unfortunately it was not found possible in the existing confusion to give serum intravenously, as, Dr. Ramirez remarks, he would naturally like to have done.

During that night three children died. Next day more were traced, serum was given, and as many children as possible sent to hospital. The first death occurred about twenty-four hours after the injection; within sixty hours of the injection fourteen children had died. Six days later one more died, and six weeks later one died of post-diphtheritic paralysis—thus sixteen of the forty-eight children injected succumbed.

CLINICAL COURSE

The general picture was one of toxaemia. The accounts subsequently got from the parents showed that during the first night after the injection the children suffered from pain at the site of injection, with fever, and with restlessness often going on to convulsions; some reported vomiting, and a few diarrhoea.

In the report the children fall into four groups. In the first group (A) of twenty-six children, some were ill during the first night; the majority received serum, and all were reported as well when discharged from observation during the first week in December. In the second group (B), consisting of three children, there was severe pain at the site of injection with much swelling, ulceration, and necrosis. All recovered after prolonged treatment. In the third group (C) of three children there was severe local pain, and post-diphtheritic paralysis; but all finally recovered. A photograph in the report gives an impression of the gravity of the local condition, with ulceration of the whole length of the back of the upper arm and contraction after healing. All the sixteen children in Group D died. In this last group high temperature, delirium, vomiting, and severe pain at the site of injection occurred. One child discharged well, and admitted a month later to hospital suffering from paralysis which had already been present for several days, was given no less than 290,000 units of antitoxin after readmission, but died of heart failure. Apparently few necropsies were permitted. The liver and kidneys were recorded as slightly engorged, and cerebral membranes were intensely congested. Microscopically the liver, kidney, spleen, and suprarenal capsules showed "cellular lysis" at different stages, with some haemorrhage.

It is striking that false membrane in the throat, apparently typical in character, was reported in ten children, smears and cultures were made but no diphtheria bacilli were found. It was not known how early this membrane appeared, but it was first detected forty-eight hours after the injection. Dr. Ramirez discusses this extraordinary phenomenon at some length, and is quite convinced that the membrane is produced by the circulating toxin, and is not, as we have hitherto believed, the result of the growth of the diphtheria bacilli on the tonsils and pharynx. Submaxillary adenitis was recorded in a number of children, presumably as a secondary result of the membrane and dirty tongue which were noted in many instances.

The escape of the thirty-two children in Groups A, B, and C, notwithstanding the injection of the large amount of toxin, is discussed at some length. Formol-toxoid (0.5 c.cm.) was injected thirty-eight days before the toxin, and 1 c.cm. twenty-one days before; though the formol-toxoid used was presumably of rather low antigenic power, it is in accord with much laboratory and clinical evidence that this amount of toxoid would have already begun to produce a material degree of immunity. The probability is that when the toxin was injected on November 14th, the children in Group A were already Schick-negative, those in Group B, who suffered severe local reaction, had a lower degree of immunity, those in Group C still less, while those in Group D had little or none—at all events, not sufficient to enable them to withstand the terrible ordeal represented by an injection of 300 guinea-pig m.l.d.

There is no conclusive evidence in the report that the serum used saved any of the children; quantities up to 80,000 units were given to children in the three groups which recovered, but even the first small doses were not given until clinical symptoms had been present for perhaps sixteen to eighteen hours, and the serum was given subcutaneously.

It is of interest to compare the clinical picture presented in the Bundaberg disaster with that recorded on other occasions when toxin has been erroneously injected—that is, at Baden, Concord, Dallas, and Medellin. At Baden[2] a dose of about 10 guinea-pig m.l.d. was injected and proved fatal in four days to children about a month old; the first local swelling appeared about twenty-four hours after the injection. At Concord[3] a sublethal dose of toxin was injected, for though some children had paralysis, none died. Within twenty-four hours "a severe local inflammatory reaction" was produced. At Dallas[4] a fatal dose of toxin was injected, and the local pain commenced within a few hours of the injection. The

children in Group D at Medellin, as we have seen, suffered severe pain during the first night. Among the Bundaberg children (whose deaths are attributed by the Australian Royal Commission to the staphylococci injected with the contaminated prophylactic) the general picture was one of collapse with cyanosis ; severe vomiting and diarrhoea were present in all, but local pain within a day or two of the injection is not recorded in any instance. This non-occurrence of local pain would appear to lend strong confirmation to the finding of the commission.

A further deduction is that, if it ever happens in the future that a group of children who are undergoing immunization complain of severe pain locally within a few hours of the injection, an instant examination of the material injected should be made, and consideration given to immediate intravenous injection of large doses of antitoxin.

In the laboratory at Medellin the bottle of toxin which was responsible for the deaths was kept in the same ice-chest with a similar bottle containing the toxoid used in the first two injections. The possibility of disastrous human error under such conditions is obvious. Surely no arrangement of the kind would be sanctioned by any of the inspectors who, under either the English or the American laws, grant licences to institutions producing serums and other like substances.

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[1] Ramirez, Bernado G. : "Contribucion al estudio de la receptividad hiferica en Medellin, y su profilaxis por la anatoxina" (*Universidad de Antioquia, Medellin*). 1931.
[2] *Arch. f. Hygiene*, 1926, xcvii, 97.
[3] *Journ. Amer. Med. Assoc.*, 1924, lxxxii, 567.
[4] Ibid., 1919, lxxiii, 1778.

PREVENTION OF TUBERCULOSIS

CONFERENCE AT MARGATE

This year the conference of the National Association for Prevention of Tuberculosis, which was held at Margate from June 25th to 27th, elected to discuss one of the most important and comprehensive subjects that have ever appeared on its programme—namely, "The protection of the child from tuberculosis." A number of constructive issues were raised, and while it is not usual in such mixed lay and professional meetings to reach permanent conclusions, there appeared several very significant trends of thought.

After formal business, the vice-chairman of the council, Sir ROBERT PHILIP, delivered an introductory address which again revealed his power of defining the problem in its simplest terms. He assumed that tuberculous infection was contracted in childhood, and that its influence, for better or worse, remained throughout life. On the whole, this was a beneficial thing, but it was desirable to find out by means of the tuberculin test whether it had occurred. The avoidance of massive infection and of milk-borne disease was essential. His attitude to B.C.G. was one of caution. He pleaded for a closer liaison between the child welfare and tuberculosis departments of the public service. The address, although designedly not introducing any features of novelty, was an admirable prelude to the further discussions, and anticipated all the points that subsequently raised controversy.

Dr. EUGENE L. OPIE (Phipps Institute, Philadelphia) read a masterly paper on varying manifestations of the disease in childhood. He drew the accepted distinction between the disease of early infancy and that of adolescence—periods at which the greatest mortality occurred. The former was a primary invasion, the latter a second infection in a system partially protected. It was the latter that must be sought out in its latent stage, by a routine use of the tuberculin test and of stereoscopic films among the apparently healthy school population and those children in contact with open cases. The method of sputum examinations repeated at intervals was a very effective but neglected public health weapon. The actual number of school children with latent tuberculosis was very large, and there might be a long interval between the end of exposure and the onset of disease. Loss of weight was not a reliable sign. The diffuse opacity of infiltration was seen in the radiogram, with deeper shadows and perhaps partial calcification in the lymph nodes. The adult pulmonary type made its appearance about puberty, and was more serious than the childhood form. Used in conjunction with screening of the chest and the inspection of films, the tuberculin test gave useful information. Dr. Opie warned the conference that the large fall in the death rate revealed in statistics which included the aged, had tended to belittle the real extent of the problem in childhood and adolescence.

Dr. LETITIA FAIRFIELD surveyed the administrative side. The present death rate from tuberculosis in the age period 15 to 25 was practically the same as that of twenty years ago. For younger children, massive infection was the most important danger. The London County Council, for the last five years, had adopted the practice of boarding out children from families in which there was a sputum-positive case of tuberculosis. Continuous care of the tuberculous expectant mother must be developed further.

The remainder of the first day was occupied by a discussion of the milk problem, and this, as usual, proved to be one of the most controversial issues. Dr. NATHAN RAW gave an outline of the scientific position and the consequences of bovine infection. He described his method of immunizing calves by feeding with killed bacilli of an attenuated strain, cultivated by him for twenty-four years. As an immediate remedy, he advocated compulsory pasteurization. A more extreme position was taken by Dr. REGINALD JEWESBURY, who believed that ordinary commercial pasteurization could not be relied upon, and that even "Certified" milk, the highest grade, was not absolutely safe. The vitamin content of milk was uncertain ; orange juice and cod-liver oil should be added in every case.

The veterinary side of the case was very aptly put by Major D. S. RABAGLIATI, chief veterinary officer to the West Riding County Council, in a paper which does not lend itself to abstracting, but which should be consulted. He stressed the friendly character of the relations between veterinary surgeon and farmer in carrying out the Milk and Dairies Acts. In the general discussion, compulsory pasteurization made its usual facile appeal.

The second day of the conference dealt with the protection of the child during the years before school and in the school life itself.

Dr. T. R. ELLIOTT emphasized that children were the heirs of ignorance, and that infection must be prevented in the home. He had found boarding-out of children a difficult measure, but the segregation of the infant in a babies' home for the first twelve months was a practical possibility. After that age the protection devolved upon the health visitor. The chronic open case of phthisis, diagnosed or undiagnosed, was the chief danger.

Dr. NOEL BARDSWELL objected to the great difficulty of Opie's proposals for examining every school child with stereoscopic film and the tuberculin test. He believed that the person who developed tuberculosis in adolescence was not the one who was missed in school years. Sir HENRY GAUVAIN described the interplay of infection and resist-

ance. He was an advocate of pasteurization of the milk supply under proper control.

The more limited sphere of the school was considered in two excellent papers by Dr. RALPH CROWLEY and Dr. Midgley Turner. Dr. Crowley gave an inspiring summary of the newer ideals in humanizing education. Caution and conservatism did not pay. More residential open-air schools were needed, equipped with every kind of facilities for physical diagnosis. The term "pre-tubercular" was an inaccurate label. Without accepting one or other view of the cause of adolescent tuberculosis, Dr. Crowley favoured a much more intensive study of this condition, aided by every technical means at our disposal.

Dr. MIDGLEY TURNER referred to the danger of infection from school teachers. At present, although there were regulations governing the employment of a teacher once diagnosed as tuberculous, there was no provision for discovering new cases. He scouted the commonly held opinion that there was no pulmonary tuberculosis among children. They must not, at this period of life, look for initial infiltration, for the disease was confined to the root. Considerable institutional accommodation was necessary for children in this condition. Dr. L. S. T. BURRELL stressed that it was essential to have a reinfection before tuberculosis could develop in adult life. He believed that the tuberculous child rarely became the tuberculous adult; progress would be made by looking back from the adult case.

Views may differ on technical points, but it is certain that expert and lay opinion is now focused on the adolescent period as probably containing the key to adult phthisis. The result of the conference has been to bring the main problems into prominence in a much clearer manner than is the case at many gatherings of the kind.

EPSOM COLLEGE

ANNUAL GENERAL MEETING

The seventy-eighth annual general meeting of the Governors of Epsom College was held at the Royal College of Physicians on June 26th with Lord Burnham in the chair.

The following were declared to be the successful candidates in the recent election of pensioners, annuitants, and foundation scholars:

Pensionerships:

	Votes
*Marin, Mrs. Edith M.	3,523
†Shortridge, Mrs. Louisa...	3,467

* Hadlow Pensioner. † Ordinary Pensioner.

"Morgan" Annuity:

Waring, Miss S. Annette...	3,342

Foundation Scholarships:

Ring, Charles A. S.	12,436
Hyde, Edward K.	10,856
Parnell, James A. W.	10,672
Smith, Hugh F. S.	10,411
Evans, Raymond F. G....	9,614
Reid, Alexander P.	8,398
Walker, Robert G.	7,075
Armitage, Raymond S.	5,738

Mr. Frank Newcombe will be appointed an ordinary pensioner, under By-law 16, at the council meeting, which will be held on July 1st, 1931, a vacancy having arisen.

A by-law of the College which precluded a widow from sending her son to the College as a day-boy was amended so as to correct this anomaly.

At the termination of the annual general meeting an extraordinary general meeting of the Governors was held, at which the following resolutions were passed unanimously:

That the Council of Epsom College be and is hereby authorized to promote legislation to amend, extend, and repeal the provisions of the Royal Medical Benevolent College Act, 1855, and the Royal Medical Benevolent College Act, 1894, so far as may be requisite or convenient for the following purposes—that is to say:

1. To effect the abolition of the present method of election of Pensioners, Foundation Scholars, and Annuitants by the Governors of the College, and to substitute therefor election of Pensioners, Foundation Scholars, and Annuitants by a Committee to be appointed by the Council and to consist of twenty Governors, of whom ten shall be members of the Council and ten shall be Governors (not being members of the Council) whom the Council shall select annually as most adequately representing the varied interests of the Medical Profession.

2. To provide for the extension of the benefits of the charity so as:

(*a*) To enable Pensions to be provided for medical women (but not for their widowers unless such widowers are otherwise eligible) on the same conditions as for medical men;

(*b*) To render the sons of medical women eligible for election as Foundation Scholars on the same conditions as the sons of medical men; and

(*c*) To enable Annuities or occasional pecuniary assistance to be provided for medical women or their families (but not for their widowers unless such widowers are otherwise eligible) on the same conditions as such annuities and assistance may be provided for medical men or their families.

The council is taking steps forthwith to promote legislation in Parliament to make these resolutions effective. As this cannot be done before the early months of 1932, one more election on the old lines must necessarily be held in that year.

It will be seen that as a result of the proposed legislation the election of pensioners, annuitants, and foundation scholars will be in the hands of a composite committee, consisting, as to one half, of the council of the College, and, as to the other half, of governors selected annually by the council in such a way as to give to the medical profession in all parts of the country an important direct power in the election. Further, the benefits of the charity in future will be extended to medical women and their sons on the same terms as apply to medical men and their sons.

Scotland

Scottish Honorary Degrees

At the June graduation ceremony of St. Andrews University, held on June 26th, Principal Sir James Irvine, who presided, conferred the honorary degree of Doctor of Laws upon five recipients. These included one member of the medical profession—namely, Dr. George M. Robertson, professor of psychiatry in the University of Edinburgh. At the graduation ceremony held in Edinburgh University on July 2nd, the list of graduands who received the degree of Doctor of Laws consisted of eleven persons, including Sir George Andreas Berry, M.B., Member of Parliament for the Scottish Universities, and formerly lecturer in ophthalmology in the University of Edinburgh; also Sir Walter Morley Fletcher, M.D., F.R.S., secretary of the Medical Research Council.

Training the Deaf in Scotland

The annual meeting of the Edinburgh Royal Institution for the Education of Deaf and Dumb Children was held on June 24th, under the presidency of the Duke of Montrose. In commenting on the fact that this institution depended largely upon public charitable support, he said that while the deaf were not recognized by the State, blind persons might be said to be nursed by the Government throughout life. In his opinion deafness was the more grievous affliction. He referred to Helen Keller, who was

born deaf, dumb, and blind, and yet had been trained to take her part in the affairs of the world; she had considered that deafness was worse than blindness, and had given up her work for the blind in order that she might concentrate on work for the deaf. He was pleased to see the attention paid in the institution to lip-reading, but he did not agree with the statement that it should be substituted wholly for signs; in his view both forms of instruction should be given. He was glad to see that the children of the institution were encouraged to take part in all manner of sports, and were learning industries. He suggested that smallholdings for market-gardening, poultry-raising, and the like should be worked by deaf people in a group, with a hearing person to act as marketing agent.

At the hundred and tenth annual meeting of the Glasgow Society for Education of the Deaf and Dumb, held on the same day, Mr. Alan Burns, who presided, said that the directors were paying particular attention to vocational training. It was hoped that the society would be able to assist the Scottish Association for the Deaf in starting a shop for boot-mending by the deaf. After-care education, under a nurse as supervisor, formed an important part in the society's operations, and this had included 94 visits to ex-pupils, 413 general visits, and 178 visits to the sick.

The prize distribution of Langside School for the Deaf, Glasgow, was held on June 25th, under the chairmanship of Dr. Duncan MacGillivray, who said that it was being more generally realized that much of the labour expended on behalf of those who were handicapped in one direction or another was lost owing to the fact that they had not received a vocational training in their educational establishments. In London schools instruction was now given in cabinet-making, bakery, confectionery, and boot-making for boys, with laundry work and other occupations for girls. Mr. G. S. Haycock, superintendent of the school, said that evidence was accumulating that deafness in school children was decreasing, thanks to the improved school medical service of the country and to the better care now taken in hospitals of children suffering from scarlet fever and measles.

The annual meeting of the Scottish Association for the Deaf was held at Donaldson's Hospital, Edinburgh, on June 25th, with Dr. James Haig Ferguson, president of the Royal College of Surgeons of Edinburgh, as chairman. Dr. James Kerr said that a Royal Commission had been inquiring into the administration of Donaldson's Hospital and the Edinburgh Royal Institution for the Deaf, and an amalgamation of these two schools had been advised. It was imperative that all authorities, schools for the deaf, and the Scottish Education Department should unite for joint action in this matter. The association intended to appoint a legislative committee at once to draft a Bill similar to, but not identical with, the Blind Persons Act, with the object of providing work for the unemployed deaf. He pointed out that it was important that the training of the deaf child should begin as soon after birth as possible. Children began to talk normally in the second year, and if a healthy child was kept from speech till the middle of school life, it would probably be mute. This tragedy was happening too frequently in Scotland. There was need also for the association to urge education authorities to provide classes for "hard-of-hearing" children, who were from five to ten times as numerous as the completely deaf. The chairman remarked that there were about 40,000 deaf-born persons in the country who depended for subsistence upon voluntary agencies after the school age was passed. With regard to Donaldson's Hospital, the commissioners had proposed to make it a purely deaf-mute school, and to exclude altogether the hearing children whose presence had hitherto been an important feature of its existence. He doubted whether this was wise, and hoped that other counsels might still prevail, so that Donaldson's Hospital might go on caring for the best interests of both hearing and deaf children. The present inmates of the hospital included twenty-five normal children, of whom fifteen had both parents, and the other ten one parent, deaf and dumb.

Glasgow Dental Hospital

The annual meeting of the Incorporated Glasgow Dental Hospital, which is now nearing completion, was held on June 12th. The Earl of Home, who presided, remarked that this institution had existed for forty-six years, and had rendered invaluable services to the community. Improved facilities would be available in the new home of the hospital. Instead of thirty-five operating chairs there would be seventy, each of which would have a self-contained equipment including a supply of water, compressed air, gas, and electricity. There would be a separate department for children, and a special *x*-ray room, while the laboratory would provide ample accommodation for fifty students at a time. There would be three rooms available for research, and, for extractions, a large anaesthetic room and two recovery rooms. Dealing with the financial position, he said that the estimated cost of building and equipping the new hospital was £90,000, for which subscriptions amounting to £39,150 had been received. He appealed to the citizens to make it possible for the hospital to open free of debt. The dean of the hospital, Dr. J. Forbes Webster, pointed out that a grant for equipment of £2,000 by the Dental Board of the United Kingdom was contingent upon their raising £1,700 by July 1st; although that date was drawing near they were still about £400 short of the quota.

England and Wales

Guy's Hospital

The annual report on the work of Guy's Hospital for 1930 has just been issued. In his review the treasurer notes the continuous growth in the number of in-patients treated, which reached last year the total of 12,249 persons—between four and five hundred in excess of any previous figure. "This regular growth of the main function of the hospital—treating within its walls poor sick persons and restoring them to health—is the visible proof of skilful medical attention and studied organization. By the former the average stay of each patient in the hospital was reduced last year approximately from eighteen to seventeen and a half days, by the latter the average number of beds in daily occupation has been raised in twelve months from 553 to 563. Both factors widen the capacity of the hospital, and enhance the public value of the great charity founded two hundred years ago by the far-seeing benevolence of Thomas Guy." The total available number of beds in the hospital is now 648. Some 50,000 persons attending the out-patient department last year were interviewed by the inquiry officer, and of these about one per cent. were found to be able to pay for the treatment privately. "The fact that 40 per cent. of those interviewed bring, on their first visit, cards or letters of recommendation from their own private doctors shows to how great an extent the hospital has become the specialist and consultant of the poor." The new out-patient department is approaching completion, and will be opened in the latter half of this year. The total number of medical students in attendance during the year 1929-30 was 449, and besides these there were 301 students at the Dental School. Another passage in the treasurer's report will be read with interest by many who are not old students of

the school: "Every visitor to Guy's knows the statue of the Founder, Thomas Guy, occupying the centre of the front quadrangle. But it is not so well known that the statue, obviously a fine piece of work, is well-nigh unique among London statues, being of brass, by Scheymaker, an artist famous in the eighteenth century. By the expert advice kindly offered by H.M. Office of Works, the statue, which is in excellent condition, has been cleaned at a small cost."

L.C.C. Medical Officers: Study Leave and Outside Appointments

A regulation of the London County Council provides that leave of absence for a period not exceeding six weeks in any one year may be granted to an assistant medical officer desiring to undergo a course of medical instruction at a university, such leave to be on full pay in the case of officers with five years' service, on half pay in the case of officers with two years' service, and without pay in the case of officers with less than two years' service. It is now proposed by the Central Public Health Committee to amend the terms of the regulation so as to provide that leave may be granted not only to officers who are following university courses, but also to those who are undertaking other approved courses of study, or research work, or investigation in this or other countries, where it is deemed that such study will be of benefit to them as medical officers in the public health service of the Council, and of advantage to the Council's service itself. The committee has also recently had before it applications from two medical officers attached to council hospitals for permission to apply for honorary appointments on the staffs of voluntary hospitals. The committee expresses the view that, generally, the staff should be encouraged to hold such appointments, as association with outside medical work provides valuable experience which will be of benefit in carrying out their duties under the Council. In the case of the county mental hospitals there is already a rule that the medical superintendent may hold an appointment unconnected with his office—for example, physician to an out-patient clinic at a general hospital—on such conditions as the council may decide. The committee thinks that similar facilities should be granted to the medical staff in the hospital service generally if, as in the case of the applications just mentioned, the appointment is an honorary one, the holding of it will not in any way interfere with the efficient discharge of the officer's ordinary duties in the Council's service, and the work entailed by the appointment will be carried out in the officer's off-duty hours.

London Maternity Hospitals

In the annual medical report of the General Lying-in Hospital, York Road, Lambeth, it is stated that, during 1930, 1,165 women were delivered in their homes and 1,068 in the hospital. Of the hospital patients one died, and there was an infant mortality of 59 per 1,000; there were forty-one cases of albuminuria of pregnancy with no maternal deaths, and a foetal mortality of 12.19 per cent.; the maternal morbidity rate for the puerperium was 1.3 per cent., and only two Caesarean sections were performed during the year. In the clinical report for 1930 of the East End Maternity Hospital, Commercial Road, E., there is a brief account of the activities of this institution, since it opened as a "home" in Glamis Road, Shadwell, in 1884. During the first four and a half years 427 patients were admitted, and during 1930 the number was 1,450. There were no cases of eclampsia, and Caesarean section was not performed in the year under review; the maternal mortality rate was 1.38 per 1,000, and the infantile mortality rate 34.3 per 1,000. The attendances at the ante-natal clinic numbered 10,441.

Correspondence

DIVERTICULA OF THE COLON

SIR,—I regret that I did not see until this month the article upon diverticula of the colon and their sequelae by Mr. Lockhart-Mummery and Dr. Graham Hodgson in your issue of March 28th, or the just comments by Mr. Gilbert Scott and Dr. Muir on April 11th, as I was unable to see the *Journal* at those times. The paper is of much interest, and, whilst the authors' experience confirms in the main that of previous writers, there are four matters on which I should like, with your permission, to comment.

1. The authors say that they have, with Dr. Dukes, been able to show that the appearance of the prediverticular stage "is not due to inflammation, but is caused by very small and numerous diverticular 'buds' in the colonic wall"; in other words, that the term "prediverticular" for the appearance Mr. Marxer and I have described is a misnomer. The investigation by these distinguished observers, including a surgeon, is much to be welcomed, for, since early diverticulosis is not fatal, suitable material is hard to come by except at operations; and it is by such collaboration between the radiologist, histologist, and clinician that the early stages of diverticulosis need to be studied. I venture, however, to suggest that the evidence presented does not prove the conclusions drawn. The proof offered consists of a drawing of a microscopical section, published without description, of a piece of bowel showing the early formation of crevices and pouches; also radiograms of a bowel in different stages of diverticulosis. A small part of this bowel, so far as can be seen in the illustration, is in the prediverticular state; but much of it, like the section, appears to us to be in the second stage of forming diverticula, which Mr. Marxer and I have described as the aftermath of that state. Any histological evidence should be got from a section of the part of bowel previously identified by *x* rays as the exact area which was in the prediverticular state. It should also be confirmed by an *x*-ray, after incision, of the same area, the bowel having been hardened when distended. The authors do not show which piece of the bowel in the *x*-ray picture was removed for section, or make it certain that any of it was. For if Figs. 9 and 10, showing different stages of development of diverticula, are not of the same bowel, then the text is open to mislead; if they are, the specimen could hardly have been taken from that bowel at the first stage. We have obtained and have examined sections of areas accurately identified by *x* rays before and after removal. Reference has been made to these (*British Medical Journal*, 1929, ii, 570), and further reports will be published upon new material. We believe that we can often recognize a real prediverticular state. Similar observations have been made by other workers (see J. T. Case, *Amer. Journ. Roent.*, 1929, xxi, 207) and independently, unknown to us, by George and Leonard, pioneers in this field. The pathology of the prediverticular state is as yet unsettled, but I suggest that it deserves further consideration from my friends Mr. Lockhart-Mummery and Dr. Hodgson. The conclusion that multiple diverticula of the colon are pulsion pouches, pure and simple, and that there is no preceding pathological change other than senile weakness of the wall to determine where and when they arise, is that which most observers, including George and Leonard, and ourselves, assumed at first. But it does not explain the features revealed by a closer study. If the little herniae are due only to general causes—for example, a bowel thinned with age and internal pressure—the progress of the disease should be, as the years go on, roughly uniform in regard to the rate and the areas affected. This may be sometimes the case,

but we find that most often it is not. In the course of fourteen years' observation, particularly of the same cases seen year after year, we have noted that:

(*a*) Patches of the prediverticular state appear to creep about an affected bowel, with the subsequent formation of groups of pouches, all the same size, at that area. This may be quite close to an area of large pouches of some years' standing.

(*b*) Acute symptoms may occur at this stage. I have known a surgeon do a colostomy for an acute prediverticular state in a large area of sigmoid.

(*c*) The prediverticular appearance may be arrested in great part, and the irritation of that part of the bowel, and the symptoms, allayed by careful douching of the area and other measures formerly described.

(*d*) At the time of recurring attacks of an old (inflammatory) diverticulitis, new areas of the prediverticular state are often seen there or close by.

It is such clinical and pathological points, which are not considered in the paper by Mr. Lockhart-Mummery and Dr. Hodgson, that have led us to suggest that a mechanical cause, though no doubt a factor, is not the sole explanation of the way in which this disease arises and progresses.

2. The authors say that "diverticula can often be recognized by the barium meal method, but it is a very inexact one, and in this paper the radiographic appearances after the injection with a barium enema will be considered alone." We agree that the enema is most valuable, but have often obtained additional information when a barium meal has been given as well; for, particularly with a suspension, without cereal, of barium sulphate in buttermilk or malted milk, details such as tiny pouches are detected, which with the enema alone may be missed.

3. It is stated that the tendency to diverticulitis "appears to be definitely associated with a propensity to the deposit of excessive fat in the abdomen, and elsewhere." A comparison, published by us in 1927 (*Proc. Roy. Soc. Med.*, 1927, xx, 674), between 100 diverticulous and 900 non-diverticulous patients gave no evidence that diverticulous people in general are fatter than others of the same age. But the experience of Mr. Davies-Colley (*British Medical Journal*, 1926, i, 282), Mr. Lockhart-Mummery, and of other surgeons suggests that cases of diverticulitis in the later stages are more liable to need surgical help in the obese. This is probably because fatty tissue round an inflamed pouch is less vascular and therefore less able to resist an invading infection.

4. The authors speak of operations to prevent complications, and lay stress on the risk of perforation. This, in our series of 410 cases of diverticulosis, of whom the larger number sought relief for other complaints, appears to be about 1 per cent.; and, as there are thousands of people with quiescent diverticulosis who have not had symptoms leading them to be *x*-rayed, the risk in the general population is much less. Such a rupture is, of course, a disaster, though an operation within a few hours may yet save life; and the patient's medical man must always have the possibility of perforation in mind. It is natural to wish that this danger could be prevented by an operation. But the risk of a short-circuit, or excision, of a diverticulous area as a preventive of possible perforation in an otherwise healthy person is, even in the most skilled hands, many times greater than the risk to be avoided.—I am, etc.,

Ruthin Castle, June 20th. EDMUND SPRIGGS.

TREATMENT OF DYSMENORRHOEA

SIR,—Most gynaecologists are well aware of Dr. Sanderson Clow's invaluable contributions to the investigation and treatment of dysmenorrhoea, and one can only endorse the views she has expressed in her letter published in your current issue. Since she has implied, however, that gynaecologists are possessed of undue surgical enthusiasm in their efforts to improve upon nature, I must suggest that the primary responsibility lies elsewhere.

Private patients of this type are rarely referred to us nowadays; therefore we are possibly deprived of the opportunity of close study, as out-patient conditions are not ideal. But we do at least see dozens of cases under these conditions, such as they are; and my point is that the patients have almost invariably been told by their general practitioner that the trouble is due to cervical stenosis or a misplaced womb. On the other hand, he has all too frequently been good enough to guarantee a cure as a result of the dilatation of the cervix, which it is proposed that we should perform. Dr. Sanderson Clow will agree with me that it is difficult in these circumstances to persuade the patient to adopt less dramatic procedures, particularly as they impose the onus of treatment upon her rather than upon ourselves. As a result she usually gravitates sooner or later towards someone who is obliging enough to perform the operation originally recommended by her own doctor.

May I add that I have on two occasions performed, with apparent success, the operation of pelvic sympathectomy to which Dr. Venn Dunn referred in his address. But obviously it must be very rarely justifiable to perform a laparotomy with the object of treating dysmenorrhoea *per se*. Apart from the inevitable risk of an abdominal operation, the degree of genuine disability is always doubtful in these cases, as there are usually psychological factors. In one of my cases it was necessary to open the abdomen for other reasons, and in the second the patient was really desperate after all other measures had been given an extensive trial.—I am, etc.,

London, W.1, June 26th. FRANK COOK.

SIR,—Dr. Sanderson Clow's letter on the treatment of dysmenorrhoea raises some interesting points, and the bulk of opinion will be on her side in considering it unjustifiable to submit a large majority of patients to per vaginam examination under anaesthesia. She states that she has treated several hundred cases of dysmenorrhoea, in which gross pathological conditions were excluded, by means of daily exercises, with almost invariable cure. Dr. Clow rightly emphasizes a factor in the etiology of dysmenorrhoea which is of prime importance. As Professor Norman Miller and others have shown in late years, faulty posture and poor muscular tone play a large part in the production of menstrual pain, and further correction of these by suitable exercises produces remarkable results. Nevertheless, the claim of almost invariable success in several hundred cases is considerable, and one feels that in so important a subject it is not unreasonable to ask for definite figures, especially as the remedy is at once costless, simple, and at the ready disposal of the general practitioner. Dr. Clow has done a very valuable service in bringing forward this point, but the validity of the treatment would be better evaluated if actual figures were given.

I might add that I have been associated for some time with Dr. James Young, investigating cases of dysmenorrhoea in his clinic in the Royal Infirmary, Edinburgh. We have obtained very satisfactory results by organotherapy, especially by the administration of sistomensin. It is only very rarely that any of our cases have required dilatation of the cervix, and in this point also we are in agreement with Dr. Clow.—I am, etc.,

WALTER P. KENNEDY, Ph.D., L.R.C.P. and S.,
Edinburgh, June 29th. Beit Memorial Fellow.

CANCER OF THE CERVIX AFTER SUBTOTAL HYSTERECTOMY

SIR,—In the *Epitome* published with your issue of June 20th appears an abstract of a paper by R. Monod in *La Gynécologie* of February, 1931, in which it is stated that "Monod advises that the subtotal kind should be abandoned in favour of total hysterectomy." Monod has made a very important communication on cancer of the cervical stump, and I should be glad to welcome him as an advocate of total, to the exclusion of subtotal, hysterectomy; but, neither in the abstract in *La Gynécologie* nor in the full account in the *Bulletin de la Société Belge de Gynécologie et d'Obstétrique* (1930, p. 128), does he advise that subtotal hysterectomy should be abandoned. These are his words:

"Tout en restant fidèle a l'hystérectomie subtotale, soyons toujours prêts à pratiquer la totale et à en étendre les indications," and "sans aller jusqu'à conclure avec M. Herbert Spencer 'que l'hystérectomie subtotale est une opération que l'on ne doit plus faire,' la majorité des orateurs, partisans de la subtotale, admettent que dans de nombreux cas elle doit céder le pas à la totale."

I hope that gynaecologists will read the original paper of Monod and the discussion upon it—the *Bulletin* is in the Royal Society of Medicine's library—and be led to abandon the incomplete operation, as I did over thirty years ago (vide *British Medical Journal*, 1902, ii, 1131).—I am, etc.,

London, W.1, June 24th. HERBERT R. SPENCER.

ANAEMIC BREAKDOWNS CONNECTED WITH CONGENITAL HAEMOLYTIC JAUNDICE

SIR,—Among the many important points brought out in Lord Dawson's Hume Lectures (*British Medical Journal*, May 30th and June 6th) is the connexion of startling and dangerous "anaemic breakdowns," at various periods of life, with congenital haemolytic jaundice. In a woman, aged 34, under my care in hospital a year ago, who nearly died from anaemia, with ascites and pleuritic effusion, there was a history of severe anaemia, with enlargement of the spleen and jaundice, when she was 13 years of age. On examining her blood it was found that the fragility of the erythrocytes was excessive, haemolysis commencing when they were added to a 0.72 per cent. sodium chloride solution; her blood serum gave a strongly positive indirect (but negative direct) Hijmans van den Bergh reaction for blood bilirubin. Between the attack in childhood and the attack at 34 years of age there had been what were described as "bilious attacks without headache," which were evidently merely temporary exacerbations of icteric tinge connected with haemolytic jaundice.

She has relatively recovered, but at present still has a greatly enlarged spleen and moderate anaemia, and a variable sallow or slightly jaundiced face. I take it that in this woman an infection of some kind (with pleurisy, etc.) led to the second great "anaemic breakdown" in her life. Now comes the very serious question of recommending splenectomy in order to lessen her liability to another dangerous attack of anaemia and save her from the otherwise almost inevitable cholelithiasis (if she has not already latent cholelithiasis).

Not only is this patient not a true acquired case, as at first sight she had seemed to be, but probably she is not even really an "isolated" case. Though no family history of haemolytic jaundice can be elicited in her case, she is unlikely to be really the first case in the family, and I would point out that in the family series of congenital haemolytic jaundice cases described by the late Dr. G. Dorner and myself in 1910 (*Lancet*, 1910, i, 227, and *Folia Haematologica*, 1910, ix, 518) the father of the family was the only one out of fifteen children who inherited the jaundice from the grandfather, who had been jaundiced all his life, and died at the age of 76 years. A familial incidence can obviously easily escape recognition in the shifting population of London.

The present patient to whom I am referring has been only once pregnant, and the child was stillborn. With improved health following splenectomy more successful pregnancies may result, and the surgeon may enable the patient to bring forth a jaundiced generation for another generation of surgeons to deal with. I may add that the members of the haemolytic jaundice family about which I wrote with Dr. Dorner in 1910 have since furnished a striking example of "anaemic breakdown," and have given surgeons some work to do in splenectomy and cholelithiasis operations.

In regard to diagnosis, cases especially likely to give rise to difficulty are, I think, the anaemic ones, sometimes without obvious jaundice and with relatively little excess of erythrocyte fragility, especially if there happen to be likewise a suspicion of congenital syphilis in the family (cf. F. P. Weber, *Brit. Journ. Child. Dis.*, 1926, xxiii, 185).—I am, etc.,

London, W.1, June 28th. F. PARKES WEBER.

CONTACT GLASS OR CROSSED CYLINDERS

SIR,—I gladly welcome Mr. Beaumont's advocation of contact lenses in the *Journal* of June 20th, but I am not in favour of crossed cylinders in all cases. It is true that they are lighter than the equivalent sphero-cylinder, but in most cases of mixed astigmatism the glasses would be more periscopic if the concave spherical surface were placed next the eye.

In the case of L. T. with 18 D. of astigmatism almost certainly no benefit would be derived. I have not worked it out, but probably a crossed cylinder would give a far better result from a periscopic point of view if the minus cylinder were placed next the eye. With crossed cylinders +8 D. at 10 degrees and −10.5 D. at 100 degrees the vision was brought up to J. 1, and 6/9 for distance, but associated with a great deal of distortion.

There may be three reasons to account for this: (1) the *effectivity* of a crossed cylinder, or, indeed, of any lens of this power, will be greater when viewing objects at a distance than when reading at 30 cm. from the glasses. A +7.36 D. cyl. crossed with a −9.55 D. cyl. when used for distance will correct the same defect of the eye as a +8 D. cyl. crossed with a −10.5 D. cyl. when used for reading (see *Prescriptions of Spectacles*, p. 189). (2) Owing to the strands of adhesion described there would be some rotation of the eye (cyclophoria) induced by the act of convergence, so that the axes of astigmatism would be altered when reading and when seeing distant objects. (3) The pupil will be smaller when reading than when there is no accommodation exercised.

For reasons (1) and (2) a contact lens is the only conceivable single lens that would serve for distance and for reading.—I am, etc.,

Woking, June 29th. A. S. PERCIVAL.

CATHETER LIFE

SIR,—During the last forty years I have seen from time to time an old hospital patient. The following is a brief history of his case, given in his own words:

"On May 31st, 1891, being then 16 years of age and in perfect health, I went to the Whitworth swimming baths, Manchester. After diving in the water I felt a burning pain at my chest; the pain gradually became worse, and eventually very severe; then it suddenly left me, but at the same

time I lost partial use of my left leg, and in a lesser degree lost some power from my right leg. With assistance I managed to walk out of the baths, but I felt the use in my legs to be slowly leaving me; after walking about 300 yards I was obliged to sit down, and I then lost all power in both legs and became completely paralysed, and lost all sensation from the third rib downwards. I also lost all control over my bowels and bladder. From the time I dived in the water to being completely paralysed was about twenty minutes. I passed blood in the urine for several weeks.

"I was admitted to the Royal Infirmary in a completely paralysed condition; my bladder was greatly distended. I was in the Infirmary eight months, and for some time my bladder was washed out thrice daily.

"Eighteen months after the accident I managed to stand up, and then got to walk just a little with the aid of two sticks. For many years this condition prevailed. I could walk just a little, and my general health was good. (I washed the bladder out every day.)

"My present condition is: my back and legs are weaker than they used to be, and I get a lot of pains across the front of my head and left temple. As the urine accumulates in my bladder the pains in my head become more severe. At the same time there are many days when I feel very well indeed, and I am still able to carry on my business, but it certainly gets harder to do so.

"I have washed my bladder out every day for forty years, and have always been obliged to use a catheter to pass water. I calculate that I have passed catheters 80,000 times. I use steel and silk web instruments. I am now aged 56."

I think this account of long duration of catheter life is almost unique and worthy of record.—I am, etc.,

Manchester, June 22nd. JUDSON S. BURY.

PREVENTION OF RENAL COMPLICATIONS IN SCARLET FEVER

SIR,—Dr. B. A. Peters's letter in the *Journal* of June 20th states that by his (somewhat complex) method of treatment the complication rate for nephritis and albuminuria in his last 600 cases of scarlet fever was just over 1 per cent. This is admittedly a low figure. It can, however, be lowered still further, and, moreover, all the other complications of scarlet fever along with it.

During the last three years I have given Dick antitoxin intravenously to 832 cases. These have been "selected" only in the sense that they included all the worst cases—that is, nearly all definite cases admitted up to the fifth day of disease, and "septic" cases admitted up to the eighth day of disease. Exceedingly mild and doubtful cases were not included. The complications in this series have been: albuminuria 2, acute suppurative otitis media 5, arthritis (very mild) 3. Besides these there have been a small number of minor skin septic foci which can hardly be called complications. Excluding the latter, the total complication rate for scarlet fever in this series just exceeds 1 per cent. Such as they are, most of these complications occurred during a period of three or four months in 1930, when the dosage of antitoxin was insufficient. For all practical purposes one may claim that, by this method, the complications of scarlet fever can be abolished.

To many this may read like a fairy tale. Nevertheless, the facts can be demonstrated any day. The cases in the hospital at one time are never numerous, because they are discharged in eight to fifteen days. They are, moreover, quite well. There is practically no medical or nursing work involved except for the intravenous injection on the day of admission. Needless to say, adequate precautions have been taken to ascertain that complications do not, in fact, occur after the patients' discharge from hospital.—I am, etc.,

H. STANLEY BANKS,
Medical Superintendent.

Isolation Hospital and Sanatorium, Leicester, June 24th.

VITAMIN B CONTENT OF LIVER EXTRACT

SIR,—It appears to be generally accepted that all commercial liver extracts are deficient in the antineuritic factor of the vitamin B complex, although they are rich in vitamin B_2. A reference to this in an article by Dr. Lucy Wills (*British Medical Journal*, June 20th, p. 1059), quoting a verbal communication from Dr. Harriette Chick, prompts me to ask you to publish this preliminary note on certain experiments carried out in this institute during the past six months, from which it is clear that the vitamin B_1 content of liver extracts varies to an extent which renders any generalization in this connexion inadvisable. The results obtained indicate that proprietary liver extracts are divisible into two sharply defined groups: those which contain considerable quantities of the antineuritic factor B_1, and those in which B_1 is present in negligible amount. There is no intermediate class, if equivalents of fresh liver are compared, and the first category includes the majority of the extracts tested.

Eight different liver extracts, as used for the treatment of pernicious anaemia, were tested for their ability to promote normal growth in rats on a diet deficient in all water-soluble vitamins; of these eight extracts six were found to be efficient sources of vitamin B_1 as well as B_2. Three stomach preparations were also examined for their vitamin content, and all were found to be effectual in correcting a deficiency in both factors of the complex; presumably the stomach preparations, therefore, contain both B_1 and B_2.

The full experimental data will be published in due course. The results suggest that those liver extracts which are rich in B_1 as well as in B_2 should be included in the list of medicaments available for use in cases in which administration of the vitamin B complex is indicated. Clinical evidence can indeed be adduced that such extracts are of practical value as general tonics, a fact which may be partly attributable to their vitamin content.—I am, etc.,

ESMÉ GILROY, M.B., CH.B.

Institute of Animal Genetics, Edinburgh, June 22nd.

MICROCEPHALY

SIR,—It seems that my question was justified, because it has led Professor Berry to give a very clear and detailed statement of the reasons for believing that most mental defectives have unduly small heads, and to explain that he has discarded belief in microcephaly as a type of defective. His reasons for the latter view are less categorical, but the negation is interesting. I imagine that no worker in the subject will dispute the frequency of "microcephaly" in Professor Berry's sense, but I believe he is in a minority in his rejection of microcephaly in its more usual sense as a type name. The proper classification of defective types is, of course, a matter of opinion, and might be the subject of an interesting discussion; but if types exist at all, or have any meaning, then I hold that the microcephalic is as clearly differentiated as the mongol, and has as real an existence. The standard English textbook seems to be quite clear in this teaching, but no doubt Dr. Tredgold would prefer to speak for himself rather than through quotation. While admitting Professor Berry's right to dispute the reality of the type, my question now becomes more simply defined: Is he justified in using the type name with a new meaning if the majority of students of the subject still adhere to the old usage?—I am, etc.,

London, S.W.17, June 22nd. NOEL H. M. BURKE.

REFRESHER COURSES FOR SHIP SURGEONS

SIR,—I would like to endorse Dr. Haslett Frazer's letter in the *Journal* of June 27th (p. 1139). After my war service I was for three and a half years a ship surgeon, most of the time in the P. & O. Company, and can speak from experience as to the value of Dr. Frazer's letter to any man thinking of going to sea as a surgeon. He must, however, be a surgeon in fact as well as in name. One must be prepared single-handed, and with no operating table other than a bunk or a temporary arrangement of boards, to deal with any surgical emergency. I have operated on most of the conditions Dr. Frazer mentions. In one voyage to New Zealand I can recall one confinement, two very bad septic hands, a fractured upper end of tibia, a (?) fractured lower end of femur (no x-rays available), fifteen cases of influenza, three of measles, and two of scarlet fever. Sea-sickness is common and troublesome, especially if the surgeon himself is also a sufferer. I found large doses of sodii bicarb. in plenty of hot water the best treatment.

I wish to take this opportunity of concurring with Dr. Frazer in his tribute to the staff of the shipping companies. In all the vessels in which I served, and while doing shore duty, I met with nothing but kindness and consideration, from the senior medical officer and marine superintendents to the lowest ranks of officers and men. I would strongly recommend any recently qualified man who can get a post as ship surgeon to go to sea for at least six months before settling down to his life's work. He will remember it to the end of his life, and will be a better man physically, socially, and professionally than he was before.—I am, etc.,

H. W. WEBBER, M.S., M.D.Lond.

King's Tamerton, Plymouth, June 27th.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The report and third reading on the Finance Bill were taken in the House of Commons this week, and the Bill increasing the loan to the Unemployment Insurance Fund passed through committee and report. The Lords discussed the Representation of the People Bill.

On June 30th the Sentence of Death (Expectant Mothers) Bill was read the third time and passed by the House of Lords.

In the House of Lords, on June 30th, the Bethlem Hospital (Amendment) Bill passed through committee without amendment and was reported to the House.

Scottish Health Estimates

Debate in the Commons

The Estimates for the Department of Health for Scotland were considered by the House of Commons on June 25th. Introducing them, Mr. WILLIAM ADAMSON said that from 1919 to May, 1931, 121,010 houses had been built in Scotland with State assistance, but the shortage of houses was still about 100,000. In 1930, 10,145 houses were approved for erection. Every effort was being made to secure more expedition in the erection of houses, and, if necessary, compulsory action would be taken against defaulting local authorities. Out of 227 local authorities 180 had submitted statements showing that 76,986 houses were required in their areas, and that they proposed to undertake a three years' programme, amounting to 52,174 houses. Forty-seven local authorities had not yet submitted statements making adequate provision for the housing needs of their area. Turning to national health insurance, Mr. Adamson said that the outstanding fact about the work of the scheme during 1930 was a drop in the payments for sickness and disablement benefit. The amount paid out was less per member than in any year since 1925. During 1930 some new forms of medical records were introduced, and a system by which the Department would receive details of all sickness occurring among insured persons. The preliminary reports which had been published in the annual report of the Scottish Department of Health were merely samples of the information which the Department would furnish when the scheme was in complete working order. Mr. Adamson referred to the administrative schemes which, under the terms of the Local Government Act, local authorities had submitted for his approval. The majority of these schemes provided for the removal out of the Poor Law of maintenance and treatment of mental defectives, provision for the health of expectant mothers, nursing mothers, and children under 5 years of age, the care of blind persons, and the provision for the treatment and clothing of school children. Mr. Adamson said he was disappointed that so little progress had been made in town-planning since the Act was passed in 1919. He called attention to the satisfactory vital statistics for 1930. Although some death rates were up (cancer, for example), some infections, and maternal mortality very slightly, the total death rate was only 13.2 in 1930, compared with 14.5 in 1929. The deaths of infants were 83 per 1,000, lower than the recorded rate for any year with the exception of 1923, which was 78.9. The tuberculosis death rate was a very satisfactory record also—88 per 100,000, compared with 94 in 1929. The progress made in fighting this disease was well illustrated by the contrast between the rate of 88 in 1930 and 124, at which it stood in 1920. For the first time since 1920 the birth rate had increased. These signs of improved health referred to a year of widespread unemployment. During 1930 the Health Department carried out an investigation of 100,000 school children in Edinburgh, Glasgow, Dundee, Aberdeen, and Lanarkshire. The results seemed to show that the social services were warding off the worst effects of this period of difficulty. On the whole, when beginning school life, and even on leaving school, children were better clothed and cleaner than in 1919, and suffered less from malnutrition, rickets, and defective teeth. The Government was devoting special attention to the development of an adequate hospital service. It looked to the local authorities to go forward with a policy which would end the old differentiations between the standard of treatment in Poor Law hospitals and that in fever hospitals or in the ordinary voluntary general hospitals. There was no justification for social differences in the treatment of the sick. The estimate of medical research into the causes of diseases had been increased in the Scottish Estimates this year from £100 to £2,500. It was intended that the scientific advisory committee should guide these investigations.

Sir JOHN GILMOUR agreed with Dr. Adamson that the health treatment of those who came under the Poor Law should be on a different and better footing. He thought that the step of linking the school and public health authorities would greatly facilitate the problem of dealing with the child of pre-school age. Scientific research in the matters of health should be brought quickly to the notice of local doctors.

Mr. R. W. SMITH said that if the statistics of maternal mortality were classified into smaller groups the House would be able to see the number of deaths in institutions, the number of cases where patients were nursed at home by a nurse and attended by a doctor, and the number where patients were nursed in their own homes and attended by a midwife. Mr. Smith approved the suggestion in the report of the Department of Health that systematic health home visitation should be applied in rural areas. He suggested that where a district nurse attended a woman in a maternity case she should also inquire about any children in that house under 5 years of age who had not been medically attended within the year, and should report upon them to the medical officer.

Mr. MACPHERSON asked whether the Health Department intended to assist poorly populated localities to get a telephone service installed to enable persons to get quickly into touch with the doctor. He also remarked upon the frequent lack in the houses of Highland doctors of a small additional room where patients might wait, or which could be used in an emergency for a slight operation. He asked the Secretary for Scotland to see what could be done in that matter.

Mr. MCKINLEY asked for an assurance that the medical arrangements under the Silicosis Act of 1930 should be amended so that victims of silicosis in Aberdeen, Orkney, and Shetland no longer had to travel to Newcastle-on-Tyne in order to be medically examined.

Mr. MACQUISTEN referred to dental disease in Scotland, and

said it was due to unsuitable food, and often from white bread.

Mr. McGOVERN spoke of overcrowding in Glasgow. Two million people in Scotland lived in one-apartment or two-apartment houses. In Glasgow 6,000 families lived in one-apartment houses, and most of these families numbered from six to twelve persons. In the notorious Calton area 160 children out of every 1,000 died before reaching the age of 12 months. He had discovered a case where a man, wife, and eight children under 14 lived in a single apartment house. Nine months previously a child who had been for two years in hospital as a tuberculous inmate had been partly cured and then sent back among the other children to give them that disease.

Sir FREDERICK THOMSON said that where home visiting could not be done by health visitors it was done by the district nurse. The infant mortality rate of 83 per 1,000 for Scotland in 1930 was better for any year except 1923, but the improvement was not so noticeable for the first week of life. For children between 1 and 5 years of age the death rate was 10 per 1,000, which was a great improvement over past years. The figure for maternal mortality was 70 per 1,000, which was regrettably high. It seemed certain that cases in past years which were due to puerperal causes, and which were not so described in the statistics, were now much more carefully described. He thought that the Local Government Act would improve the health of children between the ages of 1 and 5 by ensuring that from birth to the conclusion of school life the health of the child would be under one control.

Dr. WALTER ELLIOT said the annual report of the Department stated that a section taken out of the 1,850,000 insured persons in Scotland showed a lower morbidity rate during 1930 than in previous years. One of the important factors in that improvement was the absence of an influenza epidemic. The recurrence of such an epidemic had been one of the chief reasons for the rise which had perturbed all persons administering the National Health Insurance Acts for several years past. Scotland had been able to come through these years of depression and to show at the end of the period a lower infantile mortality, a lower tuberculosis rate, and an unimpaired standard of health of 100,000 children of unemployed people.

The Duchess of ATHOLL pleaded for the extension of maternity and child welfare schemes in the rural areas. Medical opinion agreed that one of the chief reasons for maternal mortality was the want of more ante-natal care. It was important to ensure that a nurse health visitor was within the reach of every mother and expectant mother. Only one-third of the mothers of Scotland got ante-natal care, and only one-quarter of the children up to 5 years of age got any medical care in the child welfare centres. One of the first things to be done for health in Scotland was to ensure that every county had district nursing associations with schemes by which the district nurses would advise mothers in regard to their own health and to the health of their children. Under the Local Government Act the whole of the scheme would be in the hands of the county council. She asked Mr. Adamson to appeal to the county councils to put themselves in touch with local nursing associations, which should federate and discuss with the councils how they could carry out child welfare and maternity welfare schemes.

Mr. ADAMSON then withdrew the motion that the Estimate be voted. This leaves the Estimate open for a possible further discussion.

Distemper

In reply to Mr. Freeman, on June 25th, Mr. CHARLETON said no complete statistics of the results of researches promoted by the *Field* Distemper Council concerning the inoculation of dogs against distemper were obtainable. The preparations were issued by a commercial firm to veterinary practitioners throughout the country. Inquiry was recently made, however, into the histories of some hundreds of foxhounds inoculated in 1928 and 1929. Taking only the twenty-three packs in which subsequent exposure to infection was certain, the incidence of distemper among inoculated hounds was found to be 1.4 per cent., and the death rate from this cause 0.3 per cent. Without inoculation the incidence of distemper among young foxhounds in this country approached 100 per cent., while the death rate was frequently 50 per cent., and might exceed 75 per cent. on occasion.

Foot-and-Mouth Disease

On June 29th Dr. ADDISON, in reply to Brigadier-General Brown, said that 922 cattle, 2,692 sheep, and 68 pigs had been treated with foot-and-mouth disease serum in the present outbreaks of the disease. It was too early yet to make any statement on the results of that treatment.

On June 30th Dr. ADDISON told Mr. Rosbotham that he was that day issuing instructions authorizing the removal under licence of the Irish animals which had been detained in landing places in Great Britain. He was also issuing that night an Order releasing a large part of Great Britain from the operation of the stand-still Order. The effect would be that in England and Wales there would be no restriction on the movement of animals, except in Northumberland, Cumberland, Westmorland, Durham, Lancashire, and the North and West Ridings of Yorkshire. In Scotland all parts of the country north of the Caledonian Canal would be free.

Small-pox in India

Mr. BENN, replying to Mr. Freeman on June 29th, said that 316 deaths from small-pox took place in Calcutta in 1924, 3,923 in 1925; 934 in 1926; 2,860 in 1927; 558 in 1928, 393 in 1929; and the provisional figure for 1930 was 1,831. The deaths in Bombay were: 1924, 1,231; 1925, 565; 1926, 476; 1927, 841; 1928, 595; 1929, 1,126; and 1930, 1,56 (provisional). In Madras the figures were: 1924, 196; 1925, 762; 1926, 60; 1927, 32; 1928, 246; 1929, 503; and 1930, 181 (provisional).

Tuberculosis and Infected Milk.—Mr. GREENWOOD told Mr. L. Smith, on June 19th, that there was no information available on which to base a reliable estimate of the number of cases of tuberculosis attributable to infected milk.

Housing in Scotland.—On June 23rd Mr. WESTWOOD informed Miss Lee that complete figures of the number of unfit houses in Scotland were not yet available. According to the statements that had been submitted by 180 local authorities, the houses required to replace unfit houses were 37,846, and the houses likely to be provided by those local authorities within three years to replace unfit houses was 24,321. He could not state the number of persons in Scotland living in condemned houses.

Grade A Milk.—Replying to Mr. Hurd, on June 25th, Mr. GREENWOOD said there had been a steady increase in the number of producers of Certified, Grade A (Tuberculin-Tested), and Grade A milk in England and Wales during recent years, but the number of producers of graded milk was still very small compared with the total number of milk producers in the country. In consultation with the Minister of Agriculture he was considering steps for encouraging public confidence in the purity of milk supplies.

Tinned Milk.—Mr. GREENWOOD told Mr. Perkins, on June 25th, that tinned milk marked "Unfit for babies" was so marked because it was lacking in milk fat, which was essential for babies. It was not otherwise objectionable on grounds of health. He could not take special steps to restrict its sale.

Change of Doctor.—Miss LAWRENCE informed Mr. Mills, on June 29th, that procedure with regard to change of doctor under the national health insurance scheme was altered, from April 1st, by the Medical Benefit Amendment Regulations, 1931. Those Regulations were laid before Parliament on February 17th. The department did not contemplate any revision of procedure.

Health of Mauritius.—Dr. SHIELS states that he will ask the Governor of Mauritius to obtain a report on the incidence of undernutrition in Mauritius. The report of the Registrar-General of Mauritius for 1930 on the mortality rate there has not yet been received.

Health Films.—On June 25th, replying to Mr. Mander, Mr. GREENWOOD said cinematograph films were frequently used by local authorities and voluntary bodies for instruction to the public on matters connected with health and mother-craft. Little use had so far been made of talking films for this purpose.

Obituary

DUDLEY W. BUXTON, M.D., M.R.C.P.

Consulting Anaesthetist to University College Hospital and the Royal Dental Hospital

We regret to record the death of Dr. Dudley Buxton, on June 28th, on his seventy-sixth birthday. He will be remembered by many doctors throughout the world for the work he did on anaesthesia, a subject which he made his life's study.

Dudley Wilmot Buxton was the second son of H. Wilmot Buxton, barrister-at-law, and was educated privately and at University College, London, and University College Hospital. He obtained honours in the M.B. and B.S. examinations in 1882, taking the M.D. in 1883 and the M.R.C.P. in the following year. After resident posts at University College Hospital, he worked for a time with Sydney Ringer, who was professor of medicine at University College. Their work was on the action of certain drugs on the heart. At this time he edited the fourth edition of Waring's *Therapeutics*. Starting the practice of anaesthetics in the early 'eighties, he confined himself to this subject from 1885 onwards. His early writings show his desire to investigate the scientific administration of ether and chloroform. His first publication in the *British Medical Journal* (September, 1885) was entitled "The practice of artificial anaesthesia, local and general, with special reference to the modes of production and their physiological significance." Nitrous oxide, ether, and chloroform attracted his attention in turn, and he made important observations on each. His work on nitrous oxide was largely due to an extensive experience at the Royal Dental Hospital, and in private practice for dental extraction, and to him is due the introduction of "continuous nasal gas." He was a strong advocate of the gas-ether induction for general anaesthesia, but little employed Shipway's apparatus. His work on colonic ether received little attention, but the recent development of avertin rectal anaesthesia was of great interest to him, and he felt that his early work may have influenced its introduction.

In 1901 the British Medical Association appointed Buxton honorary secretary of the Special Chloroform Committee, which issued an extensive final report in 1910. The particular subject of investigation was "To investigate methods . . . and to determine what is the universal dose of the drug (chloroform) which would secure an adequate anaesthesia for operations and at the same time not endanger life." As the outcome of this report, Dudley Buxton advocated the Vernon Harcourt apparatus, particularly for cerebral surgery. He had previously served on the Association's Committee on the Effects of Anaesthetics, appointed in 1891, and was a member of the Metropolitan Counties Branch Council from 1895 to 1898. His *Anaesthetics* reached its sixth edition in 1920, and is better known than the many monographs which he wrote in a literary style too rare amongst medical writers. He was anaesthetist to University College Hospital and the Royal Dental Hospital until his retirement in 1919, and had been anaesthetist to the National Hospital, Queen Square, and the Hospital for Women, Soho Square. During the great war he was anaesthetist to King George V Hospital. He was at one time president of the Society of Anaesthetists, of the Section of Anaesthetics at the Annual Meeting of the British Medical Association at Liverpool in 1912, and of the corresponding section at the International Medical Congress in London in 1913.



DUDLEY W. BUXTON, M.D.

As a teacher of anaesthetics Dudley Buxton's influence was considerable, and his great desire was that the doctor going into practice should have a competent knowledge of his subject, the teaching of which was neglected until the latter part of the last century. During his busy years he had a host of friends—surgeons with whom he worked, doctors who came to learn from him, and patients who appreciated his skill and his kindly words before the induction. He was one of the first anaesthetists who insisted on visiting a patient on the day before the operation if the case was likely to be a difficult one.

His interests, apart from anaesthesia, were mostly of a literary nature, and he was fond of his country cottage. After his retirement from London he lived in a house he had built in 1903 near Boxmoor. Of late years he took a warm practical interest in the work of the West Herts Hospital, administering anaesthetics and teaching the nursing staff. The welfare of nurses he always considered, and many will remember his parties for nurses from University College Hospital every summer.

He married Louisa, daughter of the Rev. Thomas Grey Clarke, in 1884, and his three sons survive him.

JOHN CARSWELL, F.R.F.P.S.GLAS., L.R.C.P.ED.

Late Medical Commissioner, General Board of Control, Scotland

By the death of Dr. John Carswell, formerly Commissioner of the General Board of Control for Scotland, on June 20th, at the age of 75, a distinguished and well-known figure in the world of psychological medicine has passed away.

John Carswell was born in Glasgow, and came of West

Highland stock. He studied medicine in his native city, and qualified in 1877. His first appointment, which gave a bias to his medical interests in after life, was that of assistant to Dr. James Rutherford, then medical superintendent of the newly erected Glasgow Mental Hospital, Woodilee. Dr. Rutherford was a man of original ideas and of forceful character. He was a pioneer of many movements for the greater freedom and better treatment of those suffering from mental disorder which became recognized features of Scottish procedure, such as the abolition of the "airing-court system" (there have never been any airing courts or padded rooms at Woodilee), the policy of the "open door," and occupation. From him Dr. Carswell obtained much of his inspiration.

Leaving Woodilee, Dr. Carswell was appointed a medical officer, first of the Barony and then of the Glasgow Parish Council. This office provided him with exceptional opportunities for the study of social questions, in which he took a deep personal interest. He devoted special attention to the condition of the homeless poor, to the question of the control of inebriates, and to the simplification of the procedure for dealing with mental disorder. He next induced the Glasgow Parish Council to place under his sole charge the certification of all alleged insane persons in a parish with a population of 600,000. This gave him a position and an experience unique in Great Britain, and he at once found grave anomalies, against which his rational and independent spirit rebelled. He found that cases of delirium tremens among the poor could only receive adequate treatment if certified insane and sent to the mental hospital, although they might be ill for only a week or two, and that cases of mild and incipient mental disorder, which from his personal experience he knew would also recover soon, had to submit to the same stigma of certification. The legal aspect of these cases, not their medical treatment, was evidently the paramount consideration. Further, he found that legal certification stood in the way of every attempt at early treatment, for the friends of those suffering from mild and early forms of mental disorder would not allow them to be certified.

Glasgow solved these problems by providing wards for the treatment of such cases in a new general hospital at Duke Street, and by placing these under the care of Dr. Carswell. There was thus initiated in 1890, by the inspiration of Dr. Carswell, the practice of treating early and recoverable cases of mental disorder without legal procedure or certification in the wards of a general hospital, but under the care of an experienced psychiatrist, assisted by trained mental nurses—a method of dealing with such cases now made permissible in England, and advocated under the provisions of the new Mental Treatment Act. The idea that the treatment of mental derangement without certification and legal intervention is a menace to the community in these days is a relic of the past, the bogy of a Victorian novelist (Charles Reade), from whose writings (*Hard Cash*) the public still accepts its information on mental treatment, in spite of the investigations of a parliamentary committee and of a Royal Commission, neither of which found a single sane person detained in any mental hospital.

In contemplating these developments one cannot avoid being struck by the great influence that Dr. Carswell must have exercised over the Glasgow Parish Council, and the confidence it must have reposed in him. He was loyally seconded by Mr. Motion, the inspector of poor. By careful study as a young man Dr. Carswell had developed into a very ready speaker. He was gifted with a logical and argumentative mind, and marshalled his facts in the most effective manner. His choice of words also was accurate, exact, and most appropriate. It is therefore not surprising to know that in 1896 he became a member of the Town Council of Glasgow, and he was able to make his influence felt over lay circles in a way that is seldom possessed by a medical man. All this was for the public good, because no one had a deeper or a fuller insight into the sufferings of the poor in sickness and in domestic difficulties than Dr. Carswell, from his personal experiences, and no one approached the solution of these with a clearer or more sympathetic mind.

Dr. Carswell, owing to his definite opinions and to the clearness with which he expressed them, was often employed in medico-legal cases, but the most interesting and dramatic case in his career was one in which he was involved himself. A Clyde pilot brought an action against Dr. Carswell and another physician for wrongous and careless certification. The pilot lost his case and appealed to a higher court, where the case was again given against him. It is interesting to record as evidence of the satisfactory methods employed in Scotland that this is the only action against a physician who has certified a patient ever brought into court since the Scottish Lunacy Act was passed in 1887, and, as is recorded, it was lost. The Clyde pilot was not satisfied with the result of his lawsuits, and determined to bring Dr. Carswell into court again, where he would be compelled to admit that the pilot had always been a sane man. He bought a revolver and fired three shots at Dr. Carswell, wounding him in the thigh. At the trial the Crown alleged that the prisoner was insane; but, for the defence, two physicians were prepared to say that he was not insane. The jury took the latter view, and found that he was not insane, and was guilty of an assault. The judge, Lord MacLaren, said that in effect the finding was one of common assault, but he would not take it from any jury that a man could buy a pistol fit to kill, and fire it three times into the body of another man, with the idea of inflicting only slight injury upon him, and he therefore sentenced him to penal servitude for ten years. As a matter of fact, one of the bullets passed within an eighth of an inch of the femoral artery. The prisoner was first sent to Peterhead, there found to be insane, and then placed in the criminal lunatic wards of Perth Prison, where he died insane.

Dr. Carswell was lecturer on mental diseases at the Anderson College Medical School. In 1924 he was appointed Maudsley lecturer of the Royal Medico-Psychological Association, and in 1928 Morison lecturer to the Royal College of Physicians, Edinburgh. He was interested in the problems connected with inebriety, in the views upon uncontrollable impulse and responsibility for crime, and in the physiological aspects of the causation of mental disorder, but he had little sympathy with psycho-analytic theories. In 1914 he was appointed a Commissioner of the General Board of Control, and retired about ten years ago.

Dr. Carswell's name will be remembered in the history of psychiatry for the practical measures he induced the parish of Glasgow to take to simplify and improve the early treatment of the mild and recoverable forms of mental disorder. These measures were afterwards adopted in other cities, and they played an important part in effecting changes in our laws, especially those of England. Every reformer will understand the amount of inertia that had to be overcome by him, some of it due to apathy, some to ignorance, and much more to the conservatism of human nature, and will ever hold Dr. Carswell's labours in very high honour. His home life was a happy one, and he was ably supported by Mrs. Carswell in all his difficulties. The one great blow in their lives, from which they never completely recovered, was the loss of a son in the war. He also leaves a son—a barrister—and a daughter, both of whom have literary tastes.

GEORGE M. ROBERTSON.

J. A. C. KYNOCH, M.B., LL.D., F.R.C.P.ED., F.R.C.S.ED.,

Emeritus Professor of Obstetrics, University of St. Andrews

Dr. John Alexander Campbell Kynoch, emeritus professor of obstetrics at St. Andrews University, who died suddenly on June 23rd at Birnam, was born at Forres, Morayshire, in 1863, and received his medical education at Edinburgh University, where he graduated M.B., C.M. in 1887. Deciding after graduation to specialize in midwifery and gynaecology, he had an extended course of study at the Universities of Berlin, Vienna, Bonn, and Munich. On his return to this country in 1889 he was appointed house-surgeon at Dundee Royal Infirmary, and, later, resident medical officer at the Glasgow Maternity Hospital. Thereafter he spent some time at the Rotunda Hospital, Dublin, and when the conjoint medical school of St. Andrews University was established at Dundee in 1898, he was appointed its first professor of midwifery, and became obstetric physician and gynaecologist to the Dundee Royal Infirmary.

For many years Professor Kynoch acted as dean of the Faculty of Medicine at St. Andrews University, which, after his retirement in 1928, conferred upon him the degree of Doctor of Laws. He was elected a Fellow of the Royal College of Physicians of Edinburgh in 1897, and obtained the F.R.C.S.Ed. in 1904. He was a Fellow of the Edinburgh Obstetrical Society and of the Glasgow Obstetrical and Gynaecological Society, as well as a corresponding member of the Munich Gynaecological Society, and he acted as a vice-president of the Obstetrical Section at Annual Meetings of the British Medical Association in 1910 and again in 1914. He was also an examiner in midwifery for the Universities of Glasgow and Durham, and contributed extensively to the literature of gynaecology and obstetrics.

HENRY JOHN BLAKESLEY, F.R.C.S.

Consulting Surgeon, Leicester Royal Infirmary

Long associations with the medical and surgical life of Leicester have been severed by the death of Mr. H. J. Blakesley, F.R.C.S., consulting surgeon to the Leicester Royal Infirmary. Mr. Blakesley settled in Leicester as far back as the year 1889. After a short time he became attached to the old Leicester Provident Dispensary as one of its surgeons, and soon after was appointed assistant surgeon to the Royal Infirmary, becoming honorary surgeon in 1901. In 1919, on attaining the age of 60, he was elected consulting surgeon. During the years of the war he served on the staff of the 5th Northern General Hospital, with the rank of major, and was placed in charge of beds at the Royal Infirmary which were devoted to the treatment of wounded soldiers. In 1916 he was appointed medical officer in charge of the newly established Venereal Diseases Department at the Royal Infirmary, a position which he held to the day of his death—indeed, it was while he was actually in the wards of that department that the fatal seizure took place. He was a vice-president of the Section of Surgery when the British Medical Association met at Leicester in 1905, and he had been chairman of the Leicester Division and president of the Leicester Medical Society.

Like many other provincial surgeons of his day Mr. Blakesley was engaged in general practice for the greater part of his professional life, and was to a remarkable extent the friend and confidant of his patients. He was a man of fine courage, and came undaunted through several set-backs caused by illness and misfortune. The news of his sudden death came as a painful shock to his colleagues, and the respect and esteem in which he was held was shown by the large attendance at the funeral service at the church of St. John the Divine, with which he was closely associated for many years.

Dr. WILLIAM DARLING, a well-known practitioner of Edinburgh, died in that city on June 23rd. Born in 1871, he received his early education at the Royal High School and George Watson's College, Edinburgh, and, taking the M.A. degree of Edinburgh University, qualified as a teacher. Shortly afterwards he determined to study medicine, and graduated M.B., Ch.B. at Edinburgh in 1899. Thereafter he became house-surgeon to Leith Hospital and resident medical officer to the Chelsea Hospital for Women, and studied for a year at Marburg University. On his return to Edinburgh he took the Fellowship of the Royal College of Surgeons in 1903, and its D.P.H. in 1906. From 1903 he was busily engaged in general practice in the south side of Edinburgh up to within a few weeks of his death. For some twenty years he held the post of medical officer and lecturer in hygiene to the Edinburgh Provincial Committee Training College for Teachers at Moray House, and during this period many hundreds of students passed through his hands. He saw much war service, being in South Africa during the Boer war and afterwards associated for over twenty years with the medical unit of the Edinburgh University O.T.C., of which he was commanding officer for some years prior to 1914. As an officer of the Special Reserve he was sent abroad almost immediately after the outbreak of the war, and served in France and Flanders till after the armistice, when he held the rank of Lieut.-Colonel in the R.A.F. Medical Service. For services on the Somme he was awarded the Military Cross. Dr. Darling is survived by a widow and four children.

The death took place at his residence, Dean Park Crescent, Edinburgh, on June 25th, of Dr. ROBERT SHAND TURNER, whose family had long been connected with medical practice in Banffshire. Dr. Turner was born in 1846, and received his early education at Aberdeen, where he took the M.A. degree in 1864. Proceeding to Edinburgh to study medicine, he graduated M.B., C.M., and also obtained the L.R.C.S.Ed. in 1867, and the degree of M.D. in 1870. After being a demonstrator of anatomy at Edinburgh University under Professor Goodsir, and resident medical officer in the Royal Hospital for Sick Children, he joined his father, Dr. Robert Turner, who had been for nearly half a century in practice at Keith, Banffshire. Father and son conducted a practice between them for nearly a century in this district, the son contributing fifty-one years. Dr. R. S. Turner was medical officer of health for the burgh of Keith, and was the first medical superintendent—from 1880—of the Turner Memorial Hospital, which had been erected by the inhabitants of Keith and the surrounding districts in memory of his father. He was a keen Volunteer, and acted as Surgeon Lieut.-Colonel of the 6th V.B. Gordon Highlanders. He took a considerable interest in the local work of the British Medical Association, and was past-president of its Northern Counties Branch. On his retirement from practice in 1921 he resided in Edinburgh. He is survived by a widow, a son, and two daughters, one of whom is a graduate in medicine of the University of Edinburgh.

The death occurred at Middlesbrough of Dr. WILLIAM KNOTT, who was the senior practitioner in the town and district. Dr. Knott was born at Wolverhampton in 1857. He was educated in Middlesbrough and afterwards at Edinburgh University, graduating M.B., C.M., and later M.D. He settled in practice at North Ormesby, Middlesbrough, and acted as house-surgeon to the North Ormesby Hospital during a long period of years until that institution became large enough to require a resident. When that took place Dr. Knott was appointed to the honorary surgical staff, and served in that capacity for many years before he retired and was elected to the consulting staff. Dr. Knott served in many other public offices. He was medical officer of health to the North Ormesby Urban District Council before that area was absorbed by the borough of Middlesbrough. He was a public vaccinator, and honorary medical officer to Dr. Barnardo's Home and

to North Ormesby Orphanage. He was a member of the British Medical Association and of the Society of Medical Officers of Health, and was a life member of the St. John Ambulance Association. Dr. Knott is survived by a widow and one son, the deputy coroner for the county borough of Middlesbrough.

The following well-known foreign medical men have recently died: Dr. EUGÈNE BODIN, professor of bacteriology at the Rennes Medical School and an authority on dermatomycoses; Dr. G. COLDEFY of Paris, director of the office for the repression of the illegal practice of medicine; Dr. DONATIEN RAFFEGEAU of Paris, president of the Société de Psychologie; and Dr. MONNIER, professor of clinical medicine at the Nantes Medical School.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

THIRD M.B., B.CHIR.—(*Part I, Surgery Midwifery, and Gynaecology*): R. J. V. Battle, H. E. Blake, E. Bradbury, A. B. Carter, G. T. Cook, A. H. Dunkerley, K. V. Earle, G. R. Ellis, C. D. Evans, C. L. Ferguson, T. C. Gipson, D. R. Goodfellow, H. F. Green, G. W. Hall-Smith, A. S. Herington, J. Howell, J. Hughes, J. T. Irving, N. M. James, L. P. Jameson Evans, R. A. Jones, A. W. Langford, A. Lister, B. F. Longbotham, J. V. Lucas, G. C. Martin, F. C. Mayo, D. A. Metcalf, A. K. Monro, J. G. More Nisbett, G. G. Mowat, R. W. C. Murray, W. H. Mylechreest, C. R. L'E. Orme, J. L. Parker, G. T. Partridge, C. G. Roberts, I. C. Robertson, E. Sharp, N. Stevens, R. A. Sykes, J. E. J. Thomas, G. M. Tickler, A. B. Waters, M. Westwood, C. E. R. Wood, A. H. Zair. (*Part II, Principles and Practice of Physic, Pathology, and Pharmacology*): C. P. Bailey, G. N. Bailey, J. S. Barker, L. T. Bond, C. C. Bryson, H. S. Buckland, G. F. Carey, A. B. Carter, C. L. Collins, G. T. Cook, J. H. Cyriax, A. Eckford, W. A. Fell, D. R. Goodfellow, F. T. J. Hobday, J. I. Irving, G. D. Kersley, C. R. T. Lane, D. L. Lewis, J. W. S. H. Lindahl, G. G. Ludgater, E. H. W. Lyle, D. B. McGavin, J. M. Matthew, C. W. Morley, W. M. Niblock, R. G. Orr, J. L. Parker, J. Petro, W. H. Poole, H. E. W. Roberton, M. H. Salaman, G. H. Sanderson, W. W. Sargant, P. G. Scott, J. Sowerbutts, J. H. Spence, T. C. Stamp, E. T. W. Starkie, H. C. Stewart, J. W. Summerhayes, A. W. Vaisey, J. G. Vincent Smith, E. D. Ward, G. W. Whittall, L. K. Wills, T. D. G. Wilson, C. H. Wrigley, R. H. Young.

NATIONAL UNIVERSITY OF IRELAND

At an extraordinary meeting of the Senate, held on June 25th, it was decided that the degree of Doctor of Science (D.Sc.) *honoris causa* should be conferred upon Professor John Joly, Sc.D., F.R.S., in view of his scientific attainments and of his presidency of the Royal Dublin Society in the year of its bicentenary.

The Services

OPERATIONS ON THE NORTH-WEST FRONTIER

The following are among the names brought to notice by Sir William Birdwood, late Commander-in-Chief in India, for distinguished services rendered during operations on the North-West Frontier of India during the period April 23rd to September 12th, 1930: Colonel L. P. Brassey, I.M.S., Assistant Director of Medical Services, Peshawar District; Major M. P. Power, O.B.E., *M.C.*, R.A.M.C.; Captain H. J. Rice, O.B.E., *M.C.*, I.M.S.

DEATHS IN THE SERVICES

Colonel James Maybury Beamish, late R.A.M.C. (ret.), died at Drumdalcagney, County Cork, on April 21st, aged 86. He was born on January 26th, 1845, was educated at Queen's College, Cork, and at Bart's, and graduated as M.A. in 1865, and as M.D. and M.Ch. in 1868, in the Queen's University, Ireland. He also took the M.R.C.S. and M.K.Q.C.P. in 1871, and the D.P.H.Camb. in 1891. Entering the Army as assistant surgeon on April 1st, 1871, he attained the rank of colonel on December 9th, 1898, and retired on January 26th, 1905. As a regimental officer he served in the 48th Foot, the Northamptonshire Regiment. He served in the Afghan war of 1878-79, in Dadur and in the Bolan Pass, gaining the medal, and in the Burmese campaigns of 1885-86, receiving the frontier medal with a clasp. He was also re-employed during the war of 1914-18. He had a considerable reputation as a linguist, and was said to know seven languages, European and Oriental.

Medical News

His Majesty, accompanied by the Queen, will open the new King George Hospital at Ilford on Saturday, July 18th, and they will take this opportunity of visiting the hospital health centre on the London County Council's estate at Becontree.

The annual dinner of the British Medical Association will take place at the Grand Hotel, Eastbourne, on Thursday, July 23rd, at 7.30 p.m. As the accommodation is limited, it is desirable that members wishing to have tickets reserved should notify the Honorary Secretary, Eastbourne Meeting, Avenue House, Eastbourne, at the earliest possible date. Tickets will be allotted strictly in order of application. Vouchers entitling members to take advantage of the facilities offered by the railway companies of Great Britain can be obtained on application to the Financial Secretary of the Association. The companies will issue return tickets available from July 14th to 27th inclusive at the ordinary single fare and a third for the double journey.

A dinner of the Medical Society of Individual Psychology will be held at the Florence Restaurant on Thursday, July 9th, at 7.30 p.m. (morning dress), and will be followed by the general meeting.

At a meeting of the Victorian Branch of the British Medical Association, held on May 6th, Dr. E. R. G. Sheil, resident medical officer of the Ballarat Hospital, received from the hands of the president a cheque for £25, being the prize for an essay by final-year medical students of the Empire other than those of the British Isles, awarded by the Association in England. Occasion was taken at the same meeting of the Branch to congratulate Dr. Edgar King, F.R.C.S., the winner of the Jacksonian Prize for 1930, awarded by the Royal College of Surgeons of England (see *British Medical Journal*, April 18th, p. 689).

Detailed information about the lectures and demonstrations arranged for next week by the Fellowship of Medicine and Post-Graduate Medical Association will be found at page 20 of the *Supplement*. An intensive course in medicine, surgery, and the specialties will be held at the Prince of Wales's General Hospital, Tottenham, from July 6th to 18th; fee £5 5s. A similar course will be given at the Miller General Hospital from July 20th to August 1st; fee £3 3s. These courses will occupy the whole day, from 10.30 a.m. to 5.30 p.m., and are especially intended for general practitioners, and those needing a revision course. Syllabuses and tickets for all the courses may be had from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The thirteenth Carlsbad International Medical Educational Congress, with Special Reference to Balneology and Balneotherapy, will be held from September 13th to 19th. Thirty papers have been so far submitted on the more important hydrological aspects of internal medicine and associated surgical problems. Dr. P. Manson-Bahr (London) will give an address on the "Dawn of tropical medicine," illustrated by the main discoveries of Patrick Manson. Visitors to the congress will be guests of the town, and will be afforded every opportunity of studying the methods of treatment adopted in the Kur establishment; they will also obtain a 33 per cent. reduction on the Czechoslovakian railways. Further particulars may be obtained from Dr. Edgar Ganz, the business manager in Carlsbad.

At the annual general meeting of the London Jewish Hospital Medical Society, held on June 25th, with the president, Dr. L. Mandel, in the chair, the reports of a very successful year's activities were submitted by the hon. general secretary, Dr. L. Phillips, and the treasurer, Dr. L. Turiansky. Dr. M. Sorsby was elected president for the session 1931-32, and other officers were appointed.

A French society of gynaecology has been recently founded in Paris. Further information can be obtained from the president, Dr. F. Jayle, 20, Rue Cassette, Paris 6e.

The twenty fifth anniversary of the discovery of the Wassermann reaction was celebrated on June 1st at the meeting of the Kaiser Wilhelm Society for the Advancement of Sciences in Berlin by Professor Felix Plaut, who delivered an address on the theoretical foundation of the Wassermann reaction

Under the auspices of the Central Association for Mental Welfare a course will be held from August 29th to September 19th for persons engaged in the training of mental defectives in occupation centres, institutions, or mental hospitals There will be lectures on mental deficiency including the recognition of its various types, study of the growth of the child, and the general methods of promoting the development of speech and correcting defects Classes will be held in occupational handicrafts such as basket making, pottery, weaving, and woodwork, and instruction will be given in rhythmic training including country dancing and singing games specially adapted to the needs of defectives The fee for resident students is £14, and for the non resident, £6 10s , hostel accommodation has been secured Early application for the course is essential, and forms must, in any case, reach the office of the Central Association by July 20th The registration fee is 5s Further information may be had from the honorary secretary of the Central Association for Mental Welfare, 24, Buckingham Palace Road, S W 1

The returns from universities and university colleges in receipt of Treasury grant for the academic year 1929–30 has been issued by the University Grants Committee (H M Stationery Office, 1s 3d) In its introductory note the committee observes that the total number of full time students in the universities and colleges to which this publication relates continues to grow, though the proportion of women to men students has tended to fall slightly in recent years The distribution of full time students over the various subject groups reveals no change in the general tendency observable for several years past The percentage relations of the various groups to the total in 1929–30 were arts 53 4, medicine 19 1, pure science 16 5 technology 9 1, agriculture 1 9 In the medical group the men students increased by 310, women by 23 It is noted that the decline in the number of men medical students which had been continuous since 1923–24 came to an end with 1927–28, the next year showing an increase of 20s, and the year under review a further increase The schedule of degrees and diplomas obtained during the year and analysed according to faculties gives a total of 902 degrees and 971 diplomas under "Medicine, including dentistry" in Great Britain Full time medical and dental students numbered 8,759, of whom 7,623 were men and 1,136 were women

The London Light and Electrical Clinic in Ranelagh Road S W , of which the governing body is now the Order of St John of Jerusalem, has been put under the supervision of Sir Leonard Hill, F R S , who is also director of research and teaching at the clinic On the advice of the Medical Advisory Board, of which Sir William Willcox is chairman, honorary consultants have been appointed by whom all new patients are examined A staff of specialists in the methods of physical medicine control the treatments which are carried out by State registered nurses Payments are proportionate to the means of the patients, and are arranged by the lady almoner For those able to pay higher fees a private department is available Some 2,500 treatments are now given every week at the clinic

The issue of the *New Zealand Medical Journal* for February, 1931, contains the text of an address on cancer in relation to the air and food passages, which was broadcast by Dr James Hardie Neil for the Auckland Cancer Committee of the local Division of the British Medical Association

The issue of *Il Morgagni* for June 28th is devoted to the memory of G B Morgagni, who was born at Forlì in 1682 and died in 1771 Tributes are paid to his wide outlook and his influence on the progress of medical knowledge, as well as to the special researches for which his name is famous, and his famous treatise in five volumes, *De sedibus et causis morborum per anatomem indagatis*, which he published in 1761, at the age of 79

The current number of *Antiquity* is, like its predecessors, of varied intellectual interest An editorial note pleads for the endowment of a chair of Old English archaeology, and suggests that the necessary funds might be made available "by abolishing a few of the many useless professorships that abound" One of the articles describes the Peruvian scene on which the remarkable civilization of the Incas was superimposed , another comments on the evidences for "Noah's Flood" Under the heading of "Notes and News" is a reference to the study of fluorescences emitted by the inks of manuscripts when examined under ultra violet rays The ink used in papyri and such inks of later periods as contain gallic acid have been found so far to be inert to the rays, but some instructive results have been reported by workers who have employed this method in deciphering Chaucerian manuscripts At the Louvre the rays have assisted in revealing signs of retouching, and have proved apparently several supposed originals to be copies As they are evidently capable of exposing the brushwork of the artist, they may conceivably be a valuable aid in studying the technique of some of the old masters The great advantage of the ultra violet group of rays is that no damage is done to the painting during the examination

Professor Hans Spitzy of Vienna has been made an honorary member of the British Orthopaedic Association

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication

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The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange four lines)

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus Dublin*, telephone 62550 Dublin), and of the Scottish Office 7, Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh)

QUERIES AND ANSWERS

Frequent Micturition

"FIDES" asks for suggestions in the treatment of a patient with too frequent micturition during the daytime The urine contains no albumin or sugar specific gravity 1022 The usual remedies have been tried

Pyrexia after Confinement

"A E " writes With reference to J D s query June 20th p 1099) may I suggest that the urine be examined for bacilluria I had a similar case the patient's temperature and general condition cleared up very soon on a mixture of potassium citrate 30 grains every four hours, continued for about a fortnight

Urticaria

Dr BRUCE MACLEAN (Newcastle under Lyme) writes I suggest the administration of oxygen given subcutaneously in doses of 300 to 500 c cm per diem This is best injected by means of the Baveux apparatus but can be given from ordinary cylinders through rubber tubing and hypodermic

needle, provided the volume of escaping gas is sufficiently controlled The most suitable site for injection is the outer aspect of the thigh , a raised area of tissue equivalent to the size of a small saucer roughly indicates 200 c cm. of injected oxygen I have known subcutaneous oxygen to clear up urticaria rapidly, and also in cases where the usual therapeutic methods have failed. In one case the urticarial eruptions had advanced to such a degree as to involve the base of the tongue and larynx in addition to face and body areas , one injection of oxygen was sufficient to abate the symptoms. No doubt every focus of infection has been investigated by "Practitioner," including *x*-ray examination of the apices of the teeth. I know of one case of chronic urticaria where the symptoms were due to apical sepsis, for they entirely disappeared after the dental abscess was eradicated The fact that "the vaccine helped a little" is suggestive of streptococcal infection. I am not aware if anyone else has tried subcutaneous oxygen in urticaria, but it is well known, especially on the Continent, for the relief it gives in the early stages of asthma, which is another allergic disease. For full information on this subject see *The Nature of Disease*, Parts I, II, and III, by J E R McDonagh.

Surgeon Commander G. V HOBBS, R.N., writes: I would suggest that "Practitioner" tries one or two injections of novarsenobenzol, 0 45 gram, intravenously, with seven days' interval beween injections. I have cured two obstinate cases of urticaria by this method, and think it worth a trial.

Effect of Prolonged Injections of Insulin on Subcutaneous Tissue

"M D" writes I have been much interested to read the letter of Dr W W Jeudwine (June 27th, p. 1145) about the effects of injections of insulin, as only four days ago I came across a case similar to the one he records. This lady whom I have just seen had been in the habit of giving herself two injections daily, alternately in either upper arm just above the elbow. The effect was striking. The shaft of each upper arm showed a degree of emaciation which was in marked contrast with the apparently huge overhanging deltoids , these assumed almost Sandow-like proportions, though the patient was actually not muscular, but rather the reverse. Like Dr. Jeudwine, I do not know whether such local action of insulin is common. It would be interesting to have the opinion of somebody who has an extensive experience with diabetics

Income Tax

Life Assurance Statutory Income

"I S R" inquires what is the basis on which total statutory income has to be calculated in order to ascertain the maximum allowance of one-sixth of that total.

*** The total statutory income for any year is the total income on which the taxpayer is liable to bear income tax for that year Earnings are assessed for one year on the basis of the amount of the income of the previous year ; income taxable by deduction, such as dividends and mortgage interest, is taxed on the actual amount receivable in that year Consequently, the total statutory income for the year 1930-31 is the aggregate of, for example, the salary earned in 1929 30 plus the dividends, etc , receivable in 1930-31 As "I S R" points out, the latter are not necessarily known, either to the taxpayer or to the authorities, until the end of the year, and for that reason irritating adjustments sometimes fall due in applying the one-sixth restriction to the life assurance relief.

LETTERS, NOTES, ETC.

Medical Patents

Correction

We hasten to correct a printer's error in the letter by Dr. H H DALE on "Medical Patents," published in last week's *Supplement* (p 268, column 1, line 23). As the context plainly shows, the sentence should have read "I know that they can only do this by making it clear that they will have nothing to do with *patents* on the one hand, or secrecy on the other."

Sugar in Dietetics

Dr D C NAISMYTH (Walmer) writes. Now that sugar is found to play such an important part as an aid to the digestion of fats and in the prophylaxis and treatment of so many diseases, I am sure there must be many practitioners like myself who would be glad to be informed by the experts as to how much is known about the value of the various forms of sugar as regards the human body. What are the facts of "cane sugar *versus* beet sugar," and of "artificial sugars such as glucose *versus* natural sugar"? Is the chemically ultra-refined and often artifically coloured sugar on the market of equal value with the natural pure sugars? The difficulty of settling these questions is enhanced by the fact that feeding experiments on animals with regard to sugar are of little value. Sugar not being a natural form of food to any except insects, I am informed, though I cannot vouch for the accuracy of the statement, that bees cannot flourish on pure beet sugar I am using the term cane sugar to designate sugar from the cane, though the physiological chemists employ it to include beet sugar, etc., and I am never very sure in which sense the term is used by medical writers. I am informed from a reliable source that the sugar on the market in this country is mainly of sugar-cane origin—that is, the proportion of cane to beet sugar is about 4 to 1. I know one large school whose head takes the trouble to feed the children on pure cane sugar—being convinced of its superiority dietetically, though slightly more expensive. Glucose, a highly artificial form of sugar, is, I imagine, so popular in treatment, partly because it is the form of sugar actually absorbed from the alimentary canal, and partly because, not being so sweet as other sugars, more can be given without nauseating the patient. Except for its administration intravenously or per rectum, do these advantages outweigh the disadvantages of it being a purely artificial sugar and not nearly so palatable as pure cane sugar? Children in good health will generally take a large amount of cane sugar without objecting to its sweetness We do not often give peptone instead of protein because it is the form most easily absorbed. The whole trend of modern dietetics is to employ the natural forms of food in preference to the artificial. Is sugar an exception to this conception? Again, modern medicine advocates more sugar in the diet of the child, while dentists are against sugar. During the war, when sugar was scarce, the school dental clinics noted a large decrease in dental caries, and this in spite of a deficiency in the food of vitamin A. Will anyone be kind enough to explain these things to me?

Femoral Thrombosis in Pneumonia

Dr. T. STENNER EVANS (Swansea) writes: I was interested to read in the *Journal* (June 27th, p. 1146) an account of thrombosis of the femoral vein following pneumonia. In 1922 I published the notes of a similar case. My patient fortunately recovered from her illness, but two years later had a second attack of pneumonia, which was again complicated by femoral thrombosis, and on this occasion by pulmonary infarction also. She was very dyspnoeic for some hours and had severe pain in the left chest, but after twenty-four hours breathing became less dyspnoeic, and the patient ultimately recovered. My reason for quoting this case is that, although femoral thrombosis as a complication of pneumonia is comparatively rare, a repetition of the whole process, with ultimate recovery, appears to be very rare.

A Grenfell Calendar

An attractive calendar for 1932 is being prepared by the Grenfell Association, for the benefit of Sir Wilfred Grenfell's work in Labrador and Northern Newfoundland. A frontispiece in colour shows Sir Wilfred on the bridge of the hospital steamer *Strathcona*, and there is a page for each week, containing a reproduction from a photograph of Labrador. If this calendar proves a success it is hoped to repeat it each year The price in Great Britain is 3s. 6d ; packing and postage 6d. extra. Orders should be sent to the Grenfell Association of Great Britain and Ireland, 82, Victoria Street, S W 1.

A Sterilizable Telephone Disk

An old member of the British Medical Association has invented a simple device for disinfection of telephone mouthpieces It consists of a small metal reversible disk, which can be clipped on to vulcanite or glass mouthpieces Its greatest advantage is the ease of application ; this allows daily sterilization by boiling. We understand that supplies can be had from C Wilkinson, 64, Church Road, Upper Norwood, at 1s each, or by post 1s. 3d.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *19*.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

1 Myocardial Infarction

In a discussion of the clinical and pathological aspects of myocardial infarction M. REGNIER and L. DESCLIN (*Rev. Belge des Sciences Méd.*, January, 1931, p. 1) recall the fact that rich anastomoses unite the branches of the coronary arteries and the vasa vasorum of the aorta and pulmonary artery. A twig from the right coronary is the principal blood supply to the conducting system. The most dangerous consequences of infarction are derangements of rhythm, and immediate or late aneurysm formation. Coronary obliteration occurs either abruptly through embolism, or gradually as a result of decrescent coronary disease or syphilitic aortitis. Infarction resulting solely from vascular spasm has been observed in cases of epilepsy. The authors comment on the great frequency of myocardial cicatrices discovered at necropsies even when there has been no history of thoracic pain. The patients described in their present communication showed the usual symptoms and signs; it is believed that leucocytosis continuing after about six days indicates an extension of the necrotic process. Pericardial friction is discovered in a minority of cases, and when present is often variable and transitory. Among the disorders of rhythm observed were extrasystoles, paroxysmal tachycardia, auricular fibrillation, and the various grades of heart-block. The electrocardiographic findings were in general agreement with those established by other workers—an initial elevation or depression in the ST interval, the coronary wave, and ultimate T-wave inversion. These changes appear more gradually, clinically, than in the experimental animal. It is believed that previous coronary sclerosis and circulatory disorder in the first case is responsible for the difference. Recent records taken after traumatic injury to the heart in healthy individuals support this view. The authors hold that the prognosis in cardiac infarction is not so good as is generally believed, and that about two-thirds of all patients die.

2 Acquired Pulmonary Stenosis

Recording a case of acquired pulmonary stenosis, G. DE F. TRAVASSOS (*Rev. Sud-Amér. de Méd. et de Chir.*, April, 1931, p. 373) first discusses the differential diagnosis of the various cardiac murmurs. In pulmonary stenosis the right side of the heart is dilated, thus pushing the apex towards the left axilla; the systemic circulation is but little if at all involved, and the disturbances are concentrated in the lungs, giving rise to such symptoms as dyspnoea. The left side of the heart and the aorta become atrophied. The pulmonary artery below the constriction is generally dilated. Radiography provides a confirmatory sign, the heart assuming the shape of a Dutch sabot. The condition results from an endomyocarditis, the exciting cause of which is unknown. Acute articular rheumatism is not an important factor; the eruptive fevers, tuberculosis, syphilis, and traumatism of the precordial region play a part also. Travassos agrees with Hatzieganu that two mechanical factors produce the stenosis—hypertension, which causes distension; and stasis and increased volume of blood, which give rise to hypertrophy and dilatation of the right heart. The poor pulmonary circulation, by modifying the lung tissues and disturbing the intra-alveolar gaseous exchanges, favours the development of tuberculosis. The patients are usually of a robust appearance and apparently in good health; they show merely a slight facial pallor, dyspnoea on effort, which varies with the degree of stenosis, and a dry, metallic cough, also increased by exertion. As the ventricle becomes weaker and dilates, such signs as cyanosis, increased dyspnoea, oedematous pulmonary congestion, blood streaks in the sputum, true haemoptysis, and pleurisy occur. The patient may die after frequent attacks of syncope, or suddenly from pulmonary embolism or thrombosis. In most cases, however, tuberculosis with its physical signs supervenes before these asystolic symptoms appear.

3 Intracranial Aneurysms

Though intracranial aneurysms are not common, they are not very infrequent; the prognosis is bad, especially when they have begun to bleed, but the possibility of effective surgical therapy must be considered. M. SCHMIDT (*Brain*, January, 1931, p. 489) presents a study of this disease based on 23 cases which have occurred during the past fifteen years. The frequency, age incidence, and position of intracranial aneurysms are discussed; these apparently vary according to different authors. The etiology also is differently stated; congenital anomalies, local diseases in the arterial wall, traumata, arterio-sclerosis, etc., have been regarded as the most essential factors, and syphilis as unimportant. In the present series of cases Schmidt found neurosyphilis in four and arterio-sclerosis in eleven; he concludes that arterio-sclerotic aneurysms are frequent and those of syphilitic origin relatively rare. The symptoms of these aneurysms must be distinguished from those of the original disease—as, for example, arterio-sclerosis. The clinical symptoms vary, and in most cases are either not characteristic or are totally absent. Focal and local symptoms are rare, owing to the slow growth and yielding nature of the aneurysms. Symptoms of intracranial hypertension, unless bleeding has occurred, are seldom found. A frequent characteristic symptom is severe headache on the same side. All aneurysms eventually cause a subarachnoid haemorrhage with its attendant symptoms. Treatment of these aneurysms has been unsatisfactory; owing to diagnostic difficulties it must, as a rule, be conservative. Gelatin injections may have some effect in bleeding aneurysms. Lumbar puncture, important in other forms of subarachnoid haemorrhage, is dangerous and should be employed with caution and reserve. Greater knowledge of the clinical and *x*-ray features may aid diagnosis and increase the therapeutic possibility.

Surgery

4 Non-parasitic Cysts of the Liver

F. D. ACKMAN and L. J. RHEA (*Brit. Journ. of Surg.*, April 19th, 1931, p. 648) describe a case of haemorrhage into a non-parasitic cyst of the liver. A woman, aged 61, had had attacks for thirty-five years, which were characterized by a sense of weight in the epigastrium, eructations of gas, nausea, and vomiting. These attacks usually cleared up spontaneously after a few hours, but before admission to hospital a very violent pain had been experienced across the upper part of the abdomen, and there was swelling and tenderness in the right upper quadrant. Operation was undertaken and a dark-bluish globular cyst was discovered projecting from the anterior margin of the right lobe of the liver. The free surfaces of the cyst were covered with thickened peritoneum, and on palpation the cyst was found to extend some distance into the liver substance, involving the postero-inferior surface of the right lobe. A smaller cyst was seen on the superior surface of the right lobe of the liver. Both cysts were punctured, 5 c.cm. of clear amber fluid being withdrawn from the small cyst and 500 c.cm. of chocolate-coloured cloudy fluid from the larger one. Recovery was uneventful; the larger cyst was entirely obliterated, and the small one healed in five days. The pathological diagnosis was made of non-parasitic cysts of the liver of the bile duct type, with haemorrhage into the larger one and

a consequent acute inflammation. The most common location of these cysts is the antero-inferior margin of the liver; consequently pressure from their enlargement most frequently involves the gastro-intestinal tract. The larger cysts are often pedunculated; they may show a marked degree of mobility, though downward displacement is limited by the liver attachment. The diagnosis is seldom made before operation, since the symptoms are usually slight, and it is only when a complication such as haemorrhage, or an acute infection, arises that surgical treatment becomes necessary. When extirpation of the cyst is impossible owing to its situation, or inadvisable owing to infection, it should be laid open, as much of the wall resected as is necessary, and the cyst packed and marsupialized. If anatomical difficulties prevent this, the cyst may be anastomosed with the duodenum. The operative mortality is stated as 12 per cent.

5 Post-operative Hyperpyrexia in Young Children

A. NIELSEN (*Ugeskrift for Laeger*, April 16th, 1931, p. 416) discusses the problem of post-operative hyperpyrexia in young children, illustrating his observations with five cases. When his first case occurred in 1925, ending fatally, he studied the literature of the subject, to find it almost non-existent. Two more fatal cases followed. In all three the children were healthy, and they had been lightly anaesthetized with chloroform or ether for minor operations which had lasted only five to fifteen minutes. They soon recovered consciousness and seemed to be perfectly well, but in the course of two or three hours the temperature began to rise, and in seven, nineteen, and six hours respectively reached 108.5°, 108°, and 107.8°. The pulse became small, rapid, and hardly palpable, the skin was remarkably pale, and the children were flaccid and motionless. This clinical picture, being so uniform in all three cases, suggested a common cause, and Nielsen suspected that it might be an acute disturbance of the heat regulation, with inadequate loss of heat by the skin. Treatment corresponding to this supposition was adopted in the next two cases, the children being immersed in cold water at a temperature of about 63° F. for a couple of minutes or so, and then rubbed, the skin rapidly becoming pink in the process. In both cases the general condition improved quickly with the fall of the temperature, the apparently moribund and blanched children being restored to normal conditions in a few hours, the only abnormality to persist for twelve to twenty-four hours being a pulse of 130–140. The temperature took about a couple of hours after the immersion to fall to normal. Then, in an hour to two and a half hours, it rose again to about 101.8°, returning to normal in the course of the following twelve hours. Nielsen concludes that this condition is not very rare, and that it is often overlooked, the incorrect diagnostic label given to such cases being acute pneumonia or sepsis of unknown origin.

6 Surgical Cure of Hallux Valgus

C. W. PEABODY (*Journ. of Bone and Joint Surg.*, April, 1931, p. 273) considers that, although hallux valgus develops secondarily from a congenital primary metatarsus varus in many instances, yet in most cases the deformity at the big toe joint is the important one. An operative technique has been evolved on the basic principle of a skeletal or structural readjustment, and correction of the deformity, with maximum preservation of the functionally efficient tissues of the joint. The essential points for the successful operative treatment of hallux valgus are the preliminary excision of exostosis, cuneiform or trapezoid resection just proximal to the articular surface, realignment of the joint without sacrifice of any part of it, and reconstruction of mesial collateral ligament. Under local or regional anaesthesia the joint is exposed by a curved dorso-medial incision along the side of the metatarsal, and the superficial layers are dissected back only in this proximal part. Incision in the capsule begins at the edge of the phalanx, it continues around the exostosis on the dorsum of the joint and through the periosteum of the neck of the bone, where it curves mesially nearly to the plantar aspect, and continues back almost to the joint line. The bursa is freed from the exostosis and turned down in the outlined flap, which serves later for the reconstruction of the mesial collateral ligament. This flap is reflected, and the exposed exostosis is excised level with the neck of the bone. A raw bone surface for reimplantation of the capsular ligament is obtained by clearing a thin shaving from the side of the metatarsal neck. A small drill hole is made in the angle between the articular cartilage and the section by which the exostosis was removed; a second hole is placed one inch proximally through the mesial edge of the shaft. A chromic gut suture is passed through the holes and drawn aside. A wedge-shaped resection of bone is made between the holes, but not quite through the opposite cortex. After the wedge has been removed the defect in the bone is closed up by tightening and tying the suture through the drill holes. Peabody recalls 55 cases in which this operation was performed, 106 feet having been operated upon. It was found that bony union occurred in a very short time, convalescence was comfortable, the cosmetic result was perfect, the joint was mobile without loss of power, and there was no evidence of recurrence when properly fitting shoes were worn.

Therapeutics

7 Secondary Therapeutic Action of Bismuth Subnitrate

According to R. BENSAUDE and J. COTTET (*Presse Méd.*, May 9th, 1931, p. 673) the administration of bismuth subnitrate in gastro-intestinal diseases also produces marked amelioration in the frequently associated disorders of the nervous and circulatory systems. Paradigestive troubles may affect either the heart or the arterial system, and may also cause neuro-circulatory disturbances. The etiology of these is discussed, and ten illustrative cases are recorded. When properly administered in daily doses not exceeding 20 grams there is no danger of intoxication, even though the salt continues to be given for a long time. Particular benefit is derived in various forms of headache, migraine, vertigo, and hypertension, most of which, according to the authors, have an intestinal origin.

8 Gold Salts in Lupus Erythematosus

W. U. RUTLEDGE (*Arch. Derm. and Syph.*, May, 1931, p. 874) has been treating lupus erythematosus with three gold preparations—namely, gold sodium thiosulphate, 4-amino-2-aurothiophenol carbonic acid, and sodium auro-thio-benzimidazol carboxylic acid. At first most of the patients were treated entirely with the gold carbonic acid compound, but the other two preparations were used more extensively later. In cases in which toxic reactions developed, or which appeared resistant to one type of preparation, another was employed; in some cases all the three compounds were used. When the carbonic acid salt was first tried the treatment was started with minute doses, which were increased until local reactions appeared, after which there was a cessation of treatment lasting from two to six weeks until the reaction had disappeared. A dose of more than 150 mg. was rarely given at one time, although in one resistant and tolerant case a dose of 150 mg. was employed for six to eight weeks without the development of any untoward reaction other than a few small aphthous ulcers in the mouth. Injections of gold sodium thiosulphate were given once a week, or once a fortnight, in doses ranging from 50 to 500 mg., but there was no evidence that the larger doses were more effective than the smaller ones, though more prone to bring about toxic reactions. In the case of the gold salt of carboxylic acid, the doses, ranging from 50 to 100 mg., were administered once a week. The author considers that all these preparations have a definite value in the treatment of lupus erythematosus, and are superior to any other method so far devised. Of 56 cases, 18 were arrested and 30 were improved. Since

in this condition recurrences may follow an apparent clinical cure, and since five such sequels were observed in his series, he does not feel justified in counting patients as cured who remain free from a return of the condition even for a period of two years after treatment. In no case did cure follow the sole use of the carbonic acid salt, subsequent treatment with gold sodium thiosulphate or carbon dioxide snow being necessary. As a precaution against recurrence he advises eight additional injections of a gold compound during a period of three months following the disappearance of all lesions.

9 General Treatment of Acute Rheumatic Endocarditis

M. J. SHAPIRO (*Minnesota Med.*, May, 1931, p. 428) insists on the necessity of treating for several months in hospital children who show signs of acute rheumatic endocarditis. As the result of studying a group of cases of this kind, he has been impressed by the fact that these children continue to show signs of rheumatic activity for months, and even years, after the acute infection has subsided. In most cases there is chronic daily pyrexia up to 100° F., associated with frequent attacks of pain in the joints and muscles, tachycardia, pallor, fluctuating weight, with constant and progressive changes in the heart condition —a simple mitral regurgitation evolving into mitral stenosis and later aortic regurgitation. Tonsillectomy does not seem to protect the heart from rheumatic fever, or avert subsequent attacks. The only practical form of treatment would, therefore, seem to be rest in bed for some months (at least six), followed by a graduated return to ordinary activity. The author quotes Campbell and Warner, who have reported that under this treatment the number of relapses in the first three years is halved, this being the more remarkable in that the cases were of the more severe types. Special attention has to be paid to nutrition, and ultra-violet therapy is useful.

Laryngology

10 Tracheotomy in Stages

A. HAUTANT (*Ann. d'Oto.-Laryngol.*, February, 1931, p. 136) emphasizes the gravity of the prognosis of tracheotomy in aged and debilitated patients, and especially in those with progressive stenosis of such an extent that asphyxia is imminent. Two cases were observed, however, which before tracheotomy presented small laryngeal fistulae; in the first, following laryngo-fissure, and in the second, due to radium necrosis. In these cases tracheotomy was without incident. These results led the author to elaborate the following techniques of tracheotomy by stages. In cases where asphyxia is imminent an incision is made down to the trachea, and the isthmus of the thyroid is divided, and ligatured. The trachea is incised vertically, and a vertical strip of trachea, one to two millimetres wide, is resected. A silk suture is then introduced through the skin and muscle planes, passed round the neck, and tied to a similar suture from the other side of the incision. The musculo-cutaneous wound is thus kept open, and is lightly packed with sterile gauze. The incision in the trachea is sufficient to relieve the dyspnoea, and the reaction is slight. Four or five days later the tracheotomy tube is placed in position. In cases where tracheotomy is not urgent, the soft tissues are divided down to the trachea, which is not incised until the fourth or fifth day. Four days later a tracheotomy tube is placed in position. By applying this technique it has been possible to operate without any grave reaction in aged and febrile patients.

11 Paralysis of the Dilators of the Larynx

J. REBATTU and J. DECHAUME (*Rev. de Laryngol., d'Otol. et de Rhinol.*, February 15th, 1931, p. 95) review the etiology of bilateral abductor paralysis of the larynx. The condition is seen in tabes dorsalis, typhoid fever, lead poisoning, and other intoxications, and in syringobulbia. It is also found in syphilis apart from tabes dorsalis; in fact, all cases of dilator paralysis for which no other cause can be found should be considered to be of syphilitic origin. These cases give excellent results when treated by energetic antisyphilitic measures. The authors review the various possible anatomical sites of the lesion. A cortical lesion is not entertained, because so vital a function must be situated in the hind-brain. It is difficult to believe that a meningo-vascular lesion could pick out so small an area as only to affect the abductors of the larynx. Though the suggestion of peripheral neuritis is an attractive theory it is negatived by the pathological condition of the cerebro-spinal fluid (increase of lymphocytes). Evidence of a nuclear lesion is still inconclusive, though some experimenters claim to have demonstrated a dilator centre in the formatio reticularis, and distinct from the adductor centre, but the rarity of associated paralyses makes it difficult to accept this theory in the majority of cases. The last theory is that an inflammation of the ependyma of the fourth ventricle affects the dorsal vagus nucleus which lies just subjacent in the floor of the fourth ventricle. One case is described in which a histological examination of the medulla was possible. In this case the striking condition was a very localized perivascular infiltration in the region of the intrabulbar vagal fibres. There was only very little superficial involvement of the ependyma.

12 X-Ray Treatment of Chronic Tonsillitis

O. MAYER (*Wien. klin. Woch.*, April 17th, 1931, p. 521) denies that recurrent tonsillitis and tonsillar abscess are prevented by *x*-ray treatment, which may even cause severe local injury. The changes in the tonsillar tissue after irradiation include the appearance of retention cysts and sepsis, leading to abscess formation. In two patients seen by Mayer after *x*-ray treatment in America the tonsils were shrunken and cirrhotic; they exhibited numerous deep crypts which contained pus and plugs of debris. Both patients had had recurrent tonsillar abcesses since irradiation. On histological examination excessive irregular fibrosis was found with scanty adenoid tissue and deep cystic crypts, filled with pus and debris. In addition, both patients complained of severe dryness of the pharynx; the pathological appearance suggested xerosis in one case. The explanation of this very disastrous sequel is that the salivary glands were irradiated simultaneously with the tonsils; thus a parotid fistula may be induced to heal by arresting the secretion of saliva by *x* rays. Not only the parotids but also the other salivary glands were apparently rendered atrophic. Mayer remarks that irradiation of the tonsillar regions may involve large vessels and nerves as well as the cervical ganglia, resulting sooner or later in trophic changes. In both of his patients, tonsillectomy was rendered particularly difficult, not only by the small cirrhotic tonsils being so closely adherent to surrounding tissues, but also owing to the fact that severe haemorrhage occurred, requiring surgical intervention. Irradiation may retard the healing of a chronic tonsillitis, by partially obliterating the crypts, and by inducing other severe lesions.

Obstetrics and Gynaecology

13 Treatment of Occipito-Posterior Cases

A. TAYLOR (*Journ. Obstet. and Gynaecol. of the British Empire*, Spring, 1931, p. 85) pleads for a more conservative treatment of the occipito-posterior position. He asserts that dystocia is in the main confined to the group of cases in which the head is fixed in the pelvis, having entered the brim as an occipito-posterior late in pregnancy; there may be superadded an excessive obesity or a funnel-shaped pelvis. This group of cases is elusive, owing to the apparent depth of the head early during labour. For its detection the third grip is important, and a general anaesthetic is often required, but a clue to the existence of a funnel-shaped pelvis may be given by the discovery of an unduly small distance between the ischial tuberosities. After the onset of labour, therapeutic

correction from above is prevented by the control exercised by the brim on the head, and from below by the cervix; the cases must therefore continue in the occipito-sacral position, and progress is inevitably slow in primiparae. Such cases remain brim-controlled and brim-adapted for some time after the head has come into contact with the pelvic floor. It is at this juncture that the writer recommends watchful expectancy, and the administration of sedatives, rather than attempts to correct manually by the combined method, or by forceps. Bimanual examination under general anaesthesia is invaluable when the cervix is fully lifted over the head, but the latter is not showing at the vulva; successful delivery by forceps is to be expected where the head can be pushed down until no longer palpable above the brim. If the conditions for forceps application are not fulfilled Caesarean section must be seriously considered. Version, though preferable to manual rotation, is inferior to forceps application, and jeopardizes foetal life. Taylor is sceptical as to the efficacy of bolster-case and binder applications in correcting the occipito-posterior position.

14 Chronic Ulceration of the Vulva

P. P. JOSSERAN (*Thèse de Paris*, 1931, No. 115), who records eight illustrative cases in women, aged from 22 to 62, states that in addition to the well-recognized ulceration caused by syphilis, gonorrhoea, soft chancre, mycosis, tuberculosis, and cancer, prostitutes may develop a simple chronic ulceration of the vulva as the result of repeated coitus. Removal of this cause is sufficient to produce a cure. In elderly women, however, the ulcers, instead of showing normal cicatrization, undergo a fibrous and protracted organization, which is not modified by rest or local treatment.

15 Retention of the Dead Foetus in the Uterus

B. BINEL (*Riv. d'Ostet. e Ginecol. Prat.*, February, 1931, p. 69) believes that the occasional retention in the uterus of a dead foetus after expected term, although less common than in ectopic gestation, is not excessively rare; the literature contains references to retentions lasting so long as thirty or forty years. The signs of foetal death during the first half of pregnancy are malaise, slight pyrexia, nausea, and vomiting; the appearance of varices, lactation, diminution or arrest of the growth of the uterus; and acetonuria. During the second half, cessation of the foetal movements and of the heart beat may also be made out, and radiography may show Spalding's sign of overriding of the cranial bones. When the patient is first seen a considerable time after death of the foetus, signs not only of that event, but also of pregnancy, may be obscure. The uterus assumes the characters of a soft doughy tumour, and the softening of the cervix is diminished. Diagnosis is helped by detection of the uterine contractions, and occasionally by the finding of crepitus. A case is described in which a 3-para, aged 37, expelled by the vagina foetal bones fourteen months after the conception of a child that died during the sixth month.

16 Corpus Luteum Cysts and Amenorrhoea

G. COTTE (*La Gynécol.*, March, 1931, p. 129) records three cases of married women in the fourth decennium who were operated on for supposed early unruptured ectopic pregnancy. After a few weeks' amenorrhoea the patients had felt themselves pregnant; colostrum was noted, and examination showed, in addition to some uterine enlargement, a small cystic adnexal swelling which revealed itself at operation as a corpus luteum cyst. In addition, two cases are described in which ectopic pregnancy was suspected and a cystic adnexal swelling was detected; expectant treatment led to disappearance of the cyst, with return of the menses. In the first cases resection of the cyst was speedily followed by menstruation. Ablation or rupture of a corpus luteum cyst has previously been noted by Zondek and others as preceding a menstrual flow. Physiologically the coexistence of amenorrhoea and a lutein cyst is explained by the persistence in the endometrium of a pregravid phase under the hormonic influence of lutein. Why the corpus luteum cyst should persist is less clear; an occult pregnancy has been postulated (such could be excluded in Cotte's cases), but an anterior hypophyseal disturbance of function is more probable. It is certain that not all corpus luteum cysts are accompanied by amenorrhoea.

Pathology

17 Experimental Production of Scarlet Fever

T. TOYODA, Y. FUTAGI, and M. OKAMOTO (*Journ. Infect. Dis.*, April, 1931, p. 350) claim to have produced scarlet fever by throat inoculation with pure cultures of haemolytic streptococci. Two strains were used, both isolated from the throats of scarlet fever patients; at the time of inoculation they were in the third and fourth generation cultures respectively. The organisms were grown for twenty hours on an agar slope and in dextrose broth; a suspension was made; a sterile cotton swab was dipped in the suspension, and then rubbed over the throat. Three boys, apparently between the ages of 3 and 7 years, were used as volunteers; they were all Dick-positive. The time of the experiment was early winter. There had been no contact with scarlet fever for a long time. The three subjects reacted positively; the temperature rose on the second or third day after inoculation, and a rash came out on the third or fourth day, persisting for two or three days. The throat was hyperaemic and the tonsils slightly enlarged; in two of the subjects desquamation subsequently occurred. In each case the Schultz-Charlton reaction was positive, and after the attack the patient's serum became capable of producing a positive Schultz-Charlton reaction, though before inoculation the serum had been negative. Five subjects inoculated in the summer with an old strain of haemolytic streptococcus, of comparatively low virulence to mice, failed to react. Moreover, children inoculated, apparently during the winter, with filtrates of freshly isolated strains, likewise failed to react. The authors conclude that scarlet fever is caused by the haemolytic streptococcus itself, and not by any filterable body attached to it.

18 Blood Changes in Typhoid Fever

A. M. BONANNO (*Arch. di Pat. e Clin. Med.*, February, 1931, p. 341), from the study of 29 patients suffering from typhoid fever, has observed that in almost every case the blood platelets were diminished in number, the thrombopenia being more marked at the height of the illness, but returning slowly during convalescence to the normal figure. In most cases the platelet count was about 150,000 during the second week, but in one instance only 40,000 was recorded. In nine cases the coagulation time was prolonged, and in two there was retardation of clot retraction. The haemorrhagic manifestations occurring during typhoid infection, especially intestinal haemorrhage, should be attributed chiefly to the anatomical changes which determine the disease; these are favoured also by the special haemoplastic condition resulting from the infection itself in the patient, exaggerated in those cases in which a constitutional haemorrhagic diathesis is already present.

19 The Virulence of B.C.G.

J. VALTIS and F. VAN DEINSE (*C. R. Soc. de Biologie*, April 24th, 1931, p. 1109) refer to the demonstration by Valtis and Saenz that the inoculation with large doses of B.C.G. of animals previously injected with tubercle bacilli, as also the introduction of tuberculous filtrates into animals previously injected with B.C.G., does not increase the virulence of the latter. Another series of experiments, here described, was undertaken to determine whether culturing B.C.G. on tuberculous filtrates would increase its virulence; no such intensification was detected. According to the authors the results of these two series of experiments prove that prophylactic treatment with B.C.G. is entirely innocuous, even in the case of the newborn of tuberculous mothers.

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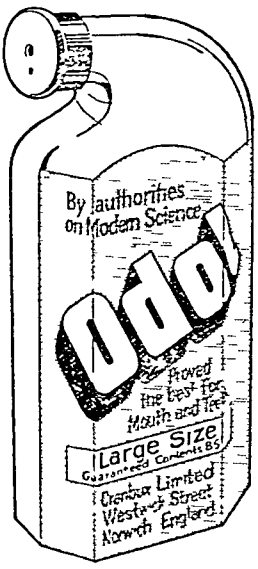
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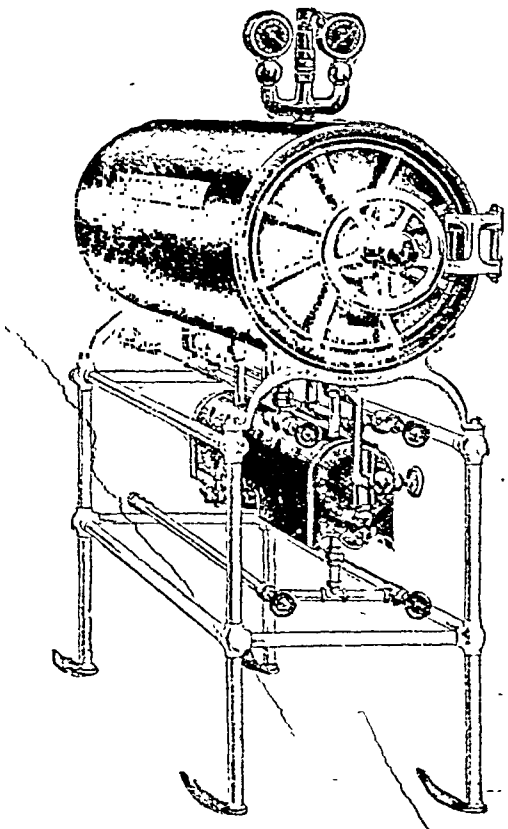
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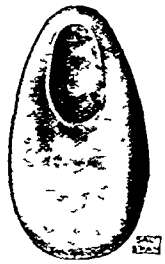
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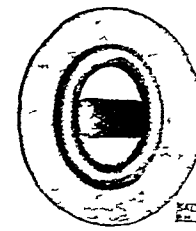


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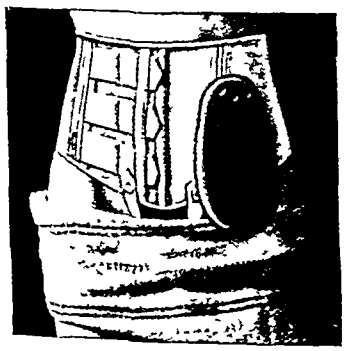
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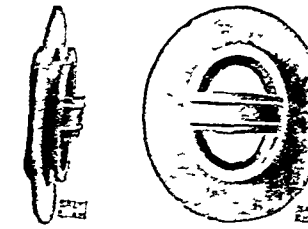
Showing bag attached to receiver.



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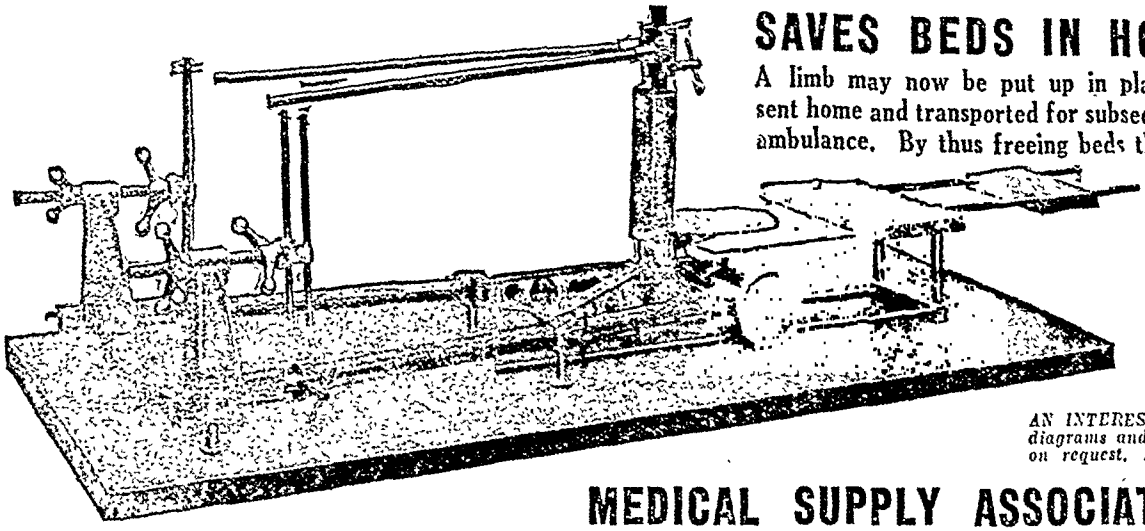
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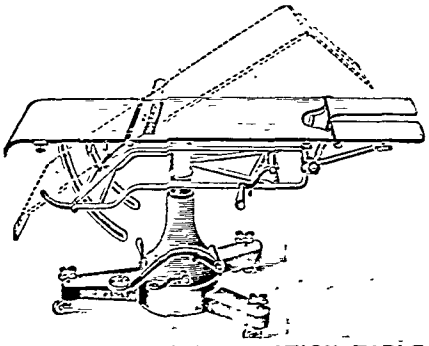
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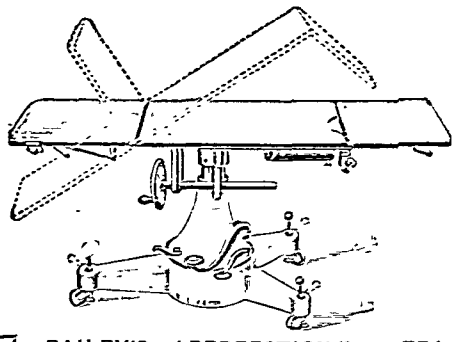
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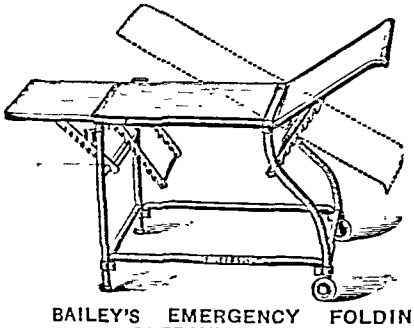
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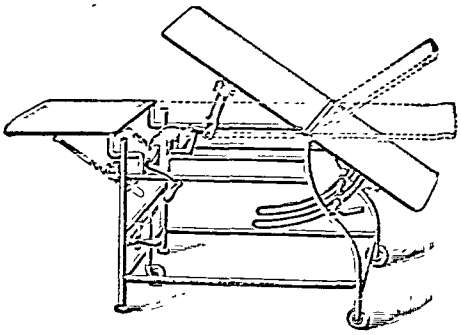
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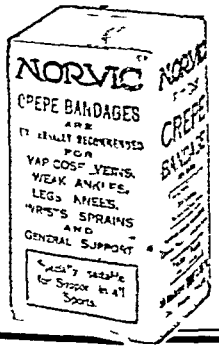
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CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON—CONVALESCENT BRANCH OF THE ABOVE.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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FOR MENTAL DISORDERS,
NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble; temporary patients; and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special department methods, including Turkish and Russian baths, the prolonged imme h Douche, Electrical bath, Plombieres treatment, etc. There is an rgery, an X-ray Room, an Ultra-violet Apparatus, and a Departm frequency treatment. It also contains Laboratories for biochemical, research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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Telephone: Teignmouth 289.

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For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

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For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 2231 GATLEY.

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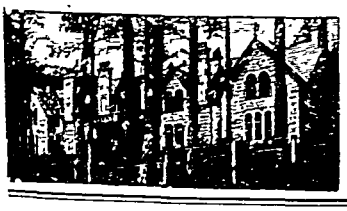
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For all information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

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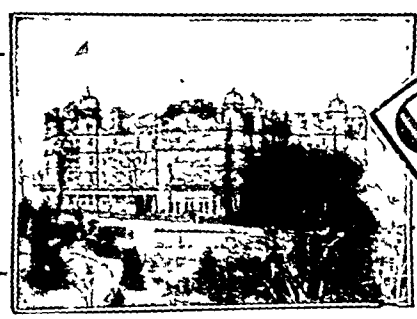
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CONTENTS – The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes Suggestions for the higher Medical Examinations Suggestions for the higher Surgical Examinations Suggestions for the Special Diploma Examinations Refresher Course. Openings for Women. Hints for writing theses Medical Prospectus gratis along with list of ... etc., on ...cation to the Principal, ...A., 17, Red Lion Sq., ... HOLBORN 6313.)



DANCING EVERY ... L ...

DIPLOMA IN PUBLIC HEALTH

London School of Hygiene and Tropical Medicine

(University of London)

The 1931-32 course of study, which qualifies students to sit for the University of London Diploma, covers a period of nine calendar months in the case of those who devote the whole of their time to the work.

The course will commence on September 28th, 1931.

The inclusive fee of 54 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instructions in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel St., Gower St., London, W.C.1.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admissions being primiparous cases). Over 2,400 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 18,000 attendances per annum.

Certificates awarded as required by the various Examining Bodies.

For rules, fees, etc, apply ARTHUR WATIS, Secretary.

LONDON SCHOOL OF DERMATOLOGY.

St. John's Hospital for Diseases of the Skin,

Leicester Square, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals Lectures and Demonstrations every Tuesday and Thursday, at 5 p m, from October to March, and four times weekly during May Clinics daily at 2 p m. and 6 p.m, Saturdays, 2 p m only Pathological Laboratory for Instruction or Research work.

For further particulars, fees, etc, apply to J E M WIGLEY, M B, Dean.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 15th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

... particulars apply to the Hon. Dean, ... School of Tropical Medicine, Pembroke Place, Liverpool.

...F.R.C.S.(Edin.).

... Museum and Anatomical ... next Exam., will commence ... work at any time ... CHAS. WHITTAKER, F.R.C.S., ... Edinburgh.

NATIONAL POST-GRADUATE SCHOOL OF RADIOTHERAPY.

The Mount Vernon Hospital and Radium Institute, Riding House Street, London, W.1.

Dean - Sir CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S.

An intensive Course in

RADIOTHERAPY

especially in its relation to Malignant Disease

will be held at the above School, commencing Monday, October 5th, 1931.

The Course will be repeated on subsequent dates.

Copy of the syllabus and full particulars may be obtained on application.

In addition, periods of hospital practice can also be arranged.

The Dean will be glad to see prospective entrants by appointment.

THOS. A. GARNER, Secretary.

MEDICAL CORRESPONDENCE COLLEGE,

19, Welbeck Street, London, W.1.

CONJOINT BOARD EXAMINATIONS

Candidates taking the First, Second, or Final Conjoint Examinations should make sure of passing at the first attempt by enrolling for the short intensive Revision Courses of the College.

POSTAL, ORAL, PRACTICAL, CLINICAL COURSES.

MICROSCOPE AND MUSEUM WORK.

Highly qualified Tutors with accurate knowledge of the special features of these examinations.

Write at once for booklet, "How to Pass the Conjoint Board Examinations." Sent free on application.

Address: The Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, London, W.1.

£350 Surgical Scholarship.

The ASSOCIATION OF SURGEONS OF GREAT BRITAIN AND IRELAND invite applications for a Surgical Scholarship of the value of £350 to be held for one year. The object of the Scholarship is to enable the holder to pursue a definite line of research or to study surgery in specified clinics either at home or abroad.

Candidates in their applications are required to state the line of research or study that they intend to pursue, and also to give a resume of their past careers. No testimonials should be sent, but each candidate is required to provide letters of recommendation, to be forwarded under separate cover, from two Sponsors.

The election will be made in November, 1931, and applications must be forwarded to the Secretary of the Association by September 30th, 1931.

E. C. HUGHES, Hon. Secretary.
The Association of Surgeons,
17, Wimpole St., London, W.1.

University of Leeds.

POST-GRADUATE COURSES IN OBSTETRICS AND ANTE-NATAL WORK AT THE LEEDS MATERNITY HOSPITAL.
(108 Beds.)

Registered Medical Practitioners are admitted to the Hospital Practice, comprising Ante-natal, Labour and Isolation Departments, for periods of 2–4 weeks.

Particulars as to vacancies at the University Women Students' Hostel, adjoining the Hospital, apply to the DEAN, School of Medicine, Leeds.

June 21st, 1930.

City of Sheffield.

Applications are invited from duly qualified Medical Women for the post of ASSISTANT MEDICAL OFFICER at the CITY GENERAL HOSPITAL, Fir Vale, Sheffield.

The Hospital contains 840 beds, and deals with all branches of medical and surgical work.

The salary offered is £250 per annum, with board, lodging, and all allowances.

Applications, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent, City General Hospitals, Fir Vale, Sheffield.

Sudan Medical Service.

Two MEDICAL OFFICERS are required for the Sudan Medical Service. Candidates must be single and should be under 30 years of age, and must have held a Resident appointment in a Large General Hospital.

Before proceeding to the Sudan the successful candidates will be required to take the Winter Course at the London School of Tropical Medicine. Fees and a subsistence allowance provided by the Sudan Government.

Pay in the Sudan commences at £E720 a year, rising to £E1,200 after thirteen years' service. On confirmation of his appointment, the selected candidate will be eligible for pensionable service.

Applications (in writing only), with copies of recent testimonials, should be made to Dr. HODSON, 24, Welbeck Street, W.1, from whom, and from the Secretaries or Deans of the principal Medical Schools, further particulars can be obtained.

County Borough of Walsall.

MANOR HOSPITAL. (270 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified gentlemen for the appointment of Junior Resident Assistant Medical Officer. The appointment will be for a period of twelve months, and the salary at the rate of £150 per annum, together with the usual residential emoluments.

The person appointed will be required to act under the general direction of the Medical Officer, from whom particulars of the appointment may be obtained.

Application, stating age, professional qualifications, and experience, accompanied by not more than three copies of recent testimonials, should be sent to the undersigned at once.

C. S. FOTHERGILL.
29, Leicester Street, Walsall. Public Assistance Officer.
June 25th, 1931.

City and County of Kingston-upon-Hull.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Corporation of Kingston upon Hull invite applications for the position of Medical Officer of Health of the City at a salary of £1,500 per annum, rising by annual increments of £50 to £1,750 per annum.

The gentleman appointed will be required to act as School Medical Officer for the City, and Port Medical Officer and Medical Inspector of Aliens for the Hull and Goole Port Sanitary Authority. He will be required to devote his whole time to the duties of the office to which he is appointed and will not be allowed to engage in private practice and all emoluments out of public monies which may be payable to or received by him will have to be paid to the Corporation. He will be required to reside in the City and to contribute to the Corporation's Superannuation Fund.

Particulars of duties and a form on which applications should be made may be obtained from the Town Clerk.

Applications endorsed "Medical Officer of Health," addressed to the Town Clerk, Guildhall, Hull, must be delivered at the Town Clerk's Office, Hull, not later than Friday, July 17th.

J. R. HOWARD ROBERTS,
Guildhall, Hull. Town Clerk.
June 29th, 1931.

County Borough of Brighton.

RESIDENT MEDICAL OFFICER at the Borough Infectious Disease Hospital and Sanatorium.

The Council invite applications for the above appointment from duly qualified, unmarried male Medical Practitioners.

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450, together with board and lodging at the Borough Sanatorium. Preference will be given to candidates entering the Public Health Service.

Forms of application and particulars of the duties to be performed, and of the conditions upon which the appointment will be made, may be obtained on application to the undersigned.

Applications (with copies of three recent testimonials enclosed), endorsed "Application for the Appointment of Resident Medical Officer," must be delivered at my office before 10 o'clock in the forenoon, on Tuesday, July 14th.

Canvassing members of the Council, either directly or indirectly, will disqualify any applicant for the position.

Town Hall, Brighton. JAS. H. ROTHWELL, Town Clerk.
June 22nd, 1931.

Leicestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified Medical Practitioners (male) under 35 years of age for the appointment of Assistant County Medical Officer.

Candidates must possess a Diploma in Public Health. The duties of the appointment will be in connection with the work of the School Medical Inspection, Tuberculosis, and Maternity and Child Welfare Services, in addition the officer will undertake general administrative duties as required.

The person appointed must devote the whole of his time to the duties of the office, and will carry out such other duties as the County Medical Officer may assign to him.

The salary will at the rate of £700 per annum, rising, subject to satisfactory service, by annual increments of £25 to £750 per annum, with travelling expenses according to the County Council scale.

The appointment is subject to the Local Government and Other Officers' Superannuation Act, 1922.

The appointment will be terminable by three months' notice on either side.

Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, by Monday, July 20th.

10, New Street, Leicester. W. J. PREER, Clerk of the Council.
June 22nd, 1931.

County Council of Middlesex.

OPHTHALMIC SURGEON.

The County Council invites applications for the appointment of Ophthalmic Surgeon (part-time) for work at Ophthalmic Clinics established by the County Council at Uxbridge, Feltham, and Teddington for the treatment of visual defects and diseases of the eye occurring amongst children attending schools under the control of the County Council, and women and children residing in the County Council's area for Maternity and Child Welfare purposes.

The possession by applicants of the F.R.C.S. or D.O.M.S. Diploma will be an additional recommendation.

The person appointed will be required to attend for one session (of about two hours) per week during the school terms at each of the aforementioned Ophthalmic Clinics. Remuneration will be at the rate of £2 12s. 6d. per session.

Applications, stating (1) name, (2) age, (3) qualifications and experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than July 18th.

No special application forms are provided. Envelopes must be endorsed "Ophthalmic Surgeon." Canvassing directly or indirectly, will be a disqualification.

Guildhall, Westminster, S.W.1. ERNEST S. W. HART, Clerk of the County Council.
June 26th, 1931.

Metropolitan Borough of Fulham

MATERNITY AND CHILD WELFARE DEPARTMENT.

PART-TIME WOMAN ASSISTANT MEDICAL OFFICER.

The Council invite applications from fully qualified Medical Women for the position of Temporary Part-time Assistant in their Maternity and Child Welfare Department. Applicants must have had experience in Infant Welfare and Ante-natal work.

The services of the officer appointed will be required on three whole days weekly, and the appointment will be terminable by one month's notice on either side.

Salary at the rate of £300 per annum.

Forms of application and list of duties can be obtained from the undersigned on receipt of a stamped addressed foolscap envelope. Applications, accompanied by copies of three recent testimonials, must be delivered to the undersigned not later than July 15th.

Canvassing will disqualify.

Town Hall, Fulham, S.W.6. WILFRED TOWNEND, Town Clerk.
June 29th, 1931.

County Council of Orkney.

Wanted an ASSISTANT MEDICAL OFFICER for the PARISH of PAPLSAY and EGILSHAY, to take up duties as soon as can be arranged.

For particulars apply, with testimonials and references to the County Clerk, Commercial Bank Buildings, Kirkwall.

Kirkwall, June 19th, 1931.

Royal London Ophthalmic HOSPITAL (Moorfields Eye Hospital), City Road, E.C.1.

OUT-PATIENT OFFICER.

Applications are invited for the post of Out patient Officer to attend on Wednesday and Saturday each week.

Candidates must be registered Medical Practitioners Salary at the rate of £100 per annum The Out patient Officer will be appointed for a period of one year and will be eligible for re appointment

Copies of regulations governing the appointment can be obtained on application

Applications, with testimonials, stating age and qualifications, must be received not later than July 9th by—

ARTHUR J. M TARRANT,
Secretary

London Hospital, E.1.

Applications are invited for the post of MEDICAL FIRST ASSISTANT & REGISTRAR The appointment is for one year, but is renewable annually, on application, for two further periods of one year. Salary £300 per annum, payable by the Hospital and Medical College jointly.

Candidates must be fully qualified medically.

Applications should arrive at the Hospital not later than by the first post on Saturday, July 11th

Further particulars may be obtained from the House Governor.

ARTHUR G ELLIOTT,
House Governor

London Hospital, E.1.

Applications are invited for the post of FIRST ASSISTANT and REGISTRAR to the Children's Department

The appointment is for one year, but it is renewable annually, on application, for two further periods of one year.

Salary £300 per annum

Candidates must be fully qualified medically.

Applications should arrive at the Hospital not later than by the first post on July 11th

Further particulars may be obtained from the House Governor

ARTHUR G ELLIOTT,
House Governor.

London Hospital, E.1.

Applications are invited for the post of HONORARY ASSISTANT ANAESTHETIST

Candidates must be fully qualified medically.

Applications, with testimonials, should be sent to the House Governor, and should arrive not later than on Saturday, July 11th.

Further particulars of the appointment may be obtained from the House Governor

ARTHUR G ELLIOTT,
House Governor.

National Hospital, Queen Square, W C 1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer, and should be sent to the undersigned, accompanied by three recent testimonials, not later than Monday, July 6th The salary is £200 per annum, with board and lodging Applicants should state if they are willing to accept a post of House Physician (salary £150,

GODFREY H HAMILTON,
Secretary

National Hospital, Queen Square, W C.1.

REGISTRAR.

Applications are invited for the post of Registrar Suggestions £200 a year Applications Suggestions, should reach Diploma Examinations Refreshments further par ings for Women Hints for writing before July 6th Medical Prospectus gratis along WILTON, Tutors, etc, on application to the Secretary Mr. E S WEYMOUTH, M.A., 17, Red London, W C 1 (Telephone HOLBORN

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS

Boys are regularly prepared for the First M B Examinations, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology New Science Buildings, containing seven laboratories two lecture rooms, science library, store rooms, etc, opened in September, 1925 Prospectus from Head Master.

RARY Three NS a l s P S

Queen Mary's Hospital for the EAST END, E 15.

Telephone: Maryland 2616.

HONORARY ASSISTANT PHYSICIAN.

There is a vacancy on the Staff of this Hospital for an Honorary Assistant Physician.

The Assistant Physician will have some beds allocated to him in the Hospital and will be required to see out patients

Applications, accompanied by copies of testimonials, from candidates, who must be duly registered Practitioners, either Graduates in Medicine of a University, or Fellows or Members of a Royal College of Physicians, should be lodged with the undersigned not later than Wednesday, July 8th

RAPHAEL JACKSON (Major),
Secretary.

Southport General Infirmary.

(150 Beds)

Special Departments for Eye, Ear, Nose, and Throat, X-Rays, Massage, Pathology, Skin, and V D.

Wanted immediately, a JUNIOR HOUSE SURGEON, fully qualified and registered, unmarried. Salary £125 per annum, with residence, board, and laundry. Excellent opportunity for gaining experience in a fully equipped, up to date Hospital, situated in be- Special experience in th anaesthetics is desirable age, nationality, and ex of testimonials, to be sent in by July 10th to Secretary, Infirmary Office, Southport.

Royal Free Hospital, EASTMAN DENTAL CLINIC, Gray's Inn Road, W.C 1.

Applications are invited from duly qualified and registered Medical Practitioners for the post of RESIDENT HOUSE SURGEON Duties will include care of wards for Tonsil and Adenoid Treatments, attendance in the Ear, Nose, and Throat Department, and administration of Anaesthetics in the Dental and Tonsil Departments Honorarium £100 per annum.

Intending candidates should submit application to the undersigned, stating age and qualifications, accompanied by copies of three recent testimonials, on or before July 6th.

REGINALD R GARRATT,
Secretary

The Children's Hospital, SHEFFIELD. (107 Beds.)

ited immediately for the

MEDICAL OFFICER

Salary £80 per annum, with board, residence, and laundry. The appointment is for six months, and afterwards the holder is eligible for the post of House Physician (salary at the rate of £100 per annum)

Candidates (female and unmarried) must be fully qualified and registered. Applications, stating age, etc, together with copies of three recent testimonials, to be forwarded to the undersigned as soon as possible

T H G. GARTLAND,
Secretary.

The Children's Hospital, SHEFFIELD. (107 Beds)

Applications are invited for the post of WHOLE TIME REGISTRAR PATHOLOGIST (non resident) The appointment is for one year, but is renewable annually Salary £350 per annum.

Candidates must be fully qualified medically. Applications, with copies of testimonials, to be sent at once to the undersigned

T H G GARTLAND Secretary

Ingham Infirmary, South Shields

Wanted, HOUSE SURGEON (male) Salary £150 p a., with residence, board, and washing No out visiting Candidates must hold registered qualifications in Medicine and Surgery The appointment will be terminable by one month's notice. Applications, stating age, and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Queen's Hospital for Children, Hackney Road, London, E 2.

HOUSE SURGEON (male or female) required on August 1st. Six months' appointment. Salary at the rate of £100 a year, with board, lodging, and washing. Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before July 11th.

CHARLES H. BESSELL,
June 1st, 1931. Secretary.

Hampstead General and North-West LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY SURGICAL OFFICER.

Applications are invited from unmarried registered Medical Women for the position of Casualty Surgical Officer, vacant on August 1st next, at the Out patient Department of the Hospital, Bayham Street, Camden Town The salary will be at the rate of £100 per annum, together with board, residence, etc, and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on July 18th next.

Bath and Wessex Children's ORTHOPAEDIC HOSPITAL, COMBE PARK, BATH

HOUSE SURGEON required, to commence duty middle of July.

The appointment will be for six months, with salary at the rate of £120 per annum, together with quarters, board, and laundry

Candidates must have had special experience in administering anaesthetics

Applications, with copies of three recent testimonials, should be forwarded at once to the undersigned.

HAROLD J. TRICKER,
June 27th, 1931. Secretary

Addenbrooke's Hospital, CAMBRIDGE

Applications are invited for the post of RESIDENT ANAESTHETIST AND EMERGENCY OFFICER (male). The appointment will be for three months from July 20th Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc, together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, July 8th

W. H. HEAD,
Secretary Superintendent

Bolton Infirmary & Dispensary. (301 Beds, including Two Auxiliary Hospitals)

Applications are invited from ladies having a registered Medical and Surgical qualification for the posts of TWO HOUSE SURGEONS Salary £150 per annum each, with board, residence, and attendance

Applications, stating age, nationality, and previous experience, together with copies of testimonials, should be forwarded to the undersigned.

ALBERT E BRISCOE,
Secretary

Bridgwater General Hospital, BRIDGWATER, SOMERSET. (62 Beds)

Applications are invited for the post of HOUSE SURGEON Salary £130 per annum for the first six months (rising to £150), with board, residence, and laundry

Candidates are desired to send applications to the Secretary not later than July 7th, stating age, nationality, qualifications, and experience, with three copies of testimonials

Duties to commence not later than July 15th.

Birmingham Maternity Hospital.

HOUSE SURGEON (man or woman) wanted for six months from August 1st (three months on District and three months in Hospital). Salary to be at the rate of £75 per annum

Applications, with full particulars and copies of testimonials, to be sent not later than July 18th to HUGH C. ASTON, 45, Newhall Street, Birmingham

Durham County Hospital, (75 Beds)

HOUSE SURGEON required immediately (two kept) Salary £150 per annum, with board and lodging

Applications, with copies only of testimonials, stating age and when at liberty, to be sent to WM R WILSON, Secretary, 79, Saddler Street, Durham.

Bristol Eye Hospital.

Applications are invited for the post of ASSISTANT RESIDENT HOUSE SURGEON, single man Salary £100 per annum Vacant immediately.

Applications to be received by Secretary by Saturday, July 18th.

Bristol Royal Infirmary.

Applications are invited for the following resident appointments for the six months commencing September 1st:

Two HOUSE PHYSICIANS
Four HOUSE SURGEONS
One HOUSE PHYSICIAN to the Cancer Research Department
One HOUSE SURGEON to the Ear, Nose, and Throat Department
One HOUSE SURGEON to the Gynæcological and Ophthalmic Department
One OBSTETRIC HOUSE PHYSICIAN
One CASUALTY HOUSE SURGEON
One ASSISTANT HOUSE SURGEON and HOUSE SURGEON to the Dermatological Department

Salaries at the rate of £60 per annum with board, apartments and laundry except in the case of the Casualty House Surgeon when the salary will be at the rate of £80 per annum with board, apartments and laundry.

One DENTAL HOUSE SURGEON

Hours of resident salary at the rate of £80 per annum but of non-resident salary at the rate £116 per annum with board.

Persons on taking up their duties House Surgeons and House Physician must become members of the Medical Defence Union.

Candidates who must be duly qualified to practise their applications, stating age together with particulars of not more than three testimonials, to be sent to the undersigned on or before July 18th.

ELLIS C. SMITH, F.C.I.S.
Secretary & House Governor.

Bristol Royal Infirmary.

Applications are invited for the post of NON-RESIDENT MEDICAL OFFICER for the years commencing September 1st, 1931. Salary at the rate of £200 per annum, with board, apartments and laundry.

The selected candidate will be required to act as House Physician or as House Surgeon and also to take up his duties must become a member of the Medical Defence Union.

Candidates who must be duly qualified to send their applications stating age together with copies of not more than three testimonials, to be sent to the undersigned on or before July 18th.

ELLIS C. SMITH, F.C.I.S.
Secretary & House Governor.

Bristol Royal Infirmary.

Applications are invited for the post of NON-RESIDENT ASSISTANT to the Obstetric Department. Candidates must be Masters of Arts of one of the Universities of Great Britain or Ireland or Fellows of the Royal Colleges of Surgeons of England, Edinburgh or Ireland or Graduates in Medicine of one of the same, and hold in addition a special practitioner's diploma in Obstetrics.

Applications, stating age, must be sent to the undersigned together with copies of not more than three testimonials, on or before July 18th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Harrogate General Hospital

Applications are invited from British subjects for the post of HOUSE PHYSICIAN for a period commencing July 11th, 1931, and terminating February 1st, 1932. Salary at the rate of £150 per annum, with board and laundry. Applications to be made on official forms, which may be had from the undersigned, should be sent in as early as possible.

The Infirmary, GEO. BALLANTYNE,
Harrogate. Secretary.

The Lady Chichester Hospital,

HOVE. (For early nervous breakdown.)
(50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, laundry and honorarium at the rate of £50 per annum. The successful candidate will be required to enter on her duties as soon as possible.

Applications must be made in writing and be accompanied by testimonials and sent to the Secretary, Mr. A. E. GRAVES, 11, North St., Hove.

June 23rd, 1931.

Buchanan Hospital,

ST. LEONARDS-ON-SEA.

Applications are invited for the post of JUNIOR HOUSE SURGEON (female) at a salary of £120 per annum, duties to commence as early as possible. Eligibility for re-election after six months' service. Applications, with testimonials, to be sent to the Matron, Buchanan Hospital, St. Leonards-on-Sea, as early as possible.

The Queen's Hospital for Children, Hackney Road, London, E.2.

RESIDENT MEDICAL OFFICER required on August 1st.

The appointment is made for six months and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, three Casualty Officers, two House Physicians, and one House Surgeon.

Salary (inclusive of panel fees) £200 per annum with board, residence and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before July 16th.

CHARLES H. BESSELL,
June 30th, 1931. Secretary.
Telephone: Bish. 6305 and 2837.

The General Hospital, Birmingham.

OPEN APPOINTMENTS.

Applications are invited for the following Resident appointments, vacant immediately:

TWO ANÆSTHETISTS (Two).—Salary £120 per annum.
HOUSE PHYSICIAN. £70 per annum.
HOUSE SURGEONS (Three). £70 per annum.

Applications, giving full details of qualifications and accompanied by testimonials (if desired), should be sent to the undersigned as soon as possible.

A. H. JEANES,
June 29th, 1931. House Governor.

The Guest Hospital, Dudley.

(General Hospital—107 Beds.)

Two HOUSE SURGEONS required, one to commence duties July 15th, and one August 23rd. Salary £160 £170 per annum according to experience, with furnished apartments, board and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications and experience and accompanied by copies of testimonials to be sent to the undersigned.

H. RAYMOND HURST,
House Governor and Secretary.
The Guest Hospital,
Dudley. June 22nd, 1931.

East Suffolk and Ipswich Hospital, Ipswich.

(265 Beds—7 Residents.)

Applications are invited for the post of CASUALTY OFFICER. Salary £120 per annum or more according to experience. Board, residence and laundry.

Applications from British (male) candidates, stating age, qualifications and experience, accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.
June 1st, 1931.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards. Applications with copies of testimonials must reach the undersigned not later than Saturday, July 11th. The appointment is for six months commencing on August 1st with an honorarium of £50.

Brompton, S.W.3. FREDERICK WOOD,
June, 1931. Secretary.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the posts of SENIOR and JUNIOR HOUSE SURGEONS for the period commencing August 1st, 1931, and terminating February 1st, 1932. Salary at the rate of £150 and £120 per annum respectively, with board and lodging. Applications to be made on official form to be had from the undersigned, should be sent in not later than July 11th.

The Infirmary, GEO. BALLANTYNE,
Harrogate. Secretary.

House Surgeon required, male or female.

British nationality. ASHFORD HOSPITAL, KENT. Salary £150 per annum. Please state experience and qualifications. Candidates must be unmarried and under 25 years of age. Duties to commence August 1st. Applications with three recent testimonials to be sent to the Hon. Secretary on or before July 9th.

Manchester Royal Infirmary.

ASSISTANT MEDICAL OFFICER TO THE DERMATOLOGICAL DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on August 1st.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointment (non-resident) is for twelve months' renewable for two further periods of one year, subject to the provisions of the By-laws as to tenure.

Attendance required on Tuesday mornings from 9 o'clock to 12 noon.

Salary at the rate of £220 per annum.

Applications must be sent, addressed to the undersigned, not later than July 9th.

By Order,
FRANK G. HAZELL,
General Supt. & Secretary.

The Victoria Hospital for Children,

Tite Street, Chelsea, S.W.3. (138 Beds.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant August 1st). The appointments are for six months. Salaries at the rate of £100 per annum with board, lodging and washing.

Candidates must attend the Hospital for the purpose of an interview at 4 p.m. on Friday, July 24th (no travelling or other expenses will be paid). They must hold Medical and Surgical qualifications and be registered under the Medical Act.

Applications with copies of three recent testimonials should be sent to the Secretary not later than first post on Wednesday, July 22nd.

By Order,
D. ST. JOHN BAMFORD, Secretary.

West Norfolk and King's Lynn General Hospital.

(75 Beds.)

The Board of Management of the above Hospital invite applications for the post of HOUSE PHYSICIAN (male or female). Duties to commence as soon as possible. To have charge of Medical and Ophthalmic beds, also to act as Casualty Officer and Resident Anæsthetist. The post, which is for six months in the first instance, offers valuable experience in both In-patient and Out-patient work. Salary £125 per annum.

Applications, stating experience and full particulars, to be sent as early as possible to—

JOSEPH E. SEARJEANT,
House Governor & Secretary.

Royal Northern Hospital,

Holloway, N.7.

Applications are invited for the post of HOUSE PHYSICIAN, vacant on August 15th.

The appointment is for nine months (six months as House Physician and three months as Out-patient Medical Officer). Salary at the rate of £70 per annum with board, residence, and laundry.

Applications with copies of testimonials, should be sent by July 11th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PAYTER,
Secretary.

South Devon and East Cornwall Hospital, Plymouth.

(240 Beds.)

HOUSE SURGEON (MALE).

Salary £100 per annum with board, residence and laundry. Appointment is for six months, and subject to renewal. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by July 15th.

ARTHUR F. CASH,
June 26th, 1931. Gen. Supt. & Secretary.

Stockton and Thornaby Hospital, Stockton-on-Tees. (150 Beds.)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months. Duties to commence on or about August 1st. Salary £130 with board, residence and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with copies of three recent testimonials to be sent to the undersigned.

JOHN WILKINSON, Secretary.

Warwick County Mental HOSPITAL, HATTON.

A vacancy has arisen for a SECOND ASSISTANT MEDICAL OFFICER. Candidates must have had considerable experience in the treatment of acute mental disorders, and be able and willing to conduct pathological investigations, etc.

The salary is £450 per annum, rising by £25 per annum to a maximum of £500, together with board, apartments, etc. In addition, £50 per annum is given for a qualification in Psychological Medicine.

In the event of a married man being appointed the salary would commence at £600 per annum with no emoluments.

There are no married quarters.

Applications, together with copies of testimonials, should be sent to the Medical Superintendent at the Hospital.

All Saints' Hospital (for Genito-URINARY DISEASES).

In patient Dept.: 91, Finchley Road, N.W.8.
Out patient Dept. & Secretary's Office: 49,05, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required immediately for periods of three months as Junior House Surgeon (non-resident), followed subject to the approval of the Board of Management, by a period of three months as Senior House Surgeon (resident). Salary will be at the rate of £150 per annum, with board and laundry during the resident period. The duties of the non-resident House Surg on consist of attendance at the Out-patient Dept. every afternoon and three evenings weekly.

Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should be sent immediately.

D. H. EADE, Secretary.

Bury Infirmary, Lancashire.

Applications are invited for the post of THIRD HOUSE SURGEON, who must have both Medical and Surgical qualifications. The appointment is for six months, at a salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not later than July 11th, endorsed "Third House Surg on."

Particulars of duties may be had on application.

ALEX. W. MAITLAND,
Honorary Secretary.

Royal Liverpool Babies' Hospital [illegible] AND CROFTON RECOVERY [illegible]OMEN,

Required on October 1st, RESIDENT MEDICAL OFFICER for the above Hospitals. The appointment to be for a period of six months. Salary at the rate of £200 per annum. Applications, with copies of testimonials, to be sent to the Chairman of the Hospital, c/o the Child Welfare Association, 9, Copperas Hill, Liverpool, on or before 12 noon Saturday, July 18th.

The Children's Hospital, SUNDERLAND. (70 Beds.)

Wanted, Two RESIDENT MEDICAL OFFICERS (female)—one middle of June, one middle of July. Candidates must possess double qualifications (registered). Salary £100 per annum, with board, residence, and laundry. The appointments are for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

[illegible]t Yarmouth General

Applicati[illegible] HOSPITAL. (72 Beds.)
Registrar [illegible]

[illegible] invited for the post of [illegible]ne of two appointments)
Medical Prospectus gratis [illegible] and unmarried [illegible]£140 per annum, with
Tutors, etc., on applicatio[illegible]ndry.
Mr. E. S. WEYMOUTH, M.A., [illegible]
London, W.C.1. (Telephone: [illegible] and qualifications, [illegible] recent testimonials,
[illegible]igned.
[illegible]ENNINGS.
Secretary.

TAUNTON SCH[illegible] Hospital,

TAUNTON.

A PUBLIC SCHOOL FOR BO[illegible]
Boys are regularly prepared for [illegible] HONORARY
M.B. Examinations, University Scholarsh[illegible] must be
Chemistry, Biology, etc.
Special facilities are offered for the teac[illegible]ing the
study of Chemistry, Physics, Botany, and Zoology, stating
New Science Buildings, containing [illegible]ate
laboratories [illegible] lecture rooms, science library,
store rooms, etc., opened in September, 1925.
Prospectus from Head Master.

Hove Hospital (Carr-Burton MEMORIAL), Sackville Road, Hove.

A RESIDENT MEDICAL OFFICER (male) is required, who must be unmarried and under 40 years of age. The Hospital contains 24 beds.

The appointment affords excellent opportunity for surgical experience and for acquiring knowledge of Radium Treatment.

Salary £200 per annum, with board, apartments, and laundry.

Candidates should state when they could take over the duties.

Expenses not exceeding one guinea will be paid to any applicant invited to attend for interview.

Applications must be received by the undersigned not later than July 10th.

H. AUBREY FROGGATT,
General Secretary.

Birkenhead General Hospital. (156 Beds.)

Vacancy for HONORARY SURGEON for the Ear, Nose and Throat Department.

The General Committee invite applications for the post of HONORARY SURGEON to the above Department.

Applications, stating age, qualifications, with full details of experience and posts held, together with copies of three testimonials, to be sent to the undersigned not later than July 18th.

W. H. DANIELS, A.C.I.S.,
Secretary-Superintendent.

NOTE.—The present Hon. Assistant Surgeon is eligible to apply for the above post, and has signified his intention of so doing.

Burslem Haywood & Tunstall WAR MEMORIAL HOSPITAL.

Wanted, SENIOR AND JUNIOR RESIDENT MEDICAL OFFICERS (males). Salaries £175 and £140 respectively, with board and residence. Must be fully qualified. Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me not later than July 10th. Duties to commence on July 23rd.

Public Offices, Price Street, Burslem.
F. C. POWELL, F.C.I.S., Secretary.

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry.

The appointment is for a minimum of six months from September 1st next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than 10 a.m., Wednesday, July 22nd.

Swansea General and Eye HOSPITAL. (316 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS,
Secretary-Superintendent.

Royal Lancaster Infirmary. (106 Beds.)

JUNIOR HOUSE SURGEON (male, British) required immediately. Salary £130 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be addressed to the Hon. Secretary, Royal Lancaster Infirmary, Lancaster.

Victoria Hospital for Sick CHILDREN, HULL. (Incorporated.)

RESIDENT HOUSE PHYSICIAN (lady) required. Salary £100 per annum, with board, residence, and laundry. Applications (with copies of recent testimonials), stating age, qualifications, and other particulars, to be sent to the Secretary as soon as possible.

Rotherham Hospital. (130 Beds.)

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.) (300 Beds.)

Owing to the sudden and lamented death of Mr. ANTHONY BLACKSTOCK, F.R.C.S.Eng., there is a vacancy on the Honorary Staff for a FRACTURE AND ORTHOPAEDIC SURGEON.

Applicants should possess special qualifications and experience in the treatment of fractures as well as orthopaedic surgery. The Surgeon appointed will be expected to devote considerable time daily to his hospital work, and he will be paid a substantial annual honorarium for doing so. He will be at liberty to practise privately as an Orthopaedic Surgeon, for which there is a good opening in the large and populous district served by the Hospital.

Further particulars may be obtained from the undersigned.

Wolverhampton, June, 1931.
W. H. HARPER, House Governor.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.)

HOUSE SURGEON required. The Hospital contains 240 beds, includes the usual Special Departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded immediately to the undersigned.

W. H. HARPER,
Wolverhampton. House Governor.
June 16th, 1931.

The Royal Hospital, WOLVERHAMPTON. (Incorporated under Charter.)

HOUSE PHYSICIAN required.

The Hospital contains 240 beds, the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice. Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with a salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to the undersigned.

Wolverhampton, June 20th, 1931.
W. H. HARPER, House Governor.

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

The Board of [illegible] applications for the post of [illegible] the Nose, Throat, and Ea[illegible] one day a week. By Section 6, sub-Sections 19 and 20, of the Constitution of the Hospital, every Surgeon shall be a Fellow of the Royal College of Surgeons of England.

Applications, with copies of testimonials, should be addressed to the undersigned, and delivered to the Hospital on or before Saturday, July 11th.

By Order of the Board of Management
W. M. WILCOX, Secretary.

Royal Devon & Exeter Hospital, EXETER.

HOUSE PHYSICIAN (Male).
HOUSE SURGEON TO SPECIAL DEPARTMENTS (Male).

Applications invited for either post now vacant.

Appointment for six months, candidates being eligible for re-election.

Salary £150 per annum with board, residence and laundry.

Applications, with copies of recent testimonials and certificate of registration, to be sent to the undersigned as soon as possible.

S. S. COLE,
July 1st 1931. Secretary & Manager.

The Royal Gwent Hospital, NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and as House Physician.

Salary £135, with board, lodgings, and laundry. Resident Medical Staff—Five. Eligible for promotion.

Large Out-patients' Department.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
June 29th, 1931. Secretary-Supt.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	MIDDLESEX COUNTY COUNCIL. *(Junior Assistant Medical Officer at Napsbury Mental Hospital—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	NEWPORT EDUCATION COMMITTEE. *(Assistant School Medical Officer and Medical Inspector of Schools—Male.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

July 1st, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Royal Manchester Children's HOSPITAL

Out-patients' Department, Gartside Street, Manchester.

Wanted, for the Out-patients' Department, a SENIOR MEDICAL OFFICER (non-resident). Applicants must be doubly qualified and on the *Medical Register*. Hours 9 a.m. to 4 p.m., approximately. Saturdays noon. Particulars of the duties can be obtained from the Secretary. Salary £300 per annum. The appointment is for one year with a view to extension for a further period.

Applications, stating age and experience, and accompanied by copies of not more than four testimonials, to be sent to the undersigned at the Hospital, Pendlebury, Manchester, at once.

By Order,
W. M. HUMPHRY, Secretary.

June 25th, 1931.

Hull Royal Infirmary.

(270 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (male), now vacant. The appointment will be for six months in the first instance, determinable on either side by one month's notice. Salary at the rate of £150 per annum, plus board, residence, and laundry.

Applications, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS,
House Governor.

June 1st, 1931.

The Royal Infirmary, Sunderland

(290 Beds—Six Residents.)

Wanted, HOUSE SURGEON (male), HOUSE PHYSICIAN (male). Salary £140 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

The Royal Infirmary, SHEFFIELD. (500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts—HOUSE SURGEON, OPHTHALMIC HOUSE SURGEON, ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON.

The appointments will be tenable for six months from July 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, should be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
General Superintendent and Secretary.

Board Room. June 2nd, 1931.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered. Number of Beds 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before July 8th.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

The Royal Infirmary, Sheffield.

(500 Beds.)

OPEN ELECTION.

A vacancy having arisen in the post of SURGICAL REGISTRAR to the Royal Infirmary, Sheffield, the Weekly Board invite applications therefor. Candidates must be Fellows of one of the Colleges. The appointment is a whole-time one and the successful candidate will not be allowed to engage in other work. The post will be held for one year, subject to re-election. Salary £300 per annum, with emoluments, the minimum value of which will be £100 per annum.

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.

June 17th, 1931.

The Willesden General Hospital

(Incorporated), N.W.10.

(105 Beds.)

Appointment of (a) HOUSE SURGEON, (b) HOUSE PHYSICIAN.

Applications are invited from fully qualified and registered candidates for each of the above appointments. Candidates must be unmarried.

These appointments are for a period of four months from August 1st, and the persons appointed may be eligible for subsequent appointments.

Salary—House Surgeon at the rate of £110 per annum. House Physician at the rate of £100 per annum.

Detailed applications, with copies of testimonials, should be sent addressed to the Secretary, The Willesden General Hospital, N.W.10, not later than Monday, July 13th.

June 18th, 1931.

(Appointments continued on p. 54).

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

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Up to Six Lines (32 Words) 9s.
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(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted for Week-ends, in good-class Practice within a few minutes of several West End Hospitals, part time ASSISTANT, preferably one able to do light dispensing and book keeping during evenings (6—8 p.m.) Salary £2 2/- and £3 3/- respectively. —No 4180, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship (outdoor) by Male M.B., B.Ch., ex H.S. and H.P. Four years' experience of G.P. Single. 29 years. Own car. Well received. Interview. —Address, No. 4123, B.M.A. House, Tavistock Square, W.C.1.

Wanted, beginning August, ASSISTANT, Glamorgan Colliery Practice, 20 miles Cardiff. £400, outdoor (£360 and small unfurnished house if desired). Usual bond. Refs.—Address, No. 4183, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant, with view to early Partnership, in Country Practice in Yorks. Ex. pros. for young man fond of country life. Capital air. Age, experience, refs. required. £500, early inter.— No 4131, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Woman ASSISTANT for Country Practice. Young and energetic. Good Obstetrician. Salary 5 guineas weekly, indoors. Dispenser kept.— Address, No 4133, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, young, energetic. Able to drive car or motor cycle. Usual bond. Scotch or English. Salary £300 p.a., indoor.—Address, No. 3907, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor. Salary £450. Mixed Practice in pleasant Essex Country Town. English or Scottish. Usual bond. References required. — Address, No. 4102, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant (female) in General Practice in City. State age, nationality, and other particulars —Address, No. 4106, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately, a male ASSISTANT, near Manchester.—Address, with references and recent photo., No. 4033, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant for General Practice. Work light. Car provided. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistant wanted early in August, male, single, Irish preferred, for panel and private Practice outskirts of London. Without view to Partnership. Commencing salary £250 per annum, all found.—Address, No. 4132, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (male) wanted for Central London Practice. Good terms and prospects for suitable man. Irish Graduate, with Hospital experience, preferred. References essential. — Address, No. 3927, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, North London area. Must be energetic, reliable, and recently qualified. Salary to commence £300 per annum, with furnished rooms and attendance. Abstainer preferred.—Address, No. 4134, B.M.A. House, Tavistock Square, W.C.1.

Male indoor Assistant, single, not over 30 years of age, wanted in small West Riding Town. Good opportunity of gaining experience of General Practice.—Apply, WESTERN, Reynolds & Branson, Ltd., Medical Transfer Agents, 13, Briggate, Leeds.

North Wales.—Wanted a Welsh-speaking outdoor ASSISTANT for general Practice, private and panel. District industrial and rural. Usual bond. References required. —Address, No. 4120, B.M.A. House, Tavistock Square, W.C.1.

Ophthalmic Assistantship or PARTNERSHIP wanted by M.D., B.S., D.O.M.S., male. Twelve months' Ophthalmic H.S., experienced Refractionist. Over 2 years' Eye experience. — Address, No. 4117, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO
PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2
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After Office Hours: Epsom 9142.

Wanted.—Locum, with car, for two weeks in July. Beautiful district five miles from sea. Work exceptionally light. Three to four guineas per week, petrol, and hospitality for wife.—Address, Dr. LIDGERWOOD, Week St. Mary, near Holsworthy, Devon.

Wanted. — Locum Tenens, ex H.S. and H.P., well experienced, in panel and private Practice, from now.—Address, No. 4188, B.M.A. House, Tavistock Sq., W.C.1.

General Practitioner, age 43, is willing to undertake LOCUMS or deputize in Bristol district. Own car and house.— Dr. E. PARKER, 85, Coldharbour Rd., Westbury Park, Bristol.

Locum Tenens wanted for 14 days in July. Country house in Wiltshire, with lovely garden, bowls, croquet, etc. Work very light. Hospitality for wife, plus small fee.—Address, No. 4189, B.M.A. House, Tavistock Square, W.C.1.

Locum wants Re-engagement. All recent refs., ex H.S., H.P. Free July 15th.—Write, Dr. W., 88, Birch Lane, E.1.

Medical Woman (not young), open to light LOCUM duty, no midwifery. Particulars on application.—Address, No. 4185, B.M.A. House, Tavistock Sq., W.C.1.

Ophthalmic Surgeon available LOCUM in Consulting Practice. Well qualified, considerable Hospital and private experience. Expert Refractionist. Can take full charge, including operative work.—Address, No. 4111, B.M.A. House, Tavistock Square, W.C.1.

Woman (Scotch), M.B., Ch.B., aged 28, 5 years' G.P. experience, requires LOCUM. Free July 20th—Aug. 13th and Sept. 5th onwards. London or near. Own car. £7 7s. per week inclusive.—Address, No. 4128, B.M.A. House, Tavistock Square, W.C.1.

HOLIDAY LOCUMS
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* { TEMPLE BAR 105. RIVERSIDE 1234. (*Night Calls*)

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Resident Medical SUPERINTENDENT for small Private Mental Home. Would suit retired Practitioner, or Lady. Some outside, and panel work if desired. No married quarters.—Address, No 4108, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0959), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part time. Bookkeeper Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctor, English, 9 years' experience, undertakes to run Morning and Evening Surgery in return for HOSPITALITY to himself and wife. No salary required. Country or seaside preferred. — Address, No 4104, B.M.A. House, Tavistock Square, W.C.1.

Doctor's Secretary-Receptionist. —POST wanted by Daughter of Professional Man. Shorthand, typewriting, office routine. Honours Diploma of College of Hygiene and Physical Training. — Address, No 4105, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Experienced Laboratory Attendant: Bacteriology, Section-cutting, Media Preparation. Several years' Hospital experience. Age 24.—A. V. ALLEN, 27, Luke Hall Road, Chingford, E.4.

India. — Evangelical Interdenominational Missionary Society, with Women's Hospital, urgently requires Two Post-graduate Assistants, optional scope for incalculable service. Passage paid to and fro on 4 years' agreement. Moderate salary. Apply, Secretary, 33, Surrey St. Strand, W.C.2.

Industrial Medicine. — Opening occurs for a Doctor to TAKE CHARGE of AMBULANCE ROOM in a factory employing 3,000, London district. Three years' appointment. Whole time job.—Write, stating age, qualifications, experience, fees expected, to Box Z.O. 712, c/o DEACON'S, Finchurch Avenue, E.C.3.

Lady seeks position as Reception CLERK. Thoroughly efficient typewriting, good knowledge shorthand and general secretarial work. Initiative, good address. Excellent references. Would travel if desired.— SEARLE, 5, Lincoln's Inn Fields, W.C.

State Registered Nurse, speaking fluent French and with literary ability, seeks LIGHT EMPLOYMENT, where knowledge of Medical terms would be an advantage. Could drive car.—Address, No. 4118, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

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Typewriting and Duplicating.—Testimonials, Theses, etc., neatly and accurately copied. Scientific work a speciality.—WOMEN'S BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). 'Phone, Museum 4475.

PARTNERSHIPS.

Wanted.—Partnership or panel PRACTICE by experienced Irish Catholic Graduate, age 31, married. Capital available. West Midlands or South preferred. House to rent. Income about £800. Free for interview after July 8th.—Address, No 3918, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in a busy Prac-tice, just outside London, doing £4,000 a year. A 1/3 share is for disposal, premium 1½ years' purchase. If preferred, could come in as a Salaried Partner for 6 months, at the rate of £500 a year, with unfurnished house, rates and taxes free. This only wants seeing by an enthusiastic and energetic man, because the scope is unlimited for the right man. The Practice has been in present hands for the past 25 years.—Address, in strict confidence, No 4123, B.M.A. House, Tavistock Sq., W.C.1.

Partnership.—Half share offered in sound panel and contract Practice in South-West Wales. Receipts last two years £2,400 per annum. Panel 1,600. Unopposed, and scope for increase. Suitable house available to rent. Welsh-speaking Welshman desirable, but not absolutely essential. Premium 1½ years' purchase.—"G.," c/o FEPPIS & CO., LTD., Union Street, Bristol.

Partnership.—1/3 (or more op-tional) in well-established mixed Practice averaging about £2,000 per annum. Panel 1,000 patients. Very easy terms to a well-qualified, keen, energetic English or Scotsman. Good Anæsthetist. Married or engaged. Midland City. Succession. No agents.—Address, No 4109, B.M.A. House, Tavistock Sq., W.C.1.

Partnership wanted, London, N.W., or near growing district preferred. South Graduate, aet. 27, ex H.P. and H.S.; special experience Eye, and over 3 years' G.P.; with or without prelim. Assistantship. Capital available.—No. 4182, B.M.A. House, Tavistock Sq., W.C.1.

South Midlands.—Partner, well-qualified man, required in old-established Country Practice doing about £2,000 per annum, 1/3 share (Sundays free to No 4119, B.M.A.

PRACTICES.

Wanted.—Middle-class Town PRACTICE in Scotland, £1,500—£2,000 (East from panel), preferably East Coast, but not essential, with good house to rent, containing 3 rooms and sitting room, 2 or 3 reception rooms, garden and garage.—Address, No 4116, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., Ch.B., a PRACTICE or PARTNERSHIP in Bournemouth district or Guildford district. Income £1,200—£1,500. Age 28. Capital available. Good house required.—Address, No 4124, B.M.A. House, Tavistock Square, W.C.1.

Wanted by experienced Practi-tioner, small to medium and better-class PRACTICE with good-rate panel, in residential non-industrial district of Country Town or Country. Good house. Limit £1,000—£1,500. Strict central.—No 4125, B.M.A. House, Tavistock Sq., W.C.1.

Wanted to purchase, Panel Prac-tice in industrial or middle-class district in town or country. North or Midland preferred. Receipts about £1,250 up, with house.—Full particulars to ALFD. HY. WHITTAKER, 44, Ainsworth Street, Blackburn.

Dental Practice in Industrial district of Glasgow for Sale. Drawings last year over £800.—Apply, CRAWFORD, HEPBURN & CAMERON, 257, West George Street, Glasgow.

E. Cowes, I.W.—Nucleus £260 p.a., price £300. Fine house, grounds, and garage, rent £75, or sell freehold £1,500. Scope.—Address, No 4121, B.M.A. House, Tavistock Square, W.C.1.

For Sale in important seaside South-Western town, an easily worked small PRACTICE, capable of development as no midwifery has been done for some years. Easy panel, about £300 per annum. Mild climate. Good educational facilities. Also golf, sailing, and other sports. Good house for sale or short lease. Favourable terms for cash. No agents.—No. 4114, B.M.A. House, Tavistock Sq., W.C.1.

For Sale. — Rapidly increasing PRACTICE in Northern City. Cash receipts for past year £890. Panel 600. Good house, garden, and garage, on lease. Premium 1½ years' purchase.—Address, No 4129, B.M.A. House, Tavistock Square, W.C.1.

Gloucestershire.—Country Doctor offers HOSPITALITY to another with small family, in Aug. or Sept., or would EXCHANGE PRACTICES if near sea. Large garden. Tennis court. Pleasant district.—No 4184, B.M.A. House, Tavistock Sq., W.C.1.

Holidays.—Mid Cornwall Coast. Summer.—Doctor EXCHANGE NUCLEUS Practice (est. 1½), or let house, five bedrooms, Surgery shut off. Safe sandy beach ¼ mile. Refs.—Address, No 4181, B.M.A. House, Tavistock Square, W.C.1.

Lanes Town.—Old-established.— Good house, garage, garden; rent £60. Excellent scope, growing district. Receipts £1,200. Panel 900, increasing. Price, 1 year's purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Liverpool. — Average cash re-ceipts £1,700 p.a. Panel over 2,000. Well established. Good house available to let or sell.—Premium £3,000.—Address, No 4186, B.M.A. House, Tavistock Square, W.C.1.

London Nucleus.—Small modern HOUSE, with garage. Pleasant neighbourhood. Established 8 mths. panel 50, increasing. Great scope for whole time Practitioner. Introduction given. Cheap good mortgage or house.—No 4125, B.M.A. House, Tavistock Sq., W.C.1.

London, N.W.—Over £700 p.a. Great scope. Panel roughly 300. CORNER HOUSE on long lease, excellent position; main thoroughfare; garden; good garage. Fees—Surgery, 2/6; Visits, 3/6 up. £900 cash.—No 4127, B.M.A. House, Tavistock Sq., W.C.1.

Manchester.—Old-established.— Nice house, gardens, £50. Receipts (including panel £135) over £600. Great scope. Price £1,000 or near offer (to include fittings, drugs, linoleum coverings, and good debts £600), part deferred. — MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, Brown St.

Nucleus, Kent, near boundary, London, New Estate. Receipts £200, panel 143. Ample scope for Resident, now Branch Surgery. Premium £200 for immediate disposal.—Address, No. 4107, B.M.A. House, Tavistock Square, W.C.1.

Old-established middle-class PRACTICE in pleasant residential suburb of Midland University City, averaging £750, increasing and good scope. Excellent house (6 bedrooms), good garden, garage, tennis court, lease or rent. 1½ years' purchase. Excellent opportunity.—Address, No. 3920, B.M.A. House, Tavistock Square, W.C.1.

Old-established Country Practice for Sale in Aberdeenshire. Good house for sale or let.—Address, No. 4187, B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale in residential suburb, near Dulwich College. Average £1,200 p.a. (panel £345). Midwifery refused. Vendor retiring for health reasons. Commodious house on main thoroughfare for sale (leasehold).—No. 3912, B.M.A. House, Tavistock Sq., W.C.1.

Practice wanted, about £2,000 per annum., South or West Counties or East Anglia. Hospital interest, or not averse midwifery, good fees. Private negotiation. Cash purchase.—Address, No. 4110, B.M.A. House, Tavistock Square, W.C.1.

Practice for Sale in Matlock; 600 on panel, average receipts £1,000 per year.—For details, address No 3822, B.M.A. House, Tavistock Square, W.C.1.

Sale. — Old-established General PRACTICE in West London. Income over £850. Panel about 800. House on long lease. Cash offers.—Address, No. 4027, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers. — Do not buy without expert assistance. With 50 yrs' experience Mr PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

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Amberley, Chertsey Lane, Staines.—4 bedrooms (h. and c. in each), lounge, large verandah, kitchen, bathroom, separate W.C., petrol motor, gas fires and cooker, electricity, company's water, telephone. Garage and garden leading down to 50 ft. landing stage. Good train service 28 mins. London. For sale; absolute bargain.—Apply, "G," Eze, Chertsey Lane, Staines (next door).

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Barrow-in-Furness.—Ron Island. —Large HOUSE known as "Villa Marina." Large gardens, situate near edge of sea. Easily adaptable for Nursing Home, Convalescent Home, or Private School. Vacant possession.—Apply T. KITTSON, District Estate Agent, L.M.S. Railway, 10, Walton's Parade, Preston, Lancs.

Birmingham, Edgbaston. — Im-portant and prominent CORNER HOUSE suitable for Doctor. Laboratory, consulting room. Garage for 3 cars. Vacant possession.—94, Bal-all Heath Road.

Consulting Rooms to Let.— Harley Street and District. Whole and part time. Rents £80 to £500. Lists sent on application. Rooms wanted in Harley Street district.—ELGOOD & CO., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

Doctor's widow in North London having large house, garden, car, good staff, would like some PAYING GUESTS. Terms moderate. — Address, No. 371, B.M.A. House, Tavistock Square, W.C.1.

Fashionable Seaside Health Resort, North East Coast.—Doctor's HOUSE in one of the best positions, with small but well established PRACTICE, for sale.—Address No. 4115, B.M.A. House, Tavistock Square, W.C.1.

Freehold, £2,450. — In rapidly growing residential district on outskirts County Town.—Well-built HOUSE, 10 rooms, all main services, secluded garden and orchard, 2 acres in all, greenhouse, 300 ft. up, garage, stable, etc.; 40 mins. rail London.—Address No 4101, B.M.A. House, Tavistock Square, W.C.1.

Harley Street.—Part-time Con-SULTING ROOM to Let. Times (short or long) by arrangement. With or without plate. Hand-some waiting room attendance, telephone. Appts. made.—No. 4130, B.M.A. House, Tavistock Sq., W.C.1, or 'phone Dr. E. C. Welbeck 6052.

Malvern. — For Sale, detached STONE HOUSE. Suitable for Heart Clinic or small Hostel. 3 sitting, 8 bed., dressing, and bath rooms. Sunny aspect. Electric light, gas, telephone. — Address, No. 4105, B.M.A. House, Tavistock Square, W.C.1.

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SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS
in Harley Street and leading Medical Positions.
Telephone: Langham 3927 and 3928.

Mayfair Consulting Room.—Exceptional opportunity occurs for two part time Consulting Specialists to share very handsome CONSULTING ROOM in Grosvenor Street, W.1. Name plates permitted. Excellent attendance.—Address, BM/ELHA, London, W.C.1

Part-time Consulting Room in Harley Street district.—A fine CONSULTING ROOM, with or without plate, is now available in a first class professional building. Every convenience. Rent £50 p.a.—Address, No. 3328, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Consulting Room.—Park Crescent, opposite gardens.—Well-equipped Electrical apparatus. Doctor or Masseuse. Rent from £50 to £60 p.a., inclusive, according to time.—Address, No. 4122, B.M.A. House, Tavistock Square, W.C.1.

Spacious Light and Impressive First Floor FLAT, near Wimpole Street, Harley Street, etc., comprising hall, 2 reception rooms, 3 bedrooms, large kitchen, bathroom, etc. Suitable for Doctor or Specialist as Residence and Consulting Rooms. Three rooms have parquet floors, and finishings throughout are good. Three separate entrances to flat if required. Electric passenger lift and resident Porter.—For full particulars apply to SOAR & SOAR, 7 and 8, Poultry, E.C.2. Telephone: City 2600

To be Let furnished (long or short period).—BUNGALOW, suitable for delightful holiday, on shores of Lochbroom. One living, 4 bedrooms, verandah, bath, kitchen. Indoor sanitation. H. and c. water. Plate, linen. Near village. Beautiful scenery. Sea fishing. Rent open to offer. — FOWLER, The Owls, Alton, Hants.

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Medical Surgical Sundries Ltd.
Supply Instruments, etc. First Dressings (Navy type). Wool pad, gauze pad, waterproof cover and bandage 3 in. by 6 yds. 1/9 per doz. Sample, post free, 2d.
Showroom 97, Swinderby Road, Wembley.

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—ERNEST GRIMALDI, Ltd., 148/150, Gt. Portland Street, W.1. Museum 3931 & 7236.

Undiluted Goats' Milk. — Hospitals, Sanatoriums and Convalescent Homes supplied. Samples forwarded for analysis. All goats registered with the British Goat Society.—D. DAVIES, Goat Farm, Solid Lane, Doddinghurst, Brentwood, Essex.

Very Fine Set of 500 Pathological SLIDES, 330 fully labelled, arranged in systems prepared, mounted, labelled by Chief Laboratory Assistant, London Teaching Hospital, £5 5s. Also Barnes' Axis Traction Forceps, new condition, 25/-. — Address, No. 4112, B.M.A. House, Tavistock Square, W.C.1.

The Binoscope.—See the B.M.J. of May 16th for the Physiological Treatment of Strabismus, Heterophoria, and Asthenopia. Price 7/6.—D. GREAVES, 24, Wood Ride, Haywards Heath, Sussex.

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to MEMBERS of the MEDICAL PROFESSION
CLOTHES of DISTINCTION for MEN of DISCRIMINATING TASTE. Specially Cut, Fitted, and Moulded to each individual figure, made from Finest Quality Materials and in the Best Possible Style, cost no more than mass production ready made clothes.
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SOLID FANCY WORSTED TROUSERS, £2 2s.
THE Ideal Suit for Professional or Business wear
SUITS & OVERCOATS to measure from £6 6s
SOLID WORSTED SUITS £7 7s
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GOLD MEDAL RIDING BREECHES ... from £2 2s
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Medical Missionary returning to Indian Hospital would be grateful for GIFTS of Discarded Surgical, Optical, or Laboratory Equipment, sent care Wants Department, L.M.S., 42, Broadway, Westminster, S.W.1.

Covers for Binding
Vols. I and II of the BRITISH MEDICAL JOURNAL for 1930 and previous years can be had, price 2s. 6d., by parcel post 2s. 10d. each.
Remittances must accompany all orders. Apply at the office, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

Caernarvonshire County Council.

Applications are invited for the post of DEPUTY MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER for the County of Caernarvon.
Candidates must hold a diploma in Public Health, and must have a knowledge of the Welsh language. Salary £600 per annum.
The successful candidate must devote the whole of his time to the duties of the office and will not be allowed to engage in private practice.
Applications, on forms to be obtained from the undersigned and endorsed "Deputy Medical Officer," must be delivered at this office on or before July 20th.
Dated the 29th day of June, 1931.
DAVID G. JONES,
Of the County Offices, Caernarvon,
Clerk to the County Council.

London Skin Hospital,
40, Fitzroy Square, W.1.
HONORARY PHYSICIAN required. Applications, with copies of testimonials, to be sent to the Honorary Secretary.

Cardiff Royal Infirmary.
(Associated with Welsh National School of Medicine)
Applications are invited for the undermentioned posts:
Three HOUSE SURGEONS.
One HOUSE SURGEON (Surgical Unit)
Two HOUSE PHYSICIANS
One HOUSE
One HOUSE
Salary at the rate of £250 per annum, with board and lodging. Appointments are for six months, commencing August 20th.
Forms of application can be obtained from the undersigned, and should be returned with copies of three recent testimonials, on or before August 1st.
R. ARMSTRONG,
June 30th, 1931. Medical Supt.

Beckett Hospital & Dispensary,
BARNSLEY. (152 Beds.)
The Committee invite applications for the following posts:
CASUALTY OFFICER, to take charge of injuries and Eye Wards. Capability to perform emergency operations a recommendation. Salary £250 per annum, together with board, residence, and laundry.
HOUSE PHYSICIAN. Preference will be given to applicants who have held a previous Hospital post and having pathological experience. Salary £200 per annum with board, residence, and laundry.
Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned immediately.
ARTHUR L. BOURNE,
June 22nd, 1931. Secretary Superintendent.

Liverpool Hahnemann Hospital,
HOPE STREET.
Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital.
Appointment is for six months, renewable.
Duties include occasional anaesthetics, and assisting at a wide variety of operations, general, gynaecological, ophthalmic, and aural.
Knowledge of Homœopathy desirable, but not essential.
Salary at the rate of £100 per annum.
Apply, stating age, sex, nationality, and previous experience to the Registrar before 6 p.m., July 15th.

Whitehaven and West Cumberland Hospital, Whitehaven.
(90 Beds.)
Wanted, JUNIOR HOUSE SURGEON (male or female). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum.
Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," at once.
R. HIGGINS, Secretary.

Royal Hampshire County Hospital, Winchester.
(158 Beds.)
HOUSE PHYSICIAN. Applications are invited from fully qualified men for the above post, to take up duties on August 1st. Six months' appointment. Salary £150 per annum, with board, residence, and laundry. Candidates who must be of British nationality, should make application at once to the undersigned, enclosing copies of three testimonials.
HERBERT MASLEN, Secretary.

Central London Ophthalmic Hospital, Judd Street, W.C.1.
There is a vacancy for an OUT PATIENT OFFICER to the Hospital who shall attend on four afternoons a week. Remuneration at the rate of £200 per annum. Applications, with testimonials showing Ophthalmic experience, to be submitted as early as possible. Details in regard to the post may be obtained from the Secretary, H. R. S. DRUCE.

Royal Surrey County Hospital,
GUILDFORD (182 Beds.)
Wanted, July 14th, HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.
Applications, stating essential particulars with copies of testimonials, to be sent to Secretary-*Superintendent.*

City of Birmingham.

SELLY OAK HOSPITAL

CASUALTY OFFICER (Male)

Applications are invited from fully qualified Medical Practitioners for the whole time appointment of Casualty Officer (male) at the Selly Oak Hospital Birmingham

The present Hospital accommodation is 550 beds divided into General Medical General Surgical Gynaecological, Obstetrical and Children's Disease sections There are completely equipped Laboratories and Massage, Ultra violet ray apparatus

The appointment will be for a period of six months but may be extended for a further period of not exceeding six months

The person appointed will be required to assist at operations to administer anaesthetics and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent

The salary attached to the appointment is at the rate of £200 per annum together with full residential emoluments (rations apartments laundry and attendance) The officer appointed will be required to refund to the Council all fees allowances and emoluments (other than the foregoing) received by him

Further particulars of the appointment may be obtained from the Medical Superintendent, J P STANLEY KELMAN, Esq, M B, Ch B, F R C S (Eng & Edin) at the Selly Oak Hospital to whom applications, stating age experience and qualifications accompanied by copies of recent testimonials, should be forwarded not later than Wednesday July 15th

The Council's House Birmingham. F H C WILTSHIRE Town Clerk

June 1931

Administrative County of London

HOSPITAL SERVICE.

The LONDON COUNTY COUNCIL invites applications for appointment to the undermentioned position

RESIDENT MEDICAL SUPERINTENDENT in the Public Health Department for duty at NORTH EASTERN (FEVER) HOSPITAL, St Ann's Road Tottenham, N 15

The person appointed will be required to act under the direction of the Medical Officer of Health and should occasion arise to assist at any of the other establishments or medical districts under the control of the London County Council

The salary is £1 100 a year rising by annual increments of £50 to £1 350 a year An unfurnished house or quarters free of rates taxes or water charges will be provided valued provisionally at £100 a year

Candidates must be duly qualified medical practitioners of at least 5 years' standing and must give evidence of having had experience in the administration of a hospital for infectious diseases Experience in small pox is desirable but not essential

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Clerk of the Council The County Hall Westminster Bridge S E 1 and must be returned by July 17th. Canvassing disqualifies

MONTAGU H COX,
Clerk of the London County Council

The Radium Institute,

Riding House Street, London, W 1

Applications are invited for the post of HOUSE SURGEON Candidates must be fully qualified unmarried and of British nationality The appointment is for a term of six months and the successful candidate will be required to take up the duties as early as possible

The salary will at the rate of £150 per annum with board lodging and laundry

Applications stating age qualifications and experience with copies of three recent testimonials must be received at the Institute not later than the first post on Tuesday July 7th

THOS A GARNER
Secretary

Midland Hospital, Easy Row, BIRMINGHAM

A vacancy will occur for post of HOUSE SURGEON lady or gentlemen at the above Hospital on August 9th Salary £150 per annum with board residence and laundry

The appointment includes Surgery, Gynaecology Dressings etc

Applications stating age and qualifications with recent testimonials should be forwarded at once to

JAMES O AYRES, Secretary

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE

LAKE HOSPITAL AND DARLTON HOUSE ASHTON UNDER LYNE, near MANCHESTER

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER

Applications are invited from registered Medical Practitioners for the appointment of Junior Resident Medical Officer at the above Hospital and Institution, at a salary at the rate of £150 per annum

Candidates should be unmarried

The appointment will, in the first instance be for a period of six months, the successful applicant however, will be eligible on satisfactory service for re appointment for a further period of six months at the end of that period

In addition to the salary the Junior Resident Medical Officer will be provided with the usual residential allowances

The Hospital comprises 300 beds, and the Institution 600 beds

Applications, accompanied by copies of not more than two testimonials should be forwarded to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices Preston not later than July 11th Envelopes should be endorsed "Junior Resident Medical Officer"

County Offices, Preston GEORGE FLETCHERTON, Clerk of the County Council

June 25th, 1931

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as SECOND ASSISTANT MEDICAL OFFICER (man or woman) at the Maudsley Hospital, Denmark Hill S E 5 (for treatment of incipient mental disorder) Candidates must not be more than 40 years of age (unless already in the Council's Mental Hospital service) must be registered to practise both in medicine and surgery in England and must have held a residential position in a General Hospital for six months or have had comparable general experience

Appointment pensionable under the Asylums Officers Superannuation Act 1909 Salary £625 a year, rising to £700 a year No emoluments Charges made for board lodging etc (at present £2 9/ weekly) if required to be resident In the case of a woman, marriage terminates contract of service

Application form, giving full particulars obtainable from Chief Officer (Ref E) L C C, Mental Hospitals Department Artillery House, Artillery Row, S W 1 Applications must be received by Monday, July 13th Canvassing disqualifies

MONTAGU H COX,
Clerk to the London County Council

The Manchester and District Radium Institute, Manchester

ASSISTANT RADIUM OFFICER

Applications are invited for the above appointment (male) which offers excellent opportunities for acquiring experience in Radium Therapy

Previous Clinical experience necessary, previous Radiological experience an asset but not essential

Appointment for six months in first instance but with view to permanency

Salary £300—£500 per annum, dependent upon qualifications and experience

Applications giving full details (with testimonials) to be submitted to the Hon Secretary by July 31st

Warrington Infirmary and Dispensary

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male) unmarried

Applicants who must be of British nationality, must be duly qualified Medical Practitioners

Salary £175 per annum with board apartments and laundry Applicants stating age with copies of three recent testimonials should be sent in at once to the undersigned

By Order
HENRY L ROOT,
Superintendent and Secretary

June 29th, 1931

The Kidderminster and District General Hospital. (120 Bed)

HOUSE SURGEON required

Salary £150 per annum, with residence board and laundry Applications with not more than three testimonials to be sent to the Assistant Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster

Enfield Education Committee.

APPOINTMENT OF SCHOOL DENTAL SURGEON.

The Education Committee of the Urban District Council of Enfield invite applications from registered Dental Surgeons holding a degree or diploma in Dental Surgery Salary of the office will be at the rate of £600 per annum, rising by £25 per annum to £700 per annum

The duties will be

(1) Dental Inspection and Treatment of School Children under the supervision of the School Medical Officer

(2) such other Dental work as required by the Enfield Education Committee

The appointment will be full time and subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 and to a medical examination by the Medical Officer of Health

Applications, stating age, qualifications and experience accompanied by three recent testimonials should be received at the Offices of the Education Committee Gentleman's Row Enfield, by first post, July 18 h, addressed to the undersigned

Canvassing members of the Council or Education Committee directly or indirectly, is prohibited and will disqualify

F G ARTHROPP
Director of Education

Borough of Luton.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

The Luton Borough Council invite applications for the appointment of ASSISTANT MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER

The salary is at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £600 per annum, but the commencing salary will be determined according to the experience of the selected candidate There is no Superannuation Scheme

The gentleman appointed will be required to devote the whole of his time to the duties and to act under the directions of the Medical Officer of Health

On receipt of stamped and addressed envelope, the undersigned will supply particulars of the appointment and application form

Applications (on such form) accompanied by copies of not more than three recent testimonials endorsed "Assistant Medical Officer of Health" must be delivered to me not later than Wednesday, July 22nd

Canvassing is prohibited and will disqualify.

2, Upper George Street, Luton W SMITH Town Clerk

July 4th, 1931

City of Manchester Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from fully qualified Medical Practitioners for the post of Assistant School Medical Officer

Applicants must have been qualified three years and will be required to devote the whole time to the duties of the office Preference will be given to those who have special experience in the prescription of spectacles

The salary is £300 per annum rising by yearly increments of £25 to a maximum of £750 There is also a yearly allowance of £10 for travelling expenses

The person appointed will be required to contribute to the Superannuation Scheme of the Corporation

Forms of application may be obtained from the undersigned and applications should be returned not later than July 18 h

W O LESTER SMITH
Director of Education
Deansgate Manchester Education Offices,

Kent and Canterbury Hospital.

Applications are invited for the following posts

HOUSE PHYSICIAN (Male or Female)
HOUSE SURGEON

Six months' appointments Salaries payable £125 per annum plus board residence and laundry Both of these appointments are recognized by the Universities of London for the M B and B S Examination

Applications stating age and full particulars of qualifications and enclosing copies of testimonials, should be forwarded to the undersigned

W T SOUTHWOOD
Superintendent & Secretary.

St. John's Hospital, Lewisham, S.E.13.

A HOUSE SURGEON and a CASUALTY OFFICER are required for appointment on August 1st. The appointments are resident and tenable for six months at a salary of £100 p.a. Applications, with copies of testimonials from duly registered Practitioners, should reach the undersigned not later than the morning of July 15th.

J. C. GILBERT,
Secretary-Superintendent.

St. Mary's Hospitals, Manchester

Two HOUSE SURGEONS for the WHITWORTH ST. WEST HOSPITAL (Maternity); and Two for the WHITWORTH PARK HOSPITAL (one Children's Dept. and one Gynaecological Dept.); each for a period of six months from August 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before July 16th.

R. RATCLIFFE, Secretary.

Medical Practitioners' Union Agency Limited

56, Russell Square,
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South Midlands.—Country, within one hour Town.—£1,500. Panel and appts: £600. House to rent, 3 recep., 3 bed., and attics.—No. 8878.

East Coast Resort.—Over £4,000 p.a. 1/3 share. Panel 2,000. Appts. £200. Visits 5/- up. Good house to rent.—No. 8877.

South Coast Town.—£1,750 p.a. Non-panel family type. Visits 3/6 to 10/6. House, 5 bed., 2 recep., etc.—No. 8876.

Midland Town. — £3,600 p.a. Panel 17/1,800. Appt. £220 p.a. Average fee 5/-. Suit 2 men. Scope Surgery. House, 6 bed., to rent.—No. 8874.

London Suburb, E.—About £750. Panel 600. Visits 2/6. No midwifery. Small house on lease. Premium £700 or near offer.—No. 8873

Kent Suburb. — Residential. Non-dispensing. Average £897. Panel 386. Appts. £72. Fees mostly 7/6 and 10/6. Large house (7 bed., etc.) to rent or sell cheap. House optional. Low premium.—No. 8872.

Manchester Suburb.—Over £700 p.a. Panel 150, but scope. Visits 5/- to 21/-. House, 5 bed., etc., to rent. Premium £700 or near.—No. 8870.

Manchester. — £1,500. Panel 50. Great scope. Visits 5/- and 7/6. Detached corner house, 5 bedrooms, etc., rent £50. Premium only £1,250.—No. 8869.

Midlands.—Share worth £1,000, increasing to £2,000. Small panel. Fees 5/- to 15/-. Good house at £80. Partner about 35, well qualified.—No. 8868.

London, N.—Average £1,230 p.a. Panel 1,200. Fees 2/6, 3/6, etc. Lock-up premises, but limited accommodation. Good lease.—No. 8866.

Leics.—Half share of £2,000 p.a. Country, near Town. Visits 5/- up. Panel 1,600. Roomy house to buy, others to let.—No 8855.

Urgent Sale. — South Wales. — £1,500 p.a., mostly derived from contract work and panel. *Not much opposition.* Premium £1,500, or offer.—No. 8865.

London Sub., W.—About £600. Panel about 600. Fees average 5/-. Detached corner house, 6 bed., etc., large garden. Prem. 1¼ years' purchase.—No. 8864.

South Coast. — £1,800, steadily increasing. 1/3 share now and succession shortly. Panel 864. Appts. about £200. Fees 4/- to 10/6. Rooms and houses available.—No. 8863.

South Midlands. — Within 40 miles.—£900 p.a. Unopposed. Panel 897. Good appts. Visits 5/- to 10/6. Large house [illegible]den to rent.—No. 8859.

[illegible]s.—Partly Surgical.—Over [illegible],000 p.a. Panel 1,365. Visits 3/6 to [illegible]ajor ops., 10 to 50 gns. Suitable [illegible] 8858.

[illegible]own. — About £800 and [illegible] Vendor retiring. Panel £460 p.a. [illegible]ouse, with 2 recep., 5 bed, sur[illegible]ent.—No. 8856.

[illegible]wn. — Over £1,100 p.a. [illegible]50. Visit and med., 5/6 and [illegible]£1,600 on terms. House, 3 [illegible]ery, etc. For sale at £1,200.

[illegible]wn. — Over £2,200 [illegible]20. Appts £50. Fees 3/6 [illegible], 4 bed., to rent on lease.

[illegible]y. — £600 p.a. [illegible]orked. Panel over 200. [illegible]d house. For sale.—No. 8841.

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The

BRITISH MEDICAL BUREAU

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12, Stratford Place, Oxford St., London,

or its Northern Branch at
33, Cross Street, Manchester.

or its Newcastle Branch at
7, Windsor Place, Newcastle-on-Tyne.

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HIS HEALTH
HIS HOME
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AND
HIS CAR

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(Limited by Guarantee),
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TAVISTOCK SQUARE, W.C.1.

WE CAN ALSO ARRANGE ADDITIONAL CAPITAL FOR THE PURCHASE OF A PRACTICE OR PARTNERSHIP

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED)

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FOR DISPOSAL.

Full Particulars Free on Request.

SHEFFIELD.—Excellent old established PRACTICE. Average cash receipts £1,776 Panel 1,861 Good house, 2 reception, 5 bed rooms Garage and large garden. Premium 1½ years' purchase.—No 270.

NORTH STAFFS.—INDUSTRIAL TOWN PRACTICE Cash receipts last year £1,200 Panel nearly 2,000 Good house, 2 reception, 7 bedrooms Rent approx. £55 p.a. on long lease. Premium £2,000 (to include book debts and drugs).—No 255.

LARGE LANCS TOWN.—Old established PRACTICE Average cash receipts £1,546 p.a. Panel 1,052 Excellent detached house, 3 reception, 4 bedrooms Garage and garden Rent £74 10s. p.a. Premium 1½ years' purchase. Vendor retiring.—No 267.

MANCHESTER SUBURB.—Old-established middle class PRACTICE Cash receipts for last year £2,600 Panel 1,150 Excellent detached house, 3 reception, 4 bedrooms, garden, tennis court, to rent Premium 1½ years' purchase Preliminary Partnership, with early succession, if desired.—No 275.

EAST COAST. — PARTNERSHIP in large Town Practice Income over £10,000 p.a. Panel over 5,000 Good house available, 2 reception, 4 bedrooms. Garden. Premium—1/6 or 1/4 share—1½ years' purchase.—No 258.

MANCHESTER SUBURB.—PARTNERSHIP in old-established Practice. View succession 3/5 years Cash receipts £2,100. Panel 2,155 Semi-detached house available, 2 reception, 3 bedrooms Rent £45 p.a. Premium 1/3 share £950, part by arrangement.—No 259.

SEASIDE TOWN.—MEDICAL WOMAN'S PRACTICE. Cash receipts for 1930, £600. Panel 400 Excellent rooms at £36 p.a. Premium £850 or near offer.—No 274.

SOUTH YORKSHIRE.—Old established PRACTICE Cash receipts 1931, £1,275 Panel 1,430. Excellent house, 3 reception, 4 bed rooms. Garage and good garden. Premium 1½ years' purchase.—No. 253.

YORKSHIRE (W.R.).—Excellent Country PRACTICE Cash receipts last year £1,421. Panel 880 Good freehold detached house to rent, with nice garden 4 bedrooms, 2 reception rooms. Premium—Practice—£2,175.—No 271.

LIVERPOOL (near).—Cheshire Coast Town PRACTICE. Average cash receipts £1,187 p.a. Panel 785 Much scope. Good double fronted house (freehold) 3 reception, 4 bedrooms, garage Premium—Practice—£1,100.—No 248

MANCHESTER SUBURB.—Middle class PRACTICE Average cash receipts £1,500 p.a. Small panel Good house, 2 reception, 5 bedrooms Garage and garden. Rent £65 p.a. Premium for quick sale £1,250.—No. 261.

NORTH WEST COAST. — SEASIDE RESORT — Old established PRACTICE. Cash receipts 1930, £874 Small select panel. Excellent freehold house, 5 bedrooms Garage and garden.—No 266.

LANCS TOWN.—Old established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460 Excellent house, 3 reception, 5 bed rooms. Garage and garden. For sale or to rent for a period Premium £1,600, payable by arrangement.—No 232.

MANCHESTER.—PLEASANT RESIDENTIAL SUBURB.—Old-established PRACTICE Average cash receipts £685 p.a. Panel over 600. Much scope Excellent house, 2 reception, 4 bedrooms, garage, and good garden, to be sold, or may be rented for a period on lease Premium 1 year's purchase Vendor retiring.—No. 246.

LANCS TOWN.—Old-established PRACTICE Cash receipts 1930, £1,186 Panel 900. Much scope Excellent house, 2 reception, 4 bedrooms. Garage Premium, best offer.—No 178

SPECIAL NOTICE.

For the convenience of Practitioners, Branch Offices have been opened as under:—

LIVERPOOL & DISTRICT.
28, Exchange Street East, Liverpool.
(Tel.: Central 1970. 'Grams: "Legal, Liverpool.")

YORKSHIRE.
Phoenix Chambers, South Parade, Leeds.
(Tel.: 26771.)

NORTHERN, IRELAND.
72, High Street, Belfast.
(Tel: 7636/7. 'Grams: "Vouch, Belfast")

CHANNEL ISLANDS.—PRACTICE in beautiful district. Cash receipts for 1930, £425 Excellent house, 2 reception, 3 bedrooms, garage and large garden. Premium—Practice—£600.—No 167.

MANCHESTER SUBURB.—Good class PRACTICE. Average cash receipts £662 p.a. Small panel. Scope House, 2 reception, 5 bedrooms. Garage and garden Rent £70 p.a. Premium, best offer.—No 226

YORKSHIRE. — Near North East Coast.—PARTNERSHIP in unopposed Country Practice Cash receipts £3,000 p.a. Third share offered to suitable man about 30. Choice of houses.—No 276.

LANCS TOWN, near MANCHESTER.—Old-established PRACTICE. Cash receipts 1930, £1,406. Panel nearly 1,000 Excellent house, 2 reception, 6 bedrooms Rent £90 p.a. Good Local Hospital. Premium £2,050.—No 260.

NEAR MANCHESTER.—PLEASANT TOWN, largely residential.—Old-established PRACTICE Average cash receipts £995 p.a. Panel 902. Appointments not included £100 p.a. Great scope. Excellent detached house (freehold), 3 reception, 5 bedrooms Garage and garden and tennis court. Premium—Practice—1½ years' purchase.—No. 234.

CHESHIRE TOWN, near MANCHESTER.—PRACTICE. Cash receipts last year, £1,033 Panel 650 Good house, 3 bedrooms. Rent £45 p.a. Premium £1,330.—No 263.

ISLE OF MAN.—SEASIDE TOWN PRACTICE.—Average cash receipts £946 p.a. (£550 from panel) Nice house 3 reception, 4 bedrooms, garden. Good schools Premium, any reasonable offer.—No 173

WANTED IMMEDIATELY.—INDOOR AND OUTDOOR ASSISTANTS FOR TOWN AND COUNTRY PRACTICES, WITH OR WITHOUT VIEW. Good salaries offered State full particulars.

LOCUMTENENTS (male and female) SHOULD REGISTER AT ONCE FOR IMMEDIATE ENGAGEMENTS.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

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Telephone: Mayfair {1782 1783

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Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.

Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.

Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER"

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 S. OF ENGLAND.—Partnership in good-class non-dispensing Practice of about £6,000 p.a., in attractive Watering place No panel Suitable house obtainable Incoming Partner must be well qualified (Oxford, Cambridge, or London) and experienced in Medicine Share of one sixth to one fourth at first at 2 years' purchase

2 MIDLANDS. — Good-class non-dispensing PRACTICE of nearly £1,800 p.a. in best residential suburb of first rate City No panel Large and beautiful house in excellent position to be rented on lease Premium 1½ years' purchase.

3 NOTTINGHAMSHIRE. — Country PRACTICE averaging nearly £1,100 p.a. No panel Good house (6 bedrooms and 2 bathrooms), garage, and garden of 1½ acres, to rent on lease Hunting, etc Great scope. Premium £1,500, to include drugs.

4 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast Panel 660 Detached house (6 bedrooms), with garage and beautiful garden, to rent Hunting, shooting, fishing, etc Premium 1½ years' purchase Suitable for retired Service man

5 SUSSEX AND HANTS BORDERS. — Country PRACTICE about £800 p.a. (£440 from panel) House (6 bedrooms, etc.), with delightful garden, paddock, and garage, to rent Hunting, shooting, etc Scope. Premium £1,200

6 S. DEVON.—Partnership in Practice over £1,800 p.a. in beautiful country district near the borders of Dartmoor Suitable house available Hunting, shooting, fishing Premium for one half share 1½ years' purchase.

7 LONDON, E.C.—City Practice. Receipts 1930, over £1,300 Consultations mainly £1 1s., some £1 11s 6d and £3 3s Excellent consulting rooms Premium 1½ years' pur.

8 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast Receipts average £300 p.a. (including £100 from panel) Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's pur.

9 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel House, with 4 bedrooms and fair sized garden, to rent Good scope Premium £700 cash

10 NORTHUMBERLAND. — Practice averaging nearly £1,100 p.a. in small seaside resort. Panel 750. Semi-detached villa residence, in central position, for sale. Scope. Premium £1,100.

11 LONDON, W.—Partnership in sound non-dispensing Practice of nearly £2,300 p.a., close to West End. No panel and very little night work Partner should be aged about 35 and used to good class Practice. One-third share 2 years' purchase

12 MIDLANDS.—Partnership in easily worked good class non-dispensing Practice over £4,000 p.a., in beautifully situated county town. Panel about 1,600. Hospital in town, and incoming Partner must be a good Surgeon. One fifth share at first at 2 years' purchase.

13 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one half 2 years' purchase. Up to date Cottage Hospital.

14 DEATH VACANCY. — N. DEVON. — Country PRACTICE of over £1,600 p.a. in beautiful part. Panel over 600 House (6 bedrooms), garage, and good garden, for sale.

15 WITHIN 120 MILES OF LONDON.—Important City —PARTNERSHIP in non-dispensing Practice over £3,600 p.a. No panel. Partner should be aged about 30 and hold the F.R.C.S. Excellent prospects of Hospital appt. One third share 2 years' purchase

16 LONDON, S.E.—Practice averaging nearly £1,250 p.a. in one of the pleasantest outlying suburbs Panel under 500. Attractive semi-detached house (6 bedrooms), garage, and very nice garden, to rent. Premium 1½ years' purchase

17 S. OF ENGLAND. — Partnership in good middle class non-panel Town Practice over £5,300 p.a. Suitable house to purchase. Premium one-fourth share £2,000. Preliminary Assistantship

18 S. COAST.—Partnership in good-class non-dispensing Practice, over £4,000 p.a., in favourite residential town in seaside resort. No panel and not much midwifery. Pleasantly situated house (4 or more bedrooms) to rent on lease. Incoming Partner should be Oxford, Cambridge or London man (aged about 30), who has held Hospital appointments. One third share at first at 2 years' purchase.

19 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock-up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent Premium £900

20 S. OF ENGLAND.—Partnership in Practice, about £2,800 p.a., in favourite seaside resort. Delightful house (5 bedrooms), garage, and nice garden, to rent Incoming Partner should be a Surgeon (preferably F.R.C.S.). Hospital and appointment on staff Premium one fourth share 2 years' pur.

21 MIDLANDS. — Partner required in sound lucrative Practice in residential town close to large city. Small panel Very good Cottage Hospital. Share of £1,000 p.a. at 2 years' purchase. Applicant should be well up in his work.

22 DEVON. — Partnership (with preliminary Assistantship) in old established Practice about £3,000 p.a. in beautiful part. Good house (5 bedrooms) to rent. Premium one third share 2 years' purchase.

23 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.), easy access of West End Premium for one third share £1,500

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...n Street, W.C.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)

(FOUNDED 1880)

12, Stratford Place,

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Telephone: Mayfair {1782 1783

Practices and Partnerships for Disposal (continued).

24 S. COAST.—Partnership in non-dispensing Practice in a seaside resort. Good house (6 bedrooms) to rent. Share about £750 p.a. at 2 years' purchase.

25 S. COAST.—Partnership in non-dispensing Practice in seaside resort. Incoming Partner must hold the F.R.C.S. Hospital. Scope for Surgery. Share worth about £1,000 p.a. (after short preliminary Assistantship) at 2 years' purchase.

26 LONDON, S.W.—Practice about £500 p.a. in suburban district. Panel 650. No midwifery. Semi-detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

27 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope. Prem. 1 yr's. pur.

28 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwfy. Six roomed house to rent. Prem. £700.

29 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p.a. in manufacturing town. Panel over 1,300. Pleasantly situated double fronted house (4 bedrooms), with garden, for sale. Premium 1½ years' purchase.

30 LONDON, W.—Practice of about £600 p.a. in residential district. Panel 600. Detached double fronted corner residence (6 bedrooms), garage, and nice garden, for sale. Scope. Premium 1½ years' purchase.

31 LONDON, E.—Cash Practice of £850 p.a. in populous neighbourhood. Panel over 1,000. House (3 bedrooms) in main road, to rent. Premium 1½ years' purchase.

32 S. COAST.—Small Seaside Place.—Nucleus of PRACTICE, with very good semi-detached house (3 bedrooms). Would suit semi-retired Practitioner who could wait a while as place is developing quickly. Price for freehold house £1,400.

33 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

34 S. OF ENGLAND.—Partnership in steadily increasing Practice about £6,000 p.a. in small town. Panel 3,300. Suitable house could be purchased. One seventh share at 2 years' purchase. Preliminary Assistantship. London Graduate preferred.

35 MIDDLESEX.—Steadily increasing PRACTICE about £800 p.a. in growing district. Panel about 600. Very good house (5 bed and dressing rooms), garage and excellent garden, for sale. Ample scope. Premium £900.

36 LONDON, N.—Practice about £360 p.a. in Residential Suburban district. Panel 180. Detached corner house (4 bedrooms), with small garden, for sale. Scope. Premium £100.

37 N. OF ENGLAND.—Partnership in lucrative Practice in large city. Panel over 5,000. Small house (3 bedrooms and attics) for sale. Partner must be young and energetic. A share of £1,650 or £2,500 would be sold at 1½ years' purchase.

38 DEVON.—Partnership in Practice averaging £3,000 p.a. in small town. House to rent. Hunting, shooting, fishing, etc. Premium one half share 2 years' purchase. Hospital.

39 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p.a. in developing Indust district. Panel 1,870. Small house available. Large Cottage Hospital. Prem. two-fifth share 2 years' purchase.

40 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London. Panel 300. Attractive house (7 bed and dressing rooms) in grounds of 2 acres, with garage, to be sold or let. Very suitable for Resident Patients. Good scope. Premium 1 year's purchase.

41 N. MIDLANDS.—Partnership in Practice over £1,400 p.a. in first rate city. Panel 1,800. House, with 2 reception rooms and 4 bedrooms, to rent. Premium one half share £1,100. Preliminary Assistantship entertained.

42 MIDLANDS.—Practice of over £2,100 p.a. in manufacturing town. Panel 820. House (4 bedrooms) to rent, on lease. Premium 1½ years' purchase.

43 SURREY.—Ophthalmic Practice of about £300 p.a. in desirable town within 15 miles of London. Fees mostly £3 3s. Good detached house (4 bedrooms, etc.) for sale. Plenty of scope to one devoting whole time. Premium £300.

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45 STAFFS. — Partnership in Practice over £2,000 p.a. in an industrial town. Panel 3,000. Suitable house (5 bedrooms) to rent. Ample scope. Premium one half share 1½ years' purchase.

46 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase.

47 N. WALES.—Country Practice of £1,230 p.a. in Welsh speaking district. Panel about 550. Convenient and well situated house, with electric light, etc., for sale. All kinds of sport. Premium for a quick sale 1 year's purchase, or even slightly less.

48 CHESHIRE.—Practice of nearly £500 p.a. in residential town. Panel 100. New semi-detached double-fronted house (4 bedrooms) for sale. Scope for considerable increase. Premium £500.

49 CHESHIRE. — Partnership in increasing better-class non-panel Practice, over £4,500 p.a., in first-rate residential district. One-fourth share at 2 years' purchase. Partner should be University Graduate who must have held Resident appointments.

50 MIDDLESEX. — Partnership in Practice nearly £3,500 p.a. in rapidly growing residential town under 20 miles from London. Panel about 1,150. Semi-detached corner residence (6 bedrooms), garage, and garden, for sale. Premium one half share 2 years' purchase.

51 HOME COUNTIES. — Partnership in middle and working-class Practice of £3,440 p.a. in industrial town within 25 miles of London. Panel 1,830. Detached double-fronted house (5 bedrooms), garage and garden, for sale. Premium one-half share 2 years' purchase.

52 MIDLANDS.—Practice over £800 p.a. in first rate town. Panel 500. Large detached house, with garage and garden, to rent. Premium one and a quarter years' purchase.

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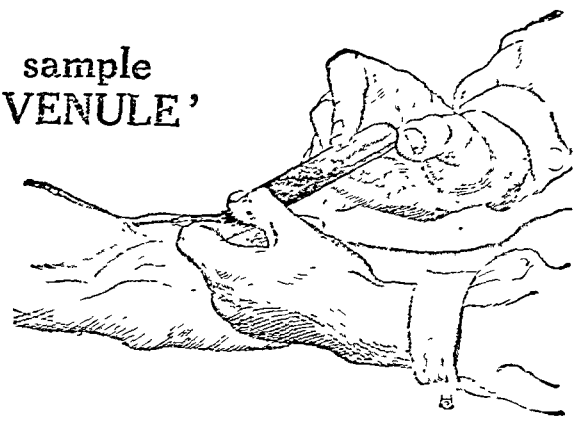
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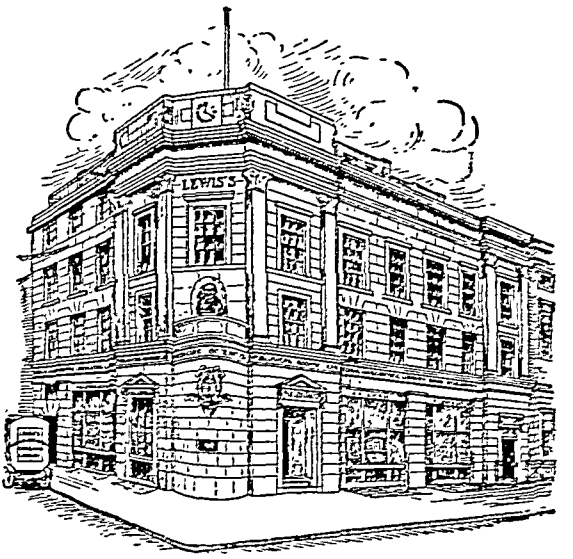
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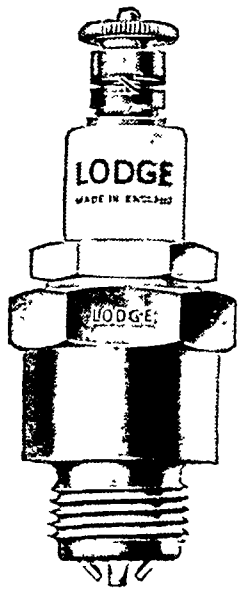
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I. The filter-tip is selective in its action and while permitting the full passage of all the desirable constituents, shows a high capacity for retaining both the pyridine bases and non volatile bodies, which undoubtedly form the principal source of throat irritation.

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IV. Cigarettes containing this filter-tip will be welcomed both by the medical profession and the public as a valuable means of preventing "smoker's cough" and other adverse effects on the pharynx, larynx or general health, traceable either directly or indirectly to the irritants and acrids in tobacco smoke.

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The aim of *this ingenious filter* is to trap the irritating pyridine derivatives and other non-volatile bodies, while permitting free passage of the agreeable volatile constituents of tobacco smoke.

The British Medical Journal, April 18th, 1931. p. 692.

A filter-tip must not only be efficient as a filter to irritating and noxious products, but must not affect the flavour . . . pyridine, the most offensive constituent of tobacco smoke, and other non-volatile irritant substances are retained by the ingenious filter-tip which is used in du Maurier cigarettes. From a personal trial we can testify to the *pleasant flavour and aroma* and to the *distinct lack of irritation* experienced in smoking these cigarettes.

The Practitioner, May, 1931. p. 584.

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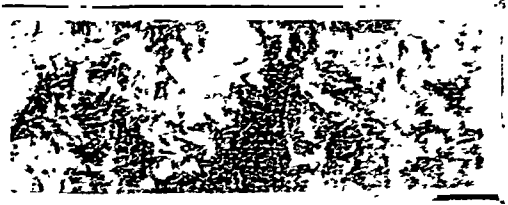
The filter-tip . . . retains bodies which are generally held to be the principal cause of throat irritation. Additional advantages of the filter-tip comprise *protection of the lips, teeth and fingers from unsightly stain,* and prevention of fragments of tobacco from getting into the mouth.

The du Maurier cigarettes may be regarded in every way as satisfactory, and they constitute a distinct and hygienic advance in the marketing of cigarettes.

The Lancet, January 24th, 1931. p. 194.



Magnified view of cellulose fibre (contained in the filter-tip). BEFORE SMOKING.

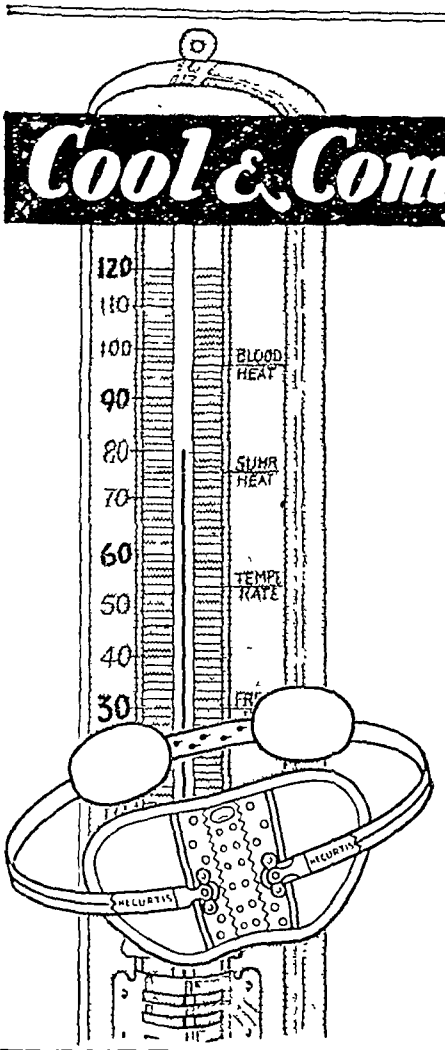


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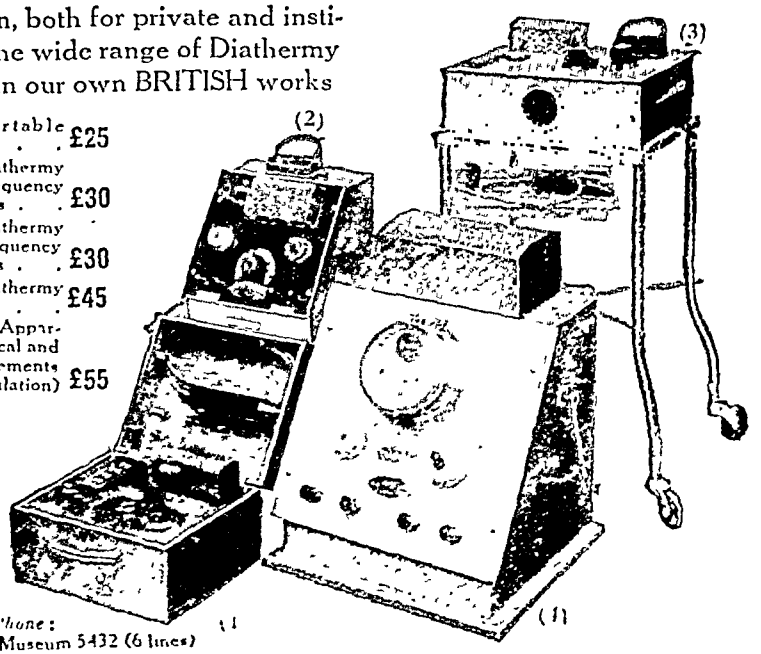
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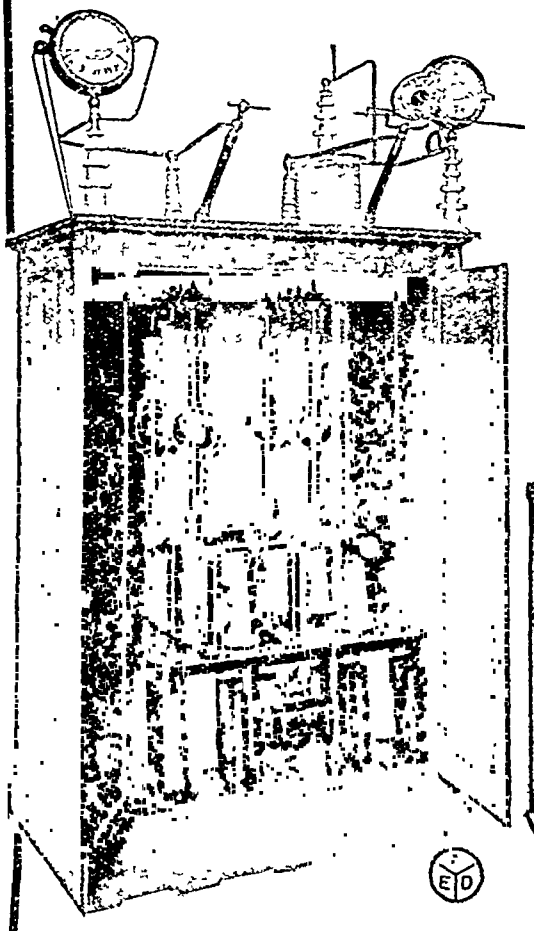
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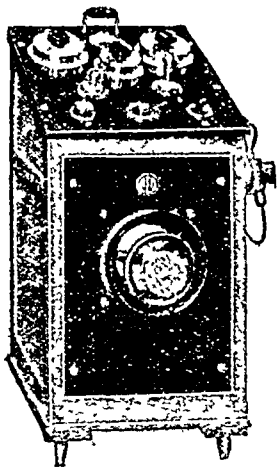
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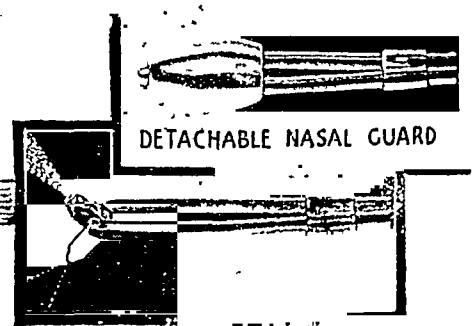
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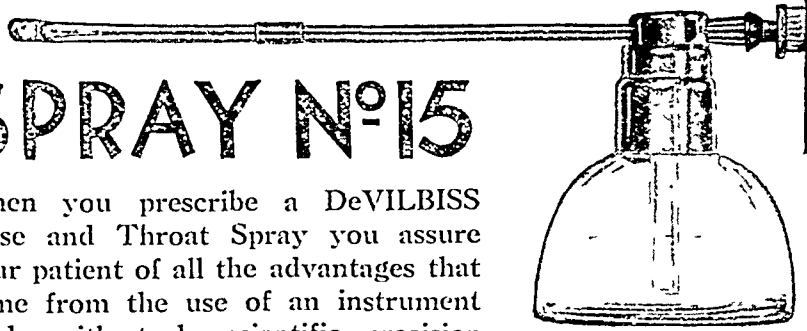
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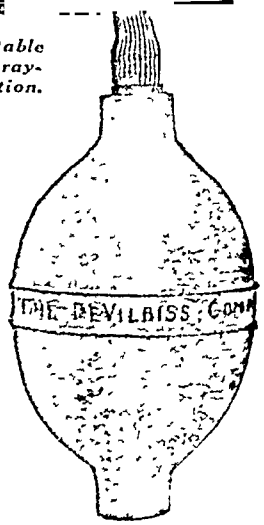


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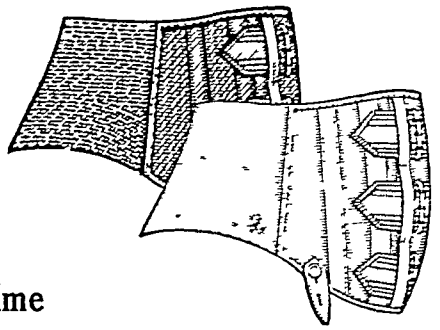
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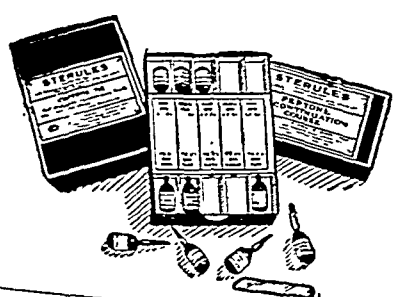
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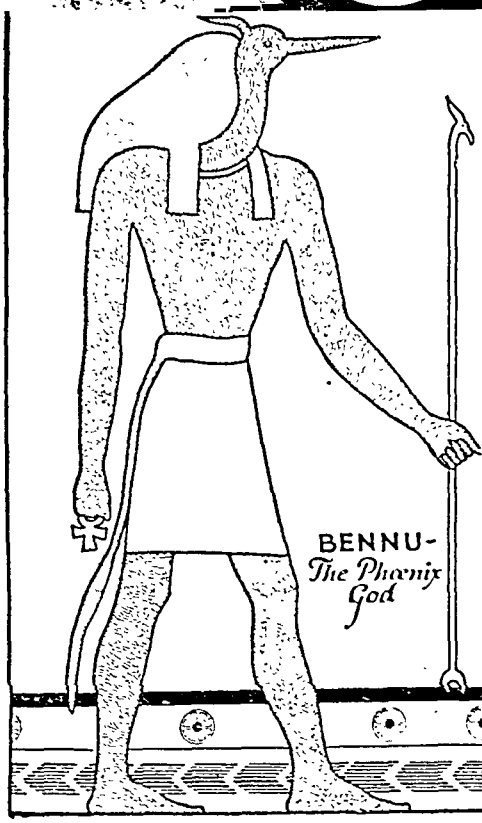
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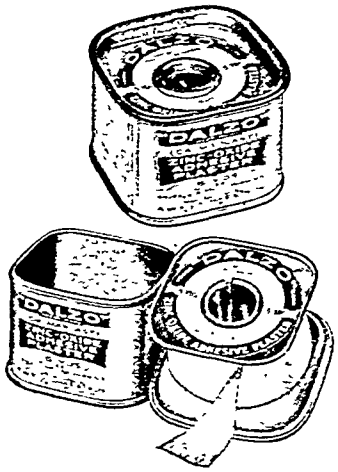
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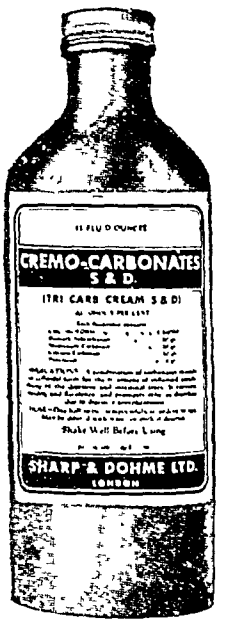
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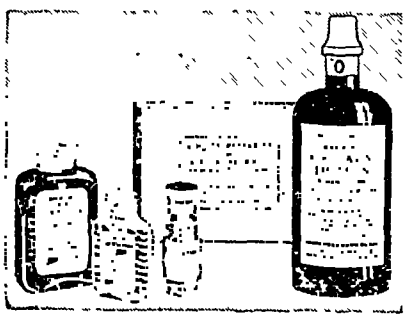
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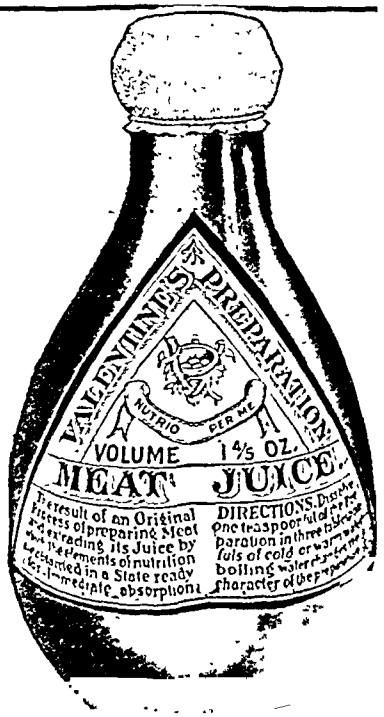
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A British Medical Association Lecture

ON

THE SIGNIFICANCE OF A RAISED BLOOD PRESSURE*

BY

JOHN HAY, M.D., F.R.C.P.

PROFESSOR OF MEDICINE, LIVERPOOL UNIVERSITY; SENIOR PHYSICIAN AND PHYSICIAN IN CHARGE OF HEART DEPARTMENT, ROYAL INFIRMARY, LIVERPOOL

My subject is one of very general interest and also of considerable practical importance, if for no other reason than that a large number of our patients at or over middle age present a raised blood pressure. No one can now afford to be indifferent to the problems associated with variations in blood pressure, for a high pressure is an abnormality which always demands investigation, supervision, and careful treatment. There is a danger that patients may take the variations in their blood pressure too seriously, and it is well to remember that the blood pressure is only one factor in the circulation, and that it must be carefully correlated with the other physical signs and symptoms manifested.

An abnormally high blood pressure indicates some underlying psychological or pathological abnormality, and an attempt should always be made to interpret it in terms of pathology, and finally in terms of prognosis.

The blood pressure, constantly fluctuating within certain limits, rising and falling to meet the changing needs of life, is the resultant of several factors. There are the frequency of and the vigour of the ventricular systole, the distension of the arteries which grasp the blood, and a varying peripheral resistance. More prone to develop in middle age, high blood pressure is not infrequently encountered in the young; it is helpful, therefore, to classify the patients into a few groups.

The Type of Patient

High blood pressure may be latent, causing no symptoms and discovered accidentally in a patient otherwise healthy.

Then there is the thin, spare, sallow, highly strung individual, often nervous, active, and self-opinionated—a neurasthenic with a tendency to constipation and a coated tongue. As a contrast there is the sthenic type: florid, stoutish, muscular, with a vigorous mentality, great driving power, an excellent appetite, a good digestion, and a clean tongue—the man who takes it as a personal affront when he is loaded or refused for life assurance. And, finally, there is the menopausal group, in which the chief etiological factor is probably a dyscrinism, characterized by vasomotor instability, an increase in weight, and obesity hard to dispel; in this group there is a steady increase in the blood pressure, which may slowly subside in the late fifties.

Method of Estimation

The reading of the blood pressure should be taken without fuss and as casually and unobtrusively as possible, and no unnecessary importance attached to the actual recording, and as little as possible said about the findings to the patient. To take a blood pressure reading is simple enough, but my impression is that in some instances the technique is not satisfactory, and the records, especially of the diastolic pressure, are unreliable. This is unfortunate, because the diastolic pressure is of undoubted clinical importance.

*Delivered at Bradford, February 25th, 1931.

The Diastolic Pressure

In Great Britain the diastolic pressure is usually taken as that point at which there is a sudden marked diminution in the intensity of the sounds on auscultation of the brachial artery—normally about 70 to 80 mm. Hg. An increase in diastolic pressure signifies that with each systole a greater expenditure of energy is required to force open the aortic valves. The permanent load on the heart and arteries is greater than normal. The result is an increase in the size and power of the left ventricle, and it is this strain which may be ultimately responsible for the cardiac failure. The end-result of persistent increase in the diastolic pressure is cardiac defeat. The diastolic pressure is increased by any cause which augments peripheral resistance, either vasoconstriction or actual pathological changes in the arterioles, and it is so intimately related to the elasticity of the arterial walls that it is worth while to refer to this in a little more detail.

Importance of Arterial Elasticity

Elasticity is a characteristic of all arteries, but it is a dominant feature of the aorta and its main branches. During life the elasticity of any artery depends on two factors—its structure, and the pressure exerted on it by the contained blood. In any given artery the latter is a varying factor, and with an increase in the diastolic pressure there is a rapid decrease in arterial elasticity, and an inevitable and corresponding increase in the amount of energy required from the heart.

It is well to remember that in the "make-up" of an artery there are two materials—an elastic, and a relatively non-elastic. With the ejection of blood from the ventricle the elastic element in the aorta first comes into play, and later, when the artery is well stretched, the non-elastic is in evidence. It is clear, then, that a normal artery is much more elastic at low pressures, and becomes more rigid as the pressure rises. It must be equally clear that an artery acts with optimum efficiency at a pressure which allows full play to its elasticity. The relationship between arterial elasticity and blood pressure is therefore of the greatest practical importance. With a rise in diastolic pressure there is a rapid diminution of elasticity, the artery approximates to a rigid pipe, and the work of the left ventricle is increased.

The reason for the extra work required from the ventricle is to be found in the fact that with a low diastolic pressure the elastic artery accepts comfortably the blood discharged from the ventricle, whereas when the diastolic pressure is high the aorta is already stretched and relatively inelastic, and it takes a very powerful systole to produce any further distension. At even extremely high pulse pressures (for example, with blood pressure 200/120, a pulse pressure of 80) the results of each systole are poor.

A high diastolic pressure means a diminished ventricular output per beat. The aorta yields only with difficulty, and even with a much increased heart rate the output per minute falls below the requirements of the body, and anoxaemia is imminent.

At the risk of repeating myself, I would remark that the greater elasticity of the arteries at the lower diastolic pressures is of the utmost value in preserving the heart from undue strain. The aorta acts as a shock absorber, for the arteries are more than tubes. The larger arteries—the aorta and its main branches—are elastic reservoirs, and this elasticity is of importance in saving unnecessary and wasteful effort on the part of the ventricle. The elasticity of the aorta enables rapid distension to take place, followed by slow collapse, and the more elastic the aorta the less the ventricular force required.

An elastic artery saves the heart ; it grasps the blood comfortably. Conversely, any factor which diminishes the elasticity increases the work of the heart, and ultimately the output per minute ; and the most potent adverse factor is a high diastolic pressure, which causes the arteries to become rigid, inelastic pipes. Hence the reserve power of a heart with high diastolic pressure is necessarily very small, and one finds that dyspnoea is usually induced with the slightest effort. Dr. J. C. Bramwell[1] discusses this subject at length, and has shown that the volume elasticity of the arteries is halved between the ages of 10 and 60.

The systolic and diastolic pressures having been recorded, the heart rate and rhythm should be noted at the same time, and also the presence or absence of arteriosclerosis. That gives the complete picture.

Systolic Pressure

In most individuals, as the pressure in the armlet diminishes, each systole is represented by a sound heard from the upper systolic pressure to the diastolic point. Sometimes, however, the sounds, from being sharp and defined in the upper range, fade out as the armlet pressure falls, to reappear as further air escapes. This silent gap may give rise to a faulty reading if the observer only picks up the sounds when they reappear after the gap. In a patient whose systolic pressure is 200 there may be a silent gap from 180 to 160 ; and unless this is recognized a blood pressure of 160 will be recorded as the systolic pressure for that patient. This mistake can be avoided by verifying the systolic pressure as judged by auscultation with that obtained by palpation of the radial pulse.

THE NORMAL READING

There has been a tendency to take as normal a reading definitely too high. It is not uncommon to find the age plus 100 accepted as within normal limits—that is, 160 for a man of 60. This is undoubtedly incorrect. The following[2] is the average of a very large number of records of blood pressure of apparently normal healthy individuals :

Age	Systolic	Diastolic	Age	Systolic	Diastolic
20	120	75	50	130	83
30	123	79	60	135	85
40	126	81			

These figures may be accepted, but it must be remembered that in every individual fluctuations in pressure are constantly taking place under the varying conditions of life, and that even when the record is made with everything in favour of a normal reading it is almost impossible to eliminate all adverse or disturbing factors.

With uniform conditions, a body at rest, and an easy mind, the arterial pressure should approximate to the above standard, and if it diverges markedly repeated estimations should be made. Fluctuations are marked and characteristic in the earlier stages of hyperpiesia. With advancing years the blood pressure becomes less labile and the fluctuations slower ; the fall after a rise is delayed. The compensatory mechanisms are at fault.

Blood Pressure and Exercise

Physical effort is one of the most common causes of a rise in arterial pressure, and this rise is a necessity during exercise, for with muscular effort the blood flow through the muscles in action is greatly increased, and to maintain this increase the output from the heart is doubled or even trebled, and the splanchnic vessels are constricted. As a result the pressure rises, and the active muscles are adequately flushed with oxygen-bearing blood. The increased activity of the heart demands a more liberal supply of blood, and this can only be obtained by a higher pressure in the aorta, for the coronary blood flow is largely dependent on aortic pressure. It is agreed that a " high arterial pressure is essential for the efficient performance of muscular work." It is probable that the higher the work the higher is the pressure.

In the man out of training or engaged in some work with which he is not familiar, the rise in blood pressure tends to be greater than in the man working equally hard at a congenial and accustomed task.[3] As Meakins and Gunson showed, there was an average rise of 31 mm. Hg. in the systolic pressure half a minute after walking briskly up a single flight of thirty steps ; with more strenuous effort a much greater pressure would be reached. Congenial exercise, moderate in degree, in a man under training, after causing a rise in pressure which begins abruptly with the onset of effort, tends to lower the pressure slightly, and proves of benefit. Sir Clifford Allbutt found that " a few weeks of mountain climbing or a cycling tour " was always followed in him by a " lower range of blood pressure, lasting some weeks." I think that there can be no doubt that carefully regulated exercise is one of the most valuable elements in the treatment of patients suffering from high arterial pressure.

Rest, as one would expect, lowers pressure. The work on the heart is diminished, the muscles are relaxed, and the mind tranquil.

Variations During Sleep

Sleep is even more potent, and there is a fall of 20 mm. Hg or more during undisturbed sleep. The greatest fall is noted within the first two hours of sleep, and from this point the pressure gradually rises. During sleep the heart's action and the respiration are slowed, and the general musculature is relaxed, metabolic activity is reduced, with a slight lowering of temperature ; but, as Pr[illegible] pointed out in 1923, this applies only to the peaceful slumber, and in a most interesting section he directs attention to the [illegible] which occur when sleep is disturbed by unpleasant dreams. In disturbed sleep the changes are sometimes very striking. There may be " extreme rise of pressure, increased heart action, with flushing after waking.

The cardio-vascular response to afferent impulses is in the form of a rise in the rate of the heart or a rise in pressure brought about by splanchnic constriction, or both combined. There may be a rise of pulse with little if any rise in pressure, when the heart may be forcible and the cardiac action and vigorous, in response to a great increase in pressure, and the patient may waken to find his heart beating rapidly and forcibly. Professor [illegible]D, records one case in which, during a dream, the pressure rose from 130 to 200. To quote his article :

" The suddenness of development of the functional disturbances in blood pressure, heart action, etc., in the dream state is an important feature. As is well known, most dreams are of very brief duration as regards the actual time occupied, a number of seconds or a very few minutes often sufficing for a dream which is subjectively a long and complicated one—for example, an apparently long and varied dream has been recorded as running its course between the beginning and the ending of a clock striking midnight. The

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associated functional disturbances may thus be set up with unusual abruptness, as compared with the waking state—as, for instance, in ordinary muscular exertion. It follows that there is little or no time for the coming into play of the various adjustments and compensations in the circulatory and respiratory systems, etc., that are operative in muscular exercise; in the latter the rise of arterial pressure is checked by gradual dilatation of the vessels of the skin and the working muscles, while the heart accommodates itself with the aid of increased coronary blood supply, etc. Thus the blood pressure rise in certain dreams may be both large and steep in ascent. The call on the heart, through its nervous apparatus, etc., may also be a sudden one."

It must have occurred to most of us that it was difficult to understand why cerebral haemorrhage should occur during sleep, when the blood pressure should, if anything, be lower than during the waking hours. And the same difficulty manifests itself in the case of anginal attacks other than those due to coronary thrombosis—seizures which in the daytime may have been induced only by effort or emotional disturbances. Professor MacWilliam has, I believe, supplied the answer. At any rate, sleep can no longer be viewed as a certain haven of peace. The cardio-vascular mechanism is even then liable to be taken suddenly by storm, and, if there be a disease, or a flaw in the arterial tree, disaster may follow.

Effect of Psychological States

On discovering a raised blood pressure we have to form an attitude of its significance, and the first essential is to eliminate the possibility of any transient ephemeral rise due to nervousness on the part of the patient, and then determine how far the cause may be psychical. Such limits as persistent worry, dread, or fear should be frequent for. "Mental pain and physical passivity," the characteristics of melancholia, invariably induce a raised varying pressure, in marked contrast to the relatively low middle age pressure present in neurasthenia and in the active encountered state.

Neurasthenia, characterized by low spirits, depression, and mental fatigue, does sometimes occur in differing from those pathological conditions associated with high pressure. When this High blood pressure a fall in the average pressure of such a symptoms and discovers found that as the indications of neurwise healthy, the pressure rises. The waxing and

Then there is the pressure tends to run parallel with the individual, often nervous of the neurasthenia. When, howa neurasthenic with a ten the neurasthenic symptoms coated tongue. As a contra pressure it is reasonable to infer florid, stoutish, muscular, a true neurasthenic, but rather great driving power, an presenting symptoms simulating tion, and a clean tongue—the

personal affront when he is loss important factors modifying assurance. And, finally, there a physically sound patient, but in which the chief etiological mention them.

dyscrasism, characterized are we to attach to the presence of increase in weight, an essure? The great difficulty in arriving group there is a steat this is increased when the rise is not which may slowly rising only 30 or 40 mm. Hg above the age—that is, 160 to 170 in a middle-aged an. When the pressure runs to 200 and over, The reading significance cannot be mistaken. Bearing in without fail points we have already discussed, the first step possible, are minate as far as possible any transient rise due actual excitement, emotion, fear, or other similar cause, and further attempt should then be made to determine whether the patient is the victim of persistent worry and anxiety in his home or in his business, and whether he is overloaded with responsibility and cares.

CARDIO-VASCULAR RENAL DISEASE

Having eliminated a psychical cause, we have then to differentiate between a high pressure due to frank renal or cardio-vascular disease, and that of so-called essential hypertension or hyperpiesia, hoping that we may be justified in the latter diagnosis, for the outlook is then more promising, and there is a fair prospect of a satisfactory response to treatment.

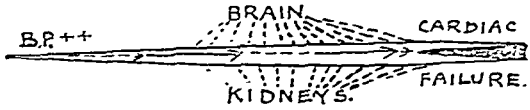
The urine should be examined for evidence of nephritis, and tests for the estimation of the renal efficiency carried out. Positive findings are of value, but, unfortunately, the extent of the renal damage must be considerable before there is a measurable increase in the non-protein nitrogen of the blood or a clear depreciation in the concentrating power of the kidneys.

The first object is, then, to classify the patient under one of three heads—namely: (1) hypertension due to psychical influences; (2) hyperpiesia, characterized by high blood pressure with no essential primary renal involvement, but presenting some degree of cardiac hypertrophy and arterial disease; and (3) a renal group—chronic disease of the kidneys in which the high blood pressure is a secondary manifestation.

PROGNOSIS

There is something dramatic and ominous in the steady diminution in the expectation of life accompanying a rise of blood pressure, revealed by a scrutiny of the figures published by insurance companies. This is more marked when the rise in blood pressure is accompanied by obesity; the expectation of life is then still further diminished.

The normal termination in a case of persistent hyperpiesia is cardiac defeat. This is inevitable unless life is cut short by intercurrent disease, some cerebral accident, or by renal complication.



The life-history of the hyperpietic.

Another factor in the prognosis worthy of note is the significance of the age of onset of the hyperpiesia. It is most serious when it appears during the middle period of life, between the ages of 40 and 50.

If the two following tables are compared, the significance of the age of onset becomes apparent, the ratio of actual to expected deaths between the ages of 40 and 49 being 2.21 to 1, while the ratio between the ages of 50 and 65 is only 1.40 to 1. In the first table the 2,634 cases are arranged according to the degree of hyperpiesia; in the second, according to age groups.

TABLE I

Cases	Blood Pressure	Ratio of Actual to Expected Deaths
(a) 1,456	+10 to +16	1.35 to 1
(b) 824	+17 to +23	1.83 to 1
(c) 354	+24 to +30	2.14 to 1

TABLE II

Ages at Entry	Cases	Actual Deaths	Expected Deaths	Ratio of Actual to Expected Deaths
15-39	919	13	11.3	1.15 to 1
40-49	979	53	24.0	2.21 to 1
50-65	736	51	35.3	1.40 to 1
	2,633	117	71.6	1.63 to 1

There is frequently a well-marked familial tendency towards high blood pressure. The knowledge that such a tendency exists in any family justifies the practitioner in recording the pressure, when opportunity arises, in the younger members, so that the first deviation from the normal may be noted, and an attempt made to control the degenerative process. The importance of this is illustrated by the following two cases.

A. H., aged 60. Blood pressure 280/120 mm. Hg; pulse rate 96. Father dropped dead at 46. Both grandmothers found dead in bed at 66 and 64.

Mrs. D., aged 50. Blood pressure 255/130 mm. Hg; pulse rate 90. Father died of stroke at 64. Mother died of stroke at 74. Two sisters died at 45 and 48, both of strokes.

Fluctuations in the pressure are characteristic of the earlier stages of hyperpiesia, and are of favourable significance. Later, when the arteriolar and arterial damage is marked, there is much less tendency to variations. In the advanced cases, if the systolic does fall to any extent below the optimum, it generally indicates myocardial weakness, and is evidence of cardiac failure. The diastolic rarely changes materially, and thus a fall in pulse pressure is an adverse sign, and is generally accompanied by clinical manifestations of cardiac failure and distress, such as an increased liability to dyspnoea, an alternating pulse, a gallop rhythm, or angina of effort. One or more of such signs is ominous.

Auricular Fibrillation

The future is still further jeopardized by the advent of auricular fibrillation, and some of the most dramatic instances of acute cardiac failure are caused by the onset of fibrillation in a patient with marked hyperpiesis. Extreme dyspnoea, accompanied by a sense of constriction in the chest, the skin bedewed with sweat, ashen colour, and a rapid disorderly action of the heart—such are some of the characteristics of the attack. Death may occur in a few hours, or the heart may gradually accommodate itself to the new load, and life may be maintained, though at a much lower level of effort. When fibrillation of the auricle has established itself the expectation of life is very definitely lessened. The acute urgent symptoms described above are those of left ventricle distress; later in the course of the disease congestive failure develops.

The Gravity of Infections

The wider my experience of the life-history of the hyperpietic the more I have been impressed by the importance of infectious illnesses—for example, such transient toxaemias as influenza and tonsillitis.

The first serious depreciation in cardiac reserve and the earliest record of anginal pain are frequently clearly related to a transient toxaemia. The myocardium was hit, and has lost its power of recovery. The practical bearing of this lies in the recognition of the importance and significance of a toxic illness in such patients, and of the necessity for a prolonged convalescence with the administration of haematinics and general tonics.

It is often difficult to convince the active, vigorous hyperpietic that a sharp short attack of influenza is undoubtedly for him a serious matter, and that he must save his myocardium and give it time to recover before resuming his usual activities. Neglect of this advice is often followed by disastrous and irremediable results.

TREATMENT

I am quite aware that, interested as you are in the pathogenesis and prognosis of high blood pressure, you are probably more interested in the management and treatment. Unfortunately, the opportunity for treatment generally arises when the high blood pressure is well established. In any case, the preliminary is a careful and detailed examination and cross-examination—the latter being the more important. It is essential to discover the responsible etiological factors. Heredity, habits of life, diet, the existence of overwork, mental strain, worry, embarrassments (either matrimonial or financial) must be investigated. You must know your man before you tackle his malady.

It is dangerous, not only for the patient's peace of mind, but also for the doctor, to focus attention too persistently on the sphygmomanometer readings. Since a rise in blood pressure is for many patients a compensatory phenomenon, it is obvious that some attempt must be made to determine the optimum pressure in each individual, and not to attempt to reduce it below that level by drugs or drastic remedies. There is some truth in the saying that the greatest danger to a man with a high blood pressure lies in its discovery, because "then some fool is certain to try and reduce it."

General Measures

In the later stages more can be done by careful revision of the mode of life, undertaken with the active co-operation of the patient, than by any drugs prescribed for the specific purpose of lowering the pressure. If the patient is in the early or pre-sclerotic stage, or if the cardio-vascular damage is not advanced, the response to treatment is much more satisfactory, and a great deal can then be done if he will pay the price. When feasible, as a first step in treatment, it is well worth while to order the patient to bed for a few weeks, and at the same time to prescribe a mixture of bromides, or bromide and chloral, with the object of diminishing restlessness and irritability. When the nervous factor is dominant, rest will probably bring about a material fall in the pressure, and those with cardiac symptoms will certainly be benefited. This will afford an opportunity to observe your patient, and to determine in what way and to what degree his manner of life should be modified. Then get him off to the country or to some spa for a month's quiet holiday.

High blood pressure is often the penalty of success—a success the result of continuous hustle and mental strain. The successful man does not walk, he rides. His meals tend to become richer. His friends take advantage of his efficiency; flatter him and impose upon his good nature; and accordingly he is a member of this and that committee, is treasurer of one society and secretary to another, so that the load he has to carry is considerable. While at rest and in the hands of his doctor he must be made to edit the list of his duties and responsibilities, and cut out everything that is not essential to his happiness or his financial stability, so that when he returns to work he has shed that which was irksome and unnecessary. This short period of rest also offers an opportunity for investigating any and every possible source of infection, and it is well to deal with any such focus and to make sure that the teeth are sound and the gums healthy.

In so far as it is possible to remove causes of worry and anxiety, this should be done; occasionally in suitable cases psychotherapy may yield valuable assistance in restoring psychic rest.

To begin with it is wiser not to prescribe drugs, but rather to note the effect of general treatment. Exception may be made, however, in the case of restless and excitable patients; then *bromide, or bromide and chloral*, is valuable; salines and—if necessary—a simple stomachic may be given with advantage.

Regulation of Diet

The diet will require supervision, especially in those who are well above the normal in weight. Every unnecessary pound in weight adds to the load the heart has to carry.

The first essential is to diminish the intake. As one patient put it, after a heart-to-heart talk, "It seems to me that I must keep my head out of the nosebag." I do not believe it wise to give the patient detailed instructions as to diet. He should grasp the main principle—namely, that the diet must be simple, wholesome, and small in amount. "No second helping" is a good rule, and he will do well to remember that "a good cook may be more dangerous to a man in health than a bad doctor when he is sick." He must keep an eye on the scales. If the weight keeps up, the intake of food must go down.

He will probably find it easier to eat less if he takes his meals with a minimum of fluid. Water can be taken on rising, and again before retiring. The starches and the fats should be eaten sparingly, and it is probably wise to refrain from a diet rich in extractives. Gravies, soups, rich stews, and hashes should be avoided, especially when there is evidence of renal damage. Fresh fruits, salads, lettuce, celery, vegetables, milk, and honey should find an honoured place in the menu; and fish, cold boiled bacon, lean ham, and chicken may be allowed. Butcher's meat should be eaten moderately, and beyond the salt used in cooking none should be taken. Alcohol is better deleted from the diet, and any excess in tea, coffee, and tobacco avoided. The diet should be such that the patient likes what he eats, though it is obvious that he should not be allowed to eat just what he likes.

As someone has aptly said, "In few conditions are both the dish of herbs and contentment more essential, or the stalled ox and strife more injurious."

When possible, an occasional day in bed is helpful. In the more advanced cases, with indications of commencing cardiac failure, it is invaluable. During that day the patient should drink plenty of water, lemonade, orangeade, barley water, raisin tea, or weak tea, and refrain from solid food, with the exception of a few biscuits and honey, or an apple.

The Use of Drugs

Drugs, although of secondary importance, have their honoured place in treatment, more especially in the earlier stages. Later they are useful in treating various distressing symptoms—cardiac, cerebral, or renal. The benefit to be obtained in the earlier phases from bromide has already been mentioned, and it is of great service in menopausal hyperpiesia. Mercury, as a blue pill, or a dose of calomel, followed the next morning by a small but concentrated dose of saline, is undoubtedly of benefit. Such a pill should be taken once a week and the saline every morning—not to procure free purging, but one loose rather watery motion each day. Iodine and the iodides are still popular and widely prescribed, either in very small doses, such as 1/10 grain of the iodide, or in the larger dose of 10 grains. Iodine is acceptable either as collosol iodine or as the tincture—five to seven drops of the latter stirred up in an ounce or two of milk is not unpalatable, the small fraction of potassium iodide in the British tincture being an advantage rather than otherwise. If iodism is produced then the French Codex tincture can be used. The myocardium suffers from the toxaemia accompanying any infective illness, especially influenza, and during convalescence (which should be prolonged) haematinics are essential—simple iron preparations with or without arsenic.

There are three drugs which have come more prominently into notice in the last few years: luminal, acetylcholin (acecoline, pacyl), and the sulphocyanates of potassium and sodium. Their tendency is to lower the blood pressure, and their action is evanescent. They are more likely to be of service in the earlier than in the later stage, before gross pathological changes have taken place. Luminal has, in addition, a helpful sedative effect. The sulphocyanates are prescribed in doses of 1½ to 2 grains three times daily after food, the dose being increased gradually day by day. I question whether the nitrites are of any value, except to bring about an immediate and temporary lowering of the pressure.

It is well to remember that the blood pressure is constantly varying both in health and in disease, and that, within certain limits, the normal has been established. When the figures pass beyond this normal there is a corresponding diminution in the expectation of life. It is therefore a physical sign worth investigating in every patient, especially when there is a known familial tendency to cardio-vascular disease. There is here a wide field for study, more particularly for the general practitioner.

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MESOTHELIAL REACTIONS IN CHILDHOOD*

BY

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I confess I find it a difficult thing to choose an appropriate subject for a lecture such as this. It is a privileged opportunity to address a gathering of men who are engaged in general practice, and I would like to justify that opportunity by presenting to you a subject which will be both interesting and helpful. It is in that very ambition that my difficulty lies, for I would like to leave the beaten tracks of stereotyped subjects and venture into fields that are as yet but little understood and largely unexplored. I know that when we leave the broad highway our footsteps often tread on sinking sands, and the foundation that we fondly thought was firm and sure may crumble into fragments when we rest upon it. None the less there is an interest—an adventure—call it what you will—in venturing into new territory, and in a very small and modest way the subject I propose to present to you may be said to justify the description, so alluring to the mind of the average man, of "terra incognita." If by these introductory remarks I seem to weave a veil of mystery where no secret really lies, it is because I appreciate that what I have to say is based, in part at least, upon hypothesis, supported, it is true, by a certain measure of experimental evidence and a framework of clinical observation. The purpose of my paper is to present to you certain reactions of the mesothelial spaces of the body, and more especially of the great mesothelial space—the peritoneal cavity.

A CASE HISTORY

Some months ago a boy of 6 years was admitted to the Edinburgh Royal Infirmary. The summary of the case history was as follows: Ten days before admission he complained of a sore throat, there was a rise of temperature with general illness, and a diagnosis of acute tonsillitis was made. Four days later, under appropriate treatment, the local infection subsided, and the boy appeared to be convalescent,

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but at the end of a further forty-eight hours there was a recurrence of illness, the temperature rose again, there was abdominal pain and vomiting, and considerable constitutional disturbance. The usual simple remedies failed to produce improvement, and further examination showed that an acute peritoneal infection had developed. When the child was admitted to hospital, ten days after the original onset of symptoms, he was found to be suffering from a generalized peritonitis, and it was our view that the infection had arisen secondary to an inflamed appendix.

Operation revealed an interesting state of affairs. The peritoneal cavity contained a considerable amount of purulent fluid, but we were unable to discover any localized infection from which the peritonitis could have arisen. The appendix was normal, and a careful exploration of other regions yielded negative results. The condition might be described as an idiopathic generalized peritonitis—an unsatisfactory diagnosis, and we preferred to regard the peritoneal infection as secondary to a generalized blood infection originating from the tonsillitis. The organism recovered from the peritoneal fluid was a streptococcus, and, though no blood culture investigation was done preceding the operation, the clinical history suggested that a septicaemia existed. It was therefore our view that the tonsillitis had induced the septicaemia, and that the peritonitis arose as a secondary blood-borne infection. Such was the position, but it is my purpose to elaborate the problem and to present other possibilities for your consideration.

THE STRUCTURE OF THE PERITONEUM

When we examine the structure of the peritoneum we find that it is arranged on an essentially simple plan; a layer of flattened cells rests upon a connective tissue basis which carries the lymphatic and blood vessels (tunica propria). On surface outline the cells appear to be pavement epithelium, but on profile they are seen to be imperfect pyramids with truncated apices and sloping slides. Such being their outline, there are ditches or fossae between the individual cells, and contiguous cells are in contact only at the fringes of their respective edges. There has been much surmise on the *raison d'être* of this peculiarity in structure, and it has been suggested that the relative insecurity of contact between individual cells permits the passage of leucocytes and connective tissue phagocytes from the deeper tissues to the surface, and vice versa. It will be recalled that when the peritoneum is stained by the silver nitrate method a network-like arrangement interspaced with punctate points is evident. It was thought at one time that this appearance was produced by stomata, apertures which established continuity between the peritoneal surface and the underlying lymphatics; in all likelihood deposits of silver stain in the ditches explain the appearance, and it is doubtful if actual stomata exist. I would add that the peritoneal cells, while capable of great reparative power, so that wounds of the surface are rapidly healed, have relatively small phagocytic activity, this function being mainly assumed by phagocytic leucocytes and connective tissue corpuscles.

THE ORIGIN OF THE PERITONEUM

What is the source from which peritoneal tissue has arisen? The peritoneum originates as a split in the mesoblast, and the method of its production is similar to that which occurs in the formation of certain joint spaces and in the pleura. It is therefore obvious that the cells which line the peritoneum are specially adapted mesoblastic cells, and, because they adopt the function of space-lining, they are appropriately termed "mesothelium." The terms "epithelium" and "endothelium" are often applied to the structure, but, as Professor Mall has shown, they are misnomers.

THE FUNCTION OF MESOTHELIAL SPACES

We may now inquire why this special adaptation of the mesoblastic area arises. Why should a mesoblastic split occur, and what is the reason for this peculiar structural metaplasia of the cells? In other words, what are the functions of mesothelial spaces, and of the peritoneal space in particular?

We may learn something if we consider the question from the morphological standpoint. In the most primitive types of organism the digestive tube courses through a mesoblastic field. It is in the Annelidae that we find the first suggestion of a peritoneal space. It has arisen as a split in the mesoblastic tissues which surround the digestive tube, and it is significant that it contains large numbers of leucocytes suspended in fluid, the function of which is to destroy parasites which have passed through the gut wall. From evidence such as this it is reasonable to argue that one of the reasons for the formation of the peritoneal space is to develop a protective barrier between the dangerous area of the digestive tube and the tissues which lie in relation to it. The earliest and original function is the basic and primitive one of body protection. I agree that it is difficult to ascribe such a function to the mesoblastic spaces of joints, and even of the pleura, but, where the peritoneum is concerned, the argument is appropriate, and, as we shall see, evidences are apparent of the same inherent quality when we consider the reaction of other mesothelial spaces to disease.

The second function of the peritoneal space is to permit freedom of mobility and motility of the viscera which lie within its confines. At first sight this would seem to be the most important and obvious function. It is one which has become elaborated as the complexity of the digestive tube has increased, but it is probably correct to regard it as acquired and secondary rather than primitive and original. Clinical experience tells us that the space capacity of the peritoneal area may be obliterated by a widespread adhesive process while comparative efficiency of the related viscera is retained, a demonstration of the fact that the "space mobility" function is not as essential as might appear. The peritoneal space and tissue exercise a third function, which is physiological. They are concerned in the secretion and absorption of fluid, changes which imply the physical processes of osmosis and dialysis. We know comparatively little regarding the stimuli which induce these changes or the ways in which the reactions are beneficial, but the processes are being constantly exercised, both in health and in disease.

Such are some, probably the most important, of the functions of the peritoneum and of its associated space; it will be noted that they may be grouped as protective, mechanical, and physiological.

THE NATURE OF THE PROTECTIVE FUNCTION

Let us now focus our interest on the protective function. Mesoblastic tissue would appear to be essentially supporting in purpose and design; it forms the bulk of the body tissues, the bone, and the muscles, but where it splits and where certain of its cells become adapted as a lining substance or mesothelium, such portions of the mesoblast appear to exhibit changes in the existence of infection which I believe we shall some day regard as protective in character. Let me recall experimental evidence which has a bearing on this matter. In 1929 Herrmann published in the *Bulletin of the Mayo Clinic* the results of an experimental inquiry on peritonitis. He encountered the difficulty which previous investigators had experienced in inducing an experimental peritonitis similar to the state which we meet with clinically. The intraperitoneal injection of a small quantity of infected material produced no apparent result, owing to the exercise of the phagocytic and antibacterial influences of the peritoneal area, while the injection of a larger quantity resulted in death from septicaemia before local evidences of peritonitis were appreciable. Herrmann attempted to overcome the difficulty by increasing the immunity of the subject prior to

the inoculation For this purpose he employed a combination of the *Bacillus coli communis* and the *Streptococcus viridans*, and a vaccine prepared from this symbiosis was injected on successive occasions over a period of some weeks Animals so prepared, when injected intraperitoneally with an amount of infection which under ordinary circumstances would have proved fatal from septicaemia, developed a purulent peritonitis virtually similar to that which we encounter clinically These experiments, while not fully conclusive, indicate that a peritonitis develops in coexistence with a certain degree of immunity, that in the absence of immunity no local reaction develops, and death ensues from general infection, while in the existence of a fully developed immunity there is no local reaction, because the infection is overcome as soon as it is introduced

THE MEANING OF IDIOPATHIC PERITONITIS

It is now appropriate to recall the circumstances of the case I outlined at the beginning of this address If we correlate the case history with the various points I have discussed, we may build up an interesting, though hypothetical, explanation

Our little patient developed a septicaemia secondary to the acute tonsillitis which introduced his illness He might have succumbed to such an infection, but fortunately he possessed sufficient resistance to develop a specialized field of immunity That field was located in the largest and most active mesothelial region of the body —the peritoneum He developed, in fact, what the older clinicians termed a " fixation abscess," a state which they used to induce by the subcutaneous and intramuscular injection of turpentine, and that which was regarded in the case under discussion as a most regrettable development, a purulent peritonitis, was really an attempt on the part of the body to induce a local field of reaction from which a general immunity would result I appreciate that the infection was conveyed to the peritoneal area by the blood stream, but so it was to every other portion of the body, the significance lies in the specialized reaction which the mesothelial tissues demonstrate

If we regard the problem in this way our conception of various infective conditions is modified There is a polyarthritis associated with a streptococcal septicaemia, sometimes spoken of as Still's disease In it we are probably witnessing a very similar process to that which we have been discussing—the joint changes are mesoblastic and mesothelial responses to a general blood infection, and in the adult the proliferative type of rheumatoid arthritis may well have a similar explanation I believe that, as our knowledge develops we shall increasingly appreciate the significance of the mesothelial response to general infection, but for the moment our interest is centred on the peritoneal mesothelium From what we have seen, the response of this tissue is chiefly evidenced in childhood, and more particularly in the early years of that period The protective association is then at its maximum, and as age proceeds, the response tends to diminish, perhaps to disappear

THE MESOTHELIAL REACTION IN PNEUMOCOCCAL PERITONITIS

Some years ago I was interested in the question of pneumococcal peritonitis, and the investigation which was carried out at that time in conjunction with Dr MacCartney seemed to indicate that in female children the peritoneal infection probably arose in consequence of a spread through the genital tract into the pelvic peritoneum In view of what I have since observed, I am inclined to believe that the majority of pneumococcal peritoneal infections are examples of a mesothelial reaction to a pneumococcal septicaemia, and that the cases which survive are those which show the degree of peritoneal reaction which results in a purulent peritonitis

Too often there is an insufficient immunizing response, and all that we discover is the deep blush of a congested peritoneum with but a scanty effusion of turbid fluid, findings which indicate the insufficiency of resistance and the hopelessness of the ultimate prognosis

PERITONITIS IN RELATION TO NEPHRITIS

Let me recall one further point in relation to the part which the peritoneum plays in the general infections of childhood

Last summer a boy of 5 years came under my care with the following history Some weeks previously he developed acute nephritis, the urine contained a large amount of albumin and there was considerable body oedema, with marked ascites The general condition improved under medical treatment, but the albuminuria and ascites persisted On the evening of July 12th acute abdominal pain was complained of, the temperature rose from 99° to 102°, and general abdominal tenderness was elicited on palpation I saw the boy for the first time the following morning The clinical features were those of an early generalized peritonitis Dr Charles McNeil recalled that Holt had described the development of a streptococcal or a pneumococcal peritonitis in association with nephritis and ascites and in this case Dr McNeil had made the diagnosis of a pneumococcal or a streptococcal peritonitis A laparotomy was performed, and we found the abdominal cavity filled with turbid fluid, there was no localized infection, and from the fluid a pneumococcus was isolated and cultured The findings were those of a generalized pneumococcal peritonitis The real interest, however, lies in the sequel Within five days the albumin vanished from the urine, the tissue fluid disappeared and an uninterrupted recovery was made, the child to-day enjoys apparently perfect health It is not unreasonable to recognize in this case an example of an immunizing response of the mesothelial tissues The kidney error was local evidence of a general infection, the peritonitis was an attempt at an immunizing experiment and though we interrupted the development of Nature's intention sufficient had been achieved to eliminate both the local and the general errors

THE PROBLEM OF TREATMENT

If we accept the view that an immunizing peritonitis arises in childhood in association with certain types of general bacterial infection, the proper course to adopt in relation to it gives us anxiety If we intervene too early we are interrupting a process which is protective, and therefore salutary, on the other hand, because the reaction arises in a closed space and in an area from which absorption will ultimately occur, a time comes when intervention in the form of drainage is essential if disaster is to be avoided I suppose the truth is that, as we are unlikely to recognize an immunizing peritonitis until it is demonstrated by laparotomy, we shall continue to intervene, the time is not yet when we can say, " *Cunctando restituit rem* " I would add that, while there is no doubt a time of election at which operative intervention is most appropriate, less harm arises from early operation than from undue delay

And now the demon of doubt has entered my mind Have I erred in drawing attention to this question? Shall I be accused of the heresy of advising conservatism in peritonitis? I hope no such construction can be placed on what I have said, but perhaps I should insist that the condition I am discussing is the generalized peritonitis developing in the absence of any local inflammatory or perforating lesion a peritonitis which is the result of the response of a certain type of tissue to a general infection, a response which I believe, we may regard as protective and immunizing in its character, a phenomenon (and this is important) which is exercised in its maximum degree in the years of childhood.

A Clinical Lecture
ON
HOUR-GLASS CONTRACTION OF THE STOMACH

DELIVERED AT GUY'S HOSPITAL, APRIL 16TH, 1931,

BY

R. P. ROWLANDS, M.S., F.R.C.S.
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I venture to illustrate this lecture with accounts of my first and of my latest case of hour-glass contraction treated by operation. I published a detailed description of the first and most remarkable case, with five others, in the *British Medical Journal* of March 25th, 1911, and in *The Operations of Surgery* (1927, ii, 188). The latest patient has only just left Guy's Hospital.

CASE I.—*Hour-glass Contraction : Duodenal Stenosis : Gastro-gastrostomy and Finney's Operation*

Mrs. M. D., aged 42, came to me in 1909 with a history of indigestion for many years, and of almost constant pain in the epigastrium and sternum for the last three years. Swallowing immediately made the pain worse, and was followed by vomiting, which eased the pain. Only two or three ounces of liquid could be taken at a time ; solids always caused severe pain and vomiting. There was no history of haematemesis or of melaena. The patient was very thin, sallow, and weak, and said that her weight had gone down from 130 lb. to 56 lb. during the last two years. A physician had seen her, and had diagnosed incurable malignant disease of the stomach or oesophagus. Radiographic examination after an opaque meal excluded oesophageal obstruction, but showed tight hour-glass contraction of the stomach, with a very small upper pouch and a very large lower one, with definite pyloric stenosis. Gastro-gastrostomy was performed with great difficulty owing to the small size and high position of the upper pouch ; the incision in the latter had to be made almost circumferential in front of the greater curvature in order to get a sufficiently large anastomosis. The pylorus was then enlarged by Finney's operation. There were many gall-stones in the gall-bladder, but the temptation to remove them was resisted. The patient made a good recovery, and had gained over a stone in weight before she left the nursing home five weeks later. In 1912 she weighed over 9 st., having more than doubled her weight. In 1913 I removed a number of gall-stones from the gall-bladder and cystic and common bile ducts. The patient has remained perfectly well ever since.

CASE II.—*Hour-glass Contraction : Partial Gastrectomy*

E. H., aged 44, was admitted, under Dr. A. F. Hurst, on February 18th, 1931, for severe and continuous pain in the left side of the abdomen and the back, which occurred at intervals of two or three months for the past four years. Her brother had a partial gastrectomy for gastric ulcer. She had five children, having had also severe pelvic peritonitis after the birth of her first child, twenty-one years ago. Six years ago she had a hysterectomy, with removal of both ovaries ; afterwards she was ill with double pneumonia and in bed for seven months. Four years ago she began to suffer from severe pain in the left hypochondrium, with nausea, vomiting, constipation, and retention of urine. These attacks would last for two or three weeks, and then would give way to a period of comparative freedom from symptoms, lasting for about three months, but even then there was a dragging pain under the left costal margin. The attacks gradually became more frequent until, finally, just before Christmas, 1930, she had an attack which was much more severe than any previous one, and lasted until she was admitted on the above-mentioned date. She usually vomited about two or three times a week. On admission the patient was weak and anaemic. The teeth were in bad condition, and showed extensive caries. The abdomen was full, and showed numerous brown stains, due to the application of heat. There was resistance and tenderness in the left hypochondrium, and the pain was referred to the left breast and left shoulder-blade. The urine contained albumin, with a little pus, and gave a culture of the *Bacillus coli communis*. An *x*-ray examination of the renal tract showed no abnormality ; the Wassermann test was negative. The pain was almost continuous, but was worse very soon after food ; nausea and vomiting followed the pain. *X*-ray examination after a barium enema demonstrated no abnormality. After an opaque meal had been given, an hour-glass stomach was visible, with a large niche about the middle of the lesser curvature. This was tender on pressure, and was thought to indicate an ulcer penetrating the pancreas. The notch on the greater curvature opposite the ulcer was very deep, but although the channel for food was very narrow, the barium passed quite freely from the upper into the lower pouch. The duodenal cap was normal, but about half the meal remained in the lower pouch of the stomach at the end of six hours. Although the patient improved a good deal on a strict diet, Dr. Hurst did not think the deep and large ulcer would heal under medical treatment, nor did he expect gastro-gastrostomy would be sufficient, especially as there was no delay in the upper pouch. The patient was therefore transferred to my ward on March 19th. As the haemoglobin was 80 per cent., transfusion was considered unnecessary.

At operation, on March 26th, using the left Kocher incision, many adhesions were found in the lower abdomen from the old hysterectomy. There were some calcified glands in the mesentery, especially near the ileo-caecal angle. The appendix did not appear to be diseased, and was not removed. There were many calcified glands in the ileo-caecal region. There was no duodenal ulcer or stenosis. A large ulcer was found at the middle of the lesser curvature, whose crater just admitted the tip of my thumb. There was only a moderate hour-glass contraction ; most of the deformity shown on the *x*-ray pictures was clearly due to spasm, and as the ulcer was deep and partly adherent to the pancreas, and appeared to penetrate the stomach wall, Dr. Hurst (who was present) and I decided in favour of partial gastrectomy. This was carried out, the stomach being divided 1 inch from the pylorus and the adhesions to the pancreas being tied and the stomach divided 1½ inches above the ulcer and joined to the jejunum 8 inches below the duodeno-jejunal flexure, the proximal part being at the greater curvature. When the operation had been completed the distal jejunum appeared kinked and compressed by the root of the transverse mesocolon ; therefore an entero-anastomosis was made. During the operation a grey swelling, 1 inch long, was found in the early part of the jejunum, which was suggestive of tuberculous ulceration. The anastomosis was made below this part. No other similar patches were found. After the stomach had been removed the mucous membrane about the ulcer was seen to be very oedematous and congested, and this made the ulcer seem deeper than it really was. It had not quite pierced the outer coat of the stomach.

ETIOLOGY

Hour-glass contraction is nearly always due to a peculiarly chronic kind of gastric ulcer, which is very rare in men but fairly common in women. It generally occurs near the middle of the lesser curvature, but occasionally it may be found much higher or lower down. Opposite the niche of the ulcer on the lesser curvature a deep spasmodic notch is formed on the greater curvature. Gradually the ulcer extends deeply into the gastric wall and causes extensive infiltration of it, especially where it is in spasm. It has a great tendency to heal with the formation of dense scar tissue, which draws up the greater towards the lesser curvature, causing more and more obstruction, with secondary dilatation and hypertrophy of the upper pouch. Spasm of the muscular coat of the stomach and congestion with oedema of the mucous membrane add to the obstruction. These factors vary

from time to time, so that the degree of obstruction is also variable. It is interesting and significant that the type of ulcer which causes hour-glass contraction very rarely becomes malignant. This well-recognized fact has great influence in making the surgical treatment easier and safer and the ultimate prognosis better.

At one time it was thought that this deformity was congenital in origin, a reversion to the type of divided stomach seen in some of the lower animals. There is only one authentic case of congenital hour-glass contraction. In one case the deformity was secondary to a congenital gastric fistula. Bands outside the stomach may squeeze it into an hour-glass shape. I have seen several cases of this kind. In one of these the contraction had followed the perforation of a gastric ulcer with diffuse peritonitis. After some months, a broad band of adhesions remained and passed round the stomach from the ulcer, which was on the lesser curvature and adherent to the liver. In another, a thin band constricting the upper part of the stomach extended from calcified glands above the pancreas. Occasionally syphilis causes hour-glass contraction, and therefore it is always wise to make the Wassermann test. *Carcinoma causes about 1 per cent.* of hour-glass contractions. The *x*-ray appearances differ much from those of simple hour-glass contraction.

VARIETIES

Usually the ulcer causing the stricture is near the middle of the lesser curvature, and the upper pouch is larger than the lower, but occasionally the ulcer may be very high up, near the cardia, so that the upper pouch may be very small. Sometimes the ulcer may extend to the cardiac orifice and cause not only an hour-glass contraction but also oesophageal obstruction. Rarely an ulcer near the pylorus may cause an hour-glass contraction with a *small lower pouch*. In about one-third of the cases, duodenal or pyloric stenosis complicates hour-glass contraction; this has been overlooked before and during operation with serious consequences.

Instances are recorded of two or more contracting ulcers of the stomach dividing the latter into three or more pouches. The contracted part of the stomach is nearly always adherent to the under surface of the liver, the pancreas, the falciform ligament, or the anterior abdominal wall. In the majority of my cases the ulcer had healed or was quite small before the patient came to operation, so that there was no suspicion of malignancy or need to excise an ulcer or stricture, but only to make a good short circuit for the free passage of food.

DIAGNOSIS

Before the introduction and perfection of radiographic examinations the diagnosis of hour-glass contraction was often difficult, and we had to rely upon gaseous distension of the pouches. Nowadays, careful and repeated *x*-ray examinations make the diagnosis easy and accurate. It is possible, however, to overlook the lower pouch if the stricture above it is very tight, and if repeated examinations are not made after the food has had time to pass into the lower pouch. The notch produced by muscular spasm opposite an ulcer upon the lesser curvature has often led to erroneous diagnoses of hour-glass contraction, so that when the stomach has been exposed at operation the spasm has been overcome by the anaesthetic, and very little narrowing of the stomach has been evident. But, as already mentioned, spasm and oedema of the stomach add greatly to the obstruction produced by real fibrous contraction. The waist of an atonic stomach dragged down by an opaque meal is quite different from that of true organic hour-glass contraction. It does not show the bulge or pouch below and to the left of the stricture. Reflex spasmodic contraction of the stomach has led to a wrong diagnosis. In one case of this kind, hour-glass contraction was demonstrated on three separate occasions, but none was found at the operation. A subacutely inflamed appendix lying in the pelvis and full of pus had caused the reflex contraction, and its excision cured all the reflex gastric symptoms and signs.

TREATMENT

Although medical treatment may greatly relieve the symptoms of hour-glass stomach in its early stages, an operation should be performed as soon as obstruction develops, for it is rarely possible to cause the ulcer to heal completely without seriously increasing the obstruction. Delay has often led to unnecessary suffering and semi-starvation. Many of my patients had become extremely thin and weak before they were sent for operation. Delay may also lead to serious haemorrhage, perforation, or possibly malignant disease. A subphrenic abscess had developed in one of my patients, and had existed for nearly three months before the operation; it is no wonder, therefore, that she died a few days after the operation.

PREPARATION FOR OPERATION

The patient should be carefully prepared for the operation, and all septic conditions, especially in the mouth, throat, and nose, should be efficiently treated at least a fortnight beforehand. The stomach is washed out if there is much stasis, and, after this, the diet should be limited to sterile liquids for two days before the operation. Rectal salines with 5 per cent. glucose may also be given with advantage in severe cases.

The operation should begin as a rapid exploration of the whole abdomen, and any obvious source of infection, such as a diseased appendix, should be treated. The stomach, pylorus, and duodenum must be carefully examined, for without this precaution a cardiac pouch, a trilocular stomach, or associated duodenal obstruction has been overlooked, with disastrous consequences. In six cases mentioned by Veyrasset[1] the upper pouch was overlooked, and only the pyloric pouch was drained by a gastro-jejunostomy, with fatal results. The exact nature of the operation must depend on the conditions found on exploration, for the same operation is not suitable for all cases. Much depends on the size of the cardiac pouch, the presence or absence of pyloric obstruction or adhesions, and any suspicion of malignant disease. The condition of the patient has also to be taken into consideration, for this is frequently too bad for a long and severe operation.

The immediate need is to overcome the obstruction, so that the patient may be saved from starvation. Under these conditions excision, which may seem to some to be the ideal radical operation, may be far too dangerous, and therefore wrong. Experience has also shown that it is rarely necessary.

Hour-glass contraction depends chiefly on the formation of scar tissue in connexion with a chronic ulcer. Recovery under medical treatment is prevented by the increasing obstruction, with the consequent starvation and the forcing of food through the narrow neck of the hour-glass over the surface of the ulcer. When the obstruction is overcome by operation, the food is no longer driven over the ulcer, *full diet can be taken with safety, and complete* healing may be expected; there is abundant evidence that this does take place.

CHOICE OF OPERATION

The choice of operation depends chiefly on the presence or absence of pyloric obstruction in addition to hour-glass contraction. It follows that the discussion will be facilitated by adopting this natural division.

Simple Hour-glass Contraction

Gastro-gastrostomy is, in my experience, the most commonly applicable and satisfactory operation; when well done it permanently overcomes the obstruction without altering the physiological conditions of the stomach, and without trespassing on the ulcerated stricture, through which the food need never pass again. Moreover, it is the safest operation, and it carries no risk of gastro-jejunal ulcer or of vicious vomiting, which are especially likely to follow gastro-jejunostomy performed under unusual difficulties. When the upper pouch is very small, gastro-gastrostomy may be difficult, but by making a curved incision a sufficiently large opening can be obtained. The vertical gastric incisions figured in some of the books cannot be made nearly long enough to provide adequate drainage. This operation is much more easily done on the front of the stomach for adhesions in the lesser sac, and the distortion of the stomach makes a posterior operation very difficult without any compensating advantages. The essential points of gastro-gastrostomy now require attention. It is of vital importance to make the stoma as large as possible, especially when this is the only operation performed. With this object very large pouches of the cardiac and pyloric parts of the stomach are so secured in strong curved clamps that long curved incisions can be made in them about 1 inch above and nearly parallel to the greater curvature. The points of the clamps are just below and in front of the structure, and their handles below the greater curvature well to the right and left. The pouches are brought together and joined by two continuous fine catgut sutures as in gastro-jejunostomy.

Gastroplasty, as advocated by Kammerer, is not nearly so satisfactory because it trespasses upon the stricture or ulcer; consequently haemorrhage is more likely to follow, and the sewing is more difficult owing to the adhesions which generally bind down the contracted part of the stomach.

Gastro-jejunostomy.—When there is no pyloric obstruction and the cardiac pouch is of large size, posterior gastro-jejunostomy, engaging the lower part of the cardiac pouch, is attractive, because it not only overcomes the gastric stricture in a simple way, but it also corrects the excessive secretion of acid, which is such an important cause of the persistence of the ulceration when a low gastric stricture has once formed.

Excision of the Ulcer.—In some cases it is possible and advisable to excise the ulcer upon the lesser curvature without approaching too near the greater curvature. When the V-shaped opening thus made is closed, the narrowing is abolished, and the natural shape of the stomach is restored. This operation has the merit of immediately removing a chronic ulcer, which is slow to heal and may be regarded as a possible source of malignant disease, but it is unnecessarily difficult and severe for bad cases, and is only to be undertaken at any time by surgeons of considerable skill and experience in gastric surgery. Recurrence of ulceration with more severe hour-glass contraction occurred within a year in one of my cases; gastro-gastrostomy was then performed, and proved satisfactory. It must always be remembered that gastro-gastrostomy, which is a comparatively easy operation, cures these patients at a much smaller risk.

Partial Gastrectomy.—Removal of the part of the stomach bearing the stricture either by sleeve resection or by the classical partial gastrectomy is recommended by some surgeons, but as a rule it is unnecessarily severe and exposes a feeble patient to unnecessary risk. It is certainly necessary in a few cases, especially when the ulcer is large or when malignant disease is present, or even then there is reason to suspect it. I have operated on over sixty cases of simple hour-glass contraction, and only one patient who had had an attack which was much worse than any previous one, and lasted until she came under my care for the above-mentioned date. She usually had hour-glass contractions at two or three times a week. On admission she was very emaciated, was weak and anaemic. The teeth were in bad condition, and showed extensive caries. The abdomen was scaphoid and the proximal loop of jejunum could be seen and felt as a tense cord. The patient had completely recovered, and she has remained quite well and able to work hard for six years following the operation.

Retrograde Dilatation.—Moynihan[2] records a remarkable case in which it was impossible to join the cardiac pouch to the pyloric pouch or jejunum owing to adhesions. He opened the pyloric pouch and dilated the stricture in a retrograde manner, and to his surprise the patient made a good recovery.

Temporary jejunostomy has been performed in some cases when no other operation could be done with advantage (Eusterman).[3] The rest afforded to the stomach for some months may improve the local conditions so much that a secondary radical gastric operation may become possible.

Hour-glass Contraction with Pyloric or Duodenal Stenosis

Gastro-gastrostomy followed by Finney's Operation.—I prefer this combination whenever possible. When the pylorus and duodenum are movable Finney's operation appears to be the best method of overcoming duodenal stenosis, for it is simple and effective, and can be performed very quickly when time is important in these enfeebled patients requiring two anastomoses, and particularly because it carries no risk of vicious circle or gastro-jejunal ulcer. Sometimes lateral gastro-duodenostomy is easier and better, but gastro-jejunostomy is preferable when there is active ulceration with deep and firm fixation of the duodenum.

Double posterior gastro-jejunostomy is not satisfactory in these circumstances for various reasons. It is difficult to drain the two pouches thoroughly through the limited space available in the mesocolon. Moreover, there are as a rule extensive and firm adhesions behind the stomach, and the mesocolon may be considerably shortened and adherent. In some of my cases it seemed impossible to join the jejunum to the posterior surface of the very small cardiac pouch, without undue risk of angulation and obstruction of the long-drawn-up loop of the jejunum around which the mesocolon, although sewn to the stomach, is very likely to contract.

Partial gastrectomy is worth considering when duodenal ulceration or duodenal stenosis complicates hour-glass contraction in a patient who is not too feeble, but so far I have been content with the simpler and safer methods described above.

RESULTS OF OPERATION

Mortality.—Veyrasset's[1] statistics published in 1908 show a mortality of 16 per cent. for 260 operations for simple hour-glass stomach, but six of the deaths were due to draining the pyloric instead of the cardiac pouch. The death rate has much diminished since then, especially when great care is taken to select the operation, or combination of operations, most suitable for each case. As a rule gastro-gastrostomy is applicable and is attended by a very small risk, considering the state of nutrition of these starved patients. I have operated on over sixty cases with only two deaths due to the operation. It is fair to put the mortality at under 4 per cent.

Ultimate Results.—These are very good when the obstruction is thoroughly overcome. In the majority of my cases I have adopted gastro-gastrostomy and added either Finney's operation or gastro-jejunostomy when it was necessary to overcome duodenal stenosis. Very few of my patients required a secondary operation. There were three secondary gastro-jejunostomies, one secondary partial gastrectomy, and one secondary gastro-gastrostomy seven years after the first.

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VITAMIN B_2 AND PELLAGRA

THE ETIOLOGY OF PELLAGRA

BY

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The purpose of this article is to direct attention to the fact that, though Goldberger's researches have thrown very considerable light on the question of the etiology of pellagra, there are several points in this problem which are still obscure. The earlier theory that pellagra was caused by a deficiency of protein of good biological value was discarded by Goldberger after a series of researches, in which he found that, while caseinogen provided little relief, certain materials like brewer's yeast and fresh meat afforded both protection and cure.[1 2] Convincing evidence was advanced by Goldberger and Lillie,[3] who produced a pathological condition in rats by giving them an alcoholic extract of corn-meal, which is known to be rich in the so-called antineuritic factor, as the sole source of water-soluble B. This condition was characterized by a failure of growth, loss of fur, and buccal lesions, and was considered to be the experimental analogue of human pellagra. Inclusion of yeast, in which the antineuritic substance was almost completely destroyed by autoclaving, cured and prevented all these symptoms. These experiments, confirmed by others,[4] have led to the general belief that the water-soluble B of McCollum consists of a relatively heat-labile factor which is specific for polyneuritis and a more thermostable constituent (Goldberger's P-P factor) which is concerned in the prevention and cure of pellagra. These two factors have now been respectively designated as vitamins B_1 and B_2 in this country.

ETIOLOGICAL CONSIDERATIONS

In spite of the above work, however, it is not yet clear whether pellagra, experimental or human, is the result of an uncomplicated deficiency of the factor called vitamin B_2—that is, the substance which supplements a purified preparation of vitamin B_1 for the development of vitamin B deficient rats. Nor is it certain that the dermatitis condition in rats is a perfect analogue of human pellagra. This condition in rats cannot be produced uniformly by the deficiency of vitamin B_2 in the diet. Attention is drawn to statements in the literature[5 6] that pellagra symptoms in rats may be produced when they are still growing, while, very often, the arrest of growth in vitamin B_2 deficiency is not associated with any skin symptoms. Elsewhere[7] I have described a curious kind of depilation in rats subsisting on a vitamin B_2 deficient diet, in which the fur fell off not in patches, but uniformly. This occurred fairly regularly when young animals were kept on a vitamin B_2 deficient diet with only occasional administrations of small doses of vitamin B_2, such that the deprivation of vitamin B_2 was not complete, but sufficiently severe to cause the weight of the animals to remain between 60 and 80 grams over a period of ten to twelve weeks. Lesions on the mouth and paws occurred only in a minor proportion of these animals. The symptom of depilation was rapidly cured by administration of Eli Lilly's liver extract No. 343. Leader[8] has recorded that small doses of marmite, sufficient to prevent beri-beri, are actually helpful in the production of pellagra-like symptoms in rats, an observation which is supported by the work of Sure and Smith.[9] It has been pointed out by Aykroyd[4] that rice, millet, and maize are all poor sources of vitamin B_2 as tested on rats, while human pellagra appears to be associated chiefly with the consumption of maize.

Bliss[9] has recently put forward the view that human pellagra, as well as experimental pellagra in rats and black tongue in dogs, is caused by iron deficiency. In a more recent paper[10] he has adduced fresh evidence in support of his claims. He observed depilation occurring in rats on an iron-deficient diet containing ample vitamin B; according to Elvehjem and Peterson,[11] hair is the richest source of iron in the body. The depilation of our rats on a vitamin B_2 deficient diet cannot, however, be due to a simple iron deficiency, as the food intake and, therefore, the iron intake was still sufficiently large to cover the iron requirements of the animal. This condition of depilation was not remedied, nor did growth resume on feeding 25 mg. of haemin per day. The haemin was dissolved in 0.2 *N* NaOH and precipitated in a finely divided condition by 0.2 *N* HCl, this suspension being fed in various doses. The dose fed was much in excess of that which could be absorbed by the animals, as was shown by a considerable excretion of haematin, indicated by the benzidine test. Nor did the condition improve on feeding 0.5 gram of haemoglobin per day. However, the experiments with haemin may have been complicated by an insufficient absorption from the gut, and hence they cannot be strictly compared with those of Kollath,[15] who states that the feeding of alkaline haematin prevents the appearance of pellagra symptoms in rats on a diet deficient in vitamin B. The fact that vitamin B_2 in certain preparations can be inactivated by autoclaving in an alkaline medium[12] argues against the proposition that vitamin B_2 deficiency is simply an iron deficiency. The possibility, however, must be recognized that pellagra, both clinical and experimental, might be associated with a disturbance in iron metabolism. The observation[5] that the presence of sugar in the diet causes pellagra symptoms to appear more regularly in rats may have some significance in this connexion, as Whipple, Hooper, and Robscheit[13] observed that the fasting anaemic dog was able to regenerate red cells and haemoglobin more readily than the animal fed with sugar. Sure, Kik, and Smith[14] have observed a distinct lowering of the red blood cell count in vitamin B_2 deficiency, and we have also observed the same in this laboratory.

COMMENTARY

The statement that clinical and experimental pellagra is the result of a simple deficiency of the dietary factor, vitamin B_2, has passed into current literature. The above analysis of the existing evidence indicates, however, the inadequacy of this assumption. On the other hand, the suggestion that pellagra is caused by a simple iron deficiency in the diet appears to be untenable in view of Goldberger's and of our own experiments. It is considered probable that pellagra is a complex syndrome arising from an association of various factors, in which the deficiency of an antipellagra factor (Goldberger's P-P factor), which is possibly, but not necessarily, identical with the growth-promoting vitamin B_2, is the main but not the sole factor. Thus, iron might be one of the limiting factors, especially so far as depilation is concerned. Preliminary experiments, carried out in conjunction with L. Mapson, indicate that a balance between vitamin B_2 and other dietary factors might be involved in this question, and that vitamin B_2 may play a part in a particular phase of iron metabolism.

Finally, it is considered that, instead of presuming the identity of the two factors involved in the definition[1] of vitamin B_2 as the "factor in the vitamin B complex other than the antineuritic, which promotes growth and prevents dermatitis in rats," the terms vitamin B_2 and antidermatitis (antipellagra ?) factor should not be used interchangeably, as has been hitherto the practice. Though the terms vitamin B_1 and vitamin B_2 might appear to

indicate some relationship between the two, it may be mentioned that so far they appear to be both chemically[12] and physiologically unlike.

I wish to express my thanks to Sir F. Gowland Hopkins for his interest in this article.

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MÉNIÈRE'S DISEASE*

BY

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HARROGATE

For many years it was taken for granted that Ménière's disease was due to haemorrhage into the labyrinth. This misconception was due to a faulty reading of Ménière's original paper, in which there is no mention of this condition. He described the material found in the labyrinth of his well-known case as being composed of reddish plastic lymph. Alexander of Vienna considers that Ménière's patient suffered from leukaemia complicated by a leukaemic haemorrhage into the labyrinth. Escat thought that Ménière's disease occurred only in arterio-sclerotics, and ascribed the paroxysmal attacks to an intermittent spasm of the internal auditory artery, and the apoplectiform attacks to haemorrhage.

The exclusion of labyrinthine haemorrhage as an etiological factor placed this disease in a less formidable light, for haemorrhage from one intracranial blood vessel implies the possibility of haemorrhage from another, secondary to arterio-sclerosis and high blood pressure. But haemorrhages, arterio-sclerosis, and high blood pressure are absent in Ménière's disease. The vertigo due to spasm of the cerebral arteries in patients with arterio-sclerosis must be distinguished from the vertigo of Ménière's disease in which tinnitus and deafness are prominent symptoms.

INTRACRANIAL CAUSES

The rejection of haemorrhage and arterio-sclerosis as causes of this disease was followed by many theories and, naturally, by as many treatments. Thornval, a recent writer, considers that the main disturbance is in the medulla oblongata. Charcot (1874) and Dandy (1928) put forward the view that there was a lesion of the auditory nerve and not of the semicircular canals. Charcot recommended division of the nerve, and Dandy divided the nerve in nine cases with a resulting cure. Aboulker thinks that the syndrome is due to pressure on the nerve from a collection of fluid around it—that is to say, to an encysted meningitis or hypertension of cerebrospinal fluid in the lateral cisterna. He consequently does a decompressive trephine behind the mastoid, with or without incision of the meninges. Babinski, and, later, Blake, must have had the same idea, as they treated their patients by lumbar puncture. Quix also believes that this disease is due to intracranial hypertension, which acts on the otoliths via the ductus endolymphaticus instead of on the nerves. Kobrak also subscribes to this theory of an intracranial origin. According to his view the trouble is localized behind the labyrinth mainly in the cisterna pontis, and the increased pressure is transferred to the labyrinth via the porus acusticus or saccus endolymphaticus. He thinks that the excess of fluid is caused by an irritation of the choroid plexus or is due to a transudation resembling a circumscribed oedema of the skin. Kobrak uses atropine, pilocarpine, and adrenaline in examining his patients to find out whether the syndrome is associated with a vagotonic or sympathicotonic condition.

INTRA-AURAL CAUSES

The other theories to be considered all agree that the origin is intra-aural rather than intracranial. Thus Witmaack is of the opinion that toxins produced by a catarrhal condition of the middle ear diffuse into the labyrinth via the windows, and so produce an intralabyrinthine hypertension. Quincke believes that the symptoms are due to an angioneurotic oedema of the labyrinth, which brings about an increase in tension of the endolymph. According to Portmann the hypertension originates in the labyrinthine blood vessels. He calls this hypertension of the labyrinth "glaucoma of the labyrinth," and considers that Ménière's syndrome is closely connected with vasomotor phenomena, and hence with sympathetic equilibrium. He believes that the vertigo is caused by a vaso-constriction of the blood vessels of the labyrinth, while tinnitus and deafness are produced by vaso-constriction of the vessels of the cochlea. This vaso-constriction elsewhere would produce pain, as in frostbite or Raynaud's disease. The sign of labyrinth disturbance is vertigo, just as the sign of a diseased cochlea is tinnitus. This vaso-constriction disappears after a sympathectomy, the consequence of which is a vaso-dilatation of the blood vessels of the labyrinth. He also considers that the constriction of the blood vessels may be caused by adrenaline. Portmann does not know whether the vascular stasis produced by vaso-constriction acts directly on he nerves or, as the result of an increase of pressure, on the semicircular canals. With the idea that vertigo was due to an increase of pressure in the semicircular canals he opened the saccus endolymphaticus after performing a mastoid operation without opening the antrum. On the supposition that vertigo was purely a vasomotor reaction he performed a perivascular sympathectomy on the common and internal carotid arteries, and injected drugs which inhibited the sympathetic system, attempting to cause peripheral vaso-dilatation by hot baths. Halphen, on the same grounds, applied cocaine (Bonain's solution) to the sphenopalatine ganglion, and stated that this led to the disappearance of the vertigo after an hour or two, due, presumably, to the inhibition of the sympathetic system. Lermoyez recommended liquor trinitrini in cases of suspected spasm of the internal auditory artery. Amyl nitrite and benzyl benzoate have also been recommended. Muck agrees with Portmann in that he has found his vaso-constrictor nasal reflex present in Ménière's disease. This indicates, according to Muck, the presence of an angiospastic condition of the auditory artery. He has successfully treated five patients with a meatless diet.

FAULTY WATER METABOLISM

Finally, Dida Dederding and Dr. Mygind of Denmark have originated a theory which solves all these problems. They definitely state that the symptoms of Ménière's disease are due to increase of pressure in the semicircular canals, which produces vertigo and deafness by displacement of the stapes. They attribute this increased

* Read before the Darlington Branch of the British Medical Association on March 19th, 1931.

pressure to a faulty water metabolism, which allows water to collect intracellularly, resulting in subcutaneous infiltrations, overloading of the fluid in the labyrinth, and increase of pressure in the cerebro-spinal fluid. To the well-known signs of Ménière's disease—namely, tinnitus, vertigo, and deafness—they add the attribute of variability of these signs, the variability being due to the amount of water retained at the time. Thus, after exercise sufficient to produce perspiration, or following a decreased intake of water and salt, air conduction and bone conduction improve; while after an increased intake of fluid, air conduction and bone conduction decrease, and the latter may even be absent. Low notes are usually not audible, while high notes are well heard. This shows that the cochlea is intact and that hearing can be saved. In late cases the high notes are lost. These writers find the tympanic membranes retracted as a result of stenosis of the Eustachian tube, and so they look upon catheterization as an essential part of the treatment. The stenosis is caused by waterlogging of the lining mucous membrane. The examination of the labyrinth reveals abnormality of the semicircular canals; nystagmus occurs spontaneously, or it can be induced by the inhalation of amyl nitrite, and the turning chair shows a difference in the direction of right and left after-turning nystagmus. The proof that these patients suffer from a faulty water metabolism is that if 1,000 c.cm. of water is administered, only 400 to 500 c.cm. will be passed in four hours, whereas a normal person will pass the 1,000 c.cm. or more during this period. Furthermore, a patient with Ménière's disease will increase in weight corresponding to the amount of water retained; that is to say, if a patient retains 500 c.cm. he will increase in weight by 400 grams, allowing 100 c.cm. for loss through the skin and lungs.

A haemocritic test also shows that in a normal person the blood becomes diluted half an hour after intake of water and regains its normal concentration an hour later, while in a waterlogged patient with Ménière's disease there is no alteration in the dilution of the blood. A waterlogged patient also shows a loss of haemoglobin, the haemoglobin being about 73 per cent. The third proof offered is that an intravenous injection of salyrgan (1 c.cm.) causes diuresis, which commences immediately and lasts two days in a patient with Ménière's disease, while in a normal person the diuresis lasts one day, and there is a decreased output of urine on the second day. In certain patients with only tinnitus and catarrhal otitis disordered water metabolism has been found. These cases can be recognized by noticing an alteration from hour to hour in the perception of low tones or in the air conduction.

TREATMENT

The treatment of Ménière's disease, based on this theory, consists in diminishing the intake of fluid so that the patient loses weight and is actually thirsty. For dietetic purposes fruit and vegetables are considered to be fluid. One also must promote the loss of water by carbonic acid, fir needle, and mud baths, and by the Scotch douche, by exposure to the carbon arc up to one hour three times a week, and by massage. Diet must be salt-free. Local treatment consists in catheterization of the Eustachian tube. The drug treatment in this Danish school is unimportant. Like others they treat the acute attack with atropine, but have found ergotinine also useful. An injection of salyrgan is followed up by a long course of calcium-diuretin; while calcium, ovarian, and thyroid extracts are also used.

I myself have had great success in employing a salt-free diet with a decreased intake of fluid. I have also used a drug (in a few cases) which has been investigated by Berggren—namely, bulbocapnin (Merck). This drug is as valuable in Ménière's disease as ephedrine is in asthma. My patients take one tablet (0.1 gram oral tablet) a day, and this is sufficient to prevent vertigo, while the acute attack is treated by a hypodermic injection (0.1 gram hypodermic tablet), which will almost at once relieve the patient.

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MINERS' NYSTAGMUS

BY

W. J. ROCHE, M.B., M.CH., D.O.OXON.
D.O.M.S., D.L.O.

The following investigation favours the theory that defective illumination is the major factor in the causation of miners' nystagmus.

I have investigated the same seam in two pits which are about a mile apart; they are steam-coal pits. In Pit A 0.303 per cent. of the workers are on compensation for nystagmus; in Pit B 1.27 per cent. are on compensation. I have examined the men who are working on the day shift in both pits: suffering from nystagmus—Pit A, 26.25 per cent.; Pit B, 41.42 per cent. In both pits the greatest incidence is among colliers, but there are many more acute cases in Pit B than in Pit A.

Comparison of Conditions

	Pit A	Pit B
Number of men employed ...	1,330	1,230
Number of oil lamps	550	520
Number of 1-c.p. electric lamps	804	770
Depth of seam	1,500 ft.	1,530 ft.
Average thickness of seam ...	4 ft. 2 in.	5 ft. 1 in.
Mechanically handled	100 %	100 %
Barometric reading	23.35	23.43
Analysis of Air		
Carbon dioxide	0.25 %	0.14 %
Methane	0.78 %	1.63 %
Oxygen...	20.62 %	20.35 %
Nitrogen	78.35 %	77.87 %
Hygrometer	68° F	73.75° F.
Analysis of Coal		
Moisture	0.6 %	0.5 %
Ash...	3.6 %	3.0 %
Volatile matter	14.3 %	15.5 %
Fixed carbon	81.5 %	80.8 %
Sulphur	0.53 %	0.84 %
Phosphorus	0.042 %	0.077 %
Quantity of air	1,000 c. ft. per miner	4,920 c. ft. per miner
Velocity of air	17 ft. per min.	122 ft. per min.

The only differences of any importance in this comparison are the depth of seam, the amount of methane, and the velocity of the air. It is nearly as difficult to work in a 4-foot seam as it is in a 3-foot seam, because in both seams the worker has to perform his duties in the reclining and semi-reclining positions. The amount of methane in either pit is so slight as to be of no importance. An increase in the velocity of air means more dust.

A comparison of the reflecting power of the coal faces in the two pits shows a very distinct difference. I am indebted to J. H. Shaxby, D.Sc., physicist and physiologist of the University of Wales, for his co-operation in taking photometric data and making the following comments on reflection and minimum candle power considered necessary to ensure macular vision.

It was noticed that the face of the coal of the same seam in two pits differed appreciably in the size of the facets of the fractured surface. In Pit A these facets are relatively large, and reflect light moderately well; in Pit B they are much smaller, and give the face a more uniform but a duller appearance. The difference seems to be accentuated by the smaller fragments which result from the cuttings of Pit B sticking to the cut surface and increasing its dullness. It was decided to measure the effective reflecting power of the seam in the two pits at the working face, and for this we used a specially made small photometer, which was worked by the illumination of an ordinary electric collier's lamp of 1 candle power.

The instrument consists of a tube about six inches long, in which is mounted a small Lummer-Brodhun cube. Light from the coal face to be examined passes directly through the middle strip of the cube, while light from the lamp falls on the cube from a lateral aperture, and is reflected to the eye from the outer parts of the cube. A simple eyepiece aids observation of the cube. The field of view thus consists of a central strip illuminated by the reflection from the coal face, and areas on either side illuminated directly by the lamp. The light from the latter is subdued and made diffuse by a window of opal glass in the side aperture of the photometer, and over this window slides a neutral absorbing "wedge," fitted with a scale defining its position relative to the centre of the window. By adjusting the setting of the wedge the field is made equally bright in both parts. The fractional amount of light transmitted by the wedge is known for each point on its length. The fraction transmitted by the opal glass window is determined once for all. Thus, from the setting of the wedge the relative amounts of light falling on the instrument from the coal face and from the lamp are determined, and, knowing the distances of the lamp from the coal and from the photometer, it is easy to calculate the reflecting power of the coal.

The data obtained in this way in the two pits work out as follows:

Percentage Reflecting Powers (Averages)

	Pit A	Pit B
	Per cent.	Per cent.
Freshly cut face	15.0	12.0
Slip	15.0	7.5
Roof (dry)	6.3	7.5

In the darkest parts of the face in Pit A the reflecting power fell to 12 per cent., while in one place, where the comparatively large facets of the coal caught the light, it rose to as much as 38 per cent. The reflection from the floor was never more than 2½ per cent., and was usually much less than this in both pits.

The impression gained by general inspection of the coals from the two pits is thus borne out by measurement; perceptibly more light is reflected in Pit A than in Pit B under the same conditions of illumination. As has been stated, Pit A shows relatively much less miners' nystagmus.

It is of interest to calculate the strength of illumination necessary in a coal mine to ensure that the miner will use macular vision. The borderline between photopic and scotopic vision is given by the most trustworthy estimates as corresponding to a field of brightness about 0.0073 millilambert. It is presumably necessary, in order to ensure central fixation, to put a premium on the use of cones rather than rods by giving a brightness well above this borderline. If we assume that double the value is sufficient, and take the millilambert as the brightness of a perfectly diffusing reflecting screen under an illumination of 0.93 foot-candle, we find 0.0136 foot-candle to be required with such a screen. In a coal mine with average reflecting power 10 per cent. we shall then need 0.136 foot-candle, with a reflecting power 5 per cent. 0.272 foot-candle.

Thus, if the miner's lamp is to be 3 feet from the working face, it needs to be of intensity 1.2 or 2.4 for the two reflecting powers considered. If the working distance is 4 feet, the necessary candle power is about 2.2 or 4.4 respectively. It appears, therefore, that lights of less than 4 candle power cannot give an illumination from the coal face sufficient to ensure the employment of central vision.

It will be noted that the light reflected from the slip in Pit A was 15 per cent., whereas in Pit B it was only 7.5. A great amount of the coal in these pits is cut on the slip, and the miner is absolutely dependent on the reflected light to do his work, so in one pit the illumination from the slip was twice as good as in the other pit. In both these pits it takes about twenty minutes before the eyes are dark-adapted; there is no doubt about the fact that the worker must use the periphery of the retina for his work. Colliers and repairers suffer more from this condition than any other underground workers. I suggest that the reason is that their work is difficult form work, and the periphery of the retina was never intended to do seven hours' form work at a stretch.

Miners' nystagmus, like shell-shock and telegraphists' cramp, is a neurosis; there used to be thousands of telegraphists working under the same conditions, yet only some developed cramp; during the war thousands of men fought under the same conditions, yet only some developed shell-shock. We have all a certain amount of reserve nervous energy; some have much more than others. When all one's reserve nervous energy is exhausted a nervous breakdown follows. It is very similar in miners' nystagmus; the reserve nervous energy in the periphery of the retina is used up. In favour of this theory is the fact that all miners suffering from nystagmus complain of twilight blindness; the nervous breakdown in this disease manifests itself in inco-ordination of the eye movements, etc.,

It was thought that when the electric lamp was introduced nystagmus would cease, but it has increased in the proportion of 3 to 1. I will endeavour to suggest why this is the case.

1. The increase in illumination has been from 0.5 candle power in the flame lamp to 1 candle power in the present electric lamp; the increase is not sufficient.

2. *The increase in glare with the 1 candle-power lamp* as compared with the flame lamp is at least one hundred times. This is a great disadvantage.

3. Many men who had latent nystagmus when working with flame lamps developed acute nystagmus when they changed over to electric lamps, because of the increase in glare.

Why is it that nystagmus never occurs in house-coal pits, brown stone mines, or iron mines? Because the

illumination is better, and there is less absorption of light from the working areas

Depending on the distance of the lamp from the coal face, the worker may only have 1/500 to 1/2000 of a candle power with which to perform his work The ideal lamp is the cap lamp, it develops as much as 6 candle power the worker directs his light upon the portion of coal face on which he is working, it ensures macular vision, and there is little annoyance from the glare of other men's lights

RECOMMENDATIONS

1 The ideal illumination is by the cap lamp, many men object to them owing to the discomfort

2 Where cap lamps will not be worn, a hand lamp of not less than 3·9 candle power should be introduced, with frosted prismatic glass with a slight greenish tint The prismatic glass will mean that pillar shadows will be absent the frosted glass with a slight tint will diminish glare There are two lamps, with which I have done experimental work, which I consider are very good —the 3·9 candle power Oldham lamp and the 4 candle power Ukalit lamp These lamps at the end of the shift should not diminish by more than 1 candle power

3 Plain glass electric lamps should not be permitted underground owing to the marked glare

4 An opaque shade should be worn on the back of every lamp by men going to and returning from the coal face as the glare is a source of great annoyance to those following

5 Where possible flood illumination should be used at coal faces

6 Men returning to work after an attack should be employed in the afternoon shift, as they will then leave the pit in the dark, and they will have the maximum amount of daylight when at work, also they will have their week ends free

A detailed account of my investigations on nystagmus will be found in the April number of the *British Journal of Ophthalmology*

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

NEEDLES IN THE OMENTUM

The following is an unusual history of a foreign body in a patient, and appears to justify a description of the case

An unmarried woman aged 22 was sent by her dispensary doctor into this hospital for treatment for abdominal pains These pains were irregular and intermittent and of a stabbing character—they affected her mostly when she was walking or turning in bed She was unable to remember their first onset but was positive she suffered from them as long as she "could remember" and recently they were getting worse and made things very uncomfortable for her She had been operated on two years previously in New York for these pains "which she was informed were due to appendicitis and had her appendix removed but she suffered from similar pains after the operation She returned home to this country over twelve months ago

On admission her temperature and pulse rate were normal and manual examination revealed nothing abnormal other than a vague tenderness over the left iliac region this coupled with marked discomfort revealed on movement and the history suggested symptoms to justify a laparotomy

I opened the abdomen through a medial incision below the umbilicus The appendix had been removed In the pelvis I found a small mass of omentum slightly adherent to the posterior surface of the left broad ligament This was found to contain a needle, the eye and point of which were completely covered by rust On continuing investigations I found two other needles in the upper part of the great omentum and another in the gastro hepatic omentum—all well ensheathed by part of the omentum which resembled fibrous tissue The needles were on an average 1¼ to 1½ inches long and only in one case was the eye present—rust had reduced each one to half its proportions

It was obvious that these needles had been in the abdomen many years I sent for the girl's mother, but she could not remember hearing her daughter complain at any time that she had swallowed a needle, but she confirmed her history of having had pains in the abdomen since an early age I concluded, therefore, that the patient had swallowed the needles in her early days at school or possibly elsewhere, and that they had been present in the abdomen for perhaps fifteen or sixteen years Where they perforated the alimentary tract it is impossible to say, and I was unable to find any adhesions except those in the omentum, which were altogether apart from any viscus The patient left hospital perfectly well in fifteen days

The deductions from this case are obvious, but I may mention I had not the facility of an x-ray apparatus at the time

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CONGENITAL INTRACRANIAL ANEURYSM

The account given of this condition by Reid and Gleave in the *Journal* of March 14th (p 445) prompts me to place on record two cases seen in the past few years

CASE I

A man aged 24 complained of occipital headache and pain in the back of the neck on the day following a water polo match There were no local or general signs to indicate an intracranial origin for these pains Having been in contact with a recent case of encephalitis lethargica he was kept under observation for ten days No further symptoms or signs developed, the pain gradually subsided and finally disappeared He returned to work feeling well About three weeks later he had a sudden seizure while at work and a few minutes afterwards he was seen lying on his left side curled up in an attitude of general flexion He was extremely irritable and his breathing was deep and stertorous He resisted all attempts at examination There was a paresis of the right side of the face The clinical picture closely resembled meningitis but this was excluded by the rapidity of onset He was taken to hospital and died the same night without regaining consciousness

A necropsy revealed a subarachnoid haemorrhage from a ruptured aneurysm of the right middle cerebral artery The greater part of the haemorrhage was recent but there was an older clot close to the aneurysm suggesting an earlier leakage which had presumably occurred when he first complained of headache The Wassermann reaction was negative, and he was in good health previously

CASE II

In December 1929 a single woman aged 20 had a fit, followed by headache and vomiting which lasted a day She returned to work but complained of occasional headaches On the evening of March 20th 1930 she had another seizure which lasted forty five minutes She was seen by her doctor, who noticed that she had ptosis of the right upper eyelid and a dilated right pupil she was sent to hospital On admission she was dazed but was able to reply to questions A minute or two later she had another seizure in which she was comatosed with cyanosis of the face stertorous breathing, and frothing at the mouth The coma deepened and she died fifteen minutes later The Wassermann reaction was not known

At necropsy there was a large subdural haemorrhage over the entire right cerebral hemisphere extending down the front of the medulla The haemorrhage was recent and occurred from a small saccular aneurysm situated at the termination of the right internal carotid artery Near the aneurysm was a small hardened clot resulting from earlier leakage.

This clot was localized and pressed on the adjacent brain substance, producing an area of softening about half an inch in diameter.

Both these patients were young and apparently healthy, without signs of general arterial degeneration. The cause of the aneurysm in both cases can probably be attributed to a local congenital deficiency of the arterial wall. The initial symptoms in both cases were due to a limited leakage from the aneurysmal sac, and the terminal haemorrhage was sudden, copious, and not brought on by any unusual physical stress.

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Reports of Societies

DIABETES AND PREGNANCY

A meeting of the Obstetrical Section of the Royal Society of Medicine was held on June 19th, with the president, Sir EWEN MACLEAN, in the chair.

Dame LOUISE MCILROY, Miss GLADYS HILL, and Dr. PILLMAN WILLIAMS made a communication on diabetes and pregnancy, with a record of seven cases. They stated that the literature on the subject, previous to the discovery of treatment by insulin, was out of date. Many more cases showing that treatment gave very successful results, and that diabetes was not so dangerous when pregnancy took place, were ... consists of a tube about six inches long, ... ere carefully inv... panied a small Lummer-Brodhun cube. Light glycosuri... coal face to be examined passes directly through to ... middle strip of the cube, while light from the lamp falls on the cube from a lateral aperture, and is reflected to the eye from the outer parts of the cube. A simple eyepiece aids observation of the cube. The field of view thus consists of a central strip illuminated by the reflection from the coal face, and areas on either side illuminated directly by the lamp. The light from the latter is subdued and made diffuse by a window of opal glass in the side aperture of the photometer, and over this window slides a neutral absorbing "wedge," fitted with a scale defining its position ... results ... centre of the window. By adjusting ... confinement. ... is made equally bright ... by a balanced ... of light transmi... women suffering from ... its ... pregnancy with no injurious ... diet was important, since ... as a rule, to a mild ketosis, ... so ; 125 to 150 grams of ... y, and the insulin must ... cases ... nty-four cases of ... curring in the ... ases pregnancy ... nplicated by, ... with insulin. ... Caesarean ... normal ... cases. ... tillborn ... lization, ... e illus- ... curves ... nerous sug...

Fresnly ...
Slip ... ...
Roof (dry) ... ...

In the darkest parts of the fac... power fell to 12 per cent., while the ... comparatively large facets of the coal ... rose to as much as 38 per cent. The ... floor was never more than 2½ per cent., ... much less than this in both pits.

The impression gained by general inspec... coals from the two pits is thus borne out by ... ment ; perceptibly more light is reflected in Pit A than in Pit B under the same conditions of illumination. As has been investigated, and from a large number of cases ... now being reported. The labours were normal, ... operative intervention was not indicated in any. The ... ts, with one exception—a precipitate labour with ... h—were alive and of normal size. There were no ... sepsis or pyrexia in the puerperium, and there ... ternal deaths. Sterilization was not performed ... cases. The infants were all artificially fed. ... Williams gave in detail a demonstration by ... f the sugar tolerance curves and th... vation of the patients afte... th adequate treatm... s of insulin ... ough ri... e ...

... danger of trusting too ... pregnancy associated ... The ... roce in his hospital ... atory when the diet ... objected to the ... particularly ... glare ... ative. Professor Browne emphasized the value of a ... titative estimation of the anterior pituitary hormone ... urine in diagnosis of doubtful cases of vesicular ... the dose of insulin, as variations occurred in the activity of the pituitary. Excessive activity of the pituitary might also account for the apparently low threshold for glucose seen in some instances, such as in acromegaly. He agreed that insulin had revolutionized the treatment of diabetes in pregnant women, but he laid stress upon the importance of adjusting the diet to the requirements of the individual case. Reliance must not be placed merely upon the effects of insulin injections with a more or less uncontrolled diet. Mr. EARDLEY HOLLAND referred to the large number of cases at the London Hospital. He contrasted the treatment of Caesarean section and sterilization with those cases delivered normally at the Royal Free Hospital. General anaesthesia he considered dangerous in diabetes because of its effect upon the pancreas. Spinal anaesthesia with Caesarean section was to be advised unless the labours were abnormally easy. In the latter cases sterilization could be carried out some weeks after delivery by means of local infiltrations of novocain.

INVERSION OF THE UTERUS

Professor F. J. BROWNE showed the specimen of a uterus from a fatal case of acute puerperal inversion of the uterus in a woman, aged 29 years, with one previous child. The labour was attended by a midwife and was uncomplicated, but was followed by post-partum haemorrhage. Inversion of the uterus suddenly occurred spontaneously twenty-five minutes after delivery, and was accompanied by extreme shock. Treatment was immediately instituted to counteract the collapse before, and ... on arrival of, the obstetric assistant. The patient died ... illumination ... the placenta was separated or the uterus replaced. ... other pit. ... men showed complete inversion with the ovaries ... minutes before ... cession. No cause was found to account for ... doubt about th... periphery of the ... RAWLINS described two cases of chronic ... repairers suffer ... me uterus. In one there was a fibroid with ... underground ... ous degeneration, and inversion was complete. ... their ... mother, where a fibroid was also the cause, the patient ... suffered from severe dysmenorrhoea. Removal of the tumour and replacement was effected in both cases, and recovery was complete. Dr. MCCULLAGH said that he had published an analysis of the literature of cases of inversion of the uterus in 1925, and found that of 233 recently recorded, 200 were puerperal and 33 due to tumours. Half of the cases were in primiparae. Shock occurred in 50 per cent. of the patients, and one-third died in a few hours. When associated with a tumour, replacement might be postponed for some days after removal in order to prevent sepsis. Dr. NIXON described a case where the uterus inverted three-quarters of an hour after a normal delivery. It was replaced partially, and ten days later completely, by Aveling's repositor.

Professor BROWNE made a communication on the value of the pregnancy reaction of Zondek and Aschheim in diagnosis and prognosis of chorion-epithelioma, and showed a specimen of a uterus removed by operation from a woman, aged 37, 3-para, who had suffered from continuous bleeding and vomiting for two and a half months. The uterus was about the size of that of a twenty-eight-week pregnancy ; a mole was removed manually. Later, the patient returned to hospital on account of bleeding ... the curettings were negative. The Zondek-Aschheim test was positive on her third admission for haemorrhage, and panhysterectomy was successfully performed. The uterus showed a rounded area of chorion-epithelioma. The reactions were negative six months later. The reaction was of value if positive, even when the curettings appeared

mole. In five cases of vesicular mole in University College Hospital two patients developed chorion-epithelioma, an incidence of 40 per cent. The incidence was usually stated to be 5 per cent.

URETERIC LESIONS

At a meeting of the Edinburgh Obstetrical Society held on June 10th, with the president, Dr. H. S. DAVIDSON, in the chair, Dr. DUNCAN M. MORISON read a paper on ureteric lesions as a cause of abdominal lesions, and on ureteritis or ureteral stricture.

He said that ureteral stricture was a condition which had been only comparatively recently recognized as a definite clinical entity. The pathology was still uncertain. As proved by corrective treatment many cases of apparently obscure abdominal pain were due to ureteric lesions. The zones of the ureter most frequently affected were the nodes or physiological sites of narrowing—namely: (*a*) the pelvo-ureteral junction; (*b*) where the ureter crossed the iliac vessels; (*c*) the transvesical portion; and, in women, (*d*) where the ureter was associated with the broad ligament. Two types might be differentiated—the congenital and the acquired. The congenital type, due to some developmental error, was frequently characterized by a simple localized narrowing without any intramural thickening. The acquired form was apparently secondary to some primary focus of infection, such as tonsils, teeth, prostate, cervix, etc. It might also be induced by certain forms of repeated severe physical exertion—for example, by hammer-throwing. The earlier phases of a ureteritis were associated with local hyperaesthesia of the overlying mucosa, any stimulation of which readily produced ureteral spasm. The initial stage of the infection did not give rise to any appreciable reduction of the ureteral lumen, but later, as intramural changes became more evident, localized zones of narrowing occurred at the affected sites. Due to the intermittent attacks of spasm, and later to the progressive diminution of the ureteral lumen, there ensued an increasing interference of urine conduction and the formation of stasis within the renal pelvis. The condition required attention apart from the discomfort arising directly from the affected portion of the ureter, since there was, in addition, a mechanical hindrance to renal elimination, with consequent adverse effect on the general body metabolism. The rapidity of the destructive process would depend on the site of the lesion. As a general rule, a low ureteritis would take longer to effect renal damage than would a ureteritis at the pelvo-ureteral junction. The lumen of the ureter at the affected site rarely showed marked contraction, hence the term "ureteral stricture," commonly applied, was inaccurate, except in a few instances where a definite fibrous stenosis was present simulating the condition more frequently met with in the urethra. It was probably due to this inappropriate term that misdirected criticism had arisen.

The patient usually presented a mild degree of toxaemia—namely, sense of lassitude, loss of mental acumen, headaches, nervousness, irritability, etc. The local symptoms might be grouped as follows: (1) if attacks of vague pain were complained of in either kidney angle, or laterally below the costal margin, attended by nausea or sickness and occasionally by a dull ache just below and external to the umbilicus, it was probable that examination would reveal a ureteritis of the pelvo-ureteral junction; (2) if pains were referred to the inguinal region a lesion at the pelvic brim was suggested; (3) groin pains without bladder symptoms would point to a broad ligament source; (4) a supra-pubic ache associated with attacks of urinary frequency usually indicated involvement of the ureter at or near its transvesical portion. If, as frequently occurred, a patient had more than one portion of the ureter affected, there was a corresponding combination of the above symptoms. The attacks of pain were commonly described as dull, persistent, and aching in character, and were frequently likened to a toothache. The attacks might last from one to several hours. The pain was gradual in onset, reached a marked degree of intensity, then slowly subsided. At the period of intensity or most marked ureteral spasm there was very commonly a sense of renal discomfort indicating a damming back of urine in the renal pelvis. The pain was not induced by exercise, but fatigue or excessive exertion tended to bring it on. Patients frequently complained that they were wakened in the early hours of the morning by the pain, and that relief was only obtained by rising and walking about for a short time. It might be inferred from this that in the recumbent position the ureter was relatively more extended, and that the slight tension due to this irritated the localized inflammatory area within the ureteral wall. There might be intermissions from pain for days, weeks, or months. As a ureteritis favoured stasis in the upper urinary tract it was frequently complicated by (1) chronic or relapsing pyelitis, and (2) calculus formation. In the successful treatment, therefore, of these two conditions, it was essential that the primary contributing factor was not overlooked.

Since the symptoms might closely simulate those of the chronic appendix and disease in the pelvic organs, differential diagnosis was not easy. The absence of bladder symptoms in all but the transvesical lesion, together with a usually completely negative urine, tended to make any pathological condition of the urinary tract unlikely. A cystoscopic examination would fail to detect the lesion if ordinary straight ureteral catheters were employed, unless the degree of ureteritis was sufficiently marked to render a stenosis evident. By such means, therefore, only a small percentage of lesions would be detected, and the majority missed due to inadequate diagnostic measures. A positive diagnosis might be placed on the following findings: (*a*) the presence of residual urine in the renal pelvis; (*b*) calibration of the ureter by a "bulbed" bougie, noting mechanical resistance to the passage of the bulb or "hang" on its withdrawal, and the local induction of pain and its character; (*c*) reaction pain—if, following instrumentation, there is a reproduction or an exaggeration of the pain previously complained of. Varying amounts of residual urine were to be found in the renal pelvis in cases of long-standing ureteritis, but in the more recent types, where ureteral drainage was still adequate, there was usually none. In the earlier stages reliance had to be placed on calibration. By the employment of "bulbed" bougies the entire length of a ureter could be readily palpated and any altered zone detected. Since the normal ureter resembled an elastic tube, its walls could be painlessly distended to an appreciable degree, but should a segment of this tube be rendered somewhat rigid by inflammatory changes, it would show some resistance to dilatation and the process induce local discomfort. Thus a developed sense of touch and the history given by the patient would determine the location and type of a ureteritis. In doubtful cases, if the pain produced during or following the examination was not similar in character and position to the previously experienced pain, the ureter might be dismissed as a possible factor. Treatment consisted in a course of progressive ureteral dilatation till a size of "bulb" bougie No. F. 12 could be easily tolerated. By this means the attacks of pain were alleviated, and since

better ureteral drainage was achieved there was a corresponding decrease of stasis within the renal pelvis, permitting improved kidney elimination, with consequent benefit to general health.

Dr. J. R. CAMERON read a paper on intracranial injuries in the newborn and their relationship to breech delivery. To illustrate his paper he showed six beautifully dissected specimens of skulls from babies who had died from intracranial injury either at or soon after breech delivery. He also described in detail the birth record of these cases, and made an attempt to correlate the clinical management with the intracranial damage. The technique of dissection was also carefully gone into, and the various anatomical factors involved in the production of these injuries were discussed.

Dr. W. P. KENNEDY described a case of streptococcal infection of the uterus complicating pregnancy in which the case history and post-mortem findings were carefully reported.

ASSOCIATION OF CLINICAL PATHOLOGISTS

The fifth summer meeting of the Association of Clinical Pathologists was held in the pathological department of the General Infirmary, Southport, on June 20th, with Dr. E. CRONIN LOWE in the chair.

Dr. J. G. GREENFIELD, in a paper on the clinical pathology of the cerebro-spinal fluid, drew attention to the value of the Queckenstedt phenomenon in the diagnosis of sinus thrombosis. A fall of pressure with absent or only slow return of the fluid to a higher level on compression of one jugular vein was a strong indication of thrombosis on that side. He emphasized the importance of flakes of preformed fibrin in the withdrawn fluid as an indication of subdural haematoma. In cases of chronic disease Dr. Greenfield considered that a routine examination demanded a total and differential cell count, tests for the presence of globulin by the Pandey and Nonne-Apelt reactions, estimation of the total protein, and the performance of one of the colloidal reactions—the ones he favoured being the bi-coloured guaiac reaction and the Wassermann reaction. He pointed out that a Wassermann reaction stronger in the cerebro-spinal fluid than in the blood, or a positive Wassermann reaction in both fluid and blood, disappearing on treatment more rapidly from blood than from the spinal fluid, both indicated a syphilitic infection of the parenchymatous rather than the meningeal type. He said that in the investigation of acute cases the cerebro-spinal fluid was a good culture medium, and that in meningococcal meningitis incubation of the fluid overnight would often give a profuse growth of the organism before it had appeared upon artificial culture media. The percentage of chlorides in the spinal fluid he regarded as dependent upon the level in the blood, and its determination was of the utmost value in the diagnosis of tuberculous meningitis. The sugar percentage was low in all acute infections ; acetone was present in many cases of hyperemesis and cyclical vomiting ; the urea level was greatly raised in uraemia.

Dr. S. C. DYKE stated that in his opinion, although it was satisfactory to find the bacillus in making the diagnosis of tuberculous meningitis, it was quite possible to establish a firm diagnosis without demonstrating it. The presence or absence of a fine clot, the total and differential cell count, the chloride, sugar, and protein percentages, and the presence, absence, or excess of globulin, made it perfectly possible to say that a cerebro-spinal fluid was or was not from a case of tuberculous meningitis. Dr. Dyke drew attention to the fact that the chloride level of the spinal fluid was lowered not only in pulmonary but also in peritoneal pneumococcal infections. Dr. HUGH SMITH stated that he had found that if a few threads of cotton-wool were added to fluid from cases of tuberculous meningitis and the fluid centrifuged the tubercle bacilli tended to adhere to the threads, and could then be readily demonstrated by staining in a slide preparation. Dr. G. W. GOODHART said that, while ready to believe that it was possible to diagnose tuberculous meningitis without demonstrating the bacillus, he thought it was desirable in every case to do so ; were this not done, and should the case subsequently recover, the diagnosis would inevitably be called into question. Dr. F. B. SMITH stated that he had seen a case of pituitary tumour in which the urea content of the spinal fluid had been high, and asked if other members had had any such experience. Dr. GREENFIELD said that in some cases of cerebral disease, notably in post-vaccinal encephalitis, he had found a high urea content. Dr. H. SMITH briefly recorded a case of aseptic meningitis after spinal novocain anaesthesia, with recovery.

Dr. G. W. GOODHART reported five cases of megaloblastic anaemia not of the pernicious type. All these cases showed a progressive anaemia with high mean diameter of the red cells ; in every case, however, it was possible to demonstrate that they were not of pernicious type by the plotting of the Price-Jones curve. In all of them this curve, although shifted to the right of normal, was symmetrical, the cells showing an even deviation about the mean. The first case at post-mortem showed numerous polypoid masses in the small intestine ; the second resembled pernicious anaemia in every way except in the symmetrical nature of the Price-Jones curve and in the fact that the bone marrow at post-mortem was not found to be hyperplastic ; in the third ascites and jaundice were present ; the fourth followed upon generalized glandular enlargement vigorously treated by deep *x*-ray therapy. The last case improved with iron. In none was there any result from treatment with liver or desiccated stomach. The fifth case was one of sprue, and responded to liver treatment. Dr. A. F. S. SLADDEN drew attention to the Arneth count in the diagnosis of pernicious anaemia. He stated that in all typical cases there was a shift to the right. Dr. F. B. SMITH referred to a case of anaemia in a child of 15 months showing megalocytosis in which liver proved effective.

Dr. S. MILLER demonstrated a blood transfusion apparatus. He drew attention to the confusion caused by the coexistence of the Moss and Janssky classifications of the blood groups, and asked the opinion of the meeting as to the best form of classification. Mentioning the value of auto-transfusion in cases of ruptured ectopic pregnancy, he asked if transfusion was advisable in cases of bleeding from duodenal ulcer. Dr. DYKE said that the association had already adopted the international classification of the blood groups on the basis of the A and B agglutinogen content of the red cells ; this he considered to be the only way of escape from the existing confusion in nomenclature. In his experience transfusion in gastric bleeding entailed no risk of restarting the haemorrhage, and citrated blood appeared to be actually haemostatic. He then gave an account of two cases of transfusion in universal agglutinators. The serum of both patients agglutinated the cells of all prospective donors (irrespective of group) and even their own red cells ; this agglutination took place only in the cold, and was reversed at incubator temperature. In both cases the transfusion had been followed by a severe reaction which, however, had been readily controlled by adrenaline and morphine. Dr. Dyke pointed out that "auto" or "cold" agglutination was no contraindication to transfusion.

Reviews

BREAST FEEDING

In her book on this subject,[1] Dr MARGARET EMSLIE has succeeded in collecting most of the useful information which has accumulated during the renascence of breast feeding. At one time breast feeding was almost universal, but during the latter years of the last and the first few years of this century it had fallen into comparative desuetude, largely owing to the temptations dangled before the eyes of motherhood, not only by the enterprise of commercial minds, but also by medical enthusiasts, who believed that they had found a complete and satisfactory substitute for breast milk. The teaching and experience of welfare centres where large numbers of healthy children have been kept under observation has proved that the women of this country are not so decadent with respect to the mammary function as has been generally supposed, and this discovery has brought many a child back to the breast who would otherwise have been condemned to the bottle.

Unfortunately, the principles and practice of breast-feeding have not been well taught at maternity hospitals where the majority of midwives receive their training, nor are most of the teaching midwives adequately equipped for imparting a knowledge of breast feeding to others. Another factor that militates against the practice of breast feeding is that the best trained maternity nurses—that is to say, those who have had a full nurse's training—have had no opportunity of learning details of breast feeding in the hospitals where they have been taught. And again, ordinary domestic nurses who have been educated at nursery training schools, with one or two notable exceptions, have had *no opportunity* of acquiring practical experience in the natural method of feeding. With so many adverse factors and so few countervailing arguments, it is scarcely to be wondered at that breast feeding is so largely replaced by artificial methods. The publication of Dr Emslie's little book, with its many attractions and its breezy optimism, comes at a timely moment. The author is highly practical in her recommendations. She indicates the advantages of breast feeding without belittling or disguising the difficulties. She devotes a good deal of attention to a matter which is often considered incompatible with success—namely, flat retracted, or inverted nipples. We rather question whether the method of manipulation which she describes for curing the third mentioned condition is quite so simple or so effective as she suggests, or indeed so valuable as the older method of drawing out the depression by means of suction.

Dr Emslie is whole heartedly in favour of infrequent feeding. She would apparently prolong the intervals even beyond four hours, which in the opinion of competent authorities is the limit to which the intervals should be extended. It is possible that a compromise between extremes might be reached satisfactorily if it were agreed to feed the new born infant, at a time when its stomach is incapable of holding more than an extremely small quantity of milk, at intervals of three hours, and as the stomach develops, to increase the intervals gradually, even up to Dr Emslie's proposed limit provided that the required total could be thus obtained in the twenty four hours without overfilling of the stomach.

One of the least satisfactory parts of the book, as it appears to us, lies in the fact that it affords little help in the management of cases in which there is insufficient milk to satisfy all the needs of the child without supplementation. The use of the "test feed" in this, as well as in cases in which there is obviously a superabundant supply of milk, and even in those cases in which there is apparently the correct amount, is so abundantly justified that we are rather surprised that Dr Emslie pours cold water on its advantages. We believe we are correct in stating that at the present time at Queen Charlotte's Maternity Hospital the test feed is employed in all cases, with most excellent results, and it is probable that this practice will extend to other teaching centres.

In this little book there are chapters on the anatomy and physiology of the breast, on the establishment and maintenance of breast feeding, on difficulties in breast-feeding, and on weaning. Each one of these has its value.

[1] *Breast Feeding.* By Margaret Emslie, M.B., Ch.B. Oxford Medical Publications. London: Milford, Oxford University Press. 1931. (Pp. x + 142, 6 figures. 5s. net.)

MODERN CONCEPTIONS IN CARDIOLOGY

The demand for a second edition of *Recent Advances in Cardiology*,[2] by Dr C. F. T. EAST and Dr CURTIS BAIN has given the authors an opportunity to revise certain sections of their admirable book. In the construction of a work dealing with recent advances in any branch of medicine various difficulties must be faced. Not only must new conceptions and new methods find adequate expression, but sufficient fundamental material must be included to provide continuity and a logical basis for more recent work. In this respect the present book is excellently compiled. Further, in this second edition important improvements have been made. The revision of the chapter on angina pectoris has resulted in an admirably concise account of this condition, and additions to the chapters on fibrillation and flutter, and on the radiology of the heart and aorta, are very definite improvements. The rewritten account of cardio-vascular syphilis gives a well balanced view of the pathology and clinical features of the disease, but the very debatable technique of arsenical treatment is discussed too briefly. There must be many clinicians who have felt that the sudden deterioration in a cardio vascular syphilitic was the result of too early arsenic injections, and who have wished that the preliminary course of iodide and mercury medication had been extended to six weeks or more. The addition of a note on Averza's syndrome gives greater completeness to this section.

Although the present work is concerned essentially with cardiology, it seems strange that peripheral vascular diseases should be almost entirely omitted. Considerable space is devoted to recent work on the circulation rate and to the physiology of the peripheral circulation, while thrombo angutis obliterans, Raynaud's disease, and peripheral arterio sclerosis leading to gangrene are scarcely mentioned. It may well be held, taking a broad view of cardio vascular disorders, that no book on recent advances should omit some discussion of these clinical entities, whatever else is excluded or cut down. This is especially the case in view of the modern French work on peri-arterial sympathectomy and acetylcholine and the still more recent German production of muscle extracts, which bid fair to assume a very important position in cardio vascular therapeutics. However, in its sphere this second edition of *Recent Advances in Cardiology* is pre eminently sound and well co-ordinated, and it is certain that neither the cardiologist nor the general practitioner anxious to acquaint himself with modern conceptions in cardiology can afford to neglect it.

[2] *Recent Advances in Cardiology.* By C. F. Terence East, M.D., F.R.C.P., and C. W. Curtis Bain, *M.C.*, M.B., M.R.C.P. Second edition. London: J. and A. Churchill. 1931. (Pp. x + 353, 62 figures, 10 plates. 12s. 6d.)

EDEN AND HOLLAND'S "MIDWIFERY"

The sixth edition of Dr. WATTS EDEN'S admirable *Manual of Midwifery* appeared in 1925, under the editorial supervision of Mr. EARDLEY HOLLAND, and was noticed at some length in these columns. As it has been out of print now for more than a year the issue of a new edition[3] will be welcomed by students and practitioners alike. Mr. Holland remarks in the preface that "apart from important discoveries in female sex physiology there have been during the past six years few, if any, fundamental advances in the science and art of obstetrics; but there has been a general move forwards all along the line, and the standards of teaching and practice are steadily rising." The attention focused of late on midwifery in its practical and theoretical aspects has led to a great deal of revision and the rewriting of several sections. Most of the old illustrations have been redrawn and produced in half-tone, and many new figures are included. At the end of each of the nine parts into which the book is divided will be found a "Guide to further reading," for the benefit of those who are preparing for higher examinations, as well as for those engaged in the active practice of obstetrics; and what amounts to a new section on the newborn child is contributed by Dr. K. H. Tallerman.

The other important changes in the present edition are enumerated by Mr. Eardley Holland in his general preface. Among these we may note the incorporation of recent work on the ovarian hormones and the influence of the anterior pituitary body; the adoption of the name "pre-eclampsia" to denote the usual toxaemic "albuminuria of pregnancy"; the expansion of the section on narcosis and anaesthesia; and the bringing together of occipito-posterior positions of the vertex as a complete unit in the section on abnormal labour. Management of labour with contracted pelvis has been rewritten, as has ante-natal supervision, which now finds a place in the section on normal pregnancy. Under disorders associated with pregnancy the section on diseases of the heart and circulatory system has been entirely recast in the light of modern cardiology, and additions have been made to the paragraphs on chronic nephritis and diabetes mellitus. Foetal asphyxia has also been rewritten, and is now subdivided into intrauterine asphyxia and post-partum asphyxia, or asphyxia neonatorum. So convinced is Mr. Holland of the potency of "droplet infection" during the puerperium that he does not hesitate to state his opinion that "were simple measures universally adopted by doctors and nurses to prevent its occurrence, the incidence of puerperal infection would show a remarkable decline." In the section on the maternal mortality of childbirth the statistical tables have been brought up to date.

Generally speaking, the work of revision has been carried out most judiciously, and a fresh lease of popularity may be predicted for this well-balanced guide to the practice of midwifery.

MEDICINE AND EDUCATIONAL PROBLEMS

Early last year a conference of junior public school masters was held at Harrow. The addresses then delivered have now been published under the title of *Harrow Lectures on Education*.[4] The book is edited by Mr. T. F. COADE, an assistant master at Harrow, who has divided it into two parts, the first dealing mainly with the significance of the chief divisions in the school curriculum and their several contributions to education, and the second dealing with the subject of religion in connexion with education. Many of these essays contain a great deal of wisdom, and some of them, especially in the second part, are full of truth and beauty. It is perhaps a pity that the division of the book was not into three parts instead of two, for there are three addresses by members of the medical profession which differ (though not in the same way) from the others with which they are associated in Part I. These are: "The need for a more modern school hygiene," by Dr. George Murray Levick; "The subject of sex, with special relation to public schools," by Dr. Douglas White; and "The psychological understanding of the adolescent," by Dr. H. Crichton-Miller. Each of these contributions is very valuable and suggestive. Dr. Murray Levick is concerned with four chief factors, which he declares are deficient in almost every school—diet, atmospheric hygiene, time-table, clothing. His discussion of these factors is sufficiently detailed, is very practical, and is based upon a large experience. He is of the opinion that "hygiene in every boarding school should be supervised by a competent specialist in that subject." The other two articles have some affinities with one another, and should certainly be read together. Possibly that by Dr. Crichton-Miller is, on the whole, the most important in the book. To the schoolmasters to whom it was addressed it must have seemed a courageous utterance, and it is certainly a true one. To study the elements of modern psychology is the duty of every schoolmaster, and to understand his own as far as possible is an essential preliminary to an attempt to appreciate that of those who are under his charge. "In any case the schoolmaster should understand the principle of suggestibility, with its reverse manifestation in the rebel. He should understand the place of fantasy in the mental life of the young, and most of all he should be able to trace the mechanism of compensation." There is much more in Dr. Crichton-Miller's article than is indicated by this quotation. Indeed, both his contribution and that by Dr. Douglas White are of real importance, and cannot but be of great interest and help to all those who may be concerned with the subject to be discussed in the Medico-Sociological Section of the British Medical Association at Eastbourne this month: "The need of education in questions of marriage and sex."

ALTERATIVE TREATMENT

The idea embodied in Professor DETERMANN'S book *Umstimmung als Behandlungsweg*[5] is alteration as an objective in medical treatment. Many writers, in various fields of medicine, contribute to the discussion of this idea, and Dr. Weichart, in his introductory chapter, suggests that opinion is swinging from an endeavour to kill the germs of disease to an endeavour to put the organism in a position to resist them. He points out that tuberculosis, for example, is a specific disease for which specific treatment has proved inadequate, and has given place to a method of cure by non-specific remedies, often of a physical nature. The chemical and biological basis of true alterative treatment is defined; the examination of individual function and pathology is stressed, and the importance of individual adaptation and choice of the appropriate time and period of treatment. Thus in chronic rheumatic cases treatment may well consist of daily hardening measures, combined with periodical intensive or pyretic treatment—for example, by yatren. In subsequent chapters the factor of organic alteration is discussed in connexion with the vegetative system and

[3] *A Manual of Midwifery*. By Thomas Watts Eden, M.D., C.M., F.R.C.P., F.R.C.S., and Eardley Holland, M.D., F.R.C.P., F.R.C.S. Seventh edition. London: J. and A. Churchill. 1931. (Pp. xii + 718; 389 figures, 9 plates. 21s.)

[4] *Harrow Lectures on Education*. Edited by T. F. Coade, M.A. London: Cambridge University Press. 1931. (Pp. xvii + 230. 10s. 6d. net.)

[5] *Umstimmung als Behandlungsweg*. Herausgegeben von Professor Dr. Determann. Leipzig: G. Thieme. 1930. (Pp. 262; 34 figures. M.16.)

nutrition, with infective, nervous, respiratory, digestive, circulatory, and other categories of disease. There are also sections on the alterative effect brought about by climate and weather, irradiation, electrical and hydrological treatment, as well as by endocrine medicaments and drugs.

ORGANIC MICROANALYSIS

Dr. PREGL'S *Quantitative Organic Microanalysis*[6] is a book describing practical methods of performing analytical determinations with quantities of material which are *microscopical in comparison* with those ordinarily used. No other method but microanalysis is available for ascertaining the composition of many of the substances which exert important functions in life or which occur as products of biological activity. Pregl is one of those who have done most to render these methods practicable and trustworthy. His account of the general scheme of procedure and the details applicable to special cases is accordingly of high value. It is a book of remarkable interest, containing accounts of a great number of rare devices with which to overcome the difficulties inherent in the *nature of* the work. The translation by Fyleman has been so ably performed as to be a welcome gift to English chemists, particularly those who follow biological chemistry.

NOTES ON BOOKS

Everybody's Boswell[7] is a judiciously abridged edition of the complete biography, small enough to handle and carry easily. Of many interesting features perhaps the most noteworthy is the inclusion of the tour to the Hebrides, a quaint and delightful episode that deserves to be better known. There is an amusing incongruousness in the picture of Dr. Johnson—far from Reynolds and Mrs. Thrale—losing his spurs in the Atlantic surges and bowing over the hand of Flora Macdonald; yet something in the Gaelic temper pleased his mood. It was a heroic undertaking for an old man with a cumbrous frame, beset by nervous and organic maladies, to set out on a fatiguing and dangerous journey in the eighteenth century to island places not yet very easily accessible. The volume owes much of its attractiveness to Mr. Shepard's illustrations, which strike an instant recognition in the fancy

Various articles by Dr. EDWIN BEER of New York, which have been published in medical journals during the last twenty-five years, have now been brought together in a single volume[8] and grouped according to the subject-matter. The topics dealt with are gastro-intestinal conditions from the surgical point of view; pathological states of the liver, kidney, bladder, ureters, and prostate; an account of the history of surgery of the spleen; operative treatment of tumours and metastases of the spinal cord; and miscellaneous subjects, mostly surgical in nature, as well as reports of clinical cases. Indexes to the subjects dealt with, and also to the names of authors mentioned in the text, facilitate reference to the varied contents of this large volume.

Some of our readers may like to know of the publication of a reprint from the fourth edition of Sir ISAAC NEWTON'S *Opticks: or a Treatise of the Reflections, Refractions, Inflections, and Colours of Light*.[9] Professor Albert Einstein supplies a brief foreword, and there is an introduction by Professor E. T. Whittaker. The original title-page of the fourth edition (1730) is reproduced.

Volume i of Dr. SOUTHWELL'S report on the Cestoda of British India was noted in these columns on November 22nd of last year (p. 872); the second and final volume has now been published.[10] This deals with the majority of forms found in man and the domestic animals, as well as many of less direct medical interest. It discusses, among other worms, the two human taenias, echinococcus and hymenolepis. Southwell does not accept the generic name echinococcus, and states that the cyst is most frequently found in bovines (observers elsewhere find that sheep, pigs, and horses are more frequently infected). He regards the dwarf hymenolepis of mice as identical with *H. nana* of man, and gives preference to the name *H. murina* for both forms. The volume is essentially a faunistic and systematic one, but it is a valuable addition to our literature on the tapeworms.

[6] *Quantitative Organic Microanalysis.* By Fritz Pregl, D.Sc., Ph.D. Second English edition. Translated from the third revised and enlarged German edition by Ernest Fyleman, B.Sc., Ph.D., F.I.C. London: J. and A. Churchill. 1930. (Pp. xiv + 237, 51 figs. 15s.)

[7] *Everybody's Boswell.* Being the Life of Samuel Johnson, LL.D., abridged from James Boswell's complete text and from the "Tour to the Hebrides." Illustrated by Ernest H. Shepard. London: G. Bell and Sons, Ltd. 1930. (Pp. xiii + 609; illustrated. 6s. net.)

[8] *Collected Papers 1904–1929.* By Edwin Beer, M.D. New York: P. B. Hoeber, Inc. 1931. (Pp. x + 827; 252 figures. 7·50 dollars.)

[9] *Opticks: or a Treatise of the Reflections, Refractions, Inflections & Colours of Light.* By Sir Isaac Newton. Reprinted from the fourth edition. London: G. Bell and Sons, Ltd. 1931. (Pp. xxv + 413; illustrated. 6s. net.)

[10] *The Fauna of British India, including Ceylon and Burma.* Edited by Lieut.-Colonel J. Stephenson, C.I.E., M.B., D.Sc., I.M.S. (ret.). Vol. II. *Cestoda.* By T. Southwell, D.Sc., Ph.D., A.R.C.S., F.R.S.E. London: Taylor and Francis. 1930. (Pp. ix + 262; 355 figures. 15s.)

PREPARATIONS AND APPLIANCES

ASEPTIC VAGINAL EXAMINATION

Dr. C. CHAPLESON, F.R.C.S.Ed. (resident surgical officer, County and City of Perth Royal Infirmary), writes.

To overcome the difficulty of traversing the contaminated vulva in examining obstetrical cases I have devised a form of cuff made of glove rubber. This consists of a conical tube 12 inches long, 2 inches in diameter at the narrow end, and 3 inches in diameter at the wide end, which is flanged with similar material (*Fig. 1*). The narrow end is invaginated (Fig. 2), and the hand passed in at A, gripping the point of

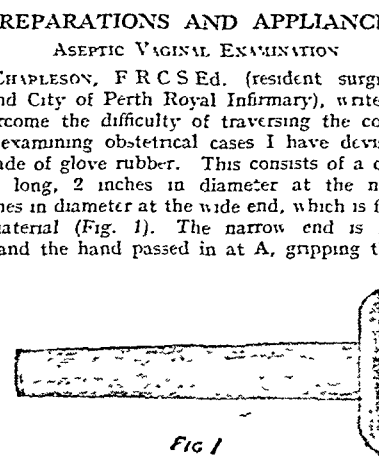


FIG 1

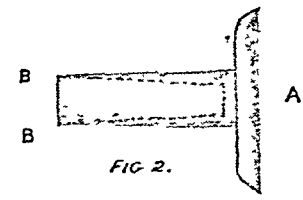


FIG 2.

invagination at B B. The hand so covered is passed just *inside the vulva and the invaginated portion evaginated into* the vagina by the examining hand, this finally passing completely sterile through the narrow end of the cuff into the cavity of the uterus, having touched neither vulva nor lower vagina. This cuff can easily be carried dry, sterilized and powdered in a package with a pair of gloves.

AN ANTACID

Normo-gastrine (Messrs. Burgoyne, Burbridges and Co. Ltd.) is an interesting new type of antacid. The preparation is composed of silicate of aluminium with 20 per cent. of added excipient, and is a light, insoluble powder devoid of taste. It acts as a buffer to strong acids but has little action when the acidity is less than *p*H 4·0. The purpose of the preparation is to antagonize any excessive gastric acidity and to bring the gastric juice to its normal degree of acidity without risk of destroying the pepsin by rendering the gastric juice alkaline. The makers claim that their preparation gives rapid relief in hyperchlorhydria. It is based on sound physiological principles, and deserves careful clinical investigation.

CENTENARY OF THE LEEDS SCHOOL OF MEDICINE

[FROM OUR CORRESPONDENT IN LEEDS]

Though lectures on anatomy were delivered by the first William Hey towards the end of the eighteenth century, and more systematically by Mr. C. T. Thackrah in the early years of the nineteenth, it was not until the year 1831 that the Leeds School of Medicine was actually founded, but it is the oldest of the bodies which are now happily united in the University of Leeds. It preserved its independent existence till the year 1884, when it was incorporated with the Yorkshire College, for the college which was established in 1874 under the name of the "Yorkshire College of Science" had by this time introduced a Department of Arts and had shortened its name while widening the scope of its work. The Yorkshire College now consisted of the Department of Science, Technology and Arts, and the Department of Medicine, the instruction in chemistry, biology, and physics being undertaken by the teachers at the "College." Strengthened by this, the Yorkshire College was able to approach the Victoria University and ask to be admitted as the third of its constituent colleges in the affiliated university which already was composed of two colleges—the Owens College of Manchester and the University College of Liverpool. The association was a very harmonious one, but, for reasons which need not here be discussed, separate charters were given to Liverpool, to Manchester, and to Leeds. There can be no doubt whatever that this disruption has worked for the good of each of the three centres, and year by year the Leeds University is growing in strength and in influence. Nothing has better shown the cordial relationship which exists between the Faculty of Medicine and the other Faculties of the University than the way in which the University as a whole has entered into the celebration of the centenary of the "School of Medicine" which is now the Faculty of Medicine in the University.

CENTENARY CELEBRATIONS

A dinner of the former students of the School was held on the evening of June 30th, at which delegates from the other Universities and teaching bodies were guests. The gathering was a large one, but it had to be brief, as everyone desired to go on to the Art Gallery, where the Lord Mayor, Dr. Hawkyard, was giving an "At home." The official celebration was held on July 1st, when the Chancellor, the Duke of Devonshire, presided over a large congregation of the University. The teaching staff of all departments of the University was well represented, and the Chancellor formally received all the delegates—some fifty in number. These included the Regius Professors of Physic of Oxford and Cambridge, Sir Farquhar Buzzard and Sir Humphry Rolleston. Addresses were then given by the Chancellor and by the Vice-Chancellor, both of whom extolled the courage and faith of the original founders. The Vice-Chancellor gave an interesting account of the development of the School, and spoke very hopefully of greater improvements in the near future. Those who have worked in connexion with the School for many years cannot but regard with the greatest satisfaction the ties which are binding together more and more strongly the Faculty of Medicine with the other Faculties of the University, and the University with the General Infirmary at Leeds, with the Maternity Hospital, and with the School of Dentistry. If in the future further unions with other institutions are amicably and carefully carried out, it will be to the advantage of everyone concerned, and not least to the suffering public and to the students of medicine. In their addresses both the Chancellor and the Vice-Chancellor extended to the delegates a most cordial welcome. Sir Humphry Rolleston and Major-General H. C. R. Hime, late R.A.M.C., a former student of the School, replied. The former, in a charming speech, introduced tentatively and with an engaging show of hesitation what most of his audience regarded as a new word in his reference to the foundation of the school "which to-day we have assembled to *centenarize*." May the writer of these lines express the hope that "centenarize"—clothed in the authority of Sir Humphry—has come to stay!

CONFERMENT OF HONORARY DEGREES

The Chancellor then conferred honorary degrees on the following:

Dr. Arthur Hawkyard, Lord Mayor of Leeds, LL.D. Presented by the Vice-Chancellor.

Dr. Jane Walker, LL.D. Presented by the Vice-Chancellor.

Dr. Alfred George Barrs, LL.D. Presented by Professor Rawdon Veale.

Sir John Bland-Sutton, LL.D. Presented by Professor Dobson.

Lord Dawson of Penn, LL.D. Presented by Professor Maxwell-Telling.

Sir Walter Morley Fletcher, D.Sc. Presented by Professor M. J. Stewart.

Sir Frederick Gowland Hopkins, D.Sc. Presented by Professor McSwiney.

Sir George Newman, LL.D. Presented by Professor Jamieson.

The inclusion of the names of Arthur Hawkyard and Arthur George Barrs in this group of honour has given great satisfaction to the local medical profession, who know the Lord Mayor to be a man of great public spirit and one of the soundest of practitioners, and who recognize in "Barrs"—for initials and titles seem to those who are privileged to know him well to take from his individuality—one of the soundest of physicians, one of the best clinical teachers, and one of the loyalest of friends.

SOCIAL ENTERTAINMENTS

The members of the Leeds and West Riding Medico-Chirurgical Society, of which Dr. Hawkyard happens this year to be the president, entertained the delegates at luncheon. Receptions were given in the afternoon at the School of Medicine, where the extensions, both those which are completed and those in course of being carried out, were of special interest to former students; and at the General Infirmary, where the various departments were shown to the visitors by an able body of stewards recruited from the resident staff and from the students.

A dinner, given by the University, followed by the University ball, brought an interesting day to a successful ending. At the dinner the chair was taken by the Pro-Chancellor, Colonel Tetley, D.S.O. In the toast of "The Foster Parents of the Leeds School of Medicine" a tribute of gratitude and respect was paid to the Royal College of Surgeons of England and to the Society of Apothecaries, for these were the two bodies for whose diplomas the medical students of Leeds, in common with Mr. Bob Sawyer, were wont to study in former days, and they were the first to recognize the School as a place for the instruction of the student. Lord Moynihan, P.R.C.S., and Colonel Samman, Master of the Society of Apothecaries, replied. The former devoted a large part of his speech to commenting on the great heritage which was the possession of the Leeds School, and pointed out the ways in which the present and future generations might try to emulate the great men who had preceded them. Especially he emphasized the demand and the necessity for post-graduate teaching, and the imperative and urgent

need for the establishment of travelling scholarships, so that men might fit themsselves for election to the staff by visiting other schools, learning their methods, and drawing their aspirations from a wide area.

A word of praise is due to those who made such excellent arrangements for the celebrations; everything went smoothly and with apparent ease. To those who were old enough to recall the days when there was but one whole-time professor on the staff—and all were glad to see Professor Birch looking so well and so little changed—the development of the School since 1884 indeed appeared wonderful. But perhaps the most lasting impression left on the minds of those former students who were able to be present was that which sprang from the renewing of old long-lapsed acquaintances and friendships and from visiting the haunts of their youth.

MEDICAL CONGRESSES, 1931

The following congresses and conferences on medical and allied subjects have been announced for the remainder of the year. Particulars are given below in the following order: date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

July 13-19.—British Social Hygiene Council. London. Secretary of Council, Carteret House, Carteret Street, S.W.1.

July 19-22.—International Congress of the Collegium Oto-Rhino-Laryngologicum. Bordeaux.

July 21-25.—British Medical Association. Eastbourne. Medical Secretary, B.M.A. House, Tavistock Square, W.C.1.

July 22-30.—French Colonial Exhibition (Lectures on Tropical Medicine). Paris. Dr. Robinson, 28, Rue de Ponthieu, Champs Elysées, Paris, VIIIe.

July 26-31.—International Congress of Radiology. Paris. Dr. Ledoux-Lebard, 122, Rue La Boëtie, Paris, VIIIe.

July.—International Congress of Laryngology. Bordeaux.

August 3-8.—International Congress of Industrial Medicine. Geneva. Mr. G. L. Perry, Industrial Welfare Society, 51, Palace Street, S.W.1.

August 3-8.—International Dental Congress. Paris. Mr. A. E. Rowlett, 165, London Road, Leicester.

August 3-8.—International Congress of Photography. Dresden. Dr. R. Luther, Paradiesstrasse, 2, Dresden, A.20.

August 31-September 6.—International Congress of Neurology. Berne.

September 2-19.—International Illumination Congress. Great Britain. Colonel C. H. Silvester Evans, c.o. The Illuminating Engineering Society, 32, Victoria Street, S.W.1.

September 12-17.—International Congress of Tropical Medicine. Amsterdam.

September 13-19.—International Congress of Balneology. Carlsbad. Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

September 14-16.—German Orthopaedic Society. Berlin. Professor Wollenberg, Prager Platz 5, Berlin-Wilmersdorf.

September 14-17.—American Public Health Association. Montreal. Secretary of Association, 450, Seventh Avenue, New York.

September 14-19.—Medical Association of South Africa (British Medical Association). Johannesburg. Dr. B. G. Meile, Medical School, Hospital Street, Johannesburg.

September 21.—Royal Institution (Faraday Centenary). London. Secretary of Royal Institution, 21, Albemarle Street, W.1.

September 21-23.—German Pharmaceutical Society. Vienna.

September 21-23.—German Association for Occupational Hygiene. Nuremburg. Secretary of Association, Platz der Republik, 49, Frankfort.

September 23-25.—Society for the Study of Metabolism and Diseases of Digestion. Vienna. Professor von den Velden, Bambergerstrasse 49, Berlin, W.30.

September 23-30.—British Association's Centenary Meeting. London. Secretary of Association, Burlington House, Piccadilly, W.1.

September.—Pan-Russian Congress of Gynaecologists and Obstetricians. Moscow.

October 1-3.—German Society for Urology. Vienna.

October 14-18.—International Congress of Comparative Pathology. Paris. Dr. Grollet, 7, Rue Gustave Nadaud, Paris, XXVIe.

ROCKEFELLER MEDICAL FELLOWSHIPS

The Medical Research Council announces that, on behalf of the Rockefeller Foundation, it has made the following awards of travelling Fellowships for the academic year 1931–32. These Fellowships are awarded to graduates who have had some training in research work, either in the primary sciences of medicine, or in clinical medicine or surgery, and who are likely to profit by a period of work at a chosen centre in America, or, in special cases, in Europe, before taking up positions for higher teaching or research in the British Isles.

ERNEST THOMAS CONYBEARE, B.Sc., M.B.Lond., Guy's Hospital, London.

GORDON MONCRIEFF DEAN, M.B.Aberd., Department of Surgery, Aberdeen University.

MORRIS HARRIS FINKELSTEIN, B.Sc., M.B.Ed., Department of Bacteriology, Edinburgh University.

OWEN STANLEY GIBBS, M.B.Ed., late Professor of Pharmacology, Dalhousie University, Canada.

EMANUEL MANNIE LOURIE, M.B.Lond., D.T.M., Liverpool School of Tropical Medicine.

ALLAN WILLIAM SPENCE, M.B.Cantab., M.R.C.P., St. Bartholomew's Hospital, London.

CONRAD HAL WADDINGTON, M.A.Cantab., Strangeways Research Laboratory, Cambridge.

KENNETH HAROLD WATKINS, F.R.C.S., Royal Infirmary, Manchester.

The Fellowships awarded to Dr. Gibbs and Mr. Waddington are tenable in Europe, the others at centres in the United States. Dr. Conybeare and Mr. Waddington have been appointed on modified conditions while receiving emoluments from other sources.

ROYAL MEDICAL BENEVOLENT FUND

During the first six months of this year the committee has been called upon to vote grants amounting to £6,349 13s., which is £1,161 3s. 5d. in excess of the amount voted in grants during the corresponding period of last year. Unfortunately, the income received from subscriptions and donations this year does not show a corresponding increase over last year, but a decrease; unless new subscribers will come forward in support of the Fund before the end of this year the committee will be forced to curtail its activities.

All who can are urged to send a subscription to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, W.1.

At the last meeting of the committee twenty-six grants were voted, amounting to £562. The following are particulars of two of the cases helped.

Widow, aged 68, of M.R.C.S., L.R.C.P. Her husband was professor at a medical school in the Near East. It was brought to the notice of the Fund that this lady, who had enjoyed a good social position, with all the ordinary comforts of life, and had lived for many years in a warm climate, had during last winter been living in a bed-sitting room, and had often been unable to afford a fire in her room. Owing to unfortunate investments her income had gradually diminished, until last year she had only £89 to live on. She had to pay 9s. a week for her room, which left only £66 a year for her maintenance, clothes, light, and warmth. Fund voted £36.

Widow, aged 51, of M.B. Husband died abroad last summer at the age of 47, having been in private practice there for twelve years. The Ex-Service League paid the widow's passage money to England. When debts and outstanding expenses have been paid, it is expected that the husband's estate will yield an income of £70. Since the death of her husband the widow has had a severe illness. When she landed in England she had only the clothes which she had travelled back in. The Fund voted £26, payable during the next six months, as it is hoped that when she has recovered her health she will be able to undertake some employment. The Guild has supplied clothes.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, Tavistock House (North), Tavistock Square, W.C.1.

British Medical Journal

SATURDAY, JULY 11th, 1931

HIGH BLOOD PRESSURE

In 1733 Stephen Hales, who was Rector of Farrington and Minister of Teddington, wrote in his second volume in *Haemostatics*: "I caused a *mare* to be tied down alive on her back," and, "having laid open the left crural artery about 3 inches from her belly, I inserted into it a brass pipe." The blood rose in a tube of 1/6 of an inch in diameter to a height of 8 ft. 3 in. above the level of the left ventricle. By this bold experiment it was proved beyond doubt that a high arterial pressure existed in mammals. Such a direct demonstration was impossible in human beings, and for 150 years after Hales's experiment palpation of the radial artery was the only method by which a physician could estimate the normal and abnormal blood pressure in man, until von Basch introduced the clinical sphygmomanometer in 1883. At Monti's clinic in Vienna von Basch in 1884 made the first systematic investigation of blood pressure. Technical improvements in the construction of sphygmomanometers rapidly followed. Riva Rocci in 1896 and Hill in 1897 adopted the method of circular compression. More accurate readings were obtained by the use of the wider "cuff" which von Recklinghausen employed in 1901. By these methods the systolic pressure alone could be measured; the modern way of estimating the systolic and diastolic pressures by auscultation was shown in 1905 by Korotkow. Since that time the elaboration of instruments in portable form has kept pace with the increasing mechanical ingenuity of the modern technician. Yet the observation of the facts of raised blood pressure and renal disease, and the formulation of the theories to explain these facts, were made and propounded by men who had to rely upon their sense and their senses only.

As a result of his classical investigation on albuminuria, Bright formed the conception of systemic vascular disease which has been the basis of all subsequent work. Looking for an explanation of the cardiac hypertrophy in his cases, he suggested in 1837 that the altered state of the blood in chronic nephritis "so affects the minute and capillary circulation as to render greater action necessary to force blood through distant subdivisions of the vascular system." In 1856 Traube, a pupil of Purkinje, from the clinical observation of the hard pulse, the large heart with its thrusting impulse and loud sounds, and of the signs of renal disease, inferred that there was an elevation of blood pressure directly dependent on a resistance to the flow of blood through the injured kidneys. It was inevitable, therefore, that the attention of numerous workers should be concentrated on these two factors as causes of high blood pressure: the mechanical obstruction of the kidney —the theory put forward by Cohnheim—and the altered quality of the blood. The problems of renal physiology, even now incompletely solved, must then have obstinately obtruded themselves in the way of those trying to elucidate the diverse manifestations of a damaged kidney. The search for the products of a disordered metabolism which might act as pressor substances began. The idea that the kidney was the primarily insulted organ became fixed, until in 1872 Gull and Sutton found that in certain cases the heart was large and the arteries thickened in a group of patients whose kidneys were healthy. They introduced the significant term of "arterio-capillary fibrosis." In his Hunterian Lecture on senile plethora, in 1895, Clifford Allbutt gave an account of four cases of "arterial hyperpiesis" in elderly persons, the state of whose kidneys "was consistent with subsequent good health." From this new fact, that high blood pressure could exist apart from renal lesions, there arose a doubt as to the exact part played by the kidney in the production of hyperpiesis in nephritis. The change of front necessitated new ideas. The kidney could no longer be regarded as the isolated apex of an invisible triangle. The heart, the arteries, and the kidney were regarded as one functional unit, the cardio-vascular renal system, or (in Osler's apt analogy) the pump, the tubing, and the filter.

In his lecture printed in this issue of the *Journal*, Professor John Hay writes: "You must know your man before you tackle his malady." You should also know your organ before you tackle its diseases; and it is this imperfect knowledge of the healthy kidney that has, perhaps, offered the greatest obstacle to research. The blood pressure depends mainly upon the output of blood from the left ventricle and upon the peripheral resistance; of these two factors the latter is thought, and logically so, to be the more important in the causation of hyperpiesis. Nearly one hundred years ago Bright thought that the changed quality of the blood affected the minute and capillary circulation. Twenty-one years ago Clifford Allbutt said that "viscosity is at least a *vera causa* of arterio-fibrosis," adding the pertinent remark that "diffusion and osmosis are universal, and govern the balances of viscosity." One year ago the researches of Harris and McLoughlin led them to the conclusion that viscosity of the blood is a causal or contributory factor in high blood pressure. The part played by viscosity is still unsettled. It seems probable that the increased peripheral resistance, shown by a rise in the diastolic pressure, depends upon a throttling down of the blood stream at the level of the arterioles. But, since Krogh demonstrated the independent activity of capillaries, increased interest has been shown in their possible influence on blood pressure. Lewis, for example, found that constricted capillaries could resist a pressure of 90 or 100 mm. Hg. Kylin, whose work has not been confirmed by all observers in the same field, showed that in the acute nephritis after scarlet fever or tonsillitis

a rise in capillary pressure preceded the arterial elevation and appeared about a week before the albuminuria. Irregularity of the capillary pattern has also been noticed in cases of hyperpiesia by Müller and Hübener, who found also an orderly arrangement of the capillaries in chronic nephritis; the capillary pressure in each of the two types they found to be normal or subnormal. According to Boas, on the other hand, there are two types of hypertension, one with normal and the other with increased capillary pressure; the latter, he suggests, may be associated with general capillary disease, with glomerulo-nephritis as one part of the picture of a generalized disease process. But here again the question is unsettled. Many experiments have shown that obliteration of the kidney vessels alone does not influence the blood pressure.

Out of a vast accumulation of observations, many of them contradictory, it is difficult to say that this or that is *the* cause of hypertension. The numerous terms invented indicate the confusion of thought that exists. And when all is said and done one is left with the main theories proposed during the first half of the nineteenth century—the renal, the arterio-sclerotic, and the vaso-constrictive theory. The view that vaso-constriction, however it may be caused—whether by tissue metabolites, by pressor substances from the breakdown products of protein, by bacterial toxins, or by imbalance of the endocrine system—precedes and determines medial hypertrophy and intimal degeneration appeals to the mind by its logical simplicity. The chief difference in attitude between the modern and the earlier workers is that now both essential hypertension and nephritis are thought to be manifestations of a widespread vascular disorder. This view has been expressed by Geoffrey Evans, who, as a result of his researches, concluded that "diffuse hyperplastic sclerosis shares with chronic nephritis and chronic interstitial nephritis a common etiology."

Perhaps the most important cause of high blood pressure is civilization. We tend to accept disease too complacently. The fitting of fact into theory fascinates. This is healthy, for it stimulates research, but the danger often is that men, instead of seeing the wood, let alone the trees, may concentrate too long on the leaves. The incidence of high blood pressure is increasing. The stress and strife of modern life, with its complicated economic and social structure, is proving too much even for the stoutest arteries. Professor Hay emphasizes the importance of the effect of psychological states in altering arterial tension. Even in sleep there are marked variations. Fear, worry, indulgence in temporal pleasures, anxious striving, are all admitted to be important contributory factors. If Samuel Butler were alive he might suggest that medicines are of no use if the emotions are disorganized, and might support his thesis by pointing out that where there is disharmony between instinctive behaviour, the vegetative nervous system and the ductless glands, vicious elevations of blood pressure are inevitable. The final synthesis of so many facts and theories awaits another Richard Bright.

THE CENSUS FIGURES

The preliminary report by the Registrar-General, Mr. S. P. Vivian, on the 1931 Census of England and Wales was published on July 6th.[1] It is divided into three parts: an introduction by the Registrar-General describing the system employed on April 26th last and the difficulties encountered in the work of enumeration; statistical notes on the findings; and tables, arranged geographically, showing population, acreage, and Parliamentary electors in 1921 and 1931. The figures included in this report are provisional, and relate solely to the numbers by sexes of the population both for the country as a whole and for an extensive series of local areas. This information has been obtained in advance of the main statistical operations by so organizing the procedure as to permit of the simple figures being abstracted locally and summaries rapidly compiled by local registrars for assembly at the Census Office. The figures are subject to confirmation in the substantive Census reports, though, judging by past experience, no material discrepancy is anticipated.

The preliminary returns show that the total population of England and Wales is now 39,947,931, females outnumbering males by 1,670,243. This total is the largest ever recorded, and the areal density it represents—685 persons per square mile—is, with the possible exception of Belgium, far higher than that of any country of which there is record, and much more than double that of most other countries. The 1931 total exceeds the number returned at the census of 1921 by 2,061,232, corresponding to an inter-censal rate of increase of about five and a half per cent. Three striking features brought out by the figures now published are the increase of urban population at the expense of rural districts, the growth of Greater London and the South of England generally, and the enormous decline in the number of births during the past ten years. The total births registered were more than a million and a quarter fewer than in the preceding ten years, and between two and two and a half million fewer than those of the last completely normal decennium, 1901–11. "The full significance of the fall will be but dimly appreciated for many years to come." As a partial set-off against the almost unbroken fall in the birth rate, the deaths registered were more than half a million fewer than those of either of the two preceding decennia. Notwithstanding variations from year to year, the standardized death rate—that is, the rate in which allowance is made for the age distribution of the population—for every individual year from 1921 to 1930 has been lower than the similar rate recorded for any year before 1921.

The figures comprised in the present report are, as we have said, provisional, relating solely to the number and sex of the population, and it is too early to draw any deductions of real importance from them, or to do justice to the many points of interest which emerge.

[1] H.M. Stationery Office. (4s. net.)

THE CEREBRAL CORTEX DURING UNCONSCIOUSNESS

By a combined study of the conclusions reached by Pavlov and the clinical studies of Kinnier Wilson, R. L. Worrall[1] has attempted to analyse the underlying physiological mechanisms of epilepsy, narcolepsy, and cataplexy. Pavlov showed that reflexes (" regulated responses to the external world ") are of two kinds—the unconditioned, and the conditioned. Unconditioned reflexes are stable, constant, present from birth, and initiated by stimulation of the lower nervous centres. Conditioned reflexes, which are cortical in origin, unstable, and temporary, depend for their existence on the association of their stimuli with those concerned in producing reflexes of the lower nervous centres. Conditioned reflexes, at first generalized, and differentiating but little between similar stimuli, later become specialized, the action of those allied stimuli which do not coincide with the conditioned stimulus being in time obliterated by the process of inhibition. Pavlov demonstrated further that there is a constant irradiation and concentration of excitation and inhibition around various points of the cortex. Excitation of one cortical region is followed by inhibition at that site, and also in surrounding regions. This type of development of inhibition from excitation, and vice versa, was termed " induction " by Pavlov, following Sherrington's terminology ; it is reciprocal, but inhibition radiates more freely than excitation. Stimulation of one point of the cortex leads to inhibition of the remainder ; this " negative induction " of Pavlov is held by Worrall to be highly significant in the interpretation of certain clinical symptoms. Pavlov asserted that such a spread of inhibition over the whole cortex was the basis of sleep, and Worrall proceeds to argue that other forms of unconsciousness may have a similar neurological basis. He explains unconsciousness in epilepsy on this basis of irradiation and concentration of cortical excitation and inhibition, with their mutual and reciprocal induction, the return of consciousness after a seizure resulting from a concentration of inhibition subsequent to its irradiation ; the briefer the period of unconsciousness in a fit, the more rapid is this ensuing concentration. He agrees with Kinnier Wilson that the epileptic symptoms are probably not due to cerebral vasomotor changes. The focal point of stimulation in fits with convulsive movement is in the motor area of the cortex ; the excitatory process may irradiate to the whole cortex with, in cases of unconsciousness, a mutual negative induction of inhibition over the rest of the cortex. In cataplexy the physiological inhibition of the motor cortex results from an emotional stimulus. It does not extend beyond the motor area, and so the patient does not lose consciousness. Descent of the inhibition to the lower motor centres obliterates their tonic contractile action, and this continues for a considerable time. The patient therefore sinks motionless and spec[illegible] pulse, the la[illegible] recovers the use of his [illegible] and loud sounds, and of the[illegible]. In many cases of [illegible] inferred that there was an elev[illegible]imulation, often with directly dependent on a resistance [illegible] area of the through the injured kidneys. It was inevit[illegible]ordinating fore, that the attention of numerous workers [illegible] concentrated on these two factors as causes [illegible]

[illegible] No. 44, Medical [illegible]

point for efferent impulses to the facio-respiratory muscles by a separate path, giving rise to " involuntary " expression of emotion. For some unknown reason a general process of inhibition radiates then over the whole cortex. Modifications of this mechanism are held by Worrall to explain the occurrence of the transitional types between narcolepsy and cataplexy. Whatever may be the ultimate fate of Worrall's method of approach, this relating of the neurological and psychological standpoints does unquestionably hold out a hopeful prospect for further investigation of the state of unconsciousness.

GUY'S HOSPITAL REPORTS

The second quarterly instalment of the *Guy's Hospital Reports*[1] contains matter of exceptional interest, even for the reader wise enough to let no number of this publication pass without at least inspection of its contents. In 1911 the late Sir Samuel Wilks, in his *Biographical Reminiscences*, recorded the advances in medicine made at Guy's, especially during his teaching career there, by epitomizing the articles in these *Reports* from 1836 to 1885. His pupil and admirer, Sir William Hale-White, continues the analysis, makes it attractive by many personal touches and recollections of the writers, and recalls the admirable obituaries of members of the staff, particularly those written by the late W. H. A. Jacobson and R. Clement Lucas. The present instalment of Sir William's historical article carries the story on to 1895. In the course of it he pays a fine tribute to his contemporary L. C. Wooldridge, who died prematurely in 1889, a genius who " seemed to live in order to throw light on obscure problems," an inspiring teacher who " taught his audience how to think." A second noticeable feature in this number is a series of articles on the less well-known forms of anaemia ; Dr. L. J. Witts, who last year contributed a valuable article on simple achlorhydric anaemia, now supplies two papers, one on the allied condition of late chlorosis, based on eighteen cases ; the other on the syndrome of glossitis, dysphagia, and anaemia, often, but erroneously from a strictly historical point of view, called the Plummer-Vinson syndrome after the two workers at the Mayo Clinic, who collected sixty-nine cases there in 1922, an earlier description having been given by Kelly and Paterson three years before. From analysis of thirteen cases Dr. Witts concludes that the incidence of the syndrome, the anaemia, the digestive disturbances, and the nervous phenomena are very similar to those of simple achlorhydric anaemia and late chlorosis. Dr. R. S. Harrison, who records a case of primary aplastic anaemia, due to a progressive decrease in the power of producing blood, and treated by 105 blood transfusions in four years, divides the cases into three groups: (1) primary, in which no cause can be discovered ; (2) a sequel of other anaemias, such as Addison's pernicious anaemia ; and (3) due to overdosage of x rays, radium, and certain poisons which cause degeneration of the bone marrow. Dr. Hurst, who obviously inspired these articles, gives an account of a woman with severe simple achlorhydric anaemia, following gastro-jejunostomy for a pre-pyloric ulcer, who, after improving under large doses of iron, had an

[1] *Guy's Hospital Reports.* Vol. lxxxi (vol. ii, Fourth Series), No. 2. April, 1931.

acute cerebral attack very similar to lead encephalopathy; though no similar case has been reported, the attack was ascribed to iron poisoning. Mr. W. L. Watt and Dr. Knott, in their article on irradiation and leukaemia, emphasize the importance for successful irradiation treatment of an adequate number of active phagocytes in the patient's blood. Professor G. W. Nicholson writes philosophically, and with a wide outlook on form and structure, Mr. E. W. Sheaf gives his experience of Crile's treatment of acute appendicitis, and Mr. Shaw writes on ocular paralyses in diphtheria.

STANDARDS OF MEASUREMENT

The first number of the new volume of *Nature* (July 4th) is distinguished by a supplement containing the chief part of the Guthrie Lecture delivered to the Physical Society of London by Sir Richard Glazebrook, F.R.S., the theme being "Standards of measurement: their history and development." The eminent physicist has given long attention to the subject of standards, and his lecture provides a remarkable review of their varying history. He begins by commenting on the ancient standards of length, on the Olympic cubit—from which our foot and inch have probably descended—on the Greek foot, the Roman foot, and the British foot. The standard of weight in Sumerian times was the mina, whence came the talent, the Alexandrian talent forming the basis of Greek, Roman, and Western European weights until the advent of the metric system. The development of the pound avoirdupois, complicated by the marc of Cologne, gave Britain the Tower or Mint pound. Troy weight, of obscure origin, had a parallel existence. In the reign of Elizabeth two juries examined and fixed standards, and so established the modern system of weights and measures. It is noteworthy that the first application of science to this subject in Great Britain was due to the Royal Society, and that in France the members of the Paris Academy of Sciences were responsible for the replacement of the old French measures by the metric system. Among those who introduced accuracy to the standards of this country were Graham, Bird, Troughton, Kater, and Dr. Hyde Wollaston, and no survey would be complete without reference to the researches of Miller, Baily, and Sheepshanks when the standards were destroyed by the fire of 1834. Notable events in recent years have been the organization of the International Bureau of Weights and Measures at Sèvres, and the conference on standardization held last year at the Board of Trade to discuss the question of inter-Dominion standards. So far, confidence has been placed in the permanence of a material standard, but since the realization of the fact that a wave-length of light of a given frequency remains invariable, the International Committee of Weights and Measures, at its meeting in 1925, agreed in principle to define the unit of length by means of this natural standard, if a satisfactory method could be devised. With this object in view investigations have been undertaken at the National Physical Laboratory, the Reichsanstalt, and at the U.S. Bureau of Standards. Hence, there is a prospect that a natural standard of length will in time be generally accepted. In electricity transference to natural standards is already taking place. It is clear from Sir Richard Glazebrook's able lecture that the quest for the "absolute" standard is not without a certain romantic attraction, more perceptible to-day, perhaps, than at any other period in the history of the subject.

OBSTETRICS AND CHILD HEALTH IN THE UNITED STATES

In November, 1930, a White House Conference was summoned by President Hoover to consider the possibility of further advances being made in promoting the health of children; some of the papers of obstetrical interest then read are published in the June issue of the *American Journal of Obstetrics and Gynaecology*. This conference was the third of a series, the first being held in 1909 to deal with the problems of the dependent child, and the second in 1919. The first of these had as its outcome the establishment in 1912 of a Children's Bureau of the Department of Labour, while the second was followed by eight important regional conferences, in which discussion of the social and economic status of the child was naturally supplemented by consideration of its health and that of its mother. The conference in 1930 included fifteen main committees, one of which was occupied with questions of medical service. This issue of the *American Journal of Obstetrics and Gynaecology* opens with the address of Dr. F. L. Adair, chairman of the committee on prenatal and maternal care, who comments sadly on the prevailing high maternal, foetal, and neo-natal death rates, and insists that more attention must be paid to educating the public and affording better training for medical practitioners, dentists, nurses, and midwives. He believes that the best plan would be the extension throughout the country of a systematic co-ordination of the work of medical practitioners and nurses, associated with a more adequate training of specialists in obstetrics and gynaecology. Reference is made in this connexion to the setting up of the American Board of Obstetrics and Gynaecology which issues certificates to approved practitioners. Dr. Palmer Findlay, discussing the possibilities of improved undergraduate instruction in midwifery, reports the conclusions reached by this committee. Unification is recommended of the departments of obstetrics and gynaecology in medical schools, and in all hospitals affiliated with and controlled by the universities. The committee also endorsed the recommendation of the American Association of Medical Colleges that 5 per cent. of the total hours required for medical graduation should be devoted to instruction in obstetrics. One subcommittee reported that further development of post-graduate training in this branch of medicine was imperative, while another subcommittee expressed the opinion that "the ultimate solution of the problem of good obstetrics lies, not in the midwife, but in developing a sufficient number of doctors who are well trained in the fundamental principles of obstetrics." Professor J. O. Polak, presenting the report of a subcommittee on prenatal, maternal, and early infant care, advocates the establishment of a nation-wide obstetrical programme, under the auspices of the Federal Government, the State, and the county. This would involve the subsidizing of county hospitals and privately owned rural hospitals as obstetrical centres. It is announced that a full report of the conference proceedings will be published in several volumes.

REFRESHER COURSES FOR SHIP SURGEONS

Following the recommendation of the special committee consisting of representatives of the shipping companies, the Ministry of Health, the London School of Hygiene and Tropical Medicine, the Seamen's Hospital Society, and the British Medical Association,[1] a programme of post-graduate courses for ship surgeons has been formulated, and lectures and demonstrations began on Monday at the Devonport Pathological Laboratory of the Seamen's Hospital Society at Greenwich. The principal objects of the course are to enable ship surgeons to take a series of "refreshers," and for candidates for these posts to receive special instruction in ships' hygiene, Board of Trade requirements, and clinical subjects in their special application to conditions on board ship. The courses of instruction are divided into three parts: (1) ships' hygiene, the Shipping Acts, quarantine procedure; (2) tropical medicine and hygiene; (3) a refresher course in clinical subjects. On drawing up the detailed schedule, it was decided that Series 2 should take place at the London School of Tropical Medicine and the Hospital for Tropical Diseases; that Series 3 should start on July 6th, at the Devonport Pathological Laboratory at Greenwich; and that Series 1 should be held during the autumn. A common room has been provided at the Dreadnought Hospital, immediately opposite the laboratory, for the use of the students, and the authorities are providing food at reasonable prices for the convenience of all attending. The refresher course will comprise a brief outline of modern methods of clinical diagnosis and treatment, with special regard to the limitations which obtain at sea and to the equipment at the disposal of a ship surgeon.

SIR HENRY THOMPSON

The *Urologic and Cutaneous Review*, which is published in St. Louis, contains in the issue for June, 1931, an interesting account of Sir Henry Thompson, written by Mr. George Buckston Browne, who worked with him as a private assistant for fourteen years. Sir Henry Thompson was a self-made man who came of an artistic stock on his mother's side, for his maternal grandfather was Samuel Medley, who painted the well-known portrait group of the founders of the Medical Society of London. His father kept the village shop at Framlingham in Suffolk, and both his parents were uncompromising Unitarians, who were so strongly opposed to science that their son was unable to begin his medical studies until comparatively late in life; it was not until he had attained the age of 33 that he became house-surgeon to Sir John Eric Erichsen, who had then just been appointed to the office of surgeon at University College Hospital. At the conclusion of his term of office Thompson went into private practice, and had the good fortune to marry Miss Kate Loder, who was making a handsome income in London as a teacher of music. "Come to London," she said; "I can keep the fire burning." They came, took a little house in Wimpole Street, and bought a private hansom cab. As surgeon to the Marylebone Infirmary Thompson saw much of old men as patients, and from his experience with them he gained the Jacksonian Prize at the Royal College of Surgeons in 1859 for his essay on "diseases of the prostate." The prize brought him Sir James Clark as a patient, and Sir James had long been in Royal favour. Clark caused him to be consulted by Leopold, King of the Belgians (uncle to Queen Victoria) who had suffered much from a stone in the bladder. He was operated upon successfully, and Sir Henry Thompson soon acquired the largest and most lucrative genito-urinary practice, certainly in this country, and perhaps in the world. A man of versatile mind, he was an ardent supporter of cremation; his pictures appeared on the walls of the Salon in Paris and the Royal Academy in London; he was a great collector of Chinese ware, and was well known as one of the gourmets of the last quarter of the nineteenth century. The paper is well worth reading, for it is written from personal knowledge. We learn from it that Thompson never performed a prostatectomy, and Mr. Buckston Browne says: "The late Mr. A. F. McGill of the Leeds General Infirmary in 1889 was the first surgeon who ever systematically removed all that can be removed of an enlarged prostate. I was the first to follow his example in London, and on March 6th, 1893, before the Medical Society of London, with Sir Jonathan Hutchinson in the chair, I read two cases and showed one very successful one, of prostatectomy. I have never had occasion to retreat from what I then said, that the operation, useful and justifiable as it often is is too dangerous to be made a routine operation." The same issue of the *Review* contains an account of Mr Buckston Browne, illustrated with an excellent portrait likeness.

WINGFIELD ORTHOPAEDIC HOSPITAL

We have from time to time had pleasure in commenting on the progress of the Wingfield Orthopaedic Hospital and of the clinics in Oxfordshire, Berks, and Bucks which are connected with it. The annual report for 1930 is a record of much good work. In looking through the list of operations we note with interest that the greatest number (85) under any one heading are classed as sequestrotomies, etc., the next largest figure being 48 tendon transplantations. These figures are evidence of the prevalence of infective bone disease and of anterior poliomyelitis. In the medical report it is also stated that there is a small but steady decrease in the severity of deformities and diseased conditions owing to the earlier general recognition of disease. Were it not for the long waiting list no doubt the decrease would be greater still. Like some other hospitals the Wingfield feels the strain of the call upon its services in industrial and transport accidents, owing to its equipment for the efficient treatment of fractures. The committee is fortunate in having the support of such a generous benefactor as Sir William Morris of Oxford.

THE HALF-YEARLY INDEXES

The usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been prepared and will be ready shortly; they will, however, not be issued with all copies of the *Journal*, but only to those readers who ask for them. Any member or subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a post-card notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

[1] See *British Medical Journal*, April 18th, 1931, p. 676.

ACTIVITY OF VITAMIN CONCENTRATES

The importance of an adequate vitamin supply in the diet is now recognized, not only by the medical profession, but also by the general public, and therefore a steady demand exists for palatable preparations containing vitamins in concentrated form. The preparation of such concentrates is rendered very difficult by certain outstanding properties of vitamins: these are, their occurrence in very small quantities, their ready destruction by many chemical processes, and their special liability to lose activity on keeping. These properties are all adverse to the preparation on a commercial scale of vitamin concentrates that will still be active when they reach the public.

Our knowledge of vitamins is of recent growth, and seven years ago, when their chemistry was very imperfectly understood, there was so great a tendency for optimism to outstrip probability in the claims made regarding the activity of commercial products that this *Journal* arranged for tests to be made of the activity of certain widely advertised vitamin preparations. The results of these tests, and of similar investigations carried out in America, were unsatisfactory, for they showed that the makers had in most cases greatly overestimated the activity of their preparations. (Coward and Clark, *British Medical Journal*, January 6th, 1923; McCollum and Simmonds, *Journal of the American Medical Association*, 1922, lxxviii, 1953.) Since that date many advances have been made in our knowledge of vitamin chemistry—for example, the manufacture of vitamin D has been achieved; this can now be produced in any quantities desired, and since it is relatively stable no great difficulty in this case attends the manufacture of concentrates. Similarly, the substances grouped under the term vitamin B can be concentrated in a fairly stable form. On the other hand, the preparation of stable concentrates of vitamins A and C still encounters very serious obstacles, for although concentrates of both these vitamins can be made which are fairly stable under laboratory conditions, yet it is a matter of great difficulty to ensure continued stability when these concentrates are mixed with other foodstuffs. Hence it is not easy to prepare for the market a mixture of vitamin concentrates in a palatable form which is reasonably stable.

It is of great importance to the medical profession to know whether such preparations can be relied on or not, for they are extensively used with the object of preventing deficiency diseases. The problem of practical importance is not whether the preparation was originally made from a highly active vitamin concentrate, but whether this is still active when it reaches the patient.

In view of these facts the Council of the British Medical Association considered it advisable to give authority for tests to be made to estimate the activity of preparations advertised as containing these vitamins. Unfortunately, such tests are very laborious and consequently expensive, and the investigation was therefore limited to a few preparations issued by firms of repute, upon whom the medical profession might reasonably rely. The manufacturers were notified of the proposed inquiry and gave their assent to it. In each case samples were bought in the open market.

METHOD OF TESTING

The tests were conducted by Dr. K. H. Coward in the Pharmacological Laboratory of the Pharmaceutical Society. Reasons of space prevent publication of the full reports, but the following are some of the essential points. The tests were as follows:

Vitamin A.—Rats were fed on a diet deficient in this vitamin until growth ceased; then a measured quantity of the commercial preparation was given to one group of rats, and the effect on growth compared with the effect of varying quantities of standard cod-liver oil given to other groups. The activity of the preparation as compared with the standard cod-liver oil was thus determined.

Vitamin D.—Rats were fed on a rachitogenic diet for three weeks; one group was then given the preparation, and two other groups were given different quantities of standard irradiated ergosterol. After ten days all the animals were killed, and the ulnae and radii were examined. The potency of the preparation in healing rickets, as compared with irradiated ergosterol, was then measured.

Vitamin C.—Guinea-pigs were fed on a basal diet deficient in this vitamin, and were given, in addition, a dose of either the preparation to be tested or of orange juice. After fourteen days the animals were killed, their jaw bones were removed, and the roots of the incisors examined histologically for signs of scurvy. The degree of scurvy was rated at none, moderate, or severe. The activity of the preparation in terms of orange juice was then measured.

RESULTS OF TESTS

The chief conclusions regarding the commercial preparations tested are as follows:

I

A preparation of cod-liver oil with malt extract, advertised as containing vitamins A, B, and D.

This preparation was tested for content of vitamins A and D three months after it had been purchased. The tests showed that 15 mg. of the preparation possessed a vitamin A content equal to that of 5 mg. of a good sample of cod-liver oil, and a vitamin D content of 40 units per c.cm., whereas the content of a good cod-liver oil is 100 units per c.cm.

The preparation contained 21 per cent. fat, and hence the vitamin activity of the fat is as regards vitamin A 1.6 times, and as regards vitamin D twice, that of a good sample of cod-liver oil.

II

A food advertised as containing vitamins A, B, C, and D.

This preparation was tested for vitamin C content one month after purchase. A daily dose of 5 grams did not prevent scurvy in guinea-pigs. A daily dose of 10 grams produced partial protection against scurvy, and the protective effect was slightly less than that produced by 3 c.cm. of orange juice.

A teaspoonful of this product weighs 10 grams, and therefore these figures indicate that a daily dose of six teaspoonfuls is equivalent in antiscorbutic potency to approximately one-quarter of an orange. The dose recommended by the makers for children is up to one teaspoonful three times a day. This report was referred to the manufacturers. They pointed out that the preparation had a specific gravity of 1.4, and therefore the report implied that 7 c.cm. of the preparation was slightly less effective than 3 c.cm. of orange juice, a conclusion which

was in very fair agreement with their claim that the product contained antiscorbutic vitamin equivalent to half its volume of fresh orange juice.

III

A preparation advertised as containing vitamin C in addition to vitamins A, B, and D.

A daily dose of 10 grams of this preparation afforded no protection to guinea-pigs against scurvy. This unsatisfactory report was confirmed by an independent test in another laboratory, which was arranged by the makers of this preparation. The makers have therefore withdrawn the claim that this preparation contains vitamin C, and their advertisements have been amended accordingly.

IV

A food advertised as containing vitamins A, B, C, and D.

This was tested for the potency of its vitamin A and C content one or two months after purchase. The vitamin A potency of the preparation was found to be equivalent to one-quarter of its weight of a good quality cod-liver oil. The preparation was nearly four times as heavy as cod-liver oil, and hence the vitamin A activity of a teaspoonful of the preparation was nearly equal to that of a teaspoonful of cod-liver oil. Tests for vitamin C activity gave negative results. A daily dose of 5 grams of the preparation produced no measurable antiscorbutic action, and the same result was obtained with a daily dose of 10 grams.

Copies of the reports were forwarded to the manufacturers of this preparation, who in the course of their comments on them said:

"Whilst we do claim that —— contains vitamin C, and, therefore, has certain antiscorbutic properties, we have never asserted that it is in itself efficient as a cure for scurvy, but rather that its vitamin C content renders it of definite value in a prophylactic sense. . . . A perusal of the report in question has led us to devote a deal of study to this subject, and we are pleased to advise you that we are taking steps to modify substantially the process of manufacture of ——. We believe that as a result of these modifications the efficiency of the product will be increased."

DISCUSSION

The substances tested were not a random sample of vitamin preparations; they were chosen as products upon which the medical profession might be expected to place reliance. On the other hand, they were tested for their content of the most easily destroyed vitamins—namely, A and C.

The results can be considered fairly satisfactory as regards vitamin A, for both products tested had an activity similar to that of cod-liver oil. This may appear to our readers to be a somewhat low standard, but, owing to the ease with which vitamin A is destroyed, this standard is difficult to attain.

The three tests for vitamin C were very disappointing, for two were completely negative. We may point out that there is no reason to doubt that highly active concentrates of vitamin C had been put into these preparations, but, unfortunately, they had disappeared during the process of manufacture, a result that is extremely difficult to avoid. Biochemists have advanced our knowledge of vitamin chemistry very greatly during the last decade, but the difference between producing results on a laboratory scale and on a commercial scale is

Concentrates of most of the vitamins can be produced in the laboratory, and they are fairly stable if kept under ideal conditions. In the case of commercial preparations it would appear that their content of vitamin A only equals that of cod-liver oil in the more favourable cases, and in the case of vitamin C it would appear to be a very difficult problem to produce a commercial preparation which contains any of this vitamin. Evidently it is difficult for the manufacturing chemist even to equal the natural sources of vitamins A and C; and, therefore, it is still advisable for the medical profession to exercise caution before abandoning cod-liver oil and orange juice as sources of these vitamins in infant diets.

We would again emphasize the fact that the preparations tested were chosen as being the most likely to yield satisfactory results, and probably a random selection would have provided far worse results. We have every reason to believe that the manufacturers made every endeavour not only to make their preparations from active concentrates, but also to put them up in a stable form.

It is evident from the results obtained that the problem of preparing on a commercial scale stable concentrates of vitamins A and C has not yet been fully solved, at any rate in the case of preparations put up in the form of foods.

On this and on other grounds there would appear to be a prima facie case for including vitamin concentrates within the scope of the Therapeutic Substances Act, but there are certain difficulties in recommending this at present. The biological tests for vitamins are expensive and laborious, and their accuracy depends on meticulous attention to fine detail. They yield satisfactory evidence regarding gross differences in vitamin content, but no general agreement regarding minor points in technique has yet been attained, and until such agreement is reached it will be difficult to establish these tests as legal quantitative criteria.

England and Wales

Presentation to Dr. Arnold Lyndon

On the occasion of his retirement from the post of chairman of the Panel Committee, which he has held for the past nineteen years, and from that of honorary secretary of the Surrey Branch of the British Medical Association, which he has held for the past eight years, Dr. Arnold Lyndon was presented at the annual meeting of the Surrey Branch, held at Croydon on July 1st, with a handsome silver rose bowl and a cheque subscribed for by his colleagues in the area. In asking the president of the Branch to make the presentation, Dr. Morton Mackenzie outlined the work that Dr. Lyndon had done for the profession during his long life of service, laying more particular emphasis on the side of his work connected with the B.M.A., and stressing particularly Dr. Lyndon's unfailing courtesy and suavity under all conditions. Dr. Bates, the vice-chairman of the Panel Committee, gave an account of the work done on this committee, and said how, in spite of continued ill-health, Dr. Lyndon continued to devote himself to his duties. Dr. Genge, the president, in a few happy words, then made the presentation. Dr. Lyndon, who was enthusiastically greeted, briefly returned his thanks.

Instruction in Tropical Medicine and Hygiene

An important announcement is made by the authorities of the London School of Hygiene and Tropical Medicine in regard to the future post-graduate courses of study in tropical medicine and hygiene. The five-months' course of intensive study hitherto in force, followed by examinations, first for the School certificate, and then for the diploma of the Conjoint Board of the Royal Colleges of Physicians and Surgeons, has been found to impose an undue strain upon candidates. In addition, many of the Colonial Governments have found it difficult to release their officers for a sufficiently long period to enable them to combine what is in effect six months' study leave with a much-needed holiday in this country. Further, the requirements of the Colonial Service have been repeatedly of so urgent a character that for recruits about to proceed over-seas there has been a demand for a shorter course of instruction than has hitherto been possible. The whole situation has now been reviewed, and, after consultation with the Colonial Office and the Conjoint Board, the School authorities have divided the course of study into two parts: Section A, a three-months' course of clinical and laboratory instruction, and Section B, a two-months' course in tropical hygiene. Each section has been so designed that it can be taken independently of the other, and the Conjoint Board is arranging for the dates of the examinations to follow closely upon the end of the corresponding course of study. The examinations for the School certificate will be discontinued, and students will be encouraged to sit for the D.T.M. and H.Eng. Application has been made to the University of London for recognition of the revised course of study as a recognized course for associate students, and every student at the School, whether sitting for the diploma examination or not, will be entitled to apply to the University for a certificate of attendance at the recognized course of study. The dates of the courses for the session 1931–32 are:

Section A (Clinical and laboratory instruction).—First course: September 29th to December 18th, 1931. Second course: January 4th to March 24th, 1932. Third course: April 11th to June 30th, 1932.

Section B (Tropical hygiene).—First course: January 18th to March 18th, 1932. Second course: April 18th to June 17th, 1932.

The course of instruction under Section A includes clinical tropical medicine, applied pathology, medical zoology, and elementary bacteriology. Section B comprises instruction in tropical hygiene, including bacteriology, medical zoology, anthropology, and vital and medical statistics. An interesting development in connexion with the revised course is the establishment within the London School of Hygiene and Tropical Medicine of a new division of clinical and tropical medicine, with Dr. G. Carmichael Low as director and Dr. P. Manson-Bahr deputy director. The instruction in this subject will be given in the new division by the medical staff of the Hospital for Tropical Diseases and by visiting lecturers. In this way the splendid resources of the hospitals of the Seamen's Hospital Society at Endsleigh Gardens, at the Albert Docks, and elsewhere become available for clinical instruction of the students at the School. It is also announced that the course for the University of London D.P.H. has been revised so that the period of study is now covered by nine months' whole-time work. A further development is the establishment in the School of a university chair of medical industrial psychology, with Professor Millais Culpin as its first occupant. The course for the D.T.M. and H., the revised course for the D.P.H., and the course for the diploma in bacteriology and other special courses all commence at the end of September or the beginning of October. Inquiries should be addressed to the secretary of the School at Keppel Street, Gower Street, W.C.1.

Midwives' Institute Jubilee

The Incorporated Midwives' Institute celebrated its jubilee on July 4th by a meeting at Bedford College, London, at which the proceeds of a jubilee fund, amounting to £1,889, were presented to Miss Rosalind Paget, the treasurer and one of the founders of the Institute, to be used as a nucleus for the provision of a new home for the work, which has outgrown its present premises at Buckingham Street, Strand. A message was read from H.M. The Queen:

"I congratulate the members on their fine record of achievement, which owes much to the life-long devotion of the senior member (Miss Paget), under whose inspiration, I trust, this noble cause will meet with increasing prosperity. The great value to the community of the daily work of midwives is inestimable."

The Marchioness of Salisbury, in presenting the fund to Miss Paget, together with a book in which were inscribed the names of the pioneers and founders, said that the Institute during the last fifty years had accomplished much for the improvement of maternity services and for the increased welfare and status of midwives. In the early days everywhere midwifery was in the hands of women, though in England, curiously, it was under the control of the ecclesiastical courts; the first licence was granted by Bishop Bonner in 1554. As time went on and medical men began to take up midwifery practice, the midwife's status deteriorated. The last bishop's licence was issued in 1786. Attempts were made from time to time thereafter to awaken the national conscience on the subject, but very little was achieved, until, in 1880, a small body of ladies decided in a quiet way to improve the service and to set about obtaining State recognition and proper training for midwives. In the year (1881) that the Midwives' Institute, then called the Matron's Aid Society, was founded, it was stated that at least seven out of ten births were attended by women, most of whom had no training or qualifications. The Midwives Act, finally passed in 1902, was preceded by the introduction of ten unsuccessful Bills over a space of twelve years. Then came the work of training a great number of midwives, and in due time the fight to have the midwife included with the doctor in the provisions of the National Health Insurance Act. Mr. R. C. Elmslie presented a gift on behalf of the Chartered Society of Massage and Medical Gymnastics, and other gifts were offered in memory of individuals.

Miss Rosalind Paget, who was described by Miss Edith Pye, the president of the Institute, as "the Florence Nightingale of Midwifery," gave an address of reminiscence. She spoke first, and gratefully, of the work of the Obstetrical Society of London, which instituted an examination for midwives in 1872, and, by the time the Central Midwives Board commenced the State examination in 1904, had certified over 10,000 women. The society was at one time threatened by the General Medical Council that if it continued this procedure its members would render themselves liable to a charge of infamous conduct in a professional respect. A compromise, however, was reached, the principal element of which was the abandonment of the beautiful large diploma and the substitution of a quite small certificate. Miss Paget paid a special tribute to three members of that society—namely, Dr. Grailly Hewitt, Dr. Charles Cullingworth (the first representative on the Central Midwives Board), and Sir Francis Champneys. A good deal of objection

Attention is drawn to the objectionable practice of depositing refuse in cellars, vacant houses, and other odd corners. During the year 3,764 accumulations of garbage and filth had been removed by the cleansing department after warnings had been given to the occupiers concerned. During the year 1,360 cases of overcrowding were recorded; of these overcrowded houses 866 were of one apartment and 474 of two apartments. It is pointed out that hitherto overcrowding has been determined on a cubic space standard—namely, an allowance of 400 cubic feet per person, irrespective of age. As the result of a survey of 1,395 houses, with a population of 6,051, it was found that only 59 of the houses were overcrowded according to the cubic space standard, while no proper sex separation existed in 275 houses; in 417 houses there were more than two persons per room. Lodgers were kept in 98 cases, and subtenants in 96, thus greatly influencing the extent of the congestion. With regard to smoke abatement, it is pointed out that this is one of the most serious problems now confronting sanitarians. The report states that in its efforts to reduce the smoke of Edinburgh to a minimum, the public health department has been well supported by industrialists and owners of public buildings, who have readily given effect to suggestions made.

Correspondence

MORTALITY FROM TUBERCULOSIS

SIR,—The above phrase forms the heading of an interesting article in the *Journal* of June 27th (p. 1127). Unfortunately the word "mortality" has acquired no exact scientific meaning. Sometimes it is used as the equivalent of the term "death rate," at other times it is used as the equivalent of "case mortality." Each of these terms, "death rate" and "case mortality," has an exact connotation; the word "mortality" by itself has not. The following are examples of the confusion arising from the use of this vague word "mortality."

1. Osler's *Principles and Practice of Medicine*, McCrae (tenth edition, p. 71), referring to scarlet fever, reads: "In Boston from 1894 to 1903 the ratio of cases per 10,000 ranged from 45.80 to 16.18, and the mortality from 3.94 to 0.60." Could anyone from reading this be sure whether the last two figures had reference to 10,000 of the population, or to 100 of the cases?

2. Last year a candidate for the D.P.H. was asked in an oral examination, "What is the mortality from tuberculosis?" He thought "case mortality" was meant, and he had no answer ready. The examiner probably meant "death rate"; and, if he had said so, the candidate could have answered him.—I am, etc.,

Belfast, June 30th. JOHN R. GILLESPIE.

HOG'S STOMACH IN PERNICIOUS ANAEMIA

SIR,—From time to time I have noticed references in medical literature to the failure of certain cases of pernicious anaemia to respond to treatment with preparations of hog's stomach. There are apparently three main reasons for this:

1. The preparation may be inactive. It is extremely important that an active preparation of hog's stomach should be used. During the last two years I have examined some twelve different preparations offered for sale in this country, and I propose to publish particulars of the results obtained at a future date. The products were administered to patients suffering from pernicious anaemia in the wards of the Manchester Royal Infirmary. The value of each preparation in the treatment of pernicious anaemia was assessed from its influence on the reticulocyte response and also the alteration (if any) observed in the blood counts. In brief, the results showed that only four of these preparations examined were active and suitable for the satisfactory treatment of cases of pernicious anaemia. It is necessary to bear in mind the fact that the price of any of these preparations is not a criterion of the activity. The cost varies from 8s. 6d. to 48s. per pound. Three of the four active preparations may be obtained at a reasonable cost to the patient. The majority of the more expensive preparations of hog's stomach are unsuitable and inactive; it is therefore important that when hog's stomach is prescribed an active preparation should be used.

2. The treatment may be inadequate. However active the preparation may be it is essential that at least one ounce by weight should be given daily until the blood count has returned to normal, when the dose may be reduced.

3. The condition may be aplastic rather than Addisonian anaemia.—I am, etc.,

JOHN F. WILKINSON,
July 4th. Director, Laboratory of Clinical Investigations and Research, Manchester Royal Infirmary.

MICROCEPHALY

SIR,—The answer to Dr. Noel Burke's further query is in the affirmative. Long before mental deficiency was ever heard of, craniologists in many parts of the world had divided crania, according to their size, into microcephalic, mesocephalic, and macro- or mega-cephalic, and they have done so because, as Quain's *Anatomy* states, "the capacity of the cranium affords the most convenient indication of the development of the brain." The same applies to the living head, though the methods of determination necessarily differ for the quick and the dead. These distinctions cannot be detected in their finer gradations by the naked eye, but require instruments of precision. It is, then, not I who use a "type name with a new meaning," but rather that "majority of students" who may possibly have overlooked some of these craniological distinctions. My own experience, for whatever it may be worth, has convinced me that if we graft on to existing clinical methods some of these anthropometric facts, together with even more recent discoveries in the ancillary sciences of embryology, neuropathology, and statistical science, the study of mental deficiency becomes intensely fascinating and, I think, more hopeful.

"Type names" in mental deficiency, like many other historical landmarks in medicine, have played their part and done it well, but the day is not now far distant when they will necessarily have to be replaced by newer and truer ideas.—I am, etc.,

Stoke Park Colony, Stapleton, Bristol, July 6th. RICHARD J. A. BERRY.

THE CEREBRO-SPINAL FLUID

SIR,—The article on a cerebro-spinal fever outbreak in the Royal Air Force by Whittingham, Kilpatrick, and Griffiths, which appeared in the *Journal* of June 27th, has interested me, but on page 1103 there is a statement with which I cannot find anyone to agree:

"Cases of meningismus had clear, sterile cerebro-spinal fluid, with a low cell count (about 10 cells per c.mm.) and a practically normal albumin content (0.03 to 0.05 per cent.)."

It is surely recognized that the protein consists of albumin (fine molecules), 0.02 per cent.; pseudoglobulin (medium molecules), 0.003 per cent.; and euglobulin (large molecules), 0.0005 per cent. Beyond 0.025 per

cent. there is a definite abnormal protein content of the cerebro-spinal fluid. The Maudsley Hospital (London University) holds perhaps the widest limits of interpretation, and its figures are 0.01 to 0.025 per cent., whereas some authorities *hold that normal can* be definitely shown to be constantly 0.02 per cent. precisely.

In view of the statement made that 0.03 to 0.05 per cent. is practically normal, it would be interesting to know what other factors were ascertained in these cases—as, for example, the Lange curve—remembering that in disease not only is the amount of protein increased, but the proportion of albumin to globulin may be greatly decreased. Thus in tabes and meningitis, with an increase of total protein, the proportion of albumin to globulin may become 3–4 of albumin to 1 of globulin (normal 7 to 1), while in general paralysis of the insane the proportion is 1–2 to 1, and the euglobulin may show as much as a thirtyfold increase. The Lange colloidal gold reaction, being probably associated with this globulin increase, becomes more intense as the globulin proportion increases; it is this increase in the large molecules which causes the precipitate in the Lange test (euglobulin comes down).

It would also be of interest to know the chloride content (normal 0.75 to 0.73), which is reduced from 0.7 to 0.6 in meningitis, and also the sugar content (normal 0.05 to 0.09), which is reduced from 0.02 to *nil* in cerebro-spinal meningitis. Again, the pressure was not stated—for example, as recorded with Greenfield's cerebro-spinal fluid manometer (probably the most reliable)—and the number of drops which came out per second (reckoning normal as one drop per second); also the colour of the cerebro-spinal fluid. Seeing that above 6 cells per c.mm. (and 1 to 5 is normal) is always considered abnormal, I take it that "low cell count" should read "relatively low cell count for this condition."

I feel sure that this further information in these cases would be *most instructive*.—I am, etc.,

L.C.C. Mental Hospital, Colney Hatch, June 27th. ALEXANDER CANNON.

TREATMENT OF DYSMENORRHOEA

SIR,—I should like to endorse what Dr. Curtis Webb says about the treatment of dysmenorrhoea by electrotherapy in your issue of June 20th. Diathermy applied, as he suggests, from front to back through the pelvis is of undoubted benefit. When the hymen is supplanted I prefer a metal vaginal electrode and a metal belt round the waist, but what I find most successful is a course of static wave treatment. A tube-shaped metal electrode is inserted into the rectum. The static wave acts as a general tonic to the pelvic organs, exciting cellular massage and phagocytosis, relieving congestion and stasis. At the same time it has a markedly beneficial effect in certain forms of constipation.

Static wave current is contraindicated if sepsis of the genital tract is present. In such a case surgical treatment might be indicated, but in cervicitis and endocervicitis intrauterine zinc or copper ionization (15 to 20 ma. for fifteen or twenty minutes twice a week), as taught by my father, the late Dr. Samuel Sloan, followed by diathermy, seems preferable to dilatation and curettage, the results of which are often disappointing.

The combination of endocrinology with electrotherapy has given permanent relief to many women afraid of operation who, before these methods were adopted, would have been condemned to suffering and disability, year after year, for one or two days every month.—I am, etc.,

London, W.1, July 1st. ELIZABETH SLOAN CHESSER, M.D.

M. P. Crowe, P. A. Fox, A. Sloan.

SIR,—In reply to Dr. Kennedy Hister, J. O'Donnell, request for figures to substantiate my for vacant regard to the treatment of dysmenorrhoea Royal College of I should like to point out that I can hardly pharma- letter, commenting on some statements by Mr. Wilson. Dunn, a medium for publishing the results of cases during nineteen years of practice. Nor could I, in the time available, produce such statistics. I have, however, made a rapid survey of my notes on 100 cases of dysmenorrhoea in women between the ages of 18 and 32 treated by exercise. Of these, 48 were severe cases, 43 of whom subsequently had painless periods, and 5 were relieved. Of the 52 milder cases, 49 became free from all disability and 3 were relieved. In scanning these notes I found that I had, during the same period of time, seven cases of failure. Five had slight pains only, and would not attempt the exercise. Two with severe dysmenorrhoea tried them once, but felt no better and did not continue. One of these, however, got much relief from hot baths.

I will not occupy further space with details, but I must explain that, as stated in published papers, I use the term dysmenorrhoea to include "*suffering of any kind* associated with the menstrual period," whether it be intense pain or merely a form of malaise. With this interpretation of the word dysmenorrhoea I presume that most women with a medium-sized general practice would see, at the least, twenty-five such cases during the year, and accumulate 100 cases in a few years. Naturally, only the severer cases find their way to the gynaecologists.

May I add, in reply to private correspondents, that I find exercises involving bending, swaying, and crouching movements the most efficacious, but they must be continued until a feeling of warm glow is produced, and, in obstinate cases, they may have to be repeated two or three times on the first day of the period for a few months.—I am, etc.,

Cheltenham, July 6th. ALICE E. SANDERSON CLOW.

TOXICITY AND FATAL DOSE OF TURPENTINE

SIR,—In Taylor's *Principles and Practice of Medical Jurisprudence* (eighth edition, 1928, vol. ii, p. 839) I find the following:

Toxicity and Fatal Dose.—Turpentine cannot be said to be very toxic. It may irritate the stomach as a primary effect, and after absorption it has a specific influence on the kidneys, causing irritation which may lead to inflammation. We are unable to find a recorded case of fatal poisoning by turpentine in an adult, so that the fatal dose must remain with the records (infra) in children.

On April 3rd, 1931, an adult male, aged 39, drank six ounces of spirits of turpentine, and after doing so collapsed and died. He was an alcoholic, and was recovering from a drinking bout. On making a post-mortem dissection over four ounces of turpentine were found in his stomach. This fluid was as clear as when he drank it. The lining of the stomach was completely macerated, and lying in small pieces in the gastric cavity. The wall of the stomach felt like leather, due to the action of the turpentine.

In view of the above statement in Taylor's *Medical Jurisprudence*, and not having heard of, or come across, a fatal case of turpentine poisoning in an adult, I am recording this case as one of interest, for there is no doubt that the direct cause of this man's death was the turpentine he drank.—I am, etc.,

Bulawayo, June 2nd. FRANCIS P. MAITLAND, Senior Government Medical Officer, Southern Rhodesia.

Attention is drawn

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st interesting, as a good many public health authorities diagnose and quarantine for diphtheria on the morphological appearance of the suspected Klebs-Loeffler bacilli, after a short period of incubation on Loeffler's medium. The following facts, although well known to bacteriologists, have not yet permeated to the textbooks in general use.

During the year 1918 the Canadian hospitals in England were startled by the news that 50 per cent. of the wounds of returning soldiers were infected with diphtheria bacilli. The matter appeared to be a very serious charge, as the examinations in Canada had been carried out by experienced bacteriologists. The problem was immediately investigated, and after thousands of cultures had been taken the pathologists of the Granville Canadian special hospital in Buxton, Derbyshire, Drs. Janes, Thomas, and myself came to the conclusion that from an academic standpoint it was practically impossible to diagnose Klebs-Loeffler bacilli without testing for toxins in cultures by injection into guinea-pigs. We found strains that answered all the known tests on the various sugars, but in the end failed to produce toxins. The solution of our problem in those war days was greatly handicapped by the poor and uncertain quality of the sugars available.

Our conclusions were that no matter what morphological resemblances or sugar reactions a culture produced, it could not be called a culture of Klebs-Loeffler bacilli unless it produced definite and fatal toxins for the guinea-pig. Full particulars are available in the War Office Reports.—I am, etc.,

KEITH M. B. SIMON, M.B.,

-au-Prince, Haiti, June 9th. D P H Lond.

SIR,—I can record a case of catheter life even longer than that of Dr Judson Bury's patient. The man was a parson who died when he was 74, after having passed a catheter daily for fifty-four years. The history he gave was that while an undergraduate at Cambridge he was seized with what was probably transverse myelitis after very strenuous rowing His legs were completely paralysed and he lost control of the sphincters. His legs so far recovered that he was able to walk with a shuffling gait with the help of two sticks. But in all his long life he never afterwards once passed urine naturally. He used a lubricant for his catheter now and then ; sometimes he passed it without any, and sometimes he spat on it. He had had orchitis and cystitis many times, but told me that the passage was now so hard that nothing troubled him. I saw him only when he was an old man , he died of cancer of the rectum.—I am, etc.,

Yattendon, Berks, July 4th. F. A. BRODRIBB.

The Services

COMMISSIONS IN THE R A M C.

Twenty-five permanent commissions in the Royal Army Medical Corps are being offered to qualified practitioners, under 28 years of age, registered under the Medical Acts There will be no entrance examination, but candidates will be required to present themselves in London for interview and medical examination. At the same time, a certain number of temporary commissions, under similar conditions as regards age and qualifications, will also be offered. Applications should reach the War Office not later than July 20th. All information as to conditions of service and emoluments may be obtained from the Under-Secretary of State, War Office (A M D 1), Whitehall, S W.1.

Universities and Colleges

UNIVERSITY OF LONDON

At a meeting of the University Court, held on July 1st, Lord Macmillan presiding, intimation was received that the late Mr. J. F. H. Knight had bequeathed to the University a moiety of his residuary estate after the determination of certain trusts and the payment of certain legacies The bequest, which is for the furtherance of teaching and research in the University, was accepted. Its value is expected to be in the neighbourhood of £25,000.

The Semon Lecture, entitled " The relative value of radiotherapy in the treatment of cancer of the upper air passages," will be given by Mr. Douglas Harmer at the House of the Royal Society of Medicine on Thursday, November 5th, at 5 p.m

Dr. Kenneth Eckenstein, Deputy Esquire Bedell since 1920, has been appointed Esquire Bedell in succession to Dr. H. E. Vincent, resigned.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following have successfully passed the school examination at the termination of the nineteth term (February-July):

*H W. H McClelland (winner of " Duncan " Medal), *W A. Burnett, *C H Howat, *J A. Rosset, *E C Vardy, E S Adderley, E E Barnett, R V. Bowles, R N Brandwood, C J H Brink, R. Caldera, H. P. Chaudhuri, H. D Cronyn, B R Das, K. Edmundson, A. J. Johnson, F B. Khambatta, T. Langan, S. H. Moore, E. Morris, R Nicklin, P. J O'Shaughnessy, A Papadakis, N. C R. M Perumal, P. B Lee Potter, J L Razdan, O Rosset, V. Sivalingam, M H Steven, M M Siddiq, J. Taylor, R W. van Cuilenburg, F. A. Vlapree, L. A F. Wiles, A. W. Williams.

* Passed with distinction.

UNIVERSITY OF LIVERPOOL

A degree ceremony took place in St. George's Hall on Saturday, July 4th.

The following candidates have been approved at the examinations indicated.

M D—S Alstead, R. E. Horsfall, E. D. Irvine, J. Lobman, C L G. Pratt

M B, Ch B—[1] T. L Hughes, [2] W. J. Chisnall, [2] A L Potter *Part III (1923 Regulations)* : M L. Kaufman. *Part B (1924 Regulations)* : H. T. Cank, L M. Crooks, W S Diggle, H. G. Evans [illegible] H Hughes, O. V. Ice[illegible], W W. Laughland, J T. Lennon, H. F. Loewenthal, A J Martinez, P. B Moroney, I. Sytner, J V Tollington, Winifred Walls, A R Williams, D. I. A. Williams, A Wynroe. *Part A (1924 Regulations)* [3]H. Ackers, [3]D G. W. Brown, [3]W. Bullock, Mervyn H Clark, H. L Davies, [3]W. S Davies, [3]J. R. Eatough, [3]T R Edwards, J. F. Foulkes, [3]G. R Griffith, H G. Hanley, A J Helfet, F. P. J. Higgins, D J. Hoskinson, [3]E R Jones, [3]A S Kerr, Nancy L. Lewis, Margaret Mewton, [3]M H Papperovitch, I Parry, R. G. Reid, T. G. Richards, Beatrice L H Sergeant, A L Smallwood, [3]Edna L Smart, K. W. Stronde, D Wainwright, V. J. Woodward, R. F. Wynroe Passed in separate subjects J. Amos (special pathology, pharmacology, and general therapeutics), H V. Corbett (forensic medicine and toxicology, pharmacology, and general therapeutics), G R Critten (forensic medicine and toxicology), Eva Macdonald (public health), E Taylor (public health), G. E Thomas (special pathology, pharmacology, and general therapeutics), J. L Williams (public health)

D P H—*Part I* : Enid M. Hughes, D. H. Williams, Mary G T. Williams. *Part II* : A C Briffa.

DIPLOMA IN TROPICAL MEDICINE—J. A. K. FitzGerald

DIPLOMA IN TROPICAL HYGIENE—F. E Camps, E. R. Gauld, K. T. Moir, M Salah el Din, G. Verghese.

[1] First-class honours.
[2] Second-class honours.
[3] Distinction in surgery, obstetrics, and gynaecology.
[4] Distinction in forensic medicine.
[5] Distinction in public health
[6] Distinction in pharmacology and general therapeutics
[7] Distinction in obstetrics and gynaecology

The following fellowships, scholarships, and prizes have been awarded in the Faculty of Medicine

Lady Jones Research Fellowship in Orthopaedic Surgery Dr E. N Wardle. *John Rankin Fellowship in Anatomy* Dr G W Causey. *Johnston Colonial Fellowship in Biochemistry* Dr R W Brookfield. *John W Garrett International Fellowship in Bacteriology* : Dr Honora J. Twomey. *Holt Fellowship in Pathology* : Dr D. H Collins *Holt Fellowship in Physiology* Dr C I G Pratt. *Thelwall Thomas Fellowship in Surgical Pathology* Dr R. A Furniss *Robert Gee Fellowship in Human Anatomy* Lennon *Samuels Memorial Scholarship (Medicine)* Dr C A Birch *Samuels Memorial Scholarship (Surgery)* Dr M Silverstone *University Graduate Scholarship in Medicine* A S Kerr *John Rankin Exhibition in Practical Anatomy* : Divided between Margaret F. Procter and M. M. Wallis. *Owen T. Williams Prize*:

T. L. Hughes. *George Adami Prize in Pathology:* A. S. Kerr. *Thomas H. Bickerton Prize in Anatomy:* B. Bland. *Torr Gold Medal:* Margaret F. Procter. *William Mitchell Banks Bronze Medal:* A. C. Brewer. *Gold Medal in Public Health:* E. R. Jones; *proxime accessit,* A. S. Kerr. *Silver Medal in Pharmacology:* S. Henderson. *Silver Medal in Forensic Medicine and Toxicology:* A. S. Kerr; *proxime accesserunt,* W. S. Davies and J. R. Eatough. *Kanthack Medal:* A. S. Kerr.

UNIVERSITY OF BIRMINGHAM

At a congregation of the University of Birmingham, held on July 4th, the following degrees were conferred:

M.D.—A. C. R. Walton (with honours), G. H. Knight, H. J. Williams.

M.Ch.—J. Gore.

M.B., Ch.B.—*†H. N. Gregg, *A. G. W. Whitfield, F. H. C. Boards, J. A. R. P. Cant, W. S. Coltart, H. L. N. Davies, R. J. de Carteret, T. A. S. Kennerley, Nancy Laughton, H. J. Riley, E. Rudkin, M. H. Sherwell, R. B. Fitz-A. Usher-Somers.

The following scholarships and prizes have been awarded:

Queen's Scholarships: (Third year) R. M. Case, (fourth year) C. S. Whitehouse, (fifth year) A. H. Barber, (final year) H. N. Gregg. *Ingleby Scholarship:* (Final year) H. N. Gregg. *Arthur Foxwell Memorial Medal:* (Final year) H. N. Gregg. *Sampson Gamgee Memorial Medal for Surgery:* (Final year) A. G. W. Whitfield. *Priestley Smith Prize for Ophthalmology:* (Final year) A. G. W. Whitfield. *Russell Memorial Prize:* R. W. C. Murray. *Peter Thompson Prize in Anatomy:* (Third year) Phyllis M. Ball.

* With second-class honours. † Distinction in medicine and in midwifery and diseases of women.

UNIVERSITY OF DURHAM

At a convocation held on June 30th, the honorary D.C.L. degree was conferred upon Dr. Robert Muir, F.R.S., professor of pathology in the University of Glasgow.

The following medical degrees were conferred on July 1st:

M.D.—G. McCoull, T. S. Severs.

VICTORIA UNIVERSITY OF MANCHESTER

The following candidates have been approved at the examinations indicated:

Ch.M.—A. A. Davis.

First M.B., Ch.B.—*§¶T. S. Heslop, †‡‖¶Nancy N. Carter, †J. C. Smith, †§G. G. E. Smyth, F. Cort, H. B. Craigie, P. M. Crowe, F. Livesey, Edith A. Longson, ¶J. P. Longworth, S. Mills, G. Ramage, J. Scully, B. Stone, I. Sutton, K. Todd, C. H. T. Wade. (*Part I—Forensic Medicine and Hygiene and Preventive Medicine*): Nancy Anderson, S. S. Andrew, F. Bagot, A. S. Beer, Kathleen M. Boves, M. M. Cohen, Patience Craig, A. W. Davies, B. Finkleman, B. Gold, C. H. Gray, D. L. Griffiths, C. C. Hurst, M. C. G. Israels, J. D. Lendrum, W. A. B. Nicholson, *H. C. Palin,* J. S. Parkinson, C. E. B. Rickards, B. Sheehan, S. Sutton, R. Whittaker, D. J. Williams, R. V. Wright, P. Zimmerman.

* First-class honours. ‖ Distinction in surgery.
† Second-class honours. § Distinction in medicine.
‡ Distinction in obstetrics. ¶ Distinction in forensic medicine.

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examination indicated:

M.D.—E. S. Clayton, J. N. Gale.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ELECTION TO THE COUNCIL

On July 2nd three Fellows were elected into the Council to fill the vacancies caused by the retirement in rotation of Mr. J. Herbert Fisher, Mr. G. E. Gask, C.M.G., D.S.O., and Mr. Graham Simpson.

The result of the poll was as follows:

	Votes.		Plumpers.
GRAHAM SCOTT SYMPSON (Sheffield)	659	...	73
GEORGE ERNEST GASK (St. Bartholomew's)...	635	...	12
ALBERT JAMES WALTON (London Hospital) ..	544	...	35
Herbert Sherwell Clogg	360	...	16
John Herbert Fisher	351	...	18
Herbert John Paterson	297	...	12

In all, 1,105 Fellows voted, including 193 Fellows resident out of Great Britain and Ireland; in addition, one vote was found to be invalid, and six were received too late.

Mr. Simpson and Mr. Gask are re-elected, and Mr. Walton is elected for the full period of eight years.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the monthly business meeting of the President and Fellows, held on July 3rd, the Licences in Medicine and Midwifery of the College were conferred on the following candidates, who had passed the Conjoint Final Examination held in June, 1931: T. J. Conlon, M. P. Crowe, P. A. Fox, J. L. Hampson, Mary G. A. M'Allister, J. O'Donnell, Y. Posner, J. V. Quinn, J. Rubinstein, G. A. Steen.

A letter was read from the registrar of the Royal College of Surgeons in Ireland, forwarding applications for vacant professorships in the Schools of Surgery, as follows: pharmacology, Dr. L. Abrahamson; midwifery, Dr. A. H. Davidson. These candidates were duly nominated for the respective chairs.

Nominations for the Fellowship were received, elections to take place on the morrow of St. Luke's Day, 1931.

The representative of the College on the General Medical Council reported on the recent proceedings of the Council.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The Coal Mines Bill, regulating hours in mines for twelve months, was hurried through Parliament this week. The House of Commons also considered the Unemployment Insurance Bill and debated Indian administration. In the House of Lords, on July 7th, the Merchant Shipping (Safety and Load Line Convention) Bill was read the third time and passed. The Bethlem Hospital (Amendment) Bill passed the report stage. The Marriage (Prohibited Degrees of Relationship) Bill was read a second time. In the House of Commons, on July 7th, the financial resolution authorizing the Ministry of Health and the Scottish Department of Health to assist rural district councils in England and county councils in Scotland in providing houses was agreed to in committee.

Progress has been made in Standing Committee with the Slaughter of Animals Bill.

Major Church has given notice that, on July 21st, he will introduce a Sterilization Bill—"to enable mental defectives to undergo sterilizing operations or sterilizing treatment, upon their own application or that of their spouses or parents or guardians, and for purposes connected therewith."

Poisons and Pharmacy Bill

Replying to Mr. Bromley, on July 2nd, Mr. CLYNES said there had been misunderstanding about the scope and objects of the Poisons and Pharmacy Bill. The Bill was based upon the recommendations of a Departmental Committee which was appointed by the previous administration and reported in 1930. The committee, which, apart from its pharmaceutical members, was entirely independent of any of the commercial interests affected, found that the existing position relating to poisons was far from satisfactory, and the object of the present Bill was to provide for a wider and much more effective regulation of poisons than existed at present. He understood that the pharmaceutical associations took exception to the Bill on two main grounds. First, they demanded that all doctors' prescriptions, whether they contained poisons or not, should be dispensed by registered pharmacists only. This proposal did not come within the scope of the Bill, and it had never been investigated, and even if it were, and there was found to be a case for considering that the demand was in the public interest, the Government could not ask Parliament to adopt such a proposal except after adequate inquiry, and after the persons who would be affected by the prohibition had had an opportunity of stating their case. Secondly, the pharmacists demanded that the increased facilities which the Bill proposed for the supply to farmers of agricultural poisons should be limited to firms carrying on a bona fide business in the supply of agricultural requisites. He was advised by the Ministry of Agriculture and by the Board of Agriculture for Scotland that this limitation would not make adequate provision for legitimate needs in the more rural districts. The Government, however, had decided to propose an amendment to the Bill, which would have the effect of requiring the Poisons Board and the Secretary of State, in considering the allocation of poisons as between Part I and Part II, to have regard to the desirability of restricting the contents of Part II (which would contain the list of poisons which might be sold

by persons other than pharmaceutical chemists) so far as was consistent with the provision of adequate facilities for the public to obtain supplies of non medical substances which were in common use Mr Clynes told Sir Kingsley Wood that the Government wished to get ahead with the Bill and to pass it into law, with the amendments to which he had referred

Sickness Benefit

Replying to the Marquess of Titchfield, on July 2nd, Mr GREENWOOD said he was aware of a statement to the effect that out of a large and representative group of insured persons who were in receipt of sickness or disablement benefit on a certain day, and whose title to benefit was made the subject of special investigation, it was found that 12 per cent were capable of work and consequently not entitled to benefit He had already addressed circulars to all insurance medical practitioners and approved societies on the steps to be taken to avoid payment of benefit to persons not entitled.

London Post-Graduate School

Miss LAWRENCE, on July 6th, replying to Mr Hastings, said that a Royal Charter constituting the governing body of the British Post-Graduate Medical School and defining the functions of the governors, was approved by the King in Council on June 29th Active steps were being taken in collaboration with the London County Council to proceed as quickly as possible with the planning and building of the school, and with the adaptation of the Hammersmith Hospital for the purposes of post graduate medical education Mr HASTINGS asked if Miss Lawrence had any idea when the school would be opened for teaching purposes Miss LAWRENCE said that she could not say at the present moment

Vaccination and Encephalitis

On July 7th Mr FREEMAN asked the Minister of Health the result of his inquiries into the death of the twin children of Councillor A A Furness of Wigston, near Leicester, following vaccination Miss LAWRENCE said that inquiries which were made locally by a medical officer of her department during the life of one of the children, taken with the evidence now available from pathological examination of material from in each case, showed that these deaths obtained post mortem were both caused by post vaccinal encephalitis, and were comparable to those cases which had been fully studied and described in the recent reports of the Committee on Vaccination The Minister of Health did not consider that a public inquiry could advance our knowledge of the circumstances in which this rare complication of vaccination developed, or that any useful purpose would be served by such an inquiry Mr FREEMAN asked whether, "in view of the fact that vaccination was now discredited by a large majority of the population" an inquiry into such cases as this would not afford an opportunity to the Government to justify the repeal of the compulsory clauses on vaccination Miss LAWRENCE said that Mr Freeman was merely repeating his question which she had answered Sir K WOOD asked if Miss Lawrence proposed to make any statement in reply to Mr Freeman's allegation in regard to vaccination Sir F HALL asked if the Government subscribed to Mr Freeman's statement Miss LAWRENCE replied that she did not think the question arose

Telephone Concessions for Midwives

On July 6th the Countess of IVEAGH asked the Postmaster General if he would consider special telephone facilities to midwives in view of the fact that many of them were unable to afford the telephone at trade rates, and that a certain number of maternal deaths were due to failure to secure prompt attention Mr ATTLEE replied that the residential rate already applied in any case where nursing was not carried on at the house, and where the entry in the telephone directory made no explicit reference to the subscriber's profession He regretted that he was unable to make any further concession Lady IVEAGH asked whether Mr Attlee would consider the special position of the country midwives Mr ATTLEE said that he recognized that the question was important but there were other applications of a similar sort, and it was extremely difficult to draw a line. The question of assisting midwives in this matter was more for the local authority concerned with health services than for the Post Office

Tuberculosis in the Navy—Replying to Sir N Grattan Doyle, on June 24th, Mr ALEXANDER said the incidence of tuberculosis among naval ratings serving with vessels at sea was approximately 3 per 1,000 In spite of careful investigation no definite reason had been ascertained to account for the relatively high incidence of pulmonary tuberculosis in the *Warspite* during 1929 It could only be assumed that it was due to fortuitous circumstances, as in 1930 only one case occurred in this ship

Branding of Tuberculous Cattle—Mr GREENWOOD told Mr Blindell, on June 25th, that a suggestion that all animals tuberculin-tested for the purpose of the Milk (Special Designation) Order of 1923, and which reacted to that test should be branded before sale had been considered and held to be undesirable It would be inexpedient to make any such requirement regarding the limited number of animals in herds to which the Special Designation Order applied If this test were applied to all cattle there would be enormous slaughter Mr SANDHAM suggested, in a supplementary question that at least 40 per cent of cattle producing milk in the United Kingdom would be affected

Refuse Dumps—Mr GREENWOOD, in reply to Mr Muggeridge on June 25th, said by-laws regarding dumping of house and trade refuse in their areas had been made by Barking Urban District Council and Orsett Rural District Council, though those of the latter had not yet been confirmed by his department Other authorities in Essex were preparing by laws Large quantities of refuse were still being dumped in South Hornchurch He was not yet able to say when legislation on the subject would be introduced

Millman Street Hospital, Chelsea—Mr GREENWOOD told Dr Morgan, on June 25th, that the figure of 56 days as an average duration for patients in a London clearing tuberculosis hospital [Millman Street Hospital, Chelsea—see June 27th, p 1143] took account not only of patients received in this hospital for observation purposes, whose average stay was from four to five weeks but also of advanced cases, which might remain for much longer periods

Asbestosis—Mr SHORT told Mr Muggeridge, on July 1st, that he had received a report from a medical inspector concerning an inquest at Barking on a packer in an asbestos works Death was due to cancer, but asbestosis of the lung was also present Mr Short would consider the suggestion of amending the medical arrangement scheme under the Silicosis (Asbestosis) Acts, 1925 and 1930, to apply to packers but no danger had hitherto been apprehended from the packing of the manufactured materials

Civilians and Poison Gas—Mr RAMSAY MACDONALD told General Clifton Brown on July 2nd, that the scheme detailing measures which should be taken for the protection of civilians from poison gas had been brought before the Standing Subcommittee of the Committee of Imperial Defence concerned with these matters, and was receiving attention Foreign nations were known to be actively studying this question, but he was unable to say what steps they were taking The ratification of the Geneva Gas Protocol in 1925 by most of the countries in Europe provided an important safeguard against this form of attack General Clifton Brown could certainly have assurance that this matter of the protection of civilians was receiving attention

A Plague of Bugs in Westminster—Mr GREENWOOD told Sir Martin Conway, on July 2nd that he was not aware that, owing to the recent destruction of some slum houses in Westminster which belonged to the London County Council a plague of vermin notably of *Icanthia lectularia*, had invaded certain streets within the borough He had no power to give directions to disinfect the houses attacked, but he would communicate with the local authorities

Schools for Mentally Defective Children—Mr LEES SMITH told Mrs Manning on July 2nd, that the number of special schools for mentally defective children opened in 1926 was five, in 1927 four, in 1928 none, in 1929 four, and in 1930 one Mrs MANNING remarked that, of 105,000 mentally defective children in this country, only 16,000 were in special schools.

Obituary

EDWARD BEADON TURNER, F.R.C.S.

Member of Council and former Chairman of Representative Body, British Medical Association

As announced in our last issue, Mr. E. B. Turner, the oldest member of the Council of the Association, and a former Chairman of the Representative Body, died on June 30th in his London home, at the age of 76. Until recent months Mr. Turner had been a man of exceptional vigour, apparently immune from the infirmities of advancing years. A lifelong devotion to athletics perhaps accounted for his immense vitality. In a message apologizing for his absence from the last meeting but one of the Council, he mentioned that he had never missed a meeting of the Council for twenty years; he also told the last Annual Representative Meeting that he had attended every session since he first became a representative for the Kensington Division in 1912. He celebrated his seventy-fifth birthday by driving a motor car from Yorkshire to London at an average speed of thirty-five miles an hour, and declared that he felt absolutely untired at the end of the journey. An illness in the spring of this year wrought a tragic change, and when, with great fortitude, he attended for a short time the meeting of the Council on June 10th, his colleagues were shocked to observe the change in his appearance. In reply to a welcome by the Chairman, endorsed by affectionate applause, he rose and said, pathetically, that he felt he must come, if only to say good-bye.



Edward Beadon Turner was born in 1854 at Chigwell in Essex. His father was a London man, and London was the scene of Turner's interests and activities throughout his career. He received his schooling at Uppingham, where Edward Thring—next to Arnold perhaps the greatest schoolmaster of the nineteenth century—was then reigning. It was probably from Thring that young Turner imbibed his love for what he called the discipline of the classics. It was a love which showed itself, along with other attractive little mannerisms in his fluent and picturesque oratory, by a fancy for Latin tags. He rarely made a set speech on any important occasion without introducing, always with a little apology lest it should be thought a conceit, a quotation from some Latin poet.

From Uppingham he went to St. George's Hospital, qualifying in 1876, and taking the Fellowship of the Royal College of Surgeons of England in 1881. He then settled down in private practice in one of the most prosperous parts of London, bordering Hyde Park. He once described his practice as having been among the well fed, the well clothed, and the well housed, with the result that even in fifty years he saw astonishingly few cases of pulmonary tuberculosis and such maladies. He was a family practitioner *par excellence*, and not long ago he mentioned that he had two families in his practice in each of which he had attended five generations.

From his schooldays right to the end of his life his interest in sport and athletics was unabated. He was a well-known figure at important Rugby matches. His love of football dated from his Uppingham days, and he was president of the Old Uppinghamian Football Club. It was in the flurry of a football field in Dublin that, as a young man, he first came into contact—physical contact—with the late J. A. Macdonald, with whom in later years he was destined to be so closely associated in the work of the British Medical Association. E. B. Turner played in the English Rugby twenty in 1875 and (with his brother, Sir George Turner) in 1876, and in the English fifteen in the two following years. He was a vice-president of the London Athletic Club, and its president in 1913. He was also a vice-president of the National Cyclists Union, and in his time made many records with the pedal. Another proficiency of his was denoted by his extra-master's certificate in navigation. Down to his septuagenarian days he kept up many forms of sport, including yachting, cycling, and skating. When, in 1927, he addressed newly qualified practitioners and advanced students at the reception given by the Metropolitan Counties Branch, he urged them to take up sport as a hobby, more than one branch of sport if possible, and to play a strenuous game.

It was his love of sport which helped to make him in due time so splendid a figure in the British Medical Association. He brought into his work on behalf of the profession the same keen enjoyment and zest, the same abundant energy, and, above all things, the same capacity for working in a team, sharing the fortunes of a side, and throwing in his own individual contribution without stint as he had shown on the playing field. A strong individualist, an outspoken debater, he was nevertheless able to work admirably with others, to accept defeat gracefully, and to go on serving with undiminished loyalty. His own special experience and environment led him to take a stronger line on some matters than his colleagues. He believed intensely in private practice, disliked all movements towards the nationalization of medicine, and

never quite reconciled himself to national health insurance. But his invariable courtesy, as well as his evident sincerity, made him honoured by opponent and friend alike.

His active entrance upon the central affairs of the British Medical Association dated from 1912, when he became a member of the Council. He was chairman of the Kensington Division in 1913, became a member of the Metropolitan Counties Branch Council in 1914, and was president of the Branch in 1927–28. In 1915 he was unanimously elected chairman of the Representative Body, which position he held for three years. His power of command over assemblies was shown to its best advantage in that capacity. He never allowed red tape to strangle common sense. His period of office was during the war years, when the Representative Meeting was contracted to two days, and he confessed that he was rather a slave-driver, but said that when time allowed more leisure he would be found the most indulgent of chairmen.

His work for the Association is illustrated by the formidable list of committees and subcommittees of which he was at various times a member. To describe it adequately would mean writing the history of every considerable enterprise of the Association during the last fifteen years. During the whole of that time he was a member of the Medico Political Committee, and its chairman for seven fruitful years, during which he presented on its behalf to the Council and Representative Body a varied volume of work. During the war he was vice-chairman of the Central Medical War Committee under his friend Sir Jenner Verrall, whom he himself proposed for the chairmanship. He was accustomed to say that the work of that committee was the greatest achievement of the Association. He was a member of the old Ministry of Health Committee, the Science Committee, the Parliamentary Elections Committee, and the Ophthalmic Committee. Innumerable special committees commanded his services, such as those concerned with the expansion of the Army Medical Service in case of national emergency, the memorial to fallen members, the presentation of evidence to the Royal Commission on National Health Insurance, minimum salaries for public health appointments, the problem of puerperal mortality and morbidity, the amendment of the lunacy law, the elaboration of tests for drunkenness, the examination of motor drivers, the health of merchant seamen, and the training of ship surgeons. There was much else to which he set his ready hand—work designed to improve the position of asylum medical officers, prison medical officers, laboratory and research workers, Post Office medical officers, and medical officers of public schools. One wonders how a man even of the most various mind and abundant energy could contribute effectively, as he did, in so many directions.

The British Medical Association by no means exhausted his energies. He looked back with special pride upon his part in the campaign against venereal diseases. He was president of the Section which dealt with this subject at the Cambridge meeting in 1920, and his interest therein was both scientific and sociological. Twenty-five years earlier he had been one of the first to impress systematically the gravity of this subject upon the public. During and after the war he carried out a programme of public speaking which amounted to something like 2,000 meetings—an itinerary which would have made John Wesley envious—and his resonant voice reached perhaps a million men. The value of Turner's work in this respect was immeasurable, for he was a man who commended his gospel by his own vital hold of the best things of life. His was always the voice of conviction, and he never let down the ideal; but he was no remote preacher—he was full of human sympathy and understanding. Turner was a Puritan, but a laughing one, and gifted uncommonly with the grace of straightforward, persuasive utterance. His enthusiastic work for the National Council for Combating Venereal Disease (now the British Social Hygiene Council) is referred to in one of the appreciations printed below.

For the five years 1920–25 he served as a direct representative on the General Medical Council. For four years he was chairman of the Central Council for District Nursing, and once declared that his experience of nurses went back to the time when Sairey Gamp was scarcely cold in her grave. Among the local appointments which he had held were those of visiting apothecary at his old hospital (St. George's), physician to St. Mary's College, Lancaster Gate, consulting physician to the Princess Helena College, and inspector of special constabulary, of one division of which he was for a time chief medical officer. He was always busier with his voice than with his pen, and his writings are mostly in periodicals. In 1891 he contributed a paper on 200 cases of influenza treated with large doses of salicin. He also wrote a good deal on the fight against venereal diseases, and on the hygiene of sport.

Among those present at the funeral service on July 3rd were Mr. Bishop Harman, Mr. McAdam Eccles, and Dr. Christine Murrell, members of Council of the British Medical Association; Dr. F. W. Goodbody, Mr. Howard Stratford, and Dr. C. F. T. Scott of the Metropolitan Counties Branch Council; Dr. Alfred Cox, Medical Secretary; and Dr. David Roxburgh.

Mr. N. BISHOP HARMAN, Treasurer of the Association, writes:

E. B. Turner—for so everyone called him with an affectionate familiarity—was no ordinary man. His exceptional physique marked him as notable, and his forceful personality turned that to great advantage. It is small wonder that a man with such natural endowments should have achieved success and fame in many fields of endeavour. They accounted for his powers and his successes in athletics in his younger days. He loved any sport that called for personal fitness and strenuous exertion, and he was able to enjoy this to an age that brings to most a desire for ease. His love of the field was but one side of his character, for he loved his fellow man as heartily, not with any mawkish sentiment, but with a vigorous good fellowship that was as robust as his physical strength. He was intensely public-spirited. No call for service in connexion with any form of social activity which he deemed good failed to secure his aid. He was an enthusiastic worker for his old school, for his athletic associations, for his medical school, and not least for the British Medical Association. In the work of our Association he made a deep impression, both in Divisional affairs, in the Metropolitan Counties Branch Council, and in the work of the Central Council and Representative Body. Of his powers as a debater none could be in doubt who has attended a meeting of the Representative Body. Not for him any chopping of fine logic, but a forthright slashing frontal attack that was almost overwhelming in its force and weight. But I am inclined to think that of all his work during recent years, that most near to his heart was the share he took in propaganda for combating venereal disease. This work seemed to hold first place with him. He detested venereal disease with his whole soul, and he spent himself journeying from place to place lecturing to crowded audiences of men. He began this work during the war by speaking to recruits, and he continued it on a wider scale for years thereafter. As a platform orator few could match him. He had a way with him that was irresistible. His bluff, hearty speech, his manner of taking

, confidence, and his manifest sincerity an influence upon his hearers that was lasting. The finer side of his character his reaction to illness. An accident at udent days left him with a permanent he overcame it. The disability and suffering llness, the significance of which he knew only was borne, not merely uncomplainingly, but a spirit of light-hearted stoicism that was . A man has gone from among us, but his le remains.

R. CHRISTINE MURRELL writes:

Mr. E. B. Turner and I became acquainted in our work for the British Medical Association. First we served together on the local Executive Committee of the Kensington Division, later representing it on the Metropolitan Branch Council and also on the Central Council. Public spirit inspired all his work for the Association. He brought to the problems of the profession the breezy outlook of the good sportsman, and, while making allowances for the different views of his fellows, held his own opinions with tenacity; he was ever generous in his appreciation of the work of others, and gave his own time without stint.

At the time of the great war he deeply regretted that he was too old to be accepted for active service, but found outlet for his patriotism by serving throughout as medical officer with the F Division of the Special Constabulary. It was through his introduction that I also was enabled to serve in a similar capacity, Dr. Charles Buttar making a third. Whereas we were only called out on two occasions to deal with the casualties caused by enemy bombs, we had continuous medical duties in the care of the many hundreds of people who took shelter during the raids at the local police station. In this capacity we attended on over seventy occasions, often remaining on duty for many hours, and during these times we became friends as well as associates in work. Mr. Turner was the soul of energy, and would never admit fatigue; not only did he live the strenuous day of a doctor in general practice in war time, but also worked indefatigably for the Central Medical War Committee, and the sleepless nights of his special constable duty undoubtedly took their toll. Serving and waiting thus together, one became aware of the golden store of classical knowledge which he possessed, whence he minted the ready phrases and apt allusions so characteristic of him. Truly his was a richly furnished mind.

In looking back over many years of association with him in public service, the qualities of E. B. Turner which live in the memory are his courage, generosity in his attitude towards others, and devotion to the public weal; he leaves behind him the greatest gift which a man can give his fellows—an example. A fine sportsman and "a very gallant gentleman."

The MEDICAL SECRETARY writes:

The death of Mr. Turner removes not only the senior member of Council, a past Chairman of the Representative Body, and an active member of many committees, but also an outstanding personality who will be very greatly missed. I well remember his debut in central Association circles, in the stormy times when the national health insurance system was in the making. All of us recognized the advent of an ardent upholder of the traditions of the profession (which he believed the insurance system was likely to damage) and a speaker of uncommon quality. At first it looked as if he might be merely the stormy petrel, who, after the storm was over, would disappear, but we soon found that the Association had secured a man who was prepared to give his whole energies and talents to its service. His extensive knowledge of practice and of men and affairs was freely placed at our service, and this was speedily recognized by his election to all sorts of posts which carried with them both honour and hard work. He worthily upheld the traditions of the Chairmanship of the Representative Body, and the list of committees of which he was either chairman or a member, which is at the moment before me, is a vivid testimony to his activity and devotion.

Special mention should be made of his work as vice-chairman of the Central Medical War Committee from 1915 to 1919, entailing exceedingly strenuous and difficult duties, which he fulfilled with great credit to himself and to the committee. His activity in connexion with the British Social Hygiene Council, on which he acted for many years as representative of the Association, will no doubt be dealt with by others who have a more intimate acquaintance with it than I have, but it was work for which he was eminently suited, and he was seen at his best as a popular exponent of subjects which required exceedingly delicate handling, and which his record as an athlete and his all-round knowledge of sport peculiarly qualified him to deal with. He represented the Council on many other outside bodies, and was always a *persona grata*. The honorary secretary of the National Safety Week Council has just written me in words which will be endorsed by all who knew Mr. Turner: "His cheerful personality and happy outlook on life endeared him to all with whom he came in contact, and his presence will be sorely missed."

As might have been expected, he carried on to the very end. I had several letters from him during his illness, all of which showed his usual optimism and courage, though one knew he was suffering badly. Up to within a short time of the end he hoped to get back again to his work, for he was very anxious to carry on until the Centenary Meeting was over, after which, as he said, he thought he would have earned his retirement. It gives me a sad pleasure, as one who worked with him intimately for many years, to testify to his never-failing consideration and comradeship, and to end what I have to say on the note I am sure he would have liked—not of sadness, but of grateful appreciation of a man who put zest, gaiety of spirit, and courage into everything he did.

Mrs. C. NEVILLE ROLFE, Secretary-General of the British Social Hygiene Council, writes:

In Mr. E. B. Turner the country loses one of its most public-spirited and self-sacrificing servants. From 1921 until his death he was a vice-president of the National Council for Combating Venereal Diseases, which is now known as the British Social Hygiene Council. For over forty years he was connected with an organization formed for an official inquiry into the prevalence of venereal disease, which continued until the Royal Commission was appointed. It was soon after the formation of the N.C.C.V.D. (1914) that Mr. Turner, together with other members of his committee, joined the organization, on which he was appointed by the British Medical Association as its representative in 1915. From that date until the day of his death he took a continuously active part in many phases of the council's work.

During the war, in spite of the many claims upon him to carry out the work of his medical colleagues serving in the Army, and the onerous duties of a responsible post in the Special Constabulary, he found time and energy to give 567 lectures to over half a million officers and men, often travelling night and day. His force and vitality were such that an address by him had an impressive and lasting effect on his hearers. Sir Alfred Keogh, Medical Director-General of the Army in 1917, in referring to the serious position in the Army caused by

venereal disease; thanked Mr. Turner for the "yeoman services he had performed." After the war, with the vivid recollections of these services in their minds, the military authorities invited Mr. Turner to undertake a month's tour of the British Army on the Rhine. In three to four lectures a day he addressed the complete force of over 12,000 men, with the result that an immediate and considerable decrease in the number of cases of venereal disease occurred. A firm believer in the efficacy of public enlightenment in securing the reduction of venereal disease, Mr. Turner completed last year the objective he had set himself of addressing over one million men. He was active in promoting other aspects of the campaign. As the representative of the British Medical Association, and as chairman of the medical committee of the council from 1919 to 1922, he pressed with success for the inclusion of syphilis and gonorrhoea among those subjects on which the General Medical Council require questions set in the qualifying examinations. He also took part in negotiations between the Ministry of Health and the council in an endeavour to provide better facilities in rural areas for the diagnosis and treatment of venereal disease through the encouragement of specially qualified general practitioners. At his instigation in 1921 a letter was issued by the council to 23,000 general practitioners asking their personal co-operation in the council's work. He took a prominent part in the negotiations between the Society for the Prevention of Venereal Disease and the N.C.C.V.D. During 1923 and 1924, as senior vice-president and chairman of the executive committee, heavy duties fell on him owing to the illness of the then president. Only those who were in close contact with him can appreciate the whole-hearted way in which he threw himself into the general work of the council, which was developing rapidly, both in this country and in the Empire over-seas. The death of Sir Malcolm Morris led to his assumption of the additional duty of liaison officer between the Ministry of Health and the council. In 1925 the title of N.C.C.V.D. was altered, with the consent of the Ministry, to that which it now holds. Mr. Turner always preferred the original title, as he felt the need of continued and direct emphasis on the problem of venereal disease. He concurred in the change, in view of the wider educational opportunities it afforded, but his strongly expressed point of view has done much to keep the primary objective of the council in the forefront of its programme. All members, particularly the officers and members of the executive, will feel Mr. Turner's death, not only as a great blow to the social hygiene movement, but as the loss of an outstanding personality The privilege of being associated with him in this work since its inception will remain an inspiration in the future.

Dr. DANIEL E. EVANS of Swansea, who died recently, aged 63, received his medical education at St. Mary's Hospital Medical School, and graduated M.B.Lond. in 1894, in which year he also obtained the qualifications of the English Conjoint Board; he graduated B.S.Lond. in 1895. He practised in Swansea for over thirty years, and was senior physician to the Swansea General Hospital and consulting physician to the Clydach Hospital. Dr. Evans was a medical referee under the Workmen's Compensation Act, and physician and cardiologist to the Welsh Region of the Ministry of Pensions. He was a lieutenant-colonel in the R.A.M.C.T., and was in command of the 3rd Welsh Field Ambulance during the war. He took great interest in the work of the British Medical Association, was secretary of the Section of Pathology at the Annual Meeting of the Association in Swansea in 1903, and had filled the offices of chairman and honorary secretary of the Swansea Division; he was also an ex-president of the Swansea Medical Society. He is survived by a son and three daughters.

Dr. WILLIAM ELDER, a well-known practitioner of Leith, died in a nursing home at Edinburgh on July 2nd. He was born at Carnwath, Lanarkshire, in 1865, and after a preliminary education at the Knox Institute, Haddington, studied medicine at Edinburgh University, and graduated M.B. in 1885. On taking the degree of M.D. in 1896 he received a gold medal for his thesis on "Aphasia and the cerebral speech mechanism," which was published in book form in 1897. He joined the Royal College of Physicians, Edinburgh, as a Member, in 1893, and proceeded to the Fellowship in 1894. Immediately after graduation he occupied the post of house-physician to the late Professor Wyllie, and afterwards held various assistantships in Kirkcaldy, Manchester, and Leith. For many years he acted as physician to the Leith Hospital, and made numerous contributions to current medical literature. Among these were a book entitled *Studies in Psychology*, published in 1927, and articles on life assurance, on cerebro-spinal meningitis, and on agraphia and the question of the existence of a special graphic centre. *In 1904 Dr. Elder married Miss E. R. Henderson*, M.B., Ch.B., by whom he is survived.

The death took place in a nursing home at Edinburgh, on June 27th, of Dr. THOMAS MARTIN, who was a well-known practitioner in Peebles. Dr. Martin was a son of the Very Rev. Thomas Martin, D.D., formerly parish minister of Peebles, and was born in 1891. He graduated at the University of Glasgow with honours in 1912, and during the war served in the East as a captain in the R.A.M.C. Taking up practice in Peebles immediately after the war, he had become a very popular practitioner in the district, and was visiting physician to the Peebles Hydropathic. Up to a week before his death he had been attending to his practice as usual.

Medical News

The president and officers of the Section of Hydrology and Climatology of the Annual Meeting of the British Medical Association at Eastbourne have arranged a reception to Dr. Carl Haberlin, physician to the Marine Hospital at Wyk-auf-Föhr, near Heligoland. It will be held in the Saffrons Room, Eastbourne, on Wednesday, July 22nd, at 5.30 p.m. Dr. Haberlin, who is to open a discussion on the following day in that Section, on the treatment of delicate children at the seaside, will give some account of the organization in Germany. Medical men interested in the medical development of British seaside resorts, especially for children, are invited to meet Dr. Haberlin.

The Mayor and Mayoress of Leamington Spa, Alderman R. F. Bury, M.R.C.S., and Mrs. Bury, gave an "At Home" in the Pump Room, on Sunday, June 28th, to meet the Warwickshire members of the British Medical Association. Two hundred and fifty members and their friends accepted, and were shown over the new bathing establishment. Demonstrations of the various forms of balneological, electrical, and accessory treatments were demonstrated.

St. Thomas's Hospital old students' dinner will take place on Friday, October 2nd, at the May Fair Hotel, Berkeley Street, W., with Mr. J. Herbert Fisher, F.R.C.S., in the chair. The portrait of Sir Cuthbert Wallace, painted by George Harcourt, R.A., will be presented by the chairman.

At the meeting of the National Smoke Abatement Society, to be held on Thursday, July 16th, at 71, Eccleston Square, Westminster, at 3.15 p.m., an address will be given by Mr. W. Prescott, of the Federation of British Industries, on "Smoke abatement from the manufacturers' point of view." The annual conference of the society will be held in Liverpool from September 18th to 20th.

The thirteenth annual meeting of the Mental Hospitals Association will be held in the Council Chamber of the Guildhall, London, on Wednesday, July 15th, at 11 a.m.

The Royal Society of Tropical Medicine and Hygiene announces that the Chalmers Medal, founded in memory of the late Dr Albert Chalmers, has been awarded to Dr N Hamilton Fairley for distinguished original work in tropical medicine, particularly in the field of serology of helminthic infections

At the meeting of the Society for the Study of Inebriety, on July 14th, at 11, Chandos Street, Cavendish Square, a short presidential address on the aims and work of the society will be delivered, at 4 p m , by Lady Barrett, after which Sir Malcolm Delevingne will give an address, entitled " Drug addiction as an international problem "

Detailed information about the lectures and demonstrations arranged for next week by the Fellowship of Medicine and Post Graduate Medical Association will be found at page 36 of the *Supplement* A course in medicine, surgery, and the specialties will be given at the Miller General Hospital from July 20th to August 1st , fee £3 3s A course in urology will be given at the All Saints' Hospital, Vauxhall Bridge Road, from August 4th to 29th, fee £2 12s 6d From August 17th to 29th a course in diseases of children will be given at the Queen's Hospital for Children Hackney Road , fee £2 2s Courses in September will include diseases of the chest at the Brompton Hospital, psychological medicine at the Bethlem Royal Hospital, diseases of infants at the Infants Hospital, ophthalmology at the Central London Ophthalmic Hospital, general medicine and surgery at the Westminster Hospital followed by a similar course at the Metropolitan Hospital Syllabuses and tickets for all the courses may be had from the Fellowship of Medicine, 1, Wimpole Street, W 1

Mr Duncan Fitzwilliams presided at the forty ninth annual dinner of the West London Medico Chirurgical Society, which was held in the Trocadero Restaurant on July 1st Proposing the toast of the society, Dr R A Young said that the members were proud of its library, its annual lecture, its medal, its " film evenings," and its journal He paid a tribute to Charles Keetley, the pioneer and moving spirit of early days In reply the chairman referred especially to Mr Percy Dunn, the founder of their journal and its editor for many years Dr Gerald Slot proposed the toast of the guests and kindred societies, remarking that associations like the West London Medico-Chirurgical Society were essentially the province of the general practitioner , they did not aim at being learned societies, but they formed centres at which the average medical man was given an opportunity of freely discussing his experiences Dr David Ross replied in a characteristic speech , he was followed by Mr Campbell Lee, who said that the laity admired the medical profession for its service and its science The health of the chairman was proposed by Sir Henry Simson, who referred to the forceful personality of Mr Fitzwilliams, and also to the aptitude of his right hand in the realms of pugilism and physic From personal experience of both he could vouch for unwavering skill and execution

The first meeting of the International Association for Preventive Paediatrics will take place at The Hague on Monday and Tuesday, September 7th and 8th The subjects for discussion are to be " Return cases of scarlatina " and " The mortality of the first ten days of life " Further particulars of the Union Internationale de Secours aux Enfants, Geneve, can be obtained from the secretary, Professor G Scheltema, 14a, Poelstraat, Groningen, Holland

The annual meeting of the German Pharmacological Society will be held in Vienna, in conjunction with that of the Society for Diseases of Metabolism and Digestion, from September 20th to 23rd The following subjects will be discussed enteral and parenteral absorption, introduced by Drs Mansfeld of Funfkirchen Pecs, Nonnenbruch of Prague and Chiarmont of Zurich Further information can be obtained from Professor W Lipschitz, Pharmakologisches Institut, Wingertstrasse 3, Frankfort on-Main

Excellency Geheimrat Braumler, the Nestor of German physicians celebrated his ninety fifth birthday on May 13th

The sixth Natural Science Congress of the Dutch Indies will be held at Bandung, Java, from September 22nd to 23th It will consist of six sections, one of which is medical

On June 24th Dr F J Waldo completed thirty years' service as coroner for the City of London and Southwark

Dr Norman Jennings of the Middle Temple was called to the Bar on June 17th

The issue of the *Practitioner* for July is a special number devoted to fractures and accidents , it includes twenty signed articles, and a general introduction by Sir Robert Jones

The first two numbers of the ninety fourth volume of the *Archiv für Psychiatrie* have been dedicated to Professor Ernst Meyer of Königsberg on the occasion of his sixtieth birthday

The issue of the *Progrès Medical* for June 30th reproduces contemporary eulogies by Daremberg, Pasteur, Renan, and Zola on Littre, the celebrated lexicographer and translator of the works of Hippocrates, on the occasion of the fiftieth anniversary of his death

In 1930 the lowest diphtheria death rate in the ninety-three cities of the United States with a population of over 100,000 was reached, the rate being a little more than half that obtaining five years before

Dr Marcellino Pascua, hitherto head of the department of sanitary statistics, has been appointed director general of public health in Spain

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C 1.**

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh)

QUERIES AND ANSWERS

Oxaluria

" INQUIRER " (Kenya) writes I should be glad to know if any recent work has been done on oxaluria What are the conditions, in addition to an excessive consumption of oxalate containing foodstuffs which cause an excretion of oxalate crystals? I have a patient who, for no apparent reason and without any change of diet excretes quantities of oxalates with much sign of bladder irritation and some mild renal colic at intervals of years Is the error of metabolism understood? Is there any drug or treatment calculated to arrest it? Are magnesium salts of any value? Where are the crystals formed—is it in the kidney or in the pelvis? Will consumption of liquid keep it in solution, and are alkaline fluids definitely better than ordinary water? What other foodstuffs carry a heavy oxalate content besides spinach rhubarb beetroot figs and chocolate? I have failed to find the information I need in any of the books of reference to hand

Mammary Abscess

Dr. A. C. F. HALFORD (Brisbane) writes: With regard to etiology, your correspondent, "Suburban G.P." (March 14th, p. 480), might inform us if any of the babies nursed by the affected mothers suffered from ophthalmia, however mild. A purulent ophthalmia contracted from the genital canal at birth is, in my opinion, a frequent cause of mammary abscess. The infecting agent gains in virulence by the passage through the new host, and may even be responsible for a morbid puerperium not uncommonly ascribed to auto-infection. In a maternity home or hospital the infection in the baby, regarded lightly by the attendants, may be responsible for infection in other patients. The remark that "it may be months before the mother recovers" from the abscess is a grave reflection on modern treatment. I have for years endeavoured to awaken the aseptic conscience to the fact that an abscess is the terminal phase of an infective process, and that therefore recovery from any form of abscess should result in from ten to fourteen days. Localization means in every case that the besiegers have been trapped and rendered *hors de combat* by the besieged. They may be allowed to leave the field, but not with all the honours of war, and care must be taken that no reinforcements meet them at the gate of exit in the shape of a secondary infection. This can only be prevented by the careful application of an antiseptic dressing into which the evacuating matter is received and destroyed. No antiseptic should be applied to the abscess cavity, as that action would retard the healing process which should inevitably follow.

Income Tax

New Partnership—Cash Basis

"ALPHA" took in a new partner, B, as from January 1st, 1930. B is entitled to one-third share of the profits, and bought a corresponding share in the debts outstanding at December 31st, 1929. In computing the assessment for 1931-32 to be based on the amount of the practice profits for 1930 the inspector of taxes declines to accept the cash receipts as a sufficiently correct measure of the gross income, claiming to bring in the increase of the book debts at December 31st as compared with January 1st, 1930.

*** In law the inspector is right, and from that standpoint "Alpha" has no sufficient defence for the employment of the cash basis. But the official practice is to accept that basis if there are no special circumstances going to show that the cash receipts do not fully reflect the true gross income of the practice. It is possible that the employment of an additional principal in the practice may increase the gross earnings. If this is so the cash receipts for 1930 will be less than the true—though partially unrealized—earnings for that year, and in such circumstances the cash basis cannot be successfully resisted. If that is the case we suggest that "Alpha" should have a personal interview with the inspector and explain to him the special difficulty of estimating the *value* of the outstanding debts, with a view to agreeing, if possible, on a rough basis of estimating probable losses through non-recovery of bookings.

Use of Car for Private Purposes

"A. P. B." uses his car "a little" for private purposes, and when making his return claimed to deduct only four-fifths of the cost of petrol and repairs. The inspector claims that the deduction for other car expenses should also be restricted to four-fifths. If he were not in practice "A. P. B." would not keep a car.

*** The total expenses will have to be restricted according to the proportion of professional to total use. It may, of course, be that one-fifth of the petrol and repair costs represents a fair charge for private use, but the better line of argument would be to show that the ratio of professional to private use is, say, as 5 is to 1, and claim to deduct five-sixths of *all* expenses. The fact that a car would not be kept if he were not in practice does not assist our correspondent; the point has to be dealt with on the facts as they are.

Motor Car Transaction

"D" bought a car for £375 in December, 1929, and sold it for £190 when giving up his practice in January, 1931. What can he claim for depreciation?

*** The amount of depreciation allowable is 20 per cent. (or 15 per cent.) on £375 as for the year 1930-31—or rather for the proportion of that year from April 5th, 1930, to the date when he gave up the practice. The claim should be made when the declaration of income is rendered, but will probably be admitted by the authorities as part of the adjustment of liability following on the transfer of the practice.

Car Replacement and Depreciation Allowance

"K. M." states that he has hitherto claimed and been allowed the cost of replacement of his car, but now expects to retain his present car in use for some years. Should he claim depreciation-cum-obsolescence allowance in future?

*** Yes, with the exception that he cannot claim to be allowed for depreciation of a car as for a financial year the assessment for which has been reduced by a cost of replacement deduction. For example, suppose "K. M." replaced his car in 1930 and was allowed £150 therefor in calculating his profits for the year ended December 31st, 1930. In that case his assessment for 1931-32 will be £150 less than would have been the case if the cost of replacement had not been allowed, and his depreciation claim will have to be deferred until 1932-33.

LETTERS, NOTES, ETC.

Treatment of Carbuncle

Dr. C. H. MARTIN (Burnie, Tasmania) writes: Your correspondents on the subject of glycerin as a surgical dressing may be interested in the following method of treating carbuncles, which I have been using for a number of years. A piece of lint, a good deal larger than the inflammatory "...e carbuncle, is obtained and folded twice the angle thus formed, a piece is cut, making a hole in the lint just big enough for the carbuncle to poke through. The larger piece is spread thickly with ichthyol in vaseline (50 per cent.) and applied to the skin round the carbuncle. The smaller circular piece is soaked in glycerin ac. carbol. (10 per cent.) and applied to the carbuncle itself. The whole dressing is then covered with oiled silk and cotton-wool, and bandaged. The ichthyol part is changed once daily, the glycerin part frequently, by applying fresh disks of soaked lint. The process is persisted in until healing is complete. Patients have assured me that relief from pain is rapid and maintained. The pus softens, free drainage is soon established, and the slough separates in a few days, leaving a clean cavity with healing edges. The relief is quite dramatic, and appears to be due to the extensive lymph flow, induced by the glycerin, quickly relieving the local tension. Local reinfection is apparently prevented by the ichthyol.

Testimonial to Sir Ronald Ross

Further contributions to the Ross Award Fund, amounting in all to £77 9s. 11d., have been received between October 31st, 1930, and June 30th, 1931. The contributors include J. C. De La Cour, Jesse Grell, James Hargreaves, Johnston Family Trust (second donation), Mrs. M. K. Marsden, Mrs. Partridge, Mrs. Webster, and Lord Winterton. The total amount so far received in response to the appeal is £14,406 17s. 6d. Donations should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15.

A Warning

A correspondent informs us that "a young man on the make," representing himself to be a doctor, has lately visited medical practitioners and hospital staff quarters on the south coast of Devon. Any reader who receives a call from him might do worse than communicate with the superintendent of the Teignmouth Police.

The Headmaster of the Westminster Abbey Choir School wishes to bring to the notice of members of the medical profession the fact that there are vacancies from time to time at that school for boys who can sing, and can pass a simple entrance examination. The fees are very moderate, and boys are prepared for the common entrance examination for public schools.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 44, 45, 46, 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenents at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 35.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

20 Hyperinsulinism

G. H. TUTTLE (*New England Journ. Med.*, May 14th, 1931, p. 1039) doubts whether the pancreas is the sole source of insulin production, and discusses two cases which seem to support his view that the tissues can also function in this way. He points out that, if the pancreas alone is concerned in the supply of insulin, the condition of hyperinsulinism can only be brought about in one of two ways: (1) as the blood sugar rises it stimulates a centre in the vagus nucleus which transmits impulses through filaments of the right vagus nerve directly to each cell of the islands of Langerhans, causing an outflow of pancreatic insulin in the blood; and (2) the acid food from the stomach excites certain hormones, probably secretin, present in the duodenal mucosa, and these exert a specific action upon the islet cells, bringing about the discharge of pancreatic insulin into the blood. If the blood stimulus is not sufficient to restrict the blood sugar content within normal limits after each meal, the rising blood sugar stimulates the brain centre, and causes the production of additional supplies of insulin by transmitting impulses through the right vagus nerve to the cells of the islands of Langerhans. Tuttle has shown that large amounts of glucose can be utilized daily by depancreatized dogs, and he has hypothecated the existence, therefore, of insulin derived from the tissue cells. In the two cases discussed by him in the present report there was association of cancerous growths with marked hyperinsulinism, though the pancreas was normal; he adds that, in any case there seems to be an intimate association between the presence of malignant disease and the production of insulin by the tissues.

21 A. D. CARR *et al.* (*Journ. Amer. Med. Assoc.*, April 25th, 1931, p. 1363) report the case of a youth, aged 19, who suffered increasingly from attacks similar to the syndrome resulting from an overdose of insulin; they were relieved by the ingestion or intravenous administration of dextrose, but medical treatment did not clear up the condition and the symptoms progressively increased. A localized tumour of the pancreas was found and removed, and complete recovery ensued.

22 Etiology of the Common Cold

D. F. MILAM and W. G. SMILLIE (*Journ. Exper. Med.*, May 1st, 1931, p. 733) report the results of studying the incidence of nasal catarrh on an isolated tropical island in the West Indies, this being part of a series of investigations of colds occurring in isolated communities and under different environmental conditions. Environmental factors seemed to be more important than the known bacteriological concomitants, and the authors agree that the specific originating factor is as yet unknown. The incubation period is about three days, and the infection seems to be spread by contact. The secondary and more severe symptoms associated with colds are due to certain aerobic bacteria, commonly found in the nasopharynx. Of the environmental predisposing factors the most potent appeared to be a fall in the atmospheric temperature, and the seasonal incidence curve of acute colds in the island corresponded with that of the United States mainland. Although the usual high tropical prevalence of haemolytic streptococci was noted, this seemed to be of no etiological significance in the case of nasal catarrh, nor was the similarly common bacillus of Friedländer concerned. The authors remark that in the temperate zones changes in the seasonal temperature are more abrupt, and colds are more severe, as compared with the tropical countries, where both temperature changes and colds are mild.

23 Cistern Puncture

L. JACOBI (*Med. Journ. and Record*, May 6th, 1931, p. 451) advocates cistern puncture in the upright position, using the neck compressor, designed by Benedek and v. Thurzo, over the internal jugular veins to insure a positive intracisternal pressure. The compressor consists of an elastic band carrying two pads, which are applied 0.5 to 1 cm. below the thyroid cartilage, and 3 to 3.5 cm. from the middle line, fitting exactly over the veins which lie behind the anterior border of the sterno-mastoid muscle. The bandage is then pulled sufficiently tight to obtain venous stasis above it without discomfort to the patient. Within fifteen to thirty seconds the face becomes suffused and the veins prominent, and these signs should be well marked before the dura is punctured. With the patient erect and the head lightly flexed, the fluid, since it is under pressure, drains out immediately the dura is pierced; the method has the advantage of being able to ensure a positive pressure, thus avoiding a dry tap in every case, whereas in the horizontal position a dry tap may result when the pressure is low. With the patient sitting in the upright position both the facility and the safety of the procedure are enhanced.

24 Myopathic forms of Polyneuritic Syndromes

L. BÉRIEL and A. DEVIC (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 18th, 1931, p. 732) draw attention to certain benign myopathies with a polyneuritic syndrome. Observation of many cases has convinced them that there exists a neuro-muscular form of epidemic encephalitis. The curious distribution of this type of case (rare in Paris and frequent in the South-East of France) has given rise to differing opinions as to the etiology. The authors suggest that the frequency of the cases in the South-East is due to some undetected focus of infection there, possibly a mild epidemic encephalitis. From the point of view of prognosis the authors emphasize the importance of correct diagnosis, these cases being benign; even after two or three years of paralysis the patient may recover completely. All these patients exhibit extreme difficulty in sitting up when they are in bed, and they may be unable to turn over. In the more severe forms they lie utterly inert, although capable of a certain motility of the extremities of the limbs. Complete cure is usual, and amelioration sets in generally after several months. Occasionally the duration is longer, but the prognosis is still good. A case is quoted of a girl, aged 15, who slowly developed paralysis of the muscles of the shoulder and pelvic girdles. After several months a total paralysis invading the trunk and limbs gradually appeared. At this stage the patient presented the picture of an acute myopathy. Very gradually she began to recover, and about six months after the onset she could sit up in bed, but could not feed herself. This condition lasted one year. Gradually the use of her arms returned, and finally, nearly three years after the onset, she was in normal condition except that all reflexes were abolished.

25 The Salivary Secretion in Mumps

N. R. SCHASTIN (*Jahrb. f. Kinderheilk.*, May, 1931, p. 304) reviews the literature, including the recent paper by Rocchi (*Epitome*, December 28th, 1929, para. 588), and records his observations made in Krasnogorki's Children's Clinic at Leningrad on the salivary secretion during mumps in children. His conclusions are as follows. Systematic investigations show a diminution of the salivary secretion during mumps. This particularly applies to cases in which the secretion was examined before the attack of mumps, as well as to cases in which only one of the salivary glands was affected, and a comparison could be made of the secretion of the healthy and diseased glands. The duration and degree of diminution of the salivary

secretion differed for each gland. The secretion sank to the lowest level, and almost entirely disappeared in the case of the gland which was first affected. The minimum secretion for each individual gland was found on different days. The salivary reflexes disappeared in the gland which was first attacked by mumps. At the end of the first week, however, they reappeared, and then gradually reached their original level. The recovery of activity of the parotid gland first affected is extremely slow, and is not complete after all the clinical symptoms of parotitis have subsided, while in the other gland recovery takes place more rapidly. Return of the normal secretion of the affected parotid gland takes twice as long in myxoedema as in ordinary children—namely, fifty-four days instead of twenty-one to twenty-seven days. The remarkable diminution in the secretion of the gland first affected is a diagnostic feature of mumps. At a certain stage of the disease there is a diminution in the amylase content of the saliva, but this soon disappears. Variations in the content of the inorganic and organic substances in the saliva barely exceed the normal limits.

26 Diphtheria in Uruguay

M. RUBINO, A. J. J. LEUNDA, and J. MOREAU (*Paris Méd.*, May 9th, 1931, p. 447) record their observations on an epidemic of malignant diphtheria which occurred at Montevideo in 1928. Their conclusions are as follows. Strains of *C. diphtheriae* are found in Uruguay with as high a toxic power as that of the toxigenic organism of the Institut Pasteur or Rockefeller Institute. This high toxic power can explain several cases of malignant diphtheria. Certain cases of clinically mild diphtheria were found which were cured with a small dose of serum, although they were due to bacilli possessing a very high toxigenic power. On the other hand, there were cases of malignant diphtheria which yielded bacilli with a low toxigenic power. No exact relationship was found to exist between the morphological type of *C. diphtheriae* and its toxigenic power.

27 Relapsing Fever in Children

FU-T-ANG CHIN, S. DEITRICK, and SHI-FAN CHUNG (*Nat. Med. Journ. China*, April, 1931, p. 224) record their observations on 26 cases of epidemic relapsing fever in Peiping occurring in children aged from 8 to 12 years. A widespread petechial eruption was common, but it could not be regarded as a sign of relapsing fever, since insect bites were probably responsible. The leucocyte count, which varied, was of little diagnostic value. Thrombocytopenia was constantly observed during the febrile attack, but after recovery the platelet count returned to normal or nearly normal. No prolongation of bleeding or of the coagulation time was noted. The Wassermann reaction was negative in all but one case, and the globulin test was uniformly negative in fourteen cases in which it was performed. There was prompt response to arsenical treatment, the temperature falling to normal in less than twenty-eight hours. No deaths occurred.

28 Tertiary Syphilis of the Thyroid Gland

J. P. P. GUIDICELLI (*Thèse de Paris*, 1931, No. 51), who records an illustrative case in a woman aged 42, states that tertiary syphilis of the thyroid gland is a rare condition, but that probably many cases fail to be recognized, so that the possibility of syphilis should be more frequently considered in affections of this gland. No pathognomonic sign can be found on clinical examination. Since tertiary syphilis of the thyroid is most likely to be mistaken for malignant disease, a search for evidence of syphilis should be made in the presence of an apparently malignant tumour of the thyroid, and even if none can be found antisyphilitic treatment should be tried. The prognosis is good, and, except in urgent cases in which operation is needed, the treatment should be purely medical, the best results being obtained by mercury cyanide and arsenical preparations, with potassium iodide and bromide as adjuvants.

Surgery

29 Angioma of the Bladder

M. SCHILLINGS (*Rev. Belge des Sci. Méd.*, April, 1931, p. 412) records a study of vesical angioma based on 30 cases, of which one was under his own care. Age and sex appear to play no part in the etiology of this rare condition. In contrast with other vesical tumours, angiomas are usually single, and occur most frequently at the base of the bladder; their colour, ranging from bluish red to violet, is characteristic. Three varieties occur, pediculated, sessile, and infiltrated, the two latter being the most common. Angiomas are benign tumours of slow evolution, and rarely give rise to metastases. They are composed of newly formed blood vessels, and two main types occur: the simple (telangiectases or vascular naevi), characterized by a large number of tortuous capillaries, abnormally dilated and separated from each other by connective tissue; and the cavernoma, formed by blood reservoirs of variable size and irregular shape, limited by a fine endothelial membrane and separated by collagenous septa. The symptomatology of cavernoma is not characteristic; the chief symptom is haematuria, which is frequent, intermittent, and may be so abundant as to cause anaemia, or even death. Diagnosis must be confirmed by cystoscopy; the site, characteristic colour, circumscribed form, the integrity of the adjacent mucosa, and the nature of the haematuria are points in the differential diagnosis. Small angiomas are best treated by electro-coagulation. In large, pediculated, non-infiltrating angiomas, cystotomy with tumour resection is indicated; when the vesical wall is infiltrated, partial cystectomy is the treatment of choice.

30 Endothelial Myeloma

Ewing was the first to point out that there is a group of tumours, originating chiefly in the shafts of long bones, occurring mostly in children and young adults, and which differ clinically, radiologically, and histologically from osteogenic sarcomata. W. B. COLEY (*Radiology*, May, 1931, p. 627) states that this myeloma, though the most malignant of bone tumours, is both highly radio-sensitive and also responsive to the toxins of erysipelas and *B. prodigiosus*; conservative treatment is therefore justifiable for a limited period before resorting to amputation. An analysis of the end-results of different methods indicates systemic treatment with the previously mentioned toxins combined with local radiation, preferably the radium pack, as the best method of treating a primary operable case. If the condition has not markedly improved in six or eight weeks, amputation or resection, followed by prolonged prophylactic toxin treatment, should be considered. Further delay without evidence of improvement may result in the development of metastases with an ultimate fatal ending. In Coley's statistics a relatively considerable number of patients with inoperable growths were found to have recovered and remained well for five years or more; four were treated with toxins alone, and five with toxins and radiation. In six of these patients metastases had already developed. Coley advises, therefore, that all cases should be given the benefit of a thorough trial of toxin and radium treatment before being considered hopeless.

31 Pancreatic Cysts

E. S. JUDD, H. MATTSON, and H. R. MAHORNER (*Arch. of Surg.*, May, 1931, p. 838) report 47 cases of cysts of the pancreas treated surgically at the Mayo Clinic since 1921. As a rule the cyst makes its way towards the anterior parietal peritoneum in the line of least resistance, presses into the lesser peritoneal cavity, and presents between the stomach and the transverse colon, behind the gastrocolic omentum. Sometimes the cyst lies between the stomach and the liver, or protrudes into the lesser peritoneal cavity behind the stomach. It may also invaginate itself between the layers of the mesocolon, and in this case it usually presents behind

the transverse colon. A smooth, relatively immobile, hemispherical swelling is characteristic of a pancreatic cyst. In 95 per cent. of the cases under review this was felt above the umbilicus, generally between the ensiform cartilage and the umbilicus in the median line or to the left of it. Pancreatic cysts are relatively immobile, unless situated in the tail of the gland and without adhesions, when they may be freely movable. Of the patients 43 (91 per cent.) complained of pain, and in 13 cases there was evidence of cholecystitis. Associated symptoms were jaundice, nausea, vomiting, and loss of weight and constipation. The diagnosis of pancreatic cyst is confirmed by *x*-ray examination when there is a filling defect in the stomach which can be eliminated by displacing the stomach, or the displacement of the duodenum and small intestines. The ideal treatment is the complete removal of the cyst, but this is only possible in cases of a small cyst with few adhesions situated preferably in the tail of the pancreas with a narrow pedicle. When the cyst is large and adherent, and when the glandular tissue encroaches on the cyst, marsupialization is the operation of choice. Total excision was performed in seven cases, in all of which the cyst was benign ; partial excision and drainage was undertaken in six cases. Persistent discharge from the fistula made by drainage may be troublesome, and may continue for as long as two years.

32 Diagnosis of Temporal Tumours

DE MARTEL (*Rev. de Méd.*, May, 1931, p. 372) describes certain signs which facilitate the diagnosis and localization of temporal tumours. The first of these is hemianopsia. Cushing has shown that hemianopsia in the upper quadrant, or simple homonymous contraction of the upper part of the visual field, indicates a lesion of the anterior and lower portion of the opposite temporal lobe, while a lesion of the upper and posterior part of the lobe causes a similar condition in the lower visual field. From consideration of the anatomy of the optic nerves, it is shown that this diagnostic method is applicable only in commencing tumours, and in such cases perimetry can be of great value. Occipital tumours give rise to the same visual disturbances as large temporal growths. Generalized convulsions are not rare in temporal neoplasms, but have no localizing value. The unciform crises described by Jackson are associated with temporal tumours bordering on the hippocampal uncus. They consist of olfactory or gustatory sensations ; these are usually disagreeable, and are often associated with visual hallucinations, which are relatively frequent and of great localizing significance. Complex visual hallucinations are indicative of temporal trouble, while simple ones are most often associated with occipital lesions. Wernicke's aphasia is present in left temporal growths ; in this condition the patient, though articulating easily, is unable to say what he wishes, and understands commands imperfectly and executes them badly. De Martel briefly notes the difficulty of differentiating temporal from occipital tumours, and advises ventriculography in doubtful cases.

33 The Surgical Treatment of Chronic Obstructive Jaundice

P. BAUZET (*Paris Méd.*, May 16th, 1931, p. 478) recommends early operation in these cases. A stone in the common bile duct should be readily recognized, from the history, clinical signs, *x*-ray and laboratory examinations. Even if cancer of the pancreas is diagnosed, the author recommends early operation, partly because laparotomy may show the condition to be due to a stone in the common bile duct or to an operable cancer of the ampulla of Vater, and partly because biliary anastomosis, permitting the passage of the bile directly into the alimentary canal, results in considerable improvement to the patient ; the jaundice and itching disappear, the urine clears, the stools regain their normal colour, weakness diminishes, the appetite returns, the patient puts on weight, and life is prolonged for twelve to eighteen months. The author prefers a cholecysto-gastrostomy to a cholecysto-duodenostomy. Under local anaesthesia a median incision gives access to the distended gall-bladder, which, punctured and emptied of its contents, is readily apposed to the anterior wall of the pyloric antrum. A vertical incision through the stomach wall preserves intact the circular muscular fibres which will form a sphincter preventing the reflux of gastric contents into the gall-bladder. The opening need not be large. The anastomosis is performed on a Nélaton's or Pezzer's sound. Shock is practically absent, and improvement is rapid.

34 Transplantation of the Epiphyseal Cartilage Plate

From a previous series of experiments on the transplantation of the epiphyseal cartilage plate, S. L. HAAS (*Surg., Gynecol. and Obstet.*, May, 1931, p. 958) concluded that this plate, either alone or with an adjoining piece of the epiphysis or diaphysis, lost its power to produce length growth. Heller, Fohl, and other authorities are not in agreement with this conclusion. In order to present further evidence for or against this operation, Haas performed another series of experiments on young growing rabbits. The results confirmed his former findings, and he maintains that unless more definite evidence is presented to prove the viability of the epiphyseal cartilage after transplantation, such transplantation in man with the expectation of obtaining length growth is not justified. Haas adds that it is difficult to explain the discrepancies between his findings and those of other investigators such as Heller ; technical errors or misinterpretation of results may possibly account for the variations, and further study is urgently necessary by other workers in view of the clinical considerations which are entailed.

Therapeutics

35 Symptomatic Treatment of Narcolepsy

J. B. DOYLE and L. E. DANIELS (*Journ. Amer. Med. Assoc.*, April 25th, 1931, p. 1370) report the successful treatment with ephedrine sulphate of six patients suffering from narcolepsy. Five were completely relieved, and the sixth was markedly improved. Since ephedrine is productive of insomnia during the early hours of the night, it has been the authors' practice to prescribe relatively small doses of the drug in the late afternoon. They point out that ephedrine is a more valuable antidote to morphine poisoning than is caffeine. The doses of ephedrine given in the narcoleptic cases ranged from 3/8 grain, three times daily, to 1½ grains. They add that thyroid medication in the treatment of narcolepsy has not been generally satisfactory, but the employment of pituitary substance for this disease appears to be worthy of further study.

36 Treatment of Angina Pectoris by Stovaine Injections

L. LANGERON (*Presse Méd.*, April 11th, 1931, p. 521) refers to the work of Lemaire, who showed that visceral pain in general might be relieved by the injection of an analgesic into the peripheral region to which the pain was referred. He has applied this principle in the treatment of angina pectoris, and has given injections of stovaine to three patients suffering from this syndrome. A solution of stovaine (1 in 100) was injected under the skin at the site of the most severe pain, 10 c.cm. being the usual dose. The first two patients showed no evidence of organic heart disease, but were accustomed to more than moderate amounts of alcohol and tobacco. Very definite relief followed injections of stovaine, although nitrites, iodide, and morphine had previously been employed without success ; this improvement was subsequently maintained. The third patient was older, and the subject of hypertensive and atheromatous disease ; the development of the syndrome in his case suggested myocardial infarction. Stovaine injections were given, but without effect, and the patient died on the following day. It appears that this drug is valuable in patients suffering from angina pectoris due to coronary spasm, but that it is useless where a coronary lesion is largely or wholely responsible for the symptoms. The author believes that stovaine acts not

valvular disease, including 131 cases of mitral stenosis, while 137 patients had a rheumatic history. Adopting the American Heart Association functional classification, it was found that patients in Classes I and II*a* as a rule did well and had normal pregnancies and labours; those of Classes II*b* and III needed careful supervision, and as a rule prolonged rest in hospital. The mortality rate was 5 per cent., and there were only five Caesarean sections. Rest, diet, and general hygiene were found to be of greater importance than drugs in treatment. Labour should be rendered as easy as possible by use of sedatives and intermittent anaesthesia; quickness in delivery is not so important as easiness. During the third stage manual stimulation of the uterus should be avoided, and ergot is safer as a haemostatic than pituitary extract. Induction of abortion, rarely to be considered in primiparae, is employed with diminishing frequency as antenatal supervision improves; in advanced cardiopathic cases, until a good degree of compensation has been re-established, it may do much harm. Lactation should usually be encouraged. Very prolonged medical observation must follow the puerperium, for permanent impairment of the cardiac efficiency is a possible sequel. As a rule three years' sterility is desirable after pregnancy, but in working-class practice the use of the condom is the only reliable contraceptive measure.

49 Use of Narcotics in Obstetrics and Gynaecology

J. B. DELEE (*Journ. Amer. Med. Assoc.*, March 28th, 1931, p. 1007) briefly reviews the indispensable uses of narcotics in obstetrics and gynaecology. Pregnancy does not contraindicate the exhibition of narcotics for any purpose which demands them. The child does not suffer, except from an overdosage that would endanger the mother. Morphine is indicated when pregnancy is associated with an acute abdominal condition, also to prevent abortion from any cause. During labour DeLee considers opium preparations preferable to chloral, barbituric acid compounds, and sodium amytal. When narcotics are given in labour at the right time and in proper dosage the child is not endangered, and the mother is made more resistant to exhaustion, acidosis, shock, and post-partum haemorrhage. By conserving her strength in a prolonged first stage, narcotics actually shorten the second, and prevent difficulties in the third; the puerperium is more smooth, convalescence more rapid, while infection is less likely since the woman's immunity powers have been preserved. In eclampsia, placenta praevia, post-partum haemorrhage, morphine is invaluable; its value is equally great as an aid to general anaesthesia. Before gynaecological operations morphine has its uses, but barbituric acid preparations, tribromethanal, and other drugs have recently been used. Morphine reduces the amount of general anaesthetic required, and obviates to an appreciable extent the incidence of post-operative complications. With the exception of cancer, morphine has but limited uses in chronic gynaecological diseases.

Pathology

50 Meningeal Reaction to Therapeutic Serum

Little mention has been made of the effect of injected serums on the nervous structures, though their reaction on other tissues has been fully discussed. W. M. SHEPPE (*Amer. Journ. Clin. Path.*, January, 1931, p. 77) reports a case in which accidental infection with the meningococcus occurred in a laboratory. The patient was treated with anti-meningococcal serum, but the reaction was fulminating, and marked by most severe clinical symptoms. It did not present the usual characters of immediate, generalized serum reactions, and all the symptoms pointed to severe meningeal irritation. Evidently a localized allergy involving the nervous system had developed; which supposition is substantiated by the fact that a repetition of the reaction followed the injection of a minute quantity of serum (0.1 c.cm.) intravenously. As the result of work on the spinal fluid of a treated case of meningococcal meningitis, Sheppe suggests that the reaction was due to the irritation of the meninges by the formation of precipitins in the presence of an excess of precipitinogen (horse serum), and describes a method for the detection and prevention of impending meningeal reactions. The literature relating to the action of serum on the nervous system is briefly reviewed.

51 Bence-Jones Proteose in Multiple Myeloma

A. MAGNUS-LEVY (*Deut. med. Woch.*, April 24th, 1931, and May 1st, 1931, pp. 703 and 751) found that the Bence-Jones proteose excreted by a patient with multiple myelomas was proportional to the amount of protein in the diet, and that the Bence-Jones nitrogen portion constituted 42 per cent. of the total nitrogen content in the urine, whether the absolute total was high or low. He considers that protein metabolism is the most important factor in determining the amount of Bence-Jones proteose excreted, and concludes that the diet should contain 60 to 70 grams of protein in excess of the amount which is being excreted in the urine as proteose, in order to maintain nutrition. There is no evidence that the Bence-Jones proteose is formed elsewhere in the body than in myelomatous tissue, with the possible exception of bone marrow, which may produce very small amounts. The greater part of normal serum protein probably originates in the bone marrow, but the connexion between this and such abnormal nitrogenous bodies as the Bence-Jones proteose has not yet been elucidated. The damage to the kidneys, joints, and other organs which occurs in cases of myeloma is secondary, and due to the circulating Bence-Jones proteose. Magnus-Levy considers that there is good evidence that the abnormal metabolism in this condition is related to the formation of the amyloid substance, the Bence-Jones proteose being probably one of its several possible precursors.

52 Functional Tests in Renal Disease

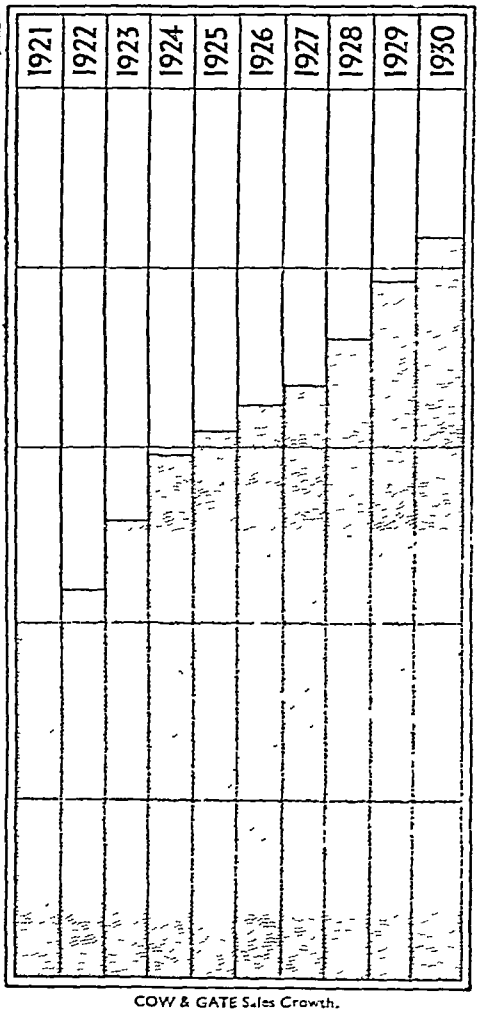
C. HOLTEN and P. B. REHBERG (*Acta Med. Scand.*, April 15th, 1931, p. 538) have observed 50 patients with various forms of nephritis, and conclude that reduction in the renal filtration rate is associated usually with diminished concentration; 41 patients had various types of nephritis, 5 had hypertension, and 4 had "surgical" kidney. While glomerulo-nephritis, nephrosclerosis, and amyloid disease reduce filtration proportionately to the gravity of the case, this reduction occurs but rarely in nephrosis. Functional tests indicate the renal excretory power, and retention symptoms do not occur when filtration does not fall below 50 per cent. of the normal; when it was reduced below 30 per cent. uraemic symptoms appeared and persisted until the nitrogenous diet was restricted. Conversely, patients with a much lower filtration rate may be freed from symptoms indefinitely by such restriction. Filtration tests, indicating the degree of protein tolerance, are a guide to treatment. In suitable cases the administration of large quantities of fluid aids the urea excretion and thus maintains a moderate level of blood urea. Rest appears to aid filtration, while over-exertion and intercurrent infections retard it. Filtration determination is of great prognostic value in uraemic and non-uraemic cases, and the patient's progress can be gauged.

53 Passage of Hormones through the Placenta

L. CATTANEO (*Ann. di Ostet. e Ginecol.*, March 31st, 1931, p. 253) records experiments showing that adrenaline, the hormone of the posterior lobe of the pituitary, and choline, injected into the foetal heart in pregnant rabbits or guinea-pigs, pass through the placenta, and after a short time manifest their characteristic effects on the maternal blood pressure. Extirpation of the maternal suprarenal glands, however, led to death in pregnant as well as in non-pregnant animals, but survival occurred if a fragment was left which weighed only half as much as the foetal suprarenal tissue. It is inferred that the adult suprarenal gland contains some principle which is lacking in that of the foetus.

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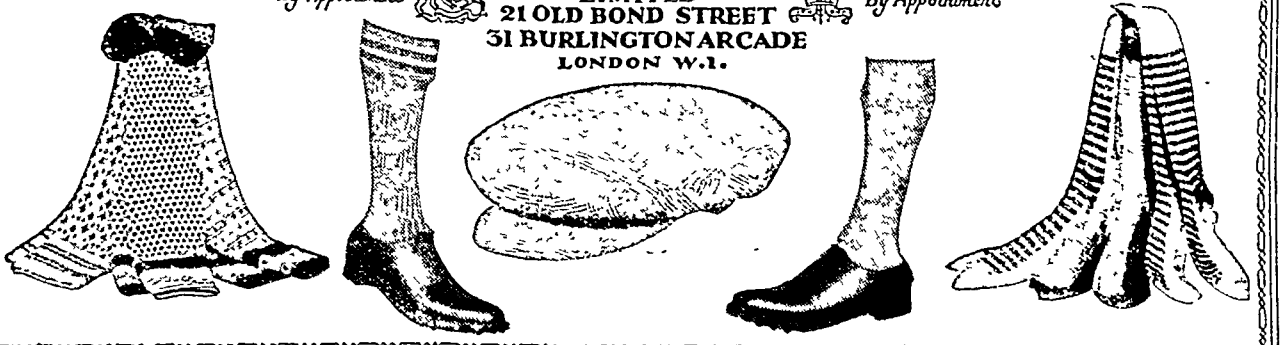
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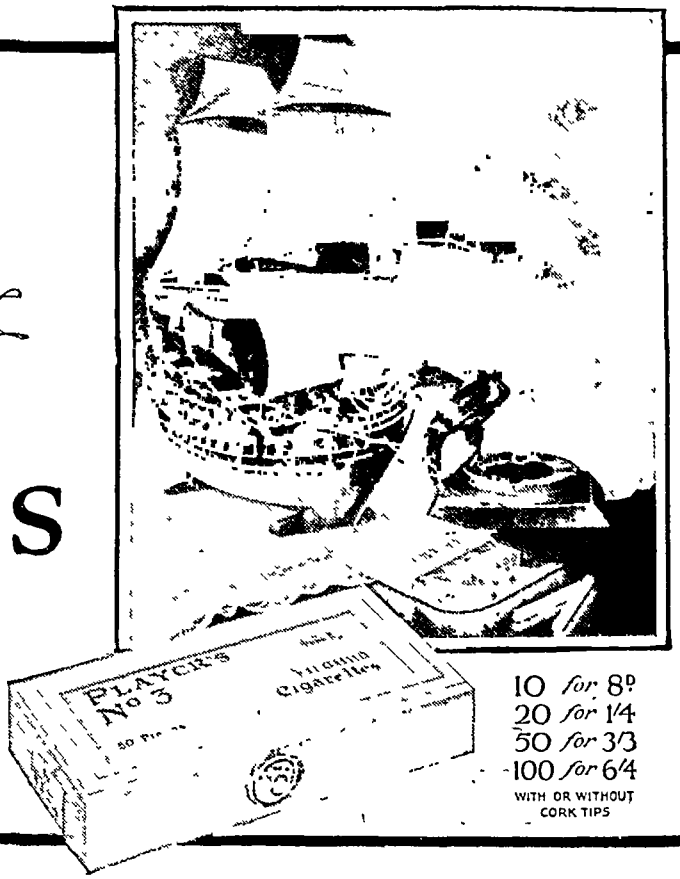
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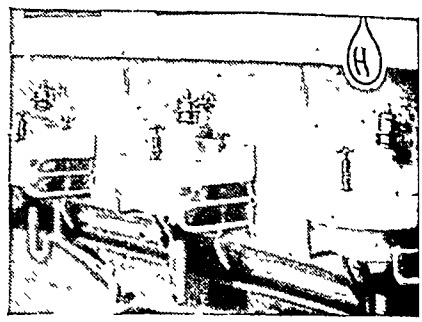
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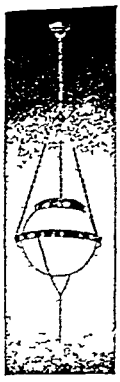
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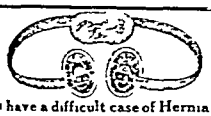
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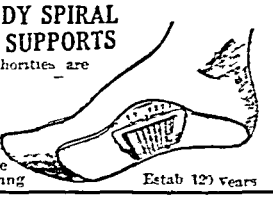
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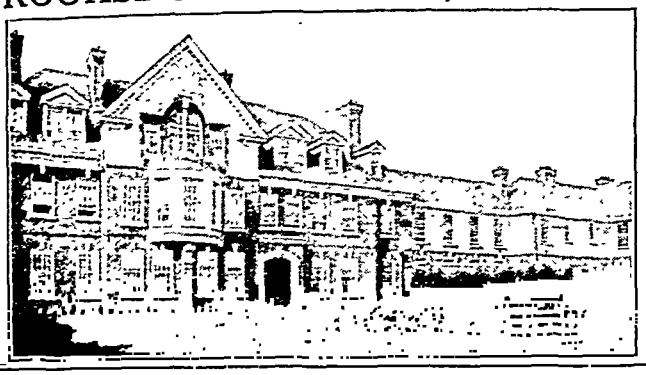
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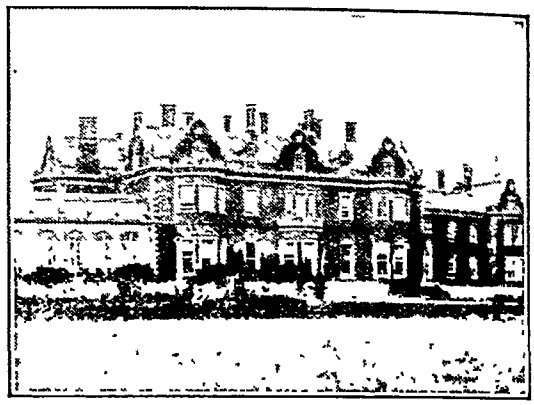
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17, RED LION SQ., LONDON, W.C.1.

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Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.)

POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-30 (9 Gold Medallists during 1913-30)	336
M.S.(Lond.),	1901-30 (including 4 Gold Medallists)	22
M.B.,B.S.(Lond.),	*Final* 1906-30 (Completed Exam.)	269
F.R.C.S.(Eng.),	*Primary*	162
	1906-30) *Final*	161
M.R.C.P.(Lond.),	1914-30	192
D.P.H.	(Various) 1906-30 (Completed Exam.)	300
F.R.C.S.(Edin.),	1918-30	46
M.R.C.S.,L.R.C.P.	*Final* 1910-30 (Completed Exam.)	467
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M.D.	Various. By Thesis. Numerous successes.	

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities; also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

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MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of the Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special : Refresher Course. Open for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

NATIONAL POST-GRADUATE SCHOOL OF RADIOTHERAPY.

The Mount Vernon Hospital and Radium Institute, Riding House Street, London, W.1.

Dean - Sir CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S.

An intensive Course in

RADIOTHERAPY

especially in its relation to Malignant Disease

will be held at the above School, commencing Monday, October 5th, 1931.

The Course will be repeated on subsequent dates.

Copy of the syllabus and full particulars may be obtained on application.

In addition, periods of hospital practice can also be arranged.

The Dean will be glad to see prospective entrants by appointment.

THOS. A. GARNER, Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

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POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE,

Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN*.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

MEDICAL CORRESPONDENCE COLLEGE,

19, Welbeck Street, London, W.1.

M.D. THESIS

All Universities.

Skilled coaching, guidance, and advice, by specialist tutors.

Recent successes include Gold Medals at M.D. Edinburgh, 1929 and 1930, and at M.D. Belfast, 1930, and many "High Commendations" and "Commendations" at other Universities.

Write for free booklet "How to Write a Thesis for the M.D. degree."

M.D. LONDON

Courses by skilled tutors for each branch of the M.D. London.

Oral, clinical, and practical work arranged.

Special courses, postal, oral, and clinical, for all higher medical examinations, M.R.C.P. London, Edinburgh, F.R.F.P.S. Glasgow. Many successes.

Write for free booklet, "Guide to the M.D. London," to the Secretary, Medical Correspondence College, 19, Welbeck Street, London, W.1.

UNIVERSITY OF LONDON.
KING'S COLLEGE.

REVISION COURSES in ANATOMY and PHYSIOLOGY will be held during SEPTEMBER, commencing on Tuesday, September 1st, 1931. Fee for each subject £3 3s.

Applications for admission should be addressed to the Dean of the Medical Faculty, King's College, Strand, W.C.2.

SOCIETY OF APOTHECARIES OF LONDON.

MASTERY OF MIDWIFERY.

Examinations will be held beginning Monday, November 16th, 1931, and Tuesday, May 17th, 1932.

For regulations, apply to the Registrar, Water Lane, E.C.4.

SOCIETY OF APOTHECARIES OF LONDON.

The Court invites applications for an EXAMINERSHIP IN SURGERY from Teachers at recognized Medical Schools.

Applications should be sent in as soon as possible.

Water Lane, Queen Victoria St., E.C.4. R. SILBY LEWIS, Registrar.

London Light and Electrical CLINIC, Ranelagh Road, S.W.1.

MEDICAL REGISTRAR. Salary £300 per annum. Applications, with copies of three testimonials, by July 20th, to Sir LEONARD HILL, 8 Devonshire.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. Fee £2 2s., which is to be sent to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

ROBERT BOLAM, Registrar.

June 10th, 1931.

MIDDLESEX HOSPITAL MEDICAL SCHOOL,
LONDON, W.1.

(University of London.)

The WINTER SESSION begins on October 1st, and new students should apply for admission at an early date.

The Medical School and Hospital occupy a central position within a few minutes' walk of Oxford Circus. They are fully equipped for teaching the entire Medical curriculum both for University Degrees and the Conjoint Course.

The new West Wing of the Hospital is fully occupied; the rebuilding of the remainder is proceeding without the loss of a single bed; the remodelled Out-patient Department continues to expand; the newly built Residents' Block affords greatly improved facilities; the Nurses' Home is the finest in London. These, with other new buildings, including magnificent Laboratories, give to the Middlesex Hospital and its Medical School the most modern facilities obtainable in Great Britain.

THIRTY-ONE RESIDENT APPOINTMENTS are offered annually to students recently qualified. In addition, TEN REGISTRARS are also appointed annually.

SCHOLARSHIPS AND PRIZES of a value exceeding £1,000 are awarded each year.

Large Athletic Grounds at North Wembley.

There is no accommodation for women students.

For further particulars and Prospectus, apply to the Dean, T. IZOD BENNETT, M.D., F.R.C.P., or School Secretary, Middlesex Hospital, Mortimer Street, London, W.1.

MIDDLESEX HOSPITAL MEDICAL SCHOOL
MORTIMER STREET, LONDON, W.1.

PRIMARY F.R.C.S. EXAMINATION.

Classes for the December examination will start on September 1st, and intending Students should call early in July, when a Course of Study to be followed prior to September 1st will be outlined to them. This preliminary study is regarded by the Professors concerned as being an essential part of the Course.

FEE 20 Guineas.

For further particulars apply to the School Secretary.

CITY OF LONDON MATERNITY HOSPITAL,
CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.G. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

UNIVERSITY OF BIRMINGHAM.
(FACULTY OF MEDICINE).

Diploma in Public Health.

COURSES OF INSTRUCTION for the above Diploma will be held during the Session 1931-32 (October to June) if sufficient entries are received. Further information and syllabus of course may be obtained on application to the Dean of the Faculty of Medicine, the University, Edmund Street, Birmingham.

University of Durham College OF MEDICINE.

[illegible] for the post of [illegible] IN PHYSIOLOGY. [illegible]ing to qualifications.

Further particulars obtainable from Sir ROBERT BOLAM, Registrar, College of Medicine, Newcastle-upon-Tyne.

July 6th, 1931.

East London Hospital for CHILDREN, Shadwell, E.1.

There will be a DEMONSTRATION of CLINICAL CASES on Wednesday, July 15th, at 4.30 p.m., to which you are cordially invited. Tea at 4 p.m.

City of Birmingham.
SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male.)

Applications are invited from fully qualified Medical Practitioners for the whole-time appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynæcological, Obstetrical and Children's Disease sections. There are completely equipped Pathological and Biochemical Laboratories and X-ray, Electro-therapeutic, Massage, Ultra-violet Ray and Electro-cardiographic Departments. Over 3,000 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time for a further period of not exceeding six months.

The person appointed will be required to assist at operations, to administer anæsthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance). The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Further particulars of the appointment may be obtained from the Medical Superintendent, R. P. STANLEY KELMAN, Esq., M.B., Ch.B., F.R.C.S. (Eng. & Edin.), at the Selly Oak Hospital, to whom applications, stating age, experience and qualifications, accompanied by copies of recent testimonials, should be forwarded not later than Wednesday, July 15th.

The Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

June, 1931.

City and County of Kingston-UPON-HULL.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Corporation of Kingston-upon-Hull invite applications for the position of Medical Officer of Health of the City at a salary of £1,500 per annum, rising by annual increments of £50 to £1,750 per annum.

The gentleman appointed will be required to act as School Medical Officer for the City, and Port Medical Officer and Medical Inspector of Aliens for the Hull and Goole Port Sanitary Authority. He will be required to devote his whole time to the duties of the office to which he is appointed and will not be allowed to engage in private practice, and all emoluments out of public monies which may be payable to or received by him will have to be paid to the Corporation. He will be required to reside in the City and to contribute to the Corporation's Superannuation Fund.

Particulars of duties and a form on which applications should be made may be obtained from the Town Clerk.

Applications endorsed "Medical Officer of Health," addressed to the Town Clerk, Guildhall, Hull, must be delivered at the Town Clerk's Office, Hull, not later than Friday, July 17th.

Guildhall, Hull, J. R. HOWARD ROBERTS, Town Clerk.

June 29th, 1931.

Borough of Luton.
ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Luton Borough Council invite applications for the appointment of ASSISTANT MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER. The scale of salary for the appointment is at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, but the commencing salary will be determined according to the experience of the selected candidate. There is no Superannuation Scheme.

The gentleman appointed will be required to devote the whole of his time to the duties, and to act under the directions of the Medical Officer of Health.

On receipt of stamped and addressed envelope, the undersigned will supply particulars of the appointment and application form.

Applications (on such form) accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer of Health," must be delivered to me not later than Wednesday, July 22nd.

Canvassing is prohibited and will disqualify.

2, Upper George Street, Luton. W. SMITH, Town Clerk.

July 4th, 1931.

City of Manchester.
PUBLIC HEALTH DEPARTMENT.

CRUMPSALL HOSPITAL AND INSTITUTION.

APPOINTMENT OF AN ASSISTANT MEDICAL OFFICER.

The Public Health Committee invites applications from qualified Medical Men for the position of Assistant Medical Officer at the Crumpsall Hospital (1,300 beds) and Institution (1,600 beds), including 600 beds for Mental patients—Crescent Road, Crumpsall, Manchester.

Every applicant must be a registered Medical Practitioner, and unmarried

Preference will be given to applicants with previous Hospital experience

The Hospital is a recognised Training School for Nurses, and is equipped with all modern hospital requirements

Salary £275 per annum, with board, residence, and laundry in addition No bonus

The appointment will be made, in the first instance, for a period of six months The successful candidate, however, will be eligible for re appointment for a further period of six months at the end of that period

Every application, stating fully the training, qualifications, and experience of the candidate, and his age, with copies of three recent testimonials and endorsed on the envelope "Assistant Medical Officer, Crumpsall Hospital and Institution," must be addressed to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than Wednesday, July 22nd

The candidate appointed will be required to commence duty on September 1st, to devote the whole of his time to the duties of the position, to pass a medical examination, to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service

Canvassing in any form, oral or written, direct or indirect, is prohibited

Town Hall, Manchester F E WARBECK HOWELL, Town Clerk.
July 7th, 1931

City of Portsmouth.
THIRD ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited for the appointment of a Third Assistant Resident Medical Officer for the Saint Mary's Hospital, St Mary's Institution, and Children's Home

The appointment will be limited to a term not exceeding one year, and will be subject to one month's notice on either side Salary £250 per annum, with furnished apartments, rations, and other allowances Candidates must be single gentlemen, and duly registered Preference will be given to those having a knowledge of the treatment of Mental Diseases, and who have experience in Surgical work A Resident Medical Superintendent is in attendance

Applications on printed forms, to be obtained at this office accompanied by not more than three recent testimonials, and a description of the diplomas certificates of degrees, licences, and other instruments held by the candidates, must be returned to me, endorsed "Third Assistant Resident Medical Officer," by Tuesday, July 21st

The Guildhall, Portsmouth F. J SPARKS, Town Clerk
July 2nd, 1931

City of Sheffield.
Applications are invited from duly qualified Medical Men for the post of ASSISTANT MEDICAL OFFICER at the CITY GENERAL HOSPITAL, Fir Vale, Sheffield

The Hospital contains 810 beds, and deals with all branches of medical and surgical work.

The salary offered is £250 per annum, with full residential allowances, the appointment being for one year

Applications, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent, City General Hospitals, Fir Vale, Sheffield

Royal Northern Hospital,
Holloway, N 7.

Applications are invited for the post of ASSISTANT PATHOLOGIST, vacant on October 1st Salary at the rate of £500 per annum, in addition to which the Assistant Pathologist is entitled to a proportion of the fees for private work done in the Department Private Practice is permissible

Candidates must possess a registered British qualification, and be engaged wholly in Pathological work

Particulars, with regard to the hours of attendance, duties, and submission of testimonials, etc., may be obtained from the undersigned, to whom application should be made not later than July 24th

GILBERT G. PANTER, Secretary

City of Manchester.
PUBLIC HEALTH DEPARTMENT.

BOOTH HALL HOSPITAL.

APPOINTMENT OF ASSISTANT MEDICAL OFFICERS.

The Public Health Committee invites applications from Medical Practitioners (men and women) for the undermentioned appointments at the Booth Hall Hospital for Children (750 beds), Charlestown Road, Blackley, Manchester.

(a) Assistant Medical Officer (man) Salary £250 per annum, with board, residence, and laundry in addition. No bonus To commence duty on August 1st Preference will be given to candidates with previous Hospital experience.

(b) Temporary Assistant Medical Officer (woman). Salary £200 per annum, with board, residence, and laundry in addition No bonus To commence duty on September 1st Previous Hospital experience not essential

Every applicant must be a registered Medical Practitioner, and unmarried

The Hospital is a registered Training School for Nurses, and is equipped with all modern hospital requirements

The appointments will be made, in the first instance, for a period of six months The successful candidates, however, will be eligible for re-appointment for a further period of six months at the end of that period.

Every application, stating fully the training, qualifications, and experience of the candidates, and their ages, with copies of three recent testimonials, and endorsed on the envelope "Assistant Medical Officer, Booth Hall Hospital," must be addressed to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than Wednesday, July 22nd

The candidates appointed will be required to devote the whole of their time to the duties of the positions, to pass a medical examination, and to execute the Deed of Service In the case of the permanent appointment, the successful candidate will be required to contribute to the Corporation Superannuation Fund.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, Manchester. F E. WARBECK HOWELL, Town Clerk.
July 7th, 1931.

Tottenham Education Committee.
APPOINTMENT OF SCHOOL DENTAL SURGEON.

The Tottenham Education Committee invite applications from registered Dental Surgeons, holding a degree or diploma in Dental Surgery, for the above appointment

The inclusive salary of the office will be at the rate of £500 per annum.

The duties of the officer appointed will be mainly connected with Dental Inspection and Treatment of School Children, but the successful candidate will be required to assist, when necessary, with other dental services of the Council

The person appointed will be required to devote his or her whole time to the duties of the office, and to work under the general supervision of the Committee's Medical Officer. The successful applicant will be required to pass a medical examination

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922

Applications, to be made on forms obtainable from the undersigned, with copies of three recent testimonials, and endorsed "Dental Surgeon," must be received by me at the Education Offices, Philip Lane, Tottenham, N 15, not later than July 31st

A J LINFORD, Director of Education.
July 6th, 1931.

Cardiff Royal Infirmary.
(Associated with Welsh National School of Medicine)

Applications are invited for the undermentioned posts

Three HOUSE SURGEONS
One HOUSE SURGEON (Surgical Unit).
Two HOUSE PHYSICIANS
One HOUSE PHYSICIAN (Medical Unit).
One HOUSE SURGEON—Gynaecological.

Salary at the rate of £50 per annum, with board and lodging Appointments are for six months, commencing August 20th

Forms of application can be obtained from the undersigned, and should be returned with copies of three recent testimonials, on or before August 1st

R. ARMSTRONG, Medical Supt.
June 30th, 1931.

City and County of Kingston-upon-Hull
SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH (Woman) for Maternity and Child Welfare Department

Applications are invited from fully qualified unmarried Women Medical Practitioners of not more than 40 years of age for the position of Senior Assistant Medical Officer of Health to take charge of the Hull Corporation's Maternity and Child Welfare Scheme.

The person appointed will be under the general administrative control of the Medical Officer of Health

Applicants must have had practical experience in Maternity and Child Welfare work, including special post graduate experience in Paediatrics, Obstetrics, and the treatment of Venereal Disease

The salary will be at the rate of £800 per annum, rising by annual increments of £25 to a maximum of £1,000 per annum Preference will be given to candidates who possess a Diploma in Public Health

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the successful applicant passing a medical examination by a doctor approved by the Corporation

A form of application may be obtained from the undersigned, to whom it must be returned, duly completed, together with copies of three recent testimonials, not later than the first post on Saturday, July 25th

Guildhall, Hull W M FRAZER, M.D., Medical Officer of Health
July, 1931

County Armagh Mental Hospital, NORTHERN IRELAND
ASSISTANT MEDICAL OFFICER

The Committee of Management of the above Mental Hospital, at its meeting on July 20th 1931, will consider applications for vacant post of Assistant Medical Officer. Commencing salary £350 per annum, and, on the candidate obtaining a Diploma of Psychological Medicine, will rise by annual increments of £25 to £450 per annum The post carries allowances consisting of furnished apartments, rations, fuel light, attendance, and fruit and vegetables for one person, all valued for pensionable purposes at £100 per annum. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909

Candidates must be duly qualified and registered, unmarried, and not over 32 years of age Preference will be given to a candidate holding the D P M, or with previous experience in Mental work. The appointment will be made in the first instance for a probationary period of six months

Applications, stating qualifications, with copies of recent testimonials, to be furnished to the Resident Medical Superintendent not later than July 15th.

City of Manchester Education Committee
ASSISTANT SCHOOL MEDICAL OFFICER

... ited from fully qualified ... for the post of Assistant

Applicants must have been qualified five years and will be required to devote their whole time to the duties of the office Preference will be given to those who have special experience in the prescription of spectacles

The salary is £600 per annum, rising by yearly increments of £25 to a maximum of £750. There is also a yearly allowance of £... for travelling expenses

The person appointed will be required to contribute to the Superannuation Scheme of the Corporation

Forms of application may be obtained from the undersigned and applications should be returned not later than July 18th

W. O. LESTER SMITH, Director of Education
Education Offices, Deansgate, Manchester.

County Bacteriological Laboratory, STAFFORD.
Applications are invited from registered Medical Practitioners for TEMPORARY DUTY at the above Laboratory for at least a calendar month commencing August 4th

Remuneration £12 12s per week, with the usual first class travelling expenses

A vacancy on the permanent staff will shortly occur

Applications, with copies of three testimonials to be made to the undersigned

County Offices, Stafford. EUSTACE JOY, Clerk of the County Council
July 6th, 1931.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in July, 1931. Applications should reach the War Office not later than July 20th, 1931.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of July. They must be under 28 years of age on August 1st, 1931, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—From £488 to £2,000 a year according to rank and length of service.

Candidates who have held a full-time house appointment in a recognised civil hospital before appointment to a permanent Commission in the R.A.M.C. may, subject to certain conditions, be allowed to count the period of service in such an appointment, up to a maximum of 12 months, as Army service for promotion and increase of pay.

Gratuities on Retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £364 10s. per annum normally earned by a Major after 20 years' service, to £920 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I.), Whitehall, London, S.W.1.

All Saints' Hospital (for Genito-URINARY DISEASES)

In patient Dept.: 91, Finchley Road, N.W.8.
Out patient Dept. & Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required immediately for periods of three months as Junior House Surgeon (non resident), followed subject to the approval of the Board of Management, by a period of three months as Senior House Surgeon (resident). Salary will be at the rate of £150 per annum, with board and laundry during the resident period. The duties of the non resident House Surgeon consist of attendance at the Out patient Dept. every afternoon and three evenings weekly.

Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should be sent immediately.

D. H. EADE, Secretary.

Hampstead General and North-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY SURGICAL OFFICER.

Applications are invited from unmarried registered Medical Women for the position of Casualty Surgical Officer, vacant on August 1st next, at the Out patient Department of the Hospital, Bayham Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials should reach the Secretary not later than noon on July 18th next.

Hampstead General and North-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried Medical Men for the appointment of House Physician, now vacant. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should be addressed to the Secretary.

East Suffolk and Ipswich HOSPITAL, IPSWICH. (265 Beds—7 Residents)

Applications are invited for the post of CASUALTY OFFICER. Salary £120 per annum or more according to experience. Board, residence, and laundry.

Applications from British (male) candidates, stating age, qualifications, and experience, accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.
June 1st, 1931.

Ear and Throat Hospital, Edmund Street, BIRMINGHAM. (64 Beds.)

HOUSE SURGEON wanted at once (non resident), to assist chiefly in Out patient Dept. Must be qualified and with clinical experience. Appointment to September 30th, when the Second House Surgeon appointment will be vacant. Salary at the rate of £200 per annum, with part board. Applications and testimonials to be forwarded to the undersigned.

Hospital is recognized for the D.L.O. Diploma.

S. G. GREW, Secretary.
July, 1931.

Great Yarmouth General HOSPITAL (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried. Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

Bristol Eye Hospital.

Applications are invited for the post of ASSISTANT RESIDENT HOUSE SURGEON single man. Salary £100 per annum. Vacant immediately.

Applications to be received by Secretary by Saturday, July 18th.

General Hospital, Nottingham. (397 Beds.)

A CASUALTY OFFICER (either sex) is required at the above Institution. The appointment is for six months. Salary at the rate of £200 a year, with board, residence, and laundry.

Candidates are desired to send particulars as to age, qualifications, and experience, together with copies of testimonials, to the undersigned.

P. M. MACCOLL, House Governor & Secretary.

New Sussex Hospital for Women AND CHILDREN, BRIGHTON (INCORPORATED). (50 Beds.) Recognized for M.D. Group 4.

The Council of Management invites applications from qualified Medical Women for the following posts:

(1) HOUSE PHYSICIAN to take up duty on July 16th.
(2) HOUSE SURGEON to take up duty on July 16th.
(3) HONORARY ASSISTANT OPHTHALMIC SURGEON to attend each Friday afternoon.

Honorarium for (1) and (2) at the rate of £100 per annum, with board, residence, and allowance for laundry.

Applications, with copies of three recent testimonials, to be sent to the Secretary immediately.

M. F. LOCKWOOD, Secretary.
July 10th, 1931.

Queen's Hospital, Birmingham.

Applications are invited for the following posts:

Ear, Nose, and Throat HOUSE SURGEON.

HOUSE PHYSICIAN for duty at the Birmingham & Midland Nerve Hospital (associated with the Queen's Hospital).

Salary at the rate of £70 per annum, together with board, apartments, and laundry.

DENTAL HOUSE SURGEON. Salary at the rate of £50 or £70 per annum, according to experience, together with board, apartments, and laundry.

Appointments for six months, from August 1st next.

Applications, together with testimonials, to be sent to the undersigned at once.

Birmingham, July 3rd, 1931. G. HURFORD, House Governor.

Queen Mary's Hospital for the EAST END, E.15. Telephone: Maryland 2616.

HOUSE PHYSICIAN.

Applications are invited from fully qualified and registered Medical Men (only) for the above post.

The Hospital contains 217 beds, including 47 Maternity beds, and other Special Departments.

Candidates, who should previously have held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Wednesday, July 15th. The appointment will be for the period ending December 31st.

RAPHAEL JACKSON (Major), Secretary.

Liverpool Hahnemann Hospital, HOPE STREET.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital.

Appointment is for six months, renewable.

Duties include occasional anaesthetics, and assisting at a wide variety of operations, general, gynaecological, ophthalmic, and aural.

Knowledge of Homoeopathy desirable, but not essential.

Salary at the rate of £100 per annum.

Apply, stating age, sex, nationality, and previous experience to the Registrar before 6 p.m., July 15th.

London Hospital, E.1.

Applications are invited for the post of HONORARY ASSISTANT ANAESTHETIST.

Candidates must be fully qualified medically.

Applications, with testimonials, should be sent to the House Governor, and should arrive not later than on Saturday, July 11th.

Further particulars of the appointment may be obtained from the House Governor.

ARTHUR G. ELLIOTT, House Governor.

London Skin Hospital, 40, Fitzroy Square, W.1.

HONORARY PHYSICIAN required. Applications, with copies of testimonials, to be sent to the Honorary Secretary.

Warwick County Mental HOSPITAL, HATTON.

A vacancy has arisen for a SECOND ASSISTANT MEDICAL OFFICER. Candidates must have had considerable experience in the treatment of acute mental disorders, and be able and willing to conduct pathological investigations, etc.

The salary is £450 per annum, rising by £25 per annum to a maximum of £500, together with board, apartments, etc. In addition, £50 per annum is given for a qualification in Psychological Medicine.

In the event of a married man being appointed the salary would commence at £600 per annum with no emoluments.

There are no married quarters.

Applications, together with copies of testimonials, should be sent to the Medical Superintendent at the Hospital.

Whitehaven and West Cumberland HOSPITAL, WHITEHAVEN. (90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male or female). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," at once.

R. HIGGINS, Secretary.

Royal Devon & Exeter Hospital, EXETER

HOUSE PHYSICIAN (Male).
HOUSE SURGEON TO SPECIAL DEPARTMENTS (Male).

Applications invited for either post now vacant.

Appointment for six months, candidates being eligible for re-election.

Salary £150 per annum with board, residence and laundry.

Applications, with copies of recent testimonials and certificate of registration, to be sent to the undersigned as soon as possible.

S. S. COLE, Secretary & Manager.
July 1st 1931.

The Guest Hospital, Dudley (General Hospital—107 Beds.)

TWO HOUSE SURGEONS required, one to commence duties immediately, and one August 23rd. Salary £160—£170 per annum, according to experience, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST, House Gov. & Sec.
The Guest Hospital, Dudley. July 4th, 1931.

Rotherham Hospital

Wanted, HOUSE PHYSICIAN, qualified. Salary £180 p.a., with board, residence, and laundry, to have charge of Out patients, administer Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

St. John's Hospital, Lewisham S.E.13.

A HOUSE SURGEON and a CASUALTY OFFICER are required for appointment on August 1st. The appointments are resident and tenable for six months at a salary of £100 per annum. Applications, with copies of testimonials from duly registered Practitioners, should reach the undersigned not later than the morning of July 15th.

J. C. GILBERT, Secretary Superintendent.

Victoria Central Hospital WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

Scunthorpe and District War Memorial Hospital (82 Beds)

Applications are invited for the following posts:

RESIDENT SURGEON. Salary £250 per annum, with board, residence, and laundry. (The Resident Surgeon is expected to perform emergency operations.)

SECOND HOUSE SURGEON, with charge of Medical Beds. Salary £150 per annum, with board, residence, and laundry.

Successful candidate is required to take up duties on August 1st, or as early as possible after that date. Applications, stating age, experience and qualifications, and enclosing copies of recent testimonials, should reach me not later than July 22nd.

ARTHUR E. MAW,
Secretary.

Swansea General and Eye Hospital (316 Beds)

ASSISTANT PATHOLOGIST wanted, whole time (male or female), non-resident. Salary £500 per annum.

Candidates must be Graduates in Medicine of a recognized British University or Members of a College of Physicians of the British Isles.

Duties to commence early August.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned on or before July 20th.

O. C. HOWELLS,
Secretary Superintendent.

South Devon and East Cornwall Hospital, Plymouth. (240 Beds)

HOUSE SURGEON (MALE).

Salary £160 per annum, with board, residence and laundry. Appointment is tenable for six months, and subject to renewal. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by July 17th.

ARTHUR R. CASH,
Gen. Supt. & Secretary.

June 29th, 1931.

St. Mark's Hospital for Cancer, Fistula, and other diseases of the Rectum, City Road, London, E.C.1

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry.

The appointment is for a minimum of six months from September 1st next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than 10 a.m., Wednesday, July 22nd.

St. Mary's Hospitals, Manchester

Two HOUSE SURGEONS for the WHITWORTH ST. WEST HOSPITAL (Maternity), and Two for the WHITWORTH PARK HOSPITAL (one Children's Dept. and one Gynaecological Dept.), each for a period of six months from August 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications with copies of three testimonials, to be sent to the undersigned on or before July 16th.

R. RATCLIFFE, Secretary.

Stockton and Thornaby Hospital, Stockton-on-Tees (140 Beds)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months. Duties to commence on or about August 1st. Salary £150, with board, residence, and laundry. Candidates must be duly qualified and unmarried. Applications stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

JOHN WILKINSON, Secretary.

Sutton and Cheam New Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at this Hospital, which will be vacant on October 1st. The appointment is for six months and the salary is £100 per annum, with full board, suite of apartments and laundry.

Applications giving full particulars as to age, training, and further experience, together with copies of three recent testimonials, should be sent to the undersigned not later than July 24th.

By Order of the Board of Management,
I. COLLINS, Secretary.

The Royal Victoria Hospital, Folkestone

The Committee of Management invite applications for the posts of RESIDENT MEDICAL OFFICERS, Senior and Junior (female), to commence duties on August 1st.

The salaries attached to the posts are—Senior £125, and Junior £100 per annum, with board and residence.

The appointments are for six months, subject to one month's notice on either side. The present Junior Medical Officer is a candidate for the Senior post. Applications, which should state if applicants are willing to serve in the Junior post, together with copies of recent testimonials, should be addressed to the Secretary Superintendent, Royal Victoria Hospital, Folkestone, Kent, not later than Monday, July 20th.

Third-class return fare from London allowed.

R. W. REED, Capt.,
July 7th, 1931. Secretary Supt.

The Queen's Hospital for Children, Hackney Road, London, E.2

RESIDENT MEDICAL OFFICER required on August 1st.

The appointment is made for six months and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, three Casualty Officers, two House Physicians, and one House Surgeon.

Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital, and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before July 16th.

CHARLES H. BESSELL,
June 30th, 1931. Secretary.
Telephone: Bish. 6305 and 2837.

The Victoria Hospital for Children, Tite Street, Chelsea, S.W.3 (138 Beds)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant August 1st). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 4 p.m. on Friday, July 24th (no travelling or other expenses will be paid). They must hold Medical and Surgical qualifications and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 22nd.

By Order,
D. ST. JOHN BAMFORD, Secretary.

The Royal Infirmary, Sheffield (500 Beds)

The Weekly Board of Management invite applications for the undermentioned posts—HOUSE SURGEON, OPHTHALMIC HOUSE SURGEON, ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON.

The appointments will be tenable for six months from July 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, should be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
General Superintendent and Secretary.
Board Room, June 2nd, 1931.

The Royal Infirmary, Sunderland (290 Beds). Six Residents.

Wanted, August 1st, HOUSE SURGEON (male), HOUSE PHYSICIAN (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

Buchanan Hospital, St. Leonards-on-Sea (Beds 115)

Applications are invited for the post of JUNIOR HOUSE SURGEON (female) at a salary of £125 per annum. Eligibility for Senior position after six months' service. Applications with testimonials, to be sent to the Secretary, Buchanan Hospital, St. Leonards, as early as possible.

The Royal Liverpool Children's Hospital.

The Committee invite applications for the post of SECOND RESIDENT MEDICAL OFFICER, at the HESWALL BRANCH of the Institution (240 beds), vacant on October 1st next. Salary at the rate of £120 per annum. The appointment will be for a period of six months. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Friday, July 17th.

The Royal Liverpool Children's Hospital.

The Committee invite applications from Graduates, with previous Hospital experience, for the post of RESIDENT MEDICAL OFFICER, at the HESWALL BRANCH of the Institution (240 beds), vacant on October 1st next. Salary at the rate of £180 per annum. The appointment will be for a period of six months. Applications with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Friday, July 17th.

The Royal Liverpool Children's Hospital.

There will be vacancies on October 1st next for TWO RESIDENT HOUSE PHYSICIANS and TWO RESIDENT HOUSE SURGEONS at the City Branch, Myrtle Street. The appointments will be for a period of six months. Salary in each case at the rate of £100 per annum. Applications, with copies of recent testimonials to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Friday, July 17th.

The Manor House Hospital, Golders Green, London, N.W.11 (105 Beds)—Extensions proceeding

Applications are invited for the post of JUNIOR MEDICAL OFFICER. Salary at the rate of £200 per annum, with board, whilst on duty, and laundry. No living accommodation can be provided at the present moment, but an allowance at the rate of £100 per annum is made in lieu thereof. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating full particulars, and accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned to reach him at the earliest possible moment.

JAMES W. LINKHORN,
Secretary.

The Stockport Infirmary.

HOUSE SURGEON (male) required.

Salary £175, with board, residence, and laundry.

Applications with copies of three recent testimonials, stating age, Universities, and experience, to be delivered to the undersigned as soon as possible.

EDWIN J. PEARCE,
July 1st, 1931. Secretary Supt.

The Willesden General Hospital (Incorporated), N.W.10 (106 Beds)

Applications are invited from general Practitioners for appointment as REGISTRARS for a period of six months from September 1st.

A copy of the regulations governing these appointments can be obtained from the Secretary of the Hospital, to whom detailed applications should be addressed not later than Saturday, July 18th.

May 25th, 1931.

The Children's Hospital, Sunderland (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female). Candidates must possess double qualification (registered). Salary £100 per annum with board, residence and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

Royal Lancaster Infirmary. (106 Beds)

JUNIOR HOUSE SURGEON (male, British) required immediately. Salary £120 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be addressed to the Hon. Secretary, Royal Lancaster Infirmary, Lancaster.

County Council of Middlesex.

OPHTHALMIC SURGEON.

The County Council invites applications for the appointment of Ophthalmic Surgeon (part time) for work at Ophthalmic Clinics established by the County Council at Uxbridge, Feltham, and Teddington, for the treatment of visual defects and diseases of the eye occurring amongst children attending schools under the control of the County Council, and women and children residing in the County Council's area for Maternity and Child Welfare purposes

The possession by applicants of the F.R.C.S. or D.O.M.S. Diploma will be an additional recommendation

The person appointed will be required to attend for one session (of about two hours) per week during the school terms at each of the above-mentioned Ophthalmic Clinics. Remuneration will be at the rate of £2 12s. 6d. per session.

Applications, stating (1) name, (2) age, (3) qualifications and experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than July 18th.

No special application forms are provided. Envelopes must be endorsed "Ophthalmic Surgeon." Canvassing, directly or indirectly, will be a disqualification.

Guildhall, Westminster, S.W.1. June 26th, 1931. ERNEST S. W. HART, Clerk of the County Council.

City of Leeds.

SENIOR ASSISTANT RESIDENT MEDICAL OFFICER KILLINGBECK SANATORIUM.

Applications are invited from registered Medical Practitioners for the post of Senior Assistant Resident Medical Officer at the Tuberculosis Sanatorium, Killingbeck (220 beds).

Applicants must be unmarried, and preference will be given to those who have held a General Hospital appointment and had experience in the treatment of Pulmonary and Surgical Tuberculosis in sanatoria. The salary offered is £350 per annum, rising by annual increments of £25 to £450, together with board, residence, and laundry.

The person appointed will be required to pass a medical examination and to contribute to the Superannuation Fund, established under the Local Government and Other Officers Superannuation Act 1922.

Form of application may be obtained from the Medical Officer of Health, 12, Market Buildings, Vicar Lane, Leeds. Applications, endorsed "Tuberculosis Officer" together with copies of three recent testimonials, should be delivered at my office, 26, Great George Street, Leeds, not later than 10 a.m. on Saturday, July 18th.

THOS. THORNTON, Town Clerk.

County Borough of Blackburn.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners for the post of Assistant Medical Officer (male), who will act under the supervision of the Medical Officer of Health and the School Medical Officer.

The person appointed must devote the whole of his time to the service of the Corporation.

The duties of the office will consist largely, but not exclusively, of work in the School Medical Department, and preference will be given to candidates with a Diploma in Public Health, and having experience in Infectious Diseases.

The salary will be £500 per annum to be increased by annual increments of £25 to a maximum of £700 per annum.

Forms of application, and further particulars of the duties and conditions of the appointment may be obtained from the Medical Officer of Health, Victoria Street, Blackburn.

Completed forms, accompanied by copies of three recent testimonials, must reach me by Saturday, July 25th, and should be endorsed on the envelope "Assistant Medical Officer."

Canvassing will disqualify.

Town Hall, Blackburn. July 2nd, 1931. BRIGGS H. MARSDEN, Town Clerk.

Hospital for Women at Leeds.

(For the Treatment of Diseases Peculiar to Women.)

HOUSE SURGEON wanted to commence duties on August 1st next. Salary £100 per annum, with board, quarters, and laundry.

Applications, together with copies of testimonials, should be sent to the undersigned immediately.

B. L. JEAFFRESON, Hon. Secretary to the Faculty.

Birmingham Public Health DEPARTMENT.

TUBERCULOSIS SECTION.

Applications are invited from single male Medical Practitioners for the post of ASSISTANT MEDICAL OFFICER in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and a Dispensary.

Candidates should have held a resident General Hospital appointment, or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis.

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450 per annum, with emoluments valued at £150 per annum.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to one month's notice on either side.

Forms of application may be obtained from, and should be returned with three recent testimonials to, the Chief Clinical Tuberculosis Officer, 44a, Broad Street, Birmingham, by 9 o'clock on July 24th.

Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as ASSISTANT MEDICAL OFFICER (full time) (man or woman) at the MAUDSLEY HOSPITAL, Denmark Hill, S.E.5, for Treatment of Incipient Mental Disorder. Candidates must be under 40 years of age (unless already in the Council's Mental Hospital Services), must be registered to practise both in Medicine and Surgery in England, and must have held a residential position in a General Hospital for six months, or have had comparable general experience.

Appointment pensionable under the Asylums Officers Superannuation Act, 1909. Salary £475 a year, rising to £550 a year (additional allowance of £50 to holders of D.P.M.). No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. In the case of a woman, marriage terminates contract of service.

Application form, giving full particulars, obtainable from Chief Officer (Ref. E), L.C.C., Mental Hospitals Department, Artillery House, Artillery Row, S.W.1.

Applications must be received by Friday, July 17th. Canvassing disqualifies.

MONTAGU H. COX, Clerk of the London County Council.

South London Hospital for WOMEN,

South Side, Clapham Common, S.W.4.

The Board of Management invite applications from fully qualified Medical Women for the undermentioned appointments:

Two HOUSE SURGEONS. Each for a period of six months from August 1st.

Salary at the rate of £100 per annum, with board, residence, and laundry. Candidates are expected to call on the Hon. Surgeons before Saturday, July 25th, by which date applications, and copies of testimonials, must reach the Secretary at the Hospital.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN in charge of the Department of Physical Medicine at the DREADNOUGHT HOSPITAL, Greenwich.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London. The elected officer will be required to attend once a week, and there is an honorarium of fifty guineas per annum attached to the post.

Applications to be sent in on or before Tuesday, July 21st, to the undersigned.

Greenwich, July 6th, 1931. R. E. V. BAX, Secretary.

St. Thomas's Hospital Medical SCHOOL

Vacancy for SENIOR DEMONSTRATOR in ANATOMY to take up duties on October 1st.

The salary, to a man with suitable qualifications, will be £500 a year.

Applications with full academic record and testimonials, to be forwarded to the Dean of the Medical School, St. Thomas's Hospital, London, S.E.1, as soon as possible, and not later than August 15th.

Bethlem Hospital, Monks ORCHARD, EDEN PARK, BECKENHAM, KENT

Wanted, One RESIDENT HOUSE PHYSICIAN (gentleman, unmarried), recently qualified in Medicine and Surgery. The term of residence is for six months from August 1st, apartments, complete board, and laundry being provided, and an honorarium at the rate of £150 per annum will be paid for the first three months, rising, if commendable service be given, at the rate of £200 per annum for the second period of three months.

Written applications, with testimonials are to be forwarded to the Physician Superintendent at the Hospital, from whom copies of the duties can be obtained.

JOHN L. WORSLOLD, Clerk, etc. Bethlem Hospital Office, 14a, New Bridge Street, E.C.4.

Warneford General Hospital, LEAMINGTON SPA.

HONORARY SURGEON FOR DISEASES OF THE EAR, NOSE, AND THROAT.

The Committee invite applications for the above appointment, which becomes vacant on October 1st.

The appointment will be made in accordance with the Rules of the Hospital, of which copies may be obtained from the undersigned.

Applications, accompanied by copies of three recent testimonials, should be delivered to the undersigned not later than Saturday, August 15th next; and candidates may submit 90 copies of them for circulation to the members of the Election Committee.

W. RUSSELL RUDALL, House Governor & Secretary. July 7th, 1931.

Bolton Infirmary & Dispensary.

(301 Beds, including Two Auxiliary Hospitals.)

Applications are invited from ladies having a registered Medical and Surgical qualification for the posts of TWO HOUSE SURGEONS. Salary £150 per annum each, with board, residence, and attendance.

Applications, stating age, nationality, and previous experience, together with copies of testimonials, should be forwarded to the undersigned.

ALBERT E. BRISCOE, Secretary.

Leicester Royal Infirmary.

Applications are invited for the post of SENIOR MALE MEDICAL OFFICER to the Venereal Diseases Department.

The appointment is for a Part-time Medical Officer, who will be allowed to engage in private but not panel, practice. Applicants must be qualified in accordance with the new regulations of the Ministry of Health. Salary £500 per annum.

Full details on application to the House Governor and Secretary.

July 6th, 1931.

Bury Infirmary, Lancashire.

Applications are invited for the post of THIRD HOUSE SURGEON, who must have both Medical and Surgical qualifications. The appointment is for six months, at a salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not later than July 18th, endorsed "Third House Surgeon."

Particulars of duties may be had on application.

ALEX. W. MAITLAND, Honorary Secretary.

Swansea General and Eye HOSPITAL (316 Beds)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary Superintendent.

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the posts of HOUSE SURGEON and CASUALTY OFFICER (male). Salary at the rate of £125 per annum, with board, residence, and laundry provided.

Applications, with testimonials, to reach the undersigned not later than July 25th.

W. M. WILCOX, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1. In the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh.

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN. *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
EBBW VALE, MON. *(Workmen's Medical Society)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	MIDDLESEX COUNTY COUNCIL *(Junior Assistant Medical Officer at Napsbury Mental Hospital—Male)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE *(Assistant School Medical Officer)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec of Division or Branch	Town or District.	Hon. Sec of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St, Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr. G. F. V. ANSON (Hon Sec, New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Friendly Societies and Friendly Societies Institute)*	The Hon. Sec, Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St, Brisbane	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr. J. P. MAJOR (Hon Sec, Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon. Sec, Western Australian Branch, British Medical Association, No 6, Bank of N.S.W. Chambers, St. George's Terr, Perth, Western Australia.

July 8th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Bristol Royal Infirmary.

Applications are invited for the following Resident appointments for the six months commencing October 1st:

Two HOUSE PHYSICIANS.
Four HOUSE SURGEONS.
One HOUSE PHYSICIAN to the Cancer Research Dept.
One HOUSE SURGEON to the Ear, Nose, and Throat Dept.
One HOUSE SURGEON to the Gynaecological and Obstetric Dept.
One OBSTETRIC HOUSE PHYSICIAN.
One CASUALTY HOUSE SURGEON.
One ASSISTANT HOUSE SURGEON and HOUSE SURGEON to the Dermatological Dept.

Salary at the rate of £60 per annum, with board, apartments, and laundry, except in the case of the Casualty House Surgeon, when the salary will be at the rate of £80 per annum, with board, apartments, and laundry.

One DENTAL HOUSE SURGEON
Part-time salary at the rate of £80 per annum, but if non-resident, salary at the rate of £110 per annum, with board.

Previous to taking up their duties, House Surgeons and House Physicians must become members of the Medical Defence Union.

Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned on or before July 18th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Durham County Hospital,
(75 Beds)

HOUSE SURGEON required immediately (two kept). Salary £150 per annum, with board & laundry.

Applications, with copies only of testimonials, to be sent to the undersigned at Liberty, to be sent to Wm. L. Watson, Secretary, 79, Saddler Street, Durham.

Bristol Royal Infirmary.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER for the 2 years commencing September 1st, 1931.

Salary at the rate of £200 per annum, with board, apartments, and laundry.

The selected candidate will be required to act as a House Physician or a House Surgeon, and previous to taking up his duties must become a member of the Medical Defence Union.

Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned on or before July 18th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY ASSISTANT to the Obstetric Department. Candidates must be Masters of Surgery of one of the Universities of Great Britain or Ireland or Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or Graduates in Medicine of one of the Universities, and hold in addition a special degree or diploma in Obstetrics.

Applications, stating age, must be sent to the undersigned, together with copies of not more than three testimonials, on or before July 18th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Rotherham Hospital.
(130 Beds)

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

The Children's Hospital,
SHEFFIELD. (107 Beds.)

Applications are invited immediately for the following post:

THIRD RESIDENT MEDICAL OFFICER. Salary £80 per annum, with board, residence, and laundry. The appointment is for six months, and afterwards the holder is eligible for the post of House Physician (salary at the rate of £100 per annum).

Candidates (female and unmarried) must be fully qualified and registered. Applications, stating age, etc., together with copies of three recent testimonials to be forwarded to the undersigned as soon as possible.

T. H. G. GARTLAND,
Secretary.

Ingham Infirmary, South Shields

Wanted, HOUSE SURGEON (male). Salary £150 p.a., with residence, board, and washing. No outside visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Hull Royal Infirmary.
(250 Beds)

Applications are invited for the post of THIRD HOUSE SURGEON (male), now vacant.

The appointment will be for six months in the first instance, determinable on either side by one month's notice. Salary at the rate of £150 per annum, plus board, residence, and laundry.

Applications, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS,
June 1st, 1931. House Governor.

(Appointments continued on p. 52)

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Wanted. — Assistant, indoor, R.C. preferred, for industrial Practice, North East Coast.—Address, No. 4226, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, for panel and private Practice in University town, 50 miles of London. Salary £300 (indoor). — Address, No. 4235, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant (young, single, male, keen), Protestant. Panel and private Practice, South Yorkshire. One recently qualified pref. Able to drive car. Usual bond. State age, height, and full parties. —No. 4219, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Junior Assistant, male, outdoor, in large mixed Practice in industrial area 10 miles from Manchester. Salary £400 per annum. Usual bond.—Add., No. 4333, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship (outdoor) by Male M.B., B.Ch., ex H.S. and H.P. Four years' experience of G.P. Single. 29 years. Own car. Well received. Interview. —Address, No. 4123, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by male M.B., B.Ch., aet. 26, ex H.S., H.P., and C.O. Twelve months' exper. G.P. Single. Own car. Well received South coast preferred, but not essential.—Address, No. 4225, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Woman M.B., B.Ch. (Belfast), aged 26; 3½ years experience Hospital and General Practice. Excellent references. Drive car. Free September. Address, No. 4237, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, by M.B., Ch.B., 7½ years' experience G.P. In or near London preferred.—Address, No. 4332, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view. Country General Practice in Cornwall. £375, outdoor. Suit young Graduate.—Address, No. 4330, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship with view, England or Scotland, desired by M.D.; late H.P., Obstetric H.S., Ophthalmic H.S., Sen. H.S., R.M.O. Fevers. One year exp. G.P.—Address, No. 4235, B.M.A. House, Tavistock Sq., W.C.1.

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M.D., qualified 8 years, ex H.S., H.P., experienced in every branch of Medicine, desires ASSISTANTSHIP with definite view to Partnership or Succession to be paid for out of income.—Address, No. 4233, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Locum, male, with G.P. and Hospital exp., for Practice near London, from July 30th, for three weeks. Must be competent. — Address, No. 4230, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Locum required to July 29th till August 12th, inclusive. Near London. Work very light. State essentials, particulars. No night work. — Address, No. 4336, B.M.A. House, Tavistock Square, W.C.1.

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ALBERT E. BRISCOE,
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Applications, stating age, qualifications, etc., with copies of recent testimonials, should be sent not later than July 21st to—

20, Church Street, ROBERT GILBERT,
Inverness Hon Secretary.

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Town Hall, W H WARBURST,
Accrington Hon Secretary.

Royal Sussex County Hospital,
BRIGHTON.

Notice is hereby given that a Meeting of the Elective Committee will be held in the Board Room of the Hospital on Wednesday, August 5th, at 12 15 p.m. for the purpose of electing (a) TWO HONORARY MEDICAL REGISTRARS, and (b) THREE HONORARY SURGICAL REGISTRARS.

Applications are invited for these offices from gentlemen who possess a Medical and a Surgical qualification of the British Empire respectively, and who are duly registered under the Medical Acts

Applications, with proof of the necessary qualifications, must reach the Hospital before 12 noon on Thursday, July 23rd, addressed to the undersigned, from whom further particulars of the above appointments, and the restrictions with regard to canvassing Members of the Elective Committee, can be obtained

By Order of the Board of Management,
L. L. W. LANCASTER GALE,
Secretary-Supt.

St. Paul's Hospital for Diseases
(INCLUDING CANCER) OF THE GENITO URINARY ORGANS AND SKIN,
Endell Street, Holborn, W C 2.

Applications are invited for the undermentioned position:

HOUSE SURGEON (vacant August 1st). Candidates must be doubly qualified and registered. Salary at the rate of £150 per annum, with board and residence. The appointment is for a period of six months, on the termination of which the holder is eligible for the position of Resident Medical Officer, in which capacity he will have charge of the Surgical beds. During his appointment as House Surgeon the duties will involve work in the Surgical Wards and in the Out patient Department for Venereal Diseases

Applications, with copies of recent testimonials, to be sent forthwith to the Chairman of the Medical Committee.

Torbay Hospital, Torquay.
(146 Beds.)

HOUSE PHYSICIAN wanted for July 20th. Salary £175 per annum, with board, residence, and laundry. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, should be sent forthwith to the undersigned, with copies of not more than three recent testimonials

E L. GRIST,
July 6th, 1931. Secretary.

The Lady Chichester Hospital,
HOVE. (For early nervous breakdowns.)
(50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, and laundry, and honorarium at the rate of £50 per annum. The successful candidate will be required to enter on her duties as soon as possible.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. P. GRAVES, 117, North St., Brighton.

June 23rd, 1931.

The Sheffield Royal Hospital.
(340 Beds.)

Required, CASUALTY OFFICER, salary £150 per annum, also OPHTHALMIC HOUSE SURGEON, salary £120 per annum, with board, residence, and laundry There are twelve resident medical officers, the Casualty Officer being second in seniority. Applications should be forwarded at once to—

W. H. BOOTH,
July 7th, 1931. Supt. & Secretary.

The Sheffield Royal Hospital.
(340 Beds.)

Required, RESIDENT ANAESTHETIST. *Salary at the rate of £80 per annum, rising* to £100 per annum in six months, with board, residence, and laundry. There are twelve resident medical officers. Applications should be forwarded at once to—

W. H. BOOTH,
July 7th, 1931. Supt & Secretary.

Royal Berkshire Hospital,
READING (243 Beds.)

RESIDENT ANAESTHETIST (male) wanted now for six months. Candidates must be fully qualified and registered Remuneration at the rate of £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned

R. A. LYON, Secretary.

Beckett Hospital & Dispensary,
BARNSLEY. (152 Beds.)

The Committee invite applications (male or female) for the following posts:

CASUALTY OFFICER to take charge of injuries and Eye Wards. Capability to perform emergency operations a recommendation.

HOUSE PHYSICIAN. Preference will be given to applicants who have held a previous Hospital post and having Pathological experience.

Salaries £250 and £200 respectively, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned immediately.

ARTHUR L BOURNE,
July 7th, 1931. Secretary Supt.

East Lancashire Tuberculosis
COLONY, Barrowmore Hall,
Great Barlow, CHESTER.
(Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.)

ASSISTANT MEDICAL OFFICER (male) required, to take up duties early in September. Salary £275, rising to £300 per annum at the end of six months, with board, residence, and laundry.

The appointment will be terminable by one month's notice.

Preference will be given to candidates with experience in Tuberculosis.

Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before July 23rd

Evelina Hospital for Children,
Southwark, S E 1.

Applications are invited for the post of HOUSE SURGEON (male) for six months from August 1st (first two months in Casualty and Out-Patient Department) Salary at the rate of £120 per annum, with board and residence

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent at once to the undersigned, from whom rules and other particulars can be obtained

By Order of the Committee of Management
W. H SIDNELL,
July 7th, 1931. Secretary-Superintendent

Evelina Hospital for Children,
Southwark, S E 1.

Applications are invited for the post of CASUALTY AND OUT-PATIENT OFFICER (male) for six months Salary at the rate of £120 per annum, with board and residence Hours of duty from 9 30 a m to 5 30 p.m. from Monday to Friday inclusive, Saturday until 2 p m ; no Sunday duty.

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent at once to the undersigned, from whom rules and other particulars can be obtained

By Order of the *Committee of Management.*
W. H SIDNELL,
July 7th, 1931. Secretary-Superintendent

Eastbourne. — Princess Alice
MEMORIAL HOSPITAL (110 Beds)

Applications are invited for the post of HOUSE SURGEON (male) Salary at the rate of £150 per annum, with board, lodging, and laundry. There are two residents, and the appointment is for six months commencing not later than August 1st Candidates must be unmarried, fully qualified, and registered

Applications, stating age, qualifications, etc., accompanied by copies of not more than three testimonials (one of which should be from Medical School), should be sent to the Secretary immediately.

Bradford Royal Infirmary.

Three HOUSE SURGEONS (male) wanted for September 1st. Candidates must be single and legally qualified. Salary £150 per annum each, with board, residence, *and washing.*

There are 215 beds and six resident officers

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Wednesday, July 22nd.

J. J. BARRON,
July 7th, 1931. Secretary Supt

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum, with residence, board, etc

Applications (with copies of testimonials) endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management

Post now vacant

H R. NORTH, Secretary.

Eye, Ear, and Throat Hospital
FOR SHROPSHIRE AND WALES

APPOINTMENT OF HOUSE SURGEON.

The Board of Management invite applications for the post of House Surgeon at the Eye, Ear, and Throat Hospital, Shrewsbury (48 Beds)

Candidates (either sex) must be unmarried and have a registered qualification in Medicine and Surgery, preference will be given to those candidates who are experienced in Eye, Ear, and Throat diseases

Salary £225 per annum, with board, lodging, and laundry In addition the House Surgeon will be paid extra for anaesthetics given for patients in the private wards

Applications with copies of testimonials, to be sent in sealed envelopes marked 'House Surgeon' to the undersigned, not later than July 20th

Secretary's Office C S ASBURY,
7, The Square, Shrewsbury Secretary

King Edward Memorial Hospital,
Ealing (106 Beds)

RESIDENT MEDICAL OFFICERS

Applications are invited for the post of Senior Resident Medical Officer, vacant on August 1st Applicants must have had good experience (at least two years) in House Appointments Salary £250 per annum, with usual residential allowances

Applications are also invited for the post of Junior Resident Medical Officer, vacant on August 1st Salary £150 per annum, with usual residential allowances

Applications, stating age experience and qualifications together with copies of two testimonials to be forwarded to the undersigned immediately

R A MICKELWRIGHT,
Secretary Superintendent

Manchester Victoria Memorial
JEWISH HOSPITAL CHEETHAM, MANCHESTER
(Non Sectarian)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male) The appointment is for six months, to commence duty September 1st. Salary at the rate of £125 per annum with board, residence, and laundry Applications stating age and qualifications together with copies of three recent testimonials to be forwarded to the undersigned not later than August 4th

FRED BARNES
Superintendent and Secretary

Royal Liverpool Babies' Hospital,
WOOLTON, AND CROFTON RECOVERY HOSPITAL FOR WOMEN, AIGBURTH
(Medical Surgical, and Gynaecological Beds)

A MEDICAL OFFICER (woman) is required on October 1st for six months for the above two Hospitals Previous General Hospital experience is essential The Medical Officer must reside in the Babies Hospital, and must visit Crofton daily Salary £200 per annum, with residence and board Applications, together with copies of testimonials, to be sent to the Chairman, c/o Child Welfare Association, 9, Copperas Hill Liverpool on or before 12 noon, Saturday, July 25th

The Jessop Hospital for Women,
SHEFFIELD (146 Beds)
Gynaecological and Maternity Departments

The Board of Management invite applications for the post of ASSISTANT HOUSE SURGEON (male) for a period of six months

Salary £100 per annum, together with board, residence and laundry

Applications stating age together with copies of testimonials should be addressed to the undersigned immediately

H B SHELSWELL, Secretary

Midland Hospital, Easy Row,
BIRMINGHAM.

A vacancy will occur for post of HOUSE SURGEON lady or gentlemen at the above Hospital on August 9th Salary £150 per annum with board residence and laundry

The work includes Surgery, Gynaecology, Dressings, etc.

Applications stating age and qualifications and giving details of recent testimonials should be forwarded at once to

JAMES O MYRES Secretary

Bradford Children's Hospital

HOUSE PHYSICIAN (lady) wanted immediately Fully qualified Salary £120 with board and laundry Applications giving full details with recent testimonial to be sent to J W HONCHEY, Secretary Superintendent.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners (male) for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER at the SOUTH WALES SANATORIUM, Talgarth, Breconshire (300 beds for pulmonary cases) Salary £250 per annum, plus maintenance This appointment is limited to a period of one year

Applications, stating qualifications, and previous experience together with copies of three recent testimonials, should reach the undersigned not later than July 25th

Memorial Offices, D A POWELL,
Westgate Street, Principal Medical
Cardiff Officer

(AMENDED ADVERTISEMENT)

West Norfolk and King's Lynn
GENERAL HOSPITAL (75 Beds)

The Board of Management of the above Hospital invite applications for the post of HOUSE PHYSICIAN (male or female) Duty to commence as soon as possible To have charge of Medical and Ophthalmic beds, also to act as Casualty Officer and Resident Anaesthetist The post, which is for six months in the first instance, offers valuable experience in both In patient and Out patient work Salary £150 per annum

Applications stating experience and full particulars, to be sent as early as possible to—

JOSEPH E. SEAPJEANT,
House Governor & Secretary

Warrington Infirmary and
DISPENSARY

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male) unmarried

Applicants who must be of British nationality, must be duly qualified Medical Practitioners

Salary £175 per annum with board, apartments and laundry Applications stating age with copies of three recent testimonials, should be sent in at once to the undersigned

By Order
HENRY L BOOT,
Superintendent and Secretary

June 29th, 1931

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DUBLIN, 23, *Upper Baggot St*
TELEPHONES
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Manchester, 3152 Ardwick
Dub, 551 Ballsbridge Glasg, 477 Douglas
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PRACTICE for disposal in Town near Chester Receipts £1,560 per annum panel 1,275 House can be either purchased or had on rental Reason for disposal retiring

For further particulars apply to the above

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Liverpool (Central). — Lock-up. £600 p.a. cash Panel 200 Clubs £25 Fees 2 6 to 5 Good premises on lease Premium £600, or near offer —No 8881

Warwickshire. — Country Practice £350 £400 Triple scope Fees 5 to 10 Panel 345 Premium £400 Choice of houses —No 8880

East Coast Resort —Over £4,000 p.a. 1/3 share Panel 2,000 Appts £200 Visits 5/ up Good house to rent —No 8877

South Coast Town.—£1,750 p.a. Non panel family type Visits 3 6 to 10/6 House 6 bed, 2 recep etc —No 8876

London Suburb, E.—About £750. Panel 600 Visits 2 6 No midwifery Small house on lease Premium £700 or near offer —No 8873

Kent Suburb. — Residential. Non panel mixing Average £897 Panel 386 Appts £72 Fees monthly 7 6 and 10 6 Large house (7 bed etc) to rent or sell cheap House optional Low premium —No 8872

Manchester Suburb.—Over £700 p.a. Panel 150, but scope Visits 5 to 21 House 5 bed etc, to rent Premium £700 or near —No 8870

Manchester. — £1,500. Panel 50 Great scope Visits 5/ and 7 6 Detached corner house, 5 bedroom etc., rent £50 Premium only £1,250 —No 8869

Midlands.—Share worth £1,000, increasing to £2,000 Small panel Fees 5 to 15 Good house at £20 Partner about 35 well qualified —No 8868

London, N.—Average £1,230 p.a. Panel 1,200 Fees 2 6 3 6 etc Lock up premises but limited accommodation Good lease —No 8866

Leics.—Half share of £2,000 p.a. Country near Town Visits 5 up Panel 1,600 Roomy house to buy, others to let —No 8855

Urgent Sale. — South Wales. — £1,500 p.a. mostly derived from contract work and panel Not much opposition. Premium £1,500 or offer —No 8865

London Sub., W.—About £600. Panel about 600 Fees average 5 Detached corner house, 6 bed., etc, large garden Prem 1½ years' purchase —No 8864

South Coast. — £1,800, steadily increasing 1/3 share now and success on shortly Panel 864 Appts about £200 Fees 4 to 10 6 Rooms and houses available —No 8863

South Midlands. — Within 40 miles —£900 p.a. Unopposed. Panel 897 Good appts Visits 5/ to 10/6 Large house and garden to rent —No 8859

Lancs.—Partly Surgical —Over £2,000 p.a. Panel 1,555 Visits 5/6 to 10,6 Major ops, 10 to 50 gns Suitable house —No 8858

Staffs Town. — About £800 and scope Vendor retiring Panel £460 p.a. Club £24 House, with 2 recep 5 bed., surgery, etc, to rent —No 8856

Lancs Town. — Over £1,100 p.a. Panel 1,450 Visit and med 5 6 and 6 Premium £1,600 on terms House 3 recep 5 bed., surgery, etc For sale at £1,200 —No 8849

Midland Town — Over £2,200 p.a. Panel 820 Appts £50 Fees 3/6 up House 2 3 recep, 4 bed. to rent on lease —No 8840

Surrey, Country — £600 p.a. and scope Easily worked Fees over 200 Fees 3 6 to 21 Good house For sale —No 8841

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LONDON, S.W.—Lady Doctor's PRACTICE. Receipts £500. Panel 250. Suitable accommodation available at 30/- p.w. Premium for quick sale, £600.

MANCHESTER.—Well-establi-hed middle and working-class G.P. Medium-siz-d house to rent. Receipts £620. Appointments £125. Panel over 400. Fees 2/6 up. Premium £700 cash.

WELSH BORDERS.—Excellent middle-class Town PRACTICE, situated in delightful locality. Good social amenities. Receipts approx. £1,800. Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained. Knowledge of Welsh not essential. Hospital.

KENT (Seaport).—NUCLEUS G.P., situated in growing locality. Good opening for a young energetic man. Receipts over £300 p.a. Panel 220, growing. One appointment worth £50/£60 p.a. Small house to rent. Premium £250 or near offer.

PARTNERSHIPS.—We have several Partnerships suitable to young and energetic men of experience. Mostly situated in new localities. Excellent scope. Incomes of £500 up. Full details on request. Personal applications desirable.

YORKS.—PARTNERSHIP in busy rapidly increasing Town Practice. Receipts £2,300. Panel 1,500. Suitable house available. 1/3 share, with view to succession, 2 years' purchase.

SURREY.—PARTNERSHIP in rapidly developing residential locality, with splendid scope. Receipts approx. £1,000 p.a. Panel nearly 300. Fees 2/6 up. Premium for 2/3 share, 2 years' purchase. Excellent opportunity for young and energetic man.

LONDON, E.—SUBURBAN Middle-class G.P. Medium-sized house to rent on lease at the low rental of £30 p.a. Fees 2/-. Average receipts £516. Panel 350. Excellent scope for young man. Premium for Practice and lease £1,050 cash, or near offer.

NORTH-WEST COAST.—PARTNERSHIP in old-established good-class non-panel and non-dispensing Practice. Suitable house available. Receipts approx. £3,600. Fees 10/6 up. 1/3 share, with view to half and possible succession, 1½ years' purchase, cash. Excellent scope for Physician.

LONDON, S.W.—Middle-class PRACTICE in residential locality within easy access of the West End. Medium-sized house, detached; large garden, garage, etc. Receipts £950. Panel 270. Premium for Practice £1,200.

MANCHESTER.—G.P., situated in working-class locality. Medium-sized house to rent on lease. Receipts approx. £1,017. Panel recently started, 60. Premium for quick sale £1,250.

NORTHANTS.—Old-established rural PRACTICE, situated in charming locality. Splendid house in own grounds to rent or purchase. Receipts £500. Panel 400. Premium £550. Suitable to semi-retired Practitioner.

LONDON, E.2.—Mixed Cash and Panel PRACTICE, situated in thickly populated locality. House to rent on lease (10 rooms), part sub-let. Average receipts (approx.) £853. Panel 1,018. Premium 1½ years' purchase.

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11. KENT.—Seaside Town.—Receipts aver. £400 p.a., incl. club of £61. Panel 260. Great scope. Small house to rent. Prem. £250.
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YORKSHIRE (W R)—Excellent Country PRACTICE Cash receipts last year £1 421 Panel 880 Good freeho'd detached house to rent, with nice garden. 4 bedrooms, 2 reception rooms Premium—Practice—£2,175—No 271

MANCHESTER—RESIDENTIAL SUBURB—Middle-class PRACTICE suitable for two in partnership Cash receipts 1931, £4 578 Panel 1,400 Two excellent houses, with ample accommodation to rent Premium 1½ years' purchase, part by arrangement—No 277

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EAST COAST — PARTNERSHIP in large Town Practice Income over £10 000 p a Panel over 5 000 Good house available, 2 reception, 4 bedrooms. Garden Premium—1/6 or 1/4 share—1½ years' purchase—No 258

NORTH STAFFS — INDUSTRIAL TOWN PRACTICE Cash receipts last year £1,200 Panel nearly 2,000 Good house, 2 reception, 7 bedrooms Rent approx £55 p a on long lease. Premium £2 000 (to include book debts and drugs)—No 255

SOUTH YORKSHIRE—Old established PRACTICE. Cash receipts 1931, £1 273 Panel 1,430 Excellent house, 3 reception, 4 bedrooms Garage and good garden Premium 1½ years' purchase.—No. 253

LARGE LANCS TOWN—Old-established PRACTICE Average cash receipts £1 546 p a Panel 1,052 Excellent detached house, 3 reception 4 bedrooms Garage and garden Rent £74 10s p a Premium 1½ years' purchase. Vendor retiring—No 257.

MANCHESTER SUBURB — PARTNERSHIP in old-established Practice View succession 3/5 years Cash receipts £2 100 Panel 2,155 Semi-detached house available, 2 reception, 3 bedrooms Rent £45 p a Premium 1/3 share £950, part by arrangement—No 259

LIVERPOOL (near)—Cheshire Coast Town PRACTICE. Average cash receipts £1 187 p a Panel 785 Much scope Good double fronted house (freehold) 3 reception, 4 bedrooms, garage Premium—Practice—£1,100—No 248

MANCHESTER SUBURB—Old-established middle-class PRACTICE Cash receipts for last year £2 600 Panel 1 150 Excellent detached house 3 reception, 4 bedrooms garden tennis court, to rent Premium 1½ years purchase Preliminary Partnership, with early succession, if desired—No 275

SEASIDE TOWN—MEDICAL WOMAN'S PRACTICE. Cash receipts for 1930 £600 Panel 400 Excellent rooms at £36 p a. Premium £850 or near offer—No 274

NORTH WEST COAST — SEASIDE RESORT — Old established PRACTICE Cash receipts 1930, £874 Small select panel Excellent freeho'd house, 5 bedrooms Garage and garden—No 266

LANCS TOWN—Old-established PRACTICE. Average cash receipts £1,175 p a Panel 1,460 Excellent house, 3 reception, 5 bedrooms Garage and garden For sale or to rent for a period. Premium £1,600, payable by arrangement—No 232

MANCHESTER SUBURB — Middle-class PRACTICE Average cash receipts £1 500 p a Small panel Good house 2 reception 5 bedrooms Garage and garden Rent £65 p a Premium for quick sale £1 250—No 261

CHESHIRE TOWN near MANCHESTER—PRACTICE Cash receipts last year, £1,033 Panel 650 Good house 3 bedrooms Rent £45 p a Premium £1,330—No 263

MANCHESTER SUBURB—Good-class PRACTICE. Average cash receipts £662 p a Small panel Scope House, 2 reception, 5 bedrooms Garage and garden Rent £70 p a Premium, best offer—No 225

NEAR MANCHESTER—PLEASANT TOWN Largely residential — Old-established PRACTICE. Average cash receipts £995 p a Panel 902. Appointments not included £100 p a Great scope. Excellent detached house (freehold), 3 reception, 5 bedrooms. Garage and garden and tennis court. Premium—Practice—1½ years' purchase—No 234

SOUTH COAST—SEASIDE RESORT—PRACTICE Cash receipts £740 p a Panel 700 Excellent house 3 reception, 5 bedrooms, garage and garden, to rent. Premium 1½ years purchase—No 197.

LANCS TOWN—Old-established PRACTICE. Cash receipts 1930, £1,186 Panel 900 Much scope Excellent house 2 reception, 4 bedrooms Garage. Premium, best offer—No 178

MANCHESTER—PLEASANT RESIDENTIAL SUBURB—Old-established PRACTICE. Average cash receipts £685 p a Panel over 600 Much scope Excellent house, 2 reception, 4 bedrooms garage, and good garden, to be sold, or may be rented for a period on lease Premium 1 years purchase Vendor retiring—No 245.

WANTED IMMEDIATELY—INDOOR AND OUTDOOR ASSISTANTS FOR TOWN AND COUNTRY PRACTICES, WITH OR WITHOUT VIEW. Good salaries offered. State full particulars

LOCUMTENENTS (male and female) SHOULD REGISTER AT ONCE FOR IMMEDIATE ENGAGEMENTS

SPECIAL NOTICE.

For the convenience of Practitioners, Branch Offices have been opened as under:—

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28, Exchange Street East, Liverpool.
(Tel. Central 1970 Grams Legal, Liverpool")

YORKSHIRE.
Phoenix Chambers, South Parade, Leeds.
(Tel 26771)

NORTHERN IRELAND.
72, High Street, Belfast.
(Tel 7636/7 'Grams 'Vouch, Belfast")

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

Tele Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION have every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUM TENENS.

Assistants and Locum Tenens can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 S. COAST. — Non-dispensing Practice of £1,635 p.a. in fashionable health resort Panel 879. Well situated house (6 bedrooms), with garage and garden, to rent Premium £3,000, or nine twentieths share at 2 years' purchase.

2 ESSEX.—Partnership in middle and working class Practice of £3,440 p.a. in industrial town within 25 miles of London Panel 1,830 Detached double fronted house (5 bedrooms), garage and garden, for sale. Premium one half share 2 years' purchase

3 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p.a., in beautiful hunting centre. Applicant should be aged about 30 ('Varsity man preferred) Cottage Hospital Scope for Surgery. One fourth share at 2 years' purchase Preliminary Assistantship.

4 S. COAST.—Partnership in Practice about £3,000 p.a. in residential town close to health resort Panel over 1,250 Choice of house to rent or purchase. Premium one half share 2 years' purchase

5 SOMERSET. — Practice averaging £870 p.a. in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase Scope for increase. Premium £1,300

6 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town Panel about 2,400 One third share at 2 years' purchase, payable by arrangement if desired

7 N.E. COAST. — Ear, Nose, and Throat PRACTICE of about £1,800 p.a. in seaport town.

8 S. OF ENGLAND.—Partnership in good non dispensing Practice of about £6,000 p.a., in attractive Watering place No panel. Suitable house obtainable. Incoming Partner must be well qualified (Oxford, Cambridge, or London) and experienced in Medicine. Share of one sixth to one fourth at first at 2 years' purchase.

9 MIDLANDS. — Good-class non-dispensing PRACTICE of nearly £1,800 p.a. in best residential suburb of first rate City. No panel Large and beautiful house in excellent position to be rented on lease Premium 1½ years' purchase.

10 NOTTINGHAMSHIRE. — Country PRACTICE averaging nearly £1,100 p.a. No panel Good house (6 bedrooms and 2 boxrooms), garage, and garden of 1¼ acres, to rent on lease Hunting, etc Great scope Premium £1,500, which will include drugs

11 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast Panel 660. Detached house (6 bedrooms), with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc Premium 1½ years' purchase. Suitable for retired Service man.

12 S. DEVON.—Partnership in Practice over £1,800 p.a. in beautiful country district near the borders of Dartmoor Suitable house available Hunting, shooting, fishing. Premium for one half share 1½ years' purchase

13 LONDON, E.C.—City Practice. Receipts 1930, over £1,300 Consultations mainly £1 1s., some £1 11s 6d. and £3 3s Excellent consulting rooms Premium 1½ years' pur.

14 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast Receipts average £300 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's pur.

15 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district No panel House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash

16 NORTHUMBERLAND. — Practice averaging nearly £1,100 p.a. in small seaside resort. Panel 750 Semi detached villa residence, in central position, for sale. Scope. Premium £1,100

17 LONDON, W.—Partnership in sound non-dispensing Practice of nearly £2,300 p.a., close to West End No panel and very little night work Partner should be aged about 35 and used to good class Practice. One third share 2 years' purchase

18 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p.a., in beautifully situated county town. Panel about 1 600 Hospital in town, and incoming Partner must be a good Surgeon. One fifth share at first at 2 years' purchase.

19 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town Panel 785. Share up to one half 2 years' purchase. Up to date Cottage Hospital

20 DEATH VACANCY. — N. DEVON. — Country PRACTICE of over £1,600 p.a. in beautiful part Panel over 600 House (6 bedrooms), garage, and good garden, for sale.

21 LONDON, S.E.—Practice averaging nearly £1,250 p.a. in one of the pleasantest outlying suburbs Panel under 500. Attractive semi detached house (6 bedrooms), garage, and very nice garden, to rent Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

22 S. OF ENGLAND. — Partnership in good middle class non-panel Town Practice over £5,300 p.a. Suitable house to purchase. Premium one-fourth share £2,000 Preliminary Assistantship.

23 S. COAST.—Partnership in good-class non-dispensing Practice, over £4,000 p.a., in favourite residential town in seaside resort. No panel and not much midwifery. Pleasantly situated house (4 or more bedrooms) to rent on lease. *Incoming Partner should be Oxford, Cambridge or London man* (aged about 30), who has held Hospital appointments. One-third share at first at 2 years' purchase.

24 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (5 bedrooms) to rent. Premium £900.

25 S. OF ENGLAND.—Partnership in Practice, about £2,800 p.a., in favourite seaside resort. Delightful house (5 bedrooms), garage, and nice garden, to rent. Incoming Partner should be a Surgeon (preferably F.R.C.S.) Hospital and appointment on staff. Premium one fourth share 2 years' pur.

26 MIDLANDS. — Partner required in sound lucrative Practice in residential town close to large city. Small panel. Very good Cottage Hospital. Share of £1,000 p.a. at 2 years' purchase. Applicant should be well up in his work.

27 S. COAST.—Partnership in non-dispensing Practice in a seaside resort. Good house (5 bedrooms) to rent. Share about £750 p.a. at 2 years' purchase.

28 S. COAST.—Partnership in non-dispensing Practice in seaside resort. Incoming Partner must hold the F.R.C.S. Hospital. Scope for Surgery. Share worth about £1,000 p.a. (after short preliminary Assistantship) at 2 years' purchase.

29 LONDON, S.W.—Practice about £500 p.a. in suburban district. Panel 650. No midwifery. Semi-detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

30 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope. Prem. 1 yr's. pur.

31 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwifery. Six-roomed house to rent. Prem. £700.

32 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p.a. in manufacturing town. Panel over 1,300. Pleasantly situated *double* fronted house (4 bedrooms), with garden, for sale. Premium 1½ years' purchase.

33 LONDON, W.—Practice of about £600 p.a. in residential district. Panel 600. Detached double fronted corner residence (5 bedrooms), garage, and nice garden, for sale. Scope. Premium 1½ years' purchase.

34 LONDON, E.—Cash Practice of £850 p.a. in populous neighbourhood. Panel over 1,000. House (3 bedrooms) in main road, to rent. *Premium 1½ years' purchase.*

35 S. COAST.—Small Seaside Place.—Nucleus of PRACTICE, with very good semi-detached house (3 bedrooms). Would suit semi-retired Practitioner who could wait a while as Place is developing quickly. Price for freehold house £1,400.

36 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of many kinds. Considerable scope. Premium two-thirds or four-fifths share 2 years' purchase.

37 S. OF ENGLAND.—Partnership in steadily increasing Practice about £6,000 p.a. in small town. Panel 3,300. Excellent house could be purchased. *One-seventh share at 2 years'* purchase. Preliminary Assistantship. London Graduate preferred.

38 MIDDLESEX.—Steadily increasing PRACTICE about £800 p.a. in growing district. Panel about 600. Very good house (5 bed and dressing rooms), *garage and excellent* garden, for sale. Ample scope. Premium £900.

39 LONDON, N.—Practice about £360 p.a. in Residential Suburban district. Panel 180. Detached corner house (8 bedrooms), with small garden, for sale. Scope. *Premium £100.*

40 N. OF ENGLAND.—Partnership in lucrative Practice in large city. Panel over 5,000. Small house (3 bedrooms and attics) for sale. Partner must be young and energetic. A share of £1,650 or £2,500 would be sold at 1½ years' purchase.

41 DEVON.—Partnership in Practice averaging £3,000 p.a. in small town. House to rent. Hunting, shooting, fishing, etc. Premium one third share 2 years' purchase. Hospital.

42 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p.a. in developing indust. district. Panel 1,870. Small house available. Large Cottage Hospital. Prem. two-fifth share 2 years' purchase.

43 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London. Panel 300. Attractive house (7 bed and dressing rooms) in grounds of *2 acres, with garage, to be sold or let. Very suitable for Resident* Patients. Good scope. Premium 1 year's purchase.

44 N. MIDLANDS.—Partnership in Practice over £1,400 p.a. in first rate city. Panel 1,800. House, with 2 reception rooms and 4 bedrooms, to rent. Premium one half share £1,100. Preliminary Assistantship entertained.

45 MIDLANDS.—Practice of over £2,100 p.a. in manufacturing town. Panel 820. House (4 bedrooms) to rent, on lease. Premium 1½ years' purchase.

46 SURREY.—Ophthalmic Practice of about £300 p.a. in desirable town within 15 miles of London. Fees mostly £3 3s. Good detached house (4 bedrooms, etc.) for sale. Plenty of scope to one devoting whole time. Premium £300.

47 HANTS. — Small easily worked Practice about £400 p.a. in beautiful country district about 50 miles from London. Select panel 50. Detached house (5 bedrooms), with good garden, for sale. Scope. Premium £400.

48 STAFFS. — Partnership in Practice over £2,000 p.a. in an industrial town. Panel 3,000. Suitable house (5 bedrooms) to rent. Ample scope. Premium one half share 1½ years' purchase.

49 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase.

50 N. WALES.—Country Practice of £1,230 p.a. in Welsh-speaking district. Panel about 550. Convenient and well-situated house, with electric light, etc., for sale. All kinds of sport. Premium for a quick sale 1 year's purchase, or even slightly less.

51 CHESHIRE.—Practice of nearly £500 p.a. in residential town. Panel 100. New semi-detached double-fronted house (4 bedrooms) for sale. Scope for considerable increase. *Premium £500.*

52 CHESHIRE. — Partnership in increasing better-class non-panel Practice, over £4,500 p.a., in first rate residential district. One-fourth share at 2 years' purchase. Partner should be University Graduate who must have held Resident appointments.

53 MIDDLESEX. — Partnership in Practice nearly £3,500 p.a. in rapidly growing residential town under 20 miles from London. Panel about 1,150. Semi-detached corner residence (6 bedrooms), garage, and garden, for sale. Premium one half share 2 years' purchase.

54 MIDLANDS.—Practice over £800 p.a. in first rate town. Panel 500. Large detached house, with garage and garden, to rent. Premium one and a quarter years' purchase.

55 S.E. ENGLAND. — Small Practice about £300 p.a. in seaport. Panel 220. Small house to rent. £250 or near offer. Good scope. Premium.

56 MIDLANDS. — Partnership in Practice in hunting centre. Panel about 1,000. House about £2,000 p.a. (9 bed and dressing rooms), electric light, ample water supply, (5 bed and dressing rooms), garage and excellent garden, for sale or rent. Premium one-third share £5,000.

57 BF £275 p.a. in favourite town. Panel 500. Semi-detached house (7 bedrooms) with garden and garage, for sale. Ample scope. Premium £200.

PARTNERSHIPS" (BARNARD & STOCKER) Post free 12/6.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTS" A. V. STOREY, General Manager.

All communications to be addressed to Mr.

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Under the personal directorship of Dr. J. FIELD HALL and J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.
Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1 SANATORIUM—SOUTH WEST OF ENGLAND—(Within 20 miles of County Town) — Very old established Receipts average over £10 000 p a for past 3 years Middle and upper class patients Accommodation for 45 Price for goodwill, freehold house and grounds (65 acres), furniture, fixtures, etc, only £10,000

2 NEAR HUDDERSFIELD—PARTNERSHIP—A half share is offered in a very well established good mixed class Practice, having considerable scope for increase Average gross cash receipts for the past three years £4 000, last year £4,273 Panel of 3,500 Fees from 3/6 to 7/6 Midwifery 1½ to 7 gns, about 50 cases Very good house, with 4 reception, 6 bedrooms, etc, and 1½ acres of garden Price for freehold £2,500, or would be let on lease Premium only 1½ years' purchase

3 NORTH MIDLANDS—PLEASANT MARKET TOWN—PARTNERSHIP—A one third share is offered in a very old established sound mixed class Practice, rapidly increasing, and producing for the immediate past 12 months over £3,000 No appointments Panel of nearly 1,400 Fees from 3/6 to 2 gns Midwifery 2 to 10 gns Suitable house available on rental, or, if single, purchaser could reside with Vendor on very advantageous terms Ingoing Partner must be able to do Surgery, as there is very good scope for this work Hospital with 60 beds Premium 2 years' purchase, half down, and balance by instalments

4 EASTERN COUNTIES—In a pleasant Market Town, amidst delightful surroundings and within 5 miles of the sea, a very old established PRACTICE worth over £2,000 for the past twelve months, of which nearly £1 000 was derived from panel and appts etc Good house, with ample accommodation (5 bedrooms, bathroom, etc), garden, and garage Rent £50 p a Sport and excellent educational facilities

5 MANCHESTER—Semi residential Suburb—Very old established non dispensing mainly middle class PRACTICE, averaging £2,500 p a, including small selected panel of 440, which latter is capable of extension Visits 5/ upwards Only about 20 cases of Midwifery from 5 gns Well situated house, with good accommodation Price (freehold) £1 600 Premium £3,750

6 SURREY—PARTNERSHIP—Residential town within easy reach of London—A one fifth share (with increase later) is offered in a very well established mainly middle class Practice Practice will produce about £3,500 p a or over, including panel of nearly 2,500 Fees from 3 6 to 21/ Lowest midwifery 5 gns Suitable house, with 2 reception 4 bedrooms etc Price for freehold £1,200, of which £1,000 could remain on mortgage Premium 2 years' purchase

7 SOUTH DEVON—PARTNERSHIP—Very pleasant agricultural district within easy reach of coast—A one half share is offered in a very old established Practice producing £1 850 p a, including panel and appointments bringing in about £1,000 p a Fees 3/6 to 21/ Mids 2 to 5 gns, about 40 cases Accommodation suitable for bachelor Premium 1½ years' purchase Sport of all kinds

8 BIRMINGHAM—RESIDENTIAL SUBURB—PARTNERSHIP—A one eighth share to commence with, is offered in a very old established mainly better class non dispensing Practice, averaging approximately £8 000 p a Small selected panel Fees 2/6 to 10/6 Midwifery 3 to 15 gns Suitable house, containing 2 sitting, 6 bedrooms, etc Good garden Rent on lease £80 p a Premium 2 years' purchase

9 LINCS — PLEASANT MARKET TOWN—PARTNERSHIP—A half share, with possible succession in two years' time Average income for past three years £1,900, including appointments and panel producing £500 Advice and medicine 3/ upwards, visits from 5/ Very few midwiferies from 2 to 3 guineas Large house with garden and garage Price freehold only £1,200 Sport of all kinds, and excellent schools for boys and girls Premium 2 years' purchase, payable £1,000 down, remainder by arrangement

10 PARTNERSHIP—WITHIN 70 MILES OF LONDON—A fourth share (to commence) of old established rapidly increasing mixed class Practice situated in very pleasant country town Cash receipts last year nearly £4 000 including appointment £200 and panel over 2 000 Good house available for purchase or rental Premium £2 000 Incomer should be experienced and about 30 years of age

11 EASTERN COUNTIES—PARTNERSHIP—A one third share, with increase later, is offered in a very good mixed class Practice, situated in pleasant town near sea Average gross cash receipts nearly £4 500, including panel of about 3 000 Visits 2/6 to 30/, with medicine extra Very nice house, in large garden containing 3 reception, 5 bedrooms etc Price for freehold £2,000 Premium 2 years purchase

12 FAVOURITE SOUTH COAST TOWN—PARTNERSHIP—A share representing about £750 a year (with increase later) is offered in a good mixed class non dispensing Practice, held by the Vendor for 7 years Panel of 900 Gross cash receipts nearly £1,700 Fees from 3/6 Centrally situated house, with 3 reception, 6 bedrooms, etc Net rent on lease, £90 p a Premium 2 years purchase

13 SOUTH COAST TOWN—PARTNERSHIP—A one third share (with increase later) is offered in a mainly better class non panel Practice Average gross cash receipts for the past three years £4 150 Fees from 10/6 Not much midwifery Well situated house, with 3 reception 8 bedrooms, etc Can be rented on lease at £135 p a Premium 2 years purchase

14 LONDON, EAST—PARTNERSHIP—A two fifths share is offered in an old established middle and working class Practice, averaging over £2 400, including panel of 2 143, and appts worth £220 p a Fees from 1/6 Not much midwifery Suitable accommodation can be secured Premium 2 years' purchase Lady doctor would be taken

15 WITHIN TWELVE MILES OF MARBLE ARCH—Middle and working class PRACTICE, steadily increasing, and producing this year about £800, including panel of 250 Fees from 3/ Suitable house, with 2 reception, 4 bedrooms, etc, secluded garden Price for freehold £1,650, of which £900 could remain on mortgage Premium £800

16 ESSEX—Very old established PRACTICE, situated in pleasant country district, in growing area about 30 miles from London, and few miles from the sea. Cash receipts average nearly £900 p a, including panel of 600 House contains surgery and waiting room, 3 reception 5 bedrooms, bathroom, etc Garden Garage Gas, but electric light available Moderate rental Premium 1½ years' purchase

17 NORTH DEVON AND CORNWALL BORDERS—Very old established unopposed Country PRACTICE, in beautiful district near the coast Cash receipts average just over £1,100 p a, including appt and panel of 330 Suitable house available Premium £1,600, to include drugs, etc Hunting, golf, fishing, tennis etc

18 PARTNERSHIP—YORKSHIRE—LARGE CITY—A one third share with succession to the whole Practice in about one years time, is offered in a rapidly increasing PRACTICE, producing for the last 12 months approximately £2 300, including panel of 1 500 One appt worth £150 A suitable house will be vacant shortly Premium £1,200 Large scope for further development

19 LONDON (WEST END)—Old established non dispensing and non panel PRACTICE, averaging over £4,700 p a Visits (very few) and consultations from one guinea upwards No midwifery Suitable accommodation available on rental Premium £6,000 Good introduction given Personal application desired

20 WITHIN 20 MILES OF LONDON (WLST)—Rapidly developing district—PARTNERSHIP—A half share in a well established good middle class Practice, averaging over £3,500 p a Panel of 1 100 and appts worth £100 p a Fees 3/6 to 21/ Good corner house, with 3 reception, 6 bedrooms, etc Garden Price for freehold £2,100 Premium 2 years purchase

21 SURREY—COUNTRY PRACTICE—Very old established, and situated [illegible] cash receipts for past 12 months £2 000, 700 Fees from 2/6 to 21/ Midwifery nice house, with 2 reception, 6 bedrooms, and professional rooms Nearly 2 acres of garden Price for Practice and house £5,000

22 CHESHIRE—NEAR COAST—Old established good mixed class PRACTICE averaging for the past 3 years nearly £1,600 including panel of 1,280 Very good house in 3 acres of ground, with 2 reception, 4 bedrooms, etc Rent on lease £85 p a Premium £2,300

23 PARTNERSHIP—HOME COUNTY—Within 60 miles—In a small country town, in very pleasant district, the third share, with increase later, of an old established mixed class Practice offering good scope Cash receipts average over £3,000 p a, including panel nearly 1,700 and appts Good house, with 3/4 of an acre of garden, tennis court, etc Rent on lease £65 p a Premium £1,700 Ingoing partner should be about 30, English or Scotch, and prof married

24 WITHIN 30 MILES OF LONDON—In a delightful residential district (well populated and growing rapidly), a small PRACTICE producing last year £406 including panel of 300 and capable of considerable development Very good residence (suitable for resident patients) in about 2 acres of ground Price, freehold £4,000 Mortgage arranged. Premium £400 Excellent schools, good society, and sport

25 FAVOURITE COAST TOWN—Old established good middle and better class PRACTICE, producing over £1,800 p a Selected panel of under 400 Fees 3/6 to 10/6 Very little midwifery Commodious house, with 2 reception, 6 bedrooms, etc large garden Freehold for sale Premium £3 000

26 HOME COUNTIES Within 40 minutes' run of London Old established mixed class and increasing PRACTICE situated in small town with pleasant surroundings Cash receipts average £1,725 p a, including appt £70 and panel 1,000 House with good accommodation and small garden Price for freehold £2,500 Premium 1½ years purchase Educational facilities

27 SOUTH AFRICA—Within 8 hours of Durban—Rapidly increasing PRACTICE in very pretty township near sea coast producing last financial year over £1,700, including appt £120 Practically all fees, which are good, are paid in cash Opposition negligible Bungalow residence in about one acre of ground Rent £84 on lease Premium £1 500 to include furniture drugs instruments and motor car (£1 325 without latter) payable £1 000 down and balance by easy instalments Excellent climate and sport

28 SURREY—Increasing residential district, with good train service to town—Well established good general PRACTICE offering Surgical scope Gross cash receipts for last 12 months nearly £3 200, with panel of about 900 Visits 5/ to 21/ Suitable house, with 3 reception, 7 bedrooms etc Can be bought or rented on lease Premium 1½ years' purchase

Full Schedule of Terms and Conditions will be forwarded on application.

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·SPRAINS·

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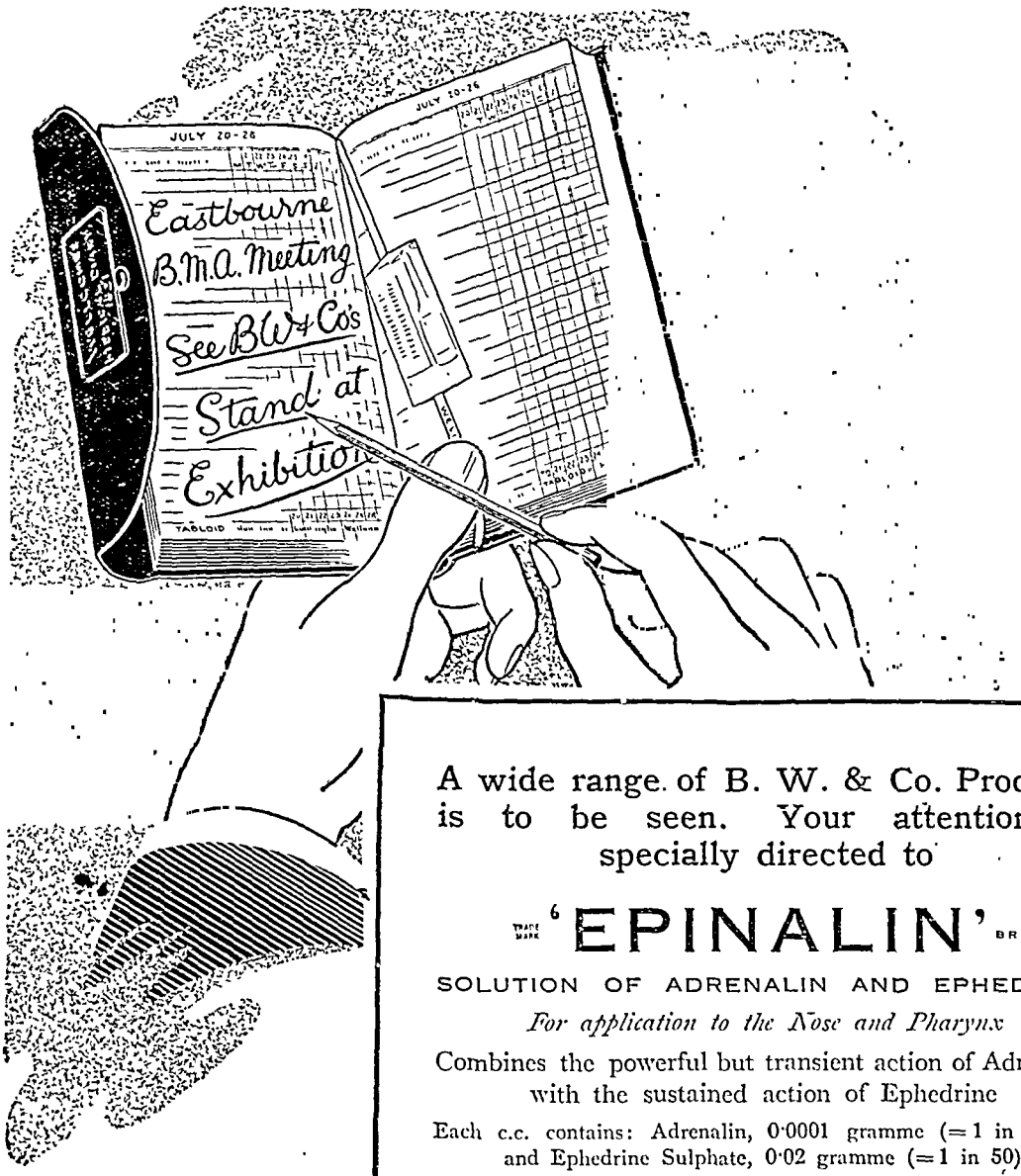
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Contribution by Dr. Charles L. Scudder, *Boston*
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Clinic of Dr. Leo M. Davidoff, *Fifth Avenue Hospital.*
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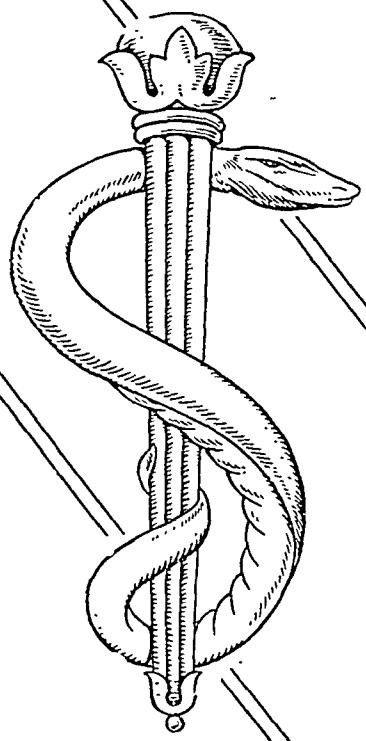
These new models incorporate some very important changes. They set a new standard of value in the field of actino-therapy equipment, being easier to operate, better finished and of higher efficiency—thus achieving better therapeutic results.
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If you cannot attend the Exhibition, send for our new free booklet "What is Modern Actinotherapy?" marking the enquiry Dept. 9.

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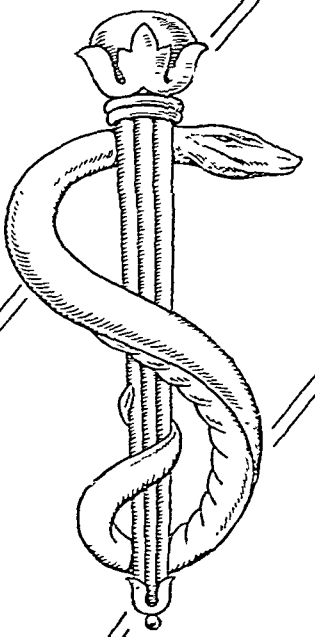
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Many cases have been described by eminent medical men, some results of which are shown below.



FIG. 1.—December, 1921.

Case of Mrs. H., aet. 35.

FIG. 1.—Shows the knee-joint fixed in a position of partial flexion; patella ankylosed.

FIG. 2. — Shows after an interval of 9 years the improvement which resulted from 3 years' extension treatment—the complete restoration of the tibio-femoral joint which permits of free and painless flexion and extension.

This case was one of exceptional severity. In the average case the Extension Walking Appliance can be discarded in one or two years from the time of its first application.



FIG. 2.—April, 1930.

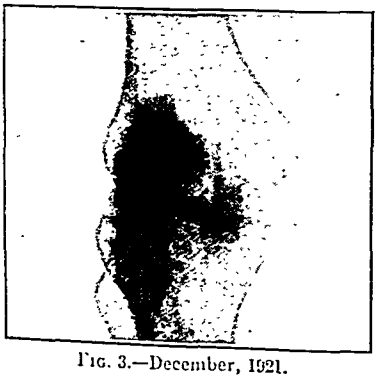


FIG. 3.—December, 1921.

FIG. 3.—Shows the irregularity of the outline of the articular surfaces as seen from before backwards. The interval between the bones is practically obliterated.

FIG. 4.—Shows the joint in an antero-posterior plane. Note the restoration of the outlines of the articular surfaces and the formation of a practically normal interval between the bones.

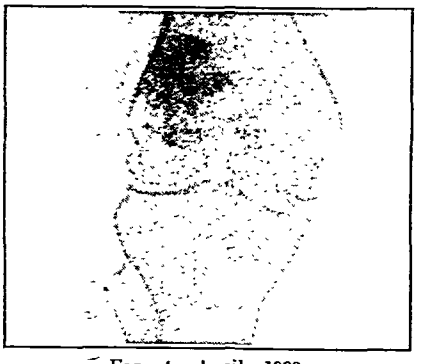


FIG. 4.—April, 1930.

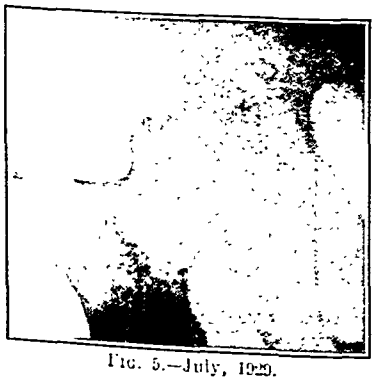


FIG. 5.—July, 1929.

Case of Mr. S., aet. 63.

FIG. 5.—Shows the hip-joint practically ankylosed in the adducted position. Patient hardly able to walk with great pain.

FIG. 6. — Shows spike absorbed; cavity filled in; head of femur covered with new cartilage, resulting in free abduction with full painless movement in the joint.

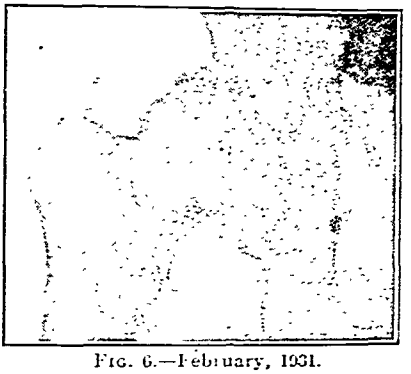


FIG. 6.—February, 1931.

Original radiograms of these and other cases can be shown by appointment with

Mr. CAREL A. HOEFFTCKE, at 7, Harley Street, London, W.1,

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ARTERIO-SCLEROSIS

IT is an old adage that a man is "as old as his arteries," meaning that degenerative changes in the arteries are largely responsible for senility.

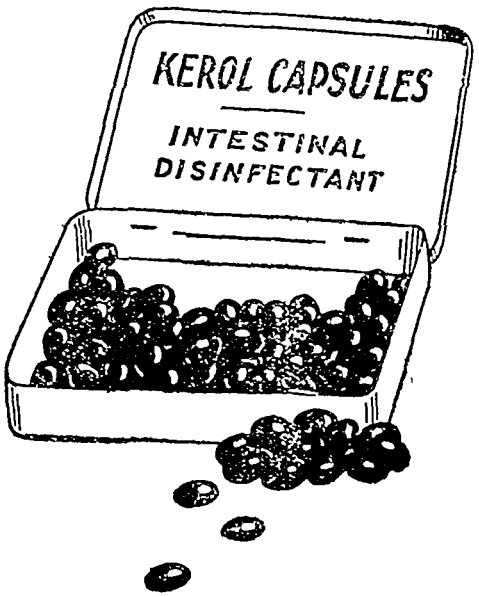
The modern view is that arterio-sclerosis is produced by increased blood-pressure, and that increased blood-pressure results from the absorption of "pressor" substances developed by putrefactive bacteria in the intestine.

(Prof A Robin, among his suggestions for the treatment of arterio-sclerosis, emphasises in the first place the need to remove the alimentary toxic factors which are causative of arterial hypertension.—*Therapeutique Usella du Practicien*, p. 344.)

To retard the activity of the putrefactive bacteria, Metchnikoff introduced the soured milk treatment; but how much better it is to use an antiseptic substance. The ordinary so-called intestinal antiseptics, such as Salol, possess little real disinfectant power, and more potent germicides, such as Phenol, are absorbed, and, in sufficient dose, are toxic.

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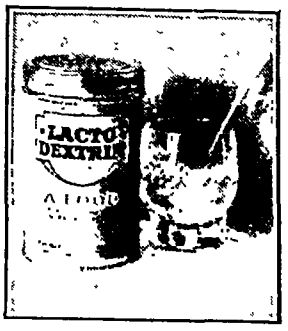
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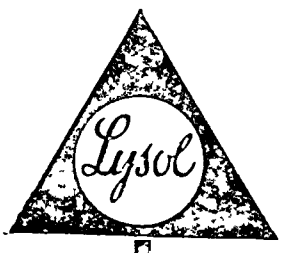
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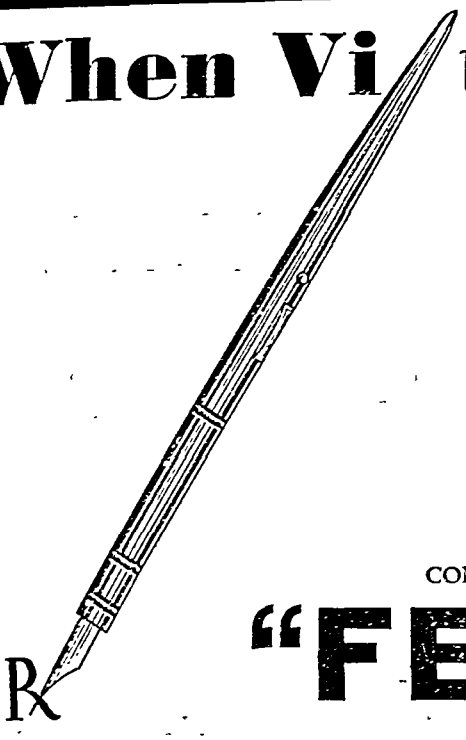
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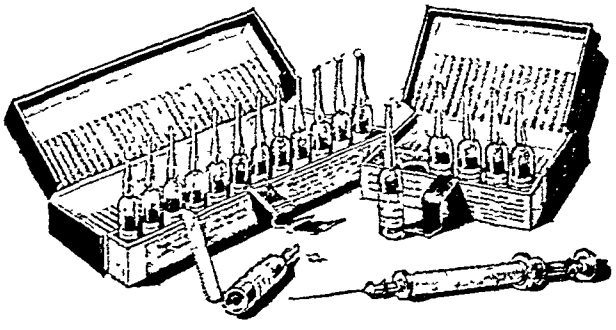
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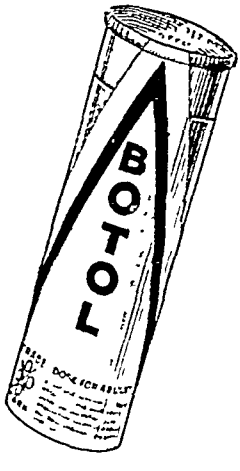
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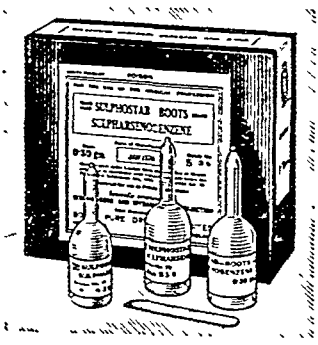
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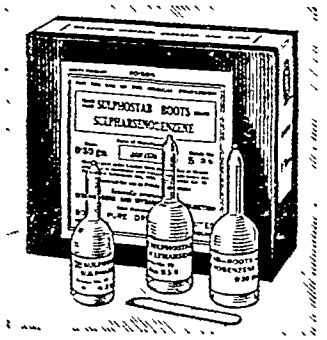
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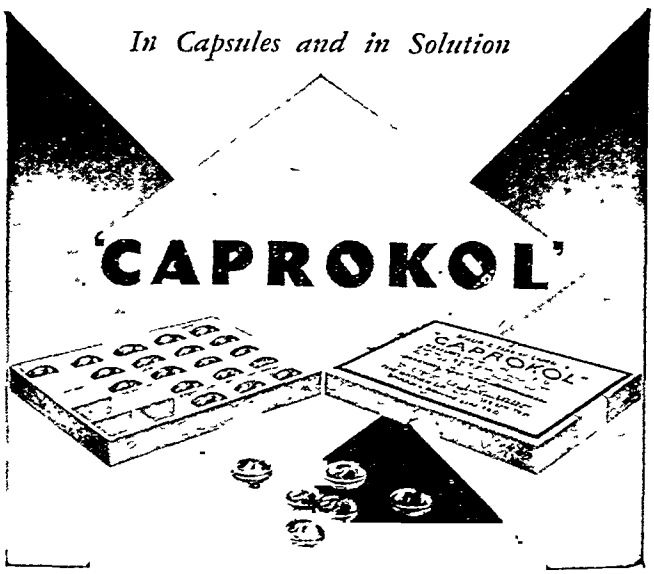
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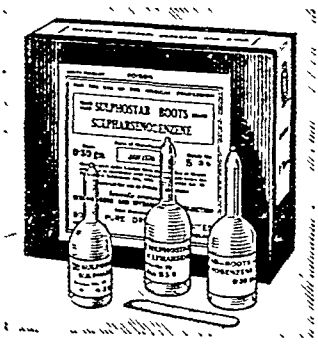


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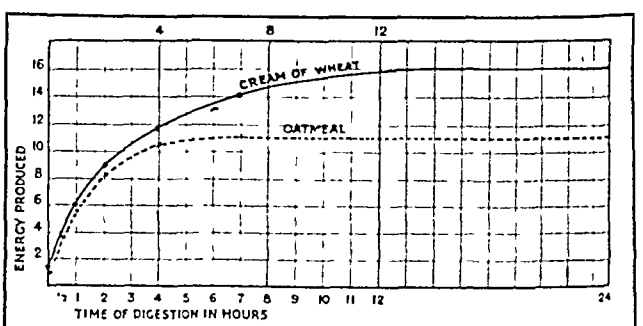
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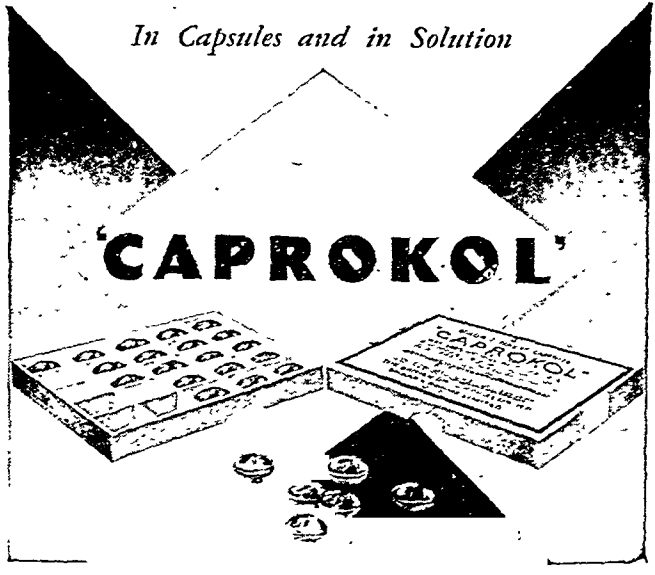
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• *Modern Infant Feeding* ...BERNARD MYER... Pp. 90. (Publishers, Cape, 1930.)

• *Diseases of Children* ... Sir ARCHIBALD E. ... M.A., F.C.P., F.R.S., the late FREDERICK ... F.C.P. and HUGH THURSFIELD, D.M., M.A., F.R.... 21. (London: Edward Arnold & Co., 1929.)

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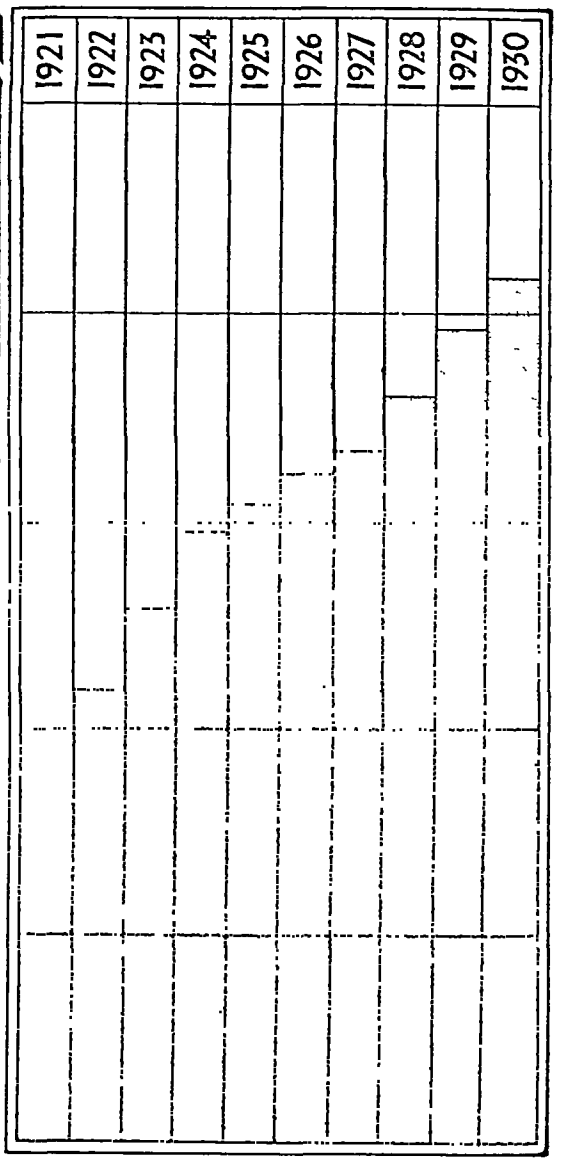
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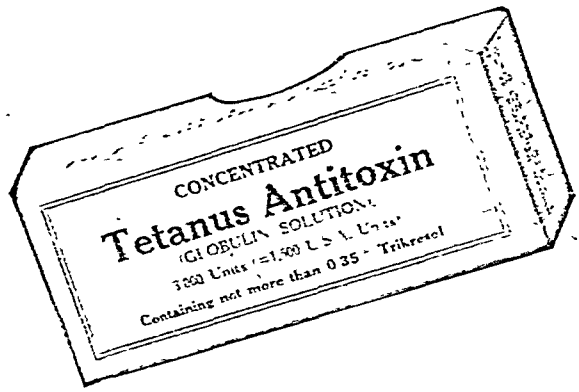
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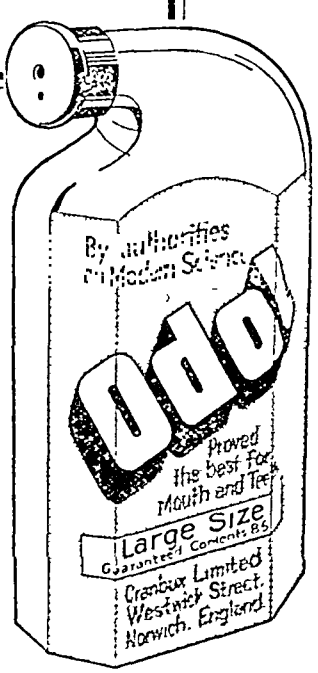
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Remarks
ON
SOME CLINICAL PICTURES ATTRIBUTABLE TO LEAD POISONING
WITH SPECIAL REFERENCE TO THE NEUROLOGICAL MANIFESTATIONS OF PLUMBISM*

BY

EDWIN BRAMWELL, M.D., F.R.C.P.

MONCRIEFF-ARNOTT PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY OF EDINBURGH; PHYSICIAN TO THE ROYAL INFIRMARY, EDINBURGH

Perhaps it may seem strange that I should have chosen as the subject of this lecture a disorder which is relatively uncommon, and which may be said to be upon the wane. An explanation to justify my choice would consequently seem necessary, although I feel that no apology is called for. Lead poisoning may be acquired from numerous unsuspected sources, and may appear under a variety of subtle guises. The diagnosis (and it is of diagnosis that I propose particularly to speak) may be at once suggested by the patient's occupation, for there are certain industries in which it is common knowledge that the workers are especially exposed. On the other hand, there are many occupations in which the risk is not so generally realized and many different ways by which accidental lead poisoning may be brought about. When the preliminary anamnesis fails to indicate the cause the possibility of lead poisoning will not occur to the practitioner unless it is suggested by the symptomatic features which the case presents. Hence the importance of an acquaintance with the varied symptomatology of plumbism. The clinical pictures which I purpose to portray may consequently prove helpful.

My first consultation after entering practice some thirty years ago (the case was one of lead poisoning) has for various reasons left an indelible impression on my mind. Such memories are invaluable; they constitute, indeed, an essential part of clinical experience, for, when the exceptional and unexpected are again encountered, they may indicate the line of approach or even serve to determine the diagnosis. For the purpose of this lecture I have, with undoubted benefit to myself, and I trust the result may be not unprofitable to you, reviewed my experience of lead poisoning and selected from my notes of some thirty cases, in a number of which the cause had not been previously suspected, several which exemplify some of the diverse manifestations of plumbism and raise certain problems of interest in this connexion.

OCCUPATIONAL AND ACCIDENTAL LEAD POISONING

Since the recognition of the source of poisoning plays so prominent a part in diagnosis it may be well in passing that I indicate some of the industries fraught with special danger and some of the sources of accidental poisoning. Occupational lead poisoning has long been recognized, and periodic inspection of the employees engaged in many industries is now insisted upon as a routine procedure. Medical practitioners are, indeed, under a statutory obligation to notify cases of lead poisoning occurring in a factory or workshop. A great deal of valuable information has been so acquired, and the risks of industrial poisoning, which are now known to be largely due to the inhalation of particles of lead contained in dust or in fumes, have been materially diminished by the application of appropriate preventive measures. Sir Thomas Legge,[1] in a recent paper on industrial lead poisoning, has classified the cases of plumbism reported to him over a period of twenty-five years in his official capacity as the senior inspector of factories. The various occupations, including that of house painting, with the number of cases reported during the year 1925, were as follows: house painting, 88; electrical accumulators, 73; pottery, 45; ship breaking, 31; coach building, 23; smelting of metals, 22; ship building, 13; white lead, 12; enamelling, 9; printing, 8; paints and colours, 8; plumbing and soldering, 7; red lead, 7; tinning, 4; litho transfer making, 2; indiarubber, 2; other contact with molten lead, 17; paint used in other industries, 14; other industries, 29. There has been, it seems, a material and progressive diminution in the number of cases in all the occupations in which lead poisoning is specially met with, apart from electrical accumulators, a rapidly growing industry, and ship breaking, a new industry which came into existence during the war.

The term "accidental" is applied to cases of lead poisoning attributable to causes other than occupational exposure. These are very numerous, and often obscure. Contamination of drinking water derived from a peaty soil is, because of its comparative frequency, of special importance as a cause of chronic lead poisoning. The acids in the soft water act upon lead pipes, particularly if the pipes are new, and dissolve the lead. Instances are recorded in which epidemics of lead poisoning have been so produced. Poisoning may result when the quantity of lead in the water is not more than 0.01 grain per gallon. But it is not necessary that the lead should be in solution, for Sir Thomas Oliver[2] reports a case in which lead poisoning was caused by several lumps of white lead left in a cistern by careless workmen. The water was muddy in appearance from the precipitated lead, and lead was deposited on vegetables boiled in it. Among many other possible causes of accidental lead poisoning are the following: drinking aerated water from siphons with lead or pewter valves; drinking beer, wine, or cider which has been drawn through lead pipes; eating tinned articles of diet in which solder has been used in the tinning process; eating confectionery in the preparation of which lead chromate has been utilized for colouring purposes; drinking tea or eating food or sweets wrapped in lead foil, etc. Sucking the fingers and biting the nails after contact with white lead paint was the cause of the epidemic of lead poisoning in children reported by Lockhart Gibson[3] of Brisbane in 1897.

Although poisoning is very rarely caused by lead when prescribed for medicinal purposes, it is sometimes so produced. Plumbism has, for example, been reported in cases in which lead acetate has been given to control diarrhoea. Infants have been poisoned by lead ointment applied to an excoriated nipple. Poisoning has also been observed in cases in which an ulcer has been dressed with lead lotion. The risk of absorption of lead through the unbroken skin is very small, but lead poisoning has been known to follow the application of hair dyes, cosmetics, and lotions.

Lead has seldom been employed with criminal intent for purposes of suicide or homicide; at one time, however, it was widely used, and is still sometimes employed, as an abortifacient. Nowadays the sale of diachylon is restricted under the Poisons Act.

A CASE OF "LEAD NEURITIS" IN WHICH WEAKNESS OF THE RIGHT HAND WAS THE PATIENT'S SOLE COMPLAINT

The first case to which I shall direct your attention is in many respects typical, since it exemplifies the form of nervous lesion most often met with in lead poisoning.

A lead smelter, aged 34, was seen on January 8th, when he brought with him a note from his medical attendant to the effect that he had a right-sided radial paralysis. The patient stated that he had worked as a lead smelter for ten years,

* A British Medical Association Lecture delivered to the Leeds Division, March 25th.

that to his knowledge he had never had any symptoms of lead poisoning, and that he had had no illness prior to the onset of his present trouble some three months previously. At that time, when feeling otherwise perfectly well, he noticed that he was unable to straighten the middle and ring fingers of his right hand. The weakness of the hand, which had come on gradually and without apparent cause, had, he said, been progressive. Although he had had some sharp pains at times, extending from the region of the right elbow to the dorsum of the thumb, he had noticed no numbness or other subjective sensation in the skin. Further, it was ascertained from the patient, only, however, in answer to direct leading questions, that for the previous two months he had been rather constipated, that his appetite had been poor, and that occasionally he had had some pain in the lower abdomen, though this had never been severe, and from his description had not been definitely colicky in character. Again, he stated that there was no weakness of the left hand, and that he had been doing a full day's work up to the previous day.

Upon examination the patient's appearance was that of a healthy man, though he was possibly slightly anaemic. There was, indeed, a secondary anaemia, for the red cells numbered 3,610,000, the haemoglobin was reduced to 55 per cent., and there was a distinct punctate basophilia. The extensors of the right hand, notably those of the middle and ring fingers, of the thumb, and of the wrist, were obviously weak, though there was no definite wasting; there was no paresis of the small muscles of the hand, of the brachio-radialis, or of other muscles of the arm. The muscles of the right forearm and upper arm were hypersensitive on pressure. The deep reflexes of the right arm were less active than those on the left side. There was no sensory loss. Despite the patient's statement that he had noticed no weakness of the left hand, the power of the extensors of the left wrist, but not that of the fingers, was found to be definitely reduced when tested against resistance. There was no weakness of, or alteration in, the reflexes in the lower extremities, and no tremor, nor was there a blue line on the gums, but it should be added that the patient was edentulous. Further examination revealed no additional physical signs. Lead was not found in the urine even after large doses of potassium iodide had been given for three days.

There can, you will agree, be no doubt as to the diagnosis of lead poisoning on the data I have presented to you. The patient's occupation, the bilateral though asymmetrical weakness of the extensors, the history of constipation, loss of appetite and abdominal pain, and the associated secondary anaemia with punctate basophilia place the diagnosis beyond question. But had it not been that the patient was a lead smelter, the possibility of lead might never have suggested itself, and the case might have been diagnosed on cursory examination as a simple radial palsy of undetermined etiology, for the patient's one complaint was of weakness of the right hand, he did not look ill, and it was only in answer to direct questions that the history of constipation and slight abdominal pain was elicited. There is indeed no reason why a lead worker should not develop a coincidental radial palsy. On the other hand, the gradual onset of the paresis affecting, in the first instance, the extensors of two fingers only, and the progressive course would probably, I think, have aroused the suspicions of those of you who have had some experience of lead poisoning.

A number of pertinent questions are raised by the case to which I have just referred. Why should a lead smelter develop symptoms of lead poisoning for the first time after working at his occupation for ten years? Sometimes, in similar circumstances, a history may be obtained to the effect that the patient had had influenza or some preceding illness, that he had been indulging in alcohol to excess, that he had been doing extra work, or that he had been especially exposed to lead immediately prior to the onset of his trouble. But in other cases, as in the present instance, no clear evidence of a determining cause is obtained. Then this case demonstrates a point I wish especially to emphasize—that wrist-drop due to a "lead neuritis" may be the first and only obvious manifestation of lead poisoning. Why should this be? The problem is an interesting one, since it raises the whole question of the selective action of poisons. Is it not an interesting fact that the musculature of the upper limbs, and particularly the extensors of the wrists and fingers, should be picked out so often by lead, whereas the lower limbs so rarely suffer? I know of no form of multiple neuritis, apart from occasional post-diphtheritic types, in which this is so. The study of the exceptional sometimes throws light upon the commonplace. Numerous reported observations appear to indicate that muscular effort plays a part in determining the incidence of the paralysis. The facts in this case are suggestive in this connexion, for the patient, whose work chiefly consisted in ladling lead, informed us that he was in the habit of grasping the end of the iron ladle with his right hand while he supported the shaft of the ladle with his left. The employees in the works in which this patient was engaged were, he informed us, inspected once a month, when the inspector examined the gums for the presence of the blue line, looked at the eyes for anaemia, and noted whether there was any tremor of the hands. With the exception of a slight degree of anaemia, however, none of these phenomena were present here. On the other hand, this case demonstrates that a paresis of the extensors of the wrist and fingers may be the first noticeable manifestation of lead poisoning, and that unless this is pronounced it may cause little if any disability. Consequently it would seem to be advisable to test the power of the extensors of the wrists and fingers as a routine procedure. J. P. Leake[4] has devised a special instrument for this purpose, but an ordinary dynamometer, which I am in the habit of using for recording progress in cases of radial palsy, appears to be all that is required.

Etiological Considerations

The cause of lead palsy is still the subject of debate. For long the paralysis has been regarded as secondary to the histological changes which are met with in varying degree, in individual cases, in the peripheral nerves and spinal cord. Gowers[5] recognized two clinical types, in one of which the symptoms resembled peripheral neuritis, in the other, a progressive muscular atrophy of spinal origin. Messing[6] in 1913 described inflammatory changes in the muscles which were not, he thought, to be accounted for by interruption of the nerve fibres. Hyslop and Kraus[7] in 1923 were of opinion from their careful anatomical studies that lead palsy is due to a neuronitis which may affect any part of the neuro-muscular apparatus, while Aub[8] and his co-workers conclude that "in the light of more recent work on the chemistry of muscular activity and of lead within the body, it seems probable that the physiological lesion of lead palsy is in muscle."

Chronic Lead Poisoning Simulating Malignant Gastric Disease

The following case is of considerable interest from the diagnostic point of view:

A business man, aged 62, whose home was in the North of Scotland, was seen on August 31st, 1900. A history was obtained from the patient to the effect that he had been an exceptionally healthy man up to two years previously, when he had had influenza, since which time he had been troubled with occasional attacks of abdominal pain, not related to food, and unaccompanied by vomiting. In February, 1900, six months before we saw him, he had a second bout of influenza, and after this never seemed to regain his strength. For some months he had been rapidly losing weight; in the spring he weighed 11½ st., whereas he now weighed only 8 st. 5 lb. Further, he informed us that for six weeks or more his arms had been becoming progressively thinner and weaker, and that he had been much troubled with what he described as boring pains in the arms, especially about the shoulders.

The patient was sallow, rather anaemic, and somewhat emaciated. There was pronounced symmetrical wasting and weakness of the upper limbs. So weak were the deltoids that he could only raise his hands for two or three inches from his sides. The extensors at the elbow were relatively weaker than the flexors, the extensors of the wrists and fingers were definitely weaker than their opponents, and the brachio-radialis had, I see from my notes, escaped. An occasional fibrillary tremor was to be seen in the wasted muscles. There was no sensory loss, nor was there any weakness or wasting of the lower limbs. The knee-jerks were present, equal, and not exaggerated, and the plantar reflexes were definitely flexor. The spine showed no deformity, limitation of movement, or localized tenderness. No tumour was detected in the abdomen, the stomach did not appear to be dilated, the liver and spleen were not enlarged, nor was there any glandular enlargement. The radial arteries were slightly thickened and tortuous, the blood pressure was not high, the heart was not enlarged, and there was no albumin in the urine.

Such were the leading facts. What was the diagnosis? Malignant disease of the stomach or bowel had been suggested some months previously, a diagnosis which might naturally suggest itself in view of the patient's age, the abdominal pain, the constipation, and the loss of weight. At a later date, the pain in the arms and associated wasting and loss of power had been attributed to secondary growths involving the cervical nerve roots. This diagnosis now appeared to be very unlikely in view of the facts that, although the abdominal pains had been present for two years, no tumour could be felt, that no peristalsis was observed, and that there was no enlargement of the liver or glands. Further, it seemed very improbable that the condition of the arms was to be explained by secondary growths involving the nerve roots in the cervical region, for pain in the back had not been complained of, nor was there any evidence of disease of the bone or of implication of the spinal cord.

When the clinician is confronted by a complicated case, and when the most suggestive line of inquiry fails to lead up to a diagnosis, other lines of approach must be explored. Now in this case, setting aside for the moment the history of abdominal pain and the loss of weight, the striking feature was the more or less symmetrical wasting and weakness of, and pain in, the arms. These phenomena were certainly indicative of peripheral nerve involvement. But a symmetrical neuritis confined to the upper limbs is very rarely met with apart from lead. Might the facts of the case perhaps be so explained? This would account for the frequent attacks of abdominal pain. The suggestion appeared very feasible. True the atrophic palsy was not limited to the extensors of the wrists and fingers, but this is by no means always so in lead poisoning. The fact that the brachio-radialis muscles had escaped was in itself suggestive. But the patient had had a great deal of pain in the arms, and pronounced pain is an unusual feature in cases of lead palsy. It might be, however, that some additional etiological factor, possibly the influenza, would account for this. The patient lived in the Highlands, and was it not consequently possible that there might have been a contamination of a moorland water supply? These facts were indeed most suggestive. Was any further evidence available? The gums were next examined, and a blue line was observed opposite the two lower incisor teeth. Although the blue coloration of the gums was very faint—indeed, it would probably have passed unnoticed unless it had been specially looked for—its presence was sufficient, in association with the other features of the case, to practically clinch the diagnosis. Upon further inquiry the patient informed us that, although it was true that the water supply of his house came direct from the moor, the present system had been laid down some eight years previously. Two additional lines of inquiry were still open to us. The urine was examined by a skilled analytical chemist, who reported that he could find no trace of lead, but in his report he referred us to a recent authority who had examined the urine in fourteen cases of chronic plumbism and was only able to detect lead in two of these. On the other hand, on analysing the tap-water from the patient's house, he detected 0.12 grain of lead to the gallon of water. Conclusive proof of the diagnosis was afforded by the progressive improvement in the patient's condition after the correction of the faulty water supply. Among features of particular interest in this case were the great loss of weight and the unusual severity of the pains in the arms. No doubt the two attacks of influenza had, by lowering the patient's resistance, determined the symptoms.

Two methods are employed in arriving at a diagnosis: that is, the diagnosis may be based on the positive findings or arrived at by a process of exclusion. This patient was examined thirty years ago, and the diagnosis was suggested directly from the physical examination, was supported by the history, and confirmed by the detection of lead in the water supply and the rapid improvement after this had been corrected. Had the patient been seen to-day a number of diagnostic methods might have been employed for purposes of exclusion or confirmation which had not at that time been introduced—for example, the examination of the gastric contents for free acid, radiograms of the gastro-intestinal tract and of the spinal column, and the examination of the cerebro-spinal fluid and blood. But apart from the possible detection of a punctate basophilia, the occurrence of which in lead poisoning had not at that time been described, no additional evidence of a positive kind would have been obtained from these procedures.

ACCIDENTAL LEAD POISONING SIMULATING GASTRIC ULCER AND PROGRESSIVE MUSCULAR ATROPHY

Another case in which the source of the lead poisoning was the drinking water is of interest. The facts were as follows:

A married woman, aged 33, the wife of a gamekeeper, living in Inverness-shire, was seen on January 4th, 1915. The patient, I was informed, had suffered for some years from progressive muscular atrophy, and had been troubled from time to time with symptoms which had been attributed to a gastric ulcer, though she had never, so far as was known, vomited blood or passed blood by the bowel. The history was instructive. Bloodless since childhood, the patient stated that at the age of 19 she married and left her home in the South of Scotland to live in Inverness-shire. She had two healthy children, and had had no miscarriages. Some six years before I saw her, up to which time she said she had had no illness, the patient began to be troubled with attacks of abdominal pain, vomiting, and diarrhoea. About the same time she noticed that her hands, particularly the right hand, were shaky. These symptoms had continued to recur, although it was significant that when she left home to stay with her relatives in the Border country, as she did for a few weeks each year, her health always improved. A medical man whom she consulted sent her to see a distinguished surgeon, who, the patient said, agreed with the diagnosis, but was of opinion that operation was not called for. (It would be of interest to hear from surgeons of large experience whether they have ever met with, or operated upon, cases of lead poisoning sent to them with a diagnosis of gastric ulcer, intestinal obstruction, or appendicitis. I know personally of one case which was admitted directly to a surgical charge as a case of chronic appendicitis in which the symptoms were, I think, almost certainly to be explained by the lead poisoning from which the patient was suffering.) For some months before I saw her the patient had also been suffering from severe pains in the knees and elbows with, so she said, some swelling of the joints.

Upon examination there was a complete symmetrical paralysis, with very pronounced wasting of the extensors of the fingers and wrists. There was, too, great weakness and wasting of the small muscles of the hands. No fibrillary tremors were observed. The brachio-radialis and the muscles

of the upper arm and shoulder girdle had escaped. There was no sensory loss, nor was there any weakness or alteration in the reflexes of the lower limbs.

The distribution of the paralysis in association with the history was most suggestive of lead poisoning. There was no blue line on the gums, but the patient was edentulous. Upon further inquiry it was ascertained that a new water supply from a peaty well had been introduced into the patient's house a few months before she first commenced to suffer from the symptoms above described. Corroboration of the diagnosis was obtained when the tap-water was examined and found to contain 0.4 grain of lead to the gallon.

Among a number of interesting features presented by this case were the following: the occurrence of diarrhoea and vomiting in association with the abdominal pain; the improvement which occurred when the patient left home; the arthritic pains which are observed in some cases of lead poisoning; the great wasting and weakness of the small muscles of the hands in addition to the extensors; and the patient's statement that, although her husband and children looked pale, and had never felt well after the introduction of the new water supply, they had not suffered from colic or paralysis. Women are, it is affirmed, more susceptible to lead poisoning than are men.

So pronounced was the wasting of the hands and forearms in this case that I was very doubtful as to the ultimate recovery of the muscles, but when I examined the patient in January of this year she had completely regained the use of the hands and arms, and was looking in robust health.

LEAD ENCEPHALOPATHY, DUE TO DIACHYLON POISONING, SIMULATING BRAIN TUMOUR

Cases of lead encephalopathy are rarely met with nowadays. I can only recall two occasions upon which I have made this diagnosis.

A widow, aged 28, was admitted to hospital under my care on October 9th, 1929, when she complained of intense headache, vomiting, and double vision, which symptoms had troubled her for a month. The patient was somewhat confused and agitated, and when first seen it was not possible to obtain from her a very precise history of her illness.

Upon examination she was well developed, well nourished, but distinctly anaemic. There was a right internal strabismus, which the patient said had been present since early childhood. The pulse rate was rather fast (104), but there was no febrile disturbance. The retinal vessels were engorged, and the right optic disc definitely swollen. Otherwise the cranial nerves presented no abnormality, and there was no history of otorrhoea. There was no weakness, inco-ordination, or tremor in the upper limbs. A slight degree of ataxia was present in the lower limbs, but no distinct weakness. The knee-jerks and one ankle-jerk were absent, as were the abdominal reflexes. Both plantar reflexes were definitely flexor. There was no tenderness of the muscles on pressure. Apart from a soft mitral systolic murmur nothing abnormal was detected on examination of the thorax and abdomen. The radial arteries were not thickened, the blood pressure was not raised, and the urine contained no albumin. The result of the examination of the blood was as follows: Red blood cells, 3,650,000; haemoglobin, 50 per cent.; white blood cells, 12,800. Differential count: polymorphonuclears, 80 per cent.; small lymphocytes, 20 per cent.; basophils, 1 per cent.; no punctate basophilia. The Wassermann reaction was negative in both the blood and the cerebro-spinal fluid. The latter contained two cells per c.mm. There was no increase of protein, and the colloidal gold test was 0011000000. No lead was found in the urine, which was examined on two occasions by the Ganassini test. The Zondek-Aschheim test for pregnancy was negative.

The diagnosis of lead poisoning, which was at once suggested by the blue line on the gums, was confirmed by further inquiry, and by the subsequent history of the case. The patient was obviously agitated and worried, and upon questioning her directly she admitted that, after missing a menstrual period two months previously, she thought she might be pregnant, and had bought an ounce of diachylon and two pennyworth of aloes, which she had made into pills and taken during the first fortnight of September. Further, she said that the headache and vomiting commenced immediately after she began to take the pills. Three days after the patient's admission to hospital she developed hallucinations and delusions of sex, and commenced to have severe attacks of abdominal colic. She was not taking potassium iodide at the time, a point of some interest, for cases have been reported in which symptoms of acute lead poisoning were precipitated by potassium iodide, in some instances long after exposure to lead had ceased. Gradually the patient's symptoms passed off, and when she was discharged, on November 21st, she was practically well. When seen on January 17th, 1931, she said that she felt in perfect health; she had had no further headache, abdominal pain, or vomiting, the knee- and ankle-jerks were present, the fundus oculi was perfectly normal, and she was no longer anaemic.

Lead encephalopathy, which is characterized by such symptoms as headache, vomiting, papilloedema, passing on it may be to optic atrophy, hallucinations, mental depression or exaltation, dementia, tremor, paresis, and epileptiform seizures, is undoubtedly very uncommon. Sir Thomas Legge[1] met with this diagnosis in only 1.1 per cent. of the male and 2.1 per cent. of the female cases reported between the years 1920–24. Byrom Bramwell long ago insisted upon the importance of keeping this possibility in view in suspected cases of brain tumour. It is possible, indeed, that some of the reported cases of recovery from brain tumour are to be so explained. Mott[10] was of opinion that lead encephalopathy was of the nature of an encephalitis. Aub[11] and his collaborators take the view that the process is meningeal, basing their conclusions on the observations of (*a*) Hassin, who found a marked proliferative meningitis and relatively slight changes in the brain, of (*b*) various observers who have found increased pressure and an excess of lymphocytes in the cerebro-spinal fluid, and of (*c*) Camus, who produced excitability, "hallucinations," and convulsions just before death in dogs in which lead had been injected into the subarachnoid space by cistern puncture, whereas no symptoms followed when the lead was injected into the brain substance.

W. B. Ransom[12] drew attention in 1900 to the then very prevalent use of diachylon as an abortifacient, and suggested that something should be done to restrict the indiscriminate sale of the drug. Although diachylon is now included in Part I of the poisons schedule, the case to which I have referred shows that it may still be obtained and is still used for this purpose. Indeed, one should always bear in mind the possibility of lead poisoning when one is consulted by a woman of child-bearing age who complains of severe headache and vomiting, who is perhaps anaemic, and in whom there is a history of amenorrhoea. It is to be remembered that a single dose of diachylon may produce symptoms of poisoning, that these may persist for months, and that they may be aggravated by an intercurrent febrile illness.

SPASTIC PARAPLEGIA A CONSEQUENCE OF LEAD POISONING

Doubt was at one time expressed as to whether a pronounced spastic paraplegia is ever produced by lead. The following case is of interest in this connexion:

A gentleman, aged 56, was seen on July 18th, 1911, complaining of difficulty in walking, which had troubled him for three or four years. He had, he said, had no previous illness, apart from an attack of typhoid fever some twelve years previously. The history he gave me of his illness was

as follows. Four years before I saw him the patient had been troubled for some weeks with a pain about the right knee. At the same time, or soon after, he noticed some weakness of the hands and a tendency to drag the right foot when walking. The right leg became gradually stiffer, and soon after the left leg became similarly affected. He then began to have attacks of severe abdominal pain, vomiting, and constipation. His brother, who lived in the same house, commenced at the same time to be troubled with stiffness in the legs. After the weakness of the hands and attacks of abdominal pain had persisted for some six months the patient's medical man recognized that he was suffering from lead poisoning. He wrote me: "It was about this time that I suspected plumbism, and found that the patient had a blue line on his gums. The drinking water was analysed by Dr. Falconer King, who reported the presence of 0.15 grain of lead per gallon. Since then the water has been taken from a well free from lead contamination, and the patient has greatly improved in health and power of walking. He seemed always better away from home." According to the patient's statements, the attacks of abdominal pain disappeared at this time and have not recurred, the power of the hands was gradually regained, but the difficulty in walking has persisted.

Upon examination the patient had a good colour, and was well nourished. The only symptom of which he complained was difficulty in walking. His general health was, he said, excellent. The gait was very spastic, both lower limbs being affected to the same degree, though the patient was able to walk across the room with the aid of a stick. The muscles of the thighs and of the anterior tibial group were somewhat wasted. No fibrillary tremors were observed. The knee-jerks were exaggerated, and there was bilateral ankle-clonus and a bilateral extensor response. There was no sensory loss, and nothing abnormal was detected on examination of the upper limbs, cranial nerves, or other organs.

I heard nothing more of this patient until January of this year, when, in reply to my inquiries, he wrote:

"I am now 74 years of age, and there is little difference in my health. The loss of power has not extended to any other part of my body. This would seem to indicate that the disease has been stationary ever since I discontinued using the poisoned water. My brother, who also suffered from lead poisoning, died about two years ago, aged 70. He never recovered the use of his limbs. Latterly he had one or two shocks, and was bed-ridden for a while before his death."

That the patient had suffered from lead poisoning is clearly shown by the history of attacks of abdominal pain, the weakness of the hands, the presence of the blue line on the gums, the detection of lead in the water supply, and the improvement that occurred after the source of poisoning had been eliminated. There can be practically no doubt that the spastic condition of the lower limbs was due to the same cause, for the difficulty in walking developed at the same time and ceased to progress after the water supply was changed. It is interesting to note that the patient's brother was similarly affected.

J. J. Putnam,[13] so long ago as 1887, described some cases of spasticity of the lower limbs in which he demonstrated lead in the urine. Kinnier Wilson,[14] who in 1907 reported four cases of amyotrophy in men who, from the nature of their occupations, must have been exposed to lead, in each of which the onset was with double wrist-drop, while in three there was a certain amount of spasticity in the lower limbs, remarks, "One cannot but be struck with the progressive nature of the affection, which is so contrary to the ordinary forms of lead poisoning where cures are by no means uncommon." In the present case, however, the progress of the nervous symptoms appears to have been definitely arrested.

COMMENTARY

The cases I have referred to illustrate some of the varied clinical pictures attributable to lead poisoning. Is it not a remarkable fact, though it is an everyday experience, that the same disease-producing agent may affect individuals so differently? We see this constantly exemplified, and yet we are often quite unable to account for the incidence of symptoms, and have to content ourselves by attributing the special symptomatology the case presents to some peculiarity of the virus, to personal idiosyncrasy or individual predisposition, or to the presence of additional etiological factors which it is not always possible to demonstrate or assess. While the majority of patients suffering from lead poisoning no doubt come to the practitioner complaining of attacks of colicky pain referred to the lower abdomen associated with constipation, of cramps, of general debility, and of other symptoms associated with anaemia, these symptoms may, as exemplified by more than one of the cases to which I have referred, be relatively insignificant while the nervous phenomena predominate. When this is so, the nature of the condition, as I have emphasized, may never occur to the clinician, even when he happens to be conversant with the clinical features which may be met with as a consequence of lead. Personally I have a guilty feeling that I have probably failed to recognize cases of the kind. Sometimes, perhaps, because one has not realized the occupational risk, sometimes because one has not elicited the history with sufficient care, sometimes because the symptoms have suggested to one a different etiology, and sometimes because, although one has suspected lead, one has not been able to obtain confirmatory evidence.

When, in any given case, one suspects lead poisoning from the character of the nervous symptoms, what are the points to which special attention should be paid for purposes of corroboration?

1. The patient's occupation may raise the possibility. Reference has been made to those industries in which there is a special risk.

2. Upon inquiry one may obtain a characteristic or suggestive history of attacks of intermittent, colicky, lower abdominal pain which is relieved by pressure.

3. The blue line on the gums, when present, is distinctive. It is, however, merely an indication of exposure, and not necessarily of poisoning, for many lead workers show the blue line and manifest no symptoms. But when symptoms are present which raise the possibility of plumbism the blue line is of the greatest diagnostic value. It is, however, to be remembered that this sign fails us when the patient is edentulous or the teeth well cared for.

4. The examination of the blood in most cases of lead poisoning shows a secondary anaemia with, in almost all cases, a punctate basophilia, which may, however, vary from day to day. To the latter appearance much importance is attached as an indication of early lead poisoning. Although not pathognomonic (for an occasional cell showing punctate basophilia may, it is affirmed, be sometimes seen in normal blood, and cells of this type are also met with in pernicious anaemia and leukaemia), the presence of definite stippling is a most suggestive sign in a case of suspected plumbism.

5. Lead may be found in the urine, and its presence is then a clear indication that it has been absorbed into the system. On the other hand, its absence does not exclude lead poisoning, for the lead may be retained in the tissues. Of 200 patients with suspected lead poisoning examined at the Mayo Clinic[15] 100 were shown to be excreting lead in the urine. Lead may indeed be found in the urines of individuals who are admitted to hospital for various conditions, who have not encountered obvious occupational hazards, and who present no symptoms suggestive of lead poisoning. Consequently, while further observations are called for, the presence or absence of lead in the urine is a point to which too much importance must not be attached.

From what I have said you will see that, while in many cases the diagnosis of lead poisoning is obvious, in others the possibility may never suggest itself, while

even in cases in which one suspects lead as the cause of the clinical picture a definite conclusion may only be arrived at after a careful consideration of all the facts if the source of poisoning is not detected.

Coincidences are sometimes remarkable. Two days ago, within an hour of writing the above lines, I saw at the hospital a man, aged 50, who had been under my care in June of last year with an anterior crural neuritis of undetermined etiology. The patient has now practically recovered, but the symptoms, as the notes showed, were anomalous. I recalled a remark of that great clinical master Sir William Gowers,[16] who in writing of the diagnosis of lead poisoning says, "It is not possible to avoid error in such cases except by the habit of remembering lead as a possible cause in obscure cases." Was it possible that this man's symptoms had been caused by lead? Upon inquiry as to his occupation he informed me that he was a house painter, and, further, I found that while he was in hospital the house-physician had noted the presence of "a slight blue line round the gums." The teeth had since been extracted, and the line had consequently disappeared. Further, the patient stated that, although he had worked as a house painter for thirty-five years, he had never been troubled with abdominal pains, weakness in the hands, or, so far as he knew, any symptom of lead poisoning. The probabilities would, however, appear to be that this was the cause of his symptoms in view of their anomalous character and the absence of any other apparent etiological factor.

There is a natural tendency to associate symptom-complexes with individual diseases. Now while this is of undoubted value in furthering the general recognition of the disorders in question, it has its disadvantages. There can, for instance, be no question that the symptomatic triad—intention tremor, nystagmus, and scanning speech—emphasized by Charcot in disseminated sclerosis, was too restricted and retarded diagnosis in so far as it failed to include many cases which we now know to be due to the same pathological process. Similarly the three symptoms of lethargic encephalitis to which so much importance was originally attached—lethargy, febrile disturbance, and ocular palsies—concentrated attention upon one particular type of the disease. The same applies to the diagnosis of plumbism, for when we think of lead poisoning most of us, no doubt, at once recall the characteristic wrist-drop, whereas we are apt to forget that a variety of nervous symptoms may be so produced. There is an aphorism so familiar that it savours of a platitude—"More mistakes are made by not looking than by not knowing." Mistakes in the diagnosis of lead poisoning are often due to not expecting. My purpose will have been achieved if I have succeeded in impressing you with the importance of thinking of lead poisoning as a possibility in every case with which you meet which presents anomalous nervous symptoms.

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CUMULATIVE EFFECTS OF INFINITESIMAL DOSES OF LEAD*

BY

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There are two types of plumbism: one, the classical lead poisoning of the textbooks, caused by massive doses; the other, little known, a slow, subtle, insidious saturation of the system by infinitesimal doses of lead extending over a long period of time, and producing a group of symptoms altogether different from the recognized forms of plumbism.

In the type of plumbism to which I refer there is rarely colic, seldom a blue line on the gums, and wrist-drop will occur only if the significance of the early symptoms is not recognized. There is rarely noticeable anaemia. I cannot say if an examination of the blood would reveal any approach to the blood destruction characteristic of the grosser forms of lead poisoning.

SIGNS AND SYMPTOMS

A strange lethargy creeps over the sufferer; he feels as if a cloud had settled over him; he loses interest in life; everything is a trouble—a weariness of flesh and brain. He prefers to sit over the fire to tackling his work, though when he forces himself through his tasks he finds no diminution of brain or bodily power. As the condition continues he becomes gloomy and taciturn. Instead of joining in conversation with relatives and friends he sits silent and apathetic, as if overcome by thoughts too melancholy to utter. All his faculties and bodily powers are sluggish. His bowels are constipated and stubborn, he derives no satisfaction from his food, and has perhaps abdominal discomfort, which he puts down to indigestion. The strange lethargy of body and mind increases. Sleep brings welcome respite, but he gets up tired and weary, as if he had not been to bed, though he has slept heavily all night; so tired, indeed, that to bathe, wash, and dress are ordeals he wishes he could shirk. Breakfast bucks him up, but during the day, oppressed with a weariness of body and misery of mind, and unaccountably tired, he succumbs to his desire to sleep. In neurotic females emotional outbursts, with flatulency and abdominal pain, may punctuate the melancholy.

Apparently lead puts a brake on metabolic processes. The listlessness may be due to deficient renal excretion or to a check to thyroid secretion. The hebetude is not unlike that of myxoedema, and I am sanguine enough to think that lead will lessen thyroid activity. The old doctors were not afraid to administer lead to their patients. The still officinal pil. plumbi cum opio was their favourite prescription. It has passed into the limbo of forgotten remedies, but it is possible that it might prove an efficient weapon in the hyperthyroidism of Graves's disease.

The patient gets no sympathy from those about him. If his expression is saturnine, his complexion is fresh and healthy, he sleeps well, forces himself to do justice to his meals, and his relatives set him down as a gloomy person who will not take the trouble to be chatty and lively. He is usually the only person in the house to behave so strangely, for lead has a selective action, and the freedom of others from symptoms increases contempt for the sufferer. Perhaps he sees a doctor, who suggests change of air. He goes away, and in a few weeks returns home a different man, full of life and energy, with all the

* Read before the North Wales Branch of the British Medical Association.

cobwebs cleared from his brain. But he soon loses the benefit of the change of air. The old lethargy and weariness overcome him again.

This is no fancy picture. I have myself twice suffered from this group of symptoms. Thinking that my bodily and mental hebetude were due to lack of it, I dosed myself with thyroid. That did not make me any brighter. Then, remembering my experiences in Huddersfield, where a soft moorland water caused lead poisoning, I had my urine and the domestic water supply tested for lead. The analyst reported that my urine contained 8/19 of a grain of lead per gallon, and the domestic water supply 1/14 of a grain. With the stoppage of the lead I soon regained my usual energy and good spirits. On going, however, to live elsewhere, the same bodily weariness and mental lethargy crept over me. I had the urine again examined, and it was found to contain 4/25 of a grain of lead per gallon.

Illustrative Cases

During my first attack I had under my care a young lady who, when well, was remarkable for her brightness and activity. A mysterious change had come over her. She was gloomy, taciturn, and miserable, and took no interest in the things which had formerly given her pleasure. She had attacks of a hysterical character, refused food from the discomfort it gave her, and suffered much from flatulence. After some ineffective treatment I had her urine examined. It contained 4/7 or about half a grain of lead in each gallon, and the domestic water supply 1/14 of a grain per gallon. She went away from home, returned her bright, active, healthy self, and with the stoppage of the lead has had no return of her symptoms.

Another case was that of a young doctor who went to live in the South-West of England. When he had been there some time he began to lose energy, and was always weary. He attributed the symptoms to the enervating climate of the South Country. When I heard that the water supply was a soft water I suggested that he should have his urine tested for lead. He scoffed at my suggestion. I have never seen granular kidney as a result of this type of plumbism, but in men who drank to excess I have twice seen lead encephalopathy with unconsciousness and convulsions, and when lead poisoning was prevalent in Huddersfield there was an unusual number of cases of puerperal albuminuria and convulsions. Lead, by slowing bodily processes and hindering metabolism, accentuates the liability of the pregnant woman, with her overcharged system, to develop albuminuria and convulsions. When I heard that this doctor's wife had been laid aside by puerperal albuminuria I told him my Huddersfield experiences, and urged him to have his urine tested for lead. This he did, and the analyst reported that it contained 1/10 of a grain of lead per gallon. Three weeks after the stoppage of the lead he wrote: "I am glad to say that since installing the filter I am much better, not so lazy, but there is still room for improvement." Six months later he reported himself as free from any symptom of plumbism.

After now to the possibility that lead might be the cause of his patients' symptoms, this young doctor had the urine of eighteen of his patients tested. In seven no lead was found, in one there was copper, and in the other ten quantities of lead varying from 1/125 to 1/5 of a grain of lead per gallon. Those in whom the larger quantities of lead were found improved after the installation of a filter.

Another case is that of an elderly maiden lady. Her chief complaint was that she was always tired. I begged her to have the urine tested. It was found to contain 8/9 of a grain of lead per gallon. This patient has high blood pressure, reaching at times to 252 mm. Hg systolic and 121 mm. Hg diastolic, a condition which I believe to be exceptional in this form of plumbism. Every year she has gone away, and has had treatment at Harrogate or Ruthin, always returning feeling better. Recently she went to Cheltenham for a month, and though she had no medical treatment, she returned from there feeling better than she had done for years. But with the return to the plumbo-solvent water, the old tired feelings set in again.

Diagnosis

This type of plumbism is so little known that it may be overlooked. One patient, whom I sent from home in order to get her away from the lead, was told by a doctor she consulted that she had never had lead poisoning, although lead in quantity was found in both her urine and the domestic water supply, and another doctor told a patient with wrist-drop that the cause could not be lead poisoning, as there was no lead poisoning in the place, although I myself had seen several cases of the type I have described. The symptoms are so different from the plumbism of textbooks that the cause may not be suspected.

The diagnosis of this insidious form of plumbism must never be made from symptoms. If the medical attendant suspects that lead is the cause of his patient's malaise he must not reveal his suspicions until he has verified them. He should ask for a specimen of the patient's urine, saying he wishes to see if the kidneys are sound. If on examination the urine is found free from lead and is otherwise healthy, the doctor has not compromised himself by a premature and mistaken opinion. Not until he has found lead in the urine should he question the purity of the water supply.

The problem is not easier because the symptoms can arise from other causes. When I lived at Criccieth I had an overpowering desire to sleep during the day, although I slept all night. An examination of my urine showed that it contained no lead, and the drinking water a fraction of lead too small to be harmful. My somnolence was due to septic teeth and tonsils. Suspicion should be aroused if a patient, whose water supply is soft, improves on being sent away, only to revert to his misery on returning home.

Nor must one forget that a patient who passes lead in the urine can be attacked by other disorders. A good many years ago I saw a man with symptoms pointing to overpowering of the nervous system, but not sufficiently distinctive to implicate brain or spinal cord. The late Sir Clifford Allbutt saw the patient with me, and, hearing that lead had been found in the man's urine and domestic water supply, agreed that lead was the probable cause of the man's condition. Signs of intracranial pressure came on later, with a slowly progressive right hemiplegia, and the man lapsed into the unconsciousness characteristic of cerebral tumour. I began intensive mercurial medication in the form of hypodermic injections of perchloride of mercury, and the man made a good recovery, with some loss of power in the arm and leg. It transpired that he had had syphilis.

It is impossible for one who is not a skilled analyst to test urine for lead. A few ounces should be sent to a competent analyst. Lead in the urine is a proof that it is in the patient's system. The quantity expelled by the kidneys is no indication of the amount of lead floating round the patient's system. It represents only the surplus percolating through the kidneys. It is the soft waters, especially those from peaty moorlands, which dissolve the lead of the service pipes, and so small is the quantity taken up that it may be years before symptoms arise. Before my attacks I had consumed the lead-laden water for at least six years. The young lady I mentioned had taken the same water for years. The young doctor did not complain for some years, and the elderly lady had been consuming lead-contaminated water for some years before her symptoms made me suspect the presence of the poison. Long-continued ingestion of the poison, in persons susceptible to its action, becomes in time the equivalent of a toxic dose. The presence of only one sufferer in a house is but an exemplification of lead's selective action, or of the inability of the sufferer's eliminatory organs to get rid of the poison.

MATERNAL MORTALITY AND LEAD

Important as are the effects of small doses of lead on health, they acquire added gravity as a possible factor in the causation of maternal mortality. The Registrar-General divides deaths in childbed into two groups: those from puerperal fever, and those due to "eclampsia and other accidents and diseases." Taking the country as a whole, puerperal fever is the most frequent cause of maternal deaths. In places supplied with soft moorland water the position is reversed. There, eclampsia and other accidents and diseases outnumber the deaths from puerperal fever, in some places by more than three times. In an appendix to her report on maternal mortality, Dame Janet Campbell gives the death rates of the Registrar-General's two groups for the four years 1919–22. During those four years the fewest maternal deaths from eclampsia and other accidents and diseases occurred in London, where they were 1.62 per 1,000 births. The London water, drawn largely from chalk-bearing strata, does not dissolve lead. In Dewsbury, Halifax, Huddersfield, Rochdale, and the county of Breconshire, supplied with plumbo-solvent water, the maternal mortality from the same causes was over 5 per 1,000 births, or more than three times that of London, while in Westmorland, Anglesey, Carmarthenshire, Caernarvonshire, Merionethshire, and Radnorshire, it was over 4 per 1,000 births, or about three times that of London. In the county of Westmorland, while there were three maternal deaths from puerperal fever, there were ten from eclampsia. The high maternal death rate from eclampsia and other accidents and diseases occurs where there is soft plumbo-solvent water. The main responsibility for this high death rate rests on eclampsia.

There must be some reason for the disparity between the figures for London and the places I have quoted. Other accidents and diseases of childbed cannot be more frequent in the places I have named than in London. The disparity is greater than the figures indicate, for the London figures are swelled by the cases of eclampsia which occur there. We know that lead is eliminated by the kidneys, and though I can produce no analyses of either blood or urinary urea, the sluggishness and somnolence I have described are not unlike the defective kidney action of Bright's disease. In its grosser forms of poisoning lead damages the kidneys, and more than one of my patients suffering from the subtle form of plumbism have had the nephralgia characteristic of the passage of gravel through the urinary organs.

Next to septicaemia eclampsia is the highest factor in maternal mortality. Knowing the symptoms which I have felt in my own person and observed in my patients, and remembering the frequency of eclampsia when subtle lead poisoning was prevalent in Huddersfield, the high mortality from eclampsia and other accidents and diseases of pregnancy in places supplied with plumbo-solvent water suggests that the continuous ingestion of minute quantities of lead may be the explanation of an otherwise unaccountable mortality. Though the quantity of lead imbibed may be small, it may be enough to turn the scale and precipitate the occurrence of eclampsia in a pregnant woman on the verge of toxaemia. If the conclusions I draw from the figures I have quoted are well founded—and they are confirmed by an examination of the death rates in other places too numerous for mention here—we have, ready to our hands, one means of reducing a great cause of the baffling problem of maternal mortality.

The remedy is simple—to stop the ingestion of lead. This can be done by sending the patient away from the lead, by substituting pipes lined with block tin for the lead pipes, or by passing every drop of water used in the preparation of food or for drinking purposes through a filter with a charcoal filtering bed. The so-called tin-washed pipes are not a protection, and only a filter with a charcoal filtering medium can be trusted to remove lead from a plumbo-solvent water.

Water supplies contain organic matter derived from the soil of the gathering ground, sometimes sufficient to discolour the water. In moorland waters there is an acid derived from the peat. The lead dissolved is not a simple inorganic salt, but a complex organic compound. It is by its affinity for organic substances that lead injures the body and destroys the embryo in utero. Charcoal, as we know from its effects in fermentative disorders of the digestive tract, attacks organic matter. In a carbon filter the fraction of organic lead in the water is acted upon by a mass of carbon compared with which a dose of charcoal by the mouth is insignificant. After from six to twelve months, according to the use it has had, the charcoal is not a reliable remover of the lead, and a fresh charge should be put into the filter.

No medicinal treatment is necessary to expel lead from the body. If the ingestion of lead is stopped and the eliminatory organs are active, the body will get rid of it. If iodides liberate lead from the tissues, the extra lead set free will aggravate the patient's symptoms.

SOME NEGLECTED SYMPTOMS IN ACUTE ABDOMINAL DISEASE*

BY

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Abdominal disease, whether acute or chronic, is diagnosed by considering three groups of observations. In the first place, local anatomical changes are detected by inspecting with the eyes or *x* rays, feeling with the fingers, or even by listening with the stethoscope; secondly, perversions of physiological function are deduced from certain symptoms indicative of visceral derangement or by carrying out certain tests which betray pathological changes in the abdominal organs; thirdly, when the disease is serious and is influencing the whole organism, note is taken of the great bodily systems, especially the circulatory, respiratory, metabolic, and excretory systems.

In chronic abdominal disease the slowness of the process allows time for compensation to occur; the slight physiological changes are masked or neglected until gross anatomical alterations may attract the attention of the observer, or the general bodily depreciation may be obvious to the patient and his friends. In acute abdominal disease physiological derangement plays a much greater part; rapid changes due to violent stimuli delivered without warning are the rule, and the need for immediate compensation of the vital systems is all too frequently unsatisfied; while gross anatomical changes either are absent or appear only at a comparatively late stage in the course of the illness. Unless these facts are appreciated diagnosis becomes haphazard and unscientific.

SIGNS AND SYMPTOMS OF SHOCK

It is well, therefore, to consider in the first place that symptom which is fairly common but still misinterpreted and ill-understood—that is, shock. When a sudden internal haemorrhage occurs, or when a very violent visceral stimulus is applied, the direct or reflex disturbance of the circulation leads to that clinical picture which is generally known as shock—cold extremities, subnormal temperature, pallor, sweating, a rapid and small pulse, and a lowered blood pressure. With a person who has been in

* An address to the Norwich Division of the British Medical Association.

good general health previously, however, compensation soon occurs, the circulation is soon re-established, and the observer finds it difficult to believe in the existence of any serious condition. Neglect to realize the wonderful compensatory mechanism of the circulation accounts for this misunderstanding.

Quite as serious is the failure to note minor degrees of shock. Shock is a clinical condition, and should not be defined too rigidly. When all the classical symptoms are present shock must be accounted extreme, but it may be present even when some of the symptoms are absent. Serious clinical shock may be present without pallor, without much increase in pulse rate, without much lowering of blood pressure; very seldom, however, does the temperature fail to be subnormal. Only when the diminution of blood volume becomes too great for the vasoconstriction to bring up the pressure to normal will the sphygmomanometer record a fall; but before that stage is reached the smaller blood volume may lead to diminished metabolism, lowered temperature, sweating, and other general symptoms. It is well in acute cases to take the blood pressure several times. It will then be seen that it may fluctuate rapidly, and that one record may give misleading information. Instability of blood pressure is characteristic of those degrees of shock which fall short of the full picture.

In the case of a perforated ulcer of the stomach or duodenum a greater or less initial degree of shock is generally present, but compensation occurs inversely as the violence of the injurious stimulus. With a small leak shock is almost absent; with a large one it may be extreme, and go on to a fatal result; with intermediate cases it is moderate and fairly soon recovered from. Its occurrence is even denied by some authorities in all cases; but a subnormal temperature, cold extremities, a sweating skin, and a pallid face are enough to diagnose clinical shock, and these are usually present for a time.

IMPORTANCE OF SPHYGMOMANOMETRY

The estimation of the blood pressure is too frequently neglected in other cases. Particularly is this the case in intestinal obstruction. The constant vomiting and direct effect of the toxins lead to a great fall in blood pressure. Unless this is carefully measured the capacity of the patient to undergo any operative procedure may be woefully miscalculated. With a blood pressure under 100 mm. Hg (systolic) it is seldom expedient to give a general anaesthetic. More important to recollect is the fact that the systolic pressure may be fairly high, but the difference between the systolic and diastolic small. This difference, representing the pulse-pressure which maintains the circulation, may be quite small, even though the systolic pressure may be approximately normal. I have recorded a case of intestinal obstruction in which the systolic pressure was 135 and the diastolic 110. This patient was in the last degree of collapse, and I gave it as my opinion that he would hardly stand enterostomy—an opinion which was unfortunately verified. You will note that the systolic pressure was maintained though the blood stream was dependent on a difference of pressure of 25 mm. of mercury for its propulsion.

PAIN

When we come to consider the symptoms due to physiological derangements pain is the most important. Indeed, it is often possible to diagnose a case merely by considering the type, intensity, and position of the pain. Too often, however, pain is inquired after in a very general sort of way, and important points are omitted. I will give some examples.

In the first place, help is gained by noting the shifting of the position of the pain. The best and most common example is that of appendicitis. The initial epigastric or umbilical pain is followed by the complaint of pain or tenderness in the right iliac fossa. This sequence is nearly always found in a first attack, but may be and generally is absent in later attacks. With a retrocaecal position of the appendix the initial epigastric pain is often absent. The epigastric-right-iliac sequence in a young adult or child nearly always signifies appendicitis, but in older persons greater circumspection is needed in diagnosis. A leaking duodenal ulcer or an attack of acute pancreatitis may give rise to similar, though usually more severe, pains. The shifting of the pain with a perforated ulcer is usually characteristic. At first severe and epigastric, it is followed by general hypogastric pain and tenderness.

In cases of peritonitis arising within the pelvis diagnosis may be difficult at first, but the pain gradually shifts upwards as the inflammation ascends, and the distension of the bowel is noticed at a higher and higher level.

Severe loin pain due to passage of small stone or gravel down the ureter is frequently accompanied by pain felt in the iliac fossa. If there is doubt as to the diagnosis (that is, whether appendicitis is the cause) help is gained by noting if the site of the pain tends to move downwards, as it often does with ureteric colic.

In cases of pancreatitis the initial devastating pain is followed by a more lasting pain and tenderness in both loins. If this pain were unilateral renal inflammation would naturally be suspected, but taken along with the character of the initial pain the bilateral loin pain is almost diagnostic of acute pancreatitis. It is merely a local pain due to the reaction round the swollen tissues of the gland, which, as we know, spreads its tail and head into the left and right loin just below the level of the last ribs.

Superficial Hyperaesthesia

Superficial hyperaesthesia is often present in acute abdominal disease and is occasionally of considerable value in diagnosis. It is folly to attach too much importance to it, however, for the same area of hyperaesthesia can be produced by various intra-abdominal lesions. Yet every symptom is to be investigated, and I am sure that this is sometimes neglected. In young people the right iliac triangle is confirmatory of appendicitis, while in older persons it is only found with that disease or salpingitis. The bilateral triangle may accompany hypogastric peritonitis, and occasionally is found before any obvious peritonitis has been set up by an appendicitis.

The narrow band of hyperaesthesia above and parallel to Poupart's ligament is commonly present in subacute and subsiding appendicitis, but may also accompany pyelitis, salpingitis, or even cholecystitis and perforated duodenal ulcer. It is due to irritation of the parietal peritoneum in the corresponding iliac region. In any case of doubt between a thoracic and an abdominal lesion the finding of iliac hyperaesthesia weighs down the scale on the side of an abdominal lesion. This alone would make it worth while to test for hyperaesthesia in every case.

Referred Pain

Of much greater value in diagnosis is pain that is felt outside the abdomen. Most of these pains are well known, so that everyone is aware of the site of pain due to colic of the small intestine, large intestine, uterus, or renal pelvis. But it is not generally known that disease of the appendix may cause pain in the testicle either of the same or the opposite side. This is an added difficulty in differential diagnosis, and one that may and has led to mistakes. The referred pain of biliary colic is usually

felt in the right subscapular region, but mistakes may result if one is ignorant of the fact that the pain may be felt anywhere in the zone of distribution of the eighth or ninth thoracic nerve. I have seen cases in which all the severe pain of biliary colic was felt in the left side of this zone.

Phrenic Shoulder Pain

That referred pain which I have found of most use in difficult abdominal cases is phrenic pain. Though I and a few others have been teaching the importance of this pain for several years the current textbooks make little or no mention of it, and certainly few make proper use of this symptom in their practice. I shall therefore dwell longer on this subject.

Phrenic referred pain is that pain which is felt on the top of the shoulder as the result of an irritative lesion in the region of the diaphragm. The phrenic nerve is made up of fibres from the third, fourth, and fifth cervical nerves, and the referred pain is felt in the region of distribution of the third and fourth, but chiefly the fourth, nerves. That area comprises the supraspinous fossa, the acromion and clavicular regions, and the subclavicular fossa. The loose way in which patients and doctors speak of the shoulder region when they actually mean the scapular or subscapular areas makes it necessary to specify top of the shoulder or tip of the shoulder pain.

The intensity and nature of the pain vary considerably. It may be so severe as to feel like a nail being driven in on top of the shoulder, or, on the other hand, may be so slight that the patient will not make any spontaneous complaint, and when asked about the pain will merely say that he had a pain in the shoulder which he put down to rheumatism. In a few cases the pain is felt in the deltoid region, and I have seen others where the patient stated that the muscles felt weak in that part.

Irritation of the right or left side of the diaphragm causes pain which is limited to the shoulder on the corresponding side; that is admitted by all. Inflammation in the middle part of the muscle may cause bilateral shoulder-top pain. In my experience there is also a further localizing value in this symptom, for I have found it a general rule, with few exceptions, that an affection of the anterior or posterior part of the diaphragm causes pain on the front or back part of the shoulder. For example, irritation of the anterior fibres of the muscle will cause pain in the clavicular region, while an affection of the crura will lead to local pain in the supraspinous fossa. There are few exceptions to this important rule.

Subdiaphragmatic Conditions

Phrenic shoulder pain is of the utmost value in fixing the site of many acute abdominal disorders. Scarcely a week passes that I do not find it of the greatest assistance. In the last fortnight it clinched the diagnosis in two cases—a ruptured spleen and an acute pancreatitis. I will indicate the class of case in which it is generally or occasionally present. There are two groups which we must distinguish. First, those diseases which originate in organs which are in relation with the diaphragm. Secondly, those conditions which arise in other parts of the abdomen but may affect the diaphragm secondarily.

The first group comprises diseases of the liver and gall-bladder, duodenum and stomach, spleen, pancreas, and, rarely, kidney. The most common disorder which gives rise to it is perforation of a gastric or duodenal ulcer. Phrenic pain occurs in about two out of every three such cases. In the case of duodenal ulcer the pain is most commonly felt in the right supraspinous fossa, as might be expected when we remember that the irritated part will be the right crus and contiguous part. Here I cannot help speculating on the reason for the origin of a curious error which has been and is being perpetuated from one textbook to another. It is stated with monotonous regularity that the pain of biliary colic is often felt on top of the right shoulder. Anyone who has observed his cases carefully over a number of years knows that, though such a reference of pain is possible, it is of the greatest rarity. Nearly every case of severe right hypochondriac pain associated with pain on top of the right shoulder is due to a leakage of a duodenal ulcer. Though I have known this for more than ten years yet on a few occasions I have discussed the diagnosis of a case with a practitioner and come to the conclusion that the rare exception of biliary colic with shoulder-top pain had at last turned up. In every case when I have operated later I have found a leaking ulcer. The writers who described shoulder-top pain in connexion with biliary colic put their views to paper before the surgery of acute abdominal disease had started, and I think that the error arose from mistaking the local leaking of an ulcer for gall-stone disease. If shoulder-top pain does occur with gall-stone disease it is almost always due to the onset of peritonitis which irritates the contiguous diaphragm.

With perforated gastric ulcer the pain is more often bilateral or felt on the left side. Occasionally it is limited to the clavicular region.

Tropical abscess of the liver is uncommon in this country, but phrenic shoulder pain is very common as an accompaniment of such an abscess. As a matter of interest it was through observing liver abscesses in Mesopotamia during the war that I was led to study the significance of pain referred from the diaphragm. When the symptom is present it signifies that the liver is adherent to the diaphragm and that the abscess is threatening to break through into the thorax. It is most often felt in the right supraspinous fossa, since abscesses usually affect the posterior part of the right lobe.

The occurrence of left shoulder-top pain in connexion with ruptured spleen is sometimes known as Kehr's sign. It is due to the irritation of the muscle caused by the effused blood.

Though it may not be accounted a surgical condition there is no harm in remembering that an infarct of the spleen may also be accompanied by phrenic shoulder pain.

Rarely acute pancreatitis may be accompanied by pain on top of the left shoulder localized to the supraspinous fossa. I have already mentioned a recent case that I have seen. I have seen one other similar case, and know of several more.

Very rarely perinephritis may irritate the diaphragm sufficiently to cause referred pain, but it is so rare and inconstant as to be of no practical value.

Pelvic Conditions

When we come to consider diseases originating away from the diaphragm the most important is ruptured ectopic pregnancy. The occurrence of shoulder-top pain in this condition has long been recognized, but its full significance is still far from being realized. The pain is due to the liquid blood flowing up to and irritating the diaphragm. It is a matter of chance whether the blood irritates the anterior or posterior part of the muscle, and so the position of the pain may be clavicular or supraspinous. There are few pathognomonic symptoms in surgery, but this can be regarded as a near approach—that is, severe collapse and hypogastric pain unattended by abdominal rigidity, but accompanied by pain on top of one or both shoulders, indicate a ruptured ectopic pregnancy or bleeding from a ruptured Graafian cyst. Even this well-established fact is not widely known. When peritonitis which has its origin in any part of the abdomen reaches up to the diaphragm it may irritate sufficiently to cause shoulder pain. As a rule, if such a case comes

on necropsy there will be found one or more plaques of plastic lymph between the liver and the diaphragm. This is more common on the anterior aspect, so the referred pain is more likely to be in the clavicular region.

I would not have anyone think that phrenic shoulder pain is ever to be relied upon to the exclusion of other symptoms, for the diaphragm has an upper as well as a lower surface, and thoracic disease may irritate this upper surface. That is only one more reason for making a thorough examination, so that no localizing sign may be omitted. It is worth mentioning that pain from diaphragmatic pleurisy is more commonly felt in the clavicular and subclavicular area.

Muscular Rigidity

I now come to the symptoms produced by the reflex rigidity of the muscles which bound the abdominal cavity. There should be little need to mention rigidity of the anterior and lateral abdominal muscles produced by peritonitis, since it is familiar to everyone who has seen half a dozen cases of acute abdominal disease. But it is not yet general knowledge—nay, it is often overlooked by the elect—that extensive peritonitis may exist without any rigidity at all.

At the risk of repeating what we all may know already I would point out that irritation of the internal lining of the abdominal cavity is responded to by a greater or lesser degree of rigidity of the muscles which wall in the cavity. There is a large area comprising the pelvic cavity and the median part of the posterior abdominal wall which is *relatively* insensitive or silent when stimulated, giving rise to no rigidity of the overlying or underlying muscles. It is very common to have early pelvic peritonitis without any muscular rigidity. Another fact which is overlooked is that old people with weak muscles and easily tired reflexes frequently show little or no rigidity with peritonitis.

Muscular rigidity of the deep-lying muscles is easily, and I think commonly, neglected. When the diaphragm is immobile on account of overlying inflammation we cannot always have an *x*-ray apparatus handy to show that it does not move on respiration, but we have an easy clinical test. If the abdomen is retracted with inspiration the midriff must be relatively immobile and is probably inflamed. This reversal of the abdominal wall movement is significant.

Psoas rigidity due to appendicitis or similar inflammatory condition in the vicinity is shown either by flexion of the corresponding thigh or by slight pain on moving the thigh. Slighter degrees may be detected by extending the thigh on the abdomen and noting if it causes pain.

It is seldom that the obturator muscle becomes rigid as the result of peritonitis, since the dense obturator fascia does not readily permit the inflammatory process to pass; but occasionally putting the obturator muscle on the stretch by inverting the flexed thigh will elicit pain and denote some overlying inflamed focus which is penetrating and affecting the muscle.

There is another little test which may be of some value in fat subjects with a suspected inflammatory mass in the region of the iliac fossa and vessels. If the fingers be pressed on to the femoral artery in Scarpa's triangle so as to stop the circulation in the limb, the extra pulsation in the iliac vessels as the result of the block may cause an increase of pain when the inflammatory focus is in contact with the vessels. This femoral test would only be of real use in very fat people, who are notoriously difficult to investigate.

Gross anatomical derangements, with the exception of torsion of viscera and strangled external hernia, are not often obvious in the early stage of acute abdominal disease. The presence of free fluid and free gas displaces and masks the parts, but usually at too late a stage to be of much practical value.

Conclusion

The diagnosis of acute abdominal disease is a fascinating art which may be almost made into a science by attending carefully to the manifold symptoms to which it gives rise. The problems greatly differ from those in chronic abdominal disease. The combat against disease is in the one case a siege and the other a battle, and different qualities are required for success. In the acute disease early appreciation of the menacing forces is essential, and success may sometimes be gained by paying attention to small points which would in a chronic disease be regarded as trivial. In no other class of case is time of such importance, laboratory assistance of so little use, and the opportunity for acute clinical observation so well provided. Though disappointment comes but too often, the reward of paying attention to some of the neglected points which I have mentioned is an increasing number of successful diagnoses, and, what is even more important, an inward sense of something logically attempted, something reasonably done.

ACUTE OSTEOMYELITIS OF THE ILIUM

BY

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SURGEON TO THE BRISTOL ROYAL INFIRMARY

Probably it falls to the lot of most general surgeons at some time in their work to meet with this disease, but it is certainly rather uncommon, it presents a very difficult problem with regard to treatment, and there is extraordinarily little to be found about it in surgical literature. A considerable search for what may have been published on the subject during the past thirty years has yielded very meagre results. A case was reported by Murphy in 1916, secondary to furunculosis. A case of osteomyelitis of the ilium, probably tuberculous, was described in 1930 by Ryan and Funston. At a Russian surgical congress at Leningrad in 1925 Krasnobajev reviewed 428 cases of osteomyelitis treated by him in twenty years, with a general mortality of 22.4 per cent. There were twenty patients with osteomyelitis of the ilium—that is, about 5 per cent. of the whole number—and of these eight died. It is therefore more dangerous than osteomyelitis of the long bones. Two patients suffering from this disease have lately come under my care.

Case I

Public school boy, aged 14. First seen July 19th, 1928, complaining of pain in right lumbar region attributed to a strain whilst diving two days before, when he "felt something go click." No physical signs, but limps a little.

July 20th.—Admitted to sanatorium. Has had no sleep on account of severe pain in buttock. Temperature 100°. Tender over right sacro-iliac joint. Temperature ran up to 102°, pulse 100; pain became very severe. Nepenthe gave no relief; no sleep.

July 21st.—Temperature 104.6°; very ill; pain and tenderness persist. Operation under novocain. Dorsum ilii exposed but not trephined; periosteum scraped through. One doubtful spot of pus seen.

July 24th.—Pain has been better, wound not suppurating. Temperature 103°-104°. Leucocytes 11,000; 89 per cent. polymorphonuclears. Mercurochrome given intravenously.

July 27th.—Abscess of right buttock opened. Culture: pure *Staphylococcus aureus*

July 30th.—Temperature 102°. Pain in chest; rub. Diagnosed by Dr. Carey Coombs as pericarditis. Abscess of left buttock opened under novocain.

August 11th.—Swinging temperature has continued. Pleuritis and pericarditis stationary. Abscess in front of right iliac bone opened; small crumbling patch of bare bone found.

September 15th.—Pus in left hip-joint, with pathological dislocation. Opened by Mr. C. F. Walters in my absence.

October 15th.—Head of femur excised; through-and-through drainage of hip-joint. Did well for a time, and temperature became normal.

November 10th.—Fever again. Tube put through hip-joint.

January 1st, 1929.—Temperature has remained up. Abscess under left iliacus muscle opened. Better for a week, then temperature 102°.

January 12th.—Pus in left knee-joint evacuated.

March 21st.—Went home, improving, temperature normal.

For a long time there was a persistent sinus over the hip-joint, but eventually this healed, and the patient is now very well.

Summary.—Boy, aged 14. Acute osteomyelitis of ilium, followed by pericarditis, pleurisy, abscess under each iliacus muscle; pus in hip-joint necessitating removal of head of femur; pus in knee-joint. Very ill six months; nine operations. Recovery.

CASE II

Hospital nurse, aged 23. Seen October 2nd, 1930. History of pain in left buttock for a week, really bad for twenty-four hours, and extending down sciatic nerve. No sleep on previous night on account of pain. Temperature 100°–101°. Vomited once. Pain now severe. On examination tenderness over the left sacro-iliac joint. No pain on "crowding" iliac crests; hip-joint moved normally. Per rectum, *nil*.

Operation, incision down to iliac bone in tender area. Outer plate of bone removed over an area one and a half inches across. Marrow looked normal, but culture showed Gram-positive staphylococci, and pus cells present in smear.

October 5th.—Pain much better. Temperature 104°–105°. Delirious at times.

October 6th.—Very ill; delirious. Pleuritic rub.

October 10th.—Purpura. Pleuritis and pneumonia in both lungs.

October 12th.—Died. No necropsy.

Summary.—Nurse, aged 23. Acute osteomyelitis of ilium; bone opened by operation. Pain relieved, but died of pyaemia and septicaemia.

DISCUSSION

In both cases there was a period of several days, three in the one and seven in the other, during which the patient had pain in the buttock, gradually getting worse. There was no known septic focus. The boy thought he had strained the back. Next came violent and persistent pain, unrelieved by opiates, with a rise of temperature, and marked deep tenderness of the dorsum ilii. If the surgeon recollects that there is such a disease as acute osteomyelitis of the ilium the diagnosis is not difficult.

The disease is apt to be severe, running a prolonged course, with numerous complications, both early and late, and considerable danger to life. Both my patients became exceedingly ill with pleuritis; one had pericarditis. The patient that recovered had abscesses in front and behind both iliac bones, and in the hip- and knee-joints. A case is, however, known to me in which a quiet abscess formed in the ilium, necessitating operation, but going on to recovery. This may correspond to the condition known as Brodie's abscess in the long bones.

TREATMENT

This presents a very difficult problem, especially on the day that the diagnosis is first made. The pain is so severe that opiates give no relief, and everybody is very anxious that something should be done to relieve tension. Operation does certainly make the pain better, but during the next few days the patient is likely to be very ill. In my opinion the opening up of cancellous tissue by removing the outer layer of the iliac bone did indeed reduce tension and allay pain, but precipitated pyaemic symptoms by opening up the veins in the cancellous spaces to infection. There is nothing abnormal to see, so one does not know how much cortex to remove. It seems better, therefore, in an acute case, to treat it as the schoolboy was treated, by draining down to, but not into, the bone, under a local anaesthetic, in the hope (probably vain) that pus will be found under the periosteum. Mercurochrome may be given intravenously to combat septicaemia. Abscesses about the os innominatum must be expected, constantly watched for, and opened when they are found.

SUMMARY

In one published series of cases of acute osteomyelitis of various bones the ilium was involved in 5 per cent., with a mortality of 40 per cent.

Two cases are described, one fatal, one recovering after a long illness and many operations.

The diagnosis is not difficult; several days' pain in the sacro-iliac region; then violent pain, raised temperature, and deep tenderness.

The best treatment is probably to incise down to, but not into, the bone.

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THE PROPHYLAXIS OF TUBERCULOSIS OF THE LARYNX

BY

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Tuberculosis of the larynx is so frequent and so fatal a complication of phthisis that any suggestions for preventing its occurrence, or for securing treatment in its early stages, should be given consideration even if there is no proof that they will necessarily prove effective in all cases. There is abundant proof that in its early stages this complication can be arrested, and in many cases cured, by certain definite measures. These are:

Rest in a sanatorium.

The restriction of the voice to a whisper over a period of some months.

Complete silence for a similar period.

The elimination of sepsis in the upper air passages, because it is well known that any septic process tending to produce laryngitis, whether acute or chronic, affects adversely the progress of laryngeal tuberculosis.

The prevention of cough. By this I mean unnecessary, harsh, and irritable cough producing an unnecessary strain upon the vocal cords.

As long as the pulmonary lesion is chronic it has generally been found that these measures are effective in arresting, and finally curing, a majority of cases of early chronic laryngeal tubercle. It may be necessary to supplement these conservative measures by more active treatment such as cauterization under local anaesthesia, but, generally speaking, the larynx will respond to such treatment if the condition of the lungs is not progressive or fatal. This being so it seems justifiable to draw certain conclusions which may give some indication of how to

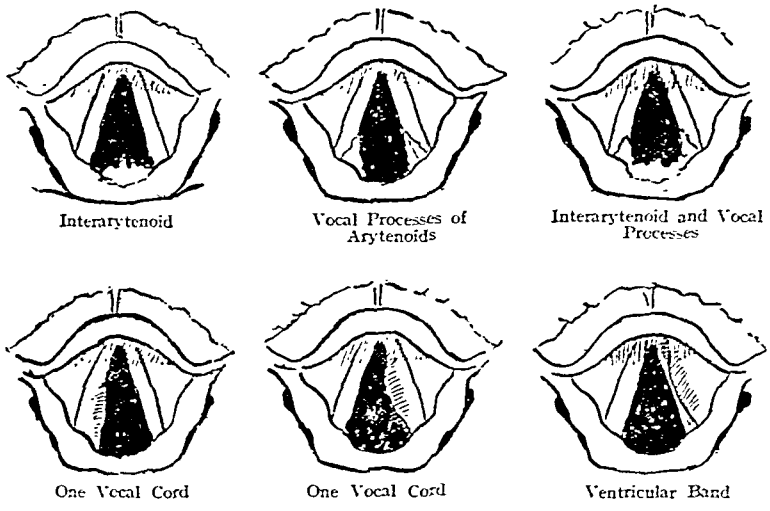
prevent the incidence of this complication. Measures which will bring about a cure in early cases may be relied upon to prevent occurrence when applied to any patient with certain reasonable modifications according to the practical possibilities in each individual.

REST IN A SANATORIUM

Where this is indicated, on account of the condition of the lungs, there is no need to stress the point on account of the larynx, but where there are any indications that a phthisical patient has a larynx which is not quite normal he or she should go to a sanatorium if possible, even if the condition of the larynx is not definitely diagnosed as being tuberculous.

RESTRICTION OF THE VOICE

This is a matter of considerable difficulty in patients who are endeavouring to lead a normal life; nevertheless it is important that patients with pulmonary tuberculosis should restrict the use of their vocal chords. Tuberculosis of the larynx is of somewhat frequent occurrence among clergy, street criers, and those whose occupation necessitates continual loud speech, and the occurrence of pulmonary tuberculosis among these is often first indicated by an early laryngeal lesion. Patients should be warned that excessive use of the voice is accompanied by a definite danger to themselves, and the doctor in charge of every case of pulmonary tuberculosis should satisfy himself that no undue strain is being put upon the larynx. This may be a difficult matter where a patient is obliged to use the voice continuously in his daily occupation, but even in such cases some modifications are often possible.



EARLY TUBERCULOSIS OF THE LARYNX

ELIMINATION OF SEPSIS

I have always attributed the greatest importance to this form of treatment because I have found gross sepsis of the teeth and tonsils in a large percentage of patients. At the Mount Vernon Chest Hospital, before its conversion to a hospital for cancer, it was a matter of common experience to examine twenty new cases of tuberculous laryngitis and find that fifteen of them were affected in this way. I have seen cases where the pulmonary lesion was rapidly healing, but where the larynx, under the influence of gross dental sepsis, had become affected by a combination of tuberculous and pyogenic infection, which finally caused a fatal termination to an otherwise favourable condition. To my mind, sepsis of the upper air passages is often a deciding factor in the progress of a case, but I have heard that some observers look upon it lightly.

THE PREVENTION OF COUGH

In all cases cough is necessary for the expectoration of sputum from the lungs. But in many instances an irritable condition of the fauces, pharynx, and larynx leads to the development of a cough which has no practical usefulness, but merely damages the larynx and permits of its invasion by tubercle bacilli in the sputum. This type of cough can readily be restrained by suitable palliative measures, which are too well known to enumerate. It seems reasonable to suppose that attention to detail under the above headings may, in many cases, prevent the occurrence of this very serious and justly dreaded complication.

In addition to these measures it appears to be important that every patient with pulmonary tuberculosis should be subjected to examination of the larynx at regular intervals, which may be decided upon for each individual. Diagnosis in such cases cannot be made too early nor can treatment be applied too soon. Immediate admission to a sanatorium is indicated as soon as a diagnosis is made, because it is quite as necessary for laryngeal tuberculosis to be treated in a sanatorium as for any other kind. If possible, the urgency in the case of the larynx is greater. It is almost impossible to persuade anyone to undergo a long period of silence which is necessary to produce a cure without the supervision, discipline, and restraint which can only be applied effectively in a properly organized institution.

The illustrations show some of the most common forms of early chronic tuberculosis of the larynx. The treatment of this condition has already been outlined in general, but special methods may justifiably be used in special circumstances; these are as follows:

1. The galvano-cautery. The application of the galvano-cautery to a laryngeal lesion is made under deep cocaine anaesthesia. It should not be made until the lesion has been quiescent for some months. It has the effect of replacing tuberculous granulations by scar tissue. It has certain disadvantages, because tuberculous patients do not always tolerate the application of strong solutions of cocaine, nor are they always unaffected by the slight shock and mental strain in which submission to a rather difficult manipulation involves them.

2. Radium. The success which has attended the radium treatment of lupus of the upper air passages encouraged me to use it in quiescent cases of laryngeal tuberculosis. Its action is similar to that of the galvano-cautery because it stimulates the granulation tissue to form scar tissue. It is more thorough than the galvano-cautery because it is applied from the outside and leaves no part unstimulated. It is less drastic than the galvano-cautery because it produces no fierce local lesion and needs no local anaesthesia. But, like the galvano-cautery, it is a weapon which should be used only by a specialist who has watched the progress of the case and feels certain in his own mind that the condition is quiescent and that the time has come to take an active step in treatment.

A NEW METHOD OF TREATMENT OF THE FRACTURED CLAVICLE

BY

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The multiplicity of the methods employed for the treatment of the fractured clavicle bears witness to the want of satisfaction which is so often felt in dealing with this common lesion. Owing to its peculiar location and to the unique mechanical purpose which it serves, a clavicle which shows any residual shortening after fracture occasions a very appreciable impairment of the strength and functional utility of the upper limb for a considerable time after the accident. Moreover, since in women décolletage is an established fashion, any mal-alignment will jeopardize the prospects of cosmetic perfection. In introducing this new mode of treatment I am convinced, after reviewing my series of cases, of the simplicity of its application, of the comfort afforded the patient, of the more perfect alignment obtainable, and of the definite curtailment of the period of incapacity occasioned by the injury.

CLINICAL FEATURES

The cause of these fractures is almost invariably indirect violence due to falls on the hand, the elbow, or the point of the shoulder. It is applied, as a rule, to the under surface of the outer end of the clavicle in an upward and inward direction, the relative magnitude of the upward and inward components varying in different cases.

The actual fracture occurs most frequently at or near the junction of the inner two-thirds and the outer third. This is the point of meeting of the two curvatures of the bone. Moreover, the inner two-thirds of the bone, constituted by the anterior convex curve, is cylindrical in form, and consists of a compact layer of considerable thickness. It therefore resists a fracturing force more effectually. The fracture may be of the "greenstick" type, this being common in young children. The angulation is directed upwards and forwards. Of the complete varieties the line of fracture may be transverse or oblique, the latter being the commoner. In the majority of cases, the obliquity takes a direction from above downwards, inwards, and backwards. The position taken up by the bone ends relative to one another is due partly to the direction of the violence and partly to the weight of the limb. The inner end of the outer fragment comes to lie below and in front of the outer end of the inner fragment. The whole outer fragment also moves inwards, so that the bone ends overlap. Other deformities occur, but are less common. In the most common type of lesion—the oblique fracture with the deformity described above—the part played by the violence in determining the direction of the fracture and the displacement of the ends is probably the same as in the case of the abduction-eversion fractures at the ankle. In the case of the clavicle, the coraco-clavicular ligaments act as a fulcrum, and the force applied to the under surface of the outer end of the bone produces an oblique fracture to the inner side of the ligaments, with the characteristic displacement. In the case of the ankle the abduction-eversion force driving the astragalus outwards against the external malleolus causes an oblique fracture of the fibula some two inches above the inferior tibio-fibular ligaments, which act as the fulcrum. The other factor producing and maintaining this position of the bone ends is the weight of the limb. The whole outer fragment drops. Moreover, as the main function of the clavicle is to buttress the shoulder outwards and backwards, when a fracture occurs, the outer fragment of necessity moves inwards and forwards.

TREATMENT

A satisfactory method of treatment must take cognizance of every one of these facts regarding the fracture. In dealing with all fractures the three principles of treatment are: first, the reduction; secondly, the retention of the corrected position; and thirdly, the maintenance of nutrition and early restoration of functional utility.

In the case of the clavicle, reduction is always easily accomplished. It is the retention which has always presented the difficulty.

To retain the position after reduction, some means must be utilized which will prevent the outer fragment from moving inwards, forwards, and downwards, and will at the same time act as a splint between the two portions of the divided bone. Moreover, the upper limb must be left free. In many of the methods which have been used, especially that known as Sayre's, the whole upper limb, including the hand, was fixed against the side and front of the chest by firm strapping or bandage. The patients always complained of great discomfort, the skin became sodden from perspiration, or blistered from strapping, while the greatest objection of all was the stiffness of the whole arm and hand, which was the outcome of the immobilization and disuse. This prolonged the period of incapacity very appreciably. Other methods, such as those depending merely on loops passed round the shoulders and tied across the back, were ineffectual. A secure and effectual retention of the reduced fracture must be ensured, not only on account of the great likelihood of recurrence of the deformity in this situation owing to the mechanics of the part, but also owing to the saltatory and restless disposition of the young patients in whom fractured clavicles are most common. The method must be essentially simple in application, owing to the ubiquitous incidence of this type of fracture and the everyday circumstances under which it occurs. It must be available to the general practitioner as well as to the surgeon. For this reason any elaborate appliance which involves the use of steel frames, fitted splints, or extensive plaster jackets is impracticable. Recumbency is undesirable. Open reduction with the introduction of a plate or intramedullary peg, though it may give ideal alignment, is as unnecessarily drastic as it is wantonly disfiguring.

I have therefore attempted to meet these exigencies by the utilization of a moulded plaster-of-Paris slab. The technique is as follows:

Make a fairly thick elongated slab by sandwiching several layers of plaster-of-Paris bandage between two layers of lint. This slab is roughly rectangular in shape,

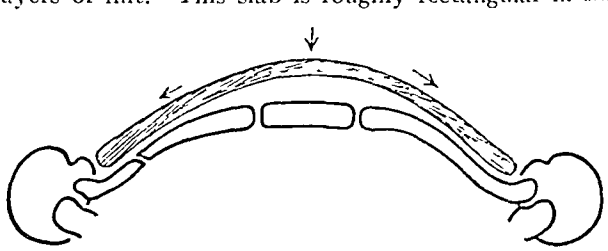


FIG. 1.—Diagram demonstrating the moulded plaster slab in position

but is somewhat wider at the ends than at the centre. It is made to an exact size for each case. Its length is one inch greater than the distance between the delto-pectoral folds in front of each shoulder. It is 4 inches wide in an adult and proportionately narrower in infants. When the precise position of the fractured ends in the radiogram have been recognized the patient is seated on a backless chair. An assistant stands behind the patient, puts his left knee between the shoulder-blades, and with the fingers of either hand in front of the shoulders, draws them firmly backwards, outwards, and upwards. The

surgeon stands in front and manipulates the fragments till reduction is perfect. The assistant retains this by maintaining the traction.

The plaster slab is then applied by the surgeon in front. Each extremity is moulded so as to be crutch-ended and to fit into the delto-pectoral hollow in front of each shoulder. It is made to come well down into the axilla beneath the shoulder so as to obtain sufficient upward lift. Owing to the prearranged length of the slab, the central part, which is in front of the sternum and inner portions of the clavicles, is bowed out from the skin surface slightly. Over the outer half to two-thirds of the clavicle the slab is moulded exactly to the contour of the bone in its corrected alignment. It thus embraces the fragments on both sides of the fracture. The plaster is held till set. A nurse then applies bandages in the following fashion. First, a double "figure of eight" is applied round both shoulders, with the intersection in front over the centre of the slab. The assistant then relinquishes his hold. The effect of this bandage, very firmly applied, is to exert a force backwards, outwards, and upwards on the centre of the bow-shaped slab. The plaster here stands off a short distance from the sternum, so that this pressure is transmitted through the crutch-ends of the slab and *pushes* the shoulders and outer ends

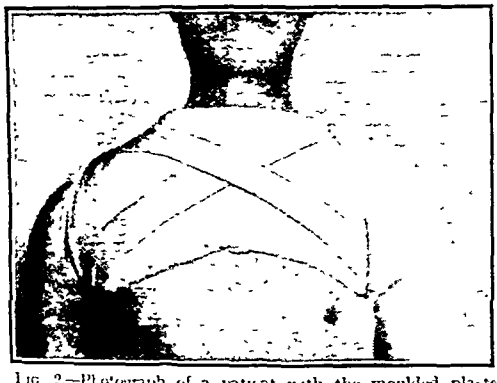


FIG. 2.—Photograph of a patient with the moulded plaster slab in position.

of the clavicles backwards, outwards, and upwards. The slab acts, indeed, exactly as an adventitious clavicle, replacing the bone both in position and function as closely as is possible. It constitutes an efficient substitute till the continuity of the prototype is restored. Properly applied, this bandage is sufficient, for the slab maintains the shoulders in the braced back and supported position, when the assistant relaxes his hold. It is best, however, in order to ensure immobility of the plaster, to apply another "figure of eight" bandage round the shoulders, with the intersection behind. The portion of the slab which has been moulded so as to lie in intimate coaptation with the clavicle over the site of fracture acts as a perfect splint, preventing any possible movement at this point. The arm is supported in a sling at first, though this is not always necessary, and the patient goes home. The movements of the shoulder are partly restricted, but the rest of the arm and hand are perfectly free for use. The plaster is retained for from ten to fourteen days. Throughout, the patient is perfectly comfortable, and on removal of the slab finds he has full movements of the whole limb.

In the series of cases treated by this method a radiogram has been taken in every patient after reduction and application of the plaster. This has confirmed a satisfactory reduction.

SUMMARY

The advantages and results can therefore be summarized thus:

The method is simple.

It is effective in securely retaining perfect alignment after reduction, so that a gratifying cosmetic result is assured, and there is no risk of disability due to residual shortening of the bone.

The patient is completely comfortable throughout the treatment, and has free use of his hand and arm.

As a result of this last circumstance the period of incapacity due to the accident is considerably curtailed by the employment of this technique.

For the opportunity of carrying out this investigation I wish to express my gratitude to Mr. Sangster Simmonds, whose clinic at the West London Hospital these patients have attended.

RENAL COLIC AND HAEMATURIA FOLLOWING RECUMBENCY

BY

W. ETHERINGTON WILSON, F.R.C.S.

TORQUAY

During the latter period of the great war many of the hospitals were made into centres where certain types of gunshot wounds were concentrated for reasons of efficiency and team work. The 1st London General at Camberwell became one of the centres for fractured femurs, and it was among these cases that I came across a remarkable series of cases of renal colic and haematuria. Of some hundred and fifty men who passed through the special femur wards I have notes of twenty-three who exhibited this renal complication. I publish them now because I have often been asked about them, and hope that they may be of some assistance to research workers on kidney disease and function.

I have to admit from the outset that many investigations were incomplete and left undone at that time in trying to find a cause for the colic and bleeding, but I am convinced that, had *x* rays been used, a larger number of urines examined carefully, or cystoscopies undertaken, no assistance would have been forthcoming in elucidating these phenomena.

It is necessary to draw attention to the following facts. (1) These were all femur cases, and were treated by the Sinclair method. (2) All the patients remained recumbent on their backs for periods varying from three to twelve months or more. (3) The foot of the bed was raised at least nine inches during the earlier weeks of their period of treatment—that is, the stage of extension. (4) Most of the patients concerned were kept recumbent for a long time on account of severe wounds, prolonged sepsis, delayed or non-union, or other wounds. Only one had a simple fracture with delayed union, and he was treated on a net bed, with the usual sloping feet-upward position. (5) When union was considered firm (normally two and a half to three and a half months) a walking calliper was fitted, and the men allowed up on crutches fifteen minutes or so on the first day. On the second day they were allowed to be up longer, and it was remarkable how much they did get about on their feet. I have known one of them to be seen walking in the corridor as if he had been up for a fortnight. Eagerness, competition, and the cheers and envy of the less lucky ones in the ward were, of course, responsible for these feats. It was on this day that several cases of renal colic with haematuria occurred. (6) With regard to the amount of sepsis present, small sinuses in the thigh, sequestra, and flaring-up of healed wounds were common occurrences. The more serious acute septic conditions—that is, secondary haemorrhages, blood infections, joint infections, etc.—did not occur in any of the present twenty-three cases under consideration. (7) Concerning diet, there was an abundance of greenstuffs eaten by the men at dinner, and it is perhaps wise to remember that during the period 1918-19 our vitamin stocks were probably somewhat lacking. (8) The total number of cases of renal colic and haematuria of which I have some record and

were seen by me number twenty-three. Actually there were probably three or four more, one or two occurring in the wards of other members of the staff and others in my own; but of these I have no record, and they will not be included.

RENAL COLIC

This symptom was present in all the twenty-three cases, and represents 15 per cent. of the total number of fractured femurs treated during a period of nearly two years. The attack was similar in most of the cases, the differences being only one of degree. The pain was usually intense and sudden in onset, beginning as an anterior or posterior renal pain and radiating down to the groin; some had pain referred to the penis tip, and a temporary frequency was manifest. The sisters of the ward got used to seeing them, and often reported that So-and-so was having an attack of renal colic. Haematuria followed nearly all these cases. One dose of morphine, and bed eased the pain, and the attack was never repeated immediately. The next day the right abdomen and renal region were tender, the kidney was felt to be enlarged in a few of the cases, and the patient still felt uncomfortable. By the third day the tenderness had nearly all gone, and no complaints were forthcoming. The renal colic always occurred on one side only at the time. Ten cases are recorded of the attack being right-sided and six left; the others are not noted. In two cases the attack was bilateral, but with an interval of three months in one case and several days in the other between the two sides.

The exact period in the treatment when the first attack of renal colic occurred is interesting. In sixteen cases the pain came on after being out of bed and assuming the upright position. Of these, two occurred on the first day up, nine on the second day (when a good deal of walking was invariably done), and five are noted as being later still—for example, many days up to three weeks. One of these latter patients got a violent attack of renal colic with profuse haematuria while out on pass away from the hospital.

Six men got renal colic while still in bed, but they were all able to sit up and move about, the foot of the bed had been lowered, and the main extension and fixation of the splint removed. The period of recumbency varied very much—the shortest case, and one only, was three months. Another case occurred after four months. In eighteen cases the average period in bed was nine months, the shortest of these being six and the longest about fifteen months. In three cases I have no note of the period, but none was less than three months. In three cases the appendix was removed—in all, I believe, in error—in cases of right-sided renal colic; in two of these I saw neither the attack nor the operation, but ascertained that the appendix did not account for the pain, and the men developed haematuria. The third patient was operated on one evening when I was absent for the day; the appendix was normal, the kidney was discovered to be much enlarged, and blood was found in the urine in large quantities; this man developed renal colic three weeks after being up, the attack occurring outside the hospital whilst he was on pass.

HAEMATURIA

In sixteen cases out of the twenty-three there was an obvious haematuria visible to the naked eye, one-quarter to one-half of the urine glass on standing containing red corpuscles. In six of these cases I note that the bleeding was profuse and alarming for the time being. The passage of blood clearly accounts for the renal colic in these cases. Within forty-eight hours the urine was very much clearer, and by the third day there appeared to be little or no blood in a fresh specimen, but the microscope showed the presence of a few red cells. The attack of haematuria usually passed off in almost as dramatic a way as it first began. In one case there was some bleeding which continued for a week, though lessening in amount daily. In four further cases there was microscopic blood, but this was not obvious macroscopically, making a total of twenty cases of haematuria. In three patients I have no note of the condition of the urine.

The Question of Calculi.—One patient with a profuse haematuria passed three or four small friable calculi. He got a recurrence of renal colic later, and passed some gravel. He was the only one of the series where lithiasis comes into the question. He was a badly wounded man, with an additional gunshot wound of the hip-joint, and had a very long period on his back in bed, with persisting local chronic sepsis.

Urine.—I only have the record of ten urines examined, and they do not help very much; in all but two the cultures were sterile; one, probably a contamination, grew staphylococci, the other staphylococci, *B. coli*, and diphtheroids. Oxalate crystals (a few) were reported in two cases. The usual report was: red cells +++, white cells one or two, albumin +, cultures sterile, no casts or crystals seen. In two cases it was shown that by the fourth day after the attack all the red cells had disappeared.

X Rays.—A very small proportion of these cases were *x*-rayed, with negative results.

Recurrence of Attacks.—Two and a half years later I sent a questionary to most of these men, and got seven replies. They had all remained quite free from urinary symptoms except one man, who recorded five attacks of colic—two in 1919 while in our hospital (one when he was up, the other in bed), and attacks in 1920, 1921, and 1922. *X*-ray examination at Bristol revealed nothing. This was one of the cases where organisms were grown from the urine, and there is no report of haematuria. I think it probable that he was not of the same type of case as the others. Four other patients got one recurrence of renal colic with bleeding.

DISCUSSION AND SUMMARY

During 1918 and 1919 15 per cent. of the patients in the femur wards developed renal colic, the actual pain being probably due in the majority of these cases to the passage down the ureter of large quantities of blood. It was manifest that this occurred, in most of the men, on assuming the upright position after prolonged decubitus. What was the explanation of these frequent incidents? Infection must, I think, be ruled out: first, because of the frequency with which sterile urines were reported; secondly, one case was a simple fracture, the result of an aeroplane accident, with no wound or sepsis at all; thirdly, it was very noticeable that nearly all the cases of renal colic occurred suddenly on getting up on the first or second day, and just as quickly got well again, without running temperatures or having rigors, or, indeed, having any further trouble up to two and a half years afterwards.

There was no evidence in any of the cases, except one, of calculus formation. This patient did pass calculi, and in a later recurrence passed gravel. It is not surprising that at least one patient should develop calculi; for does it not seem that the conditions were ideal for stagnation in the renal pelvis—for example, the prolonged dorsal position in bed with foot of bed raised, and in most of the cases chronic septic wounds continuing over a greater part or all of this period? Indeed, at one period the idea of calculus formation was uppermost in my mind. There was no evidence that such stagnation occurred, or that the possible products of such a condition—organisms, debris, crystals, etc.—passed down the ureter

and gave rise to pain and bleeding. There was no evidence at all to suggest that these were cases of oxaluria, only "a few crystals" being reported in two specimens. I eventually came to the conclusion in 1919, and still think, that the great majority of these cases, at any rate, developed painful haematuria because of postural conditions, the sudden assumption of the upright position in too great a hurry being the deciding factor. Few of the other members of the staff had the same experiences, probably because the fractured femora were mostly concentrated in special wards; these men had to lie on their backs for long periods, and, further, the colic cases occurred among the chronics of these wards. Mr. Harold Wilson, who was responsible for the beginning of the femur work, will remember the first few cases of renal colic, and our apprehension after a time as to whether So-and-so would get an attack on his second day up. It is apparent that the kidneys became engorged with blood, for there was evidence of enlargement of the organ, by palpation from without, and in one case from within, the abdomen. It is probable that this renal congestion was allowed by the temporary loss of vasomotor control and dilatation of the renal vessels and the other great vessels of the splanchnic area on assuming the erect position. The same explanation holds good in the patient who feels faint on getting out of bed after an illness, a temporary anaemia of the brain being produced.

At first it would appear that such an explanation is adequate, but does it completely clear the ground so easily? Why did no patient develop a bilateral renal epistaxis at the same time? It is not likely, however, that this would occur, for if both kidneys became congested at the same time, and the right began to bleed first and cause pain, would it not act as a safety valve? Moreover, the patient would have been put to bed, the engorgement pressure being further relieved, and the left kidney saved from any degree of haemorrhage. Some five attacks of colic occurred in bed, either as a first attack or a recurrence. The explanation here is not easy, but only in one of these cases was the patient necessarily on his back; the remainder had reached an active stage of moving about and sitting up in bed. One man developed renal colic three weeks after getting up, as mentioned already, for which his appendix was removed and a large right kidney palpated at operation, haematuria being noticed after operation. This is another type of case difficult of explanation. May it not be that there were two types of renal congestion, acute and chronic—the patients who were up on their feet too suddenly, and bled as the result, being included in the acute variety, those who remained free of actual visible haemorrhage for a few days, in the chronic? Is it possible that the devitaminized cells of the renal tubules or capillaries allowed more easily the burst of blood through into the kidney pelvis?

I am firmly of the opinion that had we got these men up more gradually, and had they not been so enthusiastic in showing what they could do on their feet at such an early stage, fewer cases would have been recorded. Painful renal haematuria occurring after a recumbency, as far as I know, is not a common disorder. Did other medical officers have any such similar experiences during those years, or have any cases been seen and recorded in civil practice?

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

AN UNUSUAL CASE OF AMNESIA

Loss of memory after head injuries is by no means rare; amnesia, of greater or less extent, being an essential feature of concussion. Yet the following case merits attention by reason of three unusual points—namely, the latent period between the original injury and the commencement of the amnesia, the duration of the condition, and the dramatic results following surgical intervention.

On August 8th, 1930, a man was found wandering the roads in an exhausted condition, and brought to the hospital. He was very collapsed from exposure and malnutrition, and was treated for shock. He could give no account of himself, and there were no marks of identification on his person. Careful nursing and prolonged convalescence restored his physical condition. He was a well-set-up man in the prime of life. On examination an old depressed fracture, about the size of a half-crown, was found in the right parietal bone, situated midway between the fontanelles and about two inches to the right of the mid-line. There was a faint crescentic scar in the skin over this region. The patient was unable to remember anything whatever of his life previous to his admission, nor could he remember his name, age, or profession. It was thought that he might have been a sailor, owing to his being able to "box the compass"—that is, recite the points of the compass in their order round the dial of the instrument. He took a great interest in his condition, and was desperately anxious to discover his identity and recover his memory.

The skull was examined by x rays, and a large depression of the inner table was found, with a layer of new bone formation beneath, extending into the extradural space and for some distance round the site of fracture. It was decided to operate. On November 28th, a large whole-scalp flap was turned back, exposing the entire depressed area and a wide margin of healthy bone. Four trephine holes were made and connected up by Gigli saw-cuts on three sides, forming a square flap. The bone flap was thus raised and removed. The subjacent dura mater was at first immobile, but in a few moments commenced to pulsate. The wound was cleaned up with saline, and the scalp flap closed, a small rubber drain being left at one side. The patient's condition remained good throughout the procedure.

On recovering consciousness he thought that he was in hospital in Shanghai, and was rather restless and worried because "his ship was due to sail in the morning." By next morning his condition was excellent, and he was able to give the following account of himself. He was in truth a seaman in the Navy, and had been in a ship on the China Station in 1920. While ashore one night he became involved in a brawl, in which he (so he was afterwards told) received a blow on the head, and was taken to hospital at Shanghai. He was treated for four to six weeks, and then sent back to his ship. No operation was performed. He continued to serve on the station till 1926, in which year his term of service was up, and he was sent home to be paid off. His last recollection was leaving Port Said, and he remembers being on duty in the morning watch when the ship sailed. His next—waking up in hospital here after his operation. He has no remembrance of the intervening period.

The patient's progress has been steady, apart from occasional headaches. He is now beginning to get up, and says he feels very well. We have had many interesting talks upon Navy subjects, and it is evident that he is perfectly familiar with the routine, and all that pertains to it, of life as a bluejacket. One may also add that the relatives have been to see him and have identified him, and that their story of his absence coincides in every way with his own account.

Commentary

1. Have we operated upon a case of hysteria? The answer to this, I think, is to be found in the character of the patient, which is the very reverse of anything approaching that of a neurotic. Also, though closely observed and questioned both before and since his operation, he has remained entirely consistent in his behaviour and statements.

2. This case would seem to emphasize the importance of operating on all depressed fractures in adults as the patient's condition permits.

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EXTRACTION OF BROKEN CATHETER FROM URETHRA AND BLADDER

A man, aged 64, called me at midnight as he had broken his catheter while attempting to withdraw it after use. The catheter was an ordinary rubber one, size 10, and the patient had been in the habit of using one for some years.

On examination the broken end of the catheter could be felt about 2½ inches from the meatus, and manipulation was tried to work it to the exit. The patient informed me that he himself had tried for half an hour to work it out. While this was being attempted by me he told me that six years previously, while in the United States of America, a similar thing had happened, about 2½ inches having broken off and being left in the bladder. For ten months a "doctor tried to dissolve it with medicine." Subsequently he returned to Swansea, where a suprapubic cystotomy was performed, and the missing portion of catheter, now somewhat encrusted, was removed. After a long convalescence he recovered, but continued to lead a catheter life, without any other symptoms until the present catastrophe.

Half an hour's manipulation having failed, I applied an ordinary pair of sinus forceps, one blade being introduced into the lumen of the catheter and the other between the catheter and the mucous membrane. After a long and careful pull the missing portion was recovered in its entirety. A very strong "grip" was noticed in the region of the stricture. The piece extracted was 9¾ inches long, the external portion being 9¼ inches.

Swansea. L. W. HEFFERMAN, M.R.C.S.

PROLONGED ANURIA WITH RECOVERY

The following case appears worth recording on account of its rarity.

Mrs. A. Q., aged 53, was admitted to hospital on September 1st, 1930, complaining that she had passed no urine for two days. Three years previously she had had a panhysterectomy and bilateral salpingo-oophorectomy for uterine fibroids. In 1929 she had suffered from a slight "stroke," but had completely recovered. A few weeks prior to admission she had noticed haematuria on two occasions. For two days before admission, in addition to anuria, she had had no bowel action, and vomiting was occurring frequently, the vomit being green and offensive. During the previous day she had been strange in manner, had complained of headache, and had been muttering in an incoherent fashion.

On examination the temperature was 99°, pulse 80, and respirations 24. The general condition was very poor, the colour greyish, the skin dry and hot, and the tongue thickly coated. The abdomen was moderately distended, with tenderness and rigidity in the left loin, but the bladder was not palpable. A catheter was passed, but the bladder was quite empty. The blood pressure was 185/105. The patient was treated with an alkaline diuretic and diaphoretic mixture, hot packs, pilocarpine, and drastic purgatives, but no urine was passed, and the general condition became much worse. Thirty-six hours after admission, despite the high blood pressure, a pint of intravenous saline was given, but this did not stimulate the kidneys to secrete. In order to eliminate calculus anuria an *x*-ray of the urinary tract was made, but this was negative.

By September 4th the condition had become critical, the patient vomiting repeatedly and being semi-comatose. The blood urea was 282 mg. per 100 c.cm., and the systolic blood pressure had risen to 195 mm. On this day 14 ounces of urine were passed, and the amount varied during the following days, until an average of 30 ounces per day passed. Examination of the first specimen of urine showed: cloud of albumin, urea 2.3 per cent., chlorides 0.29 per cent., and a deposit of red blood corpuscles, granular casts, and epithelial cells.

By September 11th the blood urea had fallen to 169 mg., by September 18th to 82 mg., and by October 16th to 46 mg. The blood pressure fell to 135 mm. on September 11th, and then gradually became stabilized at the level of 150 mm. The patient was discharged in very good health seven weeks after admission.

This case is, in my opinion, one of anuria occurring in chronic interstitial nephritis, and it is worthy of note because it is rare for a patient to suffer from complete suppression for five days, culminating in a blood urea of 282 mg. per 100 c.cm. and then to recover.

I have to thank Dr. W. G. Bendle for permission to publish this case.

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Reports of Societies

OXFORD OPHTHALMOLOGICAL CONGRESS

The twenty-first annual meeting of the Oxford Ophthalmological Congress was held on July 9th, 10th, and 11th. Members met informally at dinner on July 8th in the Hall of Keble College, which again offered its hospitality. The advantage which is gained by the all too short stay in the college, where each member is assigned rooms, and becomes for the time being a student again, is one of the features of this successful gathering, which was instituted by the late Robert Doyne in 1910.

The congress was held in the department of human anatomy of the University, kindly lent for the purpose by Professor Arthur Thomson. In addition, there was a commercial exhibition in the scientific museum, where numerous well-known firms of ophthalmic instrument makers displayed the latest forms of apparatus and instruments. As usual, a large number of foreign and overseas members attended, which emphasized once more its international character. The proceedings began on July 9th with a short address of welcome from the deputy master, Mr. PHILIP ADAMS, who announced, much to the regret of all present, that, owing to indisposition, the master, Mr. Bernard Cridland, was unable to preside.

Mr. LESLIE PATON opened a symposium on the diagnosis of intracranial new growths, dealing especially with the ophthalmological aspect. He said that ocular signs were among the most important in the diagnosis of cerebral tumours. He considered changes in the nerve head of primary importance, next alterations in vision and the visual fields, ocular palsies and nystagmus, and changes in the pupil reactions. He considered papilloedema the most important sign of the presence of increased intracranial pressure. Of less significance were the symptoms of headache and sickness. Increased retinal arterial pressure, as first pointed out by Dr. Bailliart, preceded papilloedema. Unequal papilloedema was rare, and might be due, as suggested by Dr. Walter Parker, to unequal intraocular pressure. Mr. Paton said that optic atrophy might result from pressure consequent on papilloedema.

Inequality of the pupils was not of great diagnostic value, but might indicate the site of the lesion. Ocular palsies were important for localizing purposes. He commented upon the complexity of the tracts and centres involved in nystagmus, and on the numerous sites of the lesion.

Sir PERCY SARGENT said that the aim of diagnosis should be, not merely to localize, but to ascertain the type of tumour. Some general sort of classification was necessary, the best one being a combination of the topographical and the historical. Pituitary hyperplasias, suprapituitary tumours, and cerebello-pontine tumours constituted three readily recognized groups. The speaker discussed the endotheliomata and gliomata, emphasizing the point that the former were encapsuled and always outside the brain, whereas the latter were always in the substance of the brain. He described the diagnostic points of the rarer forms of intracranial tumours, such as parasitic cysts, cholesteatomata, haemangiomata, etc. Finally, he said that chronic abscesses, tuberculomata, and gummata should be included under tumours, seeing that their symptomatology might be indistinguishable from that of true neoplasms. Dealing with the diagnosis of the tumour, the speaker said that mechanical and other adventitious aids to diagnosis should be adjuvant, and not alternative.

Dr. H. M. TRAQUAIR stressed the value of perimetry, and discussed the positive information which is obtained when the visual pathway is affected. He emphasized the importance of thorough testing of both fields by the quantitative method, and the necessity for careful study of all the characters of a field defect.

Mr. NORMAN DOTT estimated highly the value of perimetry to the neurological surgeon, saying that it might constitute the main or only evidence of the lesion. He stressed the importance of a correct knowledge of the interpretation of the perimetric findings, which, he said, should be correlated with the other factors in the case.

The discussion was continued by Professor Dr. ARTUR SCHÜLLER of Vienna, who gave a most instructive address on the radiological findings in cerebral tumours, and showed how the many pitfalls could be avoided in these cases. Professor EMIL DE GROSZ (Budapest), Mr. HARRISON BUTLER, Dr. GIRI, Dr. TYSON (New York), Dr. WALTER PARKER (Detroit), and Mr. STAMMERS also joined in the discussion.

In the afternoon Professor G. ELLIOT SMITH, F.R.S., gave a very interesting address on the evolution of the instruments of vision, tracing the developments of the eye from its earliest forms.

Demonstrations in the scientific museum were given by Mr. BURDON-COOPER on irradiation of cataractous and other lenses; Mr. GEORGE YOUNG showed a specimen of bilateral haemorrhages into Cloquet's canal; Miss MARGARET DOBSON demonstrated her binocullariscope; Mr. WHITTINGTON a new device for the training of squinting children; Mr. ARTHUR GREENE a specimen showing idiopathic panophthalmitis with unusual features; and Mr. C. G. RUSS WOOD specimens of epithelioma of the corneal limbus and papilloma of the caruncle.

The annual dinner of the congress was held in Keble College in the evening, and was attended by a large number of members and their guests. Mr. PHILIP ADAMS proposed the toast of "The Oxford Ophthalmological Congress." He stated that the membership was now over 150, and that twenty new members had joined since last year. The toast of "The Guests" was proposed by Mr. ARTHUR GREENE, and responded to by Sir FARQUHAR BUZZARD.

On the second day Dr. BAILLIART of Paris gave a very interesting and exhaustive address on tonometry. He described the various methods of ascertaining the intraocular pressure, and dwelt on the important points of tonometers. He considered that an international standardization of tonometers was desirable. The relation between the blood pressure and the ocular pressure was considered of great importance; the two should always be compared. Dr. Bailliart pointed out that the intraocular pressure was modified by the application of the tonometer. He considered that tonometric variations in pressure were extremely important, as they gave valuable indications of the intraocular circulation, and that in the case of glaucoma they were of prognostic value.

The Doyne Memorial Lecture was given by Mr. PHILIP ADAMS, and was entitled "An ophthalmological melange." This consisted of a most interesting series of experiences of common and rare cases seen over a space of many years. At its conclusion Mr. CYRIL WALKER, the master-elect, who presided at the lecture, expressed his warm appreciation when presenting the lecturer with the Doyne Memorial Medal.

Dr. HARALD GJESSING of Drammen, Norway, gave the result of the after-examination of 122 eyes which had been operated upon by Holth's iridencleisis.

Mr. JAMES CRAIG introduced a discussion on penetrating wounds of the eye. He dealt with the various ways in which a penetrating wound might injure the eye, and the evil effects of prolapsed iris. He mentioned the wounds of the ciliary region and of the sclera. He stressed the danger of retained foreign bodies, and discussed their varying effects, mentioning the methods of removal. Mr. Craig discussed the question of foreign bodies in the vitreous, and the symptoms of intolerance of the eye for them. He described the methods of removal with the magnet, also the extraction of non-magnetizable foreign bodies, and the special therapeutic measures for treating the wounded eye. Professor SCHÜLLER followed with an illuminating description of the various methods of localizing foreign bodies in the globe, and pointed out that the expensive forms of apparatus for doing so were unnecessary, equally good results being obtained by simple methods.

Mr. RUGG-GUNN read a very interesting and practical paper on contact glasses. He discussed the theory of their action, and mentioned many practical points with regard to their application.

Mr. BERNARD CRIDLAND presided at the meeting on July 11th. On rising to open the session he received a very warm welcome.

Dr. BERNARD SAMUELS of New York read a paper on the methods of formation of the posterior abscess in ulcus serpens. This was fully illustrated by many excellent slides. Dr. CRISP of Denver read an interesting and practical paper on the use of cross cylinders in refraction work. He pointed out that not only were they very useful as regards the estimation of the strength of the cylinder, but also that the position of the axis could be determined more accurately by their use. Mr. GEORGE YOUNG made a communication on recession of the internal rectus muscle, describing both the theoretical and practical aspects of the operation. Mr. NICHOLAS HUGHES read a very interesting paper on thirty-seven cases of macular disease in children. In the large majority of these, defective vision had come on after an attack of measles. Professor CURRAN of Kansas City read a paper on 400 operations of peripheral iridotomy in acute and chronic glaucoma. His special method of doing the operation was fully described, and the results were detailed.

The congress, which was attended by over 120 members, was generally considered to have been the most successful of the series, both in the high scientific value of the papers read and in the large attendance.

Reviews

ANATOMY IN THE LIVING MODEL

Anatomy in the Living Model,[1] by Professor DAVID WATERSTON, is the outcome of a desire to link together the facts of anatomy as displayed in the dissecting room with the facts to be observed in a living model, both at rest and in action. It is, however, something more. It is the outcome also of a desire to explain various phenomena—as, for instance, the restriction in certain movements of the fingers, the cutaneous lines of cleavage to which Langer has drawn attention, the mottling frequently noticed of the skin—by references to macroscopical or microscopical anatomy. Such features, but particularly the attention paid to the change which takes place in surface form in passing from rest to action, serve to differentiate it somewhat sharply from most if not all of the publications with which we are acquainted on the subject of surface anatomy.

The volume is divided into three parts: a relatively short but interesting chapter on the skin, in which such matters as the intimate structure of this covering, the question of nerve and arterial areas, and the localization of touch, pain, and warm and cold spots are discussed; a final short appendix of practical exercises on subjects like the taking of finger-prints and the electrical stimulation of nerves; and an intermediate section, forming by far the major portion of the work, subdivided into four sections dealing respectively with the topographical anatomy of the arm, the leg, the head and neck, and the thorax and abdomen. It is this last section which conforms most closely to what we regard as orthodox anatomy. It will be noted that the author has carefully refrained from describing his work as an "applied anatomy," and throughout has approached his subject from the standpoints of the anatomist and physiologist rather than from those of the surgeon and physician. The two latter, particularly the orthopaedist and neurologist, will, however, find in the book information of value and importance. For a first edition the work is singularly accurate: it is also relatively exhaustive, but we have noted a few omissions. For instance, in the account of the carrying angle at the elbow no reference is made to the part played by the anconeus in its production. The outward curvature of the radius for the better mechanical advantage of the pronator teres is remarked, but the corresponding inward curvature for the similar advantage of the antagonizing supinating muscle, the biceps, is ignored. Again, while the sharp setting back of the base of the second metatarsal is mentioned, the almost equally sharp setting back of the bases of the fourth and fifth metatarsals is not.

The illustrations, many of which are coloured, are both numerous and excellent, the wash-drawings of the modelling of the limbs and the figures of certain sections of the head and neck being, in our opinion, particularly meritorious. We think everyone will be grateful, too, for the figure of the facial musculature of a European male drawn from a specimen in the anatomy department of the University of St. Andrews. A few of the smaller and simpler figures are, however, not above criticism. For instance, the insertion of the tendon of the tibialis posticus muscle in one of the figures is incompletely shown, and that of the tendon of the peroneus tertius inaccurately. In Figure 1 the position of the sebaceous gland in relation to the arrector pili muscle, though corrected in the legend, is liable to convey a wrong impression.

Such criticisms as we offer here are obviously concerned with matters of minor importance, and in no way materially detract from the value of the work. The author has brought to his task the fruits of a wide and long experience as well as of careful and considered thought, and has succeeded in producing a volume of much originality and suggestiveness.

FIRST LINES IN ANAESTHESIA

Dr. W. S. SYKES has written a somewhat unconventional short textbook in his *Anaesthesia*,[2] which is the latest addition to Dr. Crookshank's Modern Treatment Series; but there is no doubt that his method will impress first principles very clearly upon the minds of his readers. He begins with a chapter called "The Foundation Stones of Safety," which (like the Lamps of Architecture) are seven in number. All seven are certainly fundamentals, but we should have liked to see a keystone added, impressing the young anaesthetist with the importance of choosing the safest method which will afford the surgeon proper facilities for the procedure he is about to employ. Elsewhere the author is properly emphatic on this very important principle; but he omits it in this chapter, where, above all, it should be made prominent.

The instruction offered to the student and the very junior practitioner, for whom the book has been designed, is clear and practical, as well as thoroughly up to date. It is a pity, however, that a piece of lint, or a doubled-up corner of towel, should be put forward as adequate vehicles for the administration of chloroform; they may be traditional makeshift substitutes for a proper mask, but surely should not be held out as anything more than rather risky improvisations which are occasionally useful in emergencies. How many face burns, or even corneal ulcers, to say nothing of still more serious anaesthetic catastrophes, these Victorian contrivances have caused one shudders to think of; but they still seem to have adherents, judging by some recent textbooks.

Dr. Sykes is rather sceptical about one or two fashionable developments of technique; he doubts the advantages of making the patient recovering from anaesthesia inhale carbon dioxide gas, and he is also not impressed by the virtues claimed for warmed ether vapour. It is refreshing to find an author bold enough to tilt at what he regards as passing fads; and it is conceivable that in a few years the favour with which some anaesthetists regard these procedures will have given place to indifference or even opposition. Within the severe limitations of space imposed upon him, Dr. Sykes has produced a really useful workaday outline of his subject.

PSYCHIATRY

The tenth volume of the *Archives of Neurology and Psychiatry*,[3] which is issued from the Central Pathological Laboratory of the London County Mental Hospitals at the Maudsley Hospital, includes a number of important and interesting pathological, psychological, and clinical studies, some of which may be said definitely to illuminate the obscure problems of mental disease. The first contribution is a concise summary of the conclusions arrived at as the result of a series of researches carried out under the direction of Dr. F. L. GOLLA on the pathology of schizophrenia. The details of this work are given in the seven papers which follow the summary. Since these

[1] *Anatomy in the Living Model*. By David Waterston, M.D., F.R.C.S.E., F.R.S.E. London: Hodder and Stoughton, Ltd. 1931. (Pp. xvii + 255; 74 figures, 16 plates. 25s. net.)

[2] *Modern Treatment: Anaesthesia*. By W. Stanley Sykes, M.B., D.P.H., M.R.C.S. With a Section on Local Anaesthesia by P. J. Moir, M.C., M.B., F.R.C.S. The Modern Treatment Series. London: J. Cape. 1931. (Pp. 128; illustrated. 5s. net.)

[3] *Archives of Neurology and Psychiatry*. Edited by Frederick L. Golla, M.B., F.R.C.P. Vol. x. London: P. S. King and Son, Ltd. 1931. (Illustrated. 15s.)

pathological studies have been published from time to time in various medical journals, it will be found very helpful to those who are interested in the problem with which they are concerned to find them collected in one volume. Briefly, these researches lead to the view that in the schizophrenic a failure of acid-base equilibrium exists, the determining factor of this condition being a lowered excitability of the respiratory centre to the stimulus of carbon dioxide. Dr. Golla states that the waking condition of such patients appears to resemble closely that of the normal person during sleep—an interesting generalization since, on the psychological side, it has often been noted that the psychic productions of the schizophrenic are analogous to those of the dreamer. It is to be hoped that further studies of this kind may be undertaken, since they not only throw some light on the pathology of schizophrenia, but also make it permissible to nourish the hope that treatment along biochemical lines might some day be applied with success.

In the sphere of normal psychology Drs. Golla and S. Antonovitch give an account of a particularly ingenious and interesting experimental study on the respiratory rhythm in its relation to the mechanism of thought. Studies were made on the respiratory volume and rhythm by means of a plethysmograph enclosing the whole body. Two types of habitual respiration emerged: an irregular respiratory type in subjects with predominantly auditory imagery; a regular type in subjects with predominantly visual imagery. It is interesting to note that the two types are approximately equally distributed among normal subjects of both sexes. On the clinical side we have an important article by Dr. E. Mapother emphasizing the need for accuracy in the assessment of alcoholic morbidity. Mr. C. Geary records observations upon the histopathology of general paralysis treated with malaria and relapsing fever; Dr. W. A. Caldwell reports on 579 cases of general paralysis treated by malaria in the London County Mental Hospitals; Dr. T. Tennent gives an account of investigation into the prolonged treatment of general paralysis with tryparsamide; and Dr. S. A. Mann and Mr. F. Partner deal with the question of the Wassermann reaction in mental hospital practice.

Altogether the volume contains twenty-six papers. It is evident that much active and fruitful investigation is being carried out in the laboratory, and that the high standard of the work is still being maintained.

INTERNATIONAL TRADE IN DRUGS OF ADDICTION

The League of Nations has issued for the use of the Conference on Limitation of the Manufacture of Narcotic Drugs an analysis of the international trade in morphine, heroin, and cocaine for the years 1925–29.[1] The ultimate object of the analysis was to arrive at the quotas of the world's legitimate requirements to be assigned to each manufacturing country. That objective appears, for the present, to have been set aside by the Conference, inasmuch as the quota scheme has been rejected. A not less important, and indeed a more immediate, aim of the analysis was to elucidate the extent and source of the illicit traffic in the drugs in question.

The task assigned to the "Opium Traffic and Social Questions Section" of the secretariat of the League in preparing this volume of 215 pages and five statistical tables with explanatory notes was a formidable and laborious one. While in some cases returns have not been forthcoming, and in others their accuracy is not beyond doubt, the analysis furnishes abundant material on which to base more effective endeavour to limit the production of narcotic drugs to the amounts required for medical and legitimate purposes. As regards exports, it appears that Germany was responsible in the years 1925–29 for 41.5 per cent. of the 40,783 kilograms of morphine exported from the eight manufacturing countries, and for 62.3 per cent. of the 16,642 kilograms of cocaine so exported in those years; while Switzerland supplied 41.7 per cent. of the 22,545 kilograms of heroin exported in the same years from the eight manufacturing countries. The heroin exported from Switzerland was consigned chiefly to France and the Netherlands. Since 1926 no heroin is reported to have been exported from the United States, where its manufacture is forbidden. The cocaine exports from Germany went to almost all the non-manufacturing countries, and in large amounts to Switzerland. When comparison is made between the returns of imports into certain countries with those of the exports thereto grave discrepancies are revealed, due, it is suggested, either to illicit traffic or to incorrect returns. During 1930 these discrepancies are stated to have been fewer and less in amount than in previous years. Uncertainty as to what is done with illicit drugs which have been confiscated is another possible source of the discrepancies disclosed in the stocks as accounted for. The explanations vouchsafed by various countries of the discrepancies in statistics revealed by the investigations of the secretariat of the League leave a good deal to be desired.

The last table (Table V) gives the conclusions of the whole study, and was intended, not only to serve as a basis of the present legitimate trade, but also to facilitate the allocation of quotas of production among the eight manufacturing countries. It accordingly indicates "how large a proportion of the exports of each manufacturing country should be lopped off as having been feeding the illicit traffic." From this table it appears that as regards morphine, while none remained unaccounted for at the end of the five-year period (1925–29) in the case of Great Britain, 36.33 per cent. was unaccounted for in the case of France. As regards heroin, the figures are 13 per cent. for Great Britain, 53 per cent. for France, 23 per cent. for Italy, and 74 per cent. for Austria. With regard to cocaine, while for Great Britain 2 per cent. remained unaccounted for, for France 24 per cent., for Japan 23 per cent., and for Austria 28 per cent. were the corresponding figures. The argument for some approximation to the action taken by Great Britain under the Dangerous Drugs Acts, 1920–25, in fulfilment of treaty engagements by several of the other signatory Powers, could hardly be made more complete than it is as set out in this comprehensive analysis.

[1] *Publications of the League of Nations. International Trade in Morphine, Diacetylmorphine (Heroin) and Cocaine for the Years 1925–1929.* Part I. League of Nations Publications: Opium and Other Dangerous Drugs. London: G. Allen and Unwin, Ltd. 1931. (Pp. 215. 7s. 6d.)

PROSTHETIC DENTISTRY

In conjunction with forty-five collaborators, Lieutenant Commander NICHOLS of the Dental Department of the United States Naval Medical School has compiled a volume, entitled *Prosthetic Dentistry: An Encyclopedia of Full and Partial Denture Prosthesis.*[2] The major part of the book, dealing as it does with "mechanical dentistry," will necessarily be of greater interest to the dentist than to the medical practitioner. The medical reader, however, cannot fail to be impressed by the fact that the dentist needs an intimate knowledge of the anatomical and physiological details of the parts he is dealing with before he can hope to construct an efficient replacement apparatus, as well as an expert knowledge of the materials he is using in the workshop. In

[2] *Prosthetic Dentistry: An Encyclopedia of Full and Partial Denture Prosthesis.* By Ira Goodell Nichols, D.D.S. With collaboration of forty-five authorities. London: H. Kimpton. 1930. (Pp. 687; 839 figures, 3 plates. 50s. net.)

addition to normal prosthesis there is a valuable section devoted to showing what useful work can be done in facial restoration by a combination of the surgeon's skill in plastic operations on the soft parts and the dentist's ability to supply an apparatus replacing the lost hard tissues. Indeed, we think many patients might prefer this combination as a shorter cut to health and work than is provided by bone grafting.

There is an interesting note on the torus palatinus by George M. Dorrance, who discovered references to it as far back as 1814, and mentions that it sometimes has to be removed to ease the patient's fear of cancer, but he finds that it carries with it no trace of a "stigma of degeneration." The book is well and profusely illustrated, and should appeal to all interested in mechanical dentistry, and, we may add, to all engaged in "Service" dental work.

NOTES ON BOOKS

The National Association for the Prevention of Tuberculosis has published a new edition of its *Handbook of Tuberculosis Schemes*.[6] This very useful book forms a complete directory of tuberculosis work throughout the country. Each administrative area in England, Wales, Scotland, Channel Islands, Northern Ireland, and the Irish Free State is dealt with separately; such details as general and tuberculosis death rates, provision for treatment under the tuberculosis schemes, and the administrative staff, are included. The *Handbook* forms the only published list of tuberculosis officers, and the only complete list of residential institutions for tuberculosis. It includes also charts showing the comparative rates for respective counties and county boroughs, the fall in the tuberculosis death rate, etc. Orders should be sent to the secretary, N.A.P.T., Tavistock House North, W.C.1, with remittance for 5s.

In a monograph, entitled Women and the Progress of Medical Science,[7] Dr. MELINA LIPINSKA shows the part played by eminent women in various countries in the advancement of medicine from the earliest times until the present day. The work is divided into five parts, devoted respectively to primitive medicine, antiquity, the Middle Ages, modern times up to the nineteenth century, and the nineteenth and twentieth centuries. The last part will naturally attract most readers, as it deals with the successful struggles made by women in various countries to obtain admission to medical faculties and the part played by women in the great war. The work is illustrated by numerous portraits, including those of Lady Mary Wortley Montagu, who introduced inoculation into Western Europe, Madame Necker, who did much to reform French hospitals, Miss Nightingale, Madame Dejerine, the neurologist, and Dr. Josephine Ioteyko, the Polish psychologist and patriot.

Dr. AIGLRNON WEAR, in the *ABC of Child Health*,[8] has set out for the use of the intelligent mother some elementary facts about the common diseases of childhood, as well as much straightforward advice on hygiene and first aid. The aim, as Dr. Wear says in his preface, has not been to turn the mother into a doctor, but to set out in simple language the facts about the health and well-being of children which should be the common knowledge of every mother. For this reason he makes little or no reference to treatment, except in cases calling for emergency remedies until the arrival of the doctor, such as burns and scalds. The book should be useful for reference among mothers who wish to know something of the causes underlying childish ailments.

[6] *Handbook of Tuberculosis Schemes for Great Britain and Ireland*. Sixth edition. London. National Association for the Prevention of Tuberculosis. 1931. (Pp. vi + 160. 5s., post free.)

[7] *Les Femmes et le Progrès des Sciences Médicales*. Par Dr. Melina Lipinska. Avec préface de M. Albert Thomas. 1930. Paris: Masson et Cie. (Pp. viii + 235; illustrated.)

[8] *ABC of Child Health*. By Algernon Wear, C.M.G., M.D., B.S., D.P.H. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1930. (Pp. 81. 1s. net.)

The tenth edition of *A Simple Method of Water Analysis*,[9] by Drs. J. C. THRESH and J. F. BEALE, has now appeared. Medical officers of health will find in it some definite improvements on previous editions, though little change has been necessary in the description of the chemical methods of water analysis, apart from certain practical suggestions for simplifying the procedures. All the helpful features of previous editions have been retained, but condensation has obviated any increase in the size of this popular handbook.

The Animal Year-Book[10] is the annual review of the University of London Animal Welfare Society. This body has been formed to enlist educated opinion in the cause of humane treatment of animals. It is important to note that it is not an antivivisection society; it is working on broad common-sense lines for such objects as humane slaughter, improvements in methods of trapping, proper disposal of oil-waste from ships, and so on, with a remarkable freedom from the overstatements which in the past have characterized such societies. The *Year-Book* reviews the work being done, the problems requiring immediate attention, and the more important publications on the subject which have appeared within the last decade or so. There is also an interesting article on the clinical work of the veterinary colleges, and on anaesthetics and narcotics in animal medicine and surgery.

[9] *A Simple Method of Water Analysis*. By John C. Thresh, M.D., D.Sc., D.P.H., and John F. Beale, M.R.C.S., L.R.C.P., D.P.H. Tenth edition. London: J. and A. Churchill. 1931. (Pp. 69. 3s.)

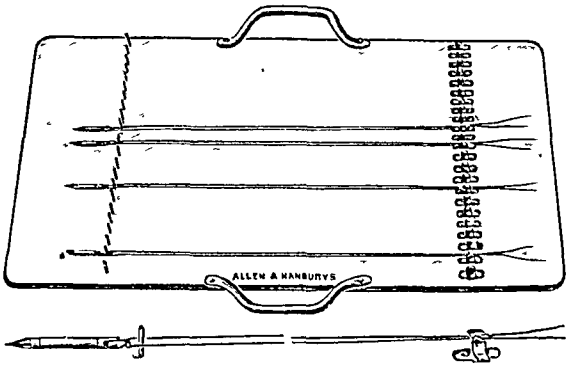
[10] *The Animal Year Book*. Edited by C. M. Knight, D.Lit., and C. W. Hume, M.C., B.Sc. London: University of London Press, Ltd. 1931. (Pp. 173. 2s. net.)

PREPARATIONS AND APPLIANCES

TRAY FOR RADIUM NEEDLES

Mr. EDGAR FRESHMAN, F.R.C.S. (London Hospital), writes:

The following tray, which has been made to my specification, has proved useful for carrying radium needles that are threaded prior to sterilization. It is of metal, 15 inches long and (including the side handles) 12 inches broad; the angle at which the handles are placed enables it to be completely immersed in one inch of fluid. Each needle with its thread is held by a peg and a spring clip, of which there is a row of twenty-four near each end of the tray. The needles, after being threaded, are placed so that one of the double threads issuing from the eyes passes over each side of a peg; the threads are then pulled taut and fixed in the corresponding clips at the other end of the tray. The pegs and



clips are placed so as to take threads of not less than 10 inches in length, but the tray can be made to accommodate needles with shorter threads. If the threads are knotted a little distance from the needles it is simpler to draw the knots, rather than the eye ends of the needles, up against the pegs. The advantages of this tray are that on each one twenty-four needles can be carried, sterilized, and counted with ease and convenience, and with the minimum amount of handling. All annoyance due to entangling of the threads is avoided, and only a very small depth of fluid is required for sterilization—an important point if this is effected by immersion in spirit. The tray has been made for me by Messrs. Allen and Hanburys Ltd., Wigmore Street, W.1.

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THE FACTOR OF INFECTION IN THE RHEUMATIC STATE

In his new monograph[1] Dr. Alvin F. Coburn, resident physician of the Presbyterian Hospital in the City of New York, defines what he means by the "rheumatic state." It is clear that he includes within this term the same group of phenomena that is in this country sometimes labelled "acute rheumatism," but better described as juvenile rheumatism or the rheumatic infection. This picture, as Dr. Coburn sees it in New York, is a little less precise than that which is apparent to clinical observers in the British Isles, and the colours are rather more vivid. These differences are probably real. The infection as it is seen in New England is more florid than in this country, and therefore produces phenomena over a wider range of organs, and of an intenser degree in the same organs. The New York lesions, however, conform in their anatomical and histological patterns to the criteria for which we are chiefly indebted to the British observers—a debt which Dr. Coburn acknowledges in generous terms. Our understanding of this "rheumatic state" has within recent years entered on a new phase. The end of the nineteenth century, with all its new bacteriological knowledge, brought a conviction of the infective nature of acute rheumatism. Since the twentieth century opened there has been a slow but steady set of opinion towards support of the view, first enunciated by Poynton and Paine, that the infection is streptococcal. The present times are witnessing attempts to solve two further questions: What kind of streptococcus is responsible, and by what means does it make its attack?

Dr. Coburn has addressed himself to the solution of these problems by means of researches as ingenious as they are thorough. The conclusion to which he comes is that "the rheumatic process is a human reaction, which appears in susceptible individuals, and which represents a special type of tissue response to chemical substances arising from disease of the upper respiratory tract. That unrecognized infective agents may be associated with these upper respiratory diseases is possible; nevertheless, the findings in this study justify the conception that *Streptococcus haemolyticus* is an important factor of infection in the rheumatic state." He does not find that this organism can be recovered from the circulatory blood in acute rheumatism. His claim to its recognition rests on the results of his laborious researches into the flora of the upper respiratory tract, especially of the pharynx, and into the reaction of the skin to inoculation with nucleoproteins of bacterial origin. The cultures made from throats both of rheumatic and of other patients in New York display a seasonal rise in the prevalence of *Streptococcus haemolyticus*, but no such rise occurred in Porto Rico, where this organism is seldom encountered in the upper air passages. Rheumatic patients taken from New York to Porto Rico soon lost their liability to active rheumatic manifestations, but these recurred with a return to New York. Parallel with these clinical variations ran a change in the bacterial content of the throat. This included haemolytic streptococci in New York which disappeared in Porto Rico, but came back again when the patients returned to New York. A somewhat similar series of observations demonstrated parallelism between the incidence of *Streptococcus haemolyticus* in the throat flora, and that of active rheumatic phenomena in children under treatment in a country convalescent home. Outbreaks of tonsillitis of the same kind have been noted by Schlesinger[2] at a similar home in Kent. Dr. Coburn alludes to this observation, and also to that of Hector[3] at a British fever hospital, which showed that "almost without exception an attack of scarlet fever in a rheumatic subject is followed by a reappearance of some of the symptoms associated with rheumatic infection." On these and other grounds he is disposed to regard the presence of haemolytic streptococci in the throat as having a close relation with the origin of rheumatic phenomena.

Inoculation of the skin with streptococcal filtrates has already been done by many workers in an endeavour to find a reaction, analogous to that of tuberculin, and of practical value in the diagnosis of rheumatic infection. Dr. Coburn's experiments were designed to test the existence of a relation between positive reactions and the presence of haemolytic streptococci in the pharyngeal flora. About 1,500 patients were tested, five different bacterial extracts being used. The patients with active rheumatic disease reacted positively to an extract of haemolytic streptococci with remarkable constancy, and in several instances the reaction assumed the characters of an erythema marginatum of the kind sometimes seen in juvenile rheumatism. Here Dr. Coburn's results have apparently been more convincing than those achieved by British workers, and he is entitled to claim that they support his views.

In the chapters that precede those summarized above the author gives an account of the observations that led him to search for the clue to the mystery in the flora of the upper respiratory tract. He noted that those environmental conditions which predisposed to "the rheumatic state" were also those in which infections of that tract flourished. It is thus that he explains the immunity of the Tropics from this disease. Certain it is that one of the outstanding facts of its causation is its limitation to the temperate zones, and in particular to the northern parts so far as Europe is concerned. Another striking fact is the influence of social position. This has been emphasized afresh by Dr. Reginald Miller, who, at a congress lately held in [illegible]ween the

high incidence of the disease among children attending the elementary schools and its almost complete absence from our great public schools.

In connexion with these problems there has been in this country a field research, the first of its kind, whose three years of investigation have now been completed. Large numbers of practitioners, medical officers of health, and school medical officers, reinforced by a group of consultants, have done their best to comb out every child with rheumatic heart disease in the three counties of Gloucester, Somerset, and Wiltshire. The interim report, based on 1,100 cases studied in this very arduous research, we have great pleasure in publishing at page 37 of the *Supplement*. The investigation, which is an outcome of the work of the British Medical Association's Subcommittee of Inquiry into Rheumatic Heart Disease in Children, is of particular value in that it deals especially with the prevalence of this condition in rural areas ; and about this we have had hitherto very little precise information. The report shows one very striking fact—namely, that in Bristol, the one great city in the area searched, the incidence of juvenile rheumatic heart disease was five or six times greater than in the surrounding rural areas. Whether or not this is to be regarded as confirmation of the view that industrialization is an important factor in the production of juvenile rheumatism, it agrees with the conviction expressed in Dr. Coburn's interesting book, that the incidence of the disease is particularly high in New York.

CHEMICAL NATURE OF ANTIGENS

An antigen is generally regarded as a substance which, on introduction into the living organism, leads to the development of a body or group of bodies capable of reacting in a more or less specific manner with the substance introduced. This reaction may be manifested in various ways, both inside and outside the body. For many years it was held that all true antigens were of protein nature, but the results of recent investigations have led to a modification of this conception. So much work has been carried out during the past decade on the chemical structure of antigens that we welcome the appearance of a monograph by Professor Oluf Thomsen of Copenhagen, summarizing the present position.[1]

Dealing first of all with the proteins, Professor Thomsen points out that not all proteins are antigenic. Gelatin, for example, is unable to give rise to the production of antibodies. There is evidence that this may depend on the poverty of aromatic groups in the molecule, gelatin being entirely deficient in tryptophane and tyrosine, and having only a small content of phenylalanine. Moreover, only those proteins which are foreign to the body of a particular animal can act as antigens. An exception must be made for the crystalline lens, which, on introduction into an animal of the same species, may yet lead to the development of specific antibodies. It is possible, however, to render a protein, naturally present in a given species of animal, antigenic to that animal by forcing upon it a new chemo-specificity. This can be done (as Obermayer and Pick, and Landsteiner have shown) by a process of iodization, nitration, or diazotization. Similarly, it has been found that under natural conditions the specificity of a given antigen may be determined, not by the protein molecule itself, but by a substance of carbohydrate nature which is linked to it. The specificity of the three common types of pneumococci, for example, is dependent on a difference in the carbohydrate substance which is combined with the basic pneumococcal protein. It is thus seen that an antigen may consist of at least two parts—one of which is " species specific," the other of which is " type specific." Further analysis has revealed the fact that the carbohydrate radicle, when entirely separated from the protein, may yet react specifically both *in vitro* and *in vivo* with the antibodies resulting from the injection of the whole antigen. The carbohydrate radicle, however, is by itself unable to give rise to the development of antibodies ; for this purpose it must be combined with the protein. The conception has therefore evolved of the existence of a substance, such as a carbohydrate, which possesses only some of the properties of an antigen ; such a substance is referred to as a " semi-antigen," or more frequently by Landsteiner's term, a " haptene." There is even evidence of a further class of bodies, referred to by Sachs as " semi-haptenes," which, though having no power to stimulate the production of antibodies or to combine with them *in vitro*, may be converted into haptenes by various substances which are able to bring about some change in their dispersion.

An antigen, it will be seen, is coming to be regarded as a mosaic, in which substances of non-protein nature may be responsible, in some instances at least, for its actual specificity. A study of the Forssman antigen, in particular, has also shown how the antigenic character of a protein may be altered by combination with a lipoid, acting as a haptene. Such an antigen may be artificially built up by combining the specific haptene—in this case the alcohol-soluble portion of the so-called F antigen—with an entirely different protein, such as ordinary hog serum. The injection of this complex into a suitable animal may give rise to the production of a haemolysin for sheep corpuscles in much the same way as the original Forssman antigen, which is present in aqueous suspensions of the lung or kidney of the guinea-pig, is capable of doing. The interest of these studies is by no means academic. Professor Thomsen discusses their bearing on such common clinical conditions as the idiosyncrasies. Many substances which are responsible for idiosyncrasy are not of protein nature. This fact has in the past often been regarded as proving the essentially different nature of idiosyncrasy and anaphylaxis. In the light of modern antigenic research, this proposition seems very doubtful ; and it is increasingly probable that some of the substances responsible for the idiosyncrasies are really of the nature of haptenes, which, by combination with certain proteins, are able to behave as antigens.

[1] *Antigens in the Light of Recent Investigations.* By Oluf Thomsen. Copenhagen: Levin and Munksgaard. 1931. (Pp. 187.)

VACCINATION OF MONKEYS WITH B.C.G.

Before advocating the widespread vaccination of infants with B.C.G., Professor Calmette, it may be remembered, decided to test the efficacy of his vaccine on monkeys. The actual experiments were carried out by Wilbert in New Guinea, and comprised tests on fifteen chimpanzees and fifty-six monkeys. All the controls became tuberculous, while of the vaccinated animals, though many died of intercurrent disease, none developed tuberculosis (see *British Medical Journal*, 1925, ii, and *Epitome*, para. 195, p. 34). Attempts to confirm Wilbert's work have proved, on the whole, unsuccessful. Tzechnovitzer, Schlossmann, Kirchner and Schneider, and Kalbfleisch and Nohlen, all failed to produce any significant degree of immunity in monkeys; in the experiments of Gerlach and Kraus some evidence of immunity was obtained, but the period of observation was limited to three months. In view of these discrepant results it is interesting to learn that the subject has again been studied, this time by no less competent and authoritative a worker than Dr. A. Stanley Griffith[1] of Cambridge. *Macacus rhesus* monkeys were used; twenty-nine were vaccinated, fifteen served as controls, and three were artificially infected for contact experiments. The vaccine was given by various routes, most commonly the mouth; sometimes single and sometimes multiple doses were given; the quantities of living B.C.G. bacilli administered were usually rather large, the total dosage by the mouth occasionally being as much as 1,000 mg. Immunity was tested for either by (*a*) instillation of small doses, 0.001 to 0.01 mg., of virulent bovine bacilli into the conjunctival sac, by (*b*) familial contact with infected monkeys, or by (*c*) subcutaneous inoculation with slightly attenuated bacilli. The interval between the last vaccination and exposure to infection varied, but was generally about one and a half to four months. All animals that died or were killed were carefully examined, and the type of the infecting bacillus was determined. In this way it proved possible to avoid confusion due to spontaneous infections, which were always due to the human type. The factors in the experiments were varied so much that no exact numerical comparisons are possible. The following results, however, seem to be fairly well established. When given by the mouth the B.C.G. strain, even in large doses, was found incapable of giving rise to progressive tuberculosis in monkeys. Intratracheal and intravenous inoculations, on the other hand, produced tuberculous pneumonia and even definite tubercles, though the lesions were limited to the lungs and did not tend to progress. Absorption of B.C.G. bacilli from the intestinal tract was found to occur to some extent, and the organisms could sometimes be recovered from the submaxillary or mesenteric glands, but Griffith believes that if they are to be absorbed in considerable numbers, which is presumably necessary for the production of immunity, the vaccine must be given over longer periods and in larger amounts than those recommended by Calmette. B.C.G. bacilli were found to remain alive in the lymphatic glands in some monkeys for periods up to six months without provoking characteristic tuberculous lesions, and without undergoing any increase in virulence for the guinea-pig. So far as the production of immunity was concerned, the results were almost completely negative. The vaccinated animals developed generalized progressive tuberculosis in much the same way as the control animals; the only perceptible difference was that in some of the vaccinated monkeys the disease was more protracted in its course and occasionally less in extent than in the controls. Whether in these instances the apparently higher degree of resistance was specific, resulting from B.C.G. vaccination, or was due to the greater age of the monkeys or variation in technical factors, could not be decided. If the former explanation is correct "it is evident," Dr. Griffith concludes, "that B.C.G. administered in the ways recommended by Calmette can produce, irregularly and inconstantly at most, only a low grade of relative immunity in the monkey."

[1] Griffith, A. Stanley: Studies of Protection against Tuberculosis. Results with B.C.G. Vaccine in Monkeys. Medical Research Council, Special Report Series, No. 159, 1931.

A HOUSE OF BOOKS

The rebuilt and enlarged premises of Messrs. H. K. Lewis and Co., Limited, medical publishers and booksellers, were the scene of a house warming on July 9th, when the directors entertained a large number of visitors, mostly members of the medical profession. Indeed, the company represented, as someone said, the life of a book, for there were authors, editors, publishers, printers, librarians, booksellers, and even, perhaps, in odd corners, readers! The new buildings have been designed to harmonize with University College, which they adjoin, and the dignified frontage at the corner of Gower Street and Gower Place bears a replica of the bust of Hippocrates presented by Messrs. Lewis some time ago for the Common Room of the British Medical Association House. The house of Lewis was founded by Henry King Lewis in 1844, not many years after the foundation of University College itself. Its first address was No. 136, Gower Street; No. 24, Gower Place was added in 1907, and now, through the co-operation of the firm with the college authorities, a worthy building has been added to Gower Street, for which that long, unlovely thoroughfare should be grateful. Sir Gregory Foster, until lately Provost of University College, who was principally concerned in the negotiations about the site and the building, presided over the brief commemorative proceedings, and said that his own memories of the firm went back for fifty years, to a time when it occupied a small shop of 25 ft. frontage, with a 240 sq. ft. floor space. Sir Gregory mentioned some names in the remarkable list of authors for whose books Messrs. Lewis had performed the office of obstetrician, and said how much he rejoiced in the success of a firm which had steadily pursued a high ideal. Professor H. R. Kenwood delivered a brief address on textbooks, surrounded as he was by shelves which were loaded with them. He pointed out the need for such books to be not only accurate in substance but interesting in style and stimulating to inquiry. As an old teacher he had long since come to the conclusion that no one properly knew his subject until he had written a textbook upon it. But a student, he added, should never restrict his reading to textbooks. He was inclined to doubt whether the standard of textbooks of recent years had improved to the same extent as their typographical production. They had assumed larger dimensions, but

some he had lately handled could have been much smaller without losing value. Professor Kenwood concluded with a word of warm congratulation to the hosts of the day. Mr. H. L. Jackson, a nephew of the founder of the firm, and one whose own association with Gower Street dates back for forty-three years, responded on behalf of himself and his fellow directors. He mentioned that one-third of the additional capital to finance the new venture had come from the staff, and a further considerable proportion from others whom it had been the firm's privilege to serve. The publication and distribution of medical and scientific literature presented peculiar difficulties, but there was always the joy to the bookseller of tracking down some perplexing query, and the publisher was consoled for his tribulations by his intimate contact with some interesting personalities. Mr. Jackson recalled that his own first meeting with Sir William Osler arose out of the disappearance at the printer's of a valuable piece of "copy"—a large tabular draft embodying an enormous amount of work, the only such occurrence in the long history of the firm. Fortunately, the distinguished author had a rough draft by him, and dismissed, in the kindliest way, a matter over which other men would have fumed. The proceedings ended with a few words of further congratulation by Dr. Percy Flemming, who mentioned the indebtedness of the medical profession to Messrs. Lewis and Co. for their circulating library, which had brought to many a poor student and medical man books he could not afford to purchase.

CONTRIBUTIONS TO THE STUDY OF CANCER

A number of Professor James Ewing's many friends and admirers have combined to do honour to him on the occasion of the sixty-fourth anniversary of his birth, by presenting him with a dedicatory volume or Festschrift on the subject of cancer.[1] In an appreciatory preface Professor W. H. Welch recapitulates the code of ethics to be observed in relation to a Festschrift, as laid down by Professor Morley. The principal conditions are that the dedicatee should be recognized as an international leader in his field of research, and that he should be an eminent trainer of scholars as well as himself an eminent scholar. The distinguished position occupied by Professor Ewing in these particulars will be admitted all the world over. It is sufficient to glance over the list of his papers, monographs, and textbooks, over a hundred and fifty of which are enumerated in the Festschrift, to realize his untiring devotion to the study of pathology and to the breadth of his interest in that science. Important as these contributions have been, it is, however, probable that his book on *Neoplastic Diseases* is that which has gained for him the greatest meed of appreciation, and has come to be considered as his chief contribution to science. As regards the scope of the Festschrift, Dr. Adair explains in his foreword that it is designed to include the most recent knowledge in the various subjects of cancer research, pathology, surgery, and radiotherapy from the scattered clinics and laboratories of Europe and America. It contains fifty-four articles under the general headings of cancer in its general relations, cancer research, regional cancer, and radium and Roentgen-ray therapy. A pleasing feature of the volume is a charming character study of Professor Ewing, sketched in chalk by Rebecca L. Taylor.

[1] *Cancer.* Comprising International Contributions to the Study of Cancer in Honor of James Ewing. Edited by Frank E. Adair, M.D., F.A.C.S. London: J. B. Lippincott Company. 1931. (45s. net.)

THE CREAM OF BEAUTY

Mr. Stanley Redgrove is doing his best to rend the veil of secrecy which has always been spread over the mysteries of the feminine toilette. In previous volumes he laid bare the secrets of the hairdresser, of the perfumer, and of the art of "make-up." He now provides a guide[1] to the manufacture, the use, and possibly the abuse, of a series of substances even more generally employed by women—namely, the very various preparations known as face creams. These are now almost universally used, and on the whole the results are gratifying. It is probable that the standard of female beauty is higher among the civilized populations of western Europe and America than it has ever been before, and, moreover, women are more successful in prolonging their period of beauty and charm into comparatively old age. This is due to a number of causes—better conditions of life, less drudgery, more intelligent feeding, and the general care and exercise of the body, to all of which the medical profession is proud to have contributed. But in addition some credit may be claimed by the chemists for providing various preparations for the preservation, and sometimes for the improvement, of the complexion. Of this subject, although it is full of medical interest, the profession has hitherto had very little knowledge. It is true that the first formula for cold cream was invented about eighteen hundred years ago by Galen, and with only slight modifications it is used even to this day, but since that time aids to the cultivation of beauty have been largely abandoned by the physician, and indeed he has rather frowned on the employment of creams and other artificial aids to adornment, implying that they do more harm than good. There may have been once some foundation for this prejudice, but the development of modern chemistry has provided a vast array of formulae for harmless and even beneficial creams which have now been introduced in one form or another into almost every civilized household. Mr. Redgrove professes in this little book to provide women with directions for the manufacture of these things in their own homes. We do not think that many of them are likely to take advantage of the opportunity he affords, but on the other hand he has given the medical profession in general, and the dermatologists in particular, valuable information on this subject in a convenient form, which they have long needed, and for which they should be duly grateful. There are, it appears, three principal categories of face creams—cold creams, vanishing creams, and emollient creams, and they have distinct functions. The cold cream, so called because the water incorporated in it causes a sensation of coolness when applied to the face, is properly employed only as a detergent. The function of vanishing cream, which is essentially an emulsion of stearic acid in water containing soap, is to provide a basis for the application of powder; while under the head of emollient creams

[1] *The Cream of Beauty.* By H. Stanley Redgrove, B.Sc., A.I.C. London: W. Heinemann (Medical Books) Ltd. 1931. (5s. net.)

are included all those which are applied to the skin at night in the hope of beautifying the complexion and remedying slight defects Many of these contain lanoline, which is almost the only substance easily absorbed by the skin, and lanoline creams are hence often known as "skin foods" We must refer the reader to the book for further details on these matters In addition to those on creams chapters will be found on face powder, rouge and lipsticks, toilet waters, and lotions On all of them the author is very knowledgeable, and his remarks are full of common sense and free from quackery On one point he is very reassuring —namely, in deprecating the common idea, almost amounting to a superstition, that the employment of emollient face creams may encourage the growth of superfluous hair He quotes scientific experiments to show that they have no such effect, and that any stimulation of hair growth is due entirely to increased blood supply to the hair follicles brought about by mechanical massage All medical men who are consulted from time to time by female patients about their complexions will find that an acquaintance with Mr Redgrove's little book will enable them to advise on this delicate subject with additional *savoir faire*

THE ORDER OF ST. JOHN AND THE BRITISH RED CROSS SOCIETY

The eleventh report of the Joint Council of the Order of St John of Jerusalem and the British Red Cross Society, which is summarized elsewhere in our columns this week, outlines the work of the various committees during the past year Perhaps the most outstanding achievement of the council since it was set up in 1920 has been the maintenance of a definite and enterprising policy during a period of rapid consolidation Not only has it exercised an exceptional vigilance in keeping abreast of progress in medical and technical knowledge, but it has shown a remarkable capacity for adapting its resources to the swiftly changing requirements of urban and rural conditions This power of adjustment to the emergencies of modern life demands an alert and co-operative spirit, and is well illustrated by the organization of elaborate services for dealing with accidents, and by the judicious establishment of over three hundred ambulance stations throughout the country Even more impressive than their material expansion is the fact that many of the services under the supervision of the council are staffed mainly by voluntary workers, who willingly surrender much of their leisure time, without thought of requital, in order to equip themselves for extremely arduous duties For example, it is not generally realized that the responsibility for the running, housing, and maintenance of the ambulance cars, the collection of subscriptions and weekly contributions, the arrangement of entertainments, and all the other methods employed to raise funds for their upkeep, is undertaken by voluntary workers, so that an efficient service may be available to patients by day and night, at little or no cost We hope that the council will continue to emphasize this important aspect of its work, for the social value of *disciplined* voluntary effort, intelligently directed towards the relief of physical and economic distress merits far more public consideration than it has hitherto obtained

"NUTRITION ABSTRACTS AND REVIEWS"

A new periodical—*Nutrition Abstracts and Reviews*—is about to be issued under the joint direction of the Imperial Agricultural Bureaux Council, the Medical Research Council, and the Reid Library, Aberdeen The editors are Dr John Boyd Orr, director of the Rowett Research Institute, and of the Imperial Bureau of Animal Nutrition, Aberdeen, Dr J J R Macleod, professor of physiology in the University of Aberdeen, and Dr Harriette Chick of the Lister Institute, London They will have the assistance of corresponding editors in other countries An attempt will be made in this journal to bring together abstracts of all papers which have a bearing on problems of nutrition, prepared, as far as possible, by workers actively engaged in research, it will also contain reviews by acknowledged authorities on the existing state of knowledge of particular subjects For the present it will be published quarterly, in January, April, July, and October, and the first issue —a double number—is due to appear in October next All communications should be addressed to the secretary to the Committee of Management, *Nutrition Abstracts and Reviews*, Imperial Bureau of Animal Nutrition, Reid Library, Rowett Institute, Aberdeen. The subscription is one guinea a volume, or 6s 6d a number (double numbers 13s), post free to any part of the world

ORTHODONTIC CONGRESS

The second International Orthodontic Congress will be held in London next week, from July 20th to 24th inclusive, under the presidency of Mr J H Badcock On Monday evening, after a presidential reception at the Savoy Hotel, Professor G Elliot Smith will give a popular lecture on evolutionary tendencies affecting both the teeth and the jaws On Tuesday evening the President and Council of the Royal College of Surgeons of England will hold a reception for members of the congress at Lincoln's Inn Fields, and on Thursday there will be a banquet at the Savoy Hotel The secretary-general is Mr B Maxwell Stephens, 76, Grosvenor Street, W 1 All meetings for papers and demonstrations will be held in the congress suite at the Savoy Hotel

THE ANNUAL MEETING AT EASTBOURNE

We published in the *Supplement* to our last issue the programmes of the Scientific Sections, and other details of the arrangements for the Annual Meeting of the British Medical Association to be held at Eastbourne next week It is very desirable that members attending the Meeting should immediately on arrival in Eastbourne register their names at the Reception Room, which will be in Devonshire Park

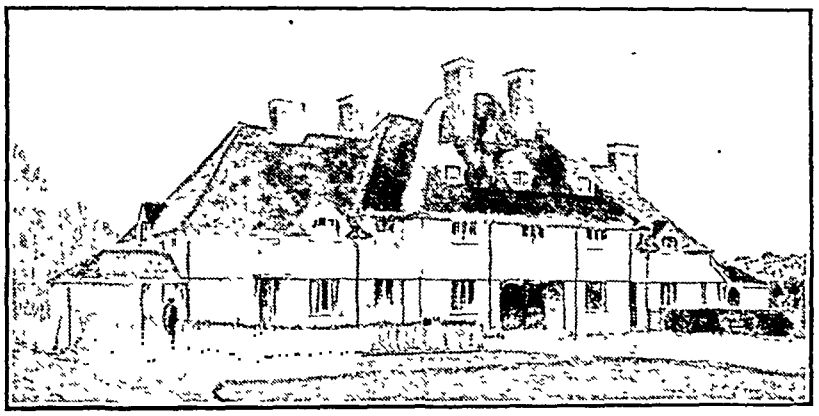
We regret to announce the death at Clifton Bristol, on July 12th, of Mr F Richardson Cross, LL D, F R C S, the veteran ophthalmologist

The annual general meeting of the West London Medico-Chirurgical Society will be held at the West London Hospital Hammersmith, to-day (Friday, July 17th), at 5 p m

THE BUCKSTON BROWNE SURGICAL RESEARCH FARM

FOUNDATION STONE CEREMONY

The foundation stone of the Buckston Browne Surgical Research Farm at Downe, near Farnborough, Kent, was laid by Lord Moynihan, President of the Royal College of Surgeons of England, on July 8th. The manner in which this great project has matured, the purchase of the Downe property through the liberality of Mr. George Buckston Browne, and the planning of this biological research station, were described in a leading article in the *Journal* of July 4th (p. 23). The stone which has been laid will form part of the porch of the large residential building, in the style of a Kentish farmhouse, which will house the research workers, as well as those in charge of the laboratories and the animals. The building of the animal houses and the experimental laboratories has not yet begun ; indeed, it is remarkable that so much progress has already been achieved, for Mr. Buckston Browne's benefaction was only made known to the College in the early part of the present year, and the site, which adjoins the Down House property, ever to be associated with Darwin, was selected only in March.



BUCKSTON BROWNE SURGICAL RESEARCH FARM, DOWNE, KENT

In addition to the President, the Vice-Presidents (Mr. C. H. Fagge and Mr. R. P. Rowlands) and most of the members of the Council journeyed to Downe. The President and Vice-Presidents wore their gowns, and the procession to the marquee was preceded by the College mace. A brief service of dedication was held by the Dean of Westminster, who, after Lord Moynihan had laid the stone in place, pronounced the words: "Here may knowledge be increased ; study fostered ; skill developed ; to the prevention and relief of suffering, the service of our fellow men, and the good of the human race throughout the world."

LORD MOYNIHAN'S ADDRESS

Lord MOYNIHAN addressed the company as follows: The Royal College of Surgeons of England to-day enters upon a new career. Hitherto it has fulfilled its statutory duties to the satisfaction of all. Henceforth it will assume fresh and wider responsibilities. Since Lister's day the main activities of surgeons have been directed to the recognition of disease in more and more precocious stages, and to the planning of methods of approach to and attack upon organs formerly inaccessible. Little by little it has become evident that no region of the body can stand aloof from our inquiry, that Lister has indeed given us a weapon which allows and even encourages us to find a path into territories which disease is able to enter. Surgery has become, then, not only the strongest of therapeutic measures, but also a method of research—a method by which, during the lifetime of the individual, the various stages and courses of disease can be investigated. Many new lessons have been learnt in that most procreant laboratory, the operation theatre, and while this has been proceeding, animal experimentation, the safety of which we also owe to Lister, has been widely carried on, with great benefit to the science and to the art of surgery.

The Council of the Royal College of Surgeons, which properly regards itself as the custodian of surgical advance in this country, has now recognized that for the further expansion of surgery there must be a correlation of the various results from methods of inquiry in three directions: (1) clinical research carried out in the wards and in the operation theatres of hospitals ; (2) biological and pathological research carried out also in hospitals and in special institutions ; and (3) research upon animals. In accordance with the Council's will, laboratories have been built and old laboratories extended in our buildings in Lincoln's Inn Fields ; there men have been set to work upon lines which they themselves desire, and there men have learned "the religion of research," and the high value of the experimental method in connexion with the science and art of surgery. Now, owing to the great beneficence of a Fellow of our College, we are here laying to-day the foundation stone of an institute for experimental research, which will add the one remaining event required for the proper development of surgery in this country.

Many memorials are raised to men, sometimes after their death, sometimes during their lives. Such memorials may be cast in bronze or graven in stone. Some are marked by a title, others by a decoration. But the finest memorials of all, we think, are raised up in the grateful hearts of men and women from whom a very heavy load of suffering and sorrow has been lifted. The finest memorial which can be raised to any man during his lifetime is surely an institute within which inquiry will take place resulting in permanent benefits conferred upon mankind. To-day we are recognizing the fact that Mr. Buckston Browne takes his place among those who may be regarded and honoured for all time as immortal benefactors. I will ask my old friend to say a few words of greeting.

SPEECH BY THE DONOR

Mr. BUCKSTON BROWNE said: Nature's discipline does not consist in a blow and a word. It does not consist even in a blow and a word some time afterwards. It consists in the blow without the word, and, as Professor Huxley told us years ago, it is for us to find out why our ears are boxed. When Jane Austen wished to pour contempt upon one of the creations of her wonderful brain, she said that he was a man without any curiosity. We who are here to-day recognize as our surgical patron saint John Hunter, who was a man devoured by an insatiable curiosity. I am sure that had John Hunter occupied the position in the Garden of Eden that Adam occupied, he would have taken a very large bite out of the apple. It is a very interesting fact that here we have been able to bring the great genius of John Hunter, who did so much for the alleviation of the suffering of the human body, alongside that great genius Charles Darwin, the emancipator—as I like to think of him—of the human mind. These two great men are brought together to-day on this really sacred spot in Kent.

Just one personal word. When I was a student I could not walk for ten minutes without meeting some unhappy

face scarred by small pox The mortality from small-pox in those days was terrible To day we hardly ever meet a pock marked face, and why? Because of the glorious work done by one of John Hunter s pupils, Edward Jenner—work done on a farm, a research farm as this is going to be With regard to myself and the too kind words which Lord Moynihan has spoken, I can only appear before you this afternoon as one of the most fortunate of men I have had a wonderful opportunity, and I am grateful to my College for it Under the aegis of that great and enthusiastic surgeon Lord Moynihan, and under the direction of my dear friend, that great anthropologist and biologist, Sir Arthur Keith—otherwise Lord Rector of the University of Aberdeen—I have been permitted to accomplish what I have done here I do believe, as Lord Moynihan has said, that we are entering upon an entirely new epoch in the history of our glorious old College

VISIT TO DOWN HOUSE

After tea had been taken, the company made their way along the sand walk—Darwin's 'thinking path"—to Down House, the property which was presented in 1927 by Mr Buckston Browne to the British Association as a memorial of Charles Darwin Here they gazed with interest at its steadily accumulating treasures, and especially at Darwin's study, kept as it was during his lifetime, with the little paraffin lamp on the table, and the dog (now a trophy of the art of the taxidermist) in its basket on the hearth

Others who accompanied the party, in addition to those already mentioned, were

Sir Thomas Barlow Sir James Berry Professor A H Burgess (Acting President British Medical Association) Mr McAdam Eccles Mr Victor Bonney Professor Graham Simpson Professor Hey Groves Mr Cecil P G Wakeley Dr Scott Williamson Sir Arthur Keith Professor Wingate Todd Professor Fraser Harris Dr de Bec Turtle Mr Sampson Handley Mr R C Hogarth Professor G E Gask, Dr John Eyre and Mr Winsbury White

ROYAL SOCIETY OF MEDICINE

ANNUAL MEETING

The annual meeting of the Royal Society of Medicine took place on July 7th, with the president, Dr T WATTS ELDER in the chair

The PRESIDENT in presenting the annual report of the council, said that the increase in the number of Fellows of the society was a matter of great satisfaction The present number of Fellows, excluding Honorary Fellows and members of other designations, was 4,160, an increase of nearly 600 upon the number five years ago On the other hand, the members of Sections (349) were decreasing, which showed that the advantages of full Fellowship were being more widely realized, so that new adherents became Fellows instead of merely sectional members The two new Sections of Physical Medicine and of Radiology (which had taken the place of the Sections of Electro Therapeutics and of Balneology and Climatology) were now fully constituted and members were enrolling in large numbers The old Sections themselves organized the change, and the matter had gone through very smoothly The society was indebted to the widow of a well known Fellow, Dr Edward Law, for a gift of £500 to commemorate her husband's work The money would be spent in the purchase of books for the library on otological, rhinological and laryngological subjects, in which Dr Law had been interested, and every book would contain a commemorative book plate

Professor WILLIAM BULLOCH one of the honorary librarians gave an account of the work of the library, which he said was now the second largest medical library in the world the largest being the Surgeon General's library at Washington Dr HUGH THURSFIELD, one of the honorary editors, spoke of improvements made and contemplated in the society's *Proceedings*

The report having been adopted, a ballot was taken for the election of unofficial members of council, 1931–32

The following were elected presidents of Sections (that is, vice presidents of the society) for the next session

Mr Ramsey Phillips (Anaesthetics) Mr Cecil Wakeley (Clinical) Dr J A Arkwright (Comparative Medicine) Dr A M H Gray (Dermatology) Sir Henry Gauvain (Disease in Children) Professor M Greenwood (Epidemiology and State Medicine), Dr R O Moon (History of Medicine), Mr W G Howarth (Laryngology) Dr H Morley Fletcher (Medicine) Dr Stanley Barnes (Neurology) Mr Victor Bonney (Obstetrics and Gynaecology), Mr E B Dowsett (Odontology) Mr E W Brewerton (Ophthalmology) Mr Harry Platt (Orthopaedics) Mr Norman Patterson (Otology) Professor E H Kettle (Pathology), Dr F G Thomson (Physical Medicine) Dr Bernard Hart (Psychiatry) Professor J M Woodburn Morison (Radiology) Mr C H Fagge (Surgery) Dr E P Poulton (Therapeutics and Pharmacology) Dr J Gordon Thomson (Tropical Diseases and Parasitology), Lieut Colonel E M Cowell (United Services) Mr Ralph Thompson (Urology)

On the motion of Dr DE BEC TURTLE seconded by Dr J D ROLLESTON, a hearty vote of thanks was accorded to Mr E K Martin, on his retirement from joint honorary secretaryship of the society after four years of devoted service in that capacity

Nova et Vetera

AN HISTORICAL ACCIDENT

The opening of the Manchester and Liverpool Railway in 1830 ended in a tragedy which has become of as much historical interest as the event which occasioned it—this was the death of Mr Huskisson The impression got abroad at the time, and has often been referred to since, that death was due to neglect through disagreement between the surgeons as to the proper treatment to adopt The following account of the event, taken from the *North of England Medical and Surgical Journal* 1830–31 (p 263), was written by Mr John Atkinson Pansome, F R C S, honorary surgeon to the Manchester Royal Infirmary, one of the surgeons called in to treat Mr. Huskisson

The Circumstances of the late Mr Huskisson's fatal Accident

The Right Honourable Mr Huskisson's melancholy case having excited, in a considerable degree the public sympathies, I am induced to avail myself of your respectable Journal, to state the particulars, as far as my observations extended Accompanied by Messrs Whatton, Garside and White, I was introduced to Mr Huskisson, at the vicarage, in Eccles, he was lying on a couch—his countenance was pallid—his expression was firm and collected, though he suffered from frequent spasmodic pains—his pulse thready and extremely feeble—his extremities cold, indicating the powerful shock his constitution had received, and which had not been succeeded by any reaction On inspecting the limb, the Tibia and Fibula were comminuted and the integuments much bruised and torn—the Os Femoris was broken into a great number of small, angular and rugged fragments—the Rectus and Triceps muscles were quite denuded and crushed, and the Sartorius torn across The sheath of the Femoral Artery was laid bare and the superficial nerves were exposed and torn The accident had occurred about two hours before we arrived Lord Wilton had, with great judgement applied a handkerchief and stick as a field Tourniquet which had restrained the hemorrhage The quantity which had escaped would not have been considered great had it occurred in a strong and vigorous man but in an individual sixty years of age, and previously enfeebled by disease and a recent operation, it was sufficient, in conjunction with the severe

shock occasioned by the accident, fatally to depress the vital powers.

Notwithstanding the premonition these alarming symptoms afforded, everything was prepared for amputation, but we discovered that the exhausted state of our patient rendered such a step highly improper. With the hope therefore of producing a favourable impression on the nervous system and thus rousing the vital powers, in order to enable him to bear the operation, cordials, viz. brandy, ammonia, and laudanum, were liberally administered—flannels, moist and hot, and sprinkled with laudanum, were applied to the limb, and bottles of hot water to the feet, and to the sides of the body. The femoral artery was secured, in order to prevent further haemorrhage. I lament to state, however, that these remedies were ineffectual, and that the fatal depression of the vital functions sensibly increased. After a short period, he complained of an extremely oppressive sensation at the praecordia—the pulse became imperceptible at the wrist—he suffered from a general sense of coldness; this was succeeded by rapid and laborious respiration, and, in nine hours from the period when the accident happened, he quietly breathed his last. During this period, no moment occurred that afforded a favourable opportunity for the operation, though our most anxious attention was directed to every symptom that could indicate it. Our patient gradually, but uniformly, declined and the succession of his symptoms was such only as rapidly conducted him to the deplored catastrophe.

Belgium

[FROM OUR OWN CORRESPONDENT]

A Standard for Specialists

Professor Coppez has made a most extensive study of a system of standardization relative to specialists in all branches of medicine. In his opinion it is essential that special certificates or diplomas of proficiency in each specialty should be granted. At present the official subjects recognized for such diplomas are surgery, paediatrics, ophthalmology, oto-rhino-laryngology, psychiatry, gynaecology, urology, physiotherapy, and certain manifestations of syphilis. To these there could be added with advantage the subjects of internal medicine, diseases of the nervous system, of the lungs, of the digestive system, and of the cardio-renal system. Professor Coppez holds that a candidate for the diploma should spend some time in an approved clinic, the requisite period varying according to the subject. As a result of the efforts of the Government and of the Belgian Medical Federation, committees of specialists have been appointed, consisting of professors in the university, of hospital directors, and of practitioners who have gained a high reputation in their particular specialty. A committee for each group is expected to arrange the medical services, to decide at which hospital the candidate will spend his period of instruction, to confirm certificates, to pronounce judgement on each candidate, and to draw up official lists of specialists, which will be kept for the benefit of public bodies and of various medical authorities. Doctors so qualified will be allowed to mention their specialty on their door plate, visiting cards, etc., and they alone will have the right to take part in the deliberations of scientific or clinical societies confined to their own subject.

Marriage of Syphilitics

In a statement with regard to the marriage of syphilitics Dr. Dujardin has expressed the opinion that the pre-marriage certificate is an indispensable social measure which ought to be legalized. He discusses the disease at length, stressing the fact that it is a secret one, easily concealed once it is discovered. Moreover, it frequently remains ignored by both sexes in its primary stages. The subsequent complications are well known. Dr. Dujardin deals with both acquired and hereditary syphilis, and with the marriage problems to which they give rise. The matter of hereditary syphilis, he maintains, can only be decided by a most exhaustive inquiry, conducted by the family doctor. In his view Friedmann's conclusions can be accepted as the essentials in giving advice to syphilitics who wish to marry. This authority states that if primary syphilis is treated within six days of infection a cure is possible in 80 per cent. of cases. At all other stages it is necessary to give four courses of novarseno-benzol, followed by supervision lasting two years at least, even though the disease is completely quiescent. Negative blood tests are also essential. These conclusions must not be regarded as absolute, and Dr. Dujardin says that the person affected should submit himself to an examination twice yearly. Syphilitic women, although they may have received a clear pre-marriage certificate, should be advised to have a course of treatment during each pregnancy.

Health of Native Labourers

A report by Dr. Trolli, principal medical officer of the Congo, contains some important observations on the question of the health of the native worker. Labour, he states, is difficult to procure, and there is naturally a shortage; housing, feeding, and transport constitute other thorny and intricate problems. Suitable natives must be selected for certain types of work, the greatest obstacles being found among the workers in the mining areas, on the railways, and in works of construction. The acclimatization of the native is an important matter, and the formation around the mills and staple industries of suitable industrial villages is essential. Overcrowding has to be avoided and, above all, the institution of compounds. Natives must be allowed time to get used to new conditions. Employers should strive to make the newcomer feel that he is in his own country surrounded by people of his own race; he should therefore be supplied with a diet resembling that of his own home. The work at first should be very light, as the native expends a tremendous energy, even though his output of work may be very small. A reference to the statistics of the Mining Union indicates that the mortality among experienced workers is 29.34 per 1,000, while among recruits it is as much as 76.99.

Overwork among School Children

Acting on a report by Dr. M. G. Rency on the subject of overwork among school children, a Franco-Belgian committee has passed several resolutions, one of which demands the representation of doctors on the councils of secondary education in Belgium. The meeting suggested that there should be a careful selection of special subjects, and that, above all, there should be no overlapping. The teachers should plan out a time-table and arrange suitable working hours. While it is agreed that home work cannot be discontinued completely, the recommendation is made that it should be spread evenly over the week.

Probationary Release of Mental Patients

A number of new rules governing the temporary discharge of mental patients have just been put into force. The doctor can allow, with the written consent of the appropriate authority, a mental patient to return home on probation. Records of patients so liberated will be kept by the medical officer of the asylum in a special register, and as soon as patients are sent home their names will be notified to the *procureur du roi*, as well as to the burgomaster of the district. Arrangements have been made whereby the discharge will become permanent after three months, unless the recovery is not complete,

in which case the time of parole may be extended for a further three months. In no circumstances can a period of more than a year be granted. If the patient is considered to be free from all mental disability he must return to the mental hospital, but only for a few days to allow certain legal formalities to be discharged.

Ireland

Evolution of Medical Services in Ireland

At the annual meeting of the North-East Ulster Division of the British Medical Association, held at Coleraine, Dr. D. Boylan delivered the presidential address, taking as his general subject the evolution of medical services in Ireland. Dr. Boylan said that he was no advocate of a State medical service, but as a student of the progress made towards such a service, from the introduction of the first State measure for medical relief to the latest legislation, he could not help foreseeing some such development. Ever since the introduction in 1765 of the County Infirmaries Act, the trend of legislation—he was, *of course, speaking of Ireland—had been towards extending* the scope of medical benefit to an ever-increasing proportion of the population. That measure was followed, fifty-three years later, by "the Act to establish fever hospitals and to make other regulations for the relief of the suffering poor, and for preventing the increase of infectious fevers in Ireland." This Act provided that in any county, town, or district where voluntary subscribers formed themselves into a committee for providing medical attendance for the poor, they could obtain from the grand jury of the county a sum equivalent to that subscribed. Dr. Boylan sketched the history of such a committee in the Province of Ulster, and mentioned some points of interest in the annual reports of the medical officers. After the Hospitals Act came the Poor Relief Act, 1838, which established workhouses and boards of guardians; then, under the Medical Charities Act, 1851, boards of guardians were enabled to divide the unions into dispensary districts and appoint committees of management for the dispensaries. The regulations drawn up by the commissions of inquiry which had preceded that Act were still in existence in Ireland. The Public Health Act, 1878, provided for the specialist treatment of poor people through the agency of the local public health authority; the Local Government Board Act, 1898, extended the benefits of infirmary treatment to persons other than the poor; and then came the Insurance Act, 1912, followed in 1930 by the Act of the Parliament of Northern Ireland for the extension of medical benefits to insured persons. Provision was now made by the State for the medical treatment of at least half the population—in his own district, for more than half—and the next step would be free school clinics for dental, ophthalmic, and other treatment. Dr. Boylan believed that the day would come when the public would demand diagnosis and treatment as far as possible by specialists. Private practitioners would disappear, and all would be members of a State service. The general practitioner would be a clearance officer, to direct the patient to the appropriate special clinic. This would mean less interesting work, but those who remained in general practice would do so by their own choice. The country would be divided into districts, similar to parliamentary constituencies, in each of which there would be a headquarters hospital, with a full staff of specialists, and district hospitals, with a smaller and more junior staff. Districts corresponding to the present dispensary areas would be adequately staffed by general practitioners, who would attend to minor ailments. Dentists, chemists, and nurses would be absorbed in the State service. After pointing out that the financial aspects of the scheme were outside the limits of his address, Dr. Boylan closed with a word of reassurance, that before such a service came into being the youngest of those present was likely to be in enjoyment of the rewards *which he doubtless so richly deserved.*

Professor Ariens Kappers

During a recent visit to Ireland to receive the honorary degree of D.Sc. from the University of Dublin, Professor Ariens Kappers, director of the Central Institute for Brain Research, Amsterdam, delivered three lectures on the subjects with which his name has been associated as an original investigator during the past decade. The first, delivered before the Royal Academy of Medicine, dealt with the significance of the sulci of the brain, and with the importance of the surface form of the brain in man and animals. Special stress was laid on the relationship between brain weight and body weight, and on the fact that complexity of brain surface depended to a large extent on the number of the skilled movements which could be executed by the possessor of the brain. Domesticity, it was pointed out, diminished complexity. In the *second lecture, on the phylogeny of the neuroglia and of* the cerebro-spinal cavities, delivered before the Association of Neurological Surgeons, it was mentioned that the foramen of Magendie is purely an artefact. The third lecture, on the function of the various cellular layers of the cortex, was given to the Royal Medico-Psychological Association, which held its annual meeting in Dublin from July 7th to 11th. This address, which was of a very technical nature, was delivered to neuropathologists, and was profusely illustrated by lantern slides. Comparison between animals and man showed that one part of the brain (the supragranular cortex) developed at the expense of another as the cerebrum became organized. In the higher monkeys, such as the chimpanzee, there was a greater development of the supragranular cortex than in the lower orders of monkeys. In the cat the supragranular cortex of the brain was less developed than in the tiger, an animal much larger in *size, but nearly related. Professor Kappers also discussed* some of the diseases of the brain, and showed, by means of lantern slides, that it was the supragranular cortex that became affected. At the conclusion of the lecture Dr. R. R. Leeper, president of the association, said that it was a great privilege even to see such a man as Professor Kappers, and to sit and listen to him was an outstanding honour that they would always remember. Professor J. Shaw Bolton, who seconded the vote of thanks, paid tribute to what he described as a remarkable address.

Medical Inspection of School Children (County Down)

In the course of his report to the regional committee, Dr. John Scott, chief school medical officer, County Down, emphasized the necessity for the teaching of hygiene in public elementary schools. At present the subject was usually given an insignificant place, with results that were apparent even on a casual inspection. During the past year the question of providing a midday meal to children considered by the medical officers to be suffering from malnutrition was under consideration. The great majority of these children were normally resident in Newry, where apparently there was an abnormal amount of hardship arising from widespread unemployment. It had been decided by the regional committee to provide a midday meal to all such children attending the Newry public elementary schools, and coming from homes where the weekly income, after deduction of the house rent, did not exceed 3s. 6d. per person. The hope was expressed that all arrangements in connexion with the cooking [illegible]

distribution of these meals would be completed in time to enable this service to be started on November 1st. With regard to the treatment of eye defects, Dr. Scott stated that in his opinion three main factors were responsible for the failure of parents to see that visual errors in their children were corrected—namely, high cost of spectacles, lack of facilities, and children's dislike of wearing glasses. Last year parents were invited to attend the medical inspections of their children. In many schools the response was overwhelming; in some urban schools over 90 per cent. attended. Such a high percentage of parental attendance was not general, however, and in many small country schools less than 5 per cent. put in an appearance. Almost invariably the parents had expressed themselves grateful for the opportunity, and had voluntarily promised that the advice given would be followed.

Scotland

Sanitary Institute Congress

The forty-second congress of the Royal Sanitary Institute, held last week in Glasgow, was attended by over 1,000 delegates; in addition, there were representatives from some 580 local authorities throughout the Empire, as well as from foreign countries. In his inaugural address Sir Henry Mechan dealt particularly with the health of the worker, and the development of the measures that had produced the present standard. In light occupations, he said, monotony was now relieved by the introduction of a short rest, tea being given in the morning spell of work; where the occupation was laborious leave to smoke was often permitted at a stated hour without stopping of medicines. Various welfare schemes had been adopted by employers of labour and supported by the good will of workers, and these expressed a united aspiration towards a new social ideal. It had been suggested by the Registrar-General that a mortality rate for male occupations, based on the deaths of the men, but on those of their wives, would throw an important light on home influences as a factor in industrial health. It was generally realized that the present conditions of sanitary surroundings often reacted strongly on the health of the worker, and he believed that the recent amelioration of the worker's condition must be ascribed, in part, to the clinic, civic progress.

On the second day of the conference, Dr. J. Parlane Kinloch, chief medical officer of the Department of Health Scotland, delivered an address on "The health services modern State." He claimed that the present battle for a clean environment had a minimum against destitution might have to be regarded as a further effort was necessary to confirm tendency to abandon the old form of which embodied the worst features of

In a statement with regard to the coal before atmospheric smoke pollu- Dr. Dujardin has expressed the opinion that a large number of services had been marriage certificate a reduction of disease and the mitigation which ought to be among these, maternity service, child length, stressing the health service, and a national health concealed once service had grown from the elementary consideration that an adequate health service must be concerned with the care of the individual. The policy now in practice was that good nurture should obviate the need for treatment. An important question was the assessment of fitness of the individual. Some connexion must be established between the national health insurance service and the hospital services, to enable the practitioner to have all the facilities he needed for specialist diagnosis and treatment. Finally, there must be an intensified effort to extend the boundaries of present medical knowledge, for such bodies as the Medical Research Council, the Industrial Health Research Board, and the Empire Marketing Board had demonstrated that expenditure on research returned remarkably good dividends. In opening a discussion on "The role of the voluntary general hospital in preventive medicine," Sir Humphry Rolleston briefly sketched the history of voluntary hospitals, while Dr. Ralph Picken, medical officer of health for Cardiff, expressed the opinion that the greatest contribution the council hospitals could make to prevention was the provision of opportunities for teaching and research. Sir David Munro, secretary of the Industrial Health Research Board, said that the war had brought out the need for more systematic study of the optimum hours and the environmental conditions that were necessary for the worker to produce the maximum output. A recent survey of the physique of women had enabled conclusions to be drawn concerning the relationship of physique to the type of work to be performed, and in particular regarding the optimum weights to be handled and carried. A similar research was being carried out on the physique of men. These investigations were typical inquiries in a large field which had not yet been explored; for example, the influence exercised by design of machinery and appliances on the working capacity of the operator has still to be determined.

On the third day Professor E. P. Cathcart gave an address to the Section on hygiene of food, in which he said that a proportion of the population was inadequately fed. This was not due so much to inadequate income as to bad buying and bad cooking. Little could be done by the wholesale distribution of leaflets supplying simple nutritious menus, for the recipients seldom had the skill or the cooking utensils to make use of the advice. Cooking classes at schools seldom tried to visualize home conditions, and it would be an advantage if courses were given on the basis of using one pan and one small gas ring. The hygienic principles of bread-making were outlined by Professor David Ellis of Glasgow Royal Technical College. Bread, he said, was one of the safest articles of diet, because the loaf proclaimed its own deficiencies, and there was no method of doctoring a bad loaf. Further, the chances of disease being contracted through the handling of the loaf in transit to the customer were too remote to be considered seriously. In a discussion on various types of hospitals Dr. Samuel J. Cameron of the Royal Maternity Hospital, Glasgow, said that maternity hospitals had a great responsibility in regard to preventive medicine. He believed that the establishment of several small maternity hospitals throughout a city or county was a wasteful expenditure; for such small institutions, besides being costly to maintain, were inadequately equipped to deal with grave emergencies. A better plan was to open ante-natal clinics where normal cases could be separated from abnormal, and the latter drafted to a large central hospital for treatment. In opening a discussion on the housing question, Lieut-Colonel William Butler estimated that the present shortage of houses was roughly equivalent to the accumulated population, for some 2,000,000 possible emigrants would, at the pre-war rate of emigration, have been housed over-seas, but had been retained in this country.

Changed conditions of work and intolerance of meagre accommodation had also contributed to increase the demands for housing accommodation Mr Alan W Ritchie, chief sanitary inspector, Edinburgh, pointed out that the problem of slum clearance in the North differed from that in the South In Scotland the tenement system predominated, and the main causes of squalid conditions were serious site congestion, subdivision, and the lack of necessary sanitary conveniences This problem was one of the unhappy consequences of the industrial revolution, and although the first errors in town planning and house construction should not be blamed too strongly, their repetition by subsequent generations was rightly a matter of astonishment These mistakes were being rectified more quickly in Scotland than in England, although the population of Scotland was about one eighth that of England there had been thirty nine slum clearance schemes by local authorities in Scotland, involving 17,000 houses and 70,000 persons, while the English schemes had involved only the demolition of about 15,000 buildings and the re housing of some 74,000 persons The need for slum clearance and the provision of new houses was urgent everywhere

On the fourth day the question of a general medical service for the nation was reviewed by Dr Thomas Gibson, medical officer for Wakefield, who pointed out that the main proposal in the scheme offered by the British Medical Association was to extend the National Health Insurance Act so as to include the dependants of all persons already insured, and, by suitable arrangements, to include indigent persons as well, so that a complete medical service should be developed for all workers and those whose income did not exceed £250 per annum He thought that this proposal would achieve an enormous improvement in the medical care of the population Mr John Wilson, chief architect, Department of Health for Scotland, speaking on hospital planning, said that there were certain differences between the ideals of hospital construction in this and in other countries In this country they had concentrated chiefly upon sanitary details, on cleanliness, on the Continent, and particularly in Germany, the treatment of the surroundings, by the provision of greater space round ward blocks, was much superior to that prevailing here In Europe generally, single or two storey buildings still held their own, and possibly in matters of hygiene and sanitation the hospitals of this country were better than those in America or Europe Referring to legal regulations for the disposal of condemned foodstuffs, Dr Gerald Leighton, medical officer to the Department of Health for Scotland, said that it was of great importance for the safety of the public health that there should be no possibility of condemned foodstuffs ever reaching the public in the shape of food Theoretically, at least, this risk existed in the absence of any definite control by the local authorities or by legislation He thought that the disposal of condemned foodstuffs of all sorts should be carried out by the local authorities under a definite system of local regulations, and that it should not be possible for such material to be handed over to irresponsible persons In regard to bovine tuberculosis Mr Arthur Gofton, chief veterinary inspector, Edinburgh, expressed doubts in regard to the efficiency of pasteurization He admitted that the process did very materially reduce the amount of tuberculous milk which would otherwise reach the public but he considered that through failure of the Local Authority or through development of faults in plant, commercial pasteurization was not so efficient as was generally supposed and much greater supervision was necessary in this country A health exhibition was held in the McLellan Galleries during the sitting of the congress

Health of Scotland

According to the return of the Registrar General for Scotland dealing with the quarter ended March 31st, the number of births—namely, 23,558—was 471 more than in the preceding quarter, but 908 below the average of the first quarters of the preceding five years The general birth rate was 19·7 per 1,000 of the population, made up of a rate of 20·7 for the large burghs and 18·6 for the rest of Scotland In individual areas the rates ranged from 31·9 in Port Glasgow and 27·0 in Hamilton to 16·2 in Edinburgh, 12·7 in Shetland, and 13·9 in Sutherland. The deaths registered during the quarter numbered 20,189, being 4,204 above those recorded in the previous quarter. This gave a death rate of 16·9 per 1,000, which was 3·8 above that for the previous quarter The number and rate per 1,000 were, however, 250 and 0·2 below the average for the corresponding quarter of the last five years The death rate in the large burghs was 17·3, compared with 16·5 for the rest of Scotland The death rates ranged from 21·6 in Arbroath to 10·0 in Clydebank The number of deaths for each of the three months in the quarter were January 6,666, February 6,145, and March 7,378 In regard to infantile mortality, the deaths of children under 1 year numbered 2,653, representing a rate of 113 per 1,000 registered births Although these figures are higher than in the last quarter, they are much the same as the average for the first quarters of the preceding five years The rate of infantile mortality, which was 117 for the large burghs as compared with 106 for the rest of Scotland, varied from 158 in Coatbridge to 48 in Falkirk, and, as regards counties, from 206 in Nairn to 28 in Inverness Out of the 20,189 deaths registered, 1,605, or 7·9 per cent, were due to the principal epidemic diseases, including 56 from measles, 41 from scarlet fever, 438 from whooping cough, 118 from diphtheria 764 from influenza, and 90 from cerebro spinal fever Deaths from all forms of tuberculosis were 1,202, or 6 per cent of the total deaths Malignant disease accounted for 1,828, or 9·1 per cent of all deaths Deaths from pneumonia numbered 2,144, and from bronchitis 1,758 These two diseases accounted respectively for 10·6 and 8·7 of the total deaths Diseases and accidents of pregnancy and childbirth caused 156 deaths, equivalent to a rate of 6·6 per 1,000 births This rate, however, was 0·8 lower than the average rate for the corresponding quarters of the preceding five years

Veterinary Teaching in Edinburgh

The annual distribution of prizes of the Royal (Dick) Veterinary College, Edinburgh, was held on July 3rd, under the presidency of Professor Sir T Hudson Beare, who said that there was a great demand by the farming community for veterinary surgeons Only in institutions like that college could they cope with the tremendous loss produced by sickness of animals, such as the present outbreak of foot and mouth disease Expansion of the college had now become necessary, for the hospital was not large enough, and there was not sufficient room for advanced teaching He therefore desired to make an appeal to the whole of Scotland for funds It would be necessary to collect about £30,000 to complete the scheme at present in view Referring to the Lovat scheme Principal O C Bradley said that a number of colonial veterinary scholars had been elected during the past session, with the aim of recruiting suitable men for the colonial veterinary service In association with this scheme a diploma in veterinary State medicine had been instituted by the University of Edinburgh The prizes were presented by Sir Norman Walker, President of the Royal College of Physicians, who commented on the remarkable progress in human and veterinary medicine that had occurred in the past fifty years The successful

result of the war had been due partly to the success of the doctors in suppressing typhoid fever, and of the veterinary surgeons in suppressing glanders. Various common diseases of great importance called for the collaboration of the two professions; many of the subjects studied by medical and veterinary students were the same, even though they might differ in detail. Thus the linking up of the Veterinary College with the University was a great advance.

England and Wales

Conference on a National Maternity Scheme

The programme of meetings in connexion with the jubilee of the Midwives' Institute (*Journal*, July 11th, p. 73) ended with a conference at which the position of the midwife under a national maternity scheme was discussed. Dr. William Paterson, chairman of the Maternity and Child Welfare Subcommittee, dealt with the relationship of the midwife to the general practitioner under such a scheme; Mr. Treherne West, with her relationship to the Insurance Committee; and Dr. R. A. Lyster, with her relationship to the Central Midwives Board and the local authority. Dr. Paterson gave a concise exposition of the British Medical Association's memorandum, approved by the Representative Body in 1929, as a contribution towards the establishment of a national maternity scheme, and then submitted himself to catechism. The first question asked was with regard to the statement that up to the time of confinement ten visits might be paid by the midwife to the pregnant woman. Suppose after the tenth visit the woman went into hospital, was the midwife to be remunerated? Dr. Paterson replied that it was certainly the view of the Association that the midwife should be compensated for her ante-natal work. Another speaker was of the strong opinion that no midwife should ask a patient at the beginning of the ante-natal examinations which practitioner she would like called in in case of necessity. The mention of a doctor to many women, said this lady, conveyed the suggestion of forceps, and put the fear of maternity into their hearts. Dr. Paterson replied that the reason for the question was not to frighten but to reassure the patient; of course, it was for the midwife to exercise discretion and tact, and perhaps the question might be postponed to a second or later visit. A midwife said that midwives generally received post-certificate instruction. What did the British Medical Association propose with regard to refresher courses for practitioners? She spoke in derogatory terms of the competence of young doctors in obstetrics. Dr. Paterson replied that the education of the modern practitioner in obstetrics had greatly improved, a statement which was received with cries of dissent. At any rate, he had come across many young doctors lately whose sound knowledge had surprised and gratified him. Another midwife said that it appeared to her that under the scheme midwives were likely to pass—as indeed they were now passing—into maternity nurses. Once the woman got inside the surgery, she became in many cases the practitioner's patient, the midwife becoming a maternity nurse, or being dropped in favour of a handy-woman, because the patient could not afford the midwife's fee as well as the doctor's. Dr. Paterson pointed out that under the scheme, if the doctor was going to take the case, he would have to explain to the local authority why this was necessary, and if it was a normal case he could not take it. Another speaker strongly urged that the British Medical Association should act towards the medical student as the Central Midwives Board did towards the midwife, and see that every young doctor went into practice with a good experience of midwifery. The midwives were the "consumers" of the service of the doctors in this respect, and as consumers had every right to criticize its quality. Dr. Paterson pointed out that the British Medical Association did not control the education of doctors; that was the function of the General Medical Council, which had for years been pressing on the schools the necessity for better training in obstetrics, and he thought the position had greatly improved, and would improve yet more. Further, under the scheme, the general practitioner, who was formerly alone, would be able to call in specialists and anaesthetists, and to have ambulance facilities and hospital beds. Miss Edith Pye, president of the Institute, said that it was gratifying to have the express recognition by the British Medical Association of the fact that maternity was a normal process, of which the midwife was properly in charge. The Institute had generally accepted the view that there should be an examination of the pregnant woman by a doctor, on the ground that two heads were better than one, and that this course was a safeguard for the midwife as well as for the prospective mother. The midwives as a whole had a very warm and sincere desire to co-operate with the medical profession.

The Order of St. John and the British Red Cross Society

The eleventh report of the Joint Council of the Order of St. John of Jerusalem and the British Red Cross Society, covering the period from January 1st to December 31st, 1930, records that the total number of patients assisted since the beginning of the war by the auxiliary hospitals for officers department is 18,125—an increase of 97 during the twelve months under review. Although the main work of the department consists at present in helping tuberculous ex-officers, assistance is also given to surgical, medical, and convalescent patients, by admitting them for treatment to the Officers' Hospital at Brighton. This institution, which works in close co-operation with the Ministry of Pensions, received 97 in-patients in the course of the year. Among the services rendered by the department, aided in many cases by the Officers' Association, were refunds of hospital stoppages, payment of full sanatorium fees, and the payment of travelling expenses for officers sent to Switzerland, Italy, and the Riviera for treatment. In the previous report reference was made to the central bureau of hospital information, instituted in 1928 under the auspices of the Joint Council and the British Hospitals Association. This organization, which now includes the information bureau of the Incorporated Association of Hospital Officers, aims: (*a*) to publish annually a hospitals year-book containing a directory of hospitals in Great Britain, along with a report giving details of their work, finances, etc.; (*b*) to collect and summarize data of interest to those engaged in hospital management and in the direction of hospital policy; (*c*) to establish a library where books, pamphlets, and diagrams concerning matters of hospital administration, construction, and equipment may be consulted; and (*d*) to act as a clearing-house of information. It is impossible to give here any adequate idea of the bureau's intelligence service, but an indication of the variety of topics dealt with is furnished by the present report, which contains an abridged list of about sixty subjects on which information has already been supplied. The services of the bureau may be used without additional charge by all hospitals which are members of the British Hospitals Association. During the year the bureau has continued the publication

of its hospital memorandums, and has undertaken the preparation of the first edition of the new year-book, which is based partly on *Burdett's Hospitals and Charities*, and has been designed to provide a comprehensive and up-to-date survey of every department of hospital work. The rest of the council's report is occupied mainly by a review of the philanthropic services organized by the various committees—the Comforts and Wards Industries Committee, the Drives and Entertainments Fund, and the Emergency Help Committee, which has provided assistance during 1930 in over 13,000 additional cases of sickness and disablement among ex-service men and their dependants. This committee's report is of special interest, as it includes a historical note on the organization of its services since it was set up in 1920. The Home Service Ambulance Committee records that 325 ambulance stations have been established in the country, and that over 111,000 patients were carried in the course of the twelve months. Despite a considerable saving in administrative expenses, the financial statement for the year reveals a deficit on ordinary income of £1,751. The council explains that this is partly due to the realization of securities to meet capital outlay on Joint Council House, and partly to a decline in other sources of income.

Woodside Nerve Hospital

The Earl of Athlone, K.G., on his return from South Africa, consented to accept the position of president of the ancient Foundation of St. Luke's Hospital, and consequently of the Woodside Nerve Hospital, upon which the activities of St. Luke's are for the present mainly concentrated. On June 30th he visited the Woodside Nerve Hospital, which was opened in November last for the reception of cases of functional nervous disorder.[1] He was received by the treasurer (Lord Blanesburgh), the committee of governors, and such of the honorary consulting staff as were able to be present. The celebrations at the Leeds University, however, prevented several of them being present, including Sir John Bland-Sutton, Sir John Rose Bradford, Sir Farquhar Buzzard, Lord Dawson, and Sir Humphry Rolleston. The hospital stands in some six and three-quarter acres of ground overlooking Highgate Woods, and has accommodation for fifty patients—twenty men and thirty women. The majority of the rooms in the ward blocks are single bedrooms, and all of them face south, each one opening on to a broad veranda. There are also some private sitting rooms. The treatment block contains rooms for hydrotherapy, colon lavage, massage, light and electrical treatments. There are also in this block dental and *x*-ray rooms, photographic dark room, dispensary, and large laboratories equipped for investigation and research. All the capital expenditure in building and equipping has been borne by the St. Luke's Hospital Foundation, but the resources of this Foundation are unequal to the heavy cost of maintaining the new hospital. This cost must therefore be borne to a great extent by the payments of patients according to their means. At the present time a minimum charge of 5½ guineas a week is made on each bed, 2 guineas extra being charged for a single room. At the same time, every effort is made by means of rebates on these charges, allowed at the discretion of the committee, to make the resources of the hospital available for those of limited means. These fees are inclusive of all necessary forms of treatment, the only extras charged being for personal laundry, special nurses, and such personal comforts as are not generally included in treatment. During the six months that the hospital has been opened sixty-five patients have been admitted, and the majority of those discharged have gone out recovered.

[1] See *British Medical Journal*, November 1st, 1930 (p. 741).

Correspondence

DIVERTICULA OF THE COLON

SIR,—I was interested to read Dr. Edmund Spriggs's comments in your issue of July 4th on the paper by Dr. Graham Hodgson and myself, published in the *Journal* of March 28th (p. 525).

Dr. Spriggs's chief argument is that the evidence which we put forward in our paper to show that there is no inflammatory prediverticular stage is not a complete proof of our conclusions. While one must admit that it would be more satisfactory if we could show the histological appearances of a portion of bowel wall previously identified by *x* rays as showing his so-called prediverticular stage, at the same time we have got much better evidence against the inflammatory prediverticular stage than he has for it. The whole of the evidence for the presence of an inflammatory prediverticular stage he has produced so far is the *x*-ray appearances of the bowel wall, a proverbially unsatisfactory form, and quite unsupported by any histological findings. I maintain we have shown histologically that the very earliest condition of microscopical diverticula occurs in the bowel wall unaccompanied by any signs of inflammation, that the *x*-ray appearances which Dr. Spriggs has ascribed to inflammation of the colon wall are much more reasonably attributable to this condition of minute diverticula, and that it is not necessary to assume that an inflammatory condition of the bowel is the cause of the *x*-ray appearances.

The onus of proving that diverticula of the colon follow on previous inflammation is upon Dr. Spriggs. So far he has only produced *x*-ray photographs in support of his contention, and we have shown that these appearances are capable of a different interpretation. I agree with him that further knowledge of the earliest stages in the production of diverticula of the colon is wanted, but such knowledge is difficult to obtain, and is only found more or less by accident. While in no way wishing to belittle the very valuable work done on this subject by Dr. Spriggs and his associates, I submit that it is obvious that *x*-ray evidence is not at all satisfactory, and that the surgeon who sees and handles the colon during the course of operations on the human subject has a better opportunity of observing the early stages of the condition. Occasionally as the result of examining colons in the pathological department an opportunity is presented of actually obtaining sections of the bowel wall in the earliest stages of the condition; this evidence seems to me to be the most convincing.

I cannot follow Dr. Spriggs's argument that if the condition is due to pulsion pouches there should be a steady progression of the condition over a series of years. No diseases progress regularly; there are always periods of quiescence and others of progress. I much doubt if any case of diverticula formation ever does other than progress, and, although the condition may be made to stand still by suitable treatment, I have never seen any evidence that an actual regression in the condition has taken place, either as the result of treatment or otherwise. At the end of his letter Dr. Spriggs estimates the risk of perforation in cases of uncomplicated diverticulosis as about 1 per cent., a figure with which on the present available evidence I should agree. But in our paper we were referring to the risk of perforation in cases of diverticulitis—that is to say, where secondary inflammatory complications have already occurred—and that is quite a different matter, as perforation is quite a common complication in diverticulitis. I have personally never operated on an uncomplicated case of diverticulosis for that condition, but I have often operated on cases of diverticulitis, and

am much impressed by the advisability of this being done before, and not after, serious complications have occurred. Too often one has to try to remedy an almost hopeless condition of sepsis and adhesions when an operation at the right time would have prevented the danger. The surgeon is too frequently called in to deal with end-results instead of being allowed to prevent them.—I am, etc.,

J. P. LOCKHART-MUMMERY, F.R.C.S.

London, W.2, July 10th.

AFTER-EFFECTS OF IRRADIATION OF UTERUS

SIR,—In your issue of June 13th (p. 1045) Mr. Malcolm Donaldson makes an interesting speculation on the possible prophylactic value of radium against carcinoma of the cervix, with reference to which the experience at this hospital in the treatment of uterine haemorrhage may be of interest. When irradiation of the uterus was started in 1921 it was thought possible that the treatment might be followed by malignant changes in the uterus, and we have therefore watched our cases for this sequel, following them up persistently in the same way as cases of malignant disease.

Of 266 cases treated since 1921, of which 107 have been followed up five years or more, and 19 only are untraced, no case of carcinoma of the cervix or body supervening on irradiation has come to our notice. One case, however, of carcinoma of the ovary which occurred recently is of interest in that it suggests an effect of irradiation the reverse of that contemplated by Mr. Donaldson.

A. M., aged 42, was treated in November, 1929, for menorrhagia. At operation the uterus was found to be bulky and to contain several fibroids. There was no palpable abnormality of the appendages. The treatment was cavitary irradiation of the uterus with two tubes of 25 mg. radium element screened with 0.5 mm. of platinum and 2.1 mm. of silver for sixty hours, that is 3,000 mg. hours. In January, 1930, the patient was readmitted and was found to have a large ovarian tumour, for which hysterectomy and bilateral salpingo-oöphorectomy was performed. The tumour was a malignant ovarian cyst 7 inches in diameter, and there were numerous metastases in the peritoneum. Lead treatment was given, but failed to arrest the metastases, and the patient was moribund when last heard of in December, 1930. I am indebted to Mr. Clifford White for permission to report this case.

A similar result following *x*-ray treatment of a patient with fibroids has been reported by J. L. Faure (abstract in *Cancer Review*, vol. vi, No. 2), who cites other cases as showing ill-effects of irradiation upon ovarian cysts.—I am, etc.,

R. S. PILCHER,
Radium Registrar, University College Hospital.

London, July 9th.

AFTER-HISTORY OF PATIENTS WHO SUFFER FROM DYSPEPSIA IN INFANCY

SIR,—The question is not infrequently asked, "Does the child who has been subject to dyspepsia or marasmus during infancy suffer from indigestion during adolescence and adult life?" As a matter of fact the answer is not easy, for in the vast majority of cases one loses sight of those little patients who have caused us so much anxiety during the first few months of life. It so happens that I am able to give details of one case, which should prove of interest.

Over twenty years ago I saw a little girl, aged 6 weeks, who suffered severely from dyspepsia, followed by marasmus. She was treated first with white wine whey, then rennet whey, and later on by percentage feeding. (This is the very type of case for which acid milks are used so successfully at the present time.) There were many ups and downs, but after four months' illness she finally recovered. During the next two years her health was fairly good, but she was not robust. Teething and walking were late.

From early childhood up to adult life, and, indeed, until a few months ago, indigestion was a frequent source of trouble, the special offenders being fatty and starchy foods. *X*-ray examination of the intestinal tract was done two years ago, and showed no abnormality.

During the last six months she has taken 4 to 5 ounces of *B. acidophilus* milk twice daily, and this has agreed with her well. She feels much better generally, and does not get indigestion now after eating fatty articles of diet, although there is still some difficulty with the starches.

The interesting point is, that on a diet containing a lactic acid milk, which in my experience is easily the best diet for dyspepsia and marasmus in infancy, this patient has greatly improved in her general health; indeed, she looks the picture of health, and rarely suffers from symptoms of indigestion.—I am, etc.,

BERNARD MYERS, M.D.

London, W., July 13th.

MICROCEPHALY

SIR,—I am in complete agreement with Dr. Noel Burke on this subject. Etymologically, of course, "microcephalic" means small-headed, and it is quite true that in many aments the skull is smaller than normal. Indeed, so generally is this the case, that if the term is applied in this wide sense it really ceases to have any practical or particular use. On the other hand, if it is restricted to a special type of small-headed aments, it is of very great use. It has long been so restricted, not only in England, but also in Europe and America. This connotation is well understood, and the type to which the term refers is, as Dr. Burke rightly remarks, quite as distinctive as mongolism. I therefore consider that any attempt to alter its generally accepted meaning, as suggested by Dr. Berry, can only lead to confusion, and is to be deprecated.—I am, etc.,

A. F. TREDGOLD.

London, W., July 7th.

ELECTROCARDIOGRAPHIC CHANGES IN ANGINA PECTORIS

SIR,—In his exhaustive and very instructive article entitled "Observations on angina pectoris," in the *Journal* of May 23rd, Dr. John Cowan has unfortunately omitted to mention the "specific" electrocardiographic changes that have been observed *during* an attack of angina pectoris, and their importance in elucidating the probable causation of this important trouble. It is true that Dr. Cowan does state, "the electrocardiograms were frequently abnormal," and he also mentions certain changes that he observed. But he does not state whether these changes were observed during the attack only. It appears, however, that those electrocardiographic changes were rather the resultants of some permanent myocardial defects. Recently, however, various observers[1 2] have shown that in the greater number of cases so examined certain electrocardiographic changes can be observed during an attack of angina; that these changes are, moreover, temporary only and reversible—that is, that soon after the attack the electrocardiogram returns again to its previous appearance; and, what is most important, that the changes in the electrocardiogram are of a "specific" kind, and that they are similar to those met with in permanent coronary occlusion—namely, a deviation in

[1] Feil, Harold, and Siegel, M.: *Amer. Journ. Med. Sci.*, 1928, clxxv, 255.
[2] Parkinson, J., and Bedford, D. E.: *Lancet*, January 3rd, 1931.

the ST portion of the electrocardiogram and alterations in the T-wave.

The importance of these observations has been enhanced materially by the recent work of Wood and Wolferth,[1] who have succeeded experimentally in producing in animals, temporarily, interference with the blood supply of part of the heart, and the electrocardiogram tracings during and after such interference were similar to those obtained by them from patients during and after an attack of angina respectively.

As regards the immediate cause of the pain, both in permanent coronary occlusion and its similar temporary occurrence in angina pectoris, I would suggest that the pain is produced by the nerve irritation on account of the proximate contiguity of injured and uninjured tissues, analogous to the severe pain produced by spreading gangrene caused by thrombosis of a vessel, and that it is not due to the actual ischaemia. This will explain the absence of cardiac pain in such conditions as mitral stenosis, congestive failure, and anaemia. It will also explain the fact that anginal attacks disappear with heart failure, because there is then no longer a sharp line of demarcation between injured and healthy tissue, the "healthy" tissue being in the circumstances to some extent "injured" tissue.—I am, etc.,

Capetown, June 18th. S. E. KARK, M.D.

REFRESHER COURSES FOR SHIP SURGEONS

SIR,—Dr. Haslett Frazer's comments in a letter in the *Journal* of June 27th (p. 1139), which is wrongly entitled "Refresher courses for ship surgeons," are evidence of a rather careless perusal of the post-graduate course for ship surgeons, which the British Medical Association has been at such pains to promote. The refresher course is Part III only of this scheme. Part I covers ship hygiene, Shipping Acts, and quarantine procedure. Part II covers tropical medicine and hygiene.

Dr. Frazer is of the opinion that the course does not touch the real requirements of ship surgeons, and goes on to instance the need for (1) the *absolute* diagnosis (the italics are my own) of the exanthemata and the various forms of conjunctivitis, (2) a knowledge of venereal diseases, (3) the full preparedness to deal with any surgical emergency. Part I disposes of his first objection. Section D, a most important one, goes into the question of the International Sanitary Convention and the quarantinable fevers; in this the subjects of clinical recognition and visits to fever hospitals are the prominent features. As for other fevers, they are provided for in Section C, with special regard to the isolation facilities and difficulties at sea. Conjunctivitis does not come within Part I, and it is not a matter for quarantine jurisdiction; but in one of its more serious and infectious forms—trachoma—it is a vital matter to immigration authorities, and, therefore, to the shipping companies; it is included in Part III, under eye diseases.

The question of the major surgical emergencies is, however, a debatable subject. It should be said that it was not the committee's intention that this, the refresher course, should compete with the usual post-graduate courses. Whatever shortcomings the post-graduate surgical course may have with regard to actual surgical practice, it would be ridiculous to imagine that this course, Part III, of four weeks' duration only, could cover not only the pertinent medical and surgical subjects, but also offer practical surgical facilities, which not even the established schools with their limited material are able to do. Such an ambition would, indeed, lead the candidates very widely astray. The course was intended not only to supplement post-graduate work, but to supplement it and select the subjects, or aspects of subjects, in a way which would constantly keep in the foreground the requirements, the facilities, and the difficulties at sea. So with surgery the particular point was rather to heighten the prognostic sense as to what was of real urgency, with the implication that, wherever reasonably possible, a surgical operation case, with respect to all the personal and material problems, is better left until the patient is put ashore. The choice of other medical and surgical subjects in Part III needs no special pleading. Where the period of incapacity can be shortened, as with skill in the diagnosis and treatment of fractures, or with the modern treatment of burns or scalds, varicose veins, and ulcerated veins, the twofold duty to the sufferer and to the shipping company becomes obvious.

The course is, however, restricted; it cannot, for instance, range over the whole field of anaesthetics—it selects for consideration only those three or four for study which are indicated under the varying temperatures and the difficulties of administration at sea. The course touches on certain subjects in which there has been acknowledged advance, such as diabetes and pernicious anaemia, or a subject like dietetics, of very great importance on board ship in the avoidance of deficiency diseases. Likewise for every item the underlying motive has been, first, to aid the ship surgeon in his special sphere and to increase his value to his company, and to keep him in touch with modern knowledge so far as it can be applicable to his work.

Part II, tropical diseases and hygiene, is of vastly increasing concern to the shipping companies who trade in the Tropics or who advertise tropical cruises. The failure to recognize certain common tropical disorders has reflected adversely on the surgeon, and has caused considerable trouble both to company and to passengers. The surgeons themselves admit the need for such instruction.

It is a little disappointing, however, to find the value of Part I unappreciated by anyone who has had experience as a ship surgeon. Few general practitioners retain a memory of anything but the general principles of hygiene, and ship hygiene bristles with difficulties. Owing to the surgeon's ignorance the hygiene is left entirely to the executive whose knowledge of it is acquired by routine only. The ship surgeon is rarely consulted except as a matter of courtesy, and yet he is the only member of the crew who is qualified by his training to pass an expert opinion. He is at a disadvantage, however; he knows only by routine the nature of intakes and exhausts, the disposal of tanks, the storage of water, the means of contamination, and the best method of sterilization. He does not understand why the crew, passenger, and cargo spaces are disposed in the way they are. That is why ship construction is included in the course. So it is with every subject in this part; the reasons are adequate in every case for their inclusion.

The only objection perhaps to the whole scheme is the shortness of time allotted to each part; in view, however, of the present depression the companies have been very generous in meeting these proposals.—I am, etc.,

Liverpool, July 10th. T. GWYNNE MAITLAND.

SYSTEMIC INFECTION AFTER TOOTH EXTRACTION

SIR,—Dr. Leonard Abrahamson's report (*Journal*, July 4th, p. 8) of three fatal cases of subacute bacterial endocarditis following tooth extraction (two cases) and tonsillectomy (one case) is a valuable contribution to the growing volume of evidence of the danger of opening up fresh channels of infection in patients whose resistance

[1] Wood, J. C., and Wolferth, C. C.: *Arch. Intern. Med.*, 1931, xlvii, No. 3.

is already seriously impaired, and especially those who have other lesions, such as a quiescent endocarditis. One of his cases, indeed, suggests that the infection of the tooth sockets, which induced the medical and dental advisers to undertake the extractions, was not a primary cause, but a late secondary effect, of infection, and this is not at all an infrequent type of case. A course of vaccine therapy before operative intervention, which Dr. Abrahamson recommends, is theoretically sound, but the isolation of specific organisms from the gum pockets is generally problematical; the preparation of an autogenous vaccine occupies valuable time, during which serious complications may occur, and the results are too unreliable. A simpler, quicker, less expensive, and, I believe, more effective therapy lies in the giving of two or three erythema doses of ultra-violet light to destroy the toxins already floating in the blood and to fortify the patient's resistance. The results (although in the nature of the case proof is impracticable) certainly encourage the belief that this is a prophylactic measure of very great value against what is undoubtedly a formidable risk. It has also a very wide range of usefulness.—I am, etc.,

London, N.6, July 7th. F. TALBOT.

MUCIN AS A THERAPEUTIC AGENT

SIR,—I was pleased to observe in your much appreciated and instructive "Epitome of Current Medical Literature" for June 27th an abstract of the work of S. J. Fogelson (*Journ. Amer. Med. Assoc.*), under the title of "Treatment of peptic ulcer with mucin," and to see that American physicians have now endorsed my belief in its superiority to all other treatment in many throat and stomach complaints. Dr. Fogelson, so far as I can gather, pronounces this as an original research; but thirty years ago, in a pamphlet entitled "Mucin in desiccation, irritation, and ulceration of mucous membranes," I emphasized the efficacy of mucin as opposed to bismuth for the soothing and healing of gastric ulcer. While working at the Central London Throat, Nose, and Ear Hospital it had been borne in on me that deficiency of mucin was the cause of much of the trouble met with, and that this shortage should be met by the application of properly prepared mucin. I observed also that indigestion and gastric pain frequently accompanied dryness of the fauces and pharynx. In 1905 I enunciated in *Mucin and Malignancy* the principle of the mucin treatment of throat and stomach, and after all these years of practice I can only repeat and emphasize the importance of this treatment. Messrs. Burroughs, Wellcome and Co. were the pioneers in the preparation of the pleasant "elixoid mucin" and the tabloids containing mucin and soda; these have held the field hitherto. It seems possible that powdered hog's stomach acts only by virtue of the mucin it contains.—I am, etc.,

London, W., July 7th. W. STUART-LOW.

TREATMENT OF DYSMENORRHOEA

SIR,—I am in complete accord with the letter of Dr. E. Sloan Chesser as to the efficacy of static wave currents in dysmenorrhoea. I usually employ it in conjunction with diathermy, but I did not refer to it in my previous letter as the number of efficient static machines in the hands of medical men in this country is so limited that the employment of these applications is but rarely possible. In America, where the value of static treatment is so much more recognized, wave applications are the recognized remedy for simple dysmenorrhoea.—I am, etc.,

Cheltenham, July 11th. J. CURTIS WEBB.

Obituary

SIR CHARLES BEDFORD, M.D., D.Sc., LL.D., D.C.L.

Lieut.-Colonel I.M.S. (ret.)

Lieut.-Colonel Sir Charles Henry Bedford, Bengal Medical Service (ret.), died at Woking on July 8th, aged 65. He was born on June 19th, 1866, in Edinburgh, the youngest son of the late F. W. Bedford, LL.D., head master and governor of Heriot's Hospital, Edinburgh, and was educated at the University in that city, where he graduated as M.B. and C.M. in 1887, as B.Sc. in 1889, as M.D., with honours, and as D.Sc. in 1892; also taking the M.R.C.S. diploma in 1888.

Entering the I.M.S. as surgeon on September 30th, 1889, he became lieutenant-colonel after twenty years' service, and retired on December 18th, 1911. After a few years' military duty he was appointed professor of chemistry in the Lahore Medical College, and chemical examiner to the Punjab Government; and a few years later was promoted to the corresponding post in Calcutta. In 1906 he organized the Central Excise Laboratory for India, of which he was appointed director, and held that post till he retired from the Service in 1911. He rejoined for service in the war of 1914–18, and in 1915–16 was Deputy Chief Commissioner for Medical Services under the Ministry of National Service, London, and in 1917–19 Commissioner for the London, South-Eastern, and East Anglian districts. In 1926 he originated the King Alfonso Chair of Spanish Studies at Oxford, and in 1930 the Anglo-Spanish and Spanish-American Institute of London. He had a world-wide reputation for his researches on alcohol, both potable and industrial. He was knighted for his scientific services on December 11th, 1911, and in 1913 he received the honorary degree of LL.D. from St. Andrews, in 1923 the same degree from Edinburgh, and in 1924 that of D.C.L.Oxon; and in 1929 was made Knight Grand Cross of the Spanish Order of Civil Merit.

Sir Charles Bedford was the author of *The Enteric Fever of India*, 1893; *History of George Heriot's Hospital*, 1901; *Memoirs of F. W. Bedford, D.C.L., LL.D.*, 1902; *Handbook of Urine Analysis*, 1902; *Elementary Hygiene*, 1903; *Symptoms and Treatment of Poisoning*, 1903; and of many scientific reports on his special subject—alcohol and its uses. He also edited the *Indian Medical Gazette* in 1898. In 1901 he married Jane Beatrice, daughter of W. A. Carter, M.I.C.E.

THE LATE MR. E. B. TURNER

Dr. ERIC PRITCHARD writes:

I feel that some posthumous acknowledgement is due to the late E. B. Turner for his many good offices in reconciling a large section of the medical profession to the new ideas embodied in the welfare movement, at a time when its activities were very unpopular with the majority of practitioners, as well as with the British Medical Association. Owing to the respect, and I think I may say affection, in which Turner was held by his colleagues in the profession and in the counsels of the B.M.A., he had many opportunities for exercising his influence at headquarters as well as among his fellow practitioners. He became a convert to the ideas of the welfare movement after he had listened to the evidence brought before the Medico-Sociological Committee of the British Medical Association which was appointed in 1920 to consider the whole question of the relationship of the medical profession to this movement; and of this committee he was an active member. He told me himself that before he heard this evidence he took the same views

as the majority of the profession—namely, that the movement was likely to interfere with the just prerogatives of practitioners by undermining their influence in the home, and by depriving them of the valuable experience connected with practice among children. Shortly after the publication of the report of this committee in 1921—a report which only grudgingly admitted the merits of this new movement—Turner joined the executive committee of the National Baby Week Council, and from that time forward entered whole-heartedly into the spirit which activated the great voluntary movement which has its headquarters at Carnegie House. In spite of his advanced age and the many calls upon his time and energies, Turner attended frequent committees connected with the various phases of the welfare movement, and served as its representative on many other national organizations. His loss will be acutely felt by the members of the National Baby Week Council, of which at the time of his death he was vice-chairman of the executive committee as well as a vice-president; as also by the members of the many other national associations quartered in Carnegie House.

We regret to learn of the death of Professor CARROLL GIDEON BULL, M.D., of the bacteriological department of Johns Hopkins School of Hygiene, at the early age of 46. It was he who as a young worker at the Rockefeller Institute brought over the first real gas gangrene (*B. welchii*) serum to be tried in France during the war. Carroll Bull was a member of the American Association of Pathologists and Bacteriologists, and of the Society of American Bacteriologists, and at the time of his death was professor of immunology in the Johns Hopkins School of Hygiene and Public Health.

Universities and Colleges

UNIVERSITY OF LONDON

The following have been recognized as teachers of the University:—*St. Bartholomew's Hospital Medical College*: Mr. J. Basil Hume and Mr. J. Paterson Ross (Surgery); *Westminster Hospital Medical School*: Dr. W. Ernest Lloyd (Medicine); *St. George's Hospital Medical School*: Mr. B. Hartop Burns (Surgery), Mr. W. S. Duke-Elder (Ophthalmology), Dr. D. Hope Freshwater (Dermatology), Mr. P. J. Jory (Oto-rhino-laryngology), Mr. Harold Taylor (Obstetrics and Gynaecology); *London Hospital Medical College*: Dr. R. Alan Brews; *London (Royal Free Hospital) School of Medicine for Women*: Dr. Daniel T. Davies (Medicine).

The annual report of the superintendent of the Brown Animal Sanatory Institution records that five lectures on diseases of bacteria were given at the Royal College of Surgeons in December last by the superintendent, in accordance with the will of the late Mr. Brown. The superintendent has continued his work on ultra-microscopic viruses, and some additional work on transmissible bacteriolytic agents has also been carried out. Dr. Nathan Raw has continued his researches on human, bovine, and avian bacilli, with special reference to their value in the immunization of animals and man against tuberculosis. The appointment of Mr. F. W. Twort, F.R.S., as superintendent of the institution has been continued for one year from June 1st, 1931.

The annual report of the Graham Legacy Committee states that the Graham Scholarship is held by Mr. C. L. Oakley. The activities of the laboratories continue along the usual lines. Grants amounting to £160 were made by the committee to six workers. The fund was founded to aid research in the School of Advanced Medical Studies connected with University College Hospital, and has for its object the prevention, cure, and alleviation of human disease and suffering. Professor A. E. Boycott, F.R.S., has been reappointed director of research under the scheme for one year from September 1st, 1931.

The regulations for the Mary Scharlieb Research Studentship have been approved. It has been founded under the will of Miss Mary Ethel Sim Scharlieb in memory of her mother, Dame Mary Ann Dacomb Scharlieb, and will be of the annual value of £250, for award from time to time, provided there is a candidate of sufficient merit. The award will be made for one year in the first instance, but will normally be renewable for a second year if the student's research is progressing satisfactorily. Candidates must be graduates of the University, and must be either medical practitioners or in possession of qualifications which, in the opinion of the Senate, would enable them to undertake post-graduate research of the kind indicated.

Regulation 3 for the Diploma in Psychological Medicine has been amended to read as follows:

The examination for the Diploma is open to any candidate whose name is on the *Medical Register*, provided that, before being admitted to Part B, the candidate shall either (*a*) have held for not less than six months a resident, or whole-time, appointment at an institution (or institutions) for (i) mental diseases (psychiatry) or (ii) mental deficiency, recognized for the purpose, or (*b*) have attended for not less than twelve months the practice of such institution (or institutions), or such other practice as may from time to time be approved by the University, provided that a candidate who under Regulation 4 professes a higher knowledge of mental diseases (psychiatry) shall have held a resident appointment or carried on approved practice at an institution in category (i) and one who professes a higher knowledge of mental deficiency at an institution in category (ii).

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE

The following scholarships and prizes have been awarded:

Kirkes Scholarship: J. H. B. Beal. *Senior Scholarship*: K. A. Latter. *Junior Scholarship*: D. F. E. Nash. *Harvey Prize*: E. W. Bintcliffe. *Foster Prize*: K. A. Latter. *Treasurer's Prize*: G. L. Bohn. *Bentley Prize*: E. R. Langenberg. *Wix Prize*: J. M. Jackson. *Matthews Duncan Prize*: J. M. Jackson and M. Westwood (equal). *Brackenbury Scholarship in Medicine*: C. H. S. Harris. *Burrows and Skynner Prizes*: C. H. S. Harris. *Brackenbury Scholarship in Surgery and Willett Medal*: J. E. A. O'Connell. *Walshaw Prize*: J. H. B. Beal. *Shuter Scholarship*: J. Smart.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The name of P. G. G. Unnithan should be added to the list of successful candidates at the recent school examination, published last week (p. 78).

The following candidates have been approved at the examination indicated:

ACADEMIC D.P.H.—Katherine Barnett, H. L. W. Beach, T. C. Lonie, G. R. Marcano, S. M. Rafi, A. M. Samarasinghe, C. R. Selous Jones, S. P. Srivastava, Sarah M. F. Walmsley.

UNIVERSITY OF SHEFFIELD

The following candidates have been approved at the examinations indicated:

M.D.—E. S. Clayton, J. N. Gale.

FINAL M.B., CH.B.—J. E. Edson (with second-class honours and distinction in obstetrics and gynaecology), A. W. R. Eardley, T. A. Hunt, S. K. Pannikar, D. R. Rigg.

UNIVERSITY OF DUBLIN

TRINITY COLLEGE

At the later Summer Commencements, held on July 3rd, the following degrees were conferred:

D.Sc. (*hon. causa*).—Cornelius U. A. Kappers, M.D.

M.D. (*hon. causa*).—Sir John Rose Bradford, Bt., K.C.M.G., M.D., Sir Foster Reuss Newland, K.C.M.G., M.B.

M.D.—T. C. Foster, B. Moshal, A. Sachs.

M.CH.—H. A. Brittain, T. J. Millin.

M.A.O.—W. S. Dickson.

M.B., B.CH., B.A.O.—T. M. R. Ahern, Ruth R. Armstrong, J. C. M. Branbell, Marjorie L. Campbell, Margaret D. Gregg, W. A. Hill, F. C. Jackson, D. G. Kennedy, M. G. Leane, N. H. Leask, A. H. Lisney, B. O'Brien, T. F. O'Donnell, Elizabeth K. Roberts, C. Ryan, H. V. Tighe.

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examinations indicated:

M.D.—T. C. Foster, B. Moshal, A. Sachs.

M.CH.—T. J. Millin, H. A. Brittain.

M.A.O.—W. S. Dickson.

FINAL M.B.—*Part I, Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology*: *I. S. M. Pringle, *Marjorie R. E. Boyd, *W. H. E. M'Kee, *Emily M. Beath, D. M. Ahern, Agnes Montero, Eileen M. Kennedy, A. B. Warren-Darley, N. Jackson, P. B. Hafner, J. J. Martin, H. Mahfud, H. S. Barber, H. R. Davies, C. C. Langford, C. W. N. Semley, J. A. Maher, C. J. Mullen, E. G. Ashton, H. T. Ryan, S. M. Freeman, G. C. V. O'Driscoll, N. Anderson, J. A. M'Elveen, I. T. F. Wiley, E. Howitt. *Part II, Medicine*: *B. O'Leary, G. A. Wray, I. M. R. Ahern, D. B. Bradshaw, H. V. Tighe, J. B. Fleming, H. F. G. Irwin, F. C. Jackson, M. G. Leane, I. G. M'Intyre, D. G. Kennedy, A. D. Barber, D. H. S. Boyd, W. A. Hill, T. J. O'Sullivan, J. C. M. Branbell, J. L. Martin, N. H. Leask, R. C. Sutton, H. S. Mason, E. FitzG. Burton, J. Elliman. *Surgery*: *Margaret D. Gregg, Elizabeth K. Roberts, B. O'Brien, T. F. O'Donnell, Marjorie L. Campbell, T. M. R. Ahern, H. V. Tighe, C. Ryan, J. C. M. Branbell, F. C. Jackson, Ruth R. Armstrong, A. A.

Lisney, W A Hill, M G Leane, N H Leask *Midwifery* A A Cunningham, J A Wallace, R D Scott, L L Nel, E W West, G F Harris H J Garland, I King

D P H—*Part I, Chemistry, Bacteriology and Parasitology, Physics Meteorology, and Climatology* H Nelson, G C Dockeray, L L Griffiths, W D Speedy, Nora A Stack, R St J Lyburn, Jane A M Nagle, C P Wallace *Part II, Sanitation (including Sanitary Construction), Public Health Administration, Hygiene and Epidemiology; Sanitary Law and Vital Statistics* G C Dockeray, W D Speedy, H Nelson, Nora A Stack

DIPLOMA IN PSYCHOLOGICAL MEDICINE—*Part II* G W M Scroope

The following prizes have been awarded

Cunningham Memorial Medal and Prize H D O'Brien *John Mallet Purser Medal, and Stewart Medical Scholarship in Anatomy and Physiology* L C Kolb *Medical Travelling Prize and Banks Medal* A H Thompson *De Renzi Centenary Prize* G C Dockeray and H Nelson *Fitz-Patrick Scholarship* B O Brien *Medical Scholarship (Anatomy and Physiology)* A Dolphin *Stewart Medical Scholarship in Physics, Chemistry, Botany, and Zoology* W A Gillespie

* Passed on high marks

UNIVERSITY OF ABERDEEN

At the graduation ceremony on July 7th the following degrees were conferred

M D—B S Cran (awarded honours for thesis), P Henderson, W J Webster

M B, C H B, with second-class honours—W G Davidson, T N Morgan (with distinction)

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A quarterly Council meeting was held on July 9th, when the President, Lord Moynihan, was in the chair

Election to Council

The President having announced the result of the poll for the election of three members into the Council (*British Medical Journal*, July 11th, p 79), Mr Graham Simpson, Mr G Ernest Gask, and Mr A J Walton were introduced and took their seats

Mr R M Vick was introduced, and admitted a member of the Court of Examiners

Election of Officers

The following officers were elected for the ensuing year *President*, Lord Moynihan, *Vice-Presidents*, Mr R P Rowlands and Mr Sampson Handley, *Physiological Curator*, Mr R H Burne, *Pathological Curator*, Mr C F Beadles, *Honorary Curator of the Odontological Collection*, Sir Frank Colyer, *Honorary Curator of the Historical Collection*, Mr C J S Thompson

Lectures

The Council elected the following professors and lecturers for the ensuing year

Hunterian Professors—Sir Arthur Keith (six lectures on recent advances in embryology applied to surgical problems), John Percival Hosford (one lecture on some factors in the causation of hydronephrosis), Reginald Theobald Payne (one lecture on excretion urography—intravenous pyelography), Albert Remington Hobbs (one lecture on the puerperal uterus as a surgical problem), John Alfred Ryle (one lecture on the natural history of duodenal ulcer), Henry Albert Harris (two lectures on the comparative anatomical aspect of prenatal, infantile, and adult disease in man and animals, with special reference to bone growth)

Arris and Gale Lectures—Wilfrid Edward Le Gros Clark (two lectures on the structure and connexions of the optic thalamus), Alexander James Edward Cave (one lecture on the morphological and functional anatomy of the human cervical spine)

Erasmus Wilson Lectures—Clement Edward Shattock (two demonstrations on pathology), Cecil Pembrey Grey Wakeley (two demonstrations on pathology), Robert Davies Colley (one demonstration on pathology), Eric Drew Moir (one demonstration on pathology)

Arnott Demonstrator—Sir Arthur Keith (six demonstrations on the contents of the Museum)

Diplomas and Licences

Diplomas of Fellowship were granted to A A Davis and A L Light, and the diploma of Membership to H Singh, these candidates having complied with the regulations of the College

Diplomas were granted, jointly with the Royal College of Physicians in Public Health to 27 candidates, in Psychological Medicine to 13 candidates, in Laryngology and Otology to 5 candidates Licences in Dental Surgery were granted to 40 candidates

Prizes

The Hallett Prize for the examination in anatomy and physiology for the Fellowship concluded on June 12th, was awarded to S G Clayton (King's College) The second Macleghlin scholarship was awarded to R Y Stevenson.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons was chiefly occupied with agricultural business this week, but the Education Estimates were also down for discussion The Long Recess is to begin on July 31st The Pharmacy and Poisons Bill is not in the list of measures which the Government desires to pass through the Commons before that date, and its chance of becoming law before the session ends is small

The Parliamentary Medical Committee has not taken any decision on the Sterilization Bill, which will be introduced by Major Church on July 21st

The Housing (Rural Workers) Amendment Act, the Mining Industry (Welfare Fund) Act, the Sentence of Death (Expectant Mothers) Act, and the Coal Mines Act received the Royal Assent on July 8th

Hygiene on Ships

Mr W GRAHAM, replying to questions by Sir B Peto and Mr Hastings on July 7th, said that the reports of the Shipping Federation Committee on crew accommodation had been considered by the Joint Committee of the Board of Trade and by the Ministry of Health, and certain instructions to the Board's surveyors had been agreed on by the Merchant Shipping Advisory Committee, and would shortly be issued The Shipping Federation had appointed in May, 1929, a special committee to advise owners on the best arrangements which could be made for the comfort and convenience of crews This committee had made two reports relating to the accommodation of seamen other than lascars, which contained a number of valuable recommendations, many of which went beyond the existing Board of Trade regulations A special arrangement of the sleeping berths was suggested which avoided double tiers of bunks, and useful suggestions were made in connexion with washing and sanitary accommodation The importance of adequate ventilation and heating was pointed out The provision of an isolation hospital on all large foreign-going cargo vessels was also recommended The committee, recognizing that the provision of good accommodation would be of little avail unless it was kept clean and in good order, laid stress on the proper supervision and cleansing of the crews' quarters, and suggested the imposition of penalties for failure to keep the accommodation clean These recommendations, as originally made, applied particularly to new ships of 1,500 tons gross and over but the Shipping Federation had agreed with the Board of Trade that they should be adopted wherever practicable irrespective of the size of the ship The reports had been examined in the Department, and also by the Joint Advisory Committee of the Board of Trade and the Ministry of Health on the health of the mercantile marine, and the opinion, both of the Board of Trade and of the Joint Committee was that if the recommendations were followed a material improvement in the standard of accommodation would result The recommendations had also been considered by the Merchant Shipping Advisory Committee, which had expressed the opinion that the recommendations should be of great value The Board of Trade had therefore decided to give its general approval to the recommendations, and to take such action as lay within its power to give effect to them It was circulating to its surveyors particulars of the recommendations of the Shipping Federation Committee, and at the same time was instructing them to ascertain, in the case of all new ships, the proposals as regarded crew spaces as early as possible, so that, if necessary it could approach the owners and builders and discuss with them the possibility of making improvements in design or in fittings where these appeared to be called for in the light of the recommendations To secure improvements on existing ships which fell below present-day standards in such matters as the provision of lavatory and washing accommodation, the substitution of metal bunks for wooden berths, and the proper lighting, ventilation, painting, and cleaning of the crews' quarters, the Board of Trade surveyors were instructed to use their best endeavours.

Ministry of Pensions

Mr. F. O. ROBERTS informed Major Evans, on July 13th, that a review of the experience of the Ministry of Pensions in the handling of the principal war disabilities had been prepared by the Ministry for inclusion in the forthcoming "Official Medical History of the War," which would be issued at an early date. He was entirely in sympathy with the suggestion that the Ministry should produce and issue for general information a comprehensive and scientific record of the experience and achievements of the Ministry in medical and surgical spheres, including treatment of wounds, disorders of the nervous systems, and other diseases. He had under consideration such steps as could usefully be taken in that direction.

Answering Mr. Marcus, on July 13th, Mr. F. O. ROBERTS said that a final award is not, under the statutory regulations, made by the Ministry of Pensions until the man's condition was reasonably stable, each case being considered on its merits and in the light of expert opinion as to the particular ailment or disease. In any event, the man had a right of appeal for a year to an independent appeal tribunal. If a condition due to war service subsequently called for treatment, it could be provided, and allowances could also be paid where justified, notwithstanding that a final award had been made. If, as a result of such treatment, a final award should be found to have been seriously erroneous, a further grant of pension could be made under special sanction.

Housing

The Housing (Rural Authorities) Bill was read a second time by the House of Commons on July 10th. Mr. GREENWOOD explained that the scheme was to help necessitous rural authorities to carry out their responsibilities under the Housing Acts.

Dr. FREMANTLE urged the Ministry of Health to make use of the annual reports of the medical officers of health. The Ministry could call for a definite survey of a particular area regarding housing, leaving aside for the time being the normal report on public health. He advised a survey by the medical officers of health both in the districts and in the counties. Such publicity would go a long way towards showing to all concerned the actual facts and needs.

The Bill extends to Scotland, and Mr. WESTWOOD read an unfavourable report from Scottish Office inspectors upon the housing in Fifeshire villages. Mr. TOM JOHNSTON said that in some country districts no houses had been built under any Act.

The Bill was considered by the House of Commons in committee on July 14th.

Maternal Mortality

Answering Dr. Marion Phillips, on July 9th, Mr. GREENWOOD stated that 139 local authorities had now replied to his circular of December, 1930, concerning maternal mortality. Of these, 102 proposed to make improvements in their maternity services, 13 stated that the circular was still under consideration, and 37 did not at present propose to extend their services. He was sending a further communication to those authorities which had not yet replied to the circular.

Napsbury Mental Hospital.—In reply to Mr. Messer, on July 2nd, Mr. GREENWOOD said he knew that one hundred mental patients were compelled to sleep on the floor at Napsbury Mental Hospital owing to lack of accommodation, and that the Middlesex County Council submitted plans as far back as 1924 which had only recently been passed by the Board of Control. Approval had recently been given to the first section of the scheme, which comprised all the administrative buildings and accommodation for 1,046 patients.

Nursery Schools.—On July 6th Mr. MORGAN-JONES, replying to Mr. Hastings, said that there were 44 nursery schools recognized by the Board of Education, 23 being provided schools and 21 voluntary schools. There were 11 provided and 3 voluntary schools in course of erection. In addition, preliminary proposals had been sanctioned for 12 provided schools. Practically all the schools now being built were open-air schools.

School Accommodation for Defective Children.—On July 7th Mr. WESTWOOD, replying to Miss Lee, said that the total number of places for backward and defective children available in special schools and classes in Scotland was 12,852. This figure included accommodation for blind, deaf-mute, and other physically defective children as well as for those mentally defective. More accommodation was still required for mentally defective children. This matter was engaging the attention of the Scottish Education Department, and the Secretary for Scotland hoped that measures would soon be taken to effect an improvement.

Water Supply in Schools.—In reply to Mr. Ede, on July 9th, Mr. LEES-SMITH stated that he had inquired into the question of the water supply in the Nottinghamshire schools. The local education authority was alive to the position. In all except three schools water for washing was now provided, and except in about seven cases drinking water was available, if not on the school premises, at no great distance. Answering Mrs. Manning, on the same day, Mr. LEES-SMITH said there was only one school in Herefordshire where a water supply was not available. He understood also that at four Herefordshire schools new water supplies were contemplated. It was the Board of Education's practice to take up all cases where the water supply appeared to be unsatisfactory and capable of remedy.

Deaths in Prisons.—Replying to Mr. Freeman, on July 9th, Mr. CLYNES said that during the twelve months ended May 31st, 1931, there were eight natural deaths in convict prisons in England and Wales, twenty-two in local prisons, and one in a Borstal institution. Of suicides there were none in convict prisons, three in local prisons, and two in Borstal institutions. In compiling any return of attempted suicides there was a difficulty in determining whether certain cases were real attempts at self-destruction or feigned attempts undertaken for some other purpose. So far as could be ascertained there was one case of attempted suicide in convict prisons, twenty in local prisons, and one in Borstal institutions.

Red Cross Rheumatism Clinic.—Replying to Mr. White, on July 9th, Mr. GREENWOOD said the British Red Cross Society had recently published a report on the work of the clinic for the treatment of rheumatism at Peto Place. He was satisfied that the clinic was fulfilling a useful purpose, but it would be premature to attempt to assess the results of its work. Suggestions for the extension of this work in other localities were under consideration, and if any proposals were submitted to his department they would receive careful examination.

Encephalitis and Vaccination.—Replying to Mr. Freeman, on July 9th, Mr. GREENWOOD said there was no reason to associate the deaths of twin children at Wigston, near Leicester, from post-vaccinal encephalitis, with the use of Government lymph. He did not propose to take any steps to prevent the further use of Government lymph in this district. Mr. FREEMAN asked if compensation was payable, and whether the Government had sent an expression of sympathy to the parents. These questions were not answered. Answering further questions by Mr. Freeman on the same date, Mr. GREENWOOD said he saw no necessity for any further inquiry at the present time into the question of vaccination, as the subject had been fully investigated by the Committee on Vaccination, whose reports were issued in 1928 and 1930. Mr. FREEMAN asked if Mr. Greenwood could announce any decision about the possible inquiry which he mentioned to the House a year ago into the whole administration of the Vaccination Acts. Mr. GREENWOOD said he could not.

Physique of Recruits.—On July 13th Mr. SHAW, replying to Mr. Louis Smith, said that in the recruiting year ended September 30th, 1921, 51,021 persons were rejected for the Army for physical or mental reasons. This was a percentage of 48.1 of the men served with notice papers. In 1922, 59,736 men were rejected, percentage 55.9; in 1923 49 559 were rejected, percentage 57.6. The figures for 1924 were rejections 49,245, percentage 58.3; 1925 52 207 and 58 5; 1926, 48,800 and 58.8; 1927, 50,396 and 60 1; 1928 47 552 and 57.3; 1929, 39,359 and 54.4; and 1930, 35,425 and 53.1.

Notes in Brief

On July 13th Mr. Benn informed Miss Rathbone that there was no general compulsory notification of births or marriages in any province in India.

On June 6th, 1931, 892,450 persons were in receipt of poor relief in England and Wales (excluding rate-aided patients in mental hospitals, casuals, and persons in receipt of domiciliary medical relief only).

THE BOARD OF CONTROL

REPORT FOR 1930

Part I of the seventeenth annual report of the Board of Control, for the year 1930, is published to-day.[1] The introductory paragraphs refer to the passing of the Mental Treatment Act in July, 1930, and the steps taken to bring it into operation, as the most important events in this sphere of work during the twelve months under review. "We believe that this Act marks an epoch in the treatment of mental disorders in this country, though some years may elapse before its full possibilities can be realized." A convenient summary points out the directions in which the Act provides opportunities for progressive development in the care of persons suffering from mental disorder. The Board is convinced that if the benefits of the Act are to be brought fully within the reach of those for whom they are intended, full co-operation is necessary on the part of the public, the medical profession, and local authorities alike.

PROGRESS UNDER THE MENTAL TREATMENT ACT

An account is given of the preparatory measures taken to ensure that the Act should come into effective operation on January 1st, 1931. As recorded in these columns last year, a largely attended conference of persons interested was held at the Central Hall, Westminster, and following this a circular memorandum was issued to all local authorities, summarizing the provisions of the Act and making suggestions for the steps necessary to give effect to them. Rules were drawn up under Section 15 of the Act and the Third Schedule, and these were consolidated with the existing Lunacy Rules of 1925, thus bringing all Rules under the Lunacy and Mental Treatment Acts together in a single code. Early steps were also taken to bring to the notice of voluntary hospitals the opportunity which the Act affords them of co-operating in the treatment of mental illness. Conferences were held and a special memorandum was issued. The approval of medical practitioners for the purpose of making recommendations under Sections 1 (3) and 5 (3) presented difficulties, and a committee was appointed, with Sir John Rose Bradford as chairman, to advise the Board on questions of principle. The recommendations of this committee were adopted, and up to March 31st the Board had approved 2,209 medical practitioners. In accordance with Section 11 of the Act the Board itself has been reorganized, and as from January 1st, 1931, it has consisted of five Senior Commissioners, mainly employed at headquarters. The bulk of the visitation will in future devolve upon the Commissioners, medical and legal, who have been appointed by the Board with the approval of the Minister of Health.

An inquiry as to the progress made up to the end of February of this year in the provision of out-patient, voluntary, and temporary patients, showed very unequal results in different areas, but the development of out-patient clinics is already most gratifying.

INSTITUTIONAL ACCOMMODATION

On January 1st, 1931, the number of notified insane persons under care in England and Wales was 144,161. The increase in the number of patients in public mental hospitals during 1930 was 2,410. While this increase may be regarded as normal and representing approximately the rate of increase which is to be anticipated for some years to come, it does not indicate any real increase in the incidence of mental disorders. Although for reasons set out in its report the Board sees no ground for pessimism when the question is regarded purely from the public health point of view, the annual increase of mental disorder is a matter of grave concern in its bearing upon the adequacy of existing institutional accommodation. The hope was entertained that this dangerous position would have been substantially relieved by the reallocation of Poor Law buildings transferred to local authorities under the Local Government Act, 1929, "but, when every allowance is made for the possibility of relieving in this way the pressure on the public mental hospital, it is clear that many authorities are faced with the urgent need of providing new hospitals." The need of beds is so acute that new building cannot be further postponed without grave risk. "Even as a temporary expedient overcrowding is dangerous. It imposes an intolerable strain on the nursing staff, and it adds greatly to the risk of epidemic disorders."

One of the most important questions engaging the attention of the Board is that of research. Recognizing that the number of hospitals able to carry out independent research must be limited, the Board welcomes the provision, in the Mental Treatment Act which empowers local authorities to contribute to research undertaken by other bodies, such as universities. To advise it on means for co-operative research the Board is taking steps to establish an advisory committee on which local authorities may be represented. It is hoped in this way to draw up a comprehensive programme of research into the causes of mental disorder, without which no great advance can be made in the application to mental disorder of the principles of preventive medicine.

Notwithstanding efforts made by many hospitals to improve the lot of their nurses, difficulty is found in securing enough probationers. The shortage is more acute in some hospitals than in others, but few are so happily placed as to have a waiting list. The Board doubts whether the scope for real nursing work in public mental hospitals is adequately appreciated.

SEDATIVES IN MENTAL HOSPITALS

For several years the authorities of all mental institutions have supplied the Board with particulars with regard to the use of sedatives, giving the quantities used annually and the average number of sleeping draughts administered each night. The data supplied revealed a wide variation in practice.

"There is clearly no consensus of opinion in respect to the value of sedatives in the treatment of mental illness. Some institutions use hardly any, but it can be said that in no case are the quantities used excessive. There is also little agreement regarding the value of individual drugs. Some given freely in one hospital are rarely, if ever, used in another. It is in no critical spirit that we draw attention to this divergence in practice, but we suggest that the subject is one that needs further study and investigation. Research is much wanted, so that it may be possible to define more clearly the conditions under which sedatives should be prescribed. It seems clear that order and tranquillity of mental hospitals bear little relation to the extent to which sedatives are used."

[1] The Seventeenth Annual Report of the Board of Control, for the Year 1930. Part I. London: H.M. Stationery Office. 1931.

A revised list has been published of the sanatoriums and other residential institutions approved by the Minister of Health for the treatment of persons suffering from tuberculosis and resident in England and Wales. As in previous years the names of the administrative counties and county boroughs in which the institutions are situated are given, with notes about such matters as limitations in respect of certain forms of the disease and of the sex of patients. The list is obtainable from H.M. Stationery Office, price 4d. net.

Medical News

The annual dinner of the British Medical Association will take place at the Grand Hotel, Eastbourne, on Thursday, July 23rd, at 7.30 p.m. As the accommodation is limited, it is desirable that members wishing to have tickets reserved should notify the Honorary Secretary, Eastbourne Meeting, Avenue House, Eastbourne, at the earliest possible date. Tickets will be allotted strictly in order of application. Vouchers entitling members to take advantage of the facilities offered by the railway companies of Great Britain can be obtained on application to the Financial Secretary of the Association. The companies will issue return tickets available until July 27th at the ordinary single fare and a third for the double journey.

In connexion with the British Medical Association meeting at Eastbourne, a medical missionary breakfast will be held, under the auspices of the Medical Prayer Union, on Friday, July 24th, at Stewart's Restaurant, Victoria Place, at 8.30 a.m. The chair will be taken by Dr. W. G. Willoughby, President, B.M.A. An address will be given by Dr. A. R. Cook of Uganda. Intimation of intention to be present will be welcomed by Dr. Victor G. Williams, 6, College Road, Eastbourne.

Founder's Day will be celebrated at Epsom College on Saturday, July 25th. There will be service in chapel at noon, and prizes will be given away by the Bishop of Guildford at 2.45 o'clock. After tea there will be an assault-at-arms, and in the evening a performance of *Patience* by the choral society. On Saturday, October 3rd, Lord Dawson of Penn, P.R.C.P., will open the new school sanatorium.

Detailed information about the lectures and demonstrations arranged for next week by the Fellowship of Medicine and Post-Graduate Medical Association will be found at page 48 of the *Supplement*. A course in medicine, surgery, and the specialties will be given at the Miller General Hospital from July 20th to August 1st; fee £3 3s. A course in urology will be given at the All Saints' Hospital, Vauxhall Bridge Road, from August 4th to 29th, fee £2 12s. 6d. From August 17th to 29th a course in diseases of children will be given at the Queen's Hospital for Children, Hackney Road; fee £2 2s. Courses in September will include diseases of the chest at the Brompton Hospital, psychological medicine at the Bethlem Royal Hospital, diseases of infants at the Infants Hospital, ophthalmology at the Central London Ophthalmic Hospital, general medicine and surgery at the Westminster Hospital, followed by a similar course at the Metropolitan Hospital. Syllabuses and tickets for all the courses may be had from the Fellowship of Medicine, 1, Wimpole Street, W.1.

A meeting of the Osler Club was held in London on Sunday evening, July 12th, to celebrate the eighty-second anniversary of Sir William Osler's birthday. Dr. William Stobie, Mayor of Oxford, delivered the fourth Oslerian Oration, in which he skilfully blended the interesting narrative of Osler's inspiring leadership in the tuberculosis campaign in Oxfordshire with a moving account of Osler as clinician, chief, and friend. Dr. A. Salusbury MacNalty of the Ministry of Health proposed, and Dr. A. P. Cawadias seconded, a vote of thanks, and Sir Percival Hartley briefly spoke in the discussion. Letters and messages had been received from absent friends: Professor J. F. Fulton of Yale University, Dr. Henry R. Viets of Boston, Dr. Vilhelm Maar of Copenhagen, Sir Arthur Keith, and Professor Grey Turner. Among those present were Sir D'Arcy Power, Dr. J. D. Rolleston, Dr. K. R. Hay, Professor D. Fraser-Harris, and Mr. Arnold M. Muirhead, whose recent *Memoir* of Lady Osler was displayed among the exhibits.

A quarterly court of the directors of the Society for Relief of Widows and Orphans of Medical Men was held on July 8th, when Dr. W. Culver James, senior vice-president, was in the chair. The death of an annuitant was reported. She had been in receipt of grants since 1920 and had received £787 10s.; her late husband had paid £52 10s. in subscriptions. £2,075 was voted for the half-yearly grants to the fifty-two widows and seven orphans on the books, and £123 15s. was voted as special grants for six orphans, to enable them to continue their education, inasmuch as they had reached the age of 16, when the ordinary grants ceased. A rebate of income tax amounting to £820 13s. 8d. had been received from the Inland Revenue for the year ending April, 1931. Relief is only given to the widows and orphans of deceased members. No widow with an income exceeding £125 per annum is eligible for relief. Membership is open to any registered medical man who at the time of his election is resident within a twenty-mile radius of Charing Cross. After election a member need not remain within this area. Full particulars may be obtained from the secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W.1.

The annual general meeting of the Medical Society of Individual Psychology was held, after a dinner, at the Florence Restaurant, on July 9th. Dr. O. H. Woodcock, the outgoing chairman, referred to the great progress made during the year, marked as it was by a visit from Dr. Adler in January. The financial position was strong, and the membership had quadrupled during the last nine months. A series of publications had been successfully inaugurated by "The case of Mrs. A" (a lecture-demonstration by Dr. Adler), and it was proposed to continue the issues at least quarterly. The publications are to be distributed gratuitously to all members and associates of the society; non-members will be able to obtain copies, through booksellers, from the publishers, the C. W. Daniel Company. Dr. W. Langdon Brown was elected chairman for the ensuing session, which opens in October next, with Dr. Crookshank as editor, and Dr. Hilda Weber as assistant editor of the publications. Dr. Thomas E. Lawson (to whom all applications for membership and information should be addressed, at 11, Chandos Street, W.1) was re-elected honorary secretary and treasurer.

On the occasion of his retirement from Moreton-in-Marsh, Gloucester, where he has practised since 1888, Dr. R. E. B. Yelf was presented by his friends and patients with a watch and a cheque for £106, as a mark of their esteem, and Mrs. Yelf was given a portable wireless set.

The celebration of the fourth centenary of the Collège de France began on June 18th, when Professor H. Vincent, member of the Institut de France and of the Académie de Médecine, delivered an address on Claude Bernard and the Collège de France.

The first International Congress of Mediterranean Hygiene will be held at Marseilles, under the presidency of Dr. Marchoux, from September 20th to 25th, 1932. Further information can be obtained from the general secretary, Dr. Violle, 40, Allées Leon Gambetta, Marseilles, or from Dr. Broquet, 195, Boulevard St. Germain, Paris, 7e.

The issue of *Le Scalpel* for July 4th is devoted to the account of the eleventh annual congress known as the Journées Medicales, held at Brussels from June 20th to 24th.

The issue of the *Gazette des Hôpitaux* for June 17th is devoted to tropical diseases, in anticipation of the International Colonial Medical Congress to be held in Paris from July 22nd to August 4th.

Further reports of subcommittees of the Pharmacopoeia Commission have been published lately by authority of the General Medical Council (44, Hallam Street, W.1). No. 5 (price 1s.) deals with the preparation of sterile solutions for injection; No. 6 (1s. 6d.) comprises the second report of the Pharmacy Subcommittee; No. 7 (1s.) is the report of the subcommittee on ampoule glass.

Dr. Laignel-Lavastine, senior physician to the Hôpital de la Pitié, and secretary of the International Society of the History of Medicine, has been nominated professor of the history of medicine in the Paris Faculty in succession to Professor Menetrier.

Sir Hilarion M. Fernando, M.D., has been reappointed a member of the Executive Committee of the Island of Ceylon.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication

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QUERIES AND ANSWERS

Oxaluria

DR BLACKBURN (Beckenham) writes In reply to "Inquirer" (Kenya), the conditions causing an excretion of oxalate crystals in addition to exogenous sources, are achlorhydria or diminished acidity, with resulting fermentative digestive disturbances A diet poor in calcium and rich in magnesium should be ordered An increase in meat is advisable, as it raises the acidity of the urine Tomatoes and asparagus should be avoided, and gelatin is inadvisable, as it is a precursor of oxalates A dose of calomel once a week, followed by mag sulph, is the best medicine to order Plenty of fluids should be taken and Contrexeville water, containing acid carbonates, is valuable

Income Tax

Car Allowance

"A F" bought a new car in April, 1930, "and was allowed replacement allowance," based on a cost of £350 for the new car For 1931-32 he claimed depreciation allowance—that is, 20 per cent of £350=£70—but has been allowed only £28 at 20 per cent = £6, that allowance being based on the written down value (? of the old car) brought forward

*** Depreciation allowance is made by way of anticipation of the cost of replacement, and it has been decided that, as for the same financial year, a taxpayer cannot claim an actual replacement cost *and* a depreciation allowance in respect of the same kind of equipment "A F's" liability for 1931-32 is based on his earnings for 1930-31, and it is understood that in computing the amount of those earnings he deducted the cost of car replacement If so, and if he were allowed depreciation for 1931-32, the tax for that financial year would be reduced by both (alternative) forms of allowance We suggest that he should ask the inspector of taxes whether he will be prepared to admit a claim to depreciation on his car for 1932-33, when the tax payable will no longer be affected by the cost of replacement deduction

LETTERS, NOTES, ETC.

Operation for Cataract

Personal Experiences

Lieut Colonel W K HATCH, F R C S, I M S (ret), writes The question of operating for cataract when one eye is in a more advanced condition of disease must I think, be decided after due consideration of the condition in each case In my own case the history is approximately as follows In 1929 I was told by Lieut-Colonel R H Elliot, whom I consulted, that I had a definite cataract in the left eye and commencing disease in the right eye I therefore had an iridectomy performed by him in April, 1929, and would have had the extraction in the same year but severe bleeding from duodenal ulcer prevented the operation taking place until the end of May, 1930, the operation being most successful During that summer I was able, using my right eye, to play bowls and to do some fly fishing fairly comfortably Though I could see splendidly with the glasses for the left eye I did not use them much indoors Early this year I could still read clear print in a good light and even decipher my own writing (which is rather difficult to do), but found that I could no longer play bowls or see my line when fishing, except very occasionally, and was unable to do delicate operations, such as tying on flies, etc I therefore had to fall back on the operated eye, which I fortunately had in reserve By this time, too, I was better able to judge distances and to walk with more facility At the end of May, 1931, Colonel Elliot performed iridectomy on the right eye, and the date of extraction now remains to be settled I have no doubt that I could shoot all game using the operated eye, but as it is the left, I do not think it worth while to learn how to shoot from the left shoulder, or have a cast made in the stock of my gun As it takes longer than one would expect to get accustomed to cataract glasses, and to judge distances get over the peculiar giddiness one feels at first, and the change of colour of some objects, faces, and clothes, it seems to me most necessary to operate early on the worst eye It will then be ready to take over charge when the best eye fails I am thankful that this was done in my case, as I can still enjoy my usual pastimes as well as I did before operation

Nord-Sud Tour in Italy

We are asked by the London office of the Italian State Railways (16, Waterloo Place, S W 1) to say that there are still some vacancies in the medical tour to Italian resorts and spas in September and October next, referred to by a correspondent on March 28th (p 568)

West African Medical Staff Dinners

"W A M S" writes The effort to revive the annual dinner of the W A M S, which used to be held before the war, has been unsuccessful, apparently owing to apathy on the part of those concerned This is to be regretted Such dinners tend to foster the spirit of cohesion and *esprit de corps* among the officers in the Service, they also afford opportunities for meetings between past and present members of staff, and between the staff and officials of the Colonial Office and prominent medical men, some of whom in each category, are usually present At this time of year most organized units—the regiments, the I M S, the R A M C, and others—are holding their annual dinners, the W A M S seems to be almost the only unit that does not follow the custom It is to be hoped that the matter will not be allowed to drop, but that some energetic officer on the active list will, later on, try to revive the dinners, with more success than has attended the present effort

A Warning

The Chief Constable of Birkenhead informs us that a man recently called on a doctor in that borough pretending to represent the Lady Haig Fund for Students Disabled in the Great War, and trying to sell Harris tweeds fountain pens, etc, and filing cabinets for the use of panel doctors The man is described as follows 26 to 28 years, height 5 ft 10 in, fair hair, curly at back, fresh complexion, *clean shaven, dressed in navy blue mackintosh*, carries a walking stick, and walks with a limp

Disclaimers

DR EDGAR CYRIAX (London, W) writes My attention has been drawn to a book entitled *The Quest for Health*, which has just been published It contains a number of statements, many of which are entirely erroneous, about certain methods of treatment practised by myself and my wife, Dr A Kellgren Cyriax This was done without my knowledge and consent

DR G EDHOLM (London, S W) also writes to say that his name appears in *The Quest for Health* without his authority

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 51, 54, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 17

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

54 Trigeminal Neuralgia during Serum Administration

R. F. VACCAREZZA (*Rev. Sud-Amér. de Méd. et Chir.*, May, 1931, p. 465) describes the case of a woman who developed facial tetanus four days after pricking her chin with a rose thorn; she recovered after receiving 180,000 units of serum. Seven days after the first injection a very severe serum reaction ensued, with vomiting, articular pains, and haematuria. During convalescence she had very painful neuralgia, involving all the branches of the facial nerve; there was also some pain in the occipital and nuchal regions, showing that the cervical roots were also involved. The severe pain persisted for several weeks, and then gradually subsided, but after two years there still remained hyperaesthesia of the side of the face affected (the opposite to that of the original wound), accompanied by twitching of the muscles of mastication and occasional fleeting pains. Vaccarezza considers that the neuralgia is a sequel of the serum reaction, and not of the original tetanic infection; he can find no record of neurological complications following tetanus other than of a paralytic nature. He alludes to the rarity of sensory nervous disturbances following serum administration, the motor forms being much more usual, and he quotes instances of both forms following the injection of antitetanic and other serums.

55 Hypoglycaemia accompanying Pancreatic Hypertrophy

According to A. W. PHILLIPS (*Journ. Amer. Med. Assoc.*, April 11th, 1931, p. 1195) hypoglycaemia appears to be due primarily to hepatic, endocrinal, or pancreatic pathological changes in the liver, the endocrine glands, or the pancreas, and is seen in various diverse conditions. A case is recorded which clinically appeared to be uraemia with hypoglycaemia; the necropsy revealed hypertrophy of the islands of Langerhans and nephritic changes. The relation of a marked retention of nitrogen and creatinine to the urinary and post-mortem renal findings indicated that the exciting cause of death was probably of renal origin. Both the pancreatic and renal changes may have been present for some time as entirely separate pathological conditions. Phillips believes that the hypertrophy of the islands of Langerhans, with probably increased insulin production, was the etiological factor in the hypoglycaemia of the present case, and that such hypertrophy explains some mild cases of chronic hypoglycaemia of long duration which are relieved by a diet high in carbohydrates. Periods of high sugar ingestion or temporary dysfunctioning of a sugar-regulating mechanism, other than the pancreas, may conceivably provoke hypertrophy of the islands, and a hyperinsulinism which continues after removal of the unusual stimulus.

56 Vaccination in the Newborn

L. LUMEZ (*Arch. f. Kinderheilk.*, April, 1931, p. 124) states that vaccination was performed on sixteen newborn children aged from 4 hours to 3 days, and on two children aged 8 and 9 days respectively, with lymph which had been in the ice-chest between six and eight weeks. As a general rule the course of vaccination was more pronounced in the newborn, who showed well-marked allergic reactions. In contrast with older infants the newborn sometimes showed a delay in the appearance of the vaccine vesicle (sixth to seventh day), and more rarely a delay of two or three days in the appearance of the vaccine pustule. The newborn also showed an increased tendency to the formation of supplementary vaccine reactions in 6 out of 20 cases, which were not seen in any of 20 controls. The newborn, like the older infants, showed a vaccinal reaction in the blood. The first vaccinal leucocytosis was in many cases reduced or annulled by the predominant allergic tendency to leucopenia in the first week. On the other hand, the second leucocytosis was favoured or considerably increased by the tendency of leucocytosis in the second week of life; there might, however, be no blood reaction at all. The mild local cause of the lymph reaction in the newborn is partly due to the peculiar mode of reaction of the young to infection or reinfection.

57 Focal Infection in Acute and Chronic Nephritis

O. RÖMCKE (*Nordisk Medicinsk Tidskrift*, May 29th, 1931, p. 344) reports from the Ullevaal Hospital in Oslo 13 cases of more or less prolonged nephritis in which treatment of a focal infection had a beneficial effect on the nephritis. In one case an outbreak of eczema was followed by a pustular dermatitis, the development of which coincided with the appearance of blood in the urine. Haematuria and albuminuria persisted after the skin condition had cleared up, and after several carious teeth had been removed. The patient also suffered from chronic bilateral otitis media, and when a radical operation was performed on one side, and more conservative treatment was prescribed for the other side, the haematuria, which had then persisted for eight months, cleared up in three weeks. In another case, complicated by pulmonary tuberculosis, the haemorrhagic nephritis from which the patient was suffering proved refractory to dietetic treatment and rest in bed. After the signs of nephritis had remained unchanged for four months an infected tooth was removed, and fourteen days later the urine was normal. In another case, in which the nephritis had lasted for a year, tonsillectomy was followed in eight days by the disappearance of all the abnormal elements from the urine.

Surgery

58 Dilating the Pylorus

M. EINHORN (*Med. Journ. and Record*, June 3rd, 1931, p. 531) gives notes of two cases in which the bloodless method of stretching the pylorus for benign obstruction gave excellent results. The first patient, a man aged 49, had complained for seven years of symptoms suggestive of duodenal ulcer; an *x*-ray examination appeared to confirm this, though an exploratory laparotomy was negative. He lost weight and became very weak. The barium meal showed immense dilatation of the stomach, absence of the cap, and the presence of a six-hour and twenty-four-hour retention. After duodenal feeding for three weeks the pyloric dilator with a bead-string guide attachment was swallowed, and the pylorus stretched the next day to 50 F. The patient was soon able to take ordinary food without discomfort, and a few months later reported feeling perfectly well with a gain of 30 lb. in weight. The second patient, a man aged 37, complained of frequent attacks of epigastric pain which were relieved by alkalis; *x*-ray examinations showed a prolapsed and dilated stomach with a six-hour gastric residue, and a small deformed cap. A diagnosis of duodenal ulcer with commencing pyloric obstruction was made and duodenal feeding began; after three days nourishment was given by mouth, the pylorus being stretched to 60 F., and four days later to 70 F. He reported later that he was perfectly well, was able to take food without any discomfort, and had gained 15 lb. in weight. Einhorn remarks that this method of stretching the pylorus is a comparatively easy and harmless procedure. It is specially indicated in cases of severe pylorospasm and commencing benign pyloric stenosis occurring in feeble patients, in whom an open operation is contraindicated.

59 Arterial Embolectomy

C. ROBERTSON, A. E. MOORE, and D. ROBB (*Journ. of the College of Surg. of Australia*, March, 1931, p. 360), who discuss the literature, etiology, diagnosis, and treatment of arterial embolectomy, conclude that cardio-vascular disease is the commonest causative factor; next in frequency come surgical operations, parturition, and cardio-renal disease. A healthy, athletic man, aged 31, complained of pain at the base of the right thumb and weakness of grip, the condition extending over five months. The onset was abrupt; while driving a car the patient had sudden pain in the wrist, with weakness of the hand, and tingling in the fingers. This condition persisted for five months. On examination there was swelling of the soft parts on the dorsal aspect of the first interosseous space, and tenderness at the base of the thumb metacarpal. There was no muscular wasting or sign of nerve involvement. The radial pulse could not be felt, and an *x*-ray examination negatived any disease or traumatic lesion. A diagnosis of unabsorbed subperiosteal haemorrhage from some unremembered injury was made, and exploration was advised. The hand and forearm were exsanguinated with an Esmarch bandage during open ether anaesthesia. On cutting down at the base of the thumb a recent thrombosis in the radial artery was found; the artery was opened, and half an inch of dark red, non-adherent clot was expressed. The walls appeared healthy. The cut ends of the artery were ligated, and the wound was closed. The pain was considerably relieved by the operation. General examination revealed nothing that might cause an embolus. Four months later the hand had improved and there was faint pulsation in the radial artery at the wrist. The first interosseous muscles were tender. Thirteen months after the operation the hand was practically normal.

60 Cancer in General Practice

C. E. L. BURMAN (*Journ. Med. Assoc. of South Africa*, May 23rd, 1931, p. 311), recording observations on cancer in general practice, emphasizes the fact that successful treatment rests upon an early recognition of the precancerous stage—the stage of conflict between the transition of the connective tissue cells and that of the cancer cell. In spite of the success that has attended the use of radium, surgical removal should be undertaken where possibilities of cure are evident, even if it entails some scarring or disfigurement. The primary good results following the employment of radium in skin epithelioma renders it essential, however, to advise such treatment in these cases before resorting to surgery; but a ten-year period of non-recurrence is necessary before the possibility of surgical intervention can be finally abandoned. Radium treatment in cancer of the breast is promising, but where the tissues are bathed in physiological secretions, as in gastric, urinary, and brain cancer, the sequels are not so good; columnar and transitional epithelial tissues appear to be more resistant to radium. In combating the disease deep therapy and *x* rays are of value. For the early recognition of the precancerous stage it is important to educate the public to seek advice for any departure from normal health, for the appearance of abnormal skin growths, and for the persistence of ulcers showing no signs of healing.

61 Appendicitis on the Left Side

R. BONNAUD (*Thèse de Paris*, 1931, No. 128), who records 48 cases in patients aged from 5 to 62 years, five of which are original, states that appendicitis on the left side is to be suspected whenever pain and the signs of inflammation appear from the first on the left of the middle line. The displacement of the appendix is due to total or partial inversion of the viscera, excess or defect of the migration, rotation, descent, and fixation of the caecum, or to excessive length of the appendix, and a transverse and inward passing of the organ. Pain on the left side of the abdomen, however, has frequently been noted in cases where the appendix is in its normal position. On the other hand, appendicitis on the left may have as its sole symptom pain on the right side. In view of the fact that appendicitis on the left is more frequent than is generally supposed, Bonnaud recommends a radioscopic or radiographic examination to determine the position of the caecum and appendix before operation, whenever it is possible. If the correct diagnosis is made, the prognosis is no worse than in appendicitis on the right side. The technique of the operation differs little from that employed in ordinary appendicitis; the incision should be made on the left side or in the middle line in cases of doubt.

Therapeutics

62 Treatment of Collapse

E. HOLZBACH and E. KOLLORS (*Munch. med. Woch.*, May 22nd, 1931, p. 875) have made a long search for an ideal drug for use in the treatment of collapse. Such an agent must increase the venous return to the heart from the splanchnic reservoir; at the same time it must act as a cardiac stimulant, and ensure efficient emptying during systole. Adrenaline and ephedrine have the peripheral effect without much direct cardiac action, the latter working more slowly but for a longer period than the former. The addition of pituitrin (or, better, vasopressin) increases the duration of the effect still further, while strophanthin has the desired central (cardiac) action. A combination was therefore tried in animal experiments; it was found that it successfully combated collapse produced by such agents as histamine, arsenic, peptone, and bacterial toxins. The final composition of the mixture was: adrenaline, 0.001 mg.; vasopressin, 0.05 unit; strophanthin, 0.003 mg.; ephedrine, 0.1 mg., for each kilogram of weight. This is now being marketed in ampoules, each of which is adequate for a 60 kg. patient. The mixture should be diluted with 10 c.cm. or more of saline or glucose solution, and be given intravenously very slowly. The clinical results are described in the case of a series of patients suffering from various types of severe collapse, and they are very favourable, the pulse, colour, temperature of the extremities, and the general condition improving immediately. The effect lasts for some hours, and after this the injection can be safely repeated if necessary.

63 Carbon Dioxide Inhalation in Hiccups

L. A. GOLDEN (*New England Journ. Med.*, June 4th, 1931, p. 1183) recalls Yandell Henderson's emphasis on the value of a 5 per cent. strength of carbon dioxide in the inspired air in arresting post-operative hiccup. Sheldon had noted that this effect was in many cases permanent. The present author has therefore used the method for the relief of hiccup of the milder kind, occurring in daily life. An ordinary paper bag of medium size is placed over the patient's face, and he breathes in and out of it steadily. In a few minutes the percentage of CO_2 is sufficiently high to have a therapeutic effect, and the hiccup ceases. In one of his cases there had been continuous hiccup for two days, with stoppage of feeding and sleeping; rebreathing by this simple method arrested the spasms in four minutes. In Golden's cases the time required by patients for relief ranged between three and six minutes; if recurrences occurred, these were easily treated along the same lines by the patients at home.

64 Gold and Sulphur in Tuberculous Adenitis

R. HUGUENIN, MYRIAM LIBERSON, and YVES DUPONT (*Presse Méd.*, June 6th, 1931, p. 833) report gratifying success in the treatment of numerous cases of cervical and axillary tuberculous glands by means of gold. They found that larger doses of gold could be given in these cases than in pulmonary patients, and they were able to avoid almost completely any ill after-effects or toxic complications by arranging for the simultaneous administration of liver extract. The authors stress three points.

Pure gold is not nearly so efficacious as a compound of gold and sulphur, which can be injected intravenously. Larger doses, quickly reaching 0.75 to 1 gram a week, should be given in two doses, or even one dose, until a total of from 6 to 10 grams has been administered. The necrotic suppurative form of adenitis often clears up more quickly than the hard indurated nodules. The rapidity of improvement is claimed to be comparable with that of the arsenical treatment of syphilitic lesions; the authors raise the hope of an improvement in the gold treatment of pulmonary cases.

Ophthalmology

65 Nodular Corneal Opacities

E. L. GOAR (*Amer. Journ. Ophthalmol.*, February, 1931, p. 133), discussing nodular opacity of the cornea, remarks that this condition has been described under various names, and the clinical appearance as outlined by several authors does not always seem identical, yet all cases have certain common characteristics. The opacity usually appears in several members of a family, and it is slowly progressive over a period of years, with or without mild periods of irritation until vision is largely lost. The etiology is unknown. The lesions are bilateral and rather superficial, although in the later stages the deeper layers of the cornea may be involved. The affection consists in the appearance in the otherwise clear corneal tissue of numerous small rounded greyish non-confluent opacities, composed of a substance which is probably hyalin. The spots occupy principally the central portions of the cornea, and the larger nodules form clusters which cause the epithelium to bulge slightly; they seem to form gradually, and to remain unaltered for some years. Goar describes the case of a brick-mason who complained that his vision had been failing for about eighteen months; he had no other discomfort, but his eyes were sensitive to light, and watered. A sister and a brother were found to have similar trouble. On close examination with the loupe and lens it was noted that the superficial part of each cornea was covered with interlacing lines, and with tiny nodules arranged in groups and singly. The eyes were treated with dionin and hot applications, with no improvement. Six months later the irritation increased, and atropine, hot applications, and holocaine instillations were tried, the patient being given injections of diphtheria antitoxin. Six months later both corneas were densely infiltrated, and vascularization had begun from all sides. When the irritative stage gradually subsided it left both corneas opaque and densely vascularized. Weiner's wedge operation was performed, followed by radium applications, but no benefit was derived from it.

66 Comparison of Ophthalmic Ointments and Solutions

S. M. KIANG (*Nat. Med. Journ. of China*, February, 1931, p. 67) remarks that though the preparation of a well-mixed ophthalmic ointment is more difficult and its application less convenient than in the case of a solution, while the residue in the conjunctival sac blurs the vision, a greater amount of drug is nevertheless made available, and a more prolonged action is procurable, by the use of an ointment. Moreover, in certain skin conditions, and in diseases such as glaucoma, where a prolonged action is required, an ointment is preferable. The author conducted a series of experiments to contrast these two forms of medication. In comparing the length and strength of action, a solution was applied by a dropper to one eye, and the corresponding ointment by a graduated syringe in its fellow. The pupil of each eye was then measured at frequent intervals in strong daylight with the patient looking into the distance. In the case of 2 per cent. pilocarpine the action commenced earlier, and remained longer, in those eyes in which the ointment was used. With atropine 1 per cent. and homatropin 2 per cent. there was no difference in the rapidity of the action, but in the case of the ointment the maximum and total action lasted longer. The difference was not so noticeable as in the case of pilocarpine. Eserin in oil was more pronounced in action than when in watery solution, but did not differ appreciably from the ointment, though the latter was superior to the solution.

67 Glaucoma and Iritis

At the Brünner Ophthalmic Clinic between 1921 and 1929 there were treated 19 cases of iritis complicated by glaucoma. M. WOSTREY (*Bratislavské Lekarske Listy*, April, 1931, p. 361) reports that fourteen out of these cases were treated with subconjunctival injections of 0·2 to 0·3 c.cm. of adrenaline combined with a myotic (in ten cases), or with the instillation of a mydriatic (in four cases). The treatment was successful in ten cases. The combination of adrenaline with a mydriatic proved more successful in cases with predominance of iritis, whereas, when the glaucoma predominated, the combination with myotics proved more successful.

Obstetrics and Gynaecology

68 Acute Vulval Ulceration

L. M. PAUTRIER and J. ROTHERY (*Bull. Soc. Franç. de Dermat. et de Syph.*, April, 1931, p. 589) describe a vulval condition which they consider has received insufficient attention in France hitherto. Apparently it has been confused with herpes. There are three types. In the acute variety one or more ulcers appear on the labia majora or minora, accompanied by severe local pain and fever. The ulcers extend rather rapidly, are covered by a pseudo-diphtheral exudate, and have an offensive odour. Healing occurs in approximately fifteen days. A subacute type runs a slower, afebrile course, and is subject to repeated relapses. In the third form there are miliary multiple ulcers as large as pins' heads, surrounded by an inflammatory zone. The authors add a fourth type—a single rounded ulcer resembling a syphilitic chancre. They report the case of a patient who was six months pregnant when an ulcer appeared; it was elliptical, grew to the size of a sixpenny bit, and was situated on the inner surface of the right labium majus. It was slightly raised, with ill-defined edges and a slightly infiltrated base. The inguinal glands were not enlarged. All tests for syphilis gave negative results, but smears and cultures showed abundant growths of *B. crassus*. The ulcer healed rapidly under local antiseptic treatment. L. M. PAUTRIER and R. GLASSER (*ibid.*, p. 593) describe another case. A woman, aged 24, was admitted four days after coitus, complaining of burning pains and much discomfort, followed by painful bilateral ulceration of the labia majora; the discharge was most offensive. There was considerable oedema, but no lymphadenitis. Local treatment consisting of sitz baths and the application of permanganate lotion healed the ulcers in a week. All the syphilitic serum tests were negative, and *B. crassus* was not found. The authors term this condition "gangrenous ulcer," and suggest that it is analogous to ulcerative and gangrenous balanitis.

69 Pernicious Vomiting of Pregnancy

J. VORON and H. PIGNARD (*Gynécol. et Obstét.*, April, 1931, p. 289) have found the coefficient of Maillard, as modified by Lanzenberg, of great diagnostic and prognostic value in the pernicious vomiting of pregnancy. This modified coefficient is obtained by dividing the sum of the urea, ammonium, and amino-acid nitrogen figures by the sum of the two latter. It was described by its author as the coefficient of ureogenic imperfection, and this is due to the fact that in this condition hepatic insufficiency is constantly present. Towards the end of the fourth month of a normal pregnancy the coefficient remains at the normal figure of 6.58; it rises to 11.32 at the end of the eighth month, and then drops progressively to 7.5 at term. A rise to between 15 and 25 indicates a condition of average severity, which can be cured by correct medical measures. Should the rise be above 25,

a particularly grave type is present, and therapeutic abortion must be considered. Should the coefficient be below 15, cure can be rapidly obtained by simple measures, despite the apparent severity of the clinical signs. The coefficient can also be employed to differentiate cases of simple or nervous from pernicious vomiting. Eight cases illustrating these points are recorded.

70 Sex Hormone and Endothelial Permeability

According to L. BICKEL (*Zentralbl. f. Gynäk.*, April 4th, 1931, p. 1250), endothelial permeability, as estimated by the number of capillary ecchymoses following temporary ante-cubital compression, is relatively small in pregnancy, and comparatively great in the climacteric ; its increase during the latter constitutes a valuable objective sign of the menopause. Oral administration of the ovarian hormone led in the majority of cases to diminution or cessation of the haemorrhages following pressure. From these findings it is inferred that endothelial permeability varies inversely with the blood content of the sex hormone ; but the value of this test is lessened by the fact that permeability is subject to spontaneous variation in the same patient, is affected by nephritis and diabetes, and is diminished by sedative drugs such as the bromides and luminal. It is probable that the sex hormone, in diminishing endothelial permeability, does so in part by inducing hypercholesterinaemia ; oral administration of cholesterin has the same effect.

Pathology

71 The Blood Pressure in Cerebral Embolism

Cerebral embolism causes in normal animals an initial fall in arterial pressure with slowing of the cardiac contractions ; a more or less prolonged hypertension supervenes, accompanied by an increase in the differential pressure, and an exaggeration in the volume of the cardiac contractions. M. VILLARET, L. JUSTIN-BESANÇON, and S. DE SÈZE (*C. R. Soc. de Biologie*, May 22nd, 1931, p. 231) record experiments on dogs which show the influence on these cardio-vascular effects of cerebral embolism of vagotomy in the neck and injections of adrenaline. The results indicated that these two procedures suppressed the initial hypertension and bradycardia caused by the embolism ; this suppression abolished equally the rise in the differential pressure and in the volume of the cardiac contractions. The increased importance and duration of the post-embolic hypertension suggests that this paroxysmal hypertension is normally limited or checked by a depressive reaction of pneumogastric origin.

72 Effect of Opium on the Blood Sugar of Non-diabetics

R. N. CHOPRA and J. P. BOSE (*Ind. Journ. Med. Research*, April, 1931, p. 1087), who previously discussed the effects of opium on the blood sugar in diabetes (see *Epitome*, 1930, vol. ii, para. 424), now record observations on the effect of opium upon the blood sugar of normal persons suffering from no disturbance of carbohydrate metabolism. Any possible psychic effect was eliminated by concealing the taste and smell of the drug with oil of citronella, so that the patient was ignorant of its nature. It was administered in a mixture containing 1 grain of opium to the ounce. Commencing with 1 or 2 grains daily, the dose was increased to 14 grains without discomfort, and in some instances it was gradually reduced, or suddenly stopped, without producing any symptoms. Most of the patients left hospital under the impression that they had been receiving an excellent general tonic. Notes of twelve cases are given, with records of the urinary output, blood sugar content, body weight, and dosage over a period varying from 12 to 23 days. There was a sense of general well-being on discharge, and one man, admitted for epigastric pain, lost all his symptoms and regained his appetite. An increase in the total urinary output was noted, except in four cases in which it was unchanged. The blood sugar level remained constant in most, but one case in which it was abnormally low on admission was much benefited, the blood sugar increasing and the weakness improving.

73 The Blood Urea in Diabetic Coma

According to M. LABBÉ and R. BOULIN (*Ann. de Méd.*, April, 1931, p. 386), in approximately half the cases, diabetic coma is accompanied by a moderate azotaemia (the amount of urea remaining at about 1 gram), and by a diminished excretion of urea, albuminuria, and the appearance of renal casts. The other classical characters of diabetes, including the state of the alkaline reserve, glycaemia, and glycosuria, are not altered. The urinary chlorides are markedly lowered, and those of the blood may be slightly diminished. The urinary acétone bodies are a little increased ; they are never totally absent. The azotaemia and passage of the acetone bodies are due to degenerative lesions of the convoluted tubules. Commencing as it does during the first hours of coma, this retention of urea is of great prognostic value ; cases with this complication end fatally twice as often as those without it. The absence of diminution in the azotaemia on the second day of the coma is an ominous indication. Death in these cases may be due to an intractable acidoketosis, to cardiac collapse, or to an intoxication of unknown nature distinct from acidoketosis. Notes on five cases are given, and the literature on the subject is reviewed.

74 The Schultz-Charlton Reaction in Relapses of Scarlet Fever

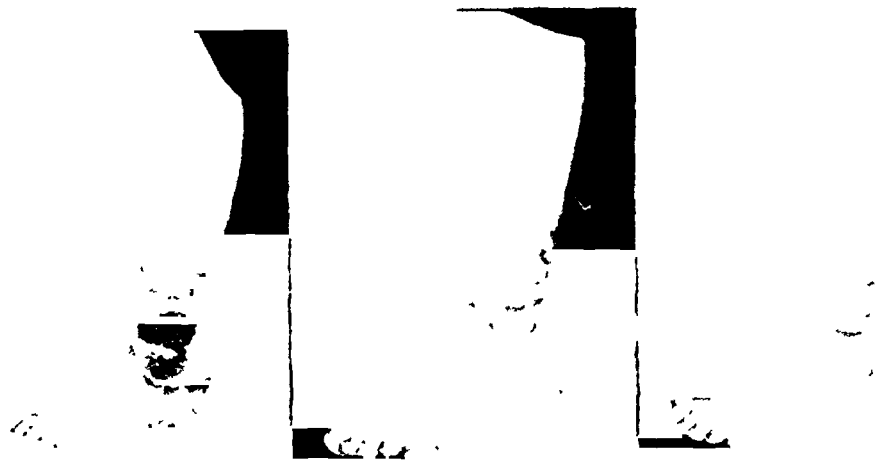
W. LOOK (*Arch. f. Kinderheilk.*, March 13th, 1931, p. 65) records 14 cases of relapse in scarlet fever among patients, aged from 4 to 26 years, in whom the relapses occurred between the seventeenth and forty-seventh days. The Schultz-Charlton reaction was positive in 13 cases ; in 5 cases it was positive both in the primary attack and in the relapse ; in 1 case the reaction was doubtful ; and in the remaining 8 the rash of the primary attack had disappeared or the test was not performed. The Schultz-Charlton reaction, therefore, in the relapse of scarlet fever does not differ from that in the primary attack. When it is not obtainable on the first or second day of the eruption, the test should be repeated on the second or third.

75 Etiology of Post-vaccinal Encephalitis

H. M. WOODCOCK (*Journ. Royal Army Med. Corps*, April, 1931, p. 275), recalling the statement of S. Smith that only since the introduction of vaccine prepared by passage through rabbits has any considerable series of cases of encephalitis or encephalomyelitis occurred, suggests that in various parts of Europe and America rabbits and other rodents such as mice are very liable to a naturally occurring encephalitis or encephalomyelitis, characterized by marked perivascular infiltration and the occurrence of the "encephalitozoon" bodies. In a summary of the work of various authorities on this condition, that of Cameron and Maitland is especially noted. These workers, after inoculating rabbits from an acute case of human encephalitis, found the encephalitozoon bodies, first in a rabbit of the third passage, and subsequently in all the animals. They consider that the bodies occurred as a spontaneous infection in the first rabbit and were then transmitted. Woodcock believes that the production of the bodies was more likely due to the inoculated human virus, and concludes that rabbit encephalitis may be induced by several causes, including human encephalitic virus. A brief comparison is made between the encephalitozoon, the Negri body, and the Guarnieri bodies of small-pox and vaccinia ; the histological changes caused by each are discussed. From all these facts, Woodcock suggests that rabbit encephalitis can be transmitted to man, and that with repeated passages a dangerous factor is added, as the ferment virus of the vaccine, originally dermotropic, will tend to have increasingly added a neurotropic quality.

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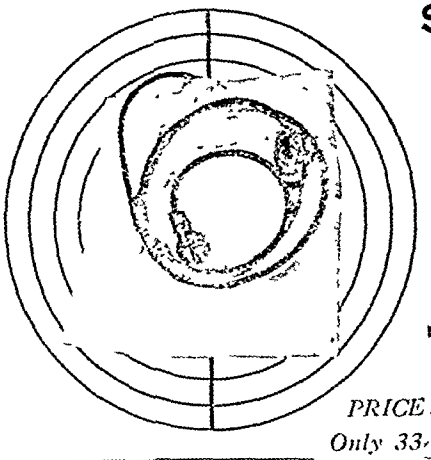
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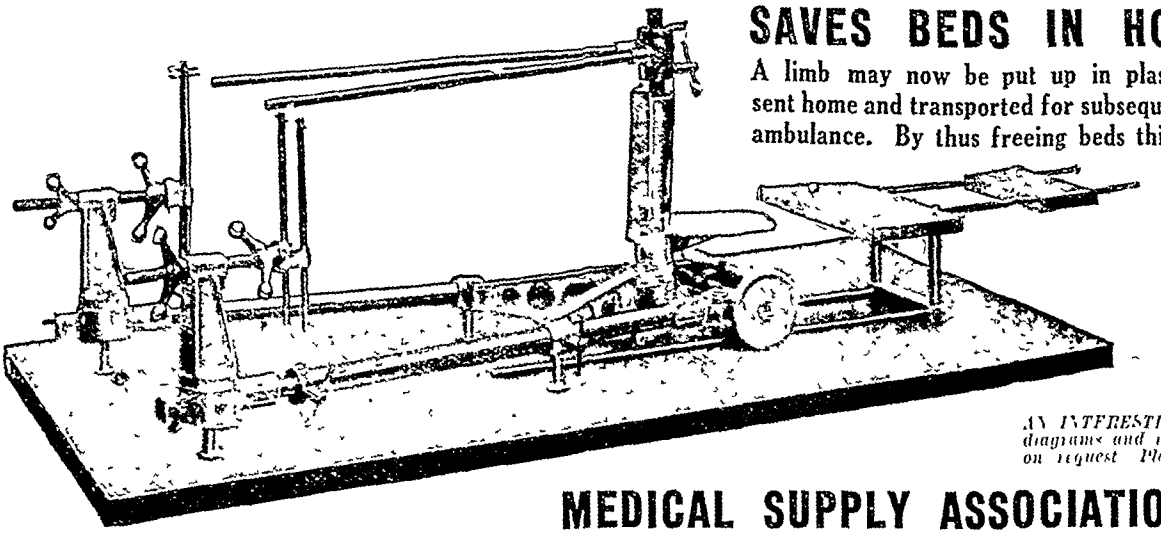
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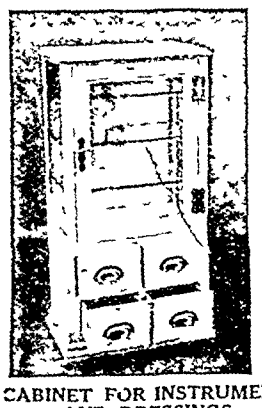
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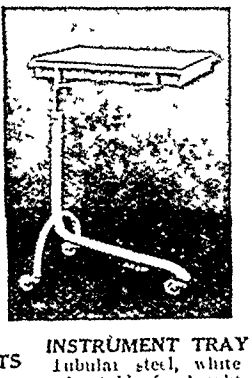
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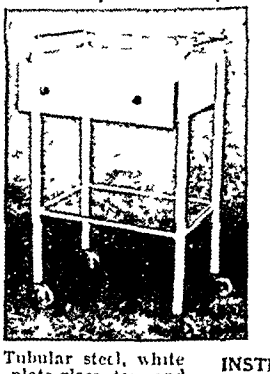


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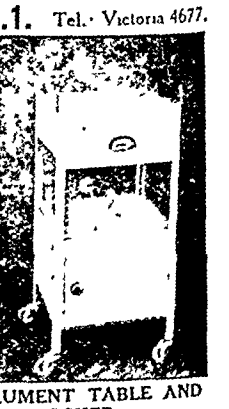
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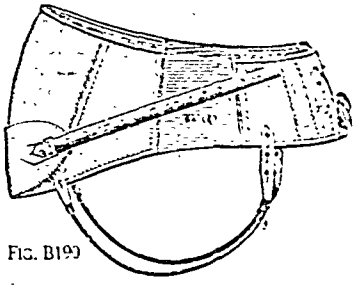


FIG. B199
BELT FOR ENTEROPTOSIS.

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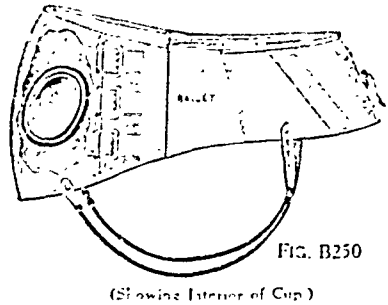
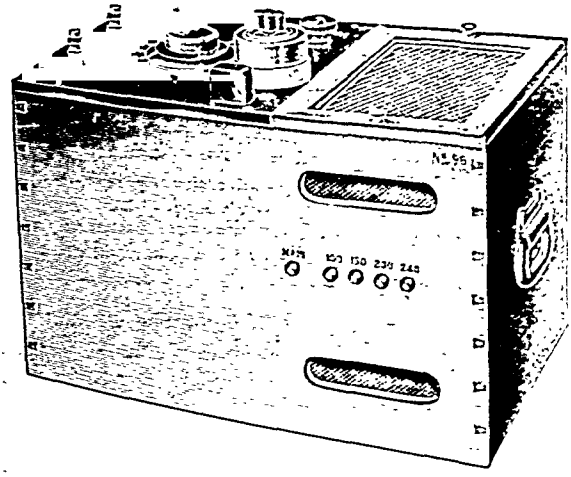
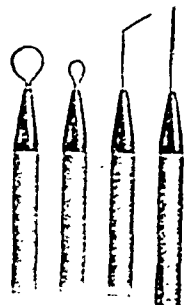


FIG. B250
(Showing Interior of Cup)
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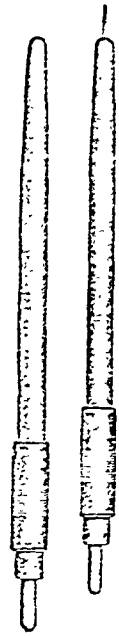
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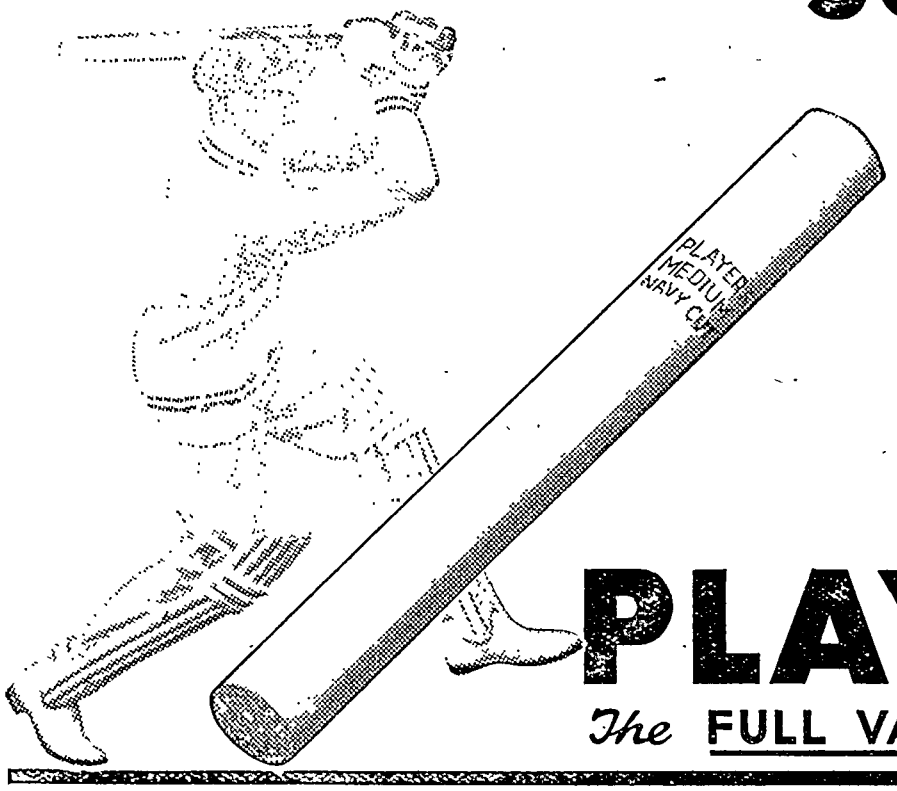
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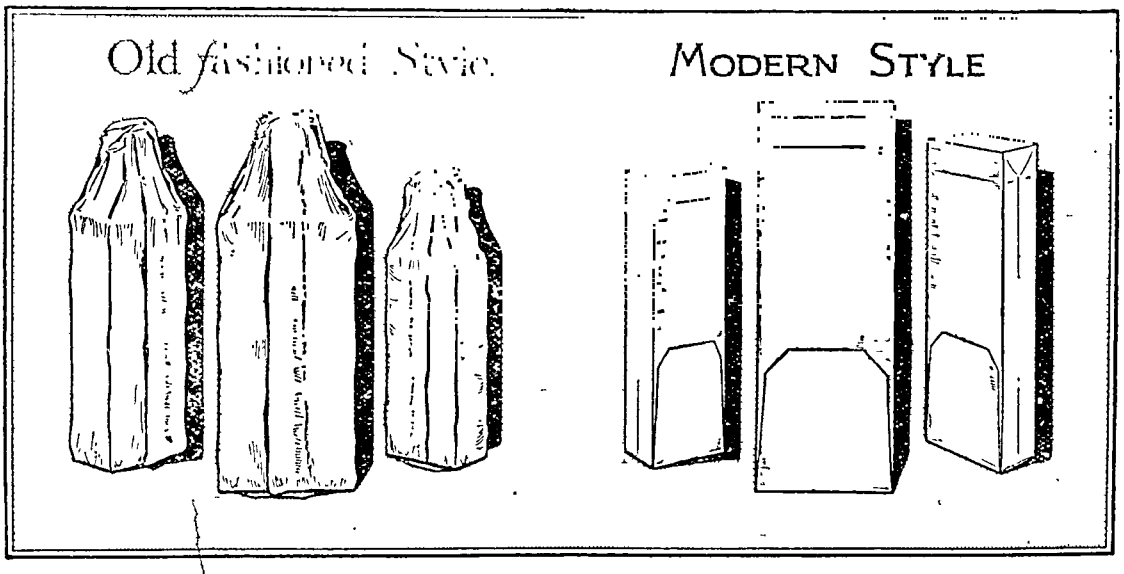
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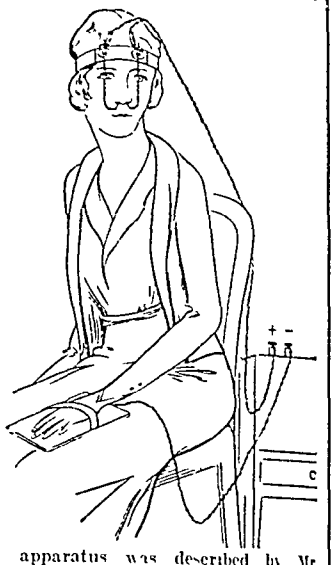
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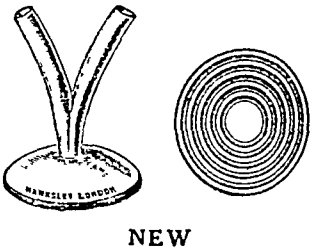
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ESTABLISHED 1922. *'Phone*: PAIGNTON 5110.

A comfortable private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The *treatment* is the *outcome* of *many years'* experience, and besides removing all craving for drink or drugs, it has a tonic action on the system, and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificat s as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. 'Phone: 10 P.O., Church Stretton.

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CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

THE MOAT HOUSE,

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Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to the Resident Medical Attendant. Telephone: Tamworth 108.

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A Private Home for the care of and treatment of a limited number of ladies mentally afflicted Climate healthy and bracing.

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ALCOHOLISM & OTHER DRUG HABITS.

THE HARE NURSING HOME.

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of the Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Fees 5—10 guineas. Ample amusements. 25 bedrooms. Annexe for mild cases. Quiet and pleasant situation.

Ladies and gentlemen admitted for treatment. For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Res. Med. Sup.), Author of "The Alcohol Habit."

'Phone: Chislehurst 451. *Telegrams*: "Masters," Chislehurst.

GILGAL HOSPITAL,

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Chairman:

THE RT. HON. THE EARL OF MANSFIELD.

For the Treatment of NEUROPATHIC and PSYCHOPATHIC DISORDERS. Certified patients not received. Under the management of James Murray's Royal Mental Hospital. Inclusive rates 5 guineas to 8 guineas weekly. Particulars on application.

Physician-Superintendent: W. D. CHAMBERS, M.D., F.R.C.P.E.

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At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res Med. Supt., Dr. A. E. CARVER, M.D., D.P.M. Fees moderate.

Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

CLARENCE LODGE,

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Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

Station: *Telephone*: Brixton 0494. Clapham Common Tube. Apply, Miss THWAITES.

SPRINGFIELD HOUSE,

Near BEDFORD. (Phone 3417.)

For Mental Disorders, with or without certificates.

Resident Physician: CEDRIC W. BOWER.

Ordinary Terms: Five Guineas per week.

(Including Separate Bedrooms where suitable.)

Interviews in London by appointment.

Tel. & Telegrams: "Haynes, Brentwood, 45."

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

Now removed to:

CHISWICK HOUSE,
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Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful and secluded grounds.

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Special provision for "Temporary" patients under the new Mental Treatment Act.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 220 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

ST. ALBANS, HERTS.
(20 miles from London.)

Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts County Mental Hospital, Hill End. Convalescent and chronic cases can be treated in a delightful country mansion, with extensive grounds, known as

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Fees 2 and 3 guineas weekly.

Particulars from the MEDICAL SUPT.

THE LAWN, LINCOLN.

This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions in addition. Special facilities for Psychotherapy in certain cases.

Particulars may be obtained from the Resident Medical Superintendent,

Dr. MARY P. BARRAS, M.D., D.P.M.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This Registered Hospital for MENTAL DISEASES with its separate branch Glanty Don, Conway, has for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES, Voluntary, Temporary, and Certified Cases is received.

Letters should be addressed to the Medical Superintendent, Dr. A. C. [illegible], M.B., who may also be seen [illegible] by appointment.

Telephone: 2231 GATLEY.

THE GRANGE,
near ROTHERHAM.

[illegible] for the reception of [illegible] suffering from Nervous [illegible] Both certified and [illegible] received. Approved for [illegible] This is a large country [illegible] and Park, for [illegible] Sandy Grange Lane. [illegible] Telephone: [illegible] Resident Physician: [illegible], M.R.C.S.

Bishopstone House, Bedford.

[illegible] MENTALLY AFFLICTED [illegible] Medical [illegible] Telephone [illegible].

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients; and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 10.

CLIFTDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliftden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: Teignmouth 289.

TYKEFORD ABBEY, NEWPORT PAGNELL,
BUCKS.
FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main road to Northampton. Road 52½ miles from London. Both sexes are received. Psycho-Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, Vibration, Ultra-violet Light, Diathermy and Foam Baths. Billiards, tennis, etc. Fees from £2 2s. per week.

Apply, Dr. D. L. M. DOUGLAS MORRIS. *Telephone*, Newport, Pagnell 121.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent.*

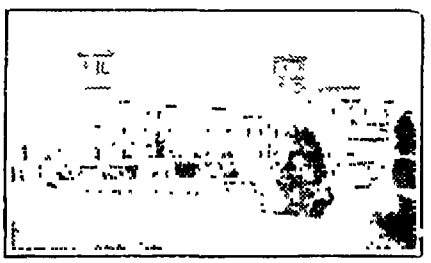
BETHLEM ROYAL HOSPITAL, for Nervous and Mental Disorders,

Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg. Tel. Address: Bethlem, Beckenham *Telephone*: Springpark 1180—1181.
Station: Eden Park (Southern Railway).

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
Physician-Supt.: J. G. PORTER-PHILLIPS, M.D., F.R.C.P.

This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
With a view to early treatment voluntary or uncertified patients are admitted.
Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise. The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free of charge.
Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
Furthermore, provision is made for Electro-Therapy and Hydro-Therapy to be carried out in all their forms.
In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.
The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms.
For forms and further particulars apply to the Physician-Superintendent at the Hospital.



King Edward VII Convalescent Home for Officers of the Navy, Royal Marines, Army, and Air Force.

Massage
All forms of Electricity.
Ultra Violet Rays
Special Dieting
Golf Course in the Grounds.

TERMS: 4/6 to 6/- per day, inclusive.

Hard Tennis Court.
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Officers on the Active List are eligible to travel by rail at Government expense
For Booklet apply—HOUSE GOVERNOR, OSBORNE HOUSE, EAST COWES, ISLE OF WIGHT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." **Telephone: Rodney 4741—4742.**

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. *Entertainments, dances, and indoor amusements held throughout the year.*
Illustrated prospectus and further particulars can be obtained from the **Medical Superintendent.**

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON" *Telephone*: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
Convalescent Home, **Kearsney Court, Dover.** For further particulars, apply to the **Medical Superintendent.**

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams "PSYCHOLITA, LONDON" FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*. RODNEY 4731—4732

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy. Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician **Dr. Hubert James Norman,** assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON—CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury Telephone 51.

DARTMOOR CONVALESCENT HOME. 750 FEET ABOVE SEA-LEVEL

Established 1903 for Treatment of Pulmonary and other forms of Tuberculosis. Sheltered Situation on the slopes of the bracing moorland. Radiographic Installation, Electric Light, Central Heating, Separate Bedrooms, Efficient Treatment, combined with individual comfort and minimum restrictions. Illustrated Prospectus on request to the Resident Physician, C. H. BERRY, M.R.C.S., L.R.C.P., Torr House, Chagford, Devonshire. Telephone 11 CHAGFORD. Telegrams, TORR, CHAGFORD.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

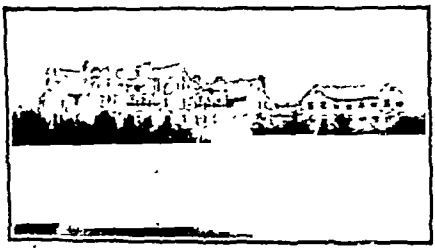
The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



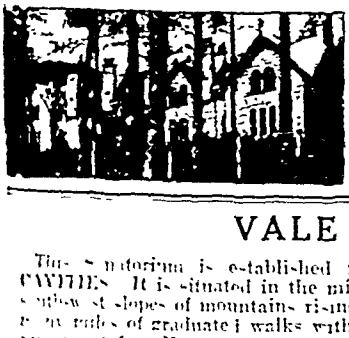
Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent. J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.



KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Spey-side district of Inverness-shire. One of the driest inland districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout. Large and open-fire shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis. Terms: £4 7s. 6d. to £6 6s. per week inclusive. No extras.

MEDICAL SUPT.: FELIX SAVY, M.D. For particulars apply to the Secretary.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29·57 per annum. Full day and night nursing staff. X-ray plant. Every facility for Artificial Pneumothorax and for operations on the chest. Electric lifts. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Medical Superintendent, H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

EAST ANGLIAN SANATORIUM

This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has recently been extended. Situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff. Nurses on duty all night. Electric lighting throughout, radiators and wireless (headphones in all rooms).

Dr. Jane Walker, C.H., J.P., Medical Superintendent. Dr. Eleanor Soltau, Assistant Medical Superintendent.

Further information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone: NAYLAND 2.

THE COTSWOLD SANATORIUM

Situated in the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and Laryngeal Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 700 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, Medicated Inhalations by means of the Aitken Inhalation Installation, and Ultra-Violet Rays is available, when necessary, in all stages of disease. X-ray [illegible]. Radiators, hot and cold basins, and Wireless in all rooms. [illegible]

[illegible] GEOFFREY A. HOFFMAN, B.A., M.D., T.C.D., and MARGARET A. HOFFMAN, M.B., B.Ch., T.C.D.

Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Telephone:* 41 WITCOMBE. *Telegrams:* [illegible]

Burgh of Kilmarnock.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Town Council invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health, or an equivalent qualification, for the appointment of Assistant Medical Officer of Health for the Burgh. Candidates must not exceed 35 years of age.

The person appointed will be required to carry out all the duties assigned to him by the Medical Officer of Health, under whose direction and supervision he will act. He will be required to devote the whole of his time to the duties of the office and to reside in the Burgh. He will not be allowed to engage in private practice.

Some experience in Public Health work, including School Medical Inspection is desirable.

The inclusive annual salary is £500, rising by annual increments of £25 to £675, subject to the satisfactory performance of duties. The successful candidate will be required to pass a medical examination.

Applications (enclosed in envelopes endorsed "Assistant Medical Officer of Health"), stating age, qualifications, previous experience and present employment, together with one copy of recent testimonials, should be lodged with the Subscriber by July 22nd.

Council Chambers, Kilmarnock. July 9th, 1931. N. J. CAMPBELL, Town Clerk.

Birmingham Public Health DEPARTMENT.

TUBERCULOSIS SECTION.

Applications are invited from single male Medical Practitioners for the post of ASSISTANT MEDICAL OFFICER in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and a Dispensary.

Candidates should have held a resident General Hospital appointment, or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis.

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450 per annum, with emoluments valued at £150 per annum.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to one month's notice on either side.

Forms of application may be obtained from, and should be returned with three recent testimonials to, the Chief Clinical Tuberculosis Officer, 44a, Broad Street, Birmingham, by 9 o'clock on July 24th.

Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

City of Portsmouth.

SECOND ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of a Second Assistant Resident Medical Officer for the Saint Mary's Hospital, St Mary's Institution and Children's Home. The appointment will be limited to a term not exceeding one year, and will be subject to one month's notice on either side. Salary at the rate of £300 per annum, with furnished apartments, rations and other allowances. Candidates must be single gentlemen, and duly registered. Preference will be given to those having a knowledge of the treatment of mental diseases, and who have experience in surgical work. A Resident Medical Superintendent is in attendance. Applications on printed forms, to be obtained from me or at the Public Assistance Offices, 1, St Michael's Road, Portsmouth, accompanied by not more than three recent testimonials, and a description of the diplomas, certificates of degrees, licences, and other instruments held by the candidates, must be returned to me, endorsed "Second Assistant Resident Medical Officer," by Tuesday, July 28th.

The Guildhall, Portsmouth. July 14th, 1931. F. J. SPARKS, Town Clerk.

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Salary £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned. PERCY G. BROWN, General [illegible] Terms to [illegible]

County Borough of Tynemouth.

ASSISTANT MEDICAL OFFICER (Non-Resident).

The Council of the County Borough of Tynemouth invite applications for the appointment, for a period of one year, of an Assistant Medical Officer for the Poor Law Institution, Preston Road, North Shields, and the Children's Homes.

Salary £300 per annum, inclusive of vaccination and all other fees. The officer appointed will be required to pay to the Council all fees received by him for inquests, certifying lunatics, etc., to devote the whole of his time to the duties of the office (which includes the training of Probationer Nurses), to reside in close proximity to the Institution, and to act under the direction of the Medical Officer.

Applicants must be duly registered under the Medical Acts, and be qualified by law to practise in Medicine and Surgery in England and Wales, and the candidate appointed will be required to produce his licences, diplomas, or certificates to the Council.

Applications must be made on a printed form which may be obtained from the Public Assistance Officer, 4, Northumberland Square, North Shields, on receipt of a stamped addressed foolscap envelope, and must be returned to me accompanied by copies of testimonials as to professional ability and personal character, by first post on July 28th.

Canvassing, either directly or indirectly, will be a disqualification.

Town Clerk's Office, Tynemouth. July 10th, 1931. C. C. HENDERSON, Town Clerk.

Essex County Council.

FIRST ASSISTANT MEDICAL OFFICER.

The County Council of the Administrative County of Essex invite applications for the above post from registered Medical Practitioners holding a Diploma of Public Health, with experience in Maternity and Child Welfare and Gynaecological work, and not over 45 years of age.

The commencing salary attached to the appointment will be at the rate of £750 to £800 per annum, according to experience, and will rise, subject to satisfactory service, by annual increments of £25 to £900 per annum. Travelling expenses will be paid by the Council.

The Local Government and Other Officers Superannuation Act, 1922, has been adopted by the County Council.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Wednesday, July 22nd.

Shire Hall, Chelmsford. July 8th, 1931. JOHN H. GOOLD, Clerk of the County Council.

Gravesend and North Kent HOSPITAL (100 Beds.)

JUNIOR HOUSE SURGEON.

The Board of Management invite applications from fully qualified men for the above post, which is of twelve months' duration.

Salary at the rate of £100 p.a., first six months, £150 p.a., second six months, plus board, lodging, washing, and certain fees as perquisites.

The successful applicant will be required to commence duties on September 1st.

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN, Secretary.

Huddersfield Royal Infirmary. (210 Beds.)

(Officially recognized for the Surgical Practice required of Non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.)

Male HOUSE SURGEON required to commence duty as early as possible. Salary £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal for further three or six months. Applications, with copy testimonials, to be addressed to the Secretary immediately.

House Surgeon required, male or female, British nationality, for ASHFORD HOSPITAL, KENT. Salary £150 per annum. Please state experience and qualifications. Candidates must be unmarried, and under 35 years of age. Duties to commence August 1st. Applications, with three recent testimonials, to be sent to the Hon. Secretary immediately.

City and County of Newcastle-upon-Tyne.

NEWCASTLE GENERAL HOSPITAL.

TWO HOUSE PHYSICIANS and THREE HOUSE SURGEONS (Male or Female).

Applications are invited for the above posts. The salary in respect of each of the appointments, which are tenable for six months, is at the rate of £150 per annum, with board, lodging, etc.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, to be addressed to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

July 14th, 1931.

King Edward Memorial Hospital, Ealing. (100 Beds.)

RESIDENT MEDICAL OFFICERS.

Applications are invited for the post of Senior Resident Medical Officer, vacant on August 1st. Applicants must have had good experience (at least two years) in House Appointments. Salary £250 per annum, with usual residential allowances.

Applications are also invited for the post of Junior Resident Medical Officer, vacant on August 1st. Salary £150 per annum, with usual residential allowances.

Applications, stating age, experience, and qualifications, together with copies of two testimonials, to be sent to the undersigned immediately.

R. A. MICKELWRIGHT, Secretary-Superintendent.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the posts of SENIOR and JUNIOR HOUSE SURGEONS, for the period commencing August 1st, 1931, and terminating February 1st, 1932. Salary at the rate of £150 and £125 per annum respectively, with board and lodging.

Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible.

The Infirmary. GEO. BALLANTYNE, Secretary.

Ingham Infirmary, South Shields

Wanted, HOUSE SURGEON (male). Salary £150 p.a., with residence, board, and washing. No out visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age, and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Manchester Victoria Memorial JEWISH HOSPITAL, CHEETHAM, MANCHESTER (Non-Sectarian)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male). The appointment is for six months, to commence duty September 1st. Salary at the rate of £125 per annum, with board, residence, and laundry. Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned not later than August 4th.

FRED BARNES, Superintendent and Secretary.

Manchester and Salford Hospital FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months. Salary £100 per annum, with board and residence. Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, July 29th.

JOHN NALL, Secretary.

West Herts Hospital, HEMEL HEMPSTEAD. (110 Beds—24 miles from Euston.)

Applications are invited for the appointment of a RESIDENT MEDICAL OFFICER, to commence duties about the middle of August. Salary £150, with rooms, board, and laundry.

Preference will be given to male candidates.

Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to— ROBT. L. BUTTERFIELD, Clerk to the Hospital.

Royal Burgh of Ayr.

RESIDENT MEDICAL OFFICER AT HEATHFIELD INFECTIOUS DISEASES HOSPITAL

Applications are invited for the above appointment from duly qualified male Medical Practitioners (unmarried).

The salary will be at the rate of £350 per annum, rising by annual increments of £25 to £450, together with board and lodging at the above Hospital. Preference will be given to candidates entering the Public Health Services and in possession of the Diploma of Public Health.

The appointment will be terminable by two months' notice on either side.

Particulars of the conditions and duties of the appointment may be obtained on application to the undersigned, to whom applications, stating age and experience, and accompanied by copies of three recent testimonials, must be delivered not later than July 31st current.

Town Buildings, Ayr. P. A. THOMSON, Town Clerk.

July 13th, 1931.

Royal Northern Hospital,

Holloway, N.7.

Applications are invited for the post of ASSISTANT PATHOLOGIST, vacant on October 1st. Salary at the rate of £500 per annum, in addition to which the Assistant Pathologist is entitled to a proportion of the fees for private work done in the Department. Private Practice is permissible.

Candidates must possess a registered British qualification, and be engaged wholly in Pathological work.

Particulars, with regard to the hours of attendance, duties, and submission of testimonials, etc., may be obtained from the undersigned, to whom application should be made not later than July 24th.

GILBERT G. PANTER, Secretary.

Royal Devon and Exeter

HOSPITAL, EXETER. (235 Beds.)

Appointment of (a) HOUSE PHYSICIAN, (b) HOUSE SURGEON to Special Depts.

Applications invited from qualified and registered candidates for each of the above appointments now vacant.

Engagement for six months, candidates being eligible for subsequent appointments.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned as soon as possible.

Exeter, July 15th, 1931. S. S. COLE, Secretary & Manager.

Royal Sussex County Hospital,

BRIGHTON. (Beds 246.)

CASUALTY HOUSE SURGEON (male) required about the middle of August next.

Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried, and, when elected, under thirty years of age.

Applications with copies of recent testimonials should be sent to the undersigned immediately.

L. L. W. LANCASTER GAYE, Secretary Superintendent.

Rotherham Hospital.

(130 Beds.)

Wanted CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications with copies of recent testimonials to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN, qualified. Salary £130 p.a., with board, residence, and laundry, to have charge of Out-patients, administer Anæsthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

St. John's Hospital, Lewisham,

S.E.13.

A HOUSE SURGEON and a CASUALTY OFFICER are required for appointment on August 1st. The appointments are resident, and tenable for six months at a salary of £100 p.a. Applications with copies of testimonials from duly registered Practitioners, should reach the undersigned not later than the morning of July 22nd.

J. C. GILBERT, Secretary Superintendent.

Scunthorpe and District War Memorial Hospital (82 Beds.)

Applications are invited for the following posts:

RESIDENT SURGEON. Salary £250 per annum, with board, residence, and laundry. (The Resident Surgeon is expected to perform emergency operations.)

SECOND HOUSE SURGEON, with charge of Medical Beds. Salary £150 per annum, with board, residence, and laundry.

Successful candidates are required to take up duties on August 1st, or as early as possible after that date. Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should reach me not later than July 22nd.

ARTHUR E. MAW, Secretary.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN in charge of the Department of Physical Medicine at the DREADNOUGHT HOSPITAL, Greenwich.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London. The elected officer will be required to attend once a week, and there is an honorarium of fifty guineas per annum attached to the post.

Applications to be sent in on or before Tuesday, July 21st, to the undersigned.

Greenwich, July 6th, 1931. R. E. V. BAX, Secretary.

The Manchester and District Radium Institute, Manchester.

ASSISTANT RADIUM OFFICER.

Applications are invited for the above appointment (male), which offers excellent opportunities for acquiring experience in Radium Therapy.

Previous Clinical experience necessary; previous Radiological experience an asset, but not essential.

Appointment for six months in first instance, but with view to permanency.

Salary £300—£500 per annum, dependent upon qualifications and experience.

Applications, giving full details (with testimonials), to be submitted to the Hon. Secretary by July 31st.

Sussex Maternity & Women's Hospital (38 Beds.)

RESIDENT HOUSE SURGEON (male) required. Salary at the rate of £130 per annum, board and washing found, and £40 allowed for travelling expenses. Good experience in midwifery and Gynæcology afforded. No canvassing allowed. The successful candidate will be required to enter on his duties in September.

Applications, in writing, accompanied by testimonials, should be sent to A. F. GRAVES, Clerk, 117, North Street, Brighton, on or before Friday, August 7th.

July 10th, 1931.

Stockton and Thornaby Hospital,

STOCKTON-ON-TEES.

(Three Residents—140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months. Duties to commence on or about August 1st. Salary £150, with board, residence, and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

JOHN WILKINSON, Secretary.

St. Thomas's Hospital Medical School.

Vacancy for SENIOR DEMONSTRATOR in ANATOMY to take up duties on October 1st.

The salary, to a man with suitable qualifications, will be £500 a year.

Applications with full academic record and testimonials, to be forwarded to the Dean of the Medical School, St. Thomas's Hospital, London, S.E.1, as soon as possible, and not later than August 15th.

Swindon & North Wilts Victoria Hospital

Wanted, a RESIDENT MEDICAL OFFICER (male). Salary £125 *per annum, with board*, residence, and laundry. Candidates must be registered under the Medical Act. Appointment for the minimum of six months. Applications, stating age, etc., and accompanied by copies of not more than three recent testimonials, should be sent to the undersigned.

K. N. KNAPP, Secretary.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON and SECOND ASSISTANT CASUALTY OFFICER. The salary attached to the appointment is £80 per annum, with board and residence.

The resident staff numbers 14, and after six months' service salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Board Room. Gen. Supt. & Secretary.

July 14th, 1931.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the post of OPHTHALMIC HOUSE SURGEON. The salary attached to the appointment is £80 per annum, with board and residence, rising to £100 after six months' service. There are 66 Ophthalmic beds, and the post offers exceptional opportunities of gaining experience in Ophthalmology.

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Board Room. Gen. Supt. & Secretary.

July 14th, 1931.

Southport General Infirmary.

(150 Beds.)

Special Departments for Eye, Ear, Nose, and Throat, X-rays, Massage, Pathology, Skin, and V.D.

Wanted immediately, a JUNIOR HOUSE SURGEON, fully qualified and registered, unmarried. Salary £150 per annum, with residence, board, and laundry. Excellent opportunity for gaining experience in a fully equipped, up-to-date Hospital, situated in beautiful surroundings. Special experience in the administration of Anæsthetics is desirable.

Applications, stating age, nationality, and experience, with copies of testimonials, to be sent in by July 24th to Secretary, Infirmary Office, Southport.

The General Hospital,

BIRMINGHAM.

OPEN APPOINTMENTS.

Applications are invited for the following Resident appointments, vacant immediately:

ANÆSTHETISTS (two). Salary £120 per annum.

HOUSE PHYSICIAN. £70 per annum.

HOUSE SURGEONS (three) £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should be sent to the undersigned as soon as possible.

A. H. LEANEY, June 29th, 1931. House Governor.

The Royal Waterloo Hospital for Children and Women,

Waterloo Road, S.E.1.

Applications are invited for the post of HON. UROLOGICAL SURGEON to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons of England, and engaged solely in Consulting Urological Surgery.

Applications, with copies of three recent testimonials, should reach the undersigned not later than July 23rd, from whom further particulars can be obtained.

J. H. TEASDALE, Secretary.

The Babies' Hospital,

NEWCASTLE-UPON-TYNE.

Non-resident MEDICAL OFFICER required in August.

The duties are those of a House Physician, with time and opportunities for research work. The appointment is for six months, subject to re-appointment. Salary £200 per annum.

Applications, with two testimonials and particulars of previous appointments held, must be lodged with the Secretary, 33, West Parade, Newcastle-upon-Tyne, by July 24th.

The Mount Vernon Hospital,

NORTHWOOD.

(The National Centre for the Treatment of Cancer.)

A HOUSE SURGEON will be required on September 1st. Candidates must be fully qualified and registered. Salary at the rate of £150 per annum, board, residence, etc. Six months' appointment. Applications, accompanied by copies of three testimonials, to be addressed to the undersigned on or before July 31st.

Offices: 32, Fitzroy Square, W.1. W. J. MORTON, Secretary.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
Tel.: ARTICULATE, WESTCENT, LONDON.
Tel., MUSEUM 9361 (4 lines).

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All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, September, Outdoor male ASSISTANT, near Birmingham, married or single, to live at Branch Surgery. Unfurnished house available if married. State age, nationality, experience — Address, No 4473, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (male), who has held an Ophthalmic or other Hospital appt. £7 weekly (indoor). If married, accommodation can be arranged. Send photo, state height, etc.—Address, No 4433, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, Indoor, male, British, for mixed Practice in Country Town. Salary £300 to £350, according to experience. Car supplied. State experience and references.—Address, No 4471, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to PARTNERSHIP, in old-established mixed Practice in country town in Midlands. Unexpired portion of present Assistant's engagement about 30. Well-equipped Cottage Hospital.—Address, No 4414, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, for panel and private Practice in University town 50 miles of London. Salary £300 (indoor). Address No 4420, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to Partnership worth £1,200 in Midland Town with Hospital. Terms £450. Attractive house, and car allowance. Practice mixed. M.B. Cantab.—Address No 4478, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant. £400, rising to £450 by six months, with furnished house. Partnership if suitable.—Address, No 4421, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view. Country General Practice in Cornwall. £375, outdoor. Suit young Graduate.—Address, No 4330, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistantship, with view, by male M.B., B.Ch. (Cambridge). Single. Age 25. Exc. D., H.S., and H.P. Free month after arrangement. Excellent testimonials.—Address, No 4410, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship (Outdoor) by male, L.R.C.P., æt. 29. Experience 4 years G.P. Errors and Refractions. Letters of recommendation but not essential. Free now.—Address, No 4417, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, to live in a new house, with guaranteed early succession to Practice. Western suburb. Unusual opportunity.—Address, No 4404, B.M.A. House, Tavistock Square, W.C.1.

Assistant required, September 1st. Englishman, experienced General Practice. South-West country town. All sports. Schools. Prospects. Live out.—Address, No 4402, B.M.A. House, Tavistock Square, W.C.1.

Assistant (Outdoor) wanted in Central London Practice. Must be well qualified, young, and active. Start at £8 a week.—Write, stating experience, age, nationality, etc., to No 4425, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted to live at Surgery, all found. Salary £300, car available. Male, unmarried.—WATTS, 136, High Road, Ilford, Essex.

Assistant-Successor. — Scotland. Panel and General. Knowledge Eyes advantageous. Experience Hospital or Practice. £450, with share midwifery fees. Half share of £1,500 at 1½ years' premium after one year. — Address No 4436, B.M.A. House, Tavistock Square, W.C.1.

Doctor (Egyptian, Christian), L.R.C.P. & S. (Edin.), L.R.F.P. & S. (Glas.), single, age 28, ex-H.P. in a leading Scottish Hospital, total abstainer, ex-refs., seeks post as ASSISTANT or LOCUM. Now available anywhere.—No 4481, B.M.A. House, Tavistock Sq., W.C.1.

LOCUMS.

HOLIDAY LOCUMS

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WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* { TEMPLE BAR 1054. RIVERSIDE 1254. (*Night Calls*)

Wanted.—Locums by M.R.C.S., L.R.C.P., woman, ex-H.S., H.P., R.O.O., experience G.P. Free August, September. Go anywhere.—Address, No 4472, B.M.A. House, Tavistock Square, W.C.1.

Doctor, at present in large Practice in S. Wales, and who has engaged a Locum from 15th to end of August, will undertake LOCUM for a Doctor during this period in a nice country or seaside district in South of England. Small fee and hospitality for wife and daughter (aged 7) required. Own car. — Address, No 4209, B.M.A. House, Tavistock Square, W.C.1.

Infant Welfare and Toddlers' CLINIC LOCUMS desired in London, during remainder of July and whole of August, by experienced woman doctor specialising in Paediatrics.—Address, No 4424, B.M.A. House, Tavistock Square, W.C.1.

Middle-aged Practitioner, with own new car, would accept LOCUM, preferably South in neighbourhood of Bournemouth, Southampton, after July 18th. Interview if desired. — Address, No 4406, B.M.A. House, Tavistock Square, W.C.1.

Near Epsom. — Practitioner, accustomed sole charge and dispensing, willing to undertake LOCUMS, from own house and by own car. Abstainer. Terms reasonable.—Address No 4439, B.M.A. House, Tavistock Square, W.C.1.

Ophthalmic Surgeon, Country Town requires young LOCUM about August 10th for 1 month. Mainly out-patient Refractions. Qualifications and essential particulars. — Address No 4428, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO
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After Office Hours: Epsom 9142.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.—An Assistant Medical OFFICER for work in the Near East. Candidates should not be over 35 years of age and unmarried. Further particulars on application. — Address, No 4482, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0959), Secretary, 7, Westbourne Park Road, W.2.

An elderly Doctor, retired from Practice, is open to take MORNING or EVENING SURGERIES, also occasional Week-ends. No visiting except emergencies. South London preferred.—Address, No 4438, B.M.A. House, Tavistock Square, W.C.1.

Clinical Pathologist.—Wanted, PARTNERSHIP, with or without view to Succession, in private Laboratory. Advertiser can bring new source of support. Confidential inquiries invited.—Address, No 4430, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time. Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679. THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858. THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Door-maid or Receptionist can be most highly recommended for DAILY POST in professional's house. Willing to do light house duties. Age 34.—Write "F.O." c/o CHARLES BARKER & SONS, LTD., 31, Budge Row, E.C.4.

Gordon Hall School of Pharmacy TRAINS WOMEN in Pharmacy and Dispensing, and can SUPPLY qualified Dispensers without charge. — Apply, PRINCIPALS, Gordon Hall, Drayton House, W.C.1. 'Phone: Museum 3930. Autumn Session September 24th.

Gentlewoman requires post as DISPENSER to Doctor. September 12½ years' experience. Live out.—Address, No 4411, B.M.A. House, Tavistock Square, W.C.1.

Medical MSS. of Books, Papers, Lectures, etc. Revised and corrected. Translations from the French. Miss HINCKS, 2, St. Paul's Studio, Birons Court, W.14. Riverside 4872.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1. (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers etc., without charge to prospective employers.

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Testimonials Duplicated per return of post. Prices per testimonial—12 copies 1/6, 50, 2/6, 100, 4/-.—Miss NANCY MCFARLANE (B.M.J.), 44, Elderton Road, Westcliff-on-Sea.

PARTNERSHIPS

London, W. — Partner wanted, preferably unmarried, age about 30, with some experience of Practice. West End high-class Practice. No panel. Average last five years over £6,000. One-quarter share at 2 years' purchase.—Address, No 4435, B.M.A. House, Tavistock Square, W.C.1.

Manchester residential suburb.—HALF SHARE PARTNERSHIP, with view to early succession. Receipts £1,800, with much scope for increase. House available. Price 1½ years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

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Doctor's widow in North London having large house, garden, car, good staff, would like some PAYING GUESTS. Terms moderate. — Address, No. 371, B.M.A. House, Tavistock Square, W.C.1.

Excellent opportunity for Dental Surgeon in good-class district, Hampstead, Doctor's house. No premium. Rental moderate. —Address, No. 4475, B.M.A. House, Tavistock Square, W.C.1.

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APPOINTMENTS.—Contd.

Royal Victoria Infirmary, NEWCASTLE UPON-TYNE. (662 Beds.)

Applications are invited for the post of WHOLE-TIME JUNIOR SURGICAL REGISTRAR. (Open appointment.) This appointment is designed for Graduates who desire to gain Surgical experience, and who have already held a *post as House Surgeon. Certain duties in* the allied departments of the College of Medicine will offer opportunities of Post-Graduate study.

The appointment will in no case extend beyond three years, and will be for one year in the first instance, renewable for two further periods.

The rate of remuneration is £150 per annum.

Applications, with copies of not more than three recent testimonials, must be lodged on or before Friday, July 31st, with the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

S. DUNSTAN,
July 13th, 1931. House Gov. and Sec.

Royal Victoria Infirmary, NEWCASTLE UPON-TYNE. (662 Beds.)

Applications are invited for the post of SENIOR SURGICAL REGISTRAR.

Candidates must be registered in Medicine and in Surgery.

The appointment will be for one year in the first instance, and may be renewed for further periods of one year, provided always that the holder of the office shall have obtained the Fellowship of the Royal College of Surgeons of England within three years of the date of first appointment.

A payment of £100 per annum is attached to this post.

Applications, with copies of not more than three recent testimonials, must be lodged on or before Friday, July 31st, with the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

S. DUNSTAN,
July 13th, 1931. House Gov. and Sec.

Royal Westminster Ophthalmic HOSPITAL

(Incorporated by Royal Charter)
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REFRACTION ASSISTANT.

The Committee of Management is prepared to receive applications for the appointment of a Refraction Assistant, to commence on August 1st, for duty on Tuesdays and Fridays. The appointment is tenable for six months. Salary at the rate of £100 per annum.

Candidates must be duly *qualified* Medical Practitioners and have had experience in Refraction work.

Applications, with copies of testimonials, to be sent at once to the Secretary, from whom further particulars can be obtained.

Royal Northern Infirmary, INVERNESS. (150 Beds.)

Wanted, Two HOUSE SURGEONS (*male*) to commence duties on August 1st. The appointments are for six months. Salaries are at the rate of £100 a year, with board, residence, and laundry.

Applications, stating age, qualifications, etc., with copies of recent testimonials, should be sent immediately to —

20, *Church Street*, Inverness. ROBERT GILBERT, Hon. Secretary.

The Guest Hospital, Dudley.

APPOINTMENT OF HONORARY ORTHOPAEDIC SURGEON.

Applications are invited for the post of Honorary Orthopaedic Surgeon to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons, and should have had special experience in Orthopaedic work.

Applications, stating age, details of experience and posts held, together with certificate of registration and copies of testimonials, to be sent to the House Governor and Secretary, Guest Hospital, Dudley, not later than July 31st.

H. RAYMOND HURST,
The Guest Hospital, Dudley. House Governor & Secretary.
July 13th, 1931.

The Guest Hospital, Dudley.

(General Hospital—107 Beds.)

Applications are invited for the following posts:

HOUSE SURGEON. Salary £200 per annum with furnished apartments, board, and laundry. Duties to commence immediately.

ASSISTANT HOUSE SURGEON. Salary £170 per annum, with furnished apartments, board, and laundry. Duties to commence August 23rd.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned

H. RAYMOND HURST,
The Guest Hospital, Dudley. House Gov. & Sec.
July 13th, 1931

The Guest Hospital, Dudley.

Notice is hereby given that a Meeting of the Committee of Election will be held in the Board Room, Guest Hospital, Dudley, on August 7th, at 12 o'clock noon, for the purpose of electing an HONORARY ORTHOPAEDIC SURGEON to the Hospital.

H. RAYMOND HURST,
The Guest Hospital, Dudley. House Governor & Secretary.
July 13th, 1931.

Swansea General and Eye HOSPITAL. (316 Beds)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS,
Secretary Superintendent.

The Sheffield Royal Hospital. (340 Beds.)

Required, OPHTHALMIC HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. There are twelve resident medical officers. Applications should be forwarded at once to—

W. H. BOOTH,
July 7th, 1931. Supt. & Secretary.

The Sheffield Royal Hospital. (340 Beds.)

Required, RESIDENT ANAESTHETIST, salary at the rate of £80 per annum, rising to £100 per annum in six months, also CASUALTY OFFICER, salary £150 per annum, with board, residence, and laundry. There are twelve resident medical officers (the Casualty Officer being *second in seniority*). Applications should be forwarded at once to—

W. H. BOOTH,
July 7th, 1931. Supt. & Secretary.

Longton Hospital, Staffordshire.

Applications are invited for the post of LADY HOUSE SURGEON to the above Hospital. Salary £120 per annum, with board, residence, and laundry, plus certain fees.

Applications, with copies of three recent testimonials, should be addressed to the Chairman of Directors, Longton Hospital, Stoke-on-Trent, to arrive not later than July 29th.

Royal Berkshire Hospital, READING. (243 Beds.)

RESIDENT ANAESTHETIST (male) wanted now for six months. Candidates must be fully qualified and registered. Remuneration at the rate of £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned.

F. A. LYON, Secretary.

The Liverpool Eye and Ear INFIRMARY, Myrtle Street

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than Tuesday, July 28th, to—

CHARLES W. WRIGHT, Esq.,
9, Harrington St., Liverpool.

The Jessop Hospital for Women, SHEFFIELD (146 Beds)

Gynæcological and Maternity Departments

The Board of Management invite applications for the post of ASSISTANT HOUSE SURGEON (male) for a period of six months.

Salary £100 per annum, to, ther with board, residence, and laundry.

Applications stating age, together with copies of testimonials should be addressed to the undersigned immediately.

H. B. SHELSWELL, *Secretary.*

The Children's Hospital, SHEFFIELD (107 Beds)

Applications are invited immediately for the following post:

THIRD RESIDENT MEDICAL OFFICER. Salary £80 per annum, with board, residence, and laundry. The appointment is for six months, and afterwards the holder is eligible for the post of House Physician (salary at the rate of £100 per annum).

Candidates (female and unmarried) must be fully qualified and registered. Applications, stating age, etc., together with copies of three recent testimonials to be forwarded to the undersigned as soon as possible.

T. H. C. GARLAND,
Secretary.

The Children's Hospital, SHEFFIELD (107 Beds)

Applications are invited for the post of WHOLE TIME MEDICAL REGISTRAR PATHOLOGIST (non-resident). The appointment is for one year, but is renewable annually. Salary £350 per annum.

Candidates must be fully qualified medically. Applications, with copies of testimonials, to be sent at once to the undersigned.

T. H. C. GARLAND, *Secretary.*

Warneford General Hospital, LEAMINGTON SPA

HONORARY SURGEON FOR DISEASES OF THE EAR, NOSE AND THROAT

The Committee invite applications for the above appointment which becomes vacant on October 1st.

The appointment will be made in accordance with the Rules of the Hospital, of which copies may be obtained from the undersigned.

Applications accompanied by copies of three recent testimonials should be delivered to the undersigned not later than Saturday, August 29th next, and candidates may submit 90 copies of their testimonials for circulation to the members of the Election Committee.

W. RUSSELL RUDALL,
House Governor & Secretary.

July 7th, 1931.

Walsall General Hospital.

The Committee invite applications from women for the post of HOUSE PHYSICIAN. Salary at the rate of £150 per annum.

The holder will must be registered under the Medical Act, must produce three recent testimonials.

Duties will be the supervision of medical cases, Assistance in Special Departments.

The appointment will be for six months.

The Hospital contains 100 beds, and has Medical, Surgical and Obstetrical Departments.

Applications, stating qualifications and full particulars of experience to the undersigned not later than Tuesday, July 28th.

WALTER EVANSCOMBE, Secretary.

Whitehaven and West Cumberland Hospital WHITEHAVEN

(50 Beds)

[illegible] HOUSE SURGEON (male or female) [illegible] £100 per annum, including [illegible]. Twelve months. [illegible] Midwifery [illegible] as Junior and [illegible] becoming Senior for [illegible] at the rate of £150 per [illegible].

[illegible] age, [illegible] qualifications, etc., [illegible] testimonials to [illegible] Secretary [illegible] Hospital [illegible].

R. HUTCHINS, Secretary.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON. Candidates must be duly qualified and registered. Number of beds 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before July 19th.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum with board, residence and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

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Death Vacancy, Yorks.—Coast Town.—Ear, Nose, and Throat PRACTICE. About £1,800 p.a. House, with 3 recepts., 6 bedrooms, etc. House and Practice only £1,500.—No. 8871.

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Warwickshire. — Country PRACTICE. £330. £460. Ample scope. Fees 5/- to 10/-. Panel 345. Premium £400. Choice of houses.—No. 8880.

East Coast Resort.—Over £4,000 p.a. 1/3 share. Panel 2,600. Appts. £200. Visits 5/- up. Good house to rent.—No. 8877.

London Suburb, E.—About £750. Panel 600. Visits 2/6. No midwifery. Small house on lease. Premium £700 or near offer.—No. 8873.

Kent Suburb. — Residential. Non-dispensing. Average £897. Panel 386. Appts. £72. Fees mostly 7/6 and 10/6. Large house (7 bed., etc.) to rent or sell cheap. House optional. Low premium.—No. 8872.

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London Sub., W.—About £600. Panel about 600. Fees average 5/-. Detached corner house, 6 bed., etc., large garden. Prem. 1½ years purchase.—No. 8864.

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LONDON, E.—NUCLEUS, working-class Practice, in thickly populated locality. Rooms to rent on agreement. Receipts over £300. Panel 260. Premium £400. Suitable for Lady Doctor. Very little visiting.

YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approximately £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

ESSEX. — Middle-class General PRACTICE, situated in well-populated locality. Receipts over £1,000 p.a. Panel 1,130. Suitable house, small, available. *Fees 2/6 up. Excellent scope. Premium £1,500.*

CHESHIRE.—Well-established PRACTICE, with excellent scope for panel *if desired. Modern semi-detached house, containing 4 bedrooms, etc.* Garage. Small panel. Receipts approx. £500 p.a. Fees 3/6 up. One appointment worth £150. Mids. 5 gns. Premium open to reasonable offer.

KENT.—Within easy reach London.—Well-established PRACTICE, situated in growing locality, with ample scope for development. Receipts nearly £900. Panel over 300. Suitable residence to let. Alternative accommodation available. *Fees 2/6 up. Premium £1,300.—Excellent scope* for energetic man.

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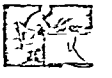
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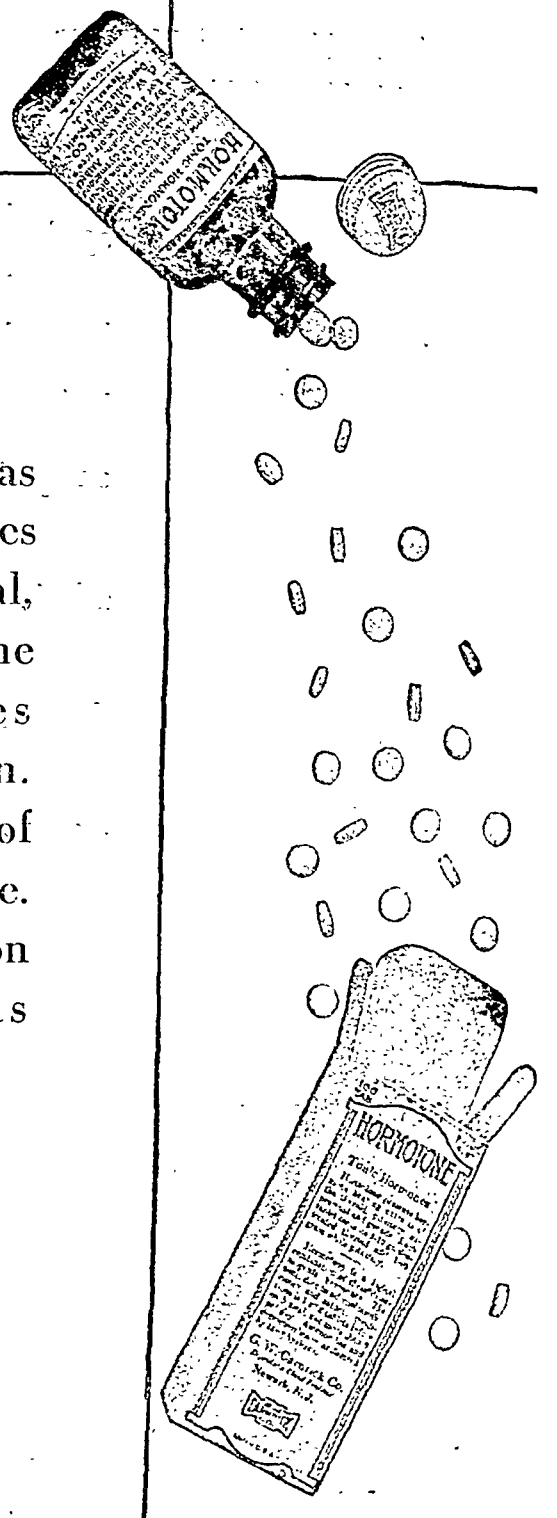
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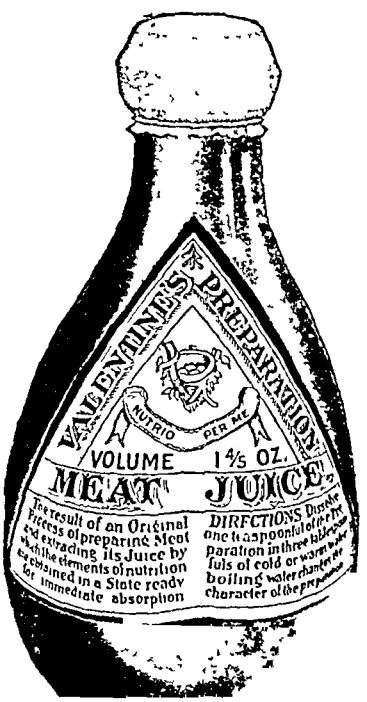
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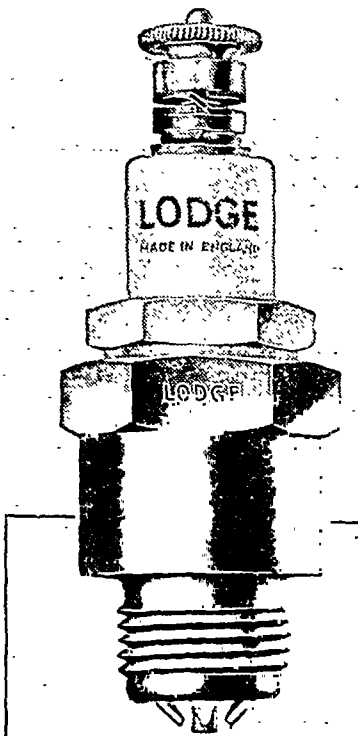
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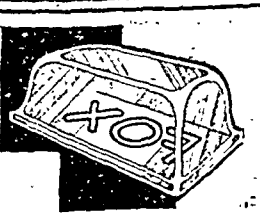
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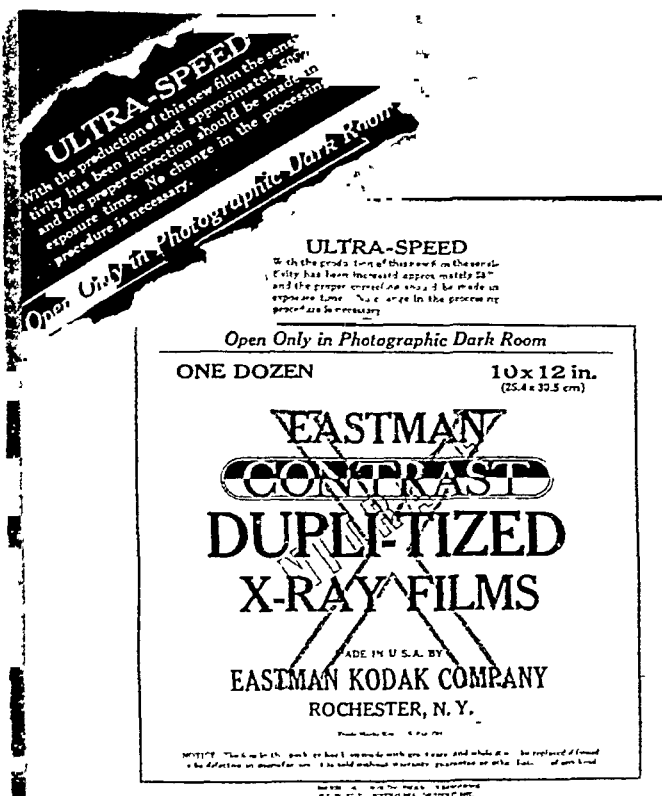
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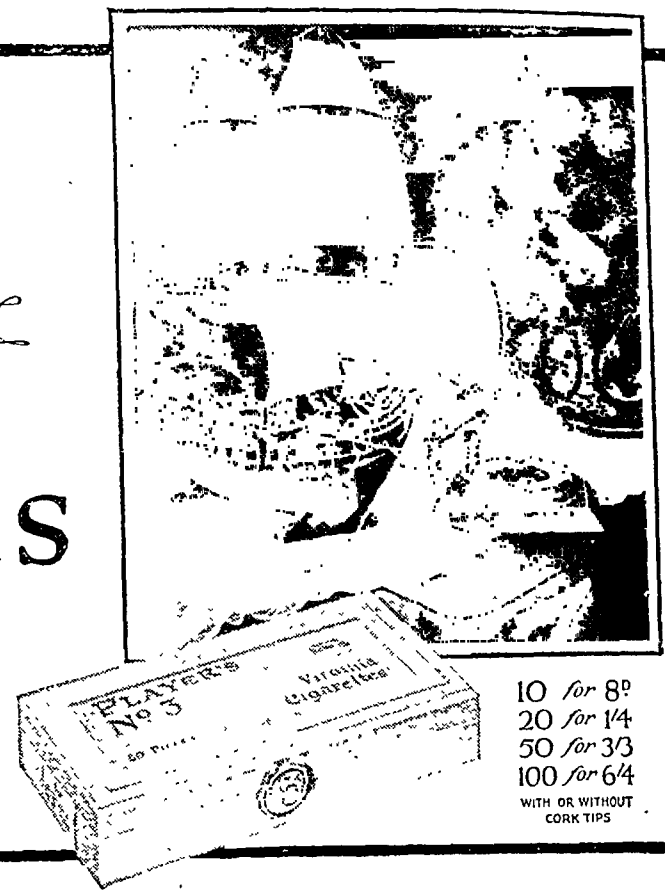
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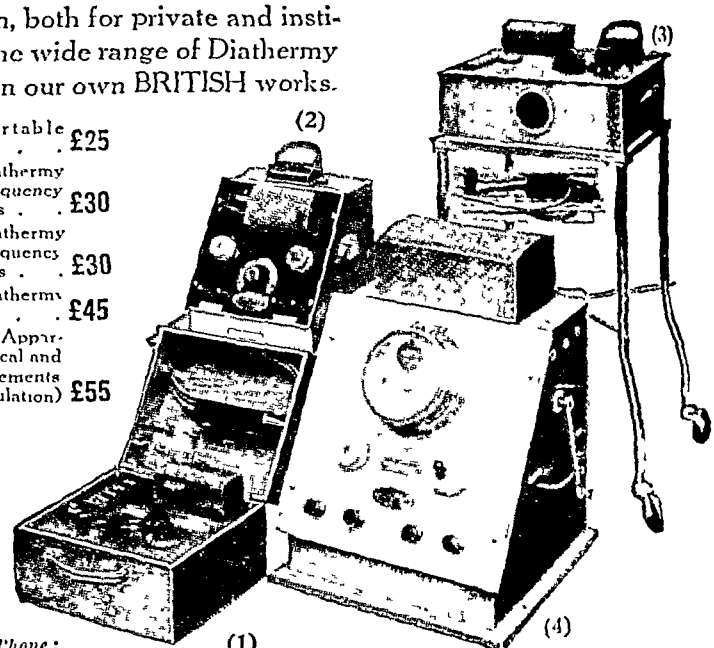
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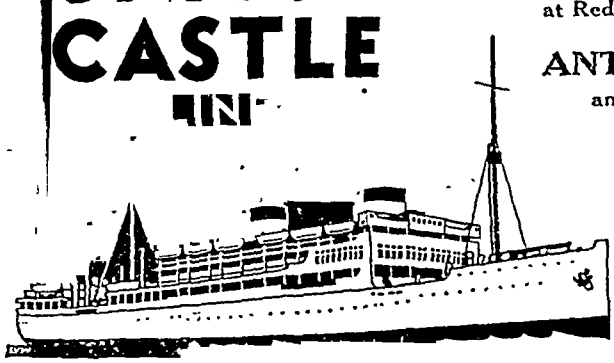
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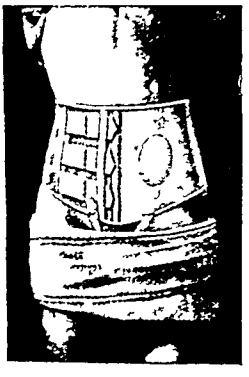
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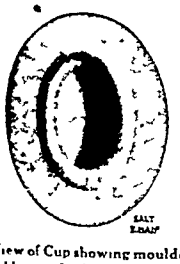
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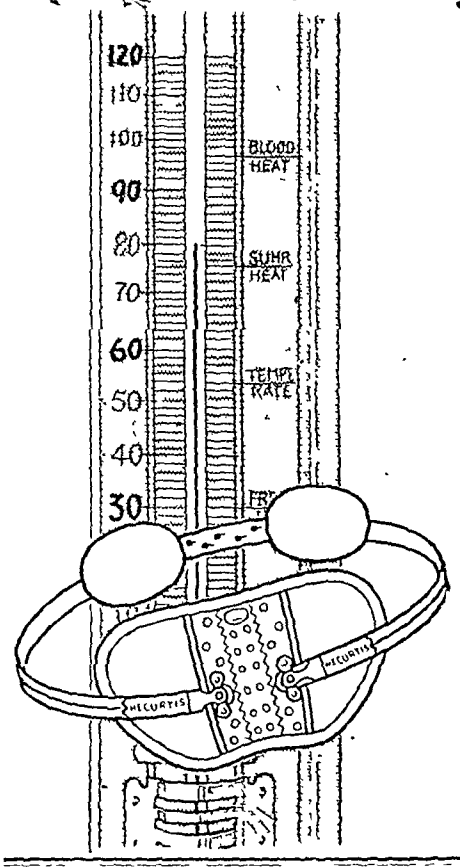
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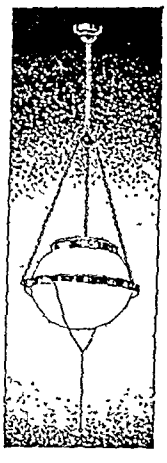
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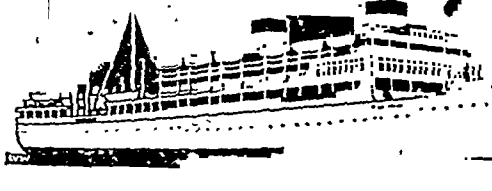
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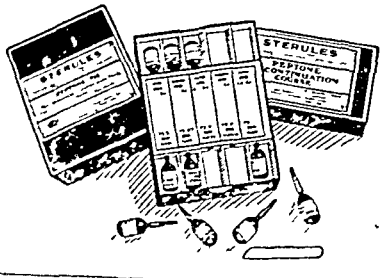
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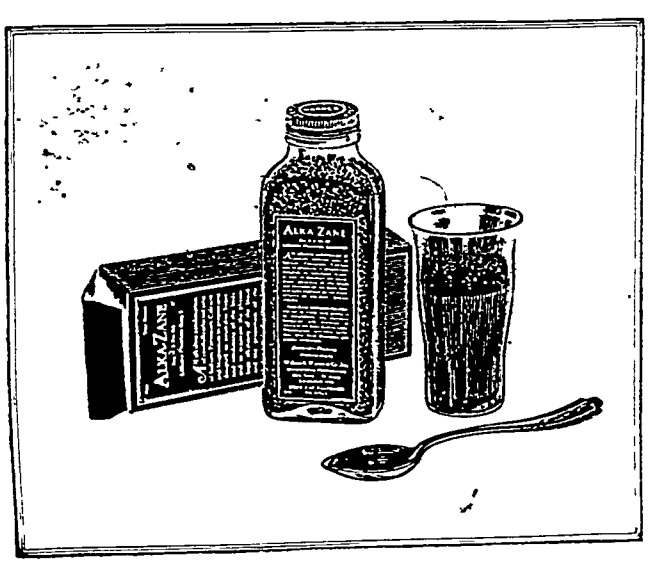
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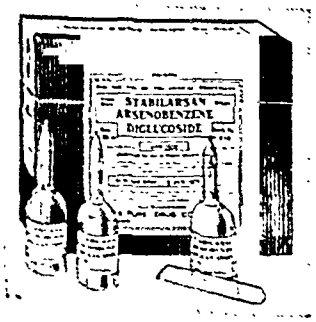
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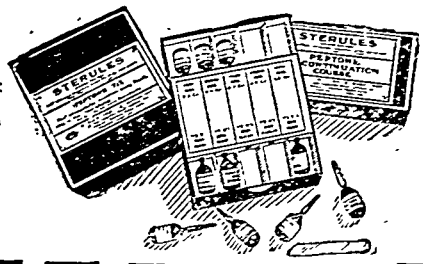
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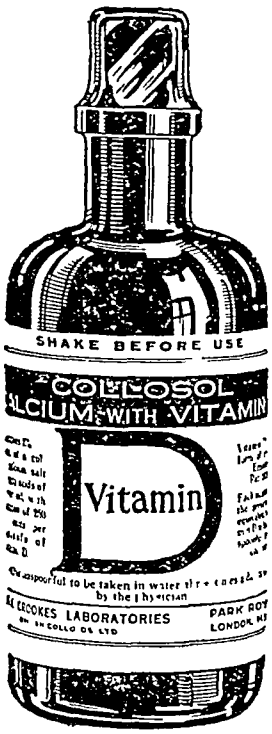
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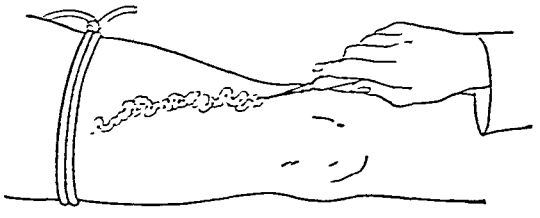
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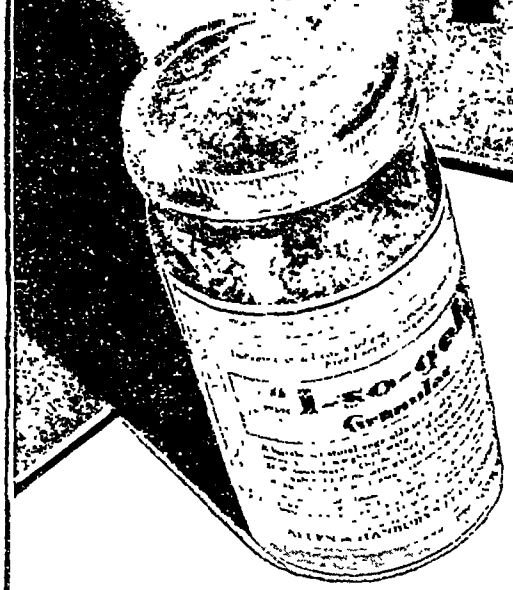
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British Medical Association.

NINETY-NINTH ANNUAL MEETING, EASTBOURNE, 1931

President's Address

ON

PUBLIC HEALTH—TO-DAY AND TO-MORROW

BY

W. G. WILLOUGHBY, M.D.LOND., D.P.H.CAMB.
MEDICAL OFFICER OF HEALTH, EASTBOURNE

I find it difficult to express how very much I appreciate the honour of my election to the Presidency of the British Medical Association. I recognize that, in addition to the honour, it involves a great responsibility in that I have to follow such a long roll of distinguished predecessors. I can only thank you most sincerely, and try to deserve the trust you have so kindly placed in me.

It has been pointed out as noteworthy that this is the first occasion on which a full-time medical officer of health has held this position, and on behalf of medical officers of health, as well as personally, I much appreciate this aspect of the honour I have received. Such an event, however, only illustrates the catholicity of the Association, and its endeavours to promote the co-ordination of every variety of medical practice in the interest both of the public and of our profession.

I think that too much stress should not be laid on the circumstance that a medical officer of health holds this position for the first time. It tends to obscure the very important fact that preventive medicine has formed from time immemorial an important part of the work of every branch of the profession. The same thing obtains now and will undoubtedly continue in the future to an even greater degree.

The existence of the medical officer of health and of the public health service is due to a very great extent to the fact that at all times members of the profession have observed and recorded the direct and contributory causes of disease, and have studied how disease generally, and diseases in particular, can be prevented. The Ministry of Health and medical officers of health are systematically applying and extending the results of these observations and records.

There is evidence that as long ago as the time of Hippocrates the circumstances of disease were observed and recorded. Not only are the brilliant discoveries of medical men of the past, and particularly since the eighteenth century, increasingly applied for the benefit of the public, but the less spectacular, though equally important, work of what one may term the rank and file of the profession has been also most important in contributing to the improved conditions of health of the present day. As regards our Association itself, I may remind you that Sir Charles Hastings, our founder and president ninety-nine years ago, was himself a lecturer on sanitary science. The office of medical officer of health is, in fact, one of the developments of the progress rendered possible by the general advance in the science of medicine.

It is natural that as a medical officer of health I should address you to-day on matters connected with public health, and I propose, after a brief reference to its improvement in recent years, to comment on its present position and on some factors that will affect the prospects of its improvement in the future. It would be tempting to dwell at some length on the achievements of the past, due so largely to the observant work of our predecessors, and its subsequent adaptation, extension, and application by highly organized methods, but a consideration of the present and of the possibilities of the future is my aim this afternoon.

RECENT IMPROVEMENTS IN PUBLIC HEALTH

As regards the past, I will only briefly remind you of such evidence of progress as the increase in the expectation of duration of life, the decrease in the general death rate and in the infant mortality rate, the disappearance or lessened occurrence of some diseases, the mitigation of the severity of many others, the wholesale advance in the skill, technique, and safety of surgery, and the improved provision for the care and prevention of sickness.

The increase in the average duration of life has been very considerable in the present century, averaging more than twelve years. Although this is owing mainly to the decrease in infant mortality, it is also partly due to the general lowering of death rates at other ages. A comparison of the three official life tables for England and Wales representing the conditions existing in 1906, 1911, and 1921 respectively, shows an increase of average expectation of life at all ages, especially in infancy, where the chances of survival increased by about 40 per cent. in the fifteen years. Ten per cent. more of the population now reach the age of 50. The annual death rates for England and Wales averaged nearly 20 per 1,000 in the last decade of the nineteenth century, and now average about 12 per 1,000. The infant mortality rates averaged 167 per 1,000 births in the last decade of the nineteenth century; during the last ten years they have averaged 74, and in 1930 the rate was 60 per 1,000 births. These and similar facts indicate the great advance that has been made in public health, especially in this century. The most casual observation shows the great improvement that has occurred. In spite of abundant evidence of progress, however, it is not possible to be satisfied with the position of the general health to-day.

PUBLIC HEALTH TO-DAY

The medical officer of health regularly receives from the registrar of births and deaths copies of all certificates of deaths, and also receives notifications of certain illnesses—so far a definite and generally accurate summary of those events in his district. He knows the extent to which ailments are affecting elementary and some other school children, and persons who attend certain clinics. He also has less definite, but abundant information as to other illnesses that are occurring in his district. It is his duty

to act in connexion with this constantly recurring mass of information, and his consequent sense of responsibility has sometimes rendered the medical officer of health, in his plans for improvement, vulnerable in the eyes of general practitioners to the charge of removing his neighbour's landmark. Such concentrated and depressing information is not so constantly before those members of the profession who are dealing for the most part with individual patients.

The medical officer of health has also to study the mass of statistical information supplied to him weekly, quarterly, and annually by the Registrar-General, and this also makes a conscientious officer more restive. Without troubling you with many figures from these and other statistics, there are some facts to which I wish to draw your attention that indicate very clearly how much room there is for improvement in the public health.

The *Annual Statistical Summary* of the Registrar-General for England and Wales demonstrates that there are far too many deaths at early ages. In the latest summary, that for 1929, it is shown that rather over one-third of the deaths of males, and nearly one-third of the deaths of females, occurred before the age of 50. Omitting deaths of infants—that is, deaths in the first year of life—there were 40,656 deaths of children under 15 years of age, and another 20,662 in the next ten years of life.

Expectation of Life

The expectation of life, according to the Registrar-General's last life table, is still only 55 years for males and 59 years for females, and though the vitality of the nation has been steadily improving generally, the life tables show almost no change at the ages of adolescence: from 30 years onwards there is but a slight increase in vitality, while at 50 the increase in expectation of life is only about two years. At advanced ages the progress is even less. In fact, the greatest part of the increase is due to the reduction of infantile mortality after the first week of life.

In the very interesting publications of the Life Extension Institute of New York you may find very plausible reasons given why there need be no limit at all to our expectation of duration of life. It is propounded that under suitable circumstances of living, and especially by means of repeated examinations to find and control defects, life could be prolonged indefinitely. Voronoff more moderately has, I believe, described 140 years as a reasonable expectation. Whatever we may think of these possibilities, we have to face the fact at present that we are still on an average far short of the 70 years of the Psalmist. We are also faced with the position that his pessimistic description of the age group 70 to 80 of his time [illegible] far too truthfully to many of the years [illegible] proportion of our population of the

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Defect in Early Childhood

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The stated causes of the deaths in early childhood and after infancy are principally respiratory diseases, enteritis, infectious diseases, violence, and tuberculosis—in fact, causes that should be for the most part preventable. An equally or even more important cause of very many of these deaths does not appear in death certificates—namely, lack of power of resistance to disease due to want of medical attention and to improper environmental circumstances at an early age.

Other groups of figures to which I wish to draw your attention are those of illness in childhood, which are obtained from the reports of school medical officers as a result of medical inspection. In the case of children medically examined in elementary schools in England and Wales, the percentage found requiring treatment for physical defect, excluding dental defect, has been 20, year after year for the past four years, and is not decreasing. The figure for 1929 was 20.8 per cent. The principal troubles are eye and vision defects, skin diseases, enlarged tonsils and adenoids, defects of the ear and hearing, deformities, nervous diseases, tuberculosis, and heart disease. Though many of the ailments are at the time slight, they definitely affect the child's ability to study, and have their effect on its after life.

Another indication of the amount of illness among school children is the constant percentage of absentees from school. In senior schools the only legitimate cause of absence is sickness. An average attendance of 92 per cent. has been considered a good one: it is more often about 90 per cent. As regards elementary school children, therefore, we find that an average of 8 to 10 per cent. are unfit to attend school owing to illness, and one in five of those attending has some physical defect.

It is noteworthy that the children arriving at school at the age of 5 are already affected; the percentage of ailments is substantially diminished before they leave thanks largely to the measures initiated by the Board of Education and carried out by school medical officers and medical practitioners. Much of the neglect of defect at the pre-school age cannot be overcome, and will still have its injurious effect when the children become adults. A few years ago I made an investigation into the history of 504 mentally retarded children of this district who were not mentally deficient. The apparent causes were multiple in most instances, but early ill-health was the definite cause of the retardation in 47 per cent. of the cases, and a contributory cause in most of the others.

Health of Young Adult Population

As examples of the unsatisfactory position to-day of the general health, early deaths and sickness in early life stand out prominently; other examples are the vast amount of sickness shown by national health insurance reports, and the wholesale rejection of young adults who have tried to enter the Navy, Army, and Air Force Services. During the war only 36 per cent. of would-be recruits between the ages of 18 and 42 qualified for active service. This unsatisfactory position still obtains. To a question in the House of Commons last year the Secretary of State for War replied that in 1929 5 per cent. were rejected for diseases of the middle ear, and over 4 per cent. for diseases of the heart. Defects of the lower extremities, dental defect, defects of vision, and insufficient weight caused rejections in each case of 2 to 3 per cent. The defects too frequently pointed to some illness or neglect in early childhood. The only marked improvements compared with the figures of 1910 were in dental condition and chest measurements.

National Health Insurance Statistics

As regards the sickness statistics connected with national health insurance, the majority of my audience know by

experience how serious they are, even after allowing for a proportion of unnecessary consultations In any year an average of about half the insured population comes under treatment by insurance medical practitioners The claims for sickness and disablement benefit have increased continuously, and have practically doubled in recent years

For my purpose to day these examples of the state of the public health must suffice There are many others that will occur to you, such as the multiplicity of hospitals, and the enormous sale of patent medicines

FACTORS INFLUENCING THE FUTURE

In considering the outlook for the future the nature and constitution of the public whose health is to be improved is of primary importance Owing to the reduction in the birth and death rates we now have to deal with an increasingly older population than in the past This is due mainly to the decrease in the number of young people, for the life of the older generations is being prolonged but slightly According to the census records of 1901, 1911, and 1921, the proportions of the population of England and Wales under 15 years of age were 32 4, 30 6, and 27 7 per cent respectively, a decrease of about 2 per cent at each census period The proportion of older persons is correspondingly increasing

In this borough in 1891, children under 5 formed 10 per cent of the population, and in 1921 only 5 8 per cent and the proportion of children of school age has dropped from 21 2 to 16 4 per cent The average age in England and Wales at the 1921 census was 30 6 (males 29 9 and females 31 2) Ten years previously it was two years less, and in 1891 four years less Corresponding figures for the 1931 census are not yet available in detail, but it is obvious that the change is now even more marked

Death Rate

As the population becomes older the prospect of a further reduction in the death rate becomes less and less The Registrar General finds that to compare annual death rates fairly a sex and age correction has to be made in accordance with the changes that are occurring in these features By this method of correction the death rate for England and Wales for 1929 which was 11 4 per 1,000, would have been 11 5 per 1,000 if the age and sex constitution had remained as it was in 1901, the difference being mainly attributable to age alteration

heredity is escaped, are often permanently damaged mentally and physically by the consequent evil environment of their early life Persons with a tendency to mental defect react very readily to environment, the mental defective being usually amoral rather than immoral

If the present course of birth reduction continues, as it probably will do, we are nearing the time when the already diminishing natural increase of the population—that is, excess of births over deaths—will disappear entirely The annual rate of increase by excess of births over deaths per 1,000 living, which was over 14 fifty years ago, and about 12 at the end of the last century, in 1928 was 5, and in 1929, 2 9 In the present difficult circumstances this may be satisfactory, but in venturing, rightly or wrongly, to interfere with the course of nature by birth control it is certainly essential to take care that in reducing the quantity of our available supply for the future of the race, we at all events endeavour to preserve the quality of the remainder

Decrease in Infant Mortality

An alteration in the constitution of the population connected with the great decrease in infantile mortality has been caused by the survival of a large number of children who would otherwise have died Here I am less pessimistic than some of my friends Those of us working at infantile mortality are often met by the accusation that by interfering with nature in this way we are reducing the average physical and mental condition of the race No doubt some of the cases tend in this direction, but I think there is not so much in the accusation as is sometimes felt When I am told that nature's way, and the best, is the survival of the fittest infants only, I can by experience reply that in too many instances, and especially when infantile mortality was higher, the fittest themselves often had no chance of survival A selection depending on ignorance and neglect is not a natural selection, but a very artificial one The diseases which took off these infants were largely preventable and due to ignorance and carelessness, and removed as many of the fittest infants as of the weaklings Moreover, the enlightened preventive treatment which has resulted in so much saving of infant life has necessarily brought up the standard of life of infants generally It seems to me at least as safe to interfere with so-called nature in this way as to interfere

good permanently, while of those who returned many frankly admitted as a cause the attractions of the dole compared with those of greater adventure.

Unemployment

Except in strong characters, unemployment has a very adverse effect on mental and physical health. There never was a time when so much was expected from the State without individual effort, and lack of such effort and want of occupation tend to the acquiring of habits that are not conducive to health. The improvement that has taken place through better general education only partly counteracts this tendency.

Habits and Sickness

As regards habits and their relation to longevity and illness the experience of life assurance companies is valuable. With a life assurance company matters of health are business propositions, and the company has to inform itself on all points that might affect any applicant's insurability from the point of view of profit to the company. Inquiry as to habits makes up the largest field of this protective service, according to the vice-president of one of the large companies of the United States. From a review of 4,500 unfavourable reports, he states that in 32.5 per cent., or about one-third, habits were the special point, ill-health being second at 25.5 per cent. These unfavourable habits are largely connected with diet, liquid and solid, and due to lack of occupation, ignorance, carelessness, and want of self-control.

Illnesses affecting the digestive tract occupy a prominent position in invalidity of all classes. Such ailments as gastric ulcer and appendicitis are increasing in the list of causes of death. In the national health insurance sickness returns digestive ailments appear among the chief causes of invalidity. It is a truism that pathological conditions follow habits that are contrary to the course of normal physiology.

Effects of Education

Fortunately some of the changes that are occurring in the population are very favourable. Education has failed with a minority, but has resulted in a much better condition of life for the majority. The most hopeful indication of this is the improved condition of the elementary school children, in spite of the figures to which I have earlier referred. The increase in physical training and in open-air life is adding to the vitality of a large section of the race. The increased care given to children on leaving school is very important. Surroundings have greatly improved in sanitation, and in the matter of housing, although there is more to be done, the population as a whole is living in a less crowded condition and in a much better type of house than ever before.

Education of the public in health matters is progressing, and advice is more regularly sought. If the lay press, with its enormous circulation, would reproduce in popular form such definite facts as are to be found in the reports of the Ministry of Health and of the Medical Research Council, the progress would be more rapid. Sensational accounts of so-called cures for such diseases as cancer and tuberculosis do real harm. The hopelessly contradictory nature of advice so freely given as to eating and drinking prevents much notice being taken of it. Fortunately the majority rely on moderation, instinct, and the application of their own experience with skilled advice if possible.

THE MEDICAL PROFESSION AND PUBLIC HEALTH

As regards the influence of our own profession on the future of the public health, we can be optimistic. Medical practitioners, in accordance with their traditions of progress, are taking an increasing interest and a greater part in preventive medicine than at any previous period. Thanks to the work of our Association, the spirit of friendly co-operation between the branches of the profession has steadily grown and artificial barriers have been removed. In recent years there has existed a small committee of eminent and representative leaders of the profession to confer with the Ministry of Health on public health matters should occasion arise. General practitioners and medical officers of health co-operate in their work more and more as years go on. In this county borough, as in many others, there are quite a number of practitioners who, in addition to the preventive work carried on in the course of their own private practices, are giving valuable assistance in the public health service.

In its early days the public health service and the activities of the medical officer of health were almost entirely confined to the environmental circumstances of disease, a few infectious illnesses, and the application of discoveries that had been made in connexion with such essentials as pure air, pure water, and pure food. These duties of the medical officer of health are as important as they ever were, but new obligations have brought him into constant touch with members of the public as suffering individuals. This has arisen very largely from the number of persons, especially children, found to be suffering from defect, and who for various reasons, and especially want of means, received very little, if any, medical attention. It was found impossible to adhere to the principle that our duty should end when we had directed the sufferer or his guardians that the necessary medical services should be obtained, for though the advantages of the agency of the general practitioner for carrying out treatment were obvious, this was frequently not available.

The original allocation of large clinics in connexion with the public health service to men and women not long from their training schools was due to the obvious necessity for organization and freedom from other calls on their time. These points could be secured with full-time clinic officers, but could not be obtained from those in practice. Though the preventive work of the general practitioner is by no means dependent on any work he may carry out in State clinics, modifications which enable him to take part in the treatment of patients in the State clinics are so clearly advantageous that there are signs of this being more developed in the future. On the one hand, the patients themselves are entitled to the benefit of his varied experience if this can be arranged, and on the other, the experience to be obtained from these clinics would be most valuable to him in his other work. The clinics, which have been an important factor in the improvement of the public health, would be even more useful if they could be co-ordinated with an increased general practitioner service in the homes of those not in a position to obtain that service at the present time. Early tendencies require skilled guidance, and environment requires skilled supervision; if these could be secured in the home, clinics for treatment would be less necessary.

It is essential that all ill-health should receive attention, and the B.M.A. scheme to extend facilities for treatment beyond the present insured persons is therefore of the utmost importance, and should receive careful consideration. The alternatives to a scheme on these general lines are either that nothing should be done for many sick people—and this is unthinkable—or that the arrangement of medical services should be made by laymen, and this would be most unsatisfactory for both the public and ourselves. It has been truly pointed out that if the best results are to be obtained it is important that in any form of clinic, contract, or insurance practice the relation between doctor and patient should remain as nearly as possible similar to that in ordinary practice.

While efficient diagnosis and treatment will always remain essential parts of preventive medicine, the improved arrangements now made for extending teaching in the subject of public health at the medical schools are extremely important. The General Medical Council has ordained that courses of instruction in forensic medicine, hygiene, and public health should be taken concurrently with the later stages of clinical instruction, and is still considering details. Public health has hitherto been a subject very detached from the other subjects of the curriculum. This arose from the also very detached nature of the original work of medical officers of health. As far as I am aware, the teaching of the subject of public health to students of medicine has reached its greatest elaboration in the McGill University. In the curriculum of this University the course of public health and preventive medicine has been divided so that in future a portion will be taken in each of the five years of the course, and brought into close relation with the other work of the medical student in the corresponding year.

Post-graduate Study and Research

In connexion with education, the facilities for post-graduate study are rapidly increasing. The time required and the expense involved in attending post-graduate centres limit this work very considerably. I would suggest that some simple extended opportunities could be made as a supplement to the present work and to the important scheme which is now in course of development. The work of the general practitioner is very largely concerned with minor ailments of children, maternity and child welfare, tuberculosis, venereal diseases, etc. There are clinics for these in abundance all over the country, and many more of them could be made available for instructive conference and consultation.

Another feature that should continuously improve present conditions as regards health is the large amount of research work that is being carried on; its closer co-ordination with clinical practice is, however, essential. In addition to the constant and valuable study of disease by individuals, records in books and journals, and debates in medical associations and societies, the results of systematic research are most encouraging. As an instance, I may allude to such results as those experimentally obtained by Professor Edward Mellanby, Mrs. Mellanby, and others on vitamins, diet, and disease, especially as regards rickets and dental development. It has been shown that by attention to the diet of infants and children rickets and dental caries can be arrested, and even entirely prevented. I mention this one item among many to emphasize the necessity of the application of such discoveries by those whose duty it should be to look after the health of the persons concerned. A thorough application to the population of this one discovery would result in a very large reduction in the suffering of children and in the subsequent defects of adults. It would be preventive medicine in its best form, incomparably better than treating these ailments in clinics.

The want of general application of existing knowledge is one of the many reasons for consideration of the scheme for extending the present limited opportunities of the medical practitioner to get into the homes for early advice and treatment.

Importance of Physiology

Much stress has been laid on the necessity for a thorough knowledge of physiology—in other words, of the normal—in order to understand disease, and, above all, to detect early defect. The study of physiology and the normal is part of our training, and needs special attention to the individual from the time of birth, and before. In this connexion, I wonder if so much abandonment of so-called normal midwifery by the general practitioner is advisable. The only capable judge as to what is normal or abnormal in the working of the human mechanism must essentially have a good knowledge of physiology. The death returns show that the first week is the most dangerous period of human existence, and it must be beneficial to have the advantage of the doctor's knowledge from the earliest start of life.

The Auxiliary Medical Services

An important indication of progress is the attention that is being given to bringing auxiliary medical services within the reach of an increasing number of the population. This is particularly the case with regard to consultant and specialist services. One of the latest of these is a scheme to make the valuable aid of pathological examinations available for those of moderate means. These developments are largely due to the activity of our Association, whose schemes also for the extension of medical services generally, and for improved midwifery services and hospital arrangements, require earnest consideration in connexion with the future of the public health.

COMMENTARY

I have only had time to mention briefly some of the outstanding conditions that are concerned with progress; many others will occur to you. One of my objects has been to stress the extreme importance of concentrating on preserving the normal in the early part of life. Children constitute the nation later on, and a sound basis is necessary on which to found it. Sickness in early life should receive more attention. Another object has been to stress the fact that, in spite of progress, a very large section of the population is still not getting the advantage of a quick and thorough application of the various discoveries that are being made in medicine. The profession is more and more fitted to provide what is required when the opportunities can be found.

It is necessary that members of the medical profession should take a leading part in the consideration of social conditions and ameliorative measures, for any matter that may affect health must concern the profession. The presence of medical men and women in Parliament, on local government bodies, and in associations and societies that have any bearing on the subject of public health is therefore most advisable.

While claiming for members of our profession such a large share in the improvements in public health, I must mention two other agencies of the greatest importance. I refer, first, to the discoveries and the work of experts in allied sciences, and, secondly, to the immense social influences that have been employed for the betterment of health. I wish I had time to do them the justice they deserve.

CONCLUSION

In conclusion, I must ask your forgiveness for introducing various controversial subjects into this address. My excuse is that they continually arise in the course of my daily duties. I own to being a little pessimistic as to the future of public health when looked at from the aspect of some of the changes that are occurring in the constitution of the population, but if our profession advances as it has done in the past, and continues its increasing interest in preventive medicine, the adverse circumstances may be largely counteracted.

One of the methods, and not the least important one, of attaining the end we have in view—namely, the better health of the community—is by meetings such as this Annual Meeting of the British Medical Association, with its numerous scientific Sections and social opportunities for interchange of knowledge and for debating the means of increasing and applying it, and I once more thank you for granting me the very great honour of presiding on this occasion.

ARGYLL ROBERTSON PUPILS TRUE AND FALSE

A POST-GRADUATE LECTURE DELIVERED AT THE ROYAL LONDON OPHTHALMIC HOSPITAL

BY

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The true Argyll Robertson phenomenon is an infallible sign of syphilis; yet pupils that react on accommodation but not to light, the usual definition of an Argyll Robertson pupil, are met with in many conditions unrelated to syphilis. If both of these statements are true there must be something wrong with the usual definition. There is. It defines nothing; hence the prevailing confusion. I tell you that the sign is infallible. Others give you a long list of conditions in which it has been observed, and you do not know what to believe. I am afraid it is the same with much your teachers tell you. The chief reason for these discrepancies is failure on our part to agree upon a definition of the terms we employ; sometimes we are using different names for the same thing; in this instance we are applying the same name—the Argyll Robertson pupil—to a number of different things; often enough we are using names for nothing at all.

NEED FOR ACCURATE DEFINITION

If we are to understand one another, then, we must decide what it is we ourselves are thinking about, and what we expect others to think about when we use the term Argyll Robertson pupil; we must agree upon a definition. I give you a choice. You may define it as one that reacts on accommodation but not to light. If that is your definition, the Argyll Robertson pupil has been found not only in various forms of syphilis of the nervous system, but also in non-syphilitic congenital cerebral defects, cerebral haemorrhage and thrombosis, tumour, myelitis, arterio-sclerotic and senile dementias, internal hydrocephalus, meningitis, disseminated sclerosis, trauma, syringomyelia, progressive muscular atrophy, polio-encephalitis, encephalitis lethargica, Friedreich's disease, chronic alcoholism, diabetes, nicotine and carbon disulphide poisoning, and in various other conditions of unknown origin. I could add to this list, but I think it is long enough to show you that your sign is hardly unequivocal. It has about as much value for differential diagnosis as fever or a headache. On the other hand, if you care to base your definition on the description of the man after whom the sign is named—surely it is not fair to his name to do otherwise—you possess yourself of the most valuable of neurological signs, and one that is perhaps nearer to being unequivocal than any other in medicine.

ARGYLL ROBERTSON'S PAPER

After this introduction you may wish to know exactly what Argyll Robertson did describe. In a short, unimportant-looking paper, published in the *Edinburgh Medical Journal* in 1869, with the title "Four cases of spinal miosis, with remarks on the action of light on the pupil," he says he observed that, although the retina was quite sensitive and the pupils contracted at once during the act of accommodation for near objects, an alteration, however, in the amount of light admitted to the eye did not influence its size, and that slow and only partial dilatation ensued on the application of a strong atropine solution. If you study this statement you will see that it says much more than is implied in the usual short definition.

Time has proved that he wrought better than he knew; to his description pupils that conform in every particular in any way they are peculiar to syphilis; if they differ they are no longer certain evidence of syphilis. Let us study the essential features in detail. The sign was found in patients with "spinal miosis." There is no agreement on what constitutes miosis; let us define it as a pupil with a diameter not exceeding 2½ mm. The typical Argyll Robertson pupil is small, often very small; I advise you to retain this feature in your definition, and to be very careful in forming your opinion if the pupil is not definitely on the small side. When it is inactive to light, but not small, you will find, as a rule, that the reaction on convergence is also defective; it is then an incompletely fixed pupil, not an Argyll Robertson pupil. The patient may still be a syphilitic, but there are many other causes of an incompletely fixed pupil. The sign was present in both eyes; we know now that it may be unilateral with the same significance. If it is genuine, the Argyll Robertson pupil is always the smaller one. Again I advise caution; many unilateral Argyll Robertson pupils that have been reported were false; a pupil on one side that does not react to light but reacts on convergence is found in various non-syphilitic conditions.

The retina was "quite sensitive"—that is, vision was good. The pupil of many a blind eye reacts on convergence but not to light, but that does not make it an Argyll Robertson pupil. Further, it may react consensually; the Argyll Robertson pupil never does. I mention this because one of you told me recently that the commonest cause of an Argyll Robertson pupil is blindness. The sign is often associated with tabetic optic atrophy; in these cases the light reflex is lost, perhaps without exception, however slight the visual failure from this cause may be. If vision is defective from some other cause—for example, optic atrophy from pressure by a pituitary tumour—some reaction to light persists so long as any vision remains, and may even do so after vision is lost. In such a case the pupil reacts very sluggishly to light but well on convergence; but it is not an incomplete Argyll Robertson pupil. You may not diagnose an Argyll Robertson pupil with complete blindness, and it is unsafe to diagnose an incomplete Argyll Robertson pupil if vision is defective. The cause of the eye signs must be sought for elsewhere.

Reaction on Convergence

Typically the true Argyll Robertson pupil contracts at once and fully, often excessively, on convergence. Thereafter it dilates again promptly. I must insist on these essential features; their neglect has led to many errors. We shall return to them when we come to consider partially fixed, myotonic, and other spurious Argyll Robertson pupils. For the moment I content myself by advising you to examine the reaction on convergence very carefully; if it is defective or peculiar in any way the pupil is not a true Argyll Robertson pupil, and you are not justified in concluding from the eye signs alone that your patient has had syphilis.

Variations in Illumination

The amount of light admitted to the eye does not influence the size of the pupils. Using ordinary bedside methods they do not contract when the illumination is increased, nor do they dilate when the eye is shaded. This is another feature that often serves to distinguish the true from the false. The Argyll Robertson pupil remains the same size for days, weeks, months on end, whatever the amount of light that falls upon it; false Argyll Robertson pupils often vary in size from time to time, or dilate when shaded, and may then react briskly to light.

Effect of Mydriatics

Mydriatics cause "slow and only partial dilatation"; whereas pupils that react on convergence but not to light may often be proved false in that they dilate rapidly and completely under the influence of atropine or cocaine.

True Argyll Robertson Pupil

Small pupils, constant in size, unaltered by light or shade, contracting promptly and fully on convergence, dilating again promptly when the effort to converge is relaxed, and dilating slowly and imperfectly to mydriatics—these are the essential features. The pupils may be irregular or unequal; the lids may droop or be retracted. If these are the ocular signs, and these alone, the pupils by our definition are true Argyll Robertson pupils, and they indicate syphilitic infection of the nervous system. I need hardly say that syphilis may produce many other pupillary and ocular signs; my point is that nothing else is peculiar to syphilis.

Partial Argyll Robertson Pupil

This is firm ground. Let us see if we may proceed further with safety. If you find that the response to light, direct and consensual, in one or both eyes is certainly pathologically slow or incomplete, and the other criteria are fulfilled, this "partial Argyll Robertson sign" has the same value as the complete phenomenon, but only if vision is good.

Pupil in Encephalitis Lethargica

Some alleged exceptions to the rule that the sign is certain evidence of syphilis may now be considered. It has been stated so frequently that it may be caused by encephalitis lethargica that you have come to believe it. During the last eight years I have made a careful *ad hoc* examination in one hundred and fifty-seven cases, and the numbers given by others who have made the same investigation reach a total of many hundreds; no critical observer has ever seen a true Argyll Robertson pupil, and if it occurs at all it must be extremely rare.

Pupil in Quadrigeminal Tumours

The pupillary signs produced by tumours of the quadrigeminal region are important for discussions on the site of the lesion responsible for the Argyll Robertson phenomenon, but they can hardly be confused with the true Argyll Robertson sign as I have defined it. The pupils are rarely small, they may vary in size under observation, dilate in the dark, react after a sojourn in a dark room, dilate well with mydriatics, react imperfectly on convergence, or present some other distinguishing feature. As a rule, there is an associated conjugate palsy of upward ocular movement, papilloedema is present, and other symptoms point to the existence of a tumour.

Among a large number of others, diabetes, disseminated sclerosis, syringomyelia, chronic alcoholism, and cunningly placed vascular, inflammatory, and traumatic lesions, have been named as possible causes. All these things are possible, but you may safely ignore them. Of the recorded cases that I have looked up not one bears scrutiny.

FIXED PUPILS

Pupils that react neither to light, direct or consensual, nor on convergence, are said to be fixed. The name is unfortunate. They are not fixed like the pupil of a glass eye; indeed the normal contraction that occurs on forcible closure of the lids is often excessive and unusually easy to observe in pupils with loss of the reactions to light and convergence. Here again you see the disadvantage of using ill-defined expressions. If your records are to be of any value you must put down exactly what the pupil does in response to the various stimuli. If you write "the pupil is fixed" I do not know what the pupil has done more than I do if you say it is an Argyll Robertson pupil. This by the way. Sometimes in fixed pupils the defects are partial; when this is so the reaction to light is usually more affected than the reaction on convergence, and the findings are easily mistaken for the Argyll Robertson sign.

The causes of partially fixed pupils are as numerous and as dissimilar as the causes of supranuclear, nuclear, and infranuclear lesions of the third nerve; syphilis is merely one of them. I said that the reaction to light is more affected than the reaction on convergence; almost always the fact that the reaction on convergence is also defective will tell you that you are dealing with an incompletely fixed and not an Argyll Robertson pupil. In a small but important group of cases, however, where the signs are due to a partial or recovering lesion of the third nerve, most often traumatic, the reaction to light is completely lost, while the reaction on convergence is normal (traumatic pseudo-Argyll Robertson pupil of Axenfeld). These false Argyll Robertson pupils are usually unilateral, they vary in size from time to time, and they usually dilate promptly and fully under the influence of mydriatics.

PUPILLOTONIA

The myotonic pupil is frequently mistaken for an Argyll Robertson pupil, because it does not react to light with the ordinary tests, but does react on convergence. It is distinguished by its peculiar behaviour during convergence. It is not very rare. I have seen ten cases during the last year, and have read descriptions of about fifty others. You should know about it, because it gives rise to an unfounded suspicion of syphilis, especially when, as sometimes happens, the abnormal pupils are associated with loss of the tendon-jerks. I have seen six patients with this combination of signs, and have found descriptions of eleven isolated cases in the journals; in almost every instance a diagnosis of syphilis of the nervous system had been wrongly made. The myotonic pupil is most often unilateral; it is then almost always larger than its fellow; it may be oval, with the long axis horizontal or vertical; it is often large, sometimes quite small, but never miotic. When ordinary bedside methods are used the reaction to light, direct and consensual, appears to be completely, or almost completely, abolished; after a sojourn in a dark room, however, the pupil dilates, and on subsequent exposure to diffuse daylight contracts very slowly again; this contraction may proceed until the pupil becomes considerably smaller than it was before it dilated in the dark; thereafter it dilates slowly again to its original size. Even after a long stay in a dark room the pupil may not contract to the usual short illumination with a pocket torch; a long exposure may be necessary—in two of my cases I had to expose the eyes for several minutes to bright light at the window on a sunny day, before the size of the pupil changed appreciably.

During the act of accommodation for a near object contraction of the pupil, sometimes after a short delay, precedes slowly through a range often greatly in excess of the normal; the larger abnormal pupil may then become smaller than its normal fellow. In all the cases that I have examined, and in a large majority of those reported by others, the pupil remained small for some seconds up to several minutes after the act of convergence had ceased; rarely it begins to dilate again at once; in both cases dilatation proceeds at an even slower rate than did contraction, so that many minutes may elapse before the pupil regains its usual size. Sometimes accommodation is affected in the same way; it is noticed most often during relaxation; after a near object is looked at some seconds elapse before distant objects become clear. I will not burden you with more details about this interesting phenomenon, but I must emphasize the points on which it differs from the true Argyll Robertson sign. It is most often unilateral; the pupils vary in size from time to time; they are never miotic; the reaction to light, though absent to ordinary tests, is not really abolished; the pupil dilates in the dark; the reaction on convergence is peculiar; accommodation, though normal in range, is

sometimes slow ; and prompt and full dilatation occurs with mydriatics.

The cause of this phenomenon is unknown, and it is probably a manifestation of a disorder *sui generis*. Certainly the pupillary reactions differ essentially from those with which we are most familiar—namely, the Argyll Robertson phenomenon, fixed pupils, and ophthalmoplegia interna. The Argyll Robertson pupil is usually bilateral, the myotonic pupil unilateral ; the first is typically small, the latter large ; the one is always syphilitic in origin, the other never. Similar considerations distinguish it from fixed pupils and ophthalmoplegia interna. The iris of the myotonic pupil is not paralysed, and if the stimulus is intense enough or sufficiently prolonged the pupil contracts through a range wider than the normal ; accommodation, too, may be slow, but the range is normal. The terms " internal ophthalmoplegia " and " iridoplegia " that have been used in the titles of papers dealing with myotonic pupils are inapplicable and confusing.

Mr. Foster Moore, to whom I am greatly indebted, has seen about twenty patients with myotonic pupils, and has allowed me to examine some of them. He applied the term " non-luetic Argyll Robertson pupil " to them, but is not satisfied with it. According to the view I am expressing here it is a contradiction in terms ; moreover, there are many other non-luetic spurious Argyll Robertson pupils than the one he has described. As we must use linguistic shorthand, " myotonic " pupil is perhaps the best name, but you should think of the word myotonic as being in inverted commas, because the reaction is not the same as the myotonic reaction in Thomsen's disease. Its importance, whatever you choose to call it, is that it gives rise to an unfounded suspicion of syphilis.

I might mention other non-luetic conditions in which the pupils react on convergence but not to light, but I think I have said enough to convince you that pupils conforming to this definition occur in many dissimilar disorders, and that this definition is of little value ; certainly it does not define what Argyll Robertson described. I hope, too, that your own experience will prove to you that the true Argyll Robertson pupil, as I have defined it, is, as near as may be in an imperfect world, an infallible sign of syphilis of the nervous system.

COMPLETE ERADICATION OF THE THYROGLOSSAL TRACT

BY

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(With Special Plate)

In an adult it is usually a simple matter to tell at a glance if a thyroglossal fistula is an old-standing one. Fistulas originating during infancy—they are rarely congenital—have their orifices situated low down in the neck ; furthermore, the crescentic appearance of an old fistula is characteristic (Fig. 1, Special Plate).

ANATOMICAL CONSIDERATIONS

The thyroglossal tract extends from the isthmus of the thyroid gland to the foramen caecum. The ramifications of a fistula connected with this tract can often be demonstrated by injecting lipiodol prior to a lateral radiogram, and the duct can sometimes be shown to pass right into the back of the tongue (Fig. 2, Special Plate). Unless the entire tract is removed, secreting epithelium is left behind, and after a short interval the fistula reappears (Fig. A). In the case of thyroglossal cysts the story of incomplete extirpation of the tract is much the same, for simple removal of the cyst is followed by a fistula which continues to discharge. In a review of thirty cases[1] of thyroglossal fistula I found that seventeen followed an operation for a thyroglossal cyst.

OPERATIVE PROCEDURES

Sistrunk's method of ensuring that the whole tract is removed is an excellent one, which should be looked upon as the standard operation for dealing with these otherwise troublesome cases. It is only by completely eradicating the whole tract in every case of thyroglossal

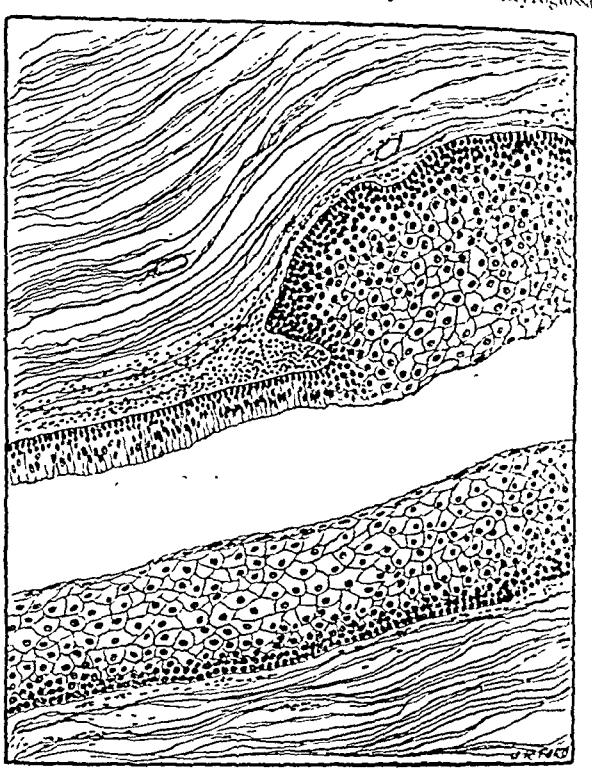


FIG. A.—Section of a thyroglossal fistula in the region of the hyoid bone, showing variations in the type of epithelium which lines the tract. (Section by Dr. P. O. Ellison.)

cyst as well as in every thyroglossal fistula that a perfect end-result may be confidently expected. The details of the operation are as follows. Through an elliptical transverse incision about the orifice, the tract is dissected up to the level of the hyoid bone. There is nothing to disturb the even tenor of the dissection up to this point. The body of the hyoid bone is then cleared on either side and divided on the left and the right so as to free a little more than a quarter of an inch of the centre of the bone, to which the tract is attached. Incidentally, even in a child, the hyoid is a tough little bone, and full-sized bone-cutting forceps are necessary to divide it cleanly. The wedge out of the hyoid is lifted up and the thyrohyoid membrane displayed. Dissection is now continued in the direction of the foramen caecum, but this time without attempting to isolate the duct (Fig. B). The tissues are cored through, allowing about a third of an inch on every side of the duct. The foramen caecum lies upwards and backwards at an angle of 45 degrees from the body of the hyoid bone (Fig. C), and it is along this line that we proceed until the cavity of the mouth is reached. This completes the dissection, and one lifts away *en bloc* the skin about the orifice of the tract ; the tract as far as the hyoid bone ; the centre of the body of the hyoid bone ; a disk of muscle from the mylohyoid muscle ; a disk of muscle from the geniohyoid muscle ; a tubular portion of the very heart of the geniohyoglossi muscles, and the foramen caecum.

Within this vermiform length of tissues, a seemingly sorry prize for so much labour, lies every secreting cell of the thyroglossal tract. Nothing short of this radical extirpation will guard against recurrence.

RECONSTRUCTION

The geniohyoglossi are brought together with sutures, care being taken that the first stitch completely shuts the opening into the mouth. The tissues about the hyoid bone are approximated, but there is no necessity to attempt to bring the cut edges of the bone together. A small drainage tube is inserted and the skin closed, mainly with Van Herff's clips, which in my experience is better than any other method of approximating the skin, as it gives the most satisfactory scar.

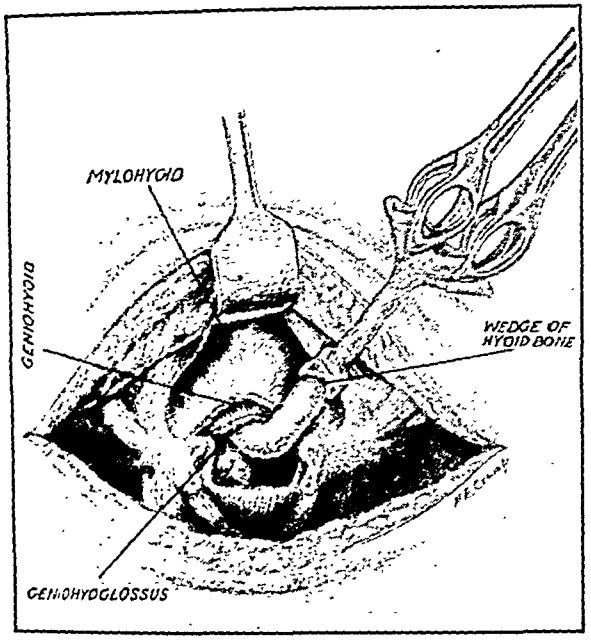


FIG. B.—The dissection nearing completion.

When the tract is a long one, as when the orifice is situated at some distance below the hyoid bone, the operation is considerably facilitated by making a second transverse skin incision above the first. For instance, in Case III (see below) the fistula was dissected out until the hyoid bone was reached, then a second skin incision was made at this level, and the dissected tract threaded through from the lower to the upper level, after which the dissection was begun anew.

THREE CASES OF THYROGLOSSAL FISTULA TREATED BY SISTRUNK'S OPERATION

CASE I

A married woman of 31 had a thyroglossal cyst excised at the age of 14. Shortly afterwards a fistula appeared in the region of the hyoid bone. Two years later the fistula was excised, but no sooner had the stitches been removed than excretion commenced to issue from the centre of the wound. For fifteen years the fistula continued to discharge, and she wore a little pad to absorb the moisture. Recurrent attacks of inflammation occurred at varying intervals. She presented herself as an out-patient during one of these attacks. After the inflammation had subsided, the indurated tract of the previous operations was excised and Sistrunk's operation performed. The result was highly satisfactory.

CASE II

A schoolgirl, aged 12, came to me with a history that one year previously a thyroglossal cyst had been excised from below the hyoid bone. Almost at once a fistula developed just below the hyoid bone. Repeated attacks of inflammation had occurred during the past few months. Sistrunk's operation was performed. The wound healed well. On examination six months later it was reported that the wound had healed perfectly.

CASE III

Mrs. S., aged 28. At the age of 7 a thyroglossal cyst had been operated upon and a fistula resulted. Three further operations were performed in her girlhood—apparently local excision of the area or incision during the acute attacks of inflammation. For the previous nine months, she stated, the fistula (*Fig. 1, Special Plate*) had leaked continuously. Sistrunk's operation was performed, a second transverse skin incision being made at the level of the hyoid bone. Intratracheal ether was given in this case, and I formed the opinion that it is the best anaesthetic for the operation.

It is interesting to note that no disability follows removal of the centre of the hyoid bone. Within forty-eight hours the patient is able to protrude the tongue normally and to swallow without pain. The body of the hyoid bone apparently regenerates, for in one of my cases one year after Sistrunk's operation had been performed for a thyroglossal cyst a radiogram showed the hyoid bone intact.

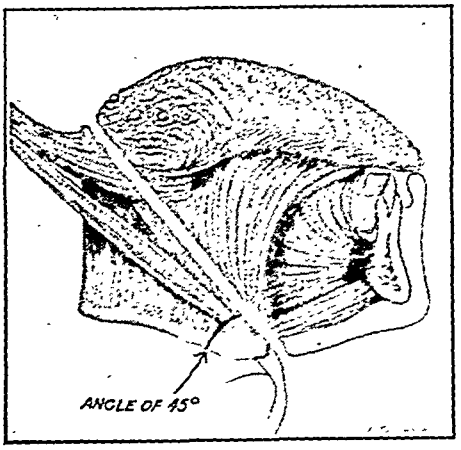


FIG. C.—The path of the dissection after passing the hyoid.

REFERENCE

1 Bailey, Hamilton: *Brachial Cysts*, 1929.

PREVENTABLE DENTAL DEFORMITIES*

BY

R. H. McKEAG, M.B., B.CH., B.DENT.SC.

(With Special Plate)

The dental surgeon is called upon to correct rather than to prevent malpositions of the teeth. So often does this occur that the accepted classifications of mal-occlusion, or abnormal relationship of the teeth, ignore the cause entirely, and are framed to facilitate treatment. By the time the dentist sees the patient it is usually the case that the mere removal of the cause is insufficient to bring about a cure, and indeed often the original cause has itself disappeared by then.

On investigating the subject I was amazed to find that the vast majority of orthodontic cases in my practice could have been prevented had the defect been noticed at an early stage by someone having the necessary knowledge and authority. I am therefore proposing to put before you the main causes of preventable dental deformity, and to illustrate some of the results following neglect of simple precautions. The models which I ask

* A paper read at a meeting of the Bath and Bristol Branch of the British Medical Association in conjunction with the Bristol and District Section of the British Dental Association.

you to examine are not those of particularly bad cases, but no exaggeration is required to demonstrate the deformities which occur. They are all from patients in my own practice seen within the last few months. There is no need to dwell on the ill effects of the deformities on the child's physical and mental welfare.

MOUTH-BREATHING

The first important cause of deformity is mouth-breathing, which may be due to habit or to some temporary or permanent obstruction to nasal respiration. It is most necessary to distinguish between habit, probably formed during a temporary obstruction due to catarrh, and one of the more permanent partial obstructions which come into the domain of the nose and throat specialist. My rough-and-ready method of differentiation is to tell the child to keep his mouth tightly closed and to jump on and off a low hassock a number of times. If the child can do this exercise with the mouth closed for a reasonable space of time I am convinced that there is no obstruction. If not, I advise a visit to the doctor. I admit that this test takes no account of defective heart or lungs, but these are as much outside of the dentist's province as are adenoids or a deflected nasal septum. Where no obstruction to normal breathing is present the child should be encouraged to breathe through the nose, and the parent can give gentle reminders when necessary. If this is insufficient to break the habit, the dentist can make a light vulcanite plate to be worn at night, fitting in front of the incisors and behind the lips.

The commonest type of deformity resulting from mouth-breathing shows a narrow, high upper arch, protruding upper incisors, and a receding chin, and is often followed by serious periodontal disease of the lower incisors, and later of the upper ones also. The normal negative pressure in the mouth being lost, the palate develops in an upward instead of a horizontal direction, and consequently narrowing or lack of development of the nasal air passages occurs. When this bony change has taken place the removal of the original obstruction does not effect a cure, as another obstruction has taken its place. It is thus of the greatest importance that enlarged tonsils and adenoids should be removed at the earliest possible moment.

Mouth-breathing associated with inflammation of the tonsils may produce a rarer but more disfiguring condition in which the lower teeth come outside the upper, and the child has a " bulldog " appearance. The reason for this is somewhat obscure, but it seems that the tongue and lower jaw are pulled forward by the muscles to avoid pressure on the inflamed tonsils by the posterior part of the mandible and the palatoglossus muscle, which is attached to the side of the tongue and forms the anterior part of the fauces. The anterior relationship of the lower jaw, if maintained for some time, becomes fixed by the interlocking of the cusps of the teeth.

THUMB-SUCKING, LIP-BITING, AND TONGUE-BITING

Thumb-sucking, and, to a lesser degree, lip-biting and tongue-biting, are responsible for another large group of deformities. In these the action is purely mechanical and easily followed. Thumb-sucking produces a splaying forward of the upper front teeth, and gives the unfortunate child a vacant appearance, which is a perpetual and dreadful handicap in his life. *Lip-biting is very common*, and may be associated with tongue-biting ; the latter by itself usually causes a gap between the upper and lower front teeth, but the child may habitually keep the tongue between the back teeth of the upper and lower jaws on one or other side, with a resultant displacement of the teeth on that side.

PREMATURE LOSS OF TEETH

The third main group is caused by the premature loss of teeth, either deciduous or permanent. When the temporary teeth are lost early through decay, or from any other cause, the growth of the jaw is arrested and crowding of the permanent teeth follows. This crowding not only produces mal-occlusion and the consequent lessening of chewing and biting power, but it renders the teeth much more liable to decay, as the great natural cleanser of the mouth, the tongue, is obstructed in its work, and corners and angles in which food may lodge and decompose are provided. Even now there are hundreds of thousands of parents who firmly believe that the loss of the milk teeth is unimportant, because they will be followed by the second set. The proper growth of the jaws is to a very great extent dependent on the presence of the teeth. Where a temporary molar is lost on one side before its time, the permanent molar in its growth drifts into the space provided, *and the permanent* bicuspid, which should occupy the position of the deciduous molar, is crowded out of the line. The bone of the jaw develops less than on the side where the deciduous teeth have been retained until the permanent teeth under them are ready to erupt.

The loss of the lower first permanent molars, and often the upper ones also, at an early age is extremely common. These teeth erupt when the child is about 6 years old, and are not noticed as permanent teeth by the parents, as none of the temporary teeth are shed until a year later, and the temporary molars are not shed until the child is 10 or 11. These first permanent molars are especially liable to decay for a variety of causes. They have deep furrows on the face of the crown which trap food, and these furrows are often badly calcified. Their calcification takes place during the first two years of extrauterine life ; the newly born baby does not always take to its food at once, nor is the process of weaning always unattended by digestive troubles. The eruption of the deciduous teeth also is, on occasions, a source of interruption to the steady flow of nutriment to the calcifying teeth. The loss of the lower first permanent molars results in a falling back of the lower front teeth, which is extremely difficult and often impossible to cure. The lower lip then has room to get behind the upper front teeth and pushes them out, the result being a greater deformity than even that caused by thumb-sucking.

OTHER CAUSES OF DEFORMITY

I purposely avoid mention of direct damage done in the mouth by the surgeon—namely, in certain operations for cleft palate—as this is always, I am sure, unavoidable, but there is one slight surgical operation which might with advantage be performed more frequently by any doctor who happens to notice the condition. I refer to the cutting of the frenum of the upper lip when this is attached too low down on the alveolus. When this happens and is unremedied the two central incisors are unduly separated.

Another cause, or contributory cause, of dental deformity is lack of muscular development of the tongue and lips. The position of the teeth is controlled much more than was formerly thought to be the case by muscular action. This should be borne in mind when deciding on the time and method for hare-lip operations.

SUMMARY

Mouth-breathing, whatever its cause, can often be noted and steps taken to cure it by the doctor, but this must be done at an early stage. Similarly, thumb-sucking, lip-biting, and tongue-biting can be investigated by the doctor, and the parents warned of the probable conse-

quences There is no need to emphasize the necessity for care in the feeding of the mother and young child Milk and cod liver oil help to produce well calcified teeth Hard food develops the jaws, and allows room for the full complement of thirty two teeth Apples and other fruit cleanse the teeth from acid producing carbohydrates Should decay occur, whether it be in deciduous or in permanent teeth, the sooner the child is brought to the dentist the better It is far easier for the medical profession than for the dentists to educate the public and stamp out the wicked fallacy that the first teeth do not matter much

The advent of the specialist has robbed us to some extent of the family doctor who cared for his patients from the cradle to the grave, and whose advice was as freely given to avoid disease and deformity as to effect a cure when they were present, but even now there are many opportunities in which a few timely words from the doctor could save his patients from many of the deformities of mal occlusion, which are very real, and none the less serious because they are so common

SEPTIC THROMBOSIS OF THE LATERAL SINUS IN CHILDREN

WITH REPORT OF A CASE COMPLICATED BY METASTATIC INFECTION OF THE HIP JOINT RECOVERY AFTER SEVEN OPERATIONS AND PROLONGED ILLNESS

BY

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(*With Special Plate*)

Septic thrombosis of the lateral sinus is rare in childhood In a series of 500 consecutive cases of middle ear suppuration (reported by one of us[1]), including 80 cases

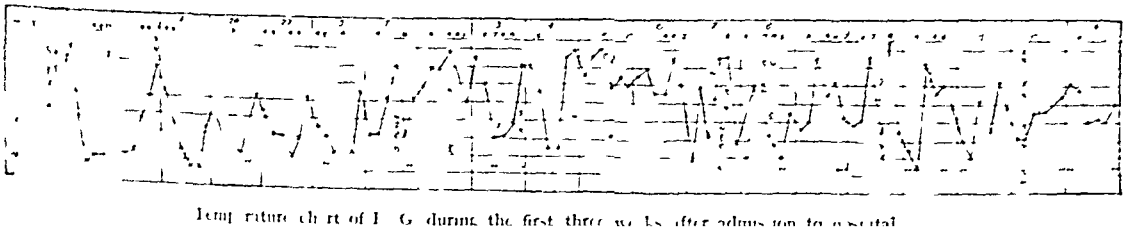
AN UNUSUAL CASE OF TYPHOID PHLEBITIS OF THE LATERAL SINUS

E. G., aged 8, was the youngest child of a family of six, and had always been healthy until she had scarlet fever in April 1929 She then had discharge from the left ear, which continued off and on afterwards Adenoids and tonsils were removed in February, 1930 Eight days before admission to hospital she was seized with vomiting, headache, and fever The family doctor treated this as gastric influenza, which was prevalent in the district The vomiting abated, but the headache continued and the day before admission she had a temperature of 101° F. and a severe rigor, during which she was evanosed and had a feeble pulse Absence of ear discharge and of mastoid tenderness was remarked upon by the doctor Admitted to Meikleham ward September 24th, 1930

September 24th, 1930.—Patient has vomited once since admission is very drowsy, and resents being moved Pupils both equally dilated Knee jerks feeble No ankle clonus or Babinski Slight stiffness of neck muscles on making passive movement Glands on left side of neck behind angle of jaw slightly enlarged and tender A little fetid sticky pus in left ear Tympanic membrane not clearly visible, but seems to show large central perforation No mastoid tenderness, swelling or oedema On account of tenderness in neck and rigor, septic sinus thrombosis suspected and operation advised

First Operation, September 24th (9 p.m.).—Under ether anaesthesia usual mastoid incision was made, and prolonged downwards along anterior border of sterno-mastoid muscle Superficial tissues appeared normal On removing outer mastoid wall, black fetid fluid escaped Sinus found to be collapsed with greenish sloughy appearance, extending from knee of sinus to jugular bulb, which was also full of fetid black fluid Upper end of sinus exposed until healthy blue wall seen Bled freely on opening here Iodoform worsted packing inserted Internal jugular vein ligatured in neck with some difficulty, owing to small dense mass of lymphatic glands Vein was washed through from above with saline dislodging dark turbid fluid and a little clot This fluid was afterwards found to contain *Streptococcus haemolyticus* in pure culture Tube left in upper end of jugular vein in neck Radical mastoid completed, but no plastic treatment of meatus White caseous material filled the tympanum No ossicles found Bipp applied and wound loosely packed without stitching

September 25th.—Vomited once this morning No rigor Is dull and listless



Temperature chart of E. G. during the first three weeks after admission to hospital

to jugular bulb in mastoid wound, dislodging some pus. Eusol dressings.

October 4th.—Patient looks very pale and ill. First complaint of pain in groin over right hip-joint. Temperature has risen to 105°.

October 5th.—Packing in sinus loosened, free bleeding. Temperature 103° to 104°, remained up continuously. Looks very ill—so ill that operation on hip is not advised.

October 8th.—Still has slight rigor every night, and is extremely ill, though wound appears healthy and is now granulating. As the symptoms suggested continued thrombosis it was decided to explore lower end of jugular, which had been ligatured in neck, before incising hip-joint.

Third Operation, October 8th.—Ethyl chloride and ether anaesthesia. Jugular explored and tied lower down, but no thrombosis found. After operation patient collapsed and was almost pulseless; cyanosed. Rallied a little after pituitrin had been injected.

October 9th.—Oedema of right eye; eyelid tense and eye quite closed. Pulse feeble, and child obviously extremely ill.

October 10th.—Oedema of eye worse, and also oedema of right side of face, but not of scalp. Blood transfusion, 5 p.m., 150 c.cm. of citrated blood from brother, aged 24, into vein in left ankle. At 8 p.m. temperature rose to almost 106°, but no rigor or perspiration.

October 12th.—Oedema of scalp, all over vertex, worse on right side, extending to right side of face. Right eye closed, lid very tense. Left eye partly closed.

Fourth Operation, October 13th.—Gas and oxygen. The condition of the hip, which had been overshadowed by the other symptoms, became worse and demanded attention. Abscess in right hip incised and drained by incision above trochanter. About half a pint of foul-smelling pus evacuated.

October 14th.—Packing removed from upper end of sinus, which did not bleed, but was apparently healthy. Temperature 100° to 102°.

October 16th.—Adexolin capsules (two-hourly for twenty-four hours) were given for three days, but they were discontinued as they appeared to cause nausea.

October 18th.—General condition slightly better. Taking food well. Wound clean and granulating. Scalp still oedematous. Right eye closed, left partly. Hip draining well; still considerable discharge of pus. Child much wasted. Temperature still 100° to 102°.

October 19th.—Less oedema. Mainly now on vertex. Right eye can be slightly opened now.

October 20th.—Radiogram taken (Fig. 1, Special Plate), and upper femoral epiphysis found to be separated. (Child had been too ill to be moved.) "Put up" in double abduction with extension.

October 22nd.—General condition much better. Taking food well. Less drowsy; mentally bright. Colour better. Oedema of vertex less, and right eye only slightly swollen.

October 26th.—Oedema almost gone. Temperature 100°. Tongue clean. General appearance improved, though patient very much wasted. Dr. Sinclair reports double optic neuritis.

November 4th.—Rather worse last few days and temperature higher. Profuse foul discharge from abscess of hip.

Fifth Operation, November 4th.—Gas and oxygen anaesthesia. Exploration of hip-joint through an anterior incision and removal of head of femur, which was lying loose in abscess cavity.

November 12th.—General condition not so good. Pulse feeble. Extremely wasted and pale. Mastoid wound quite clean and healing. Hip abscess discharging profusely.

Sixth Operation, November 12th.—Gas and oxygen. The hip-joint again explored, and various pockets found tracking down among adductors of thigh. Through-and-through drainage was established from joint to inner side of thigh.

November 13th.—Blood transfusion from brother, 150 c.cm. citrated blood.

November 14th.—Slight oedema of vertex.

November 20th.—Much less discharge from hip. Mastoid wound clean. Still variations of temperature, 98° (morning) to 102° (6 p.m.). Pulse rather rapid, 160 or less.

December 3rd.—Temperature now nearer normal, seldom above 100°. The extensive mastoid wound is healing and now quite superficial. Still a good deal of discharge from hip.

January 3rd, 1931.—Temperature has been normal for ten days. X-ray shows commencing ankylosis of hip in abducted position. Mastoid wound healed; slight meatal discharge. Hip still discharging. General condition greatly improved.

January 10th.—Dr. Sinclair reports that there is now no sign of optic neuritis.

March 6th.—Slow convalescence followed date of last note, interrupted by occasional evening rise of temperature. By February the hip wounds had healed and the joint was immobilized in a plaster case.

March 25th.—For the past fortnight has had swelling of right side of neck, which was mainly in parotid region to begin with, and the appearance strongly suggested mumps, but recently has softened and formed an abscess, which is now obviously an abscess of the carotid chain of cervical glands.

Seventh Operation, March 25th.—Abscess opened just anterior to sterno-mastoid, at cricoid level, and one ounce of thick blood-stained pus evacuated. Rapid healing followed.

March 31st.—Plaster removed. X-ray plate (Fig. 2, Special Plate) shows bony ankylosis in good position with comparatively little shortening.

Progress.—The subsequent recovery of the patient was uneventful. Early in April, 1931, she was allowed to get up, and soon regained the power of walking, though naturally this was a difficult matter at first. Her general health improved steadily, and at the end of the month she was allowed to return home.

COMMENTARY ON THE CASE

We do not propose to give an account of septic sinus thrombosis, or to repeat the facts which may be found in any textbook of otology. There are, however, certain features of the above case which call for special comment.

Diagnosis

This is often a difficult matter in the absence of definite ear symptoms, and the liability to error increases during an influenza epidemic, as the general symptoms may exactly correspond to those of a certain type of influenza. One cannot too strongly insist upon the routine examination of the tympanic membranes in all sick children. The otoscope is as essential as the stethoscope in paediatric practice. The characteristic rigors are not always present in children, although the "alpine peak" temperature chart is a constant phenomenon, if the temperature is taken at regular frequent intervals. In the present case the rigors were unaccompanied by the profuse perspiration noticed in adult patients. The tenderness of the neck and sensation (on palpation) of a cord in the neck is caused by the enlarged glands rather than by the thrombosed vein. Sometimes, as in the case we have reported, there may be no obvious discharge from the ear, and the otitis may be revealed only by careful inspection.

Extension of the Thrombo-phlebitis

Persistence of the rigors and high temperature after the first operation necessitated a second exposure of the sinus eight days later, when it was found that the septic process had extended upwards. This is not uncommon, and as a rule it is found that the extension of infection affects the upper end of the sinus rather than the lower end of the jugular vein. In the present case, even after the upward extension had been dealt with, the symptoms continued. At this stage the child was extremely ill, and it was difficult to determine whether the arthritis of the hip-joint was responsible for the high temperature and rigors. It was decided to examine the jugular vein; this proved to be healthy. A few days later the patient rallied slightly, and a large abscess of the hip was opened. With a view to minimizing the risk of an upward extension of the thrombo-phlebitis, which may, as in the present case, demand a second operation, we suggest the following modification of technique. Instead of follow-

the thrombosed vessel upwards until healthy tissue is reached and then introducing packing through an infected tract, the reverse procedure should be adopted. Thus, before opening the sinus it should be traced backwards until an area of healthy dural wall is exposed. A small incision is made here, and packing is introduced so as to check the haemorrhage and to occlude the sinus, and then the infected vessel is slit open and treated in the usual manner.

Oedema of Face and Scalp.

The day after the third operation (re-ligation of jugular) there appeared a massive oedema of the face and eyelids on the right (opposite) side. Within two days this had extended all over the scalp, which presented a curious appearance, as though the child were wearing a cap; this oedema persisted for ten days, and then gradually disappeared. The phenomenon is difficult to explain, and still more puzzling is the question why the eyelid of the side opposite to the ear lesion should have become so swollen. There was no protrusion of the eyeball and no chemosis. We have failed to find any similar case recorded in the literature of sinus thrombosis. The oedema of the vertex reappeared after the second blood transfusion, but lasted only for a few days.

Metastatic Infection of the Hip-joint

The hip is the joint most frequently involved when metastatic arthritis follows thrombosis of the lateral sinus, the infection commencing as an osteomyelitis of the neck of the femur, and almost immediately infecting the joint cavity. The hip infection is liable to be of the "quiet" variety met with in cases of multiple osteomyelitis, the arthritis developing insidiously, and causing few symptoms until destruction is well advanced. This fact is well worth remembering in all cases of septic thrombophlebitis, in order that regular examination of the joints may be carried out, and the joint lesion diagnosed at an early stage.

The result of an arthritis such as this varies with the age of the patient. In older children—for example, the patient under discussion—the upper epiphysis of the femur is very apt to separate, and requires removal as a sequestrum before healing will occur. A firm bony ankylosis results, and if this happens in a position of abduction an excellent functional result may be expected. In younger children, however, where the head and neck of the femur are largely composed of cartilage, a dorsal dislocation of the hip is apt to take place. The head and neck of the femur then frequently absorb, irrespective of whether the dislocation has been reduced or not, and the child is left with considerable shortening, a fibrous ankylosis, or even a complete false joint. In these cases function is likely to be rather poorer, and chronic osteoarthritic changes may supervene in the false joint when the patient reaches adult years.

Effect of Blood Transfusion

The patient was transfused with 150 c.cm. of blood from her brother on October 10th, and again on November 13th. On each occasion the transfusion appeared to be followed by definite improvement in the patient's condition. The bloods of donor and recipient were matched directly against each other, and the ordinary citrate method was employed. It is our experience that blood transfusion, whether of citrated blood, whole blood, or of so-called "immune" blood, is of doubtful value in the treatment of acute septicaemic or pyaemic conditions. If, however, the patient survives for a period of some weeks, a progressive secondary anaemia develops, and at this stage transfusion appears to raise the patient's power of overcoming the infection. Repeated transfusions of small quantities of blood are of more benefit than a large quantity on one occasion. We cannot be so dogmatic in regard to the administration of concentrated vitamins (adexolin or radiostoleum) or of collosol manganese, although those remedies deserve further trial in similar cases. The intramuscular injection of blood from a donor in 10 c.cm. doses is another form of treatment which has been recommended, and which was employed in one of the cases related below, unfortunately with little effect.

Psychic Phenomena

It is worth while recording that throughout the severe illness the child preserved a happy and hopeful demeanour, complacently and invariably replying with the word "Better" when asked how she was feeling. May not this mental outlook have assisted her to recover?

FOUR OTHER CASES OF SINUS THROMBOSIS IN CHILDREN

The following brief notes of similar cases observed at the Royal Hospital for Sick Children during the past three years are appended in order to complete the record. Curiously enough, no case of "aural bacteriaemia" without sinus thrombosis has come under our notice. During the same period three cases of perisinus abscess and one case of cavernous sinus thrombosis have been seen by us. In none of the cases of perisinus abscess did the sinus appear to be thrombosed; in no case was it opened; all three patients recovered.

CASE I

Lilias L., aged 8, had discharge from the left ear for six months. For three days prior to coming to hospital she suffered from headache, vomiting, and drowsiness, and the day before admission she had a rigor. Profuse thin purulent discharge from left ear, large central perforation of tympanic membrane, no mastoid tenderness or oedema. At operation fetid greenish pus was found in antrum and cells. The lateral sinus was collapsed, and covered with greenish exudate. It contained a clot extending from the knee to the jugular bulb. The usual operation was completed, and the jugular vein was ligatured. Pus contained streptococci. The child rallied next day, and had no further rigor or rise of temperature, but died suddenly two days after operation. Post-mortem examination revealed toxic changes in all organs. No meningitis. No cerebral abscess.

CASE II

Jean McS., aged 9, had pain in her left ear five days before admission, and a day later profuse discharge from ear. The pain continued, and the temperature rose to 102° or 103° each night. Vomiting and restlessness. No rigor. Mastoid oedema and tenderness. Prominence of posterior wall of meatus, which was almost occluded. At operation, no superficial abscess. On removing cortex, a cavity the size of a hazel nut was entered, containing thin, greenish, very offensive fluid. The antrum contained this fluid, and also a little caseous pus. The lateral sinus lay bare in the inner wall of the cavity, but was of healthy blue appearance. The lower part, however, was covered with granulations, and was unduly firm to the touch. It was therefore opened, and, although the upper end bled freely, the lower end was occluded by a large blood clot which appeared to extend upwards from the jugular bulb. The clot was removed. The jugular vein was ligatured in the neck, and although it contained no blood clot, it was found impossible to syringe through from the bulb in the neck towards the upper end of the jugular vein. The temperature remained at 100° to 102°, and there was not much improvement following operation. Collosol argentum (1·2 c.cm.) was injected intravenously each day, but this had little or no effect. No blood transfusion was practised. The child never rallied, and died eight days later. No post-mortem examination.

CASE III

Margaret T., aged 6, had suffered occasionally from earache prior to removal of tonsils and adenoids. A month after the operation, severe earache in left ear. Left tympanic membrane was red and bulging, and was therefore incised. The ear discharged freely, but pain continued and was accompanied by rise of temperature to 100° each afternoon, falling to normal in morning. No rigors. Mastoidectomy revealed a little muco-pus in cells and antrum, and also swollen red mucosa. Lateral sinus was exposed, and, although it appeared healthy, was incised; it bled freely and contained no clot, although the wall was thicker than is usual. As the lower end did not bleed, after packing off the upper end the jugular vein was ligatured in the neck. The case was regarded as a thrombosis of the jugular bulb. Notwithstanding those measures, the daily rise of temperature continued. It was unaccompanied by rigor or perspiration. A week later the lateral sinus was more freely exposed, and the upper end was found to be inflamed and thrombosed to within half an inch of the torcular. Indeed, the packing introduced above the clot projected into the torcular. Only slight improvement followed, and the septicaemic symptoms continued until the child died a month later. Immuno-transfusion of 250 c.cm. of blood from the father had no effect. On two occasions 10 c.cm. of blood from the father was injected intramuscularly, and the first of these injections was followed by a temperature of 105° and rigor on three successive days. Then the temperature fell to 100°, and remained at 100° to 102°, as it had averaged throughout the illness. Although the child was extremely ill during the five weeks, death was more sudden than was expected. No post-mortem examination. But for the discovery of a septic thrombus at a higher level than usual, the case would have been regarded as a primary "aural bacteriaemia."

CASE IV

Peter W., aged 11, had pain in both ears, followed two days later by discharge of pus, which ceased after a week. Then he complained of acute pain in the back of the neck, which continued for four weeks, and became more acute. He was then admitted to hospital, when it was noticed that the back of the neck was swollen and very tender on the left side. The swelling was well behind the mastoid region. Both tympanic membranes were of normal appearance. Temperature 100°. The only abnormality of the nervous system was double optic neuritis. Mr. Dott determined to explore the cerebellum. A large abscess was discovered among the suboccipital muscles. Streptococci were cultivated from the pus. There was no lesion of the cerebellum, but on exposing the lateral sinus from the posterior aspect it was found to be dilated and of yellow colour, though the outer dural surface was smooth. A needle was introduced, and some thin pus was withdrawn. The sinus was then opened and the pus evacuated. The abscess was found to extend within the sinus for a distance of 1½ inches, but the limiting clot at either end was not disturbed, as there had been no symptom indicative of sinus infection. A steady convalescence followed, and the optic neuritis disappeared. We are indebted to Mr. Dott for permission to refer to this unusual case, which will be reported more fully elsewhere.

COMMENTARY

Cases I and II presented no unusual phenomena. Case III may have been a case of aural bacteriaemia or septicaemia, in which event the operation of opening the sinus and ligaturing the jugular was ill-advised, although it appears more probable that a partial thrombus was present all the time, at a higher level than usual. Case IV was rather remarkable, and the sinus condition, which consisted of a collection of pus within the vessel between two limiting clots, might have been entirely overlooked if the optic neuritis had escaped discovery. It illustrates the importance of complete and thorough investigation of all cases in which intracranial complications are suspected.

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TWO CASES OF LINDAU'S DISEASE

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(*With Special Plate*)

The syndrome known as Lindau's disease is now fairly familiar, as, apart from Lindau's original description,[1] cases are described by Cushing and Bailey in their book on blood-vessel tumours of the brain,[2] and our present knowledge has been reviewed at a recent meeting of the Royal Society of Medicine.[3]

The essential lesion in the disease is a vascular, neoplastic tumour of the central nervous system, termed by Cushing and Bailey a haemangio-blastoma, in contradistinction to the angiomatous malformations; the former is composed solely of mesodermal tissue, while the latter can be shown to contain compressed nerve tissue. The tumour may be either solid and encapsuled or partly cystic; in the latter case it usually forms a single large cyst with a small mural nodule of tumour tissue. Both types are represented in the two cases described below. Microscopically it consists of more or less well-formed blood channels and spaces, separated by closely packed endothelial cells. Cyst formation appears to be of the nature of an exudation rather than a simple degeneration. The tumour is almost unknown above the tentorium, is most common in the cerebellum, and occurs occasionally in the medulla and spinal cord.

Associated with the primary lesion there may be angiomata of the retina and malformations or tumours of the abdominal organs, as cysts of the pancreas and kidney, hypernephromata, etc. The importance of a coincident angioma of the retina lies in the fact that only when this occurs is a pre-operative diagnosis likely to be possible.

The condition is stated to be familial in about 20 per cent. of cases of the primary lesion, though only a small proportion of these have the associated lesions characteristic of Lindau's disease.

CASE I

A girl, aged 16, was first seen in the out-patient department in October, 1928, having been sent up as suffering from albuminuric retinitis. She had papilloedema of both eyes, and her urine contained a large amount of albumin.

The history was that for two to three years she had suffered from severe intermittent headaches, chiefly over the left eye, lasting one to two hours. The headaches were usually preceded by some quivering of the visual image, and she sometimes saw what she described as a bright gold dot. She also suffered from nausea and occasional vomiting at irregular times, and not necessarily related to the headaches. One sister had died of Friedreich's ataxy, and another sister suffered from similar migrainous headaches.

She was a thin but healthy-looking high-coloured girl, and nothing abnormal was found in the nervous, cardiovascular, or excretory systems during her stay in hospital (November, 1928). The urine was albumin-free; blood pressure 115/70; blood urea = 40 mg. It was subsequently discovered that the albuminuria was of the orthostatic type; the urine was albumin-free on rising, but half solid on boiling during the latter part of the day after she had been up and about.

Her eyes were examined by Mr. Adams shortly before her discharge (November 26th, 1928). He reported as follows: "Right eye: Disk is still very rosy, margin ill-defined, with much striation of nerve fibres, and also slight oedema around especially below. Left eye: Condition of disk very similar, but more marked than the right one. There is just a trace amount of swelling; the oedema is most marked above and below the disk. The whole condition seems to be subsiding and does not now suggest albuminaric retinitis." In April, 1929, Mr. Adams reported: "Both disks focus to +4 D.

the left disk seems to have the greater neuritis of the two There are many white flecks on the disk (? oedema) There is a few similar flecks on the lower nasal quadrant of the right disk No haemorrhage in either eye"

She was readmitted in October 1929 for decompression as her sight was becoming endangered The headaches had ceased but for the past three to four months she had complained of pain behind the eyes She said that she saw things surrounded by a mist and occasionally went quite blind for a short time The left eye was worse than the right She still had occasional vomiting in the morning and slight giddiness

There were still no abnormal physical signs in the examination of the nervous system except that the right abdominal reflex was brisker than the left There was no albumin in her urine on admission A left subtemporal decompression was performed on October 8th She developed bronchopneumonia and died on October 12th Two days after the operation the urine contained a considerable amount of albumin with hyaline casts in moderate numbers

Post mortem Examination.—In addition to general hyperaemia and the changes resulting from the decompression it was noted on examination of the brain that the posterior aspect of the pons was swollen and the veins especially on the left side were enlarged and turgid The medulla was uniformly swollen in its posterior and upper parts On section of the medulla transversely to the brain axis a large tumour 1½ inches in diameter was found walled off by jelly like tissue and occupying the greater part of the cross section but more on the left than the right side and leaving both pyramids the right restiform body, and a portion of the left intact The substance of the tumour was soft and extremely hyperaemic with large blood spaces At a later examination the tumour was found to commence at the lower border of the pons and to extend 2 to 3 mm down the medulla occupying the left antero internal aspect of the cross section and extending across the mid line for a short distance on to the right side (Fig 1 Special Plate) It was an obviously vascular tumour about 2 mm in width and 1 mm in depth just projecting into the lower end of the fourth ventricle and appearing to be encapsuled There was increase of fluid in the lateral ventricles On the anterior surface of the right kidney was what appeared to be a cyst 1½ mm across and projecting 1/2 mm above the surface of the kidney On section this proved to be a vascular tumour resembling the tumour in the medulla and with the shape of an equilateral triangle (Fig 2 Special Plate) It was surrounded by a well defined capsule The kidneys were otherwise healthy With the exception of the evidence of bronchopneumonia the remaining organs though deeply congested were normal

Microscopical Examination and Report

1 The tumour in the medulla is a haemangioma consisting of numerous large cavernous spaces and channels together with numerous capillaries separated by a fairly closely packed groundwork of endothelial cells The spaces are lined by endothelium and the larger ones have a wall composed of fibrous and elastic tissue some of them are partly or completely filled by partially organized fibrin There is no definite capsule but the tumour is surrounded by a layer of compressed glia which does not contain fibrous tissue (Figs 3 and 4 Special Plate)

2 The tumour in the kidney is a hypernephroma It is surrounded by a thick fibrous wall and consists of large alveoli filled by irregular finger like processes lined by cubical cells having a small nucleus and clear cytoplasm Some of the spaces however are filled with blood and the blood spaces of an angioma but are lined by the same cubical cells (Figs 5 and 6 Special Plate)

The headache became more severe and she developed uncontrollable vomiting She also complained of vertigo which had become worse since her admission to hospital and was now noticeable even in bed I saw her first on August 11th, when I found she had been unable to keep anything down except water for two to three days Temperature and pulse were normal there were no positive signs in the examination of the nervous system and no optic neuritis Lumbar puncture produced a clear fluid under slightly increased pressure which had no abnormal features Thereafter the vomiting improved On August 10th she had a fit of short duration preceded by a sensation of pins and needles in the hand On September 3rd she was admitted to the Radcliffe Infirmary The headache and vomiting continued On September 10th her disks were examined by Mr Adams, who reported "Disks are well defined There is a strand of connective tissue across the temporal vessels on the right disk Some mixed astigmatism No optic neuritis" He also reported verbally that he could find no angioma of the retina Lumbar puncture on September 15th produced a normal fluid under slightly increased pressure The patient died on September 23rd

Post mortem Examination.—There was a cyst about the size of a golf ball in the right cerebellar lobe, containing clear fluid There was also dilatation of the fourth ventricle and, slightly of the iter and third ventricle The cyst was opened on removing the brain On the inferior wall of the cyst there was a small area about 1 cm across consisting apparently of vessels The left kidney contained in its lower pole a small area apparently composed of necrotic tissue surrounded by a well defined capsule The contents were amorphous and semi solid The right kidney contained a small cyst in its upper pole The liver had a minute naevus on the surface of the right lobe The left Fallopian tube had a large multilocular cyst at its outer end with two smaller cysts attached Except for hypostatic pneumonia the other organs were normal

Microscopical Examination of Nodule in Wall of Cerebellar Cyst

"The tumour is a haemangioma It consists for the most part of fairly closely packed irregularly arranged endothelial cells traversed by a very large number of capillaries containing blood Many of these capillaries are dilated into blood spaces and a small part of the section consists only of such blood spaces separated from each other by two layers of endothelium and a scanty stroma The whole is surrounded by a thin rather indefinite capsule The tumour in the left kidney is a hypernephroma a large part of which has undergone degeneration"

SUMMARY

Two cases of capillary haemangioma (haemangioblastoma of Cushing and Bailey), in one case of the cerebellum, in the other of the medulla, are described Their association in each case with a small hypernephroma of the kidney entitles them to rank as cases of Lindau's disease, and their occurrence in two sisters illustrates the familial tendency of this disease

It is to be noted that in neither case was an angioma of the retina observed In the first case this was not specifically sought, in the second a macroscopic examination of the retina only was made, whereas an angioma may be of microscopic size In neither case was the diagnosis made during life, and it is remarkable that in the first case, with very considerable involvement of the medulla, practically the only signs of disease were those due to increased intracranial pressure

I am indebted to Mr P H Adam, honorary surgeon (Oxford

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

PSEUDO ARGYLL ROBERTSON PUPILS

AS RESULT OF LONG RESIDENCE IN THE TROPICS

Quite recently two rather interesting cases have come under my notice, which brought to mind a fact observed during my residence in the Orange River Colony and Transvaal, etc.—namely the number of cases exhibiting contracted pupils—a fact to which, owing to the environment, I did not at the time attach much importance.

The two patients, males of middle age, had similar simple symptoms: recurrent attacks of indigestion with vomiting, headache and constipation. Both had lived for periods of over ten years in the Tropics, one in India and the other on the Congo. Both had suffered from attacks of malaria, and had undergone thorough quinine therapy. Both had returned home after the war, and have remained in England *ever since*.

On examination, heart and lungs were found to be normal, as were the liver and kidneys, the urine was normal, neither patient showed any enlargement of the spleen. The recurring gastric attacks led me to run over the nervous system: the result did not help me much, and it was at this stage of the examination that the eyes came under observation. In each case the pupils were equal, but they were abnormally contracted, with sluggish reaction to light and accommodation. The sympathetic reflex appeared to be of the same type, not quite so marked in the Congo case. No trace of venereal disease could be found in the history. A blood test, however, was made, the Wassermann reaction proving negative in both cases as the films did to malaria. I saw these patients several times, the *condition of the* pupils always being the same. Morphine addiction, etc., can be ruled out in both instances. The cases exhibit, *therefore*, true *pseudo* Argyll Robertson pupils.

The question arises, What is the explanation of the unusually contracted pupils in otherwise normal cases? Is the condition a remote post-malarial phenomenon of the migraine type, as I consider the simpler symptoms are, or is a possible cause to be found in the effects of prolonged and constant exposure of the eyes to the glare of the tropical sun, and equally severe exposure of the neck (low loose collars being worn as a rule in these regions), such exposure causing prolonged and excessive nerve action on the part of the oculomotor or constrictor nerve, with attendant strain on the spiral vessels of the iris, producing permanent changes in the muscles of the iris, this result being contributed to by the effects of the sun on the *exposed* neck, primarily stimulating and secondarily paralysing to a certain degree the cervical sympathetic? It would be interesting to know if other observers have come in contact with similar cases.

C. RUSSELL COCKFIELD, M.D., L.M.S.S.A., D.T.M.,
Medical Superintendent Municipal Hospital, Sunderland;
late Superintendent Government Area and Glencairn
Native Hospitals, Transvaal.

ERYTHEMA NODOSUM

Recent paragraphs in the *Epitome* prompt me to report the following four cases of erythema nodosum.

A boy about 8 years of age had a typical attack of erythema nodosum, but the fever continued after the erythema had disappeared. I had him admitted to the South Eastern Hospital for Children, where he came under the care of my colleague Dr. I. M. Burns. He suspected tuberculosis as the aetiology, and confirmed the diagnosis by lumbar puncture.

A married woman, aged 36, consulted my partner Dr. H. H. Hillis about a lump in the *lower and outer* quadrant of her right breast, and he asked me to see her. She gave me the following history: She had noticed the lump six weeks previously, and it had been growing larger. It was about as large as a hazel nut and appeared to be part of the breast tissue; it was firm and apparently solid, and there was dimpling of the skin over it. Three enlarged glands could be felt rather low down in the axilla; they were somewhat unexpectedly large for such a short history. On the patient's legs were *the typical* marks of a recent attack of erythema nodosum. We felt that the breast tumour must be either a carcinoma or possibly a tuberculoma. Mr. H. S. Gray agreed, and kindly operated on the patient in Charing Cross Hospital; on section the lump proved to be tuberculous. No other tuberculous focus was found.

The third case is that of a married woman, aged about 36. I was called to see her on account of tonsillitis; this was followed by a quinzy, and the quinzy by erythema nodosum. She reminded me that I had attended her for exactly the same sequence of events ten years ago. I do not remember to have seen erythema nodosum twice in the *other person*.

About twenty-five years ago a relative of my own—one under my care—had erythema nodosum, facial palsy, and iritis, all at about the same time; these were then supposed to be rheumatic; she has had no sequel, rheumatic or *tuberculous*.

These cases support the view that erythema nodosum can be caused by a variety of toxins.

Sydenham. W. M. PENNY, M.D.

TETANY AFTER EXERCISE IN AN ASTHMATIC RELIEVED BY ADRENALINE

In the *Journal* of August 16th, 1930, R. D. Lawrence and R. A. McCance gave a clinical and chemical study of a case very similar to the one described below. This boy, like the patient they describe, is also very liable to chilblains, and his teeth are also very soft. The fillings will only stay in for a very short period.

The patient, a boy aged 13, developed asthma a good number of years ago after removal of his tonsils. The attacks used to come on about every month all through the year, but this last year he has been absolutely free. He is a clever boy, very highly strung, and very fond of all forms of athletics, particularly football and running. On May 5th, 1931, he played a game of football at the school then ran home, a distance of half a mile. He complained to his mother then that he was rather tired. Later, however, he went and played a game of cricket, then ran back to the village, a distance of a mile. From his own home he ran to his grandmother's where he was to remain the night. On learning that his uncle was arriving in the village by bus he again set off running to meet him, but, failing to find him, he ran back once more. The distance travelled altogether here would be about one mile, but half of this distance would have been uphill.

When he arrived back the last time he was noticed to be unduly short of breath and very soon after complained of severe pain which gradually increased. I saw him about five minutes after this and noted a well marked tetany. Carpopedal spasm was pronounced, the muscles of *the trunk* were also affected and Chvostek's sign was present. The knee reflexes, abdominal reflexes, and knee jerk were all exaggerated. The pain was very severe particularly over the upper part of the chest and over the cardiac region. His appearance he was very grey and *appeared to be breathing* rapidly and deeply. The respirations were 50 per min., and the pulse rate was 140. The heart sounds were perfectly normal and the apex beat was within the nipple line. There was no laryngeal spasm and no signs of asthma. Expiration and inspiration were unimpeded.

Owing to the fact that he was an asthmatic I thought I would try the effect of 0.25 c.cm. adrenaline subcutaneously first before trying anything else. About twenty seconds after the injection he said he began to feel better, and the pain was getting less. In sixty seconds he was very much better, the pain was gone, and he felt relieved in every way. The deep breathing still continued, and the pneumogram showed again he would have a great shudder, and so

smaller shivering attacks, but by another half-hour the condition passed away and he felt himself again.

This is the first attack he has been known to have had, but he said that once after a very strenuous game of football he had slight feelings very similar to this, but they passed off in about five minutes.

Ranchory. J. A. SIMPSON EMSLIE, M.B., Ch.B.

Reports of Societies

MATERNAL MORTALITY

On July 14th, at the Paddington Medical Society, Dr. G. E. OATES (M.O.H. Paddington) opened a discussion on maternal mortality. The mortality rate was higher among primiparae, and nowadays there were more first children born. The Departmental Committee had stated that 48 per cent. of the deaths were preventable, 17 per cent. were due to absence of ante-natal care, 17 per cent. to errors of judgement, 5 per cent. to lack of facilities, and 9 per cent. to negligence on the part of the patient or her friends. Local authorities urged the advisability of ante-natal care, and the ideal was for that work to be done by the doctor who would conduct the labour. Consultants and laboratory facilities were available, and some local authorities provided maternity homes. Midwives were now very well supervised.

Mr. T. G. STEVENS said that the chief causes of death were sepsis, toxaemia, haemorrhage, and accidents such as rupture of the uterus or inversion. Many cases of sepsis were autogenous, and in most cases there had been instrumental intervention. Direct infection was very rare. Sterile towels were not necessary in general practice. A mask should be worn, which need not be sterile, and a clean overall. The vulva should be disinfected. Plugging the vagina in severe ante-partum haemorrhage was the best treatment. Every case should be examined at the thirty-fourth week, when it would be possible to decide whether, in a case of contracted pelvis, it would be necessary to do Caesarean section or not. He was not much in favour of trial labour at term in cases of minor degrees of contraction. True toxaemic vomiting was very rare in the early days of pregnancy. The more severe manifestations of toxaemia could be prevented by the exhibition of sodium bicarbonate, 200 to 600 grains in a day (teaspoonful two-hourly). When the urine became alkaline and more was being passed the dosage could be lessened. If taken during pregnancy this drug also prevented the recurrence of albuminuria in subsequent pregnancies. Rupture of the uterus was entirely preventable. Craniotomy was far preferable to the risk of difficult forceps extraction. No cause had yet been discovered for obstetric shock, and it was usually fatal. Much had recently been said and written about the bad state of obstetric teaching, but the speaker believed that obstetric teaching in this country was never better than it was to-day. The difficulty was in the dearth of obstetric beds for teaching purposes, and in the diminished birth rate.

Dr. L. COLEBROOK said that he thought it was impossible completely to sterilize the vulva. The best antiseptic to use was a watery solution of iodine (2 per cent.), but it must be given at least five minutes to act. In puerperal fever the microbes chiefly responsible were the haemolytic streptococcus, from throat carriers; the anaerobic streptococcus, probably from the intestine via the rectum; and the *B. coli*. Gloves should be washed in water and soaked in a strong antiseptic, such as lysol (2 drachms to 1 pint) or perchloride (1/5,000). Cases of puerperal fever ought to be regarded as emergencies, and sent to hospital in the early stages. Work was at present being carried out on the treatment of these cases by means of the arsenicals.

Reviews

A SURVEY OF RENAL DISEASE

The sixth volume of Mohr and Staehelin's Handbook of Internal Medicine[1] consists of VOLHARD'S "Die doppelseitigen hämatogenen Nierenerkrankungen," now enlarged to thrice its original length, with the addition of a section on surgical diseases of the urinary tract and the male reproductive organs by F. Suter of Basel. Volhard keeps to his former arrangement, commencing with physiology and passing on to such subjects as renal insufficiency, oedema, uraemia, etc., before dealing with classification and the consideration of actual diseases. His classification, now known the world over, remains almost unaltered, and though it has received some criticism there is probably no other which so well fulfils the requirements of clinician and pathologist while still combining completeness with simplicity. An enormous mass of knowledge has been added to the subject of kidney disease during the last twelve years, but as most of the problems—even that of the physiology of the kidney—are still unsolved, this knowledge has not yet had the simplifying effect which comes when theories are proved and hypotheses become facts.

In the preparation of this edition Volhard has accomplished a stupendous task. He gives us not only the most complete survey extant of the modern knowledge, theory, and literature of kidney disease, but, in addition, the benefit of his own teaching and interpretation of the subject. The result is a most valuable contribution to medicine, but essentially a book for the expert rather than for the student or general practitioner. It is gratifying to note, among so much that is, alas, still theory, that there are some real advances towards clarity since the last edition was published. The conception of a "pale" and a "red" type of high blood pressure will commend itself at once to the experienced clinician, and the work of Volhard's clinic on the different mechanisms of the two forms, if confirmed, is a valuable advance. The meaning of renal insufficiency is much clearer than was formerly the case, and the blood-indican and xanthoproteic reactions as tests of renal failure are still too little known and used in this country, especially as the latter can, if necessary, be performed at the bedside. Extrarenal factors, especially in relation to oedema, and the role of the tissues in preserving the constancy of the composition of the blood, are subjects becoming more and more important in the understanding of kidney disease; the sections dealing with these subjects, as also those on compensatory polyuria, on the functions of the glomeruli and tubules, and on the lessons to be learnt from the concentration and dilution test, are particularly clear and satisfying to read. Volhard's conception of ischaemia as the all-important factor in acute nephritis, and of the duration of the ischaemia as the determining factor in the production of the later non-reversible changes in the kidney, is another important lesson in the book, and the doctrine of ischaemia appears again in the explanation of pseudo-uraemic manifestations, the subject of uraemia in general being dealt with in essentially the same way as in the last edition. The survey of the literature appears to be remarkably complete, and is not especially biased towards the works of German authors, though Verney's work on the control of the kidney by the pituitary deserves further mention.

[1] *Handbuch der Inneren Medizin*. Herausgegeben von L. Mohr und R. Staehelin. Zweite Auflage, herausgegeben von G. v. Bergmann und R. Staehelin. Sechster Band. Berlin: J. Springer. 1931. Part I: Pp. xiii + 1023, 93 figures; bound, R.M.48. Part II: Pp. 1024 to 2137, 159 figures; bound, R.M. 99.60.)

It would be futile in a work of this magnitude to pick out one or two points for criticism, and it must suffice to say that the new edition of Volhard's book will retain its place as the world authority on the subject. The section by Suter, on so-called surgical affections of the kidney and genito-urinary tract, is clearly written, and, though not aiming at the completeness of the first part of the book, is sufficiently detailed to serve as a useful source of reference for the physician, for whose purposes presumably it is written. The book is published in the excellent style we have learnt to expect of the best German publishers, and the illustrations, though not over-numerous, are beautifully produced.

VISUAL SENSITIVITY

Much work has been done upon the sensitivity of the eye, both qualitative and quantitative; but it must be admitted that a lack of adequate standardization has detracted considerably from its value. The only true standard which can give results as nearly as possible quantitative and absolute must be based on terms of energy. Many of the classical investigations on vision suffer from this defect; even the well-known sensation curves, for example, upon which so much theorizing has been based, have never yet been determined with a spectrum whose energy equivalents have been accurately measured. In 1925 a very valuable contribution to our knowledge was made by Monroe, whose determinations of the energy values of the minimum chromatic and achromatic stimuli which were appreciable at the fovea were published in monograph form by the American Psychological Association. This excellent work has now a fitting sequel in a similar exhaustive and standardized determination of the sensitivity of the peripheral retina published in the same series.[2] The work was done by Miss WENTWORTH, under the guidance of Dr. Ferree, at the Bryn Mawr College in America.

The research embraces a comprehensive survey of the threshold sensitivity of the retina to light from its centre to the periphery. Spectral lights of a definite composition and purity were used, the quantitative estimations of which were all made in terms of energy. So far as can be judged, a careful control seems to have been made of the many variable factors which tend to introduce themselves in an investigation of this type, and determinations were made both in conditions of light and dark adaptation. It was found that in conditions of light adaptation there was a wide variation of chromatic sensitivity to any given range of wave-lengths from the fovea to the periphery, and that great irregularities occurred in the ratio of the sensitivity of the same colour, or of different colours, at different points in the same quadrant of the visual field, and at corresponding points in different quadrants. This is a fact of importance in the assessment of changes in the colour fields which may have a pathological significance. The conclusion of previous investigators was verified that, given sufficiently high intensities of stimulus, the limits of the visual fields were coextensive with that of white light; and the fact was brought out that the general tendency was for the area of the colour fields to vary with the logarithm of the intensity of the stimulating light. In conditions of dark adaptation the fields for blue and green were limited to 30 or 40 degrees from the fovea. Beyond this limit an increase of intensity in the stimulating light served only to change the achromatic component of the sensation towards white. Yellow, on the other hand, was seen almost to the periphery, and red to the extreme periphery. Within the central area the sensitivity of the dark-adapted eye was found to be far in excess of that of the light-adapted eye. This was already known, but the expression of the difference in terms of energy units is valuable. Moreover, from comparison of the achromatic thresholds of the dark-adapted eye and the chromatic thresholds of the light-adapted eye, it has been possible, for the first time, to evaluate the photochromatic interval on an absolute scale for all kinds of light and for all points on the retina. The definition in precise terms of the first important qualitative change in the reaction of the retina to the intensity of spectral light is of great interest.

The author makes no attempt to relate these results to existing colour theories; but it is evident that until our knowledge of visual sensations is placed upon a quantitative basis by a wide extension of work of this nature, these must always remain essentially of speculative interest.

SURGICAL HANDICRAFT

Though there is always the element of novelty in the perusal of fresh books yet the appeal of new editions of established favourites is often greater, especially when the revision has been as careful as that bestowed upon the tenth edition of *Pye's Surgical Handicraft*,[3] by the late H. W. CARSON. Mr. Carson's untimely death immediately after the work went to press gives, indeed, a special interest to this edition, since it must be regarded as the posthumous contribution of a surgeon of great experience to one of the most generally useful aspects of the art of surgery; for, while not lacking in scientific detail where required, it is particularly to the training of the "surgical artisan" that the book, as its title sufficiently indicates, is directed.

In their preface the publishers draw attention to the fact that "particular care has been taken to avoid sacrificing its individuality," and we are glad to record that this aim has been achieved, for there are many special characteristics of "Pye" which those who are familiar with previous editions would be very sorry to miss, and upon which a good deal of its popularity depended. Not least of these features were the excellent illustrations of Mr. G. Dupuy, which have not only been retained but actually increased in numbers in recent editions. New matter is copious, and includes sections dealing with infected wounds of the hand, where perhaps a reference to the name of Kanavel would not have been inappropriate; the injection treatment of varicose veins; tannic acid treatment of burns; and a brief outline of the uses of radium. The chapter on *x*-ray diagnosis and treatment has been brought thoroughly up to date, and contains some good reproductions of radiograms, which always form a test of the skill of the printer and of the engraver.

The practice of minor surgery varies considerably from school to school, as can easily be seen by comparing the textbooks on the subject from different hospitals. It is not to be expected, therefore, that all the methods described here will find universal acceptance; nevertheless, it can be stated quite confidently that the teaching in *Pye's Surgical Handicraft* is sound in all particulars, and the house-surgeon and practitioner will find it a true vade mecum worthy of their confidence. If some of the most recent innovations in treatment and diagnosis do not find a place in it, we may regard this, not as a sin of omission, but as an evidence of the wisdom of the

[2] *A Quantitative Study of Achromatic and Chromatic Sensitivity from Center to Periphery of the Visual Field.* By Hazel Austin Wentworth. Psychological Monographs, No. 183. Princeton and Albany, N.J.: Psychological Review Company, 1930. (Pp. 192; 50 figures.)

[3] *Pye's Surgical Handicraft.* Edited by H. W. Carson, F.R.C.S. Tenth edition, fully revised. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1931. (Pp. xvii + 641; 22 plates, 343 figures. 21s. net.)

editor in refusing to incorporate methods which are frankly in the experimental stage, and which may fail to stand the test of experience—an attitude requiring strength of character in face of the insistent demand for all that is expressed by the term "modern," whether useful or valueless.

INFANT FEEDING

Infant Feeding in General Practice,[4] by Dr. J. V. C. BRAITHWAITE, is outside the common run of books on the same subject. In his preface he draws attention to the difficulty experienced, both by the student and by the general practitioner, in obtaining adequate and scientific instruction in paediatrics, in spite of the fact that the care of children forms a large part of the practice of the family doctor. But he does not assume, as many writers do, that a rule of thumb, easily remembered, is the sole desire of every busy practitioner; he rather chooses to discuss each part of his subject fully before making a recommendation. In the chapter on artificial feeding, for example, he begins with a section on the elementary chemistry of infant nutrition, and this also has a bearing on the later chapter on nutritional disorders. The importance of breast-feeding is stressed in the first chapter, while the second chapter deals with the difficulties which may arise in the course of breast-feeding. The various methods of artificial feeding, with the advantages and disadvantages of each, are discussed in detail, and the last two chapters are devoted to nutritional disorders and to conditions which may simulate them. Appendices include notes on the calorific values of various foodstuffs, a table of milk-mixtures for infants, and a few simple recipes. As Dr. H. C. CAMERON points out in a foreword, the subject is presented, not from the view of the specialist in paediatrics, still less from that of the propagandist in infant welfare, but from that of the general practitioner with special experience writing for general practitioners, and as such the book should make a wide appeal.

SEX AND DISEASE

Dr. R. V. STORER's book on *Sex and Disease*[5] has been written for the purpose of educating the public concerning the dangers of venereal disease. The book is well known in Australia, and has done good work there. For this reason the publishers have decided to issue an edition in England, as they feel that nothing but good can result from a better understanding, by those uneducated in sex matters, of the grave risks incurred through promiscuous sexual intercourse. After having read this book we can confidently recommend it. Dr. Storer, unlike so many who have taken a prominent part in the anti-venereal campaign, has not allowed any emotional bias to affect his judgement of the value of the various methods by means of which venereal disease may be diminished in the community. He lays equal emphasis on education, the provision of facilities for amusement, the raising of moral tone, and on prophylaxis—that is to say, he recognizes that there will always be certain members of society who will find an outlet for their sexual urge, and that for these people education in preventive measures is of paramount importance. We should like to bring this little work to the notice of all who are interested in the venereal question.

[4] *Infant Feeding in General Practice*. By J. V. C. Braithwaite, M.D., M.R.C.P. With a foreword by H. C. Cameron, M.D., F.R.C.P. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1930. (Pp. xv + 140. 4s. 6d. net.)

[5] *Sex and Disease*. By Robert V. Storer, M.R.C.S., L.R.C.P. Fourth edition. Sydney: Butterworth and Co. (Australia) Ltd.; London: J. Bale, Sons and Danielsson, Ltd. 1930. (4s. 6d. net.)

NOTES ON BOOKS

DACOSTA'S *Modern Surgery: General and Operative*, first appeared in 1894, and since then it has passed through many reprintings and new editions. The tenth edition,[6] revised by the author with the assistance of Dr. Benjamin Lipshutz, has been published this year. It is a large volume of more than 1,400 pages, with many illustrations. The only section which remains as before is that contributed by Dr. Chevalier Jackson, on direct laryngoscopy, bronchoscopy, oesophagoscopy, and gastroscopy.

We have received a copy of the *Transactions of the British Society for the Study of Orthodontics*[7] for the year 1930. A perusal of its contents shows that the society is steadily accumulating data on the strength of which the vexed question of nature or nurture—heredity or environment—as the chief factor of mal-occlusion, may eventually be settled. In particular, communications by Mr. Charles and by Miss Tildesley show that the members are actively interested in the genetic side of the question. We may add that the second International Orthodontic Congress is being held in London this week. The high scientific level of the 1930 transactions make it certain that the British Society will prove itself worthy of the honour accorded it.

Mate in Two Moves,[8] by BRIAN HARLEY, is a treatise that will appeal to readers who are interested in the subtleties of chess problems, and even to those with a very elementary knowledge of the game. The author illustrates his theme by giving nearly 170 examples, each of which is accompanied by lucid commentary.

[6] *Modern Surgery*. By John Chalmers DaCosta, M.D., LL.D., F.A.C.S. Tenth edition, revised and reset. Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 1,404; 1,050 figures. 45s. net.)

[7] *Transactions of the British Society for the Study of Orthodontics, 1930*. London: The Dental Manufacturing Company, Ltd. 1931. (Pp. 105; illustrated.)

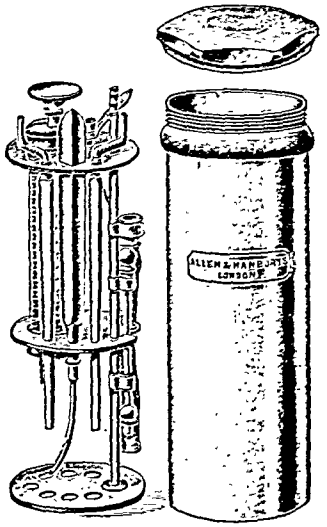
[8] *Mate in Two Moves*. A Treatise on the Two-Move Chess Problem. By Brian Harley. London: G. Bell and Sons, Ltd. 1931. (Pp. 211. 5s. net.)

PREPARATIONS AND APPLIANCES

A SPIRIT-PROOF ANTRUM PUNCTURE OUTFIT

Mr. ALFRED WALFORD, F.R.C.S. (surgeon in charge of the ear, nose, and throat department, Addenbrooke's Hospital, Cambridge) writes:

The difficulty of sterilization of the maxillary antrum



puncture outfit and paracentesis knives before use has been met by the spirit-proof case, illustrated in the accompanying figure, which Messrs. Allen and Hanburys have made for me.

The antral puncture outfit is the one designed by Mr. Cokeley, and all the instruments are of stainless steel.

British Medical Journal

SATURDAY, JULY 25th, 1931

THE PRESIDENTIAL ADDRESS

It is the ambition of the British Medical Association to represent, and at this moment it does represent, every section of the profession. Each variety of medical work is, indeed, represented within the Association more fully than by the separate societies which have been established outside it. It is no matter for surprise, therefore, that the President now entering upon his office should be a full-time medical officer of health, but it is noteworthy that this should be so for the first time in the history of the Association. Dr. W. G. Willoughby, in the admirable Presidential Address which we have the pleasure of printing to-day, says that too much stress should not be laid on this circumstance because it " tends to obscure the very important fact that preventive medicine has formed from time immemorial an important part of the work of every branch of the profession," and he believes that this will obtain in the future to an even greater degree. His address, appropriately and naturally, deals with " Public health: to-day and to-morrow." He is concerned only incidentally with the triumphs of the past ; but sets out from a somewhat novel aspect the present situation, which, in spite of these triumphs, is still sufficiently disturbing, and discusses the position of the medical profession as a whole in relation thereto.

In regard to the present state of the public health Dr. Willoughby acknowledges that he is a little pessimistic. The various sources of information from which a medical officer of health draws his knowledge ' indicate very clearly how much room there is for improvement.' In the year 1929 about one-third of the total number of deaths occurred before the age of 50. Omitting deaths of infants less than 1 year old, there were more than 40,000 deaths of children under 15 years of age, and more than 20,000 within the next decade of life. The expectation of life is still only 55 years for males and 59 years for females. The tables show almost no change at the ages of adolescence, and at 50 the expectation is increased by about two years only. In the elementary schools the daily absence of children, mainly on the ground of illness, is from 8 to 10 per cent. ; while the percentage found requiring treatment for physical defect, excluding dental defect, has been 20 for each of the past four or five years, and it is not decreasing. Many of the ailments concerned in this may be slight at the time, but they have their effect. Of young adults offering themselves for the Navy, Army, and Air Force there is still a large proportion who have to be rejected on account of some defect, and the only marked improvement compared with the figures of 1910 is in dental condition and chest measurement. Each year about half the insured population comes under treatment by insurance practitioners, and the claims for sickness and disablement benefit have doubled in recent years.

There are factors influencing the future outlook which are not altogether encouraging. The population is becoming increasingly older, and this is due mainly to the decrease in the number of young people, the life of the older generations being prolonged but slightly. Thus, the prospect of further reduction of the death rate becomes less and less. The birth rate is declining, and therefore migration becomes of more importance ; and " on the whole our emigrants are of a better type than our immigrants." The reduction of the birth rate is accompanied by a marked decrease in infant mortality. If the former is differential as against the better elements of the population, and if the latter tends to preserve inferior elements, then the outlook is correspondingly depressing. Fortunately, however, neither of these two suppositions can be held to be proved. Dr. Willoughby seems to assume that there is truth in the former ; but further investigation is required, for we are here dealing with the question of stock, and who can yet say what are the criteria by which babies are to be classified in this regard, or, indeed, which qualities of body, mind, or personality are, in changing circumstances, to be considered the most advantageous for the future of the human, or the British, race? With regard to the latter of the two suppositions, Dr. Willoughby declares himself less pessimistic. " When I am told that nature's way, and the best, is the survival of the fittest infants only, I reply that in too many instances, especially when infantile mortality was higher, the fittest themselves often had no chance of survival. A selection depending on ignorance and neglect is not a natural selection. The diseases which took off these infants removed as many of the fittest as of the weaklings." In any case it will be agreed that " it is essential to take care that in reducing the quantity of our available supply for the future of the race we, at all events, endeavour to preserve the quality of the remainder."

Dr. Willoughby looks mainly to the influence of the medical profession to counteract the less satisfactory features of the public health which have been mentioned. " Medical practitioners, in accordance with their traditions of progress, are taking an increasing interest and a greater part in preventive medicine than at any previous period. Thanks to the work of our Association, the spirit of friendly co-operation between the branches of the profession has steadily grown. . . . There are quite a number of practitioners who, in addition to the preventive work carried on in the course of their own private practices, are giving valuable assistance in the public health service. . . . Though the preventive work of the general practitioner is by no means dependent on any work he may carry out in State clinics, modifications which enable him to take part in the treatment of patients in State clinics are so clearly advantageous that there are signs of this being more developed in future. On the one hand the patients themselves are entitled to the benefit of his varied experience, and on the other hand experience in these clinics would be most valuable to him in his other work.

The clinics would be even more useful if they could be co-ordinated with an increased general practitioner service in the homes; if this could be secured, clinics for treatment would be less necessary." Moreover, in the medical curriculum, public health, which has hitherto been detached from the other subjects, is now being increasingly correlated with all those subjects; and the health education of the public, generally wisely conducted in the elementary schools and by private medical practitioners, though not so wisely by some organized bodies, is having a noticeably good effect. Further, research, both by members of the medical profession and by experts in allied sciences, is resulting in epoch-making discoveries; and, though a large section of the population is not, as yet, getting the advantage of a quick and thorough application of these, Dr. Willoughby believes that "the profession is more and more fitted to provide what is required when the opportunities can be found."

Those who heard the Presidential Address on Tuesday, and those who now read it in our columns, will unite in congratulating the President on having inaugurated his year of office by so interesting, thoughtful, and helpful a pronouncement.

TREATMENT OF MENTAL DISORDER

Regarded alike from the scientific and the social aspect, mental disease sets before us problems as perplexing as any in the whole field of medicine. Intrinsically, by its very nature, disease of the mind offers a barrier to our understanding that might seem well-nigh insurmountable. The scientific study of its many manifestations is none the less being successfully prosecuted from many different angles. It may be hoped that these numerous lines of research will converge in a fundamental discovery. Psycho-analytic inquiry on the one hand, and intensive biochemical and pathological investigations on the other, need not be regarded as mutually exclusive. We prefer to believe that the victory, when it comes, will be a common victory, capable of expression in a common language and in a wider synthesis. The researches of Von Monakow have to some extent pointed the way to this larger formulation. But it is when we abandon the words "mental disease," and instead make use of such terms as "insanity" and "lunacy," that the problem ceases to be merely a scientific one; for here there is the inevitable encroachment on other fields, where conceptions of disorder of the mind have become bound up with obsolete legal enactments and coloured by popular prejudices. From the entanglements so brought about psychiatrists have for long been seeking to be delivered so that their science might find unrestricted scope in its immediate practical application.

The Board of Control, whose report for 1930 has now been published,[1] is the official guardian of the mentally afflicted. Its duties are difficult and delicate, and have been carried out with that rare discrimination whereby legal requirements are interpreted with a refreshing common sense. By the Mental Treatment Act of 1930 the work of the Board has been made at once more onerous and more easy; more onerous in so far as the Act has entailed an enormous increase in the work of the department and a consequent reorganization of, and addition to, the personnel; more easy, or at any rate more satisfying, in that the Board does not now have to struggle against the dead weight of outworn legal requirements, but is able to realize that at last something has been accomplished which ensures the opportunity for early diagnosis and treatment, without hindrance, to every afflicted person. It is for others to see that these opportunities are made full use of. They will not lack the Board's advice and encouragement. Many, but not all, of the possibilities that have been envisaged for the better treatment of the mentally afflicted have become actualities by the Mental Treatment Act. This Act does not accomplish all that might have been accomplished, but, despite that, the Board may well claim that it marks an epoch in the treatment of mental disorders in this country. Inevitably there had to be compromise, and acquiescence in what may be regarded as unnecessary restrictions. Against the privileges of the patients there had to be weighed the rights of the community; and it is not surprising that the balance tilted, perhaps, too often towards the latter. The benefits of the Act cannot be gainsaid; and with proper use further benefits must accrue.

The most important provisions of the Act of 1930 are those which govern the extension of facilities for early treatment. The voluntary patient is no longer excluded from a public mental hospital, whether as a rate-aided or as a private patient; and, what is of even greater importance, he may be admitted into any hospital or nursing home approved by the Board; all of which means, or ought to mean, that the occurrences of suicide in patients, who hitherto had to be certified insane as a prerequisite for treatment, should steadily diminish in number. But the voluntary patient is *ex hypothesi* possessed of volition, and is not the sort that can find congenial company among the chronically insane. The Board has been alive to this special danger and has striven to induce local authorities throughout the country so to adapt their mental hospitals as to ensure proper provision for patients who may be deemed to be sensitive and critical of their surroundings. What visiting committees are urged by the Board to do is to provide a separate admission hospital with ample facilities for classification and separate convalescent villas; and many have done so. This would seem to us to be quite necessary, if future development is to be along the lines of the present Act, as, indeed, it must be. The only other alternative, now no longer possible, would have been a thorough separation of recent cases from chronic cases, not merely an artificial separation in one institution, but in entirely separate institutions; for at present the recent case does mix to some extent with the chronic at the hospital sports, and dances, and cinemas, in the workshops, and in the gardens. Such

[1] Seventeenth Annual Report of the Board of Control, for the Year 1930. Part I. London: H.M. Stationery Office. 1931. (2s. net.)

a scheme, however, it must be admitted, is now impracticable, whereas the provisions of the Mental Treatment Act are both practical and desirable. If all the way is not gone towards a complete division, at any rate all that is humanly possible under present economic conditions has been effected, and it is for the local authorities to follow the Board's lead in this matter.

For incipient mental illness, out-patient treatment is of the utmost value. The Board is already gratified by the development of out-patient clinics, and notes with satisfaction that where a clinic is held at a voluntary hospital there is a general willingness to associate with it the superintendent of the mental hospital, and to appoint him on the honorary staff. The Board views this as most desirable, and hopes that local authorities will reciprocate by making the honorary staff of the voluntary hospital the consultants at the mental hospital. It attaches particular importance to such reciprocal arrangements with teaching hospitals from the point of view of medical education; and with this statement of the Board we are in entire concurrence. If mental illness is to be recognized early it is imperative that general practitioners should have had as students ample opportunities for the study of such disorders. By the new code for the reception of "temporary patients" it has become possible to treat, without certification, patients who are incapable of expressing willingness or unwillingness to receive treatment—such cases as are classically represented by the acute toxic confusional states. Hitherto these patients could only be detained under treatment after certification. The scheduled precautions may seem unnecessary, but certification can at any rate be avoided if practitioners will see to it that such patients are dealt with under the Mental Treatment Act and not by the old procedure.

A considerable time must necessarily elapse before the Board of Control can gauge the full effect of these changes in our law. The painstaking preparations which were made to ensure the success of the new Act have been amply rewarded by its smooth and effective operation; and there is every indication that its provisions will be increasingly made use of to the benefit of the whole community.

BIOLOGICAL STANDARDIZATION OF DIGITALIS

The introduction into the *British Pharmacopoeia* of biological tests for the activity of digitalis preparations is a reform long overdue. As a matter of fact, the leading drug houses have practised such standardization for more than twenty years, and therefore the medical profession has been able to obtain reliable preparations. The official pharmacopoeial regulations have, however, furnished no safeguard against the sale of inactive preparations of digitalis, and in practice wide variations in activity have been demonstrated. We are pleased to learn from the report just issued by the General Medical Council (Report No. 4 by the Subcommittee on Digitalis and Strophanthus)[1] that this omission is to be remedied in the new *Pharmacopoeia*. This report contains recommendations on the methods of biological standardization to be adopted for these drugs. In the case of digitalis, an international standard powder has been recognized in Germany since 1928, as well as an international unit of dosage, which is equivalent to the specific activity contained in 0.1 gram of the international standard powder. In Germany manufacturers are required to make preparations from digitalis leaves which do not differ in activity from the standard powder by more than 15 per cent. This rule discourages the production of digitalis leaf of more than an average activity; therefore the English subcommittee has made regulations which aim at avoiding the necessity for dilution. The regulations are somewhat complex, because they are required to suit not only the wholesale manufacturers but also the pharmacist who desires to make up his own preparations. Digitalis leaf must be standardized biologically by comparison with a standard preparation (except leaves to be used for making tinctures, which will be standardized before issue). After standardization the manufacturer can, if he wishes, adjust the potency of the leaf by admixture with other leaves so as to bring it to the standard strength of 10 units per gram. Alternatively, the leaf may be made directly into tablets or pills, and the contents of the preparation described in terms of units of activity. Tincture of digitalis may be prepared in two ways: (*a*) from unstandardized digitalis leaf by the percolation process, when the final volume of the tincture is adjusted in accordance with the result of a biological test; (*b*) from previously standardized digitalis leaf by the percolation process, without carrying out a biological test on the percolate. With regard to the biological assay of digitalis, the methods recognized are those depending upon the lethal dose for frogs or upon the intravenous dose required to arrest the heart beat of either a cat or a guinea-pig. The effects produced on a series of animals by the preparation under test are compared with the effects produced by the standard preparation in a parallel series of experiments. The International Conference at Geneva recommended the use of crystalline ouabain as a standard for preparations of strophanthus. The subcommittee, however, recommends the adoption of a standard tincture of strophanthus. It has laid down details for the standardization of tincture of strophanthus and of strophanthin. The devising of biological tests that can serve as presumptive legal standards is a matter of much difficulty, and the subcommittee is to be congratulated on the care and skill that it has shown.

[1] Published by authority of the General Medical Council, 44, Hallam Street, W.1. (1s. 6d.)

THE LIMITATION OF MANUFACTURE OF DANGEROUS DRUGS

The conference on the limitation of the manufacture of narcotic drugs, to which reference was made in these columns on June 27th (p. 1125), concluded its labours on July 13th by the signature of a new International Convention intended to implement The Hague Opium Convention of 1912 and that of Geneva of 1925. As this new Convention is not to become operative unless and until it shall have been ratified by twenty-five nations, of whom four must be manufacturing countries, it may be reasonably concluded that the international control of the commerce in dangerous drugs will, for some considerable period, be regulated by the provisions of The Hague and Geneva Conventions. A

scheme for the allocation of fixed quotas of production among the eight manufacturing countries, though advocated by the League of Nations Advisory Committee, by the London Conference of last year, and by the British delegate, was finally rejected. The new Convention applies to codeine and dionin, as well as to morphine, heroin, cocaine, peronin, and their preparations. Largely owing to the British representations the prohibition of the manufacture of heroin, as already effected in the United States, was not approved of, but it was agreed that exports of that alkaloid should be consigned only to Governments. Moreover, any new product from opium or coca leaves is not to be exported until the Health Committee of the League of Nations has decided whether or not such drugs may lead to addiction. The reports so far available of the articles of the new Convention state that they will allow each manufacturing nation to obtain trade where it can, but each is to undertake not to manufacture in excess of the annual estimates of the amounts required. Such estimates are to have regard to home requirements, to certificated exports, to Government stocks, and to what is needed for conversion into other products. Any excess in one year is to be deducted from the next year's estimate. It is not clear on the face of it how this complicated procedure, if and when ratification by twenty-five nations shall have been achieved, will effect any advance on the methods hitherto devised under The Hague and Geneva Conventions of 1912 and 1925. The putting of those Conventions into force by Great Britain under the Dangerous Drugs Acts, 1920–25, appears, according to the League of Nations' "Analysis" (*British Medical Journal*, July 18th, p. 107), to have reduced the amounts of morphine, heroin, and cocaine "unaccounted for" to negligible proportions. If all the producing countries had ratified and carried out the Conventions of 1912 and 1925 in the same way as Great Britain the desired suppression of illicit traffic might have been more effectively realized.

COMPULSORY VACCINATION

On July 16th the Minister of Health received a deputation of Members of Parliament on the question of the abolition of compulsory vaccination. Mr. Leach, M.P., said that the views of the deputation were set out in a memorandum, of which a copy had been sent to the Minister. Their sole object was to secure that compulsory vaccination should be abolished, and they hoped that the Government would be willing to introduce, or give facilities for, the necessary legislation. They believed that all they wanted could be achieved by a one-clause Bill. The Minister said, in reply, that he had read the memorandum submitted to him. It contained a number of statements with which he must not be taken to be in agreement, but he thought it was unnecessary for him, on the present occasion, to discuss the merits of statutory vaccination. His position was that he was bound, as Minister of Health, to administer the law as it stood. The effect of the Local Government Act had been to place the administration of the Vaccination Acts in the hands of the larger local authorities, and he did not contemplate any drastic amendment of the law until those authorities had had time to gain experience of the operation of the Acts in force and furnish him with their views and advice. He could not admit that the object which the deputation had in view could be achieved by a one-clause Bill. On the contrary, he believed that complicated and highly controversial legislation would be necessary to secure what the deputation desired. In view of the many commitments of the Government and of the great pressure on parliamentary time, he was bound, in present circumstances, to prefer the claims of other more urgently needed legislation to those of a Vaccination Bill. While, therefore, he could have no objection to the introduction of a private member's Bill as a means of testing public opinion, he could give no assurances—which would in any case require Cabinet authority—either of support for such a Bill or of the introduction at an early date of Government legislation.

THE CANCER CAMPAIGN IN AUSTRALIA

Steady advance in the process of co-ordinating various lines of investigation, in the better organization of treatment, and in the diffusion of information about recent work is reported in the May issue of the *Journal of the Cancer Research Committee of the University of Sydney*. This quarterly publication is distributed to every medical practitioner in the Commonwealth. It has now been decided that, while the University will continue to concern itself primarily with the direction of cancer research, and will retain some association with the actual arrangements made for treatment, the hospitals should now be able to relieve it of a certain amount of the responsibility of providing facilities for patients. The administrative problems arising out of this decision are receiving careful consideration. A well-attended post-graduate course in radiotherapy for general practitioners was held in 1930, and the University is contemplating the institution of a diploma in radiology. Aided by the Cancer Fund of Sydney University, to which many references have been made in these columns, nine research workers have been continuously engaged in the attempt to elucidate various cancer problems, one of these being an investigation of the activities of radiations of different wave-lengths. The professor of pathology is making a preliminary examination of the large collection of material and records which have been accumulating at the Royal Prince Alfred Hospital, with special reference to the radio-sensitivity of malignant and other tumours. This issue of the *Journal of the Cancer Research Committee* includes a practical article on the problem of the "erythema dose," by Drs. A. T. Nisbet and Leila Keatinge, who point out that this rather vague term has as yet no standard value, its implications being modified by different conditions of filtration, voltage, the area of skin infiltrated, the thickness and density of the tissues, the method of dosage, and the distance of the anti-cathode from the skin. The authors indicate in this connexion a possible definition of certain degrees of erythema which appear to be capable of being standardized. In March, 1930, the first Canberra Cancer Conference was held, dealing largely with radium; a second conference followed twelve months later. A short report is published of this second meeting, at which the opinion was expressed that the further development of consultative clinics must include some reliable system for following up patients after treatment. The lines of progress of cancer research in Australia are depicted generally in an article by Mr. H. G. Chapman, who

describes briefly what is being attempted in various centres, and the degree of success achieved so far in each. By means of this university periodical, research workers are kept in touch with each other, and the general practitioner receives at regular intervals practical information about the progress that is being made.

POST-GRADUATE WORK IN VIENNA

The American Medical Association of Vienna, which was founded in 1904, and is a society of English-speaking medical practitioners, publishes a useful "blue book" every two years. The new edition of this, which has recently appeared, contains a comprehensive list of the study courses available in Vienna throughout the year for those who have little or no knowledge of German. The society has arranged with prominent physicians and specialists of the University of Vienna to conduct special courses and provide private tuition as may be required, and on reasonable terms. About 4,000 medical practitioners have become registered members of the association since January, 1923; a quarter of these joined it last year, an indication of the rapid growth which is going on. Any medical practitioner arriving in Vienna as a total stranger, even though unacquainted with the German language, can, through its agency, obtain specialist instruction in any subject for periods of any length. *Ars Medici*, the official monthly bulletin of the American Medical Association of Vienna, contains reviews and abstracts of the latest publications in foreign medical literature, special departments being devoted to German and Austrian medical research; a special section deals with the scientific and social activities in Vienna. Inquiries may be addressed to the secretary of the American Medical Association of Vienna at its headquarters, Alserstrasse 9, Vienna VIII.

ANNUAL MEETING NOTES

"THE BOOK OF EASTBOURNE"

All members attending the ninety-ninth Annual Meeting of the British Medical Association at Eastbourne this week have received a copy of *The Book of Eastbourne*, written for the occasion, and edited by the Rev. W. Budgen, M.A., F.S.A. It is an interesting and very well-produced volume, worthy of a place beside the attractive books issued in connexion with recent meetings of the Association. Indeed, the executive authorities are altogether too modest about it in their foreword, though they pay a well-deserved tribute to the Editor, who not only enlisted the help of experts on various subjects concerning the locality, but also wrote several of the articles on Eastbourne and its neighbourhood in times past and to-day. In the opening chapter Eastbourne is epigrammatically described as a modern town of ancient lineage: "The rapid growth in recent years of this highly favoured watering-place has given an impression that it is entirely a modern creation, without history and of no consequence in days gone by. This is quite contrary to the facts." A large part of the rest of the book provides convincing evidence in rebuttal of the popular view. Sir Arthur Smith Woodward (who co-operated in the discovery and interpretation of the Piltdown skull) writes on the geology of the district, and Mr. E. Cecil Curwen on the prehistory of the Eastbourne Downland. Mr. Walter H. Godfrey contributes two chapters of historical interest, one on Lewes, the county town, and the other on mediaeval hospitals, with special reference to those in the county of Sussex. Mr. John E. Ray writes on Pevensey and Battle, and Mr. Budgen on ecclesiastical history and on the villages near Eastbourne, while Mr. Ernest Straker gives an account of the Sussex iron industry, which was for three centuries the most important trade in the county. The flora and avi-fauna of the Eastbourne district are described by the Rev. A. A. Evans, and there is an unsigned note on Eastbourne as a centre of education, which recalls the saying that there are 365 schools in that town, one for each day of the year. The President, Dr. W. G. Willoughby, whose portrait forms the frontispiece, writes with full knowledge and authority on the natural and social conditions of Eastbourne, with a brief account of the local hospitals, which were described by him in more detail in our issue of April 11th. *The Book of Eastbourne* is printed in beautifully clear type, the many illustrations are excellently reproduced, and (to round off a thoroughly workmanlike production) there is a full index. Everyone who takes part in the Annual Meeting will value this book as a memento, and feel grateful to Mr. Budgen and his accomplished fellow contributors.

ANNUAL REPRESENTATIVE MEETING

Friday, July 17th

It was fitting that the first session of the Representative Meeting in the Town Hall at Eastbourne should be marked by a tribute to the personality and work of one whose absence, after so many years' service to his profession and the community, could not but cast a shadow over the opening proceedings. The Representative Body honoured the memory of E. B. Turner, and expressed its sympathy with his wife and family with a deep and abiding sense of personal loss. Before turning to the business of the day, the Chairman extended the welcome of the meeting to an unusually large number of new representatives, over seventy of whom shared its deliberations for the first time. Amongst old friends a very special welcome was accorded to Dr. R. H. Todd, "the representative of Australia." Our full report of the first two days' proceedings is published in the *Supplement* this week.

Adoption of the standing orders was followed by a brisk discussion on the methods of reservation of seats, which resulted in a victory for those who hope to discount the drawbacks of late arrival at the place of meeting by early rising on the morning of the first day. Next year at least there will be no advance reservation of seats. This was followed by the election of Lord Dawson as President of the Association for the year of its centenary, and the welcome as a Vice-President of Professor Burgess, who, in the unavoidable absence of Professor Harvey Smith, has been Acting President during the past year. The preliminary proceedings were concluded by an enthusiastic reception of the Chairman of Council's reference to the award of the Gold Medal of the Association to the Treasurer and the Medical Secretary, and the meeting passed to its main business in a discussion, opened by Dr. B. H. Pain with characteristic vigour and lucidity, on the method to be adopted in the promulgation of the Association's policy, centrally and locally. The motion which Dr. Pain introduced dealt specifically with schemes for maternity service, but the general principles formulated by the Chairman of Council in the course of the debate are of far wider application, and it is important that they should not be overlooked in determining the appropriate functions of the central and local organization of the Association.

In his presentation of the Financial Report Mr. Bishop Harman may claim an unusual triumph, since he escaped most of the customary criticism. Mr. Waterfield's question as to the proportion of the Association's resources directly devoted to the promotion of scientific research and medical

education elicited a striking statement, which deserves detailed study. On the Organization Report the Council's proposal for the creation of a class of Foreign Corresponding Members received cordial approval. The absence of controversial business left time for an interesting analysis of the composition of the profession, which Dr. Morton Mackenzie introduced with a well-deserved tribute to the card index department at the head office. It is to be hoped that Mr. Souttar's reminder, on the Science Report, that the individual may best help research by engaging in it personally, and his explanation of the meaning of the time limit suggested in connexion with the collective investigation on cancer, may be productive of more effective support than has yet been forthcoming for this important undertaking of the Association.

Dr. Lyndon, whose return to active duty was warmly welcomed by the meeting, had no easy task in presenting the Council's recommendation in connexion with the ethics of patenting inventions and discoveries in the medical field. The discussion which followed his explanation marked a real advance since last year in the general appreciation of the difficulties to be met, and a healthy desire to explore all relevant facts before deciding upon the best method of applying the traditional standards of the profession to the increasing complexities of international economic conditions. It showed also that for the moment there remain real differences of opinion within the profession, and perhaps some slight misgivings as to the wider implications of one speaker's impassioned sentiment against having any sentiment at all in professional matters. The amendment finally adopted, on the motion of Sir Robert Bolam and Dr. Bone, has the merit of reasserting traditional values, without unduly restricting legitimate development of new methods of work pending the production of a comprehensive and definite statement of policy on an extremely difficult point. The Journal Report elicited a warm expression of appreciation of the improvements in typography and in the reproduction of photographs, effected under conditions of considerable difficulty during the past year. It was followed by the Medico-Political Report, on which Dr. Bone found himself in the unusual position of having only two minor recommendations to put forward, on both of which he was not unwilling to accept modifications suggested by the Divisions. The subsequent debate on the vexed question of methods of collecting fees for attendance on road accidents was distinguished by the ingenious contribution offered by Dr. Pain on behalf of Kent, an effective speech by Dr. Nash suggesting the possible contribution of the public health service in this connexion, and an interesting review of the manner in which the question has been dealt with locally so far as police calls are concerned.

Saturday, July 18th

The agenda for Saturday suggested at the outset a day of small things, and the Representative Body was in fact largely employed in dealing with points of detail. Issues of far-reaching importance were, however, raised in general discussion on each of the four reports which fell to be considered. On the National Health Insurance Report such a discussion was opened with characteristic fervour by the member for Banff in connexion with the regulations restricting the opportunities of insured persons to exercise the right of free choice of doctor, and resulted in an emphatic protest, the importance of which was rightly stressed by Dr. Brackenbury, against the imposition of such restrictions. Perhaps not the least significant feature of the debate was Dr. Dain's incisive comment upon the allocation of responsibility for some at least of the present difficulties in connexion with certification. The Council's recommendations for the representation of Northern Ireland on the Insurance Acts Committee and with reference to the administration of additional benefits were accepted as a matter of course, and the meeting warmly endorsed the protest of Newcastle-on-Tyne against the official sanction of the system of offering gifts as an inducement to the presentation of prescriptions by insured persons. The impression left by the discussion of the report on ophthalmic services was that the urgency of the need for an economically practicable means of supplying qualified ophthalmic services to the insured population is in no way diminished; that the Ophthalmic Treatment Board has made sound progress in this direction during the past twelve months; and that the criticisms of the scheme came in the main from those areas where it was not yet fully established. The recommendation deprecating the instruction of opticians in clinical ophthalmology was accepted without serious question, and in a definitely improved form.

No recommendations were submitted by the Council on the Public Health Report, but the motions of Divisions raised issues of fundamental importance, those from St. Pancras and East Norfolk threatening the integrity of the agreed scale of public health salaries, those from Brighton challenging the constitutional validity of an important part of the operative policy of the Association. The danger was averted at the outset by the ruling of the Chairman on the point of order involved. That this was achieved without the loss of a useful discussion on the possibility of improving the constitutional provision for determining the policy of the Association was largely due to the statesmanlike manner in which Dr. Hawthorne handled a somewhat awkward point. The motion from Bournemouth on the development of health services under the Local Government Act occasioned an informative review of the progress actually made in different parts of the country, and the manner in which the Association has contributed to that progress.

On the Hospitals Report the preliminary discussion on the remuneration of visiting staffs of voluntary hospitals for the treatment of State-maintained and rate-maintained in-patients showed that the policy which some Divisions sought to stigmatize as impracticable was already working successfully elsewhere. In presenting the Report on the Problem of the Out-patient the chairman of the Hospitals Committee took the unusual course of asking leave to adopt at the outset the rearrangements proposed by Hendon, Marylebone, and Liverpool. The reception of the request lent some colour to a suspicion that not all the representatives had made that preliminary survey of the documents before them which would have removed any doubt as to the scope and effect of those amendments. The rejection of his proposal to refer the report back for further consideration can hardly have come as a surprise to Sir Ernest Graham-Little, who described his motion as a forlorn hope. The vote left no doubt as to the confidence of the meeting in the capacity of the Hospitals Committee of the Association to arrive at a fair estimate of the actual conditions of hospital practice, or its verdict on the merits of the policy presented for its consideration.

Monday, July 20th

Monday morning had been allocated in advance to the discussion of medical charities and the work of the Overseas Branches and Divisions. Full justice was done by Dr. Douglas, in his eloquent appeal, to the urgency of the call for more general, more sustained, and more generous support for the charities; to the memory and example of the pioneers to whom we owe the existing provision for relief of distress in the profession; and to the work actually done by the British Medical Association, centrally and locally, during the past year. If the problems of medical benevolence were to be solved by unfettered debate, the outlook for next year would be

bright indeed, for there was much "talk about it and about," and Sir Robert Bolam had some justification for his remark at one stage of the discussion that if he had arisen betimes to every point of order, he would have had little rest during its progress. From the purely financial point of view the amount required to meet the position is insignificant, and such corporate study of its implications should do something towards removing what has been a standing reproach to the profession for far too long.

On the reports of the work of the Dominions Committee and the Oversea Branches the meeting had the usual opportunity of making the acquaintance of the oversea representatives. Distinguishing features of the discussion were the Chairman's tribute to the example of successful organization offered by the Gibraltar Branch; Mr. Mill's account of the part played by the Association in the disastrous earthquake in New Zealand early this year, and his appreciation of the sympathy and help offered by the parent body; and Dr. R. H. Todd's practical suggestion for improving the service offered to the Oversea Branches by the Central Office.

The debate on the Hospital Report, resumed on Monday afternoon, by no means reached the usual standard of the Representative Body. It left the impression that the meeting was mainly concerned with what Dr. Dain (in a moment of pardonable exasperation) described as doing drafting work and doing it very badly. This was due in part to diversities of opinion on the platform and a consequent failure of the help usually available from that quarter. But tedious as it sometimes seemed, the debate was not without its uses, for the Hospital Policy of the Association is primarily an instrument of education, and as such it must fail, unless it is put forward at every stage by persons fully seized of its implications. Time given to the elucidation of even minor points is therefore not wasted. In the event, the Council was left free to proceed with its programme in respect of out-patient departments and schemes for providing consultant services for "contributory" patients—a result which owed much to the timely help given by Sir Robert Bolam. For the rest the meeting emphatically refused to express any opinion upon the material or ethical aspects of sweepstakes as a method of financing voluntary hospitals, satisfied, perhaps, with the earlier discussion upon the motion from Torquay.

A motion from Brighton, designed to prevent encroachments on private practice in the sphere of "mental illness," produced one of the very few close and informative debates which took place during this year's meeting. A comprehensive series of motions by Kensington was presented by Mr. Stratford, and received by Dr. Dain as a happy augury of the part to be played by Kensington in the near future in the development of National Health Insurance services. Most of the motions from individual Divisions were, with the consent of the meeting, referred to the Council, but that on the charges levelled at the profession in connexion with increased sickness certification under the Insurance Acts elicited a statement of substantial value from Dr. Dain.

It was a happy conjunction by which, when the moment came for Dr. Hawthorne to relinquish the high office in which he has rendered such devoted and distinguished service to the Representative Body for an extended period, the thanks and appreciation of the meeting were voiced by one of the first women representatives sent by an Oversea Branch—a relatively junior member of the Representative Body whose energy has been conspicuous throughout the meeting—and by one of Dr. Hawthorne's predecessors in the chair.

LUNCHEON TO REPRESENTATIVES FROM OVER-SEAS

On the first day of the Annual Representative Meeting the representatives from over-seas were entertained at luncheon at the Cavendish Hotel, Eastbourne. Dr. C. O. Hawthorne occupied the chair, and gave a welcome to the guests. He said that it was fully appreciated what the journey must have meant to many of those present in time, trouble, and expense. Those at home desired to cultivate their personal acquaintance, and to hear of the activities, and, if such there were, of the difficulties of the Branches from which they came. The guests would be particularly welcome on the platform of the Representative Meeting when the work of the Oversea Branches came forward for discussion, and he hoped that when they returned they would bear with them a message of good will and greeting to their comrades. The British Medical Association, Dr. Hawthorne continued, had an imperial range and interest, though it was not concerned with any of the contentious questions which disturbed and agitated imperial politics and economics. This year, owing to the fact that the meeting lay between the visit to Canada of 1930 and the Centenary Meeting of 1932, the number of oversea guests was rather smaller than usual, but, if fewer, the welcome which was extended to them was no less cordial. It was hoped during the Centenary Meeting to have a special meeting for discussion of some topic in which all the Branches, home and oversea, had a common interest, and possibly some suggestion might be forthcoming on the present occasion which would result in a fruitful conference next year. Three very brief responses were made on the part of the oversea guests. One was by Mr. T. Mill of the Canterbury (New Zealand) Division, who said that in his Dominion at least the value of the British Medical Association was thoroughly understood, because practically every member of the profession there was in the fold of the Association. It was the furthest away of the Dominions geographically, but spiritually perhaps the nearest. The second response was from Dr. D. H. Wessels of Capetown, who spoke of the excellent results of the visit of the Medical Secretary to South Africa. Large accessions of membership had taken place there, and during the last session a very creditable Medical Act had been placed upon the Statute Book. Dr. W. Anstey Giles of the South Australian Branch, who also responded, claimed to be the oldest member of the Association present, having joined in 1883. He spoke of the pleasure and benefit he had derived from meetings of the Association in South Australia, and also of the value derived from the visits of the late Dr. J. A. Macdonald, Sir Ewen Maclean, and of other visitors from headquarters. Time did not permit of further speech-making, but the names of the oversea guests present were read by Dr. Anderson. They included, in addition to those mentioned, the following:

Lieut.-Colonel G. T. Burke (United Provinces), Lieut.-Colonel R. E. Wright (South Indian and Madras), Major C. Crawford Jones (Grenada), Dr. J. W. Adams (Border Branch, South Africa, East London Division), Dr. D. P. Williams (Assam Valley), Dr. G. Waugh Scott (Malayan), Dr. H. B. Van der Merwe (Pretoria), Dr. W. R. Fea (South Canterbury, New Zealand), Dr. W. Dunlop (Mesopotamia), Dr. R. H. Todd (New South Wales), Dr. J. A. Doctor (Wellington, New Zealand), Dr. J. Hutson (Barbados), Dr. S. Burfoot (Punjab), Dr. Theodora Easterfield (Poverty Bay, New Zealand), Dr. J. B. D. Galbraith (Victorian), Dr. J. D. Reynolds (Uganda), Dr. A. G. Coia (British Guiana), Dr. H. Ludovici (Ceylon), Mr. H. J. Eizenberg (Queensland), Dr. Agnes Bennett (Palmerston North, New Zealand), Dr. B. Spearman (Zanzibar), and Dr. L. D. Lennard (Uganda).

HAMILTON BAILEY: COMPLETE ERADICATION OF THE THYROGLOSSAL TRACT

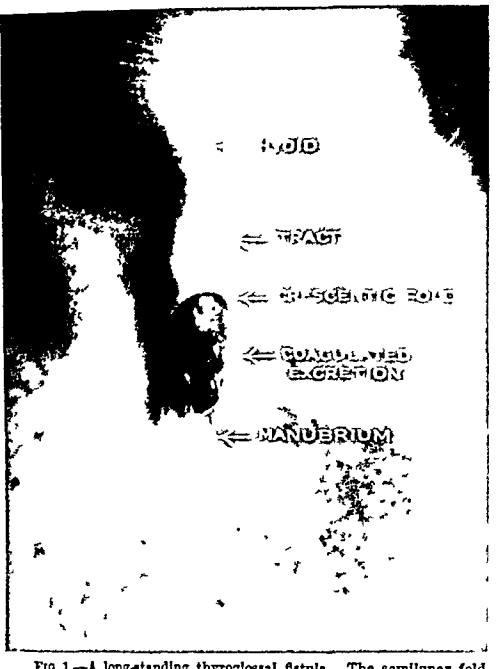


FIG 1.—A long-standing thyroglossal fistula. The semilunar fold is characteristic



FIG 2.—Lateral radiogram after an injection of lipiodol into a thyroglossal fistula. The tract passes up to the foramen cæcum. (Radiogram by Dr. H. N. Crowe, Worcester.)

R. H. McKEAG: PREVENTABLE DENTAL DEFORMITIES

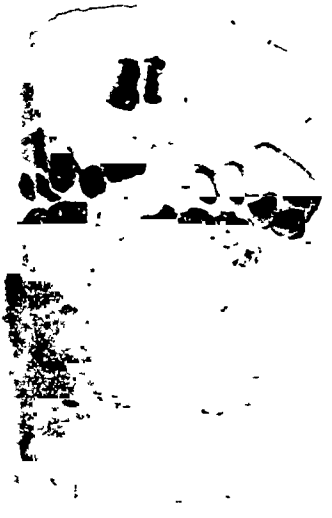


FIG 1.—Results of adenoids. Note narrow crowded arches, protruding upper incisors, corners for food to collect in which the tongue cannot clean. This patient has a receding chin and a vacant perpetual grin.

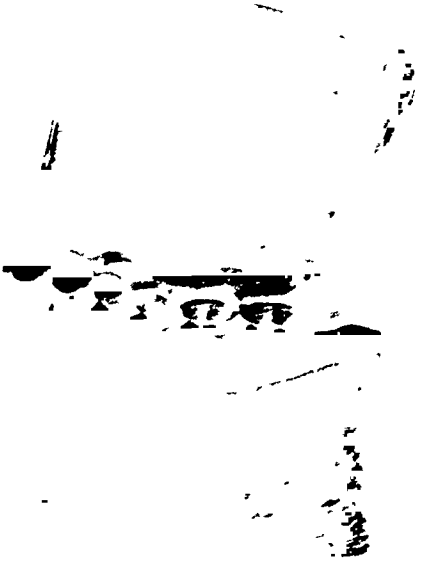


FIG 2.—Result of thumb-sucking. Note protruding front teeth. The appearance of an otherwise good looking girl is entirely spoilt by this deformity



FIG. 3.—Result of lip-biting and tongue-biting. Note protruding upper left central due to lip-biting, and complete loss of articulation on the left side, due to keeping the tongue between the teeth.

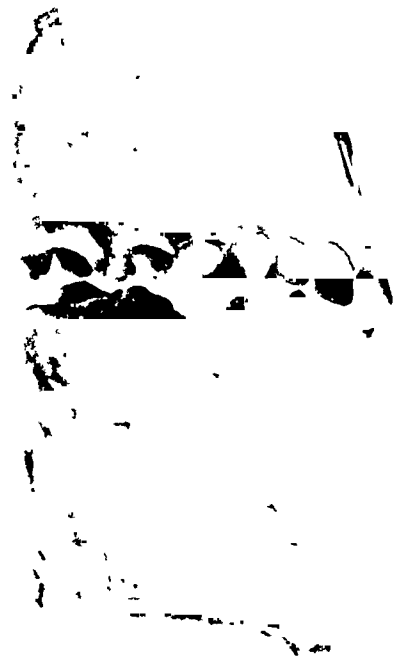


FIG. 4.—Same as Fig. 3, showing the normal articulation on the right side. The patient has acquired considerable mobility of the lower jaw and can bite on both sides, though not using both together.



FIG. 5.—Result of premature loss of deciduous teeth. Note extreme crowding of teeth. The lower front teeth have fallen back and have grown too long in trying to reach the upper teeth; instead of biting on the upper teeth they bite on the mucous membrane of the roof of the mouth.

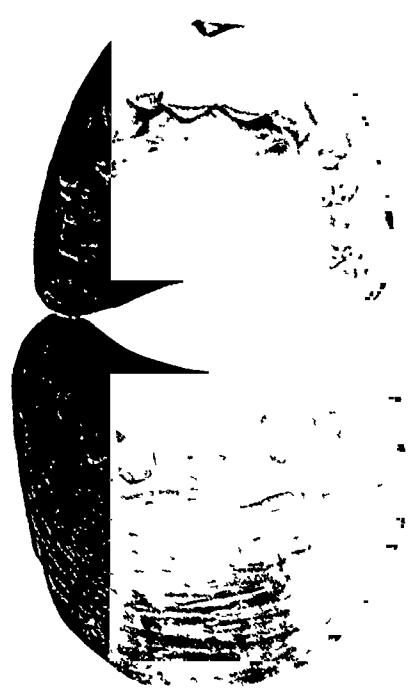


FIG. 6.—Same as Fig. 5. Note lack of growth of upper alveolus. The gum in the front of the lower jaw is very inflamed and the teeth are coated around their necks with tartar.



FIG. 1.—Radiogram taken November 3rd, 1930, showing separation of the epiphysis of the femur and upward displacement of the trochanter.

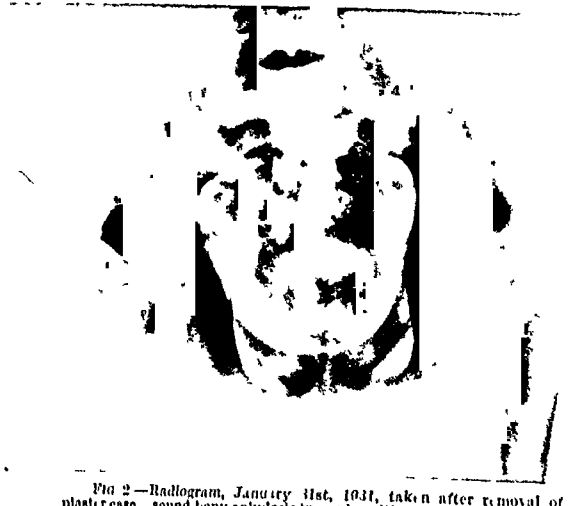


FIG 2.—Radiogram, January 31st, 1931, taken after removal of plaster case, sound bony ankylosis in good position.



FIG. 1.—Cross section of medulla just below pons (Case 1).



FIG. 2.—Tumour of the kidney (Case 1).

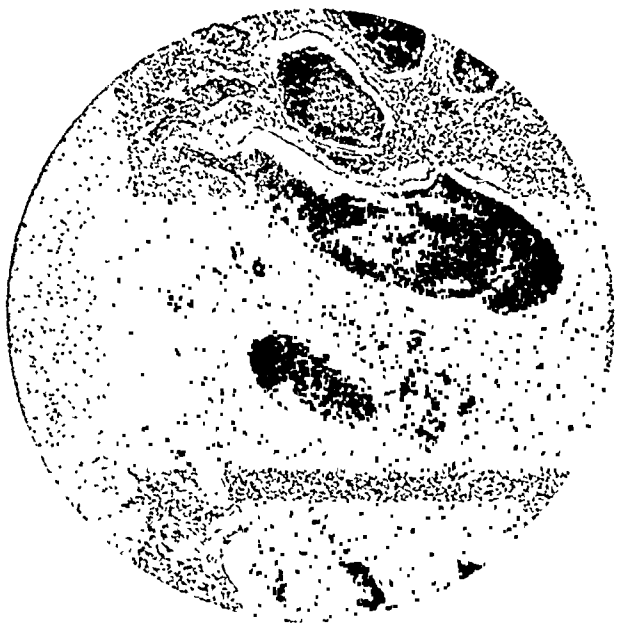


FIG. 3.—Tumour of the medulla × 47 (Case 1).

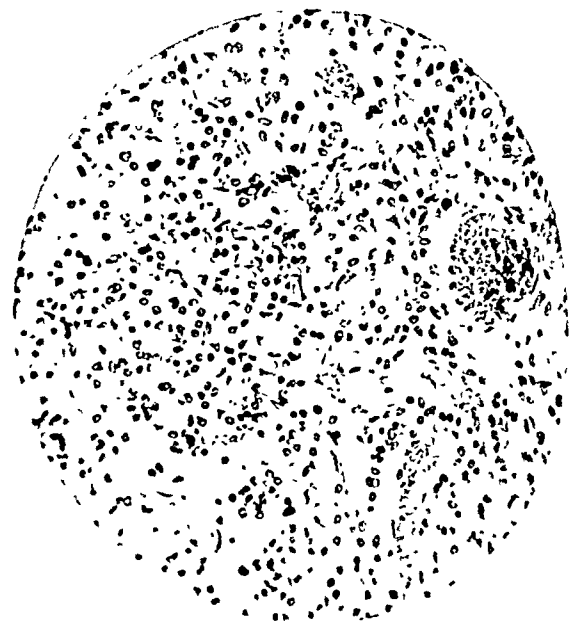


FIG. 4.—Tumour of the medulla × 300 (Case 1).

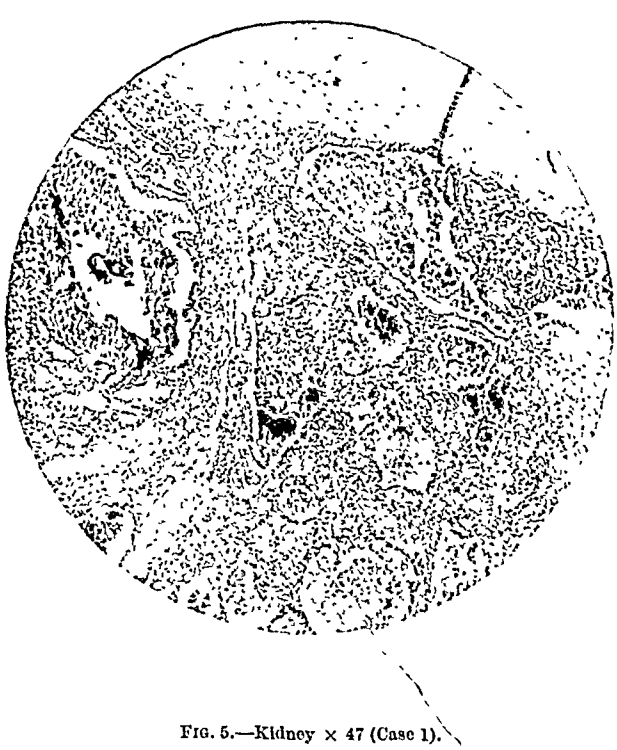


FIG. 5.—Kidney × 47 (Case 1).



FIG. 6.—Kidney × 300 (Case 1).

IMPERIAL SOCIAL HYGIENE CONGRESS

THE VENEREAL DISEASES PROBLEM THROUGHOUT THE EMPIRE

An Imperial Social Hygiene Congress, organized by the British Social Hygiene Council, was held at the British Medical Association House, Tavistock Square, from July 13th to 17th. At the opening session, which was presided over by Sir BASIL BLACKETT, and afterwards by Mr L. S. AMERY, M.P., an address of welcome to the delegates from associations in the Dominions and Colonies was delivered by Lord PASSFIELD, Secretary of State for the Colonies, who expressed the view that in venereal diseases, as in others, science had gone ahead of administration. The discovery of radical methods of treating syphilis by injecting arsenical compounds, he said, was one of the greatest discoveries in modern medicine, but administration, which included the education of public opinion on the subject, had not yet taken the fullest advantage of the facilities which science had made available.

The remainder of the first day of the congress was devoted to short addresses by speakers from all parts of the Empire who described the present position in respect to venereal diseases, the administrative measures for treatment and prevention, and the reaction of public opinion. Particular interest attached to the account of administrative measures in New Zealand, where the Government has wide powers, the Department of Health being authorized to order to hospital any infected person, and to institute legal proceedings against any who failed to take proper precautions against the spread of his infection.

At the second session, over which Surgeon Rear-Admiral R. St. G. S. BOND presided, the problem as it affects the defence forces and the mercantile marine was discussed. Surgeon Commander R. J. G. PARNELL referred to the decreasing prevalence of venereal diseases in the Navy. The average number of cases for the three years 1911–13 was 12,646, as compared with 6,258 for the three years 1927–29, and the annual average of days lost to the Service during the former period was 273,179, as compared with 139,070 during the latter. His personal view was that prevention was primarily a matter of education. The position of affairs in the mercantile marine was put forward by Dr. A. O. ROSS (venereal diseases officer, City and Port of Liverpool), who pointed out that there were in that Service approximately 170,000 men, who, by reason of their calling, were exposed to almost constant sexual temptation, and there was no single authority like the Admiralty to issue regulations with a view to uniformity and discipline.

THE CHOICE OF REMEDIES IN SYPHILIS

Colonel L. W. HARRISON opened a discussion on this subject in the medical conference. The choice of remedies, he said, was probably more important in the early stages than in the late; in the early stages he considered that the thing to do was to concentrate on the eradication of the disease out of hand. Of the arsenobenzene compounds he gave first place to the original '606'. He believed that it hit the spirochaete harder and longer than did '914' in a dosage which was equivalent in terms of arsenic. Unfortunately, the use of '606' was attended by inconveniences in the form of reaction which would deter many patients from continuing attendance, and he thought that the better results it would achieve in the individuals who persevered would be more than counterbalanced by the defaulting of others which the immediate reactions would produce. Of the other preparations he thought that the sulpharsenobenzene class, given deep subcutaneously, acted better than '914' given intravenously, but they often caused sufficient pain to defer the clinic patient from attendance. The tendency in his own clinic was to use more '914,' though in private cases he used more sulpharsenobenzene than '914.' Another disadvantage of sulpharsenobenzene was that it seemed to cause more aplastic anaemia. He believed that approximately equal results were to be expected from equivalent doses of '914' or stabilarsan given intravenously, and of sulpharsenobenzene given deep subcutaneously, or from silver salvarsan intravenously in half these doses, consequently one would use the preparation which appeared most convenient in the circumstances, reserving others for use as changes in subsequent courses where the patient had not responded to the first course so well as the average. In speaking of bismuth, Colonel Harrison mentioned that at St. Thomas's clinic a series of cases were being treated with cardyl in conjunction with '914,' and he hoped in due course to be able to compare the results with those of treatment with bismuth oxychloride in conjunction with the same amount of the arsenical preparation. With regard to the place of mercury in the therapy of early syphilis, the antisyphilitic effects of mercury were proportional to the mercurial ions concentrated in the tissues. In the majority of cases one was brought up short of one's goal by the patient's intolerance of the necessary dose. The administration of mercury by the mouth in early cases should only be adopted when circumstances prevented the use of other routes. The choice of insoluble preparations was between calomel, mercury in fine subdivisions, and the salicylate. Of these from the therapeutic point of view, calomel, on account of the regularity of its absorption and its activity, was the best. The greater pain caused by this drug could be largely obviated by an anaesthetic vehicle. When calomel could not be tolerated, he used mercurial cream, but in no greater concentration than 10 per cent. He would reserve mercury for cases in which bismuth was impracticable.

In the discussion following Colonel Harrison's paper, Dr JAMES MCINTYRE (co. Durham) said that in his area insoluble preparations of bismuth were found to give the best results. He worked in close association with tuberculosis officers, who were very definite in their opinion that arsenical preparations lit up a tuberculous focus. Many patients in this depressed area were suffering from under-nutrition, and among these, when arsenical treatment was employed, jaundice was found to be very marked. Dr E. T. BURKE (Salford) remarked that the rate of elimination of arsenobenzene remedies was so very rapid that in his clinic it was considered better to have the patient attend twice weekly than to give one single dose in a seven-day period. He considered it unsound to regard mercury as having any practical efficacy in the modern treatment of syphilis; it was an adjunct, like any ordinary tonic treatment.

Dr DAVID LEES (Edinburgh), who presided, substantiated what Colonel Harrison had said about sulpharsenobenzene preparations being responsible for aplastic anaemia. With regard to jaundice, he did not think that arsenobenzol was the sole cause, though it might be a contributory factor. But the amount of serious jaundice was infinitesimal; he had seen only three cases in about eleven years. The most important cause of intolerance to arsenobenzol treatment was the taking of alcohol during treatment. Mr Lees also suggested that the time had come when some method of creating pyrexia without the undoubted risks of malarial therapy should be devised.

INCIDENCE OF NEUROSYPHILIS IN THE TROPICS

An interesting discussion arose on a paper presented by Dr R. W. C. KELLY on syphilis in Singapore. He mentioned that in the social hygiene clinics in Singapore, hemiplegia, due to syphilitic cerebral thrombosis, was

often met with, but tabes dorsalis and general paralysis of the insane were infrequent, and the few cases of the latter which were seen generally occurred among those who did not perform hard manual labour. Dr. A. R. COOK (Uganda) said that in that Protectorate very few cases of locomotor ataxia or dementia paralytica were to be seen, and he could not recall seeing one case of general paralysis of the insane among the native population. Colonel HARPER NELSON (professor of medicine at Lahore University) said that during the twelve years he had been in Lahore he had seen only two cases of tabes dorsalis, and one of these was in a man partly of European descent; he had seen only one case of general paralysis, and that was in an Anglo-Indian. He thought it possible that the population had been immunized as the result of previous infections with malaria. Dr. A. O. ROSS (Liverpool) mentioned that he had seen many persons with neurosyphilis who were home from tropical countries, where they had had malaria. Dr. MYRTLE NORONHA (Bombay) suggested that the absence of neurosyphilis in India might be due to lack of treatment or to improper treatment of the syphilis, so that by the time the nervous manifestations appeared the people had acquired a sort of self-immunity. Dr. LOUISA PEARCE (New York) said that the difference between Occidental and Oriental syphilis might be due to a difference in the organism or in the reaction of the host. In the Belgian Congo she had seen secondary syphilis such as was not to be found in America or Europe, and it might be that after these manifestations the body acquired an immune state. Dr. A. G. COIA (British Guiana) said that in ten years there he had seen only two cases of general paralysis of the insane (one of them doubtful) and one case of tabes dorsalis. The cardio-vascular condition was very common in that country, and possibly cut off many who would otherwise go on to nerve manifestations.

Dr. DAVID LEES said that the absence of the grosser forms of neurosyphilis in the Tropics raised many problems. But the average age of death in India was 40 to 45, and most neurosyphilis in Western countries developed after that age. It seemed possible that in the Tropics people died before the age at which neurosyphilis would ordinarily appear.

ANTE-NATAL TREATMENT

Several papers were read on methods of dealing with ante-natal venereal disease. Dr. GLADYS SANDES gave an analysis of 1,000 consecutive deliveries at the London Lock Hospital since 1920. After giving details of the ante-natal treatment pursued, she made the deduction that the incidence of congenital syphilis was due primarily to the absence or inadequacy of treatment of the mother's syphilis during pregnancy. Dr. MARY MACNICOL of the Elsie Inglis Memorial Hospital, Edinburgh, followed with an account of similar work at that institution. She said that the ante-natal treatment of syphilis was comparatively satisfactory, but that of gonorrhoeal infection during pregnancy was less so. The danger to the child of ante-natal gonorrhoea had largely been removed, but such was not the case as regards the mother, who ran a three-fold risk: of immediate infection of the uterus during the puerperium; of the later development of chronic cervicitis, endometritis, and salpingitis; and of sterility following upon these conditions. Dr. DAVID NABARRO also spoke on the results of neglect of or inefficient natal treatment. The syphilitic mother, he said, could almost certainly beget a non-syphilitic child if she was adequately treated during pregnancy.

Observations from Africa and India were also brought forward. Dr. G. G. BUTLER described an investigation of material collected from the maternity hospital, Accra, Gold Coast, with the object of estimating the prevalence of syphilis among expectant mothers, and of forming an opinion as to what extent that disease was the cause of the high Wassermann positive rate in order better to assess the value of the reaction as an indication for initiating ante-natal treatment. Owing to the population being heavily infected with yaws the task was not easy, and a cross-immunity between yaws and syphilis was suggested. The investigation showed a remarkable infrequency of obvious syphilis in a local African community heavily infected with gonorrhoea and yaws. Dr. MARGARET BALFOUR discussed the ante-natal treatment of syphilis in India, for which, she said, there were two essentials: that women doctors should be employed, and that there should be a sufficient supply of necessary drugs, the latter a considerable problem because drugs were expensive and women's hospitals poor. The remedy would be for the municipalities or Governments to make grants to the hospitals. She was followed by an Indian woman doctor, Dr. MYRTLE NORONHA, whose idea was to have in every native town a maternity service unit, with an ambulance to reach the surrounding villages. A beginning in this direction, she said, had been made in Bombay. Several missionary doctors took part in the discussion.

STERILITY

The final discussion was on sterility. Dame LOUISE MCILROY said that by far the greater number of cases of primary sterility in women were due to gonorrhoea. Secondary sterility might be due to gonorrhoea also, but in her experience it was due mainly to puerperal sepsis. Incidentally she urged the investigation of the husband as well as of the wife if no obvious lesions were present in the latter. Mr. KENNETH WALKER spoke on the influence of venereal diseases on male sterility. No accurate estimate, he said, could be given of the part played by venereal disease in the production of sterility, but it was safe to assume that gonorrhoea was by far the commonest cause of impaired fertility in the male. The absence of spermatozoa was not due to any damage inflicted on the seminiferous tubes, but to a blockage in the canal along which they must travel in order to emerge. The commonest site of this blockage was the epididymal canal. Since epididymitis was the complication most likely to produce sterility, all measures which reduced its likelihood, such as rest, and the giving of belladonna or atropine in cases of posterior infection, were useful. The only syphilitic lesion which was likely to affect male fertility was gumma of the testis, and since this occurred comparatively late in the disease it was not very often the cause of a childless marriage. He associated himself with Dame Louise McIlroy's remarks as to the advisability of examining the husband before subjecting the wife to an operation.

Many other features of the congress must be passed over with a mere mention. These included a discussion on ways in which the universities may encourage the teaching of biological science in secondary schools. There were discussions also on social customs in relation to venereal disease, on means of propaganda, and on the role of British women in social service over-seas. On the last day of the congress joint sessions were held with the International Union against the Venereal Peril, and papers on follow-up work from treatment centres in Paris and Florence, as well as from centres in this country, were presented. Sir BASIL BLACKETT, the president, also delivered his address from the chair on "Social hygiene and the structure of twentieth century life."

The congress was attended by delegates from home and oversea Government departments, universities, local authorities, and social organizations. The delegates for

the British Medical Association were Dr. H. G. Dain and Mr. Bishop Harman.

The dinner of the congress was held at the Café Royal on July 17th, when representatives from twenty nations were among the guests. Sir Basil Blackett, who presided, said that their object was very much an international affair. Referring to the great part which British women had taken in the work, he said that without such assistance their object would not make much progress. The aim of the British Social Hygiene Council was essentially prevention. Professor Winifred Cullis advocated the teaching of biology as necessary to the progress of the work.

BEIT MEMORIAL FELLOWSHIPS

MEETING OF TRUSTEES

A meeting of the Trustees of the Beit Memorial Fellowships for Medical Research was held on July 14th, for the election of Fellows and other business.

In his annual report the honorary secretary, Professor T. R. Elliott, F.R.S., recalled that last year a review was given of the work of the Beit Memorial Trust in the first twenty years since its foundation.[1] The close of 1930 marked the period that had been chosen for the review with a sharper line, by the death on December 8th of the Founder of the Trust, Sir Otto Beit. The Founder's generous resolve to perpetuate the memory of his brother, Mr. Alfred Beit, by augmenting more than fourfold the gift which the latter had wished to make for the progress of medical studies in the University of London, did not conclude with the endowment by £210,000 of the Trust. As chairman of the Trustees, Sir Otto devoted close thought to every step that might advance the aims of the Foundation, and showed the keenest interest and pleasure in marking those successes in the advance of medicine by research which have been achieved by the most distinguished of the Beit Fellows.

RESIGNATIONS AND APPOINTMENTS

At the same time the Advisory Board lost by resignation two of its members, the last of those who had served continuously since the creation of the Board. Sir Charles Martin resigned when his appointment as Director of the Lister Institute expired, and he left London to take control of some developments of medical work in Australia. The Trustees are deeply grateful to him for his twenty-one years of loyal service, not only on the Advisory Board, where the breadth of his knowledge in many fields of research and his sane judgement were invaluable, but also as the immediate director of laboratories in which so many Beit Fellows had the privilege of working under his control. The debt of the Trustees to him and to the Governors of the Lister Institute, who provided all laboratory facilities freely without further help from the Trust, is evidenced by the fact that out of the 137 Fellows elected since 1909 no fewer than 31 were assigned to work at the Lister Institute. The second resignation was that of Sir James Kingston Fowler, whose services in a different direction have throughout been of such essential importance that his name will stay in the history of the Trust very close to that of the Founder himself. As Dean of the Faculty of Medicine in the University of London, he bore a leading part in the original discussions with Mr. Alfred Beit, and then with Sir Otto Beit, with regard to the contemplated benefaction; and later as honorary secretary, being a Trustee as well as a member of the Advisory Board, he planned the administrative details, advised on policy, and for twenty-one years fostered every year's growth of the Foundation in which he took so high and so justly personal a pride. Though released from the routine duties of honorary secretary, he will still give service and guidance as senior of the Trustees.

The Trustees welcome the appointment as their colleague of Sir John Rose Bradford, who in 1909 was chiefly responsible for the advice that led to the Trust being guided to the creation of Fellowships rather than to other purposes, and who served for twelve years on the Advisory Board. Sir Alfred Beit, also, has consented to serve as Trustee in the place of his father, Sir Otto Beit. Dr. J. C. G. Ledingham, F.R.S., now Director of the Lister Institute, and Dr. P. P. Laidlaw, F.R.S., have been appointed to the Advisory Board. The Trustees offer their congratulations to Sir Frederick Hopkins, a member for many years of the Advisory Board, on his election as President of the Royal Society.

WORK OF THE BEIT FELLOWS

The number of Fellows now working on the Foundation, apart from those reported for election below, is twenty-three. The list of places recognized for research has long ago been widened beyond the limitation suggested by the first idea that work would be done chiefly in the laboratories and schools attached to the University of London, and, indeed, each year more and more Fellows are being permitted for special purposes to work even for a year abroad. The Fellows choose their own problems, and no attempt is made by the Board to select a subject and appoint a team to investigate it.

"It is therefore of interest to watch the subjects proposed and see how rapidly the tide of research swings first into one bay and then to another, in the pressure to find through allied sciences the means towards fresh advances in medicine. Bacteriology, for example, has so altered its landward approaches that among the present Fellows and the 39 candidates at this July election only a very few are content to attack the problems of microbic disease by the older charted ways. More of the voyagers now are exploring the coasts of biochemistry, and through fundamental studies by precise test-tube experiments on the metabolic activities of bacteria or on the modes of ferment action are seeking to understand their behaviour in the human body. Indeed, for these and like aims, there are of the present Fellows seven now clustered in the biochemical laboratories of Cambridge University."

The aim of the Fellowships is to start a man on the career of research, and it is to the after-careers that the Trustees look for proof that the Advisory Board has guided them well in the selection of Fellows.

ELECTION TO FELLOWSHIPS

The following elections were made by the Trustees:

Senior Fellowships (value £700 per annum).—F. R. Winton, M.A., M.D. To continue his work in the Pharmacological Laboratory of University College, London, on the tonus of plain muscle, on the blood pressure in the glomerulus of the kidney, and on the effect of drugs on kidney secretion.

Fourth Year Fellowships (value £500 per annum).—B. H. C. Matthews, M.A. To continue his work in the Physiological Laboratory, University of Cambridge, on the analysis of sensory nerve impulses by electrical records obtained with the delicate oscillograph which he has invented.

Junior Fellowships (value £400 per annum).—(1) Benjamin Stanley Platt, M.B., Ch.B., M.Sc., Ph.D. Re-elected to the Junior Fellowship which he had resigned in 1926 in order to obtain medical qualification and so fit himself more fully for medical research. He will work at the School of Medicine, Leeds, on problems of the alimentary canal. (2) William Albert Hugh Rushton, M.A., Ph.D. Cambridge. Proposed research on the chronaxie of nerve and muscle, in the Physiological Laboratory, Cambridge. (3) Leonard Hubert Strickland, B.A. Proposed research: an investigation of the metabolism of the anaerobic bacteria associated with gas gangrene, in the Sir William Dunn Institute of Biochemistry, Cambridge. (4) Muriel Elaine Robinson, Ph.D. To continue investigations on haemoglobin, and on the preparation of proteins in a pure state, in the Sir William Dunn Institute of Biochemistry, Cambridge. (5) Frank Burnet Byrom, M.D., M.R.C.P. Proposed research: a study of factors influencing the total water exchange of the human body in health and in disease, at the London Hospital (in continuation of work begun at Chicago as Rockefeller Fellow). (6) Janet Maria Vaughan, B.A., D.M. An investigation of the relationship of disordered haematopoiesis to those bone changes that are found in human disease, or which can be experimentally produced in animals, at the Institute of Pathology, London Hospital.

All correspondence of Fellows and candidates should be addressed to the honorary secretary, Beit Memorial Fellowships, University College Hospital Medical School, University Street, W.C.1.

[1] *British Medical Journal*, July 26th, 1930 (p. 146).

BRITISH EMPIRE CANCER CAMPAIGN

ANNUAL GENERAL MEETING

The MARQUESS OF READING presided over the annual general meeting of the British Empire Cancer Campaign in the House of Lords on July 20th, and read a letter from H.R.H. the Duke of York congratulating the Campaign on its successful progress. The Duke referred specially to the Cheshire and North Wales branch, which had made special use of propaganda as a means of obtaining patients in the earliest stages, and commended for the consideration of the Campaign the instituting of such organized propaganda work throughout the whole country.

Sir WILLIAM WILLCOX moved the adoption of the annual report, which is summarized below, and insisted that real permanent stepping-stones were now being laid towards the objective of discovering the cause of cancer and the best lines of treatment. He agreed that propaganda efforts should be increased, and thought that this could be achieved at a relatively small cost.

Sir RICHARD GARTON, honorary treasurer of the Campaign, stated that there had been an excess of expenditure over income during the past year of £1,810. The present balance in hand was £65,841, and of this sum approximately £30,000 was earmarked to meet commitments, and for the continuation of research work which was already being carried on. He appealed for further generous support from the public so that the work of the Campaign could be pursued still more energetically.

Lord Reading was re-elected chairman of the Grand Council of the Campaign, and Lord Dawson and Sir John Bland-Sutton were re-elected vice-chairmen.

THE EIGHTH ANNUAL REPORT

The usual detailed survey of the progress made during the past year in cancer research in Great Britain and the Dominions is prefaced by Lord Reading's report as chairman. Special attention is called to " the production of a substance from artificially prepared anti-cancerous serum, which has not only cured implanted cancer in mice, but is also efficient in a certain proportion of spontaneous cancers occurring in these animals." The serum which was tried at first proved to be moderately effective, but its use was attended with grave toxic symptoms. By a chemical process the anti-cancer substance was separated from the toxic elements, and was then found to be ten times more effective in destroying cancer cells than the original serum. It causes the disappearance of implanted tumours in mice, and renders these animals completely resistant to further grafting. In two out of five mice with spontaneous tumours the growths disappeared. Some unknown factor seemed to be present in the three other cases, and efforts are being made to define its nature. Reference is made to Professor Mellanby's work at Sheffield on the metabolic changes of the cancer, and the conclusion reached that phosphate plays no part in cancer glycolysis. As regards the relation of diet to cancer, it seemed clear that foods rich in vitamins stimulated cancer cells no less definitely than normal cells, and did not prevent tumours from developing when an effective carcinogenic stimulus was present.

The Nature of Cancer

In a statement from the research institute of the Cancer Hospital the progress made in investigating the experimental production of cancer is indicated ; it is hoped by these researches eventually to find a means of preventing its development into the stage of a recognizable tumour. The possibility of a chemical factor being concerned is being explored, and the benzanthracenes and dibenzanthracenes, which are definitely carcinogenic, are being used in experiments. The number and position of the benzene rings in compounds of these series is possibly of some significance as regards carcinogenicity, but further research is necessary before it can be asserted that any definite information has been obtained as to an essential molecular structure of the cancer-producing agent in tar. It is concluded, however, that crude tar should no longer be used in experimental work; a pure substance is required in such investigations as those into the influence of dieting, for tar contains very many superfluous substances, some of which are irritating, and so the tests are confused and the results are fallible. In obtaining such a pure substance chemical separation processes have been combined with the method of fluorescence spectrum analysis, to which reference was made in last year's report.

Oxidative Power of the Cancer Cell

Both at Sheffield and in the research laboratories of the Middlesex Hospital biochemical factors in carcinogenesis have been investigated, and it now appears that a regular feature of all tumours is a weakness in the oxidation of carbohydrates. No definite correlation has been traced between malignant disease and the presence of lactic acid in the stomach contents. While interference with the oxidative processes of carbohydrates is a characteristic of tumour growths, it was not found in the case of normal embryonic cells, but it was present in certain other pathological tissues.

The Radium " Bomb "

Caution is expressed as regards the value of the radium bomb. The 4-gram apparatus at the Westminster Hospital Annexe has proved to be dangerous, rapid diminution of the blood cells occurring after twenty-five to thirty hours' treatment. There is a small decrease in the red cells, but the total white cell count falls from 7,000 to 3,000 or even less, the lymphocytes being particularly affected. The polymorphonuclear tends to occur, moreover, with a greater proportion of immature forms. When the exposures have been small, however, and spread out over a longer period of time, a definite increase in the white cell count has been detected. The damage caused was not irreparable, periods of rest being followed by a return to the normal. Treatment for one week impaired the urea concentration power in ten patients, and it seemed likely in some cases that damage had been caused to the kidney in the form of glomerular hypertrophy and oedema, and necrosis of the loops of Henle with shedding of the tubular epithelium.

Pelvic Cancer

An increase in the amount of radium available for the Marie Curie Hospital enabled a larger number of patients to be treated. A rather unexpected finding was that cases of adenocarcinoma of the uterus responded as well as those of squamous-celled carcinoma of that organ. In cancer of the cervix, conclusive evidence was obtained that the use of supplementary external irradiation when the parametria were invaded, and especially when there was fixation, materially increased the number of five-year cures.

Heredity and Cancer

The hereditary factor in intestinal polyposis was made the subject of a special investigation during the year at St. Mark's Hospital. It has now been shown that this disease is transmitted by both males and females, that both sexes suffer from it, and that the inheritance can be traced through several generations. If members of these families survive the other complications of polyposis and ordinary risks of life, they develop cancer of the rectum or colon, usually in the early thirties or forties.

STERILIZATION OF DEFECTIVES

AN UNSUCCESSFUL BILL

In the House of Commons, on July 21st, Major A. G. Church, M.P. for Wandsworth, asked leave to bring in a Bill "to enable mental defectives to undergo sterilizing operations or sterilizing treatment upon their own application or that of their spouses or parents or guardians." As recorded in our Parliamentary Notes, the Bill was rejected by 167 votes to 89. Its text was as follows:

STERILIZATION OF DEFECTIVES.

1. (1) It shall be lawful for a registered medical practitioner to perform a sterilizing operation as defined by this Act upon a defective not under the age of 16 provided the following persons and bodies, namely, (*a*) the defective, if he is capable of expressing himself as willing or unwilling to undergo the operation; (*b*) the spouse (if any) of the defective; (*c*) if the defective is unmarried, his parent or guardian (if any); and (*d*) the Board of Control, respectively consent to the operation being performed and the operation has been sanctioned by an order of a judicial authority for the purposes of this Act made upon the application of the defective or his spouse (if any) or his parent or guardian (if any).

(2) Notice of an application for such an order as aforesaid shall be given by the person making the application to all other persons authorized to make the application except in cases where such notice is dispensed with under this Act.

STERILIZING OPERATIONS, ETC.

2. For the purposes of this Act

(i) The expression "sterilizing operation" shall mean vasectomy salpingectomy and any other surgical operation whereby the patient is rendered incapable of procreation or child-bearing without the capacity to exercise the sexual functions being otherwise impaired;

(ii) Any medical treatment which attains the same result as a sterilizing operation with the same limitation in its effect as regards the sexual functions shall be treated as a sterilizing operation for all the purposes of this Act.

ORDER OF JUDICIAL AUTHORITY

3. (1) In any case where an application is made to a judicial authority under this Act for an order sanctioning a sterilizing operation, the judicial authority, provided it is satisfied by such medical certificates or other evidence as it may deem sufficient and after such visitation or inspection as it may direct and after hearing and considering any representations made by any person to whom notice of the application is required to be given by this Act (i) that the person to whom the application relates is a defective; (ii) that there is no probability of the health of such person being adversely affected by the operation; and (iii) that the several persons and bodies whose consent to the operation being performed is required by this Act have respectively given such consent, shall have power to make an order sanctioning the performance of a sterilizing operation as defined by this Act.

(2) Such an order of the judicial authority shall be conclusive for all purposes as to (i) the person to whom the order relates being a defective; and (ii) the consents to the operation being performed required by this Act having been given.

PROTECTION OF MEDICAL PRACTITIONERS

4. (1) A registered medical practitioner shall not in any case where he has with due care performed a sterilizing operation under the authority of this Act be liable to any criminal or civil proceedings in respect of such operation.

(2) Nothing in this Act shall render unlawful any surgical operation or medical treatment which before the passing of this Act could lawfully be performed or applied.

JUDICIAL AUTHORITIES: REGULATIONS AS TO PROCEDURE

5. (1) Every judicial authority for the purposes of the Mental Deficiency Acts shall be a judicial authority for the purposes of this Act with the like jurisdiction and powers as under those Acts.

(2) The Secretary of State may make regulations with respect to the procedure on application for orders under this Act.

NOTICES, ETC., DISPENSED WITH IN CERTAIN CASES

6. (1) In any case where the parent, guardian, or spouse of a defective (i) cannot be found; or (ii) is outside Great Britain; or (iii) is a person of unsound mind lawfully detained under the Lunacy Acts, 1890–1892, or a defective; or (iv) is undergoing imprisonment (except under civil process) or penal servitude, the judicial authority shall have power to dispense with any notice to or consent by such parent, guardian, or spouse which would otherwise be required under this Act.

(2) For the purposes of this Act (i) the expression "guardian" shall include any person who undertakes or performs towards a defective the duty of a parent or guardian or has charge of him; (ii) the consent of or notice to any one or more of a number of persons who with reference to a particular defective come within the designation of parent or guardian shall be sufficient consent of or notice to a parent or guardian.

INTERPRETATION AND ADAPTATION

7. In this Act (i) the expression "Mental Deficiency Acts" means the Mental Deficiency Acts, 1913 to 1927, as amended by any subsequent enactment; (ii) the expression "defective" has the same meaning as in the Mental Deficiency Acts.

SHORT TITLE AND EXTENT

8. (1) This Act may be cited as the Sterilization Act, 193 .

(2) This Act shall not apply to Scotland or Northern Ireland.

India

The Calcutta School of Tropical Medicine

A series of interesting accounts of research along many lines is to be found in the joint annual report for 1930 of the Calcutta School of Tropical Medicine, Institute of Hygiene, and the Carmichael Hospital for Tropical Diseases. This composite organization affords a fine example of the value of team work, and of the co-ordination of investigations in such different spheres as pathology, pharmacology, chemistry, and tropical surgery. The director of the Calcutta School, Lieut.-Colonel H. W. Acton, I.M.S., comments in a preliminary note on the difficulties which have been overcome during the year. Thus, the housing of the Pasteur Institute at the School takes up valuable space; even so, during the hours of inoculation, 400 patients have to crowd into a small room only about 20 by 30 feet. Sepsis and tetanus would seem inevitable complications of inoculating in such circumstances, but, so far, no accident has occurred, probably because the street dust contains only avirulent spores of these organisms, owing to the sterilizing action of the sun. Financial stringency has prevented the building of a separate wing for this Institute, but Colonel

Acton writes most warmly of the way in which the School is being supported by local societies and organizations, no fewer than five research chairs being thus subsidized, and several minor researches being rendered possible. The Indian Research Fund Association, moreover, maintains two professorial chairs at the School—namely, those of bacteriology and protozoology. The Tea and Jute Associations, in spite of their own financial difficulties, have guaranteed their generous annual grant for another five years. It is noted that in elephantiasis the frequent acute attacks of sepsis and cellulitis have now been traced to the occurrence of septic foci either on the skin or in the teeth, tonsils, prostate, or intestines. From time to time organisms pass into the blood stream from these sites, and invariably choose those areas where the local defence has been lowered by the irritation caused by the infecting *Filaria bancrofti*. Vaccines are now given to diminish the inflammation from such local foci. In the direct treatment of the lesions mercury, arsenic, bismuth, and antimony have been employed without avail, but tryparsenamide has proved effective in chyluria. One important therapeutic point elucidated has been the necessity of infiltrating the tissues below the lesions. During the last three years great advances have been made in perfecting the efficacy of antirabic treatment, and it has been concluded, on the basis of 3,000 cases observed, that the mortality rate for all badly bitten persons, if untreated, ranges from 6 to 10 per cent. In each of the three years approximately 1,000 persons have been treated who would be grouped in this category, and the death rate has remained about the level of 2 per cent. Such a saving of life of from 4 to 8 per cent. in this disease has, it is claimed, not been achieved by any other institute in the world with such consistent success over a three-year period. An important step in the securing of better clinical results has been the use of sheep instead of rabbits for the preparation of the antirabic vaccine. Inoculations must be begun as soon as possible after the bite ; this involves further decentralization of the vaccine treatment in order that indigent patients living far away may be dealt with. The whole report of the Calcutta School this year, with its various subsidiary statements on the progress made in tropical medicine, bacteriology, protoozology, serology, pharmacology, and the other lines of research, is one of the most interesting and important that have yet appeared.

Treatment of Plague

The report of the Haffkine Institute for 1929 has recently been received, the delay in its issue being due to the fact that late in that year it was decided to change the method of publishing the statistics and to hold up the clinical reports until the lapse of six months after the completion of treatment, instead of waiting only three months as heretofore. The demand for Haffkine's plague vaccine during the year under review is stated to have decreased a little, probably in consequence of the lowered incidence of plague ; there is good reason to believe that the value of this protective measure is being increasingly realized, for as soon as an epidemic occurs urgent requests are made for its supply. Certain problems in connexion with the preparation and keeping powers of the vaccine have been considered by a committee of the Institute, and it has now been shown that batches can be used in the usual doses until eighteen months from the date of their manufacture, and even up to a total period of two years provided that during that period they have been kept in cold storage. The period of preparation can be reduced from twelve to six weeks without marked loss of efficiency. The present broth vaccine which is employed seems to be superior as regards its immunizing value to the agar vaccine which had been suggested as a substitute. Evidence has been received from other countries that a satisfactory degree of immunity is obtainable there from approximately half the dose used in India ; at present, however, it is thought unwise to authorize any reduction of the dosage in India until it is certain that the improvements recently introduced in preparing the vaccine have not diminished its immunizing power. The report contains an interesting account of the processes of manufacture and of the special steps taken to prevent contamination. Standardization has proved to be very difficult, owing to broth vaccines being concerned ; the method previously employed was empirical, depending mainly on the length of incubation of the organisms. Considerable advance has recently been made in devising and perfecting a biological mode of standardization, which it is believed will be much more accurate. Researches on the flea factor in plague epidemiology have been continued at the Institute, and three species are now believed to be carriers. An attempt has been made to produce a potent anti-plague serum, and sheep and calves are being utilized in the preparation of a large stock of serum, which can be tested clinically on a sufficiently extensive scale. Chemotherapeutic research is being actively continued, the drugs at present in favour being the halogen compounds of mercury and phenol. The antirabic section of the report is less satisfactory ; the returns from many distributing centres are said to be very poor, and statistical evidence as regards the clinical results is therefore inadequate. The Paris strain of fixed virus is now being exclusively used for the treatment of patients at the Institute.

Vaccination Progress

The Government report on vaccination in Burma for the year 1929-30 states that the numbers of persons vaccinated and re-vaccinated each year in the province have steadily increased during the last decade. This is held to be the natural result of a gradual realization on the part of the people of the value of vaccination and their consequent willingness to accept it. Where there has been a decline this has for the most part been attributable to comparative freedom from small-pox. The reason for the increase in the Bassein district is said to be that " Burmese sages predicted an outbreak of small-pox in the year 1930-31, and the people resorted to vaccination as a means of protection against it." This prediction coincided with the forecasts by several health authorities of a general small-pox epidemic about this time, and strengthened the hands of the authorities. In the North-West Frontier Province similar steady progress in vaccination is reported, although there has been a decrease in the number of vaccinators employed. The ratio of successful vaccination per thousand of population during 1929-30 was also much higher, and re-vaccination increased concurrently, the prevalence of small-pox in some parts of the province rendering the population more willing to be so treated. The glycerinated chloroform lymph supplied by the Punjab Vaccine Institute was used during the year and gave satisfactory results. In Madras the attempted decentralization in the administration of vaccination in rural areas has been attended with considerable difficulties, there being a good deal of administrative opposition, which calls for legislative action. The notification of small-pox is also unsatisfactory, and serious discrepancies have been detected in the returns for some districts. About 85 per cent. of the deaths from small-pox during 1929-30 occurred in children under the age of 10. Encephalitis as a complication of vaccination has not been reported in the Presidency so far. Elaborate arrangements have, nevertheless, been made in the King Institute for a thorough examination of every batch of lymph, only such lymph as satisfies every test being now issued.

Scotland

New Edinburgh Professor

The curators of the University of Edinburgh have appointed Dr. A. Murray Drennan, who is at present professor of pathology in Queen's University, Belfast, to the chair of pathology in the University of Edinburgh, in succession to the late Professor Lorrain Smith. Professor Drennan was born in 1884, and after studying medicine at the University of Edinburgh, graduated M.B. with first-class honours in 1906. His thesis for the M.D. degree, which he took in 1924, was awarded a gold medal. In 1908 he became a Member of the Royal College of Physicians of Edinburgh, and proceeded to the Fellowship in 1914. After acting as an assistant to the late Professor Lorrain Smith in the department of pathology at Edinburgh, he was appointed professor of pathology at Otago University, Dunedin. During the war he served with the 22nd and 27th General Hospitals of the Mediterranean Expeditionary Force. He has contributed various articles to pathological literature.

River Pollution in Scotland

The Scottish Advisory Committee on Rivers Pollution Prevention, which is conducting a series of investigations, has recently reported to the Department of Health for Scotland in regard to the River Esk, Midlothian. This river, which passes through several towns concerned especially with the paper-making industry, discharges into the sea a few miles east of Edinburgh. Effluents from the paper mills cause the river to be greatly discoloured, to be covered from time to time with froth, and at times to smell very badly, so as to constitute a nuisance. The Royal Commission suggested that an average standard of purity for river water was that it should take up 0.2 part per 100,000 of dissolved oxygen in five days, while a nuisance may arise when the river water takes up 0.4 part per 100,000. It was found that the Esk, after passing the first paper mill in its course, took up 0.32 part of dissolved oxygen, and that each successive mill aggravated the condition, so that in the lower part of the river the water had to be purified even for manufacturing purposes. In the last stretch the river was further polluted by the addition of coal dust from neighbouring mines. Further measures were also found to be necessary in order to deal with the sewage from the towns situated on the river. It is pointed out in the report that the administrative position has been greatly simplified by the passing of the Local Government (Scotland) Act, 1929, which makes the county council of Midlothian the only local authority for the administration of the Rivers Pollution Prevention Acts as regards this river. The report also suggests that the county council should appoint a river inspector or inspectors to inspect purification works, to take samples of trade waste waters for analysis, and to report to the county council.

Chalmers Hospital, Edinburgh

The Dean and Faculty of Advocates, Edinburgh, who are the trustees of Chalmers Hospital, held a meeting on July 10th to consider proposals for improvements at this institution. The estimated cost of the scheme was stated to be £10,000, which was covered by a donation from the trustees of the late Mr. Edward Clark, printer, Edinburgh. The scheme includes the erection of a new wing for an *x*-ray department and an operating theatre. The hospital was founded in 1864 through a bequest of approximately £30,000 from George Chalmers, a plumber in Edinburgh, and consists of four wards, of which two are charitable and two are intended for the use of paying patients. It was one of the earliest in the country to have paying wards, and this arrangement has been very popular from the time of its institution. The hospital, which is maintained entirely by its endowment funds, and by the payments of patients, makes no claim on the public for subscriptions.

Arbroath Infirmary

A new wing, including a children's ward and accommodation for nursing staff, was opened recently at Arbroath Infirmary. The extension has cost £17,680, towards which a sum of £15,756 has already been subscribed. In declaring the buildings open, Sir John Cargill sketched the history of the institution since its foundation in 1843, and remarked that in the first year of its existence sixty-six patients had been treated at a cost of £25 per patient, whereas in the past year 879 patients had been treated at a cost per patient of £105.

Correspondence

PRIORITY IN NEUROLOGICAL SURGERY

SIR,—May I, as one of Victor Horsley's former pupils and colleagues, do a tardy justice to his acknowledged greatness both as a neurologist and as a surgeon by pointing out in your columns the inaccuracy of the oft-repeated claim in American publications that Spiller of Philadelphia, in 1898, was *the first* to suggest section of the sensory root of the fifth nerve for the relief of trigeminal neuralgia? I am the more prompted to do so by the appearance in the *Journal of the American Medical Association*, March 21st, 1931, of the last article of many by Dr. Charles Frazier, in which he continues to advance this claim, and further states: "The first purposeful section of the sensory root for the relief of trigeminal neuralgia was performed in this clinic."

Neither of these claims can be substantiated. It was Victor Horsley who first suggested the procedure, and who first carried it out, exactly eight years prior to the appearance of Spiller's suggestion contained in his paper, written in collaboration with W. W. Keen, in the *American Journal of Medical Sciences*, November, 1898. In the *British Medical Journal*, December 12th, 1891 (p. 1249), in the last of three consecutive articles, written in collaboration with Drs. James Taylor and W. S. Colman, Horsley says: "In considering the possibility of relieving cases of inveterate neuralgia where recurrence of the pain had taken place [that is, after peripheral operations], I thought one might be able to remove the Gasserian ganglion *or divide the fifth nerve behind it* [italics mine], and I made, some years ago, dissections to see how far the Gasserian ganglion could be separated from the cavernous sinus. . . . Finding this to be the case [that complete removal of the Gasserian ganglion is not possible], I then considered the possibility of *dividing the fifth nerve behind the ganglion* [italics mine]. On trying this on the dead body, I found that it was perfectly feasible."

Horsley then proceeds to describe very fully the various steps of the operation, done on December 11th, 1890, which he deliberately undertook and performed for attacking the sensory root behind the ganglion. Further, in the *Clinical Journal*, November 3rd, 1897, he refers again to this case, and says: "In 1890, after consideration of the whole question in a very severe case, I determined to divide the nerve roots behind the ganglion. . . . To attain this object (post-ganglionic section) I endeavoured to raise the temporo-sphenoidal lobe, and succeeded without much trouble in detaching the sensory root from the pons."

I am sure that it will need only this letter to secure from our American confreres their ready and generous

acknowledgement of Horsley's priority in both suggesting and carrying out the operation of section of the sensory root for the relief of trigeminal neuralgia.—I am, etc.,

DONALD ARMOUR.

London, W.1, July 15th.

MINERS' NYSTAGMUS

SIR,—Dr. Roche has given an example of scientific method in his study of lighting effects at the coal face and their bearing upon the production of miners' nystagmus. May I ask his help in applying the same method to that and other disorders that he mentions?

Miners' nystagmus, shell-shock, and telegraphists' cramp are, he says, neuroses. In this connexion what is a neurosis, and can he enlighten us about its physiology? He tells us about reserve nervous energy, as to which I am curious about the possibility of measurement by means akin to those used in the measurement of reflected light, so that we may know when exhaustion, with its sequel of nervous breakdown, is approaching. How are we to detect that reserve nervous energy in the periphery of the retina, which is somehow used up in this disorder? And in nervous breakdown, what is it precisely that breaks? Perhaps Dr. Roche will make these points clear whilst assuming in his readers that minimum of physiological knowledge demanded before qualification.—I am, etc.,

MILLAIS CULPIN,
Professor of Medical Industrial Psychology, London School of Hygiene and Tropical Medicine.

London, W.1, July 16th.

OPERATION FOR CATARACT

SIR,—Mr. Traquair's letter in the *Journal* of June 6th raises points of practical interest—treatment in the case of patients where one eye has cataract and the other none. Post-graduates and students in the Eye Infirmary, Medical College, Calcutta, are taught that as soon as a cataract is mature it should be removed, and that the advantages gained from removing the cataract in one eye, when the other eye has none, far outweigh the disadvantages. Doubtless the resulting anisometropia makes the use of glasses for both eyes impossible, but it is not always necessary to use an opaque glass before one or the other eye. Improvement in the field of vision is valuable to everyone, especially anyone working among machinery or traffic. Secondly, after a successful cataract extraction the patient has an eye which can be corrected for vision as soon as the other eye becomes unserviceable. The mental effect of this is very great, as the patient is now convinced that he can never be blind. He is also relieved of the anxiety of a serious operation on which his vision depends. A mature cataract left in an eye becomes in the course of time hypermature, with its attendant dangers. I have frequently seen low forms of iridocyclitis produced by hypermature cataracts, and subluxation of the lens is also not uncommon. Secondary glaucoma due to cataract is very common in Bengal, amongst both Europeans and Indians, and a large number of operations are performed annually for this serious complication.

Personally, I always advise an elderly patient to have a cataract removed as soon as it is mature, because, as a rule, sooner or later cataract will appear in the other eye. In juvenile and pre-senile monocular cataract one hesitates to advise removal until the cause is known, because many of these cases are complicated. One does see cases, however, where the cause cannot be determined and all examinations prove negative and the cataract can be removed, good vision resulting in the majority of cases—I am, etc.,

E. O'G. KIRWAN,
Lieut.-Colonel I.M.S.

Calcutta, July 3rd.

DIVERTICULA OF THE COLON

SIR,—I must apologize for not having noticed earlier the letters of Dr. Gilbert Scott and Dr. John Muir which appeared in the *Journal* of April 11th.

Dr. Gilbert Scott, in referring to the paper by Mr. Lockhart-Mummery and myself on diverticula of the colon and their sequelae, draws attention to the necessity of examining the colon twenty-four hours after the opaque enema has been administered. I fully agree, and would go even further by saying that the examination must be continued until the lumen of the bowel is completely empty of barium. I thought I had made this point clear when I said that " these pockets retain the barium long after the lumen of the colon is empty, which distinguishes the radiographic appearances of the condition from any other."

With regard to Dr. Gilbert Scott's contention that the ring-like shadows in the diverticula are not due to retained faecal concretions in the pockets, but to residual barium in the diverticula at twenty-four hours, I should like to point out that in the paper I am referring to pockets which are visualized as ring-like shadows at the time of the injection of the enema, and in post-mortem examinations of patients who have been *x*-rayed—and who have died of other conditions, such as superadded carcinoma of the colon—and also from the follow-up of cases after treatment in which these ring-like shadows have disappeared when the pockets have been successfully evacuated, I have been able to convince myself that these ring-like shadows seen on injection of the barium are due to retained concretions.

Dr. Muir draws attention to the necessity for a careful screen examination, with which I fully agree. But again I thought I had made this quite clear at the commencement of that section of the paper dealing with the observations of the barium enema, when I said, " the patient is carefully screened during the injection of the barium enema," and when " the patient is rotated to the left so as to bring the whole length of the sigmoid flexure into view," etc. But though the screen examination is as important as the radiographic, it is not more important, as no screen examination, however careful, can take the place of good radiograms taken in different positions so as to show the lesions which have been observed under the screen. A report on the screen examination is " hearsay " evidence, and its value is relative to the competence of the witness ; whereas good radiograms which clearly show the condition are evidence capable of ocular demonstration to the surgeon or physician in charge of the case. In addition, however careful a screen examination may be, it is only for a brief period of time, whereas a film can be carefully studied at leisure, and serves as a permanent record. Lastly, minimal changes in the colon of an obese patient can be seen very much more clearly on a good radiogram than directly with the eye, however keen. The screen examination is extremely important for visualization of the general condition, and for adhesions, points of tenderness, the positions of palpable swellings in relation to the colon, etc. ; but the screen and the radiographic examination are two component parts of the whole ; neither can be used as a substitute for the other, and both require equally thorough technique.—I am, etc.,

H. GRAHAM HODGSON.

London, W, July 13th.

SIGNIFICANCE OF A RAISED BLOOD PRESSURE

SIR,—A very charmingly phrased address like that of Professor John Hay in the *Journal* of July 11th has a tendency, by its indefiniteness, to lead one astray ; and as he says " no one can now afford to be indifferent to the problems associated with variations in blood pressure," he will, I feel sure, pardon me for criticizing some points in the address.

First of all, he does not give us his definition of either systolic or diastolic pressure, and unless one has a clear idea of the subject treated it is difficult to appreciate all the points as satisfactorily as one would like to. Personally, I want to know whether Professor Hay considers that the diastolic pressure is the same in all the arteries, and, if not, why not?

Secondly, we are told that "to take a blood pressure reading is simple enough," and yet he suggests that in some instances the technique is not satisfactory, and that the records are unreliable. If the technique is unsatisfactory, how can the working of it out be simple? Is there any wonder that the records are unreliable?

Thirdly, Professor Hay states that "high pressure is not infrequently encountered in the young." May I add that in every case of acute rheumatism the basic blood pressure, as taken by my method, is raised as well as the systolic pressure. The basic blood pressure is raised in every case of chorea, as stated by me in the *British Medical Journal* of February 21st, 1931, where I pointed out that the symptoms subside as the pressure becomes lower. Every toxin or poison tends to raise the basic blood pressure.

Fourthly, we are told that "high blood pressure may be latent," but is not this a rather misleading phrase? Because the pressure has not been estimated one cannot say that it is not raised, and the fact that it is raised in chorea may account for some of the psychological abnormalities. In my opinion the choreic abnormalities are due to a metabolic disturbance in what I have called "an acid child," and I feel it is more correct to say that a disturbance of blood pressure is responsible for melancholia than that "mental pain and physical passivity" invariably induce a raised blood pressure.

Professor Hay points out that the tendency is to take too high a reading, but if the technique is unsatisfactory and the records are unreliable, one is tempted to ask whether the figures he cites are to be taken into serious consideration. I may be allowed to draw attention to the fact that the narrower the armlet the higher is the recorded systolic pressure. My method necessitates the use of two narrow armlets, so that they may be applied to the same arm, and for this purpose Messrs. Anderson Ltd. have made them for me, measuring 2½ in. by 12 in.—I am, etc.,

Swansea, July 12th. G. ARBOUR STEPHENS.

SIR,—Professor Hay's lecture on arterial hypertension, printed in your issue of July 11th, is admirable indeed. Yet it is the best demonstration of the fact that the significance of the ophthalmoscope in medicine is badly underestimated. Many gaps in diagnosis and many doubts in prognosis, as recognized by Professor Hay, would not exist if the help of a trained ophthalmologist were sought.

The retinal vessels are the first to suffer in essential hyperpiesis. So long as they are not affected, the arterial hypertension may be regarded as temporary. But the usual optimistic reading of the blood pressure by the medical man will quickly vanish when he realizes that the retinal vessels (it means the cerebral vessels too) are deeply degenerated. Moreover, it often happens that the blood pressure remains constant, and sometimes it even falls, but the degeneration of the retinal vessels progresses and makes the prognosis gloomy.

The so-called "sudden vascular accident or death" of a hyperpietic is usually the fruit of a deficient medical examination. Such a patient ought to be warned before of the seriousness of his position. I have still to see a patient with, say, diastolic pressure of 120 (the systolic is not so important), whose retinal vessels are healthy. "Dans la nuit, où nous sommes tous, le savant se cogne aux murs, tandis que l'ignorant reste tranquillement au milieu de la chambre" (Anatole France). The "savant" is the medical man; and one of his surest foundations for the diagnosis, prognosis, and even treatment of arterial hypertension is the ophthalmoscope. The "ignorant" is, of course, the hyperpietic himself.—I am, etc.,

London, E.1, July 12th. N. PINES.

HISTORY OF PROSTATECTOMY

SIR,—On reading the article headed "Sir Henry Thompson" in the *Journal* of July 11th (p. 70), I notice a quotation from Mr. Buckston Browne: "The late Mr. A. F. McGill of the Leeds General Infirmary in 1889 was the first surgeon who ever systematically removed all that can be removed of an enlarged prostate."

While attending a short post-graduate course at St. Thomas's and Soho Hospitals I had the good fortune to be present at the meeting when Mr. McGill read his paper on prostatectomy. That was in the last quarter of 1887—not 1889. I do not recollect the exact date, but it must have been in one of the last three months of 1887, when I was in London. It happened that Mr. McGill came to the bench where I (a stranger to him) was seated, and some friend called across the room, "How do you feel about it?" and the reply was, "Rather shaky." Sir Henry Thompson presided, and was evidently impressed by the account of the operation, for he remarked, "I never heard of anything like this before" As I recall Sir Henry, he was a dapper little man with a rather florid complexion and a full white moustache, and he was in faultless evening dress.—I am, etc.,

Balfron, Stirlingshire, July 11th. D. SINCLAIR.

VITAMIN B_2 AND PELLAGRA

SIR,—It was with considerable interest that I read the article on vitamin B_2 and pellagra, by Dr. B. C. Guha, which appeared in the *Journal* of July 11th (p. 53). It seems to me that experimental pellagra in rats bears but little resemblance to the human disease. Because a rat fed on a diet, deficient in certain essential principles, becomes mal-nourished, fails to grow, loses its fur, and develops buccal lesions and a dermatitis, does not seem to me a sufficiently adequate reason to label the condition "experimental pellagra." In the diagnosis of the human analogue the symmetry of the erythema is a point of great importance, so much so that, despite the presence of the characteristic buccal lesions, one would hesitate to label the condition pellagra, unless accompanied by the symmetrical dermatitis which is undoubtedly the most characteristic feature of the disease. I have seen cases of pellagra in children, but failure of growth and loss of hair have not been much in evidence.—I am, etc.,

HORACE M. SHELLEY,
London, W., July 14th. M.R.C.S., D.T.M. and H.

PLUMBISM

SIR,—In the issue of the *Journal* of July 18th due importance is paid, in the articles by Dr. Edwin Bramwell and Dr. Norman Porritt, to the part played in the causation of plumbism by drinking water of the soft, acid, peaty, or moorland class. It is, however, not generally known that the property of plumbo-solvency is not confined to waters of this class. We have met several instances of very hard well waters which were markedly plumbo-solvent, and gave rise to severe lead poisoning among the consumers. A word of warning is necessary, for it is unsafe to assume that because a water is hard that contact with lead may take place with impunity.—We are, etc.,

JOHN F. BEALE, M.A., M.R.C.S., D.P.H.
ERNEST SUCKLING, M.B., B.S., D.P.H.
London, E.C.4, July 20th.

Medico-Legal

INJUNCTION AGAINST PROPRIETOR OF DRUG STORE

BRITISH MEDICAL ASSOCIATION v. MARSH

In the Chancery Division of the High Court of Justice, before Mr. Justice Maugham, on July 14th and 15th, an injunction was asked by the British Medical Association to restrain Mr. James Josiah Marsh, trading as Marsh's Manufacturing Chemists and the "B.M.A. Drug Stores," at 106, Borough High Street, S.E., and 186, Walworth Road, S.E., from representing that the drugs or medical or toilet preparations which he offered for sale were offered for sale by or on behalf of the Association, or from representing that he was carrying on business as a department of or in connexion with the Association, or from carrying on business or advertising or issuing to the public circulars under the name of the Association or the description "B.M.A." or "B.M.A. Drug Stores," or under any other name or names or description containing the letters B.M.A. in juxtaposition.

Mr. R. P. Croom-Johnson, K.C., and Mr. H. C. Dickens, instructed by Messrs. Hempsons, appeared for the plaintiffs, and Mr. Archibald Pocock and Mr. J. A. Lincoln Reed, instructed by Mr. G. L. Borradaile, for the defendant.

CASE FOR THE PLAINTIFFS

The plaintiffs alleged that at each of the stores the defendant displayed signs, cards, and posters bearing the letters "B.M.A.," and exhibited for sale and sold drugs and medical remedies bearing the letters "B.M.A." on the bottles or boxes containing them, and that he issued bills, labels, advertisements, and circulars in connexion with the sale of them, bearing the inscription "B.M.A. Drug Stores" and "B.M.A.," and containing references to the plaintiffs by their full name.

The defendant admitted these allegations, but contended that the letters B.M.A. did not exclusively or necessarily denote the plaintiffs, and that he was entitled to use the letters.

JUDGEMENT

In giving judgement Mr. Justice Maugham said that he could well understand there was a most important question of law, but on the questions of fact that arose he had been unable to see that there was anything to argue at all. His Lordship then continued:

The plaintiffs are the British Medical Association, a company registered under the Companies Acts, not for gain, and therefore entitled to carry on business without the addition of the word "Limited." It is an exceedingly well-known Association, first registered under the Companies Act in 1874, but the Association dates back to 1832—that is to say, just short of a hundred years ago—being then an unincorporated body. It has no less than 35,000 duly qualified members, and is a body that represents the opinion of the medical profession as a whole, and has been so recognized in various Government inquiries. It publishes a journal; it is constantly referred to in the public press, as appears from a large number of press cuttings which have been proved in this case; and it has also published, amongst other things, two publications, described respectively as *Secret Remedies*, and *More Secret Remedies*, the first in 1909, and the second in 1912. It is the nature of those two publications that has led to the activities of the defendant, and therefore, indirectly, to this action. The plaintiffs were concerned with the enormous growth of the proprietary articles which the public were induced to buy for the remedy of all sorts of ailments, and they were of the opinion that the remedies contained in proprietary and patent articles sold and broadcast over the country were in many respects remedies which were useless, if not harmful, and that they were sold at prices which bore no relation to the real prices of the ingredients. Accordingly, they caused analyses to be made of a number of the proprietary articles in question, and they published these analyses in the two books in question. There is no doubt that they thereby showed the public that a large number of the remedies in question were articles containing quite common substances, that in many cases the remedies were useless and that in some cases the remedies were positively harmful, and that in practically every case the proprietors of these remedies were charging for them sums which were greatly in excess of the value of the substances of which the remedies were composed. The two books had a large sale, and were, as I understand, reprinted on one or two occasions. The defendant came to the conclusion in 1923 that there was a profitable business to be carried on by taking from the analyses made for the plaintiffs the information necessary for making the proprietary remedies, by advertising to the public the fact that the articles made by him from those analyses were in effect precisely the same as the proprietary remedies, and selling them at a very much lower price. That was a perfectly legitimate idea. What was not legitimate was to pretend, if he has pretended, that the business so carried on was carried on as a branch of or with the assistance of or with the approval in some shape or form of the British Medical Association. It is apparent of course, that the British Medical Association were opposed to any of these remedies being used by the public without consideration and without medical advice, and are also opposed to the use of any secret remedies at all. The defendant, however, began in 1923 by forming a company . . . under the name of Public Prescriptions Limited, incorporated on June 2nd, 1923, with a capital of £500, divided into 500 shares of £1 each. . . . The Memorandum and the Articles were signed by a Mr. Hart, by the defendant, and by an Albert Edward Parkes, who was described as an analytical chemist. How far the company described itself or intended to make people believe that it was associated in some way with the British Medical Association I do not know, and it is not necessary to determine. The defendant says that at some date he adopted the letters "B.M.A." in a diamond as a trade mark, and some corroborative evidence has been given as regards that. An explanation has been suggested as to the reasons for the adoption of those three letters by the company; I shall return to that matter, because I want to conclude the story so far as it relates to the company.

His lordship then referred to the winding up of the company by reason of its liabilities, following an extraordinary resolution which it passed in July, 1926. It appeared from the evidence that the defendant had taken over, without any agreement or payment to himself as liquidator, the remaining stock of the company, its alleged trade mark "B.M.A." in the diamond, its bottles, its labels, and its other papers, and that he had used the labels up to the present time for the purposes of the business. During its existence the company had no shop, and carried on, or professed to carry on, a wholesale trade. About January, 1930, however, the defendant set up at any rate two shops, one at 186, Walworth Road, and the other at 106, Borough High Street. His lordship then went on:

Now when the shops were set up by the defendant, he chose to adopt a method of trading as to which I think there can be no doubt at all so far as concerns the conclusions that he wished the public passing his shops or entering them to draw. Taking the shop at 186, Walworth Road, it is apparent from an examination of the agreed photograph of the front of that shop that the passer-by sees at the top of it, taking up quite a large proportion of the window, the letters "B.M.A." in a diamond, with under it the words "Drug Stores"; in other words, the shop is represented as being the B.M.A. Drug Stores. Beneath that, in the window, I see exposed a guarantee beginning with the words "We guarantee." Across that, in wide letters, are the words "Why pay more? See what you save"; and beneath that I see, written out in conspicuous letters, the words "The British Medical Association." When I look at the whole of the card which is so exposed in the window, the full guarantee is this: "We guarantee," which is in large red letters two inches high, and then follow the words "that all reproductions of patent medicines are prepared strictly to the analyses of"; and then below is written again, in large red script, "The British Medical Association." It is wholly beyond doubt, to my mind, that the words "The

British Medical Association" there under the words "We guarantee" are so written for the purpose of leading the members of the public to think that "B.M.A." above is the same as the British Medical Association. If that alone were true, it seems to me that there can be no doubt as to the right inference to be drawn; but beneath the guarantee are three or four rows of bottles: the bottles are in pairs, and behind the pairs of bottles there are a number of cards which have been exhibited in this case. I will take the one with regard to "Phosferine" as an example. On the left-hand side of the card are the words "Phosferine, B.M.A. Analysis," and then there follow the five materials of which "Phosferine," according to the analysis of the British Medical Association, is composed. Below are the words "One quarter ounce bottle, 1s. 3d." On the right-hand side of the card I find this: "Nerve Food," below that "B.M.A." in a diamond, and then follow the words "is guaranteed to be made exactly from the same analysis. One and a half ounce bottle, 1s. 0d." It seems to me perfect waste of time to labour the point that "B.M.A. Analysis" there means "British Medical Association," and that "B.M.A." in the diamond refers to exactly the same thing as "B.M.A." in the words "B.M.A. Analysis," and that they both refer to the same "B.M.A." that is above the fascia of the window, which, as I think, quite clearly is the British Medical Association, who have given the large guarantee mentioned in the card. It looks as if the British Medical Association were giving a guarantee, though in truth the guarantee is a guarantee by some person unknown, and the words "the British Medical Association" at the bottom are a continuation of the sentence "the analyses of"—"the analyses of the British Medical Association."

Other documents are put forward by the defendant which I will not take up time by considering. It is, to my mind, beyond all question that both at 186, Walworth Road, and at High Street, Borough, the defendant, by his fascia, by the printed matter placed in his window, by the cards which he places behind the bottles, and by the labels on the bottles, is intending the public to draw the conclusion that these two shops are carried on by or in some connexion with the British Medical Association. I should have come to that conclusion without the evidence as to what the letters "B.M.A." mean in common parlance; but as a matter of fact it has been established that the letters "B.M.A." have meant in ordinary parlance for over twenty years past the British Medical Association. The evidence with regard to that was not cross-examined to for the most part. A dictionary of abbreviations by Mr. Rogers, published in 1913, has been produced in which the only meaning ascribed to "B.M.A." is "British Medical Association." A number of press cuttings have been produced from all sorts of papers referring to the British Medical Association as "B.M.A." The *Times* actually have at some previous date, which I have forgotten for the moment, under the heading "B.M.A.," "meaning the British Medical Association." I have not the smallest doubt that "B.M.A." to the public generally means the British Medical Association. That does not, of course, mean that every member of the public knows that fact; it means only that there are quite a large number of members of the public who do know the fact. Apart from that, the defendant, as I have said, has taken pains, by the arrangement in his shop windows and by reference to "B.M.A. Analysis," to make it perfectly plain that he meant by "B.M.A.," or intended the public to think was meant, "British Medical Association."

Now I shall deal very shortly with the suggestion that the defendant adopted the letters "B.M.A." as indicating "Bushby," "Marsh," and the person named Atkinson, who for a few months was employed at a salary by the company wound up in 1926. I have already pointed out that the company was formed for the purpose of carrying on the business of exploiting, so to speak, the analyses made by the British Medical Association. The defendant is described in the Articles of Association as a manufacturing chemist. One of the other signatories was also a chemist. It is perfectly plain on the evidence that they knew, and must have known, that "B.M.A." meant to a chemist, or to a doctor, or to the public, "British Medical Association." Frankly, in my opinion, to suggest that "B.M.A." was taken from the three initials of Bushby, Marsh, and Atkinson, is an obvious and ridiculous untruth. I am perfectly convinced in my mind that "B.M.A." was taken to help the defendant or his company to exploit these analyses of the B.M.A. by trying to represent to the public some association with the British Medical Association. Accordingly, I am quite convinced, upon the evidence before me here, that the defendant, prior to the date of the writ, was carrying on business at the two places I have mentioned so as to represent to the public that both those businesses were either carried on by the British Medical Association, or were in some way connected with that Association as businesses in which they had an interest of some kind.

The real question that falls to be decided here is the question of law whether, on that finding of fact, the plaintiffs are entitled to an injunction. No actual damage has been proved, or is suggested as having occurred. The action is in the nature of a *quia timet* action, and has to be dealt with on that footing.

After reviewing the decisions of a number of cases cited on behalf of the defendant and the plaintiffs, and the recent judgement of Mr. Justice Farwell in the action of British Legion v. British Legion Club (Street) Limited, his lordship concluded:

In the present case I find, as an inference of fact, that the acts of the defendant tend to injure the plaintiffs in their business both by tending to cause existing members of the Association to leave the Association and to cause qualified medical men not yet members of the Association to abstain from joining. The plaintiffs as a corporation have, in my opinion, a business: they subsist on subscriptions, and mainly on subscriptions of persons who become members. They are a purely voluntary body, and anybody may leave the Association or join it as they will. I am satisfied that people who may see these shops may come to the conclusion, and ordinary members of the public will come to the conclusion, that the British Medical Association is in some way connected with these shops. I have given my reasons for coming to that conclusion. Accordingly, my opinion is that the acts of the defendant tend to injure and to cause damage to the plaintiffs in their business, and that as a matter of law that is sufficient ground for granting an injunction in the present case. I am not relying on the likelihood of actions being brought against the plaintiffs if for some reason the remedies sold by the defendant turn out noxious or cause damage, but I do not wish to intimate any doubt on the view expressed by Mr. Justice Byrne in the case I have referred to of Walter v. Ashton upon such a point. My decision is that the plaintiffs are entitled to the injunction. . . . The defendant must pay the costs.

The Services

HONORARY PHYSICIAN TO THE KING

Surgeon Vice-Admiral R. St. G. S. Bond, C.B., M.B., C.M., F.R.C.P., F.R.C.S.Ed., D.P.H., has been appointed an Honorary Physician to the King as from July 1st, 1931.

DEATHS IN THE SERVICES

Inspector-General Charles Henry Woods, C.B., C.V.O., K.H.P., R.N. (ret.), died at Alverstoke on June 3rd, aged 90. He was born on May 20th, 1841, was educated at St. George's, and took the M.R.C.S. and the M.D.St. Andrews in 1862. Entering the Navy in 1862, he was promoted to staff surgeon in 1876, and to fleet surgeon in 1884. In 1875 he served on H.M.S. *Serapis*, which took the Prince of Wales, afterwards Edward VII, to India, for his tour there, the first visit of a member of the Royal Family to India. In September, 1878, he was appointed medical officer of the Royal yacht *Osborne*, Queen Victoria's favourite vessel, an old paddle steamer; and in 1878 was transferred to the *Victoria and Albert*, the successor to the *Osborne*. He was promoted to deputy inspector-general in 1895, and to inspector-general in 1900, but continued to serve as medical officer of the Royal yacht till his retirement, on attaining the age of 60, on May 20th, 1901. He received the C.V.O. in 1901 and the C.B. in 1902, and in 1901 was also made honorary physician to the King.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

At the House of Commons, on July 15th, a conference was held on the Proprietary Medicines Bill, which was attended by representatives of the Pure Food Council, the British Medical Association (Dr Alfred Cox), the Pharmaceutical Society, and the Proprietary Medicine Manufacturers Sir Robert Newman was in the chair, and Mr Somerville Hastings, who introduced the Bill, attended The meeting agreed to arrange a round-table conference of all interests to see if an agreed Bill on the subject could be presented to Parliament The Proprietary Medicine Manufacturers intimated that they object to the proposed deposition of formulas and to the schedule of diseases which, under the present Bill, may not be treated by proprietary medicines

The House of Commons this week read the Unemployment Insurance Anomalies Bill a third time. Debates arose on agriculture, transport, and other services Progress has been made with the Bethlem Hospital Amendment Bill, which received its second reading in the Commons on July 17th

Mental Deficiency

Replying to Major Church, on July 16th, Mr LEES SMITH said that, on March 31st, 1930, there were 15 500 children under instruction in England and Wales in special schools for the mentally defective , 27 per cent of the local authorities in England and Wales provided such special schools Attendance was compulsory up to the age of 16 Children certified as suitable for education in special schools for the mentally defective suffered from a severe degree of retardation, or incomplete mental development There were no separate statistics in regard to children suffering from "known mental diseases," unless severe retardation itself was so regarded, but they were few in number, and usually fell outside the scope of the educational system Records of after-careers were kept as far as possible by the local education authorities and voluntary bodies which maintained special schools

Replying to Mrs Manning, on July 16th, Mr LEES-SMITH said that the number of local authorities who approached the Board of Control about the provision of special schools for mentally defective children and were advised not to proceed was one in 1926 eight in 1927 two in 1928, and one in 1929 Since January 1929, the Board had approved any proposals submitted The refusals were made under a previous administration and the reason was that the report on mental deficiency was being prepared

Miss LAWRENCE, replying to Mr G MacDonald on July 20th, said that on January 1st, 1926 there were 3,581 mental defectives in certified institutions in Lancashire and 12,766 in England and Wales In 1927 there were 3,627 such persons in Lancashire and 13,342 in England and Wales The figures for 1928 were 3,712 and 14,099 respectively , for 1929, 3,770 and 14 840 , for 1930 3,858 and 15,664 , and for 1931, 3 949 and 17,200 Separate statistics for children were not available, but it was estimated that of the numbers above approximately 15 per cent were children under 16 years of age

Sterilization of Mental Defectives

In the House of Commons, on July 21st, Major CHURCH asked leave to bring in a Bill to enable mental defectives to undergo sterilizing operations or sterilizing treatment upon their own application, or that of their spouses, parents, or guardians [The text of this Bill will be found at page 161] He said that those associated with him realized that they were asking the House to do something which could be regarded as being in advance of public opinion His own view, though it was not that of all those associated with him, was that this was merely a first step in order that the community might be able to make an experiment on a small scale before compulsory sterilization proposals for unfit persons were put forward The Bill was based on the willingness of those suffering from mental defect to undergo voluntarily an operation which would prevent them bringing children into the world It provided every reasonable safeguard for the voluntary principle The patients themselves must consent to the operation, and then their spouses or parents or guardians must agree There must be consent on the part of the Board of Control, and, finally, the operation could only be carried out after approval had been given by a judicial authority The operation would not be the mutilation usually associated with sterilization It might be urged that mere sterilization was not enough, and was not a cure for the problem of mental disease He did not suggest that it was , but he suggested that, since information compiled about the ancestry of mental defectives in a number of different States and countries showed that anything from 45 to 80 per cent of the mental defectives had inherited defective germ plasm, it would be advisable to take the risk of sterilizing all the defectives, and that in the course of a generation or so their number could be reduced to measurable size

Dr MORGAN asked the House not to approve what he said was anti-working class legislation Nature had its own way of dealing with mental defectives—by limiting their progeny (Cries of "No") There was defective germ plasm in every family, and it was computed that the chance of a defective paternal and maternal plasm uniting was one in five million The sterilized defective would spread venereal disease He advocated the alternative of segregation

The motion for leave to introduce the Bill was rejected by 167 votes to 89.

Housing

In the House of Lords, on July 13th, the BISHOP OF SOUTHWARK called attention to the number of persons who in London and elsewhere, lived in underground dwellings He asked how many houses the local authorities proposed to build in the next five years He said that the medical officer of health of the London County Council had stated that there were about 30,000 basement dwellings in London unfit for human occupation in which 100 000 persons were living These places were always damp and dreadfully overcrowded The results to health were deplorable He (the Bishop) was told that basement children were unhealthier than slum children and that they suffered particularly from pneumonia and rheumatism Lord JESSEL said that one difficulty to be contended with was that tenants would not move because they feared to lose the protection of the Rent Restrictions Act Lord DICKINSON said his information was that things were getting worse rather than better

Lord SNELL said that the Government were in complete agreement with the main principle of the Bishop of Southwark's speech The powers possessed by local authorities were adequate to deal with the problem They already possessed full powers to close unhealthy dwellings The Housing Act of 1930 was an earnest of the Government's intention to deal drastically with the whole problem of the slums They would keep the local authorities alive to their duties.

Puerperal Fever

On July 16th, in reply to Mr Ramsbotham, Mr GREENWOOD said he understood that a new serum was being used for the treatment of puerperal fever in this country It was not yet possible to arrive at any definite conclusions on its value Research into the causes and treatment of puerperal fever was being undertaken with the assistance of the Medical Research Council and his Department He did not consider there was any necessity for a special commission of inquiry

Replying to Mr Sorensen, on July 16th, Mr GREENWOOD said that separate figures for nursing homes were not available , but, according to the returns furnished by medical officers of health, the numbers of maternal deaths which occurred during 1930 in all institutions including nursing homes, in Essex, Middlesex and Kent, were 68 53, and 34 respectively No corresponding figures were available for the first six months of 1931

Lead Poisoning.—Mr CLYNES told Mr Graham White, on July 16th, that the number of cases of lead poisoning notified during 1930 under the regulations of the Lead Paint Act was sixty-six, of which thirteen were fatal He had no reason to doubt that the regulations were working satisfactorily but would receive information of instances where they were not

Obituary

F RICHARDSON CROSS, LL D, M B, F R C S

Consulting Ophthalmic Surgeon, Bristol Royal Infirmary, and Bristol Eye Hospital

As announced in our last issue, Mr F Richardson Cross, the well known ophthalmologist, died at the age of 83, on July 12th, at his residence, Worcester House, Clifton, Bristol. He had been in good health until a few weeks ago when he was attacked with influenza, from which he did not recover, although his death had not been anticipated. In the past few years his activities had of necessity been curtailed, but he nevertheless maintained a keen interest in many spheres besides that of his own specialty the active practice of which he only gave up in the last three years of his life. Even at the age of 78 he was operating with his accustomed skill and steadiness.

Francis Richardson Cross was a Somersetshire man, having been born at Merriott, where his father, the Rev. Joseph Cross, M.A., formerly precentor of Bristol Cathedral, was vicar. Educated at Crewkerne Grammar School, he went up to King's College, London, where after qualifying, he acted as house surgeon in charge of the eye wards, subdean, medical tutor and lecturer and was associated with the late Lord Lister, and in later years was elected a Fellow of the College. After taking his F.R.C.S. in 1878, he left London, and was elected assistant surgeon to the Bristol Royal Infirmary in September of that year, and became surgeon in the following January. This post was held until October, 1885, when he was elected ophthalmic surgeon. Although greatly interested in diseases and injuries of bones during these years he had realized what a wide scope lay in the study and practice of ophthalmology, and of the necessity of an ophthalmic department in the Royal Infirmary. Accordingly he decided to devote himself to the special subject in which, as time went on, he was to become so prominent a figure, and, founding the department at the Infirmary, acted as its surgeon until July, 1900. His association with the Infirmary was not, however, confined to this one subject, for he was interested in its work generally, and in medical education in particular. In 1880 he was appointed dean of the Medical Faculty of University College, Bristol—a new post formed to supervise and arrange clinical instruction. His work with the Infirmary did not cease until September, 1928, and throughout these years he gave of his best towards the management of its affairs, as a small recognition of which he was elected a vice-president in 1919. There is no doubt that Mr. Cross, by his wise advice, ability, and powers of organization, advanced the welfare of the Infirmary in a high degree, and as a prominent member of its committee said, "his personality had been a spell upon the institution, and stood therein for happiness, love of work, and duty, which had also affected the staff as a whole."



In 1882 Mr. Cross was appointed honorary surgeon to the Bristol Eye Hospital, and it was here, even more than at the Royal Infirmary, that his chief work in ophthalmology was done. The hospital was then in a poor state owing to lack of support, but throwing his indomitable energy into the task, it was not long before striking improvements were effected, and it is almost wholly due to him that the hospital has reached the state of efficiency and prominence that it now holds. His first house surgeon was the late Professor Snellen of Utrecht, son of the able ophthalmologist whose name is associated with the test types, and following him comes a long list of men, all of whom realize the privilege of having worked under him, and are correspondingly grateful for his able teaching and example. He was a man who had set himself a very high standard of life, and he expected it in those who were associated with him. His active work at the Eye Hospital was continued until some five years ago.

In 1894 Mr. Cross was president of the Ophthalmic Section of the British Medical Association at its Bristol meeting, and was Bradshaw Lecturer at the Royal College of Surgeons of England in 1909. In 1913 he was elected president of the Ophthalmological Society of the United Kingdom, and vice-president of the Ophthalmic Section of the International Congress of Medicine, held that year in London. In 1915 he delivered the Long Fox Lecture at Bristol, and in 1920 was Doyne Memorial Lecturer at the Oxford Ophthalmological Congress. He was elected a member of the Council of the Royal College of Surgeons in 1898, and of the University of Bristol from 1909 to 1912, in which also he was reader in ophthalmology. In addition, he had a seat on the council of Clifton College from 1900 to 1927.

His interests were very wide, and besides his professional achievements he was a very prominent citizen of Bristol. In 1897 he was elected sheriff of the city and justice of the peace, and to commemorate the birth of a daughter in that year was presented with a silver cradle. In 1889 he was president of the Bristol Grateful Society, and of the Bristol Dolphin Society in 1912, and in 1916 of the University Colston Society. During his tenure of these offices he was instrumental in collecting large sums for charitable objects. He acted as chairman for the Bristol centre of the St. John Ambulance Brigade, and for very many years was chairman of the Bristol School of Industry for the Blind. The welfare of the blind was a matter which Mr. Cross had very much at heart, and on behalf of those unfortunate ones who had lost their sight his labours were unceasing. He was instrumental in obtaining new and better premises for the Royal School for the Blind, and helped to establish a blind women's hostel in the city.

Standing well over six feet in height, with good breadth of shoulder, fine upright carriage, and, for most of his life, white or nearly white hair, Mr. Cross was an impressive figure. He was one who in any gathering at once arrested attention. He was a fine speaker with the gift of being able to say the right word at the right moment, and with a cultured charm which always won approbation. The writer of this, one of his old house-surgeons, feels that it is impossible to pay in words an adequate tribute to him, to attempt to convey quite what he was to those who had the privilege of working with him. At first he seemed to inspire only awe and respect, but on closer association these feelings passed to love and admiration for a great souled man. In his life

he accomplished much for the community, and his influence in many spheres was great, but not the least of these is that which has impressed itself upon his old alumni practising all over the world.

In 1889 he married Eva, daughter of Captain Hawkes, R.N., who predeceased him in 1920, and he leaves three daughters. The funeral service took place on July 16th in Bristol Cathedral, and, besides the principal mourners, there were present many prominent people, together with representatives of learned societies, professional and otherwise. B. C.

Sir RICHARD CRUISE has been good enough to send the following appreciation. A few biographical details included above have been omitted.

The announcement of the death of Mr. Richardson Cross in the daily papers will have produced a sensation of deep regret and great personal loss among a very wide circle of patients and friends. His reputation as an oculist of keen discernment, shrewd judgement, and deft execution was far-flung at the beginning of this century. He was a man of very fine presence, an erect and athletic carriage, and a commanding personality, expressive of kindliness combined with courteous determination; an enthusiast in all things, but primarily in ophthalmology. He was a vital factor in the professional and civic life of Bristol for the best part of fifty years.

While holding the post of medical tutor and subdean at King's College, he was clinical assistant at the Royal London Ophthalmic Hospital, and was frequently in charge of the eye department at King's College Hospital. His work at King's brought him into association with Lister, who exerted a profound influence on his whole career, and it was at Lister's express wish that he accepted the invitation to join the Bristol Medical School, and was the first exponent of Lister's teaching of antiseptic surgery in the West of England. One of Mr. Cross's proudest possessions was the following testimonial in connexion with the Bristol appointment, signed by Lord (then Mr. Joseph) Lister, dated August 4th, 1878:

"Since my connection with King's College I have been constantly thrown into intimate relations with Mr. Cross. I have found him not only well versed in professional knowledge but earnest and unprejudiced in the further pursuit of it. I believe Mr. Cross would prove a great gain to any medical school with which he might become connected."

In later years, when the prognosis had long been verified, Cross was elected to the Council of the Royal College of Surgeons of England, at his first attempt, and his candidature for election was proposed by Lord Lister.

In 1882 he became surgeon to the Bristol Eye Hospital, and it is with that institution that his name will be enrolled in perpetual honour. With enthusiastic determination he raised funds and converted a collection of mean and ill-equipped dwellings into a well-appointed up-to-date institution. A long succession of house-surgeons can bear testimony to the energy of his initiative for the furtherance of the welfare and treatment of all who attended the Bristol Eye Hospital. He played an important part in the foundation of Bristol University, was awarded the honorary degree of LL.D., and his portrait hangs in the council meeting room. In the civic life of Bristol his name was a household word.

As a young man he was an exceptional all-round athlete, a fine runner at the United Hospitals meeting, and captain of King's College Football Club. Always a keen horseman, he hunted regularly up till the war with the Duke of Beaufort's and Berkeley Hounds, and was justly proud of being given the hunt "button" by the late Duke of Beaufort, and of wearing the "blue and buff" in the hunting-field. He kept a pedigree herd of shorthorns at his hunting-box at Alverston, bred blood-stock with which he won some good races at Newmarket, trained and raced carrier pigeons, and was president of the Bristol Kennel Club.

In an address some years ago he foretold the formation of the Ministry of Health in these words: "The medical profession must in the future be bold enough to advise the State as well as the family concerning conditions of life, labour, and environment." He maintained that, for his own salvation, a man should not allow his profession to exclude his active interest in other spheres of life, and lived up to his conviction.

His interest, help, and guidance to those who worked for and with him were generous and genuine, and as one who had the good fortune to be of that company, and on behalf of the remainder of that company, I submit this inadequate tribute of our appreciation.

[The photograph reproduced is by Elliott and Fry.]

ROBERT E. LORD, M.D.

Consulting Physician, Colwyn Bay and West Denbighshire Hospital

We regret to announce the death, on July 10th, of Dr. R. E. Lord, who was one of the most prominent citizens of Colwyn Bay, and was regarded as the head of the profession in that district. He was born at Rochdale on January 11th, 1867, and was educated at the Manchester Grammar School and Owens College, Manchester. Although in his early years he had a delicate constitution, he was a brilliant student, and passed the B.Sc.Lond. with honours in physiology when he was only 18 years of age. He graduated M.B. Lond. when he was 23, and M.D. in the following year. He had also obtained honours in anatomy and materia medica at the intermediate M.B. examination. He then served as house-physician to the Manchester Royal Infirmary and senior house-surgeon to the Salford Royal Hospital, and was an assistant demonstrator of anatomy at Owens College.

Dr. A. N. LEEMING writes:

When Dr. Lord came to Colwyn Bay in 1893 he was in delicate health, having had pneumonia with complications, and it is marvellous to think that he has laboured with such success and distinction and put through such a quantity of valuable work. This speaks well for the renovating capacity of the North Wales coast. During his early years he was one of the surgeons to the old Colwyn Bay Cottage Hospital, and was one of the principal supporters of the movement to enlarge this institution into the Colwyn Bay and West Denbighshire Hospital. At the same time, most valuable work was done by the old hospital, especially considering the limited number of beds available. Dr. Lord for many years was an authority on the treatment of tuberculous disease, and the results of his great experience were given in a valuable treatise read to the Colwyn Bay Medical Society a few years ago. At the time of his death he was consulting physician to the Colwyn Bay and West Denbighshire Hospital and chairman of the Medical Advisory Board, and was also president of the Colwyn Bay Medical Society and a member of the North Wales Branch Council of the British Medical Association. Dr. Lord also found time to do valuable work outside his profession. He was the people's warden at St. Paul's Church, a member of the executive committee of the Colwyn Bay Guild of Social Service, and a justice of the peace for Denbighshire since 1917. At the time of his death he was the only doctor in practice in Colwyn Bay serving on the bench of magistrates. As an indication of his prestige in Manchester, it may be noted he was one of the four vice-presidents of the Manchester Royal Infirmary Residents' Club, and the only one of the four who was not a consultant in Manchester. For many years he had held the responsible position of medical officer to Rydal School, and partly in consequence of this his

name is well known all over the country It is difficult to exaggerate his value to our hospital, at every stage in its evolution he has taken a valuable and influential part His judgement and advice on committees and the hospital board have been universally respected and supported, when serving on the constitutional committee of the new hospital his opinions were of the utmost value in framing the rules which guide the running of the institution

Dr Lord was an example of the finest type of medical man, he was devoted to duty, and animated with a high minded loyalty to the best traditions of his profession, he was kind, courteous, and skilful He was so keen on his work that the latest advances were always noted and studied by him, consequently he was often called in as a second opinion, on which occasions his advice was always valuable to his colleague and his remarks to the patient helpful and inspiring He had a keen sense of humour, and on occasions showed signs of great determination, these qualities were very useful sometimes when he was chairman of committees He leaves a widow, two sons, and three daughters, and with them the deepest sympathy of the whole neighbourhood is felt His wife has devotedly supported him in many charitable and public spirited movements His eldest son was killed during the war, his second son, Herbert, is in practice with his father's firm

Dr E L B WILKES writes

Dr Lord was generally expected, after his brilliant studentship to remain in Manchester as consultant His career was, however, interrupted by a severe illness, after which he came to Colwyn Bay to recuperate—and stayed He was a complete general practitioner, but he was much more He was the pioneer of modern major surgery in the district and his surgery showed the same thoroughness of knowledge, sound judgement, and conscientious completeness in practice as marked all his other activities Yet it was as a physician that Dr Lord chiefly made his name, and his reputation in treating diseases of the lungs especially tuberculosis, was widespread, and had much to do with the growing reputation of Colwyn Bay The range and accuracy of his knowledge in all branches was remarkable If he could be said to have specialized, it was in affections of the respiratory tract—from anterior nares to alveoli But the standard of his work in everything was really that of the "specialist" He became an extremely busy man but his methodical habits carried him through and he always made time to keep himself well abreast of medical progress All his work was of the same high standard, for rich or poor, in hospital or private practice—there was no slap dash "take it easy" "it'll do" about him His skill and judgement were always at the disposal of his colleagues, freely and generously His influence greatly helped to promote friendly relations and co operation, and his fairness and his careful weighing of all questions submitted to him were of the utmost value He was, as it were, a father to us

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In quick succession two old St George's men general practitioners of the best type in the West End of London, have passed behind the veil—E B Turner on June 30th in London, and after two months' illness, MONTAGU MONIER WILLIAMS on July 4th at Collioure, Pyrenees Orientales, France, where he had lived in retirement since 1927 They both had wide interests and were prominent in directions other than those of private practice, and especially in different forms of sport Montagu Sneade Faithfull Monier Williams was born at Cheltenham on September 19th 1860 as the fifth son of Sir Monier Monier-Williams KCIE, Boden Professor of Sanskrit at Oxford from December 1860, to 1887 and his wife, Julia Greatham daughter of the Rev F J Faithfull, Rector of Hatfield, Herts Educated at Winchester, Christ Church, Oxford, and St George's Hospital, he qualified at the Conjoint Board in 1890, and, marrying in the same year practised in Onslow Gardens for the whole of his professional life After the war he took an active part in carrying out in London the methods of Emile Coué, whom he visited at Nancy, where the new therapeutic treatment by auto suggestion had superseded the hypnotic suggestion practised by A A Liebault and H Bernheim in the last quarter of the last century He induced Coué to come to England to demonstrate his methods gratuitously, was physician to the Chelsea Clinic of Psychical Education, and had an auto suggestion clinic free to the poor in King's Road, Chelsea His first wife died in 1925 after a long illness, and two years later he married again, the widow of Warington Baden Powell, KC, and retired to live at the Chateau de Collioure in the South of France, where he was much interested in growing vines Like his father he was an expert skater, and wrote authoritatively on the subject *Combined Figure Skating*, with his brother Stanley (1883), *Figure Skating Simple and Combined*, with W R Pidgeon and A Dryden (1892), the volume in the Isthmian Library (1898), and the article in the *Encyclopaedia of Sport* (1898) He invented and patented the Monier Williams skate During this century he became a first class croquet player, and competed at a number of meetings sometimes under the sheltering pseudonym of "A S Kator" A modest and upright gentleman he leaves many friends, among them the writer, who knew him for sixty years, to sympathize with his widow in an irreparable loss

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Dr JAMES MATTHEW LAZENBY, who died at his residence in Jersey on June 5th, after a long illness, at the age of 68, received his medical education at Newcastle, where he won several scholarships and prizes He graduated MB of Durham University in 1885 and BS two years later After spending some years at Long Preston, Yorkshire, he commenced general practice at Whitley Bay in 1896, and for several years was medical officer to the Northumberland Village Homes and the Prudhoe Memorial Convalescent Homes In 1909 he removed to Gosforth, and subsequently to Jersey, where he built up a large practice and became widely popular At the outbreak of war he obtained a temporary commission in the RAMC, and, after service in France, went to Salonika He had an arduous time in the hospital ships *Panama* and *Esquito*, and was eventually invalided from the Service Apart from his medical work Dr Lazenby took particular interest in social evolution, and especially in religious developments He published a treatise entitled *A Layman's Religion*, in which he outlined the religious aspirations of the average man In the earlier part of his career he devoted much time and energy to promoting instruction in ambulance work, and helping the organization of local nursing associations At his funeral on June 8th there was a large attendance of his personal friends and representatives of various institutions and societies in Jersey

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To the deep regret of his many friends and patients, DAVID SOMERVILLE DOUGHTY passed away at Dalston, Cumberland, on July 10th Born at Thornhill, in Dumfries in 1863, educated at Hutton Hall in the same county, he became in due course a medical student at Edinburgh University, where he graduated MB CM in 1886, proceeding to his MD degree in 1895 He began his medical career as house surgeon to the Dumfries Infirmary, spent a year as an assistant in London then practised for another year at Hesket Newmarket in Cumberland, before starting in practice at Dalston where he spent the remainder of his life He retired from active work only a few weeks ago owing to failing health A colleague writes Of Dr Doughty as a man and a physician it is difficult to speak too highly He was the type of man eulogized by the Roman poet of old, *integer vitae scelerisque purus* With a keen interest in his profession and an abundant store of human sympathy, he was one of the finest specimens of the old fashioned

country doctor one could wish to meet. He had many and varied interests. He was not only a popular doctor; he was a keen follower of hounds, an ardent fisherman, and a first-class game shot, and there was no project set on foot calculated to promote the happiness of his neighbours which had not his whole-hearted support. Among his other activities he found time to serve for many years as chairman of the Local Panel Committee of the National Insurance. The meetings of this body he presided over with rare business acumen, while his genial good humour soon smoothed down any asperities arising in the course of the discussions. A sad circumstance in connexion with Dr. Doughty's death is that he was about to be presented with an illuminated address and a substantial testimonial from the clientele he had so faithfully served for forty-two years. We feel sure that many years will have passed away before the memory of this beloved physician fades from the minds of those who knew him and appreciated his worth.

The following well-known foreign medical men have recently died: Dr. OTTO SCHWARZ, extraordinary professor of ophthalmology at Leipzig, and editor of an encyclopaedia of ophthalmology; Professor MAX LANDOW, formerly director of the surgical division of the municipal hospital at Wiesbaden, aged 74; Dr. OTTO WALLACH, professor of chemistry at Göttingen, aged 84; Dr. ANDRÉ SOREL, a Paris radiologist; Dr. HIRAM WOODS, emeritus professor of ophthalmology at the University of Maryland School of Medicine, aged 73, of pneumonia; Professor F. KERMAUNER, head of the Second University Women's Clinic in Vienna, and author of works on carcinoma of the uterus, malformations of the female genitalia, and ovarian tumours, aged 58, of influenza; Dr. AUGUSTE ROUD, professor of anatomy at Lausanne, aged 60; Dr. RUDOLF WANACH, formerly professor of surgery at Dorpat, aged 69; Dr. EMIL VILLINGER, extraordinary professor of neurology at Basel, and author of a work on the brain and spinal cord, aged 61; and Dr. ABRAHAM PÉREZ MIRO, professor of therapeutics at the Havana School of Medicine.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on July 18th the following medical degrees were conferred:

M.CH.—T. H. Sellors, B. G. Scholefield.

B.M.—G. H. Bateman, F. Bicknell, H. de B. Kempthorne, R. B. Scott, T. R. Plummer, H. S. Atkinson, R. D. Newton, R. R. Bomford, Elizabeth C. M. Brunyate, Olive M. Capper Johnson, Mrs. Winifred Pitkin.

UNIVERSITY OF CAMBRIDGE

The managers of the Frederick James Quick Fund have elected Mr. David Keilen, M.A., F.R.S., Magdalene College, to the Quick Professorship of Biology for three years from November 1st, in succession to Dr. G. H. F. Nuttall, who retires on October 31st. Professor Nuttall has held this chair since its foundation in 1906.

UNIVERSITY OF LONDON

The Rogers Prize of £100 has been awarded to R. W. Fairbrother, M.D.

UNIVERSITY OF DURHAM

At the convocations held on June 30th and July 1st the following degrees and diplomas were conferred:

M.D.—C. F. Fairlie, G. McCoull, L. F. O'Shaughnessy (*in absentia*), T. S. Severs, G. E. Stephenson, H. G. Ungley, A. H. Wear, J. H. Weir.

M.D. (PRACTITIONERS).—J. W. Irvine.

M.B. AND B.S.—H. Bannerman, W. C. D. Bewick, R. Bewley, J. I. M. Black, T. H. Boon, Gladys M. Brice, J. L. Burn, C. F. Down, W. P. Dunn, W. L. Gardner, J. W. Gibson, J. Giles, T. R. Harlan, H. F. Harvey, N. V. Hepple, A. R. Holtby, A. D. Kelly, J. J. H. Lowe, Elizabeth S. Malcolm, Eileen G. Marshall, J. A. McKeon, J. C. Moor, E. W. Peet, A. H. Penman, A. de W. Ranken, L. R. Routledge, Kathleen Rowstron, E. Smith, H. K. Vernon.

B.HY. AND D.P.H.—B. Sergeant.

UNIVERSITY OF LEEDS

Department of Obstetrics and Gynaecology

The following elections to chairs in the Faculty of Medicine have been made by the council of the University of Leeds: Mr. W. Gough, B.Sc., M.B., B.S., F.R.C.S., as professor of gynaecology; and Mr. A. M. Claye, M.D., F.R.C.S., L.R.C.P., as professor of obstetrics.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the last meeting of the Royal Faculty of Physicians and Surgeons of Glasgow the following were admitted, after examination, as Fellows of Faculty: Amar Chand Bhardwaj, M.R.C.S., L.R.C.P., John Aloysius McCann, L.R.C.P. and S.Ed., L.R.F.P.S.G., and William Patrick, M.B., Ch.B.

Medical News

To mark the centenary of Hanwell Mental Hospital, which was first opened in May, 1831, the Minister of Health had consented to open, on Wednesday, July 29th, at 3 p.m., a new admission hospital villa, recently erected at the hospital.

St. Bartholomew's Hospital old students' annual dinner will be held on Thursday, October 1st, at 7.30 p.m., in the great hall of the hospital, with Sir Percival Hartley in the chair. The honorary secretary is Mr. R. M. Vick, F.R.C.S., 113, Harley Street, W.1.

The Fellowship of Medicine and Post-Graduate Medical Association announces that, from August 4th, continuing through the month, a course in urology will be held at the All Saints' Hospital; fee, £2 12s. 6d. The Queen's Hospital for Children will undertake an all-day course from August 17th to 29th, instruction being entirely by demonstration of cases, medical as well as surgical; lunch and tea are provided by the hospital authorities; fee, £2 2s. The Brompton Hospital will hold a course from September 7th for one week, the Bethlem Royal Hospital from September 8th to October 3rd, the Infants Hospital from September 14th to 26th, the Central London Ophthalmic Hospital from September 14th to October 10th, the Westminster Hospital from September 14th to 26th, and the Metropolitan Hospital from September 28th to October 10th. Detailed syllabuses may be obtained from the Fellowship, 1, Wimpole Street, W.1. (Langham 4266).

The British Red Cross Society will hold a course of nine lectures and demonstrations on tropical hygiene and nursing, commencing on Monday, September 28th, at 5.30 p.m. It is intended for persons who are going to warm climates for the first time. Particulars may be obtained from the county secretary, 9, Chesham Street, Belgrave Square, S.W.1.

Dr. Henry E. Sigerist, professor of the history of medicine at Leipzig, has been invited to give a series of lectures at the Johns Hopkins University, Baltimore, and various other universities in the United States.

As already announced in these columns the third International Congress of Radiology will be held in Paris from July 26th to 31st, with Madame Curie as president of honour and Dr. Antoine Béclère as executive president. All meetings will take place in the amphitheatres of the Sorbonne, Rue des Ecoles. Details of the programme will be found in the May issue of the *British Journal of Radiology*.

The thirty-first Congress of the French Association of Urology will be held at Paris under the presidency of Dr. Gauthier of Lyons on October 6th, when the subject for discussion will be renal acidosis, introduced by Drs. Chabanier of Paris and Lobo-Onell of Santiago. Further information can be obtained from the general secretary, Dr. Pasteau, 3, Avenue de Villars, Paris, 7e.

The Medical Society of Davos is arranging an international conference on tuberculosis, to be held from October 5th to 10th.

The Ministry of Health has issued a circular (No. 1206) dealing with the contents and arrangement of the annual reports of medical officers of health for 1931. In view of the alterations made by the Housing Act, 1930, a revision of the headings under which housing statistics have been given in recent years has now become necessary. Instructions are given in regard to the accurate filling up of forms, together with suggestions for recording action taken under the Prevention of Tuberculosis Regulations, or under Section 62 of the Public Health Act, 1925.

A special supplement to the issue of *Nature* for July 18th contains an article by Sir James Jeans, headed "The annihilation of matter," being the substance of ectures delivered before the Universities of Princeton, Yale, and Harvard, under the auspices of the Franklin Institute of Pennsylvania.

The July issue of the *Leprosy Review*, the quarterly publication of the British Empire Leprosy Relief Association, is devoted more especially to a report of the Leonard Wood Memorial Conference on Leprosy, which was held in Manila, Philippine Islands, from January 9th to 23rd. A memorandum contributed by Sir Leonard Rogers to that conference, on the present position of prophylaxis against leprosy in relation to recent improvements in treatment, is published in an abridged form. Compulsory segregation is condemned, but Sir Leonard Rogers admits that compulsion may be useful in the case of those with early disease who refuse to attend for regular treatment, and for patients with open lesions who are unable, or unwilling, to adopt the necessary precautions. Dr. P. Manson-Bahr continues his account of quinine therapy in malaria.

The council of the International Society of Medical Hydrology has published a register of spas and medicinal waters, which has been compiled by its Standard Measurements Committee. The register is designed to promote the regularizing of data regarding spas and medicinal waters in all parts of the world, and is obtainable from the office of the society, 55, Wellington Road, N.W.8, or from Headley Brothers, 109, Kingsway, W.C.2, price 1s. net.

The following promotions in, and appointments to, the Venerable Order of the Hospital of St. John of Jerusalem are announced:—Knights of Justice: Sir James Purves-Stewart. Knights of Grace: The Hon. Murray Maclaren, M.D. (New Brunswick). Commanders: Sir Thomas Houston, Dr. E. A. Chill, Sir Percival Horton-Smith Hartley, Dr. Henry John Barnes, Dr. Richard Clegg, Dr. F. N. Kay Menzies, Surgeon Vice-Admiral Sir Arthur Gaskell, the Hon. J. H. King, M.D. (Ottawa). Officers: Dr. G. E. Peacock (Johannesburg), Dr. George Mackie, Dr. A. C. W. Knox, Dr. W. Egbert Thomson, Surgeon Commander R. J. G. Parnell, R.N., Sir Squire Sprigge, M.D. Serving Brothers: Drs. W. Lee, Leonard A. Line, F. Stanley Booth, Leslie Fetherston, C. A. Verco, W. G. Shellshear, W. B. A. Moore, D. H. Griffiths, L. R. E. Downer, and Lieut.-Colonel G. C. E. Simpson, R.A.M.C. Associate Serving Brothers: Drs. S. K. Engineer and D. H. Mehta. Serving Sisters: Sibyl C. Bevan, M.B., and Susanneh H. O. Reilly, M.B.

Dr. J. Goyanes and a committee of leading Spanish surgeons have formed the Madrid Surgical Society to encourage surgical research throughout the country and to raise the status of the profession. The new society proposes to encourage the formation of similar bodies in the provinces, and so prepare the way for a National Association of Spanish Surgeons.

Drs. Carlos Mario Cortezo, editor of *El Siglo Medico*, and for many years president of the Royal Academy of Medicine of Madrid, has been awarded the Golden Fleece prize, an honour hitherto only bestowed on kings, princes, and eminent politicians or soldiers.

Turkey, with a population of 13,000,000, possesses 3,509 medical practitioners, of whom 1,000 live in Stamboul, which has 714,000 inhabitants, and the rest chiefly in Anatolia, especially the larger towns such as Smyrna and Angora. The number of medical journals in Turkey amounts to 20.

Dr. Ribot, the head of the Health Service of Marseilles has been elected mayor of that city.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

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The **TELEGRAPHIC ADDRESSES** are:
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QUERIES AND ANSWERS

Mammary Abscess

"*Suburban G.P.*" writes: In reply to Dr. Halford's letter concerning the etiology of mammary abscess, I am sorry I am unable to give any details concerning the presence of ophthalmia in the babies during the first two weeks of life. Their histories gave no support to your correspondent's suggestion, which, I may add, appears to be a fair possibility. I can only say that, during the past year, I have seen six cases, the mother in each instance being young, healthy, and free from any trace of lurking sepsis, and all of whom have had normal puerperia. No doubt, if my previous remark regarding the duration of the mothers' incapacity were taken literally, an unfavourable reflection on treatment would be justified; but Dr. Halford must remember that the cases referred to had to be dealt with under unsuitable domestic conditions and inadequate help, when worry and anxiety tend to become important factors in retarding convalescence. It is perhaps a curious reflection that among the poorer classes, where asepsis and cleanliness are a negative factor, mammary abscess, in my humble and limited experience, appears to be much less rife. In conclusion, I would like to express my thanks to Dr. Halford for the emphasis he has placed on the underlying surgical principles involved.

Painful Heels

"ELECTROTHERAPIST" asks for suggestions for treatment of any kind for a case of painful heels in a woman of 55. The pain is experienced directly in the centre and inner sides of the under part of the heels. They are a little tender and swollen, and the pain is increased by walking, and often severe on rising. Gonorrhoea can be excluded, and gout is improbable as no relief has been obtained by atophan, etc. *X*-ray examination shows a very small spur or plaque of (?) myositis ossificans between the tuberosities at the insertion of the plantar muscles. Diathermy, faradism, ionization, wax baths, etc., have been tried with very little, if any, success; also deep massage.

Tennis Blisters

"T. W. S." (Surrey) writes: Can anyone inform me of the best way of preventing blisters on the hands and feet of a lawn tennis player? I have tried treating them with industrial methylated spirit, and with a solution of potassium permanganate (1 in 2,000) in order to harden the skin, without success. Rubber adhesive plaster bound round the anterior arch of the feet is only partially successful.

June 4th. Presumably he will be satisfied if this is arrived at by taking two-twelfths of the year's assessment, but the authorities are entitled to have the liability more accurately measured according to the value of the "bookings" during that period. Unless the change in basis would make a substantial difference for those two months we think that the authorities are not likely to insist on such a revision. (*b*) As regards the year ending April 5th last (that is, 1930-31), the authorities have the option of revising the assessment for that year to the amount of the earnings of that actual year—the assessment was presumably on the amount of the profits of the year 1929-30. As for any period subsequent to June 4th, our correspondent is not liable to assessment in respect of receipts from the practice he has given up; they represent accumulations of earnings on which he has accounted for his liability to tax.

Car Transactions

"F. G." bought a new E car in March, 1925, for £275; in June, 1930, he sold it for £68 and bought a second-hand 21 h.p. R car for £110; in February, 1931, he sold that car for £50 and bought a second-hand 16 h.p. A car for £165. He does not claim depreciation allowance.

*** In our opinion, and especially in view of the short time the R car was held, the two transactions should be regarded as one, and the allowance claimed for upkeep of equipment should be (£110 − £68) + (£165 − £50)—that is, £42 + £115 = £157. If, however, "F. G." makes his accounts up to December 31st each year, he is faced with the difficulty that the two transactions fall in different years as far as the calculation of his profits is concerned. In that case he can undoubtedly claim £42 as an expense of the year 1930, but the inspector of taxes may object to allowing £115 for 1931 on the ground that the transaction by itself resulted in an improvement, and was therefore partially a capital transaction. In view of the obvious equity of "F. G.'s" case, however, he may not press that technical objection. It would clearly have been better for "F. G." to have claimed depreciation and obsolescence allowance.

Cash Basis and Car Renewal

"M. O. R." inquires: (1) whether the tax authorities can insist on bringing unpaid book debts into the calculation of his liable earnings, and (2) what allowance he can claim for the exchange of a car (bought when new for £162) for a second-hand car at a cost of £75 net.

*** (1) The authorities are technically correct, but usually accept a cash receipt basis unless the income of the practice is increasing. If there is no such increase "M. O. R." might reasonably call their attention to the absence of any reason for a change; if there is such a reason, he should remember that, though the bills unpaid at the end of the year have to come in as an addition to the cash receipts, the corresponding amount at the commencement of the year should be deducted. (2) The only claim is for the amount of the net cost of replacement—that is, £75; "depreciation" has to be claimed year by year, and cannot be allowed in a lump sum when the car in question is sold.

LETTERS, NOTES, ETC.

Koplik and Koplik's Spots

An article by Dr. W. R. Bett in the current issue of the *British Journal of Children's Diseases* (April-June, 1931), entitled "Some paediatric eponyms.—III. Koplik's spots," briefly tells the story of the man and his discovery. Extracts are reproduced from Koplik's original descriptions of his spots in the *Archives of Pediatrics*, 1896, the *Medical Record*, 1898, and the *Medical News*, 1899. In the third and final article the author expresses surprise at the slowness with which "this valuable diagnostic sign has made its way," especially in his own country. It was only in 1899 that the *Medical News* described Koplik's spots as "an integral part of the classical symptomatology of measles in the sense that it must enter into the body of medical teaching on that disease." It is true that the literature before Koplik contains descriptions of an exanthem on the buccal mucous membrane, but none of these compare with Koplik's account in accuracy and in tone of conviction. Henry Koplik was born in New York in 1859. After taking his medical degree in 1881 he studied in Berlin, Vienna, and Prague. In 1887 he was appointed attending physician to the Good Samaritan Dispensary, where, two years later, he established the first sterilized milk depot for infants in America. For twenty-five years he was attending paediatrician to the Mount Sinai Hospital. Koplik was a big, bluff, good-natured man, with a white vandyke beard. His sparkling wit and inexhaustible fund of stories made him a pleasant companion. He was essentially a man of the world, who knew how to be kindly and how to be dignified. He died of heart failure in 1927, aged 69. The article is illustrated by an autographed portrait of Koplik and a reproduction in black-and-white of his own coloured drawing of his spots.

Precipitate Labour: Death from Shock

Dr. CHARLES J. HILL AITKEN (Kilnhurst) writes: With reference to the recent article by Professor Miles Phillips (*Journal*, May 16th, p. 833), I should like to record my experience of a case. A young primipara, while standing at the foot of her bed, delivered herself of an eight months living child, the birth lasting fifteen minutes. A "queer feeling" had come on suddenly a few minutes after she had risen from bed after a good night's rest. As foetus and placenta passed from the maternal passages the mother collapsed on to the floor and died. I was called soon after this. The loss of blood had not been excessive, and the uterus was palpable through the abdominal wall. Post-mortem examination revealed fluid in the left side of the chest, extensive old-standing pleural adhesions on the right side, and a pericardium adherent to the heart. The kidneys were healthy, and no obvious tuberculosis was found in the lungs. Inquiry showed that the deceased had refused the medical examination suggested by the midwife engaged to attend, and that her friends had, for some time, thought that she looked tired and ill. Death was due to the sudden emptying of the uterus, causing shock, which had proved too much for the diseased lungs and heart. Possibly death might not have occurred had the mother gone to bed when she felt "queer." I am indebted to Dr. J. C. Halliman for the post-mortem findings.

Aseptic Vaginal Examination

Dr. C. CHARLESON, F.R.C.S.Ed. (Royal Infirmary, Perth), writes: Since the publication of my notes on aseptic vaginal examination in the *Journal* of July 11th (p. 63), my attention has been called to a similar device by Dr. F. H. Whyte, marketed by Messrs. Mayer and Phelps. Had I been aware of the previous existence of a similar technique I would not, of course, have submitted for publication my notes on that subject.

Grain Poisoning

Dr. J. KELVIN (Rutherglen, near Glasgow) writes to record the following case occurring in general practice: In January of this year a grain labourer, aged 46, began to feel a numbness, with lack of grip, in the hands. I first saw him in April. I found no organic disease anywhere, and I labelled him as suffering from a functional neurosis of the arms. A nerve specialist concurred in this view. A few weeks later the patient complained of lumbar pains and cramps in the legs. In May I found: (1) spasticity, increased reflexes, and inco-ordination in the arms; (2) ataxia; (3) spasticity, knee-clonus, ankle-clonus, and Babinski's sign in the legs. In June I connected his occupation with his illness. Clearly it was a case of ataxic paraplegia, which is due to grain poisoning. Ergotism causes an ataxic paraplegia. Lathyrism is essentially a paraplegia. The special points are: (1) sudden onset; (2) widespread, rapid course downhill; (3) exposure to grain disease—nineteen years in the grain atmosphere, grain and its dust and its insects always "bathing" and "choking" him. More attention should be directed by medical research workers to the question of diseases caused by grain poisoning. Cereals are cultivated haphazardly in soil that is "enriched" by dangerous fertilizers—soil infected by deadly sporing fungi that are parasitic instead of saprophytic. Recall what disastrous effects fungus diseases can have, as in tinea capitis and in actinomycosis.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 87.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

76 The Differential Diagnosis of Tuberculous Meningitis

E. SCHIÖDT (*Ugeskrift for Laeger*, May 14th, 1931, p. 526) has made a study of 181 cases of tuberculous meningitis observed at the Blegdam's Hospital in Copenhagen since 1919. The fact that in this twelve-year period so many cases of tuberculous meningitis were admitted to a hospital which would not have received them had the correct diagnosis been made before admission, indicates how difficult the diagnosis of this disease is. Most of the 181 patients were, indeed, admitted with a diagnosis of meningitis, but the character of this meningitis was not specified on admission. Among the many factors discussed by the author in the differential diagnosis is the season of the year. While the incidence of tuberculous meningitis is highest in March, April, and May, acute anterior poliomyelitis is practically confined to August, September, and October, while encephalitis has a definite maximum in February. The chances in an obscure case of a patient suffering from tuberculous meningitis or poliomyelitis will depend, to a considerable extent, on whether the month concerned is April or September. In addition to the 181 cases of tuberculous meningitis studied, there were 126 of epidemic encephalitis, 97 of acute anterior poliomyelitis, 25 of secondary serous meningitis, and 51 of primary serous meningitis. It was found that, in distinguishing between these diseases, a history of tuberculosis in the patient's family, Pirquet's test, and the mode of onset of the disease were of no value. But a personal history of tuberculosis was so common among the adults suffering from tuberculous meningitis, and so rare among the patients suffering from the other forms of meningitis, that this point was of value in the differential diagnosis, though only with adults, and not with children.

77 The Significance of Hypotension

V. PACHON and R. FABRE (*Journ. de Méd. de Bordeaux*, May 30th, 1931, p. 493) find that confusion still exists regarding hypotension and hypertension; to classify these conditions accurately one must differentiate between the condition of the arteries and of the heart. Formerly sphygmomanometry was used for maximal pressures only, and, by accepting this basis, it was considered possible to classify functional vascular conditions as arterial hypertension or hypotension. The minimum pressure, however, is the true basis, because the maximal pressure represents only a brief stage in arterial pressure, and pressure varies greatly in the same person under different conditions, while alterations in the maximal and minimal pressures are not necessarily relative. In the case of a cardio-renal patient suffering from heart failure, although the maximal pressure falls owing to the cardiac failure, the minimal pressure remains high or may even rise. The maximal pressure, taken by itself, may appear normal in such a case, while the minimal pressure remains at about 110 mm., and may conceal the actual hypertension which is indicated by the minimal pressure representing the actual permanent arterial charge, and affording a datum below which the internal arterial pressure does not fall. It is, therefore, the constant arterial charge on which is superimposed the intermittent supercharge due to the ventricular systole, of which the maximal pressure is but the peak. The minimal pressure represents also the total peripheral resistances that the heart must overcome at the commencement of ventricular systole, and controls the initial cardiac effort at the moment of ventricular evacuation, since the minimal pressure closes the aortic valves during diastole. Obviously a high minimal pressure necessitates an increased cardiac effort to ensure ventricular evacuation. High maximal pressures, moreover, are not necessarily pathological; they may indicate vigorous systoles of a strong or slightly overworked heart—a defensive and compensatory reaction in cases of definite hypotension, as, for example, in aortic incompetence. Thus, while a moderate or high maximal pressure may be unimportant, high minimal pressure always indicates hypertension and abnormal resistance that must be overcome by abnormal cardiac effort.

78 Focal Infection and Rheumatic Ailments

R. GORDING and H. BJÖRN-HANSEN (*Nordisk Medicinsk Tidskrift*, May 29th, 1931, p. 337) record a study of 62 cases of rheumatism in which a search was made for focal infections with leucocyte counts. The average duration of the disease before the first examination was six months, and the average duration of the subsequent observation period was two years and nine months. In the first group, consisting of 52 patients (15 men and 37 women), with an average age of 31 years, there were two subgroups. In the first subgroup of 19 patients the leucocyte count was abnormal (more than 7,000 leucocytes, and a displacement to the left of the neutrophil leucocytes exceeding 10 per cent.). With the eradication of septic foci such as infected tonsils and teeth, not only did the blood picture become normal, but all the symptoms disappeared in all these 19 cases. In the second subgroup of 33 patients the articular manifestations dominated the clinical picture, and most of the patients were unfit for work. After treatment, consisting of the elimination of septic foci, 26 of these 33 patients were rendered symptom-free and 2 became much better. The leucocyte count was abnormal in 31 of these 33 cases before treatment; after it, 24 of the 31 abnormal blood counts became normal. In this first group of 52 patients there were as many as 34 in whom the focal infection was traced to the tonsils. The second group consisted of 12 patients (4 men and 8 women), with an average age of 39 years, whose disease presumably began with an attack of acute articular rheumatism. Seven of these patients had developed acute articular rheumatism as a sequel to a sore throat, and all seven were relieved of their symptoms by the elimination of the tonsils. One other patient in this group was also cured by the removal of a septic focus. Of the total of 64 patients, 53 were rendered symptom-free and 2 much improved, but since relapses followed in 6 cases, successes could be claimed only in 49, or about 77 per cent. of the total.

Surgery

79 Traumatic Arterial Spasm

S. NOWICKI (*Lyon Chirurgical*, May–June, 1931, p. 317) describes traumatic arterial spasm as a temporary pathological condition which persists usually for several hours, but seldom for more than two to five days. The artery contracts for a variable distance, dilates, and then recovers its normal calibre. Shortly afterwards the pulse reappears in the peripheral branches of the contracted artery, and the circulation becomes normal. These phenomena usually occur in the large arteries of the limbs, and only once have they been observed in the carotid artery. A case of an agricultural labourer is reported, in which the arterial spasm followed the falling of a tree on his right arm; this caused marked sensory and motor disturbances in the limb. Signs of spasm of the brachial artery were present when the patient was admitted to hospital four days after the accident. In the lower part of the arm and in the forearm the pulse could not be felt; the upper arm was swollen and livid, but uniformly warm, and the patient was in considerable pain. Treatment was continued for nine days, since the patient refused operation,

but the oedema and cyanosis increased, and the right hand became completely cold. On the twelfth day an operation was performed, and it was found on exposing the vascular nervous bundle in the upper arm that there was no apparent injury; the sheath of the vessels was intact, but it was observed that the pulse in the brachial artery ceased below the axilla. After incision of the sheath it was seen that the artery was contracted for about 1 cm.; the walls of the artery appeared normal, although the tension was greater in the contracted portion than above it, where the pulse was stronger than normal. Below the constriction the artery was flattened, depressed, and immobile, and no thrombosis was found. The operation did not improve the circulation; symptoms of gangrene appeared three days afterwards in the skin of the forearm, and a subcutaneous haematoma began to suppurate under the scar. The gangrene spread, while in the wrist and elbow necrosis developed, followed by ankylosis of these joints. A further operation, one and a half years after the accident, showed that the obliteration of the artery still persisted, and that the spasm was complete and permanent. Periarterial sympathectomy did not improve the condition, and the arm was subsequently amputated.

80 Tumours of Joints

P. RAZEMON and G. BIZARD (*Rev. de Chir.*, April, 1931, p. 229) discuss the various types of tumours of the joints and review 74 cases; of these, 45 were benign tumours and 29 malignant. The tumour occurred 63 times in the knee, 8 times in the foot or heel, once in the elbow, and in two cases the site is not defined. Benign tumours comprise lipomas, fibromas, angiomas, and giant-cell tumours of the synovial membrane. Lipomas are usually of inflammatory or traumatic origin and, like the fibromas, are comparatively rare. Angiomas are more common, and have a characteristic appearance which makes the diagnosis easy. The varicosities can be seen under the skin, and coincide frequently with an intra-articular angioma. At the time of operation the tumour is usually visible under the distended capsule, and is often about the size of a hazel nut, bluish and elastic, with prolongations towards the head of the fibula and the middle line. On opening the capsule, more or less abundant blood-stained fluid may be drained off. Giant-cell tumours of the synovial membrane are of two different types—stalked and diffuse. Trauma is most frequently the etiological factor in the production of these tumours. Malignant tumours are usually found to be one of the various types of sarcoma or synovial endothelioma, are less common than benign tumours, and range in size from that of a prune to 7 by 5 cm. A case is reported in which the knee of the patient measured 87 cm. in circumference. These tumours have an arborescent appearance, and as a rule the tumour is not encapsuled. Diagnosis of malignancy is frequently impossible without a histological examination. Treatment of the various types of joint tumours depends upon the diagnosis; when this is uncertain, an arthrotomy is the operation of choice. In cases of benign tumours the prognosis is good; for tumours with a pedicle complete removal gives good results; for the diffuse type, synovectomy is recommended. When a definite diagnosis of malignancy has been made, amputation is the only safe procedure; when the diagnosis is doubtful, the tumour should be removed for histological examination, and, if found to be malignant, amputation must be performed immediately.

81 Tuberculous Hydrocele

P. CARTIER (*Bull. de l'Acad. de Méd.*, June 30th, 1931, p. 1034) discusses the etiology of the so-called essential hydroceles, and reports conclusions reached by investigating a series of 86 fluids from 81 patients, 5 having a double hydrocele. In 2 cases gonococci were isolated; in 6 a diplococcus, which has been previously described; in 2 unknown bacilli; and in 24 (27.9 per cent.) tubercle bacilli of slight virulence. It is suggested that the finding of the last-named bacilli proves that there exist in man very benign, easily curable types of surgical tuberculosis, and that these are more frequent than is thought. Many hydroceles of obscure etiology, and many serous effusions, may be due to non-bacillary forms of tuberculosis. In further support of the work, BRINDEAU, P. CARTIER, and POUGIN (ibid., p. 1036) argue that some tuberculous hydroceles are congenital, and cite two cases in confirmation of this view. This form of tuberculous infection in infants, transplacental in origin, has not yet been described. The prognosis is always very grave. In the two cases here recorded the patients died; neither had received B.C.G., and in each the hydroceles were non-communicating.

82 Strangulation of Meckel's Diverticulum

G. S. DONATI (*Il Policlinico*, Sez. Chir., June 15th, 1931, p. 278) reviews the pathology of Meckel's diverticulum and reports the case of a man, aged 79, who without any previous history of hernia was admitted to hospital with a history of abdominal pain and swelling in the inguinal region of four days' duration. The bowels were open, and there was no vomiting. The swelling was the size of a nut, painful and irreducible. There was no distension of the abdomen, and the general condition was good. A diagnosis of strangulated epiploön was provisionally made and laparotomy performed; it was then found that the diverticulum was implanted on a loop of the small intestine. That this was a true and not a false diverticulum was established by its size, and by the presence of serous, longitudinal, and circular muscular fibres. The diverticulum was excised and the intestine closed. The patient made a good recovery.

Therapeutics

83 Potassium Permanganate in Pneumococcal Meningitis

M. H. WEINBERG (*Journ. Nerv. and Ment. Dis.*, July, 1931, p. 38) reports a case of pneumococcal meningitis (Type III) which was treated by potassium permanganate enemas with encouraging results. The dosage used was 4 ounces of Nott's standard solution, 2 grains of this salt in 1½ pints of water. (See *British Medical Journal*, 1925, i, 443, and 1926, ii, 109.) The potassium permanganate is dissolved in cold water in an earthenware or glass dish, and hot water is added to make the solution comfortably warm; it is introduced slowly into the rectum after a cleansing enema has been administered. The patient lies on his left side, and remains thus for about twenty minutes in order to ensure retention. In Weinberg's case the patient was almost moribund, but repetition of the enema at four-hourly intervals resulted in an uneventful recovery, the temperature returning to normal eleven days after the treatment was begun. The author suggests that the manganese ion acts as a detoxicant mainly, facilitating the progress of natural auto-immunization. The infecting organisms disappear rapidly from the cerebro-spinal fluid. Weinberg urges the further trial of this method, which obviates the necessity for such severe measures as frequent lumbar and cisternal punctures, ventricular lavage, and the injection of powerful and irritating drugs into the subarachnoid space.

84 Intravenous Injections of Liver Extract

Since Cohn prepared liver fractions which gave no specific reactions and did not reduce blood pressure, it has been possible to administer the active liver principle intravenously. W. B. CASTLE and F. H. L. TAYLOR (*Journ. Amer. Med. Assoc.*, April 11th, 1931, p. 1198) review the recent work on liver fractionation, and state that a readily prepared extract (fraction G), hitherto administered orally, has been found suitable for intravenous injection, and highly potent in pernicious anaemia. This method hastens the response to treatment. Maximal reticulocyte responses were obtained by a single injection of the amount of extract derived from 100 grams of liver; a repetition of this dose at ten-day intervals has produced a satisfactory upward progression of the erythrocytes. A possible etiological and therapeutic significance of these observations is suggested. The authors allude to the

potential dangers in the intravenous injection of any substance, and emphasize that the therapeutics of this extract are still largely unknown, the present need is not for new sources of the active principle, but for persistence in the use of sufficient quantities of those preparations already available

85 Acetylcholine Bromide in Tuberculosis

From consideration of their physiological effects, M PERRIN and MARCELLE KUNTZ (*Paris Med*, May 23rd 1931, p 494) rank the salts of acetylcholine, the chloride as well as the bromide as antagonists of adrenaline They are vaso-dilators and hypotensors, acting especially on the peripheral arterioles They are eliminated rapidly It is essential to commence with small doses, watching the action on the urine, the heart, and the blood pressure The solution should have been just made at the time of injection muscarine is apt to be formed in old solutions The authors keep the bromide, in powder form, mixed with double the quantity of anhydrous glucose They find it less painful for subcutaneous injection than the chloride Its field of action is wide It acts as a vaso-dilator in spasm of the central artery of the retina Raynaud's disease, intermittent claudication, the gastric crises of tabes and lead colic It has also a hypotensor effect in the hypertension of youth, and is particularly effective in the sweats of tuberculosis as was shown by Villaret and Even in 1928 The authors' routine is to give 0·5 gram of camphoric acid for one or two days for these sweats increasing the dose, if necessary, to 1 gram during the next four or five days If this fails they have recourse to subcutaneous injections of acetylcholine bromide—three doses of 2 cg at three day intervals, each given two hours before the sweat is expected The first or second dose is often sufficient The authors rarely give 4 cg, and have not exceeded this dose Of the 10 cases observed, 3 have shown slight improvement while in 7 the effect has been remarkable, the sweats having disappeared for a week or two There have been no untoward results

86 The Treatment of Anaemia

G R MINOT (*New England Journ Med*, May 21st, 1931, p 1104) finds that many cases of anaemia depend upon inadequate nutrition, either from faulty diets or, indirectly, from some personal inadequacy of the individual Effective treatment of pernicious anaemia implies a sufficiency of potent material, whether liver, kidney, stomach, pancreas or brain, for the given individual throughout life If there is difficulty in absorption the material should be introduced intravenously The objective is the restoration to normal in all respects, both of the blood and of the patient generally Larger doses are required in older than in younger individuals, when cardio-vascular disorders occur, and in the presence of infections, lesions of the nervous system, and other complications Perseverance with maximal amounts is imperative The principles in the treatment of anaemias that can respond to iron are essentially the same as in the case of pernicious anaemia There are patients with simple hypochromic achlorhydric anaemia who must take iron with regularity for the rest of their lives Whole liver and iron should be given in any form of anaemia where there has been chronic loss of blood The 'shot gun' prescription of large amounts of liver and iron offers the greatest chance for the anaemic individual, but such routine treatment leads to neglect of the individual requirements

87 Hydrochloric Acid in Chronic Constipation

H WINTOCH (*Munch med Woch* May 29th, 1931, p 913) remarks that whereas the association of achlorhydria with diarrhoea is well known the fact that in many cases of chronic constipation achlorhydria or sub-acidity is found seems to have escaped the consideration it deserves In a series of cases of constipation those patients in whom the gastric acidity was low were treated by dilute hydrochloric acid (10 drops in water with meals), often with remarkable success Since many of these patients had previously tried numerous other methods of treatment without success, the author thinks the effect of the acid cannot be explained on purely psychological grounds and claims that the method is at least worthy of an extended trial

Anaesthetics

88 Apparatus for Simple and Combined Anaesthesia

H FRINKEN (*Schmerz Narkose Inaesthesie*, May, 1931, p 41) describes and illustrates fully the mechanism of an apparatus by which ether oxygen, chloroform oxygen, ether chloroform-oxygen and any form of gas or acetylene anaesthesia can be administered The amount of the gas or anaesthetic being used can be readily ascertained and regulated Anaesthetics can be administered under any desired pressure (as for thoracic operations) by the addition of a simple apparatus to the outlet of the mask The mask itself is of the rubber type similar to that ordinarily employed for nitrous oxide administration, with the usual ventilator allowing for pure air anaesthetic, or "rebreathing If necessary, a definite percentage of carbon dioxide can be supplied with oxygen alone, or with the anaesthetic being used Special precautions have been taken to avoid all possibility of explosion

89 Spinal Anaesthesia

C R STEINKE and H V SHARP (*Med Journ and Record*, April 15th, 1931, p 374) record their experience of spinal anaesthesia in 106 cases (53 males and 53 females) the youngest patient was 16 and the oldest 72 In 95 of the cases 2 to 3 c cm of spinocaine was injected, in five, 2 grains of apothesine, and in six, 150 to 200 mg of neocaine The operating time averaged 41 minutes and good anaesthesia was obtained in 85 of the cases, fair in 18, with failure in 3, in 23 instances supplementary ether, nitrous oxide and oxygen, or local anaesthesia was required In 47 cases the operations were abdominal, in 17 of the lower extremity, and in 42 anal or perineal A restful previous night was assured by some barbituric acid sedative, and half an hour before the operation 1/4 grain of morphine was administered hypodermically with 1/200 grain of scopolamine or 1/150 grain of atropine In 56 cases spinal anaesthesia was used because of some contraindication to inhalation anaesthesia, and the complications were less than might have been expected from other methods in that shock was minimized, and the necessity for catheterization lessened In many cases fluids could be given before, during, and after the operation, and the diet be more rapidly varied and increased There was less risk of bowel distension, normal motions being obtained earlier convalescence was shortened

90 Anaesthesia Induction in Diabetics

I I LEMANN (*Anesthesia and Analgesia*, May June 1931, p 142) believes that starvation, vomiting, and acidosis are the most menacing dangers incurred by diabetic patients in surgical operations Pointing out the risks of hyperglycaemia and acidosis produced by chloroform and ether, he states that the anaesthetics of choice for these cases are nitrous oxide and ethylene Notes on the blood sugar and plasma CO determinations are given in a series of 17 diabetics, 14 were given ethylene 2 ether, and one nitrous oxide There was in no instance any post operative plasma CO_2 value even approaching that of an acidosis These good results are attributed to the pre operative preparation, and the use of insulin and abundant carbohydrate during and after the operation An extra supply of carbohydrate and an increased insulin dose were given about six to eight hours before the operation During the course of the anaesthetic administration 20 c cm of 50 per cent glucose was injected intravenously, with 1 to 2 units of insulin per gram of glucose The danger of adding hypoglycaemia to shock must be avoided both conditions are similar If the blood pressure falls during the course of anaesthetization of a diabetic patient, glucose should be administered intravenously and epinephrine hypodermically, both substances raise the blood sugar level

Obstetrics and Gynaecology

91 Trial Labour

R. KELLER (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, April, 1931, p. 304) describes the trial labour which he employs in moderate degrees of pelvic contraction. In the first stage an endeavour is made to correct exaggerated uterine anteversion or lateral flexion. If cervical dilatation is slow, functional rigidity is treated by the exhibition of antispasmodics, and anatomical rigidity by multiple incisions. Artificial rupture of the membranes should not be performed until a dilatation of 5 cm. has been secured. Anomalies of flexion of the foetal head call for rectification, if possible. In Keller's practice the duration of the trial is extended in certain cases, in the absence of pyrexia, to twenty-four hours. In a patient who has had one Caesarean section a second pregnancy does not contraindicate, but rather demands, a second test labour at term; in a large proportion of these cases spontaneous delivery follows, although in very rare instances a rupture of the uterus has occurred during the trial. The corrected mortality in Keller's last series of a hundred trial labour cases has been 2, and the gross morbidity 37.

92 Herpes of the Urinary Bladder

A. GREMME (*Zentralbl. f. Gynäk.*, May 2nd, 1931, p. 1558) describes a case of herpes simplex of the bladder in a woman, aged 31, who was admitted to hospital for right-sided *B. coli* pyelitis. Cystoscopy was performed on admission and revealed redness and swelling of the right ureteral orifice, the rest of the mucous membrane being normal. Two days later typical herpes labialis developed, and a cystoscopy on the next day showed about twenty small shiny vesicles on the right side of the bladder. The vesicles on the lips went through the usual stages of turbidity of contents, drying, and scabbing; those in the bladder, observed by a series of cystoscopic examinations, passed through the same changes and were nearly healed about ten days after their first appearance. Although three definite cases of herpes zoster of the bladder have been recorded, and nodular and vesicular eruptions of the mucous membrane (cystitis, cystica, or nodularis) have sometimes been described as herpes, Gremme cannot find another undoubted case of herpes simplex of the bladder in the literature. As the patient was suffering from pyelitis, it is unfortunately not possible to say whether the disease is associated with symptoms.

93 Painful Breasts

M. CUTLER (*Journ. Amer. Med. Assoc.*, April 11th, 1931, p. 1201) believes that the pathogenesis of painful breasts consists in desquamation of the epithelial cells in the ducts and acini, with hyperplasia of the peri-canicular and peri-acinous connective tissue. The corpora lutea of menstruation and pregnancy are responsible for the normal physiological hypertrophy of the mammae; clinical and other forms of evidence indicate that the excessive hyperplasia giving rise to diffuse pain and nodularity in the breasts may be due to excessive stimulation of the corpus luteum. This overactive body also suppresses ovulation, and exerts an oestrus-inhibiting action. Administration of the dried and powdered residue from the fresh ovaries of hogs or cows, after removal of the corpus luteum, apparently causes a cessation of abnormal epithelial and connective tissue hyperplasia by counteracting excessive corpus luteum secretion, thereby diminishing or removing its overstimulating effect on the mammary elements. The oral administration of this substance in many cases of painful breasts has relieved pain and tenderness, and brought about a definite softening of the breasts, the actual disappearance of painful nodules, a more normal state of menstruation, and an improvement in the general condition of the patients. A note is appended as to the specificity and effects of ovarian residue and other internal secretions.

Pathology

94 Defects of Conduction in the Alimentary Canal

As a result of researches on animals and the human subject, E. F. MÜLLER and W. RIEDER (*Münch. med. Woch.*, June 19th, 1931, p. 1033) state that the active phase of peristaltic movement is that of relaxation, and that the contraction which follows is a secondary effect. The normal state of the muscle is one of contraction, so that the sphincters ordinarily remain closed, and are only opened by the appropriate stimulus from above. This stimulus fails, so far as the cardiac sphincter is concerned, when the vagal fibres are cut in animals, or in human cases of so-called cardiospasm. The sphincter is found to be in a normal resting state, and not in a condition of true spasm. Spasm is only excited by mechanical obstruction, or by the presence of foreign bodies (including ulcers). Spasm is characterized by pain, ischaemia, and a palpably hard condition of the muscle; it occurs always above the obstruction or other lesion. Failure of relaxation, on the other hand, is accompanied only by the symptoms of the coexisting deficiency of conduction, and occurs below the site of the lesion, if one can be determined. The delayed emptying of the stomach which sometimes occurs after gastrectomy is an example of this condition; it is due to section of the nervous paths. Finally, dilatation is generally due to inflammatory conditions in the neighbourhood of the intestines, especially if the serous coat is involved.

95 Cultivation of Tubercle Bacilli from the Blood

A. MUGGIA (*Soc. Internaz. di Microbiologia, Boll. Sez. Italiana*, May, 1931, p. 181) has attempted to confirm Loewenstein's work on the presence of tubercle bacilli in the blood stream of patients suffering from various types of tuberculosis. By using a special technique Loewenstein reported that he had cultivated tubercle bacilli from the blood of 54 out of 140 cases of pulmonary tuberculosis, from 18 out of 28 laryngeal cases, from 13 out of 22 renal cases, from 23 out of 51 skin cases, and from one out of 21 cases of acute articular rheumatism. Using Loewenstein's technique, the author has studied four cases of pulmonary tuberculosis with positive sputum and five cases of acute articular rheumatism. The results were negative. E. FAVERO (ibid., p. 188) has similarly attempted to repeat Loewenstein's work. Besides using this author's technique, he treated the blood by a method of his own, included Petragnani's medium, and inoculated each specimen of blood into a young guinea-pig. Forty specimens of blood were examined from patients with pulmonary tuberculosis with negative sputum, 320 cultures being put up. Incubation was continued for 60 days. The results were completely negative; not a single positive culture was obtained from the blood, nor did any of the guinea-pigs develop tuberculosis.

96 Active Immunization against Poliomyelitis

Success in actively immunizing monkeys against poliomyelitis has been attained only with living virus; the danger of infection during treatment is, however, constantly present. Rhoads attempted active immunization with a combination of immune serum and virus. M. BRODIE and A. GOLDBLOOM (*Journ. Exper. Med.*, June 1st, 1931, p. 885), experimenting with this method found that a combination of poliomyelitic virus and specific human serum was effective in conferring active immunity. For each gram of virus given intradermally 6 c.cm. of serum, injected subcutaneously, was requisite to protect a monkey from paralysis, and some degree of active immunity was induced. Immunity without symptoms was secured when the serum was given at the time of, or within three days preceding or following inoculation of the virus. In producing immunity, virus preceded by serum administration is probably less effective than when it is given simultaneously with or before the serum. The virus neutralization test is more sensitive than the direct intracerebral test for determining the development of immunity.

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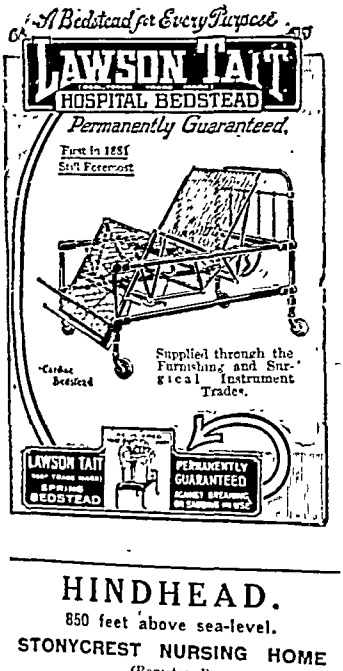
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A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER Voluntary patients ONLY RECEIVED

OUT PATIENTS—2 p.m.: MEN—Mondays and Thursdays WOMEN—Tuesdays and Fridays.

IN PATIENTS: (*a*) 189 beds (both sexes) in wards or separate rooms (*b*) 15 private rooms (for ladies) with special sitting rooms, garden, and dietary

TERMS

(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

Now removed to:

CHISWICK HOUSE, PINNER, MIDDLESEX.

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A modern country house, 12 miles from Marble Arch, in beautiful and secluded grounds.

Fees from 10 guineas per week.

Voluntary Patients received for treatment.

Special provision for "Temporary" patients under the new Mental Treatment Act

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
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Telephone No. 7 Barnwood

THE LAWN, LINCOLN.

This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post Encephalitic conditions in adults Special facilities for Psychotherapy in co operative cases

All particulars may be obtained from the Resident Medical Superintendent,
Dr MARY R BARKAS, M.D., D.P.M.

CHEADLE ROYAL,

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This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES Voluntary, Temporary, and Certified Patients received

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Telephone 2231 GATLEY

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PRIVATE HOME for MENTALLY AFFLICTED LADIES Ten only received Apply, Medical Officer or Mrs PEELL *Telephone*: 2708.

Member of the British Spas Federation.

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Established over 70 years.

The richest Sulphur-Iron waters known, containing Iron as Ferrous-Sulphate, maximum dose only one ounce. Wonderfully efficacious for Rheumatoid Arthritis, Rheumatism, Sciatica, Neuritis, Anaemia, and Kindred Ailments.

SPA CURE AT HOME.

The Waters are scientifically bottled in perfectly natural Spa condition, without alteration or manipulation, and may be prescribed to patients at home just as beneficially as at the Spa. The remarkable efficacy of the home treatment, which is a very important feature of this Spa, cannot be too strongly emphasized, and is well attested by eminent medical authority Full particulars and sample of the Waters post free from MANAGER, Trefriw Wells, Trefriw, N. Wales

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombieres Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc Special provision for invalids Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants

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'Grams: "Smedley's Matlock."
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HOSPITAL FOR CONSUMPTION

AND DISEASES OF THE CHEST, BROMPTON, and FRIMLEY SANATORIUM.

PAYING PATIENTS RECEIVED.

BOTH MEDICAL and SURGICAL CASES.

4 to 8 guineas per week at the Hospital. 3 to 4 guineas per week at the Sanatorium.

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ALTERED AND MODERNISED IN SUMMER 1930.

Inclusive terms from 5 to 8 guineas per week according to room.

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Owing to extensions there are at present a few Vacancies at the

DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Medical Superintendent,

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A HOUSE Licensed for the reception of a limited number of Ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. Approved for Temporary Patients This is a large country house, with beautiful grounds and park, five miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield Telephone: No 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, I.R.C.P., M.R.C.S.

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For Mental Disorders, with or without certificates.

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Ordinary Terms: Five Guineas per week.

(Including Separate Bedrooms where suitable.)

Interviews in London by appointment.

NORMANSFIELD

For Mental Defectives of all ages.

Under private management.

Apply to Dr. Langdon-Down,

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A first class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted

Large gardens, deer park, private golf links, fishing Grounds extend to over 200 acres

Voluntary Boarders accepted

Apply for particulars to Dr SANKEY

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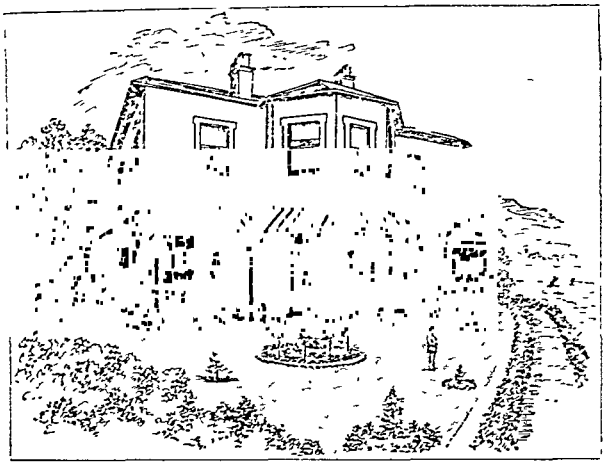
For the treatment of Ladies and Gentlemen mentally afflicted Voluntary Boarders received Situated 1,200 ft above sea level, facing S. 14 acres of grounds—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D Nat Tel 130

CITY OF LONDON MENTAL HOSPITAL,

DARTFORD, KENT.

Ladies and Gentlemen received for treatment under certificates, and without certification as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards.

CHANNEL VIEW SANATORIUM



"CHANNEL VIEW" SANATORIUM.

The Council of the Southern Convalescent Homes, Incorporated (without profits), are able to offer T.B. sufferers the advantages of reduced charges at their Sanatorium.

The Sanatorium is practically on the sea bank at Lancing, Sussex, one thousand feet of which, with the intervening meadow, are the properties of the Corporation.

Lancing ho'ds a record for sunshine. The air of the neighbourhood is of the purest, while the absence of seaweed is also a valuable asset.

A report by the Medical Officer for the District, speaking of Lancing, said:—"There is every prospect that the growth of the district will continue, especially as it is recognised that Lancing possesses, among other natural advantages, one of the finest stretches of sand on the South Coast."

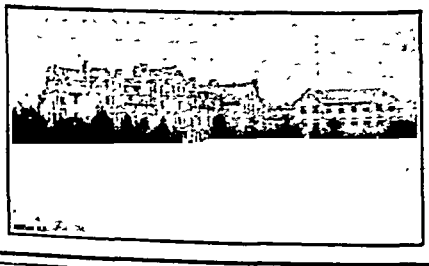
The Staff (Matron and Nurses) are fully trained and State registered. The charge is 35/- per week, which includes Medical Officer, etc. Also full board, best viands. Ladies are given the South block. Strawson revolving huts are included in the equipment. The gardens cover two acres, and provide both fruit and vegetables. Inspection invited.

Write for free booklet giving full details to

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FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent. J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

THE COTSWOLD SANATORIUM

Specially built in 1893 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air Special Treatment by artificial Pneumothorax (X-ray controlled). Tuberculins, Medicated Inhalations by means of the Apneu Inhalation Installation, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms. Full day and night Nursing Staff.

Resident Physicians: GEOFFREY A. HOFFMAN, B.A., M.B., T.C.Dub., and MARGARET A. HARRISON, M.B., B.S.Lond.

All to The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Telephone*: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."

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FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 562 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach upon Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

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ARE BEST

and membership of the British Spas Federation is a guarantee of efficiency

AT British Spas, treatment is only given (except in a few minor cases) upon medical prescription.

At British Spas the staffs are educated and properly trained and, in some cases, medically trained and medically certificated.

Equipment and administration are thoroughly up to date and scientific. Every new treatment is tested and reported upon before being adopted.

British Spas are also remarkably fortunate as regards situation, scenic beauty and pure air. These factors, combined with the social amenities of a home town, aid the cure considerably.

BATH Hot Springs (120° F.) Radio-active. Royal Baths extensions now open.

BRIDGE OF ALLAN Saline Water. Rich Calcium Bromide and Iodine Content.

BUXTON Radio-active Mineral Water. New Natural Baths. 3 Guineas Course.

CHELTENHAM Five Natural Waters. Modern Baths.

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HARROGATE 88 Waters. 100 Treatments. Medically certificated staff.

LEAMINGTON Advanced Spa Treatment. Saline Springs.

LLANDRINDOD WELLS The Modern Welsh Spa.

TREFRIW WELLS Rich Sulphate Chalybeate Waters.

WOODHALL SPA Bromo-Iodine Waters. Pinewoods. Restful Air.

A New Medical Handbook is being published, specially prepared for the use of the medical profession. A copy will gladly be sent you if you will write to the Hon. Secretary, Box 1, British Spas Federation, Pump Room, Leamington Spa, or to the Managers of any of the Spas here mentioned.

ANNOUNCEMENT BY BRITISH SPAS FEDERATION

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MONTANA, Switzerland

The only Sanatorium in Switzerland under British ownership and control, and with a full day and night staff of British Trained Nursing Sisters.

Built 1929 30. Opened Oct., 1930

For the treatment of Tuberculosis, Diseases of the Chest, Asthma, and for patients requiring rest in the Alps under strict medical supervision.

Montana (5,000 feet above sea-level) is the sunniest mountain resort in Switzerland.

For prospectus and full particulars kindly apply to the Resident Medical Superintendent, HILARY ROCHE, M.D. (Melb.), M.R.C.P. (London), Tuberculous Dis. Dep. (Ilcley).

PEEBLES
In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Dancing, winter garden, swimming bath, tennis, badminton, golf, fishing. Fully licensed. Modern baths installation. Physio therapeutic, massage, electrical treatment, ultra-violet radiation. Physician in attendance. Write for prospectus.

Among the Pine-clad Border Hills.

PEEBLES HYDRO, PEEBLES, SCOTLAND

GRAMPIAN SANATORIUM,
KINGUSSIE, INVERNESS-SHIRE.

Specially built for the Open air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 860 ft. above sea level. Sheltered situation in pine wood. Graduated walks. Electric light throughout building and in shelters. Central heating. Fully equipped X-ray Plant. Inoculation Treatment available for patients—24 beds. Trained Nurse on duty all night. Terms £4 7s. 6d. to £6 6s. p.w. inclusive. No extras. Med. Supt.—FELIX SAVY, M.D.

For particulars apply to the Secretary.

ST. ALBANS, HERTS.
(20 miles from London.)

Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts County Mental Hospital, Hill End. Convalescent and mild cases can be treated in a delightful country mansion, with extensive grounds, known as

"HIGHFIELD HALL,"

situate about a mile away from the Hospital.

Fees 2 and 3 guineas weekly.

Particulars from the MEDICAL SUPT.

BOURNEMOUTH HYDRO,
with Vita glass Sun lounge and Marine Balcony on the South Coast.

Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
High Frequency. Electric Lift.
Prospectus from Secretary. *Tele.* 341.

Resident Physicians: W. JOHNSTON SMYTH, M.D. L. T. ROSE-HUTCHINSON, M.D.

CLARENCE LODGE,
CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded garden.

HOME FOR TWELVE MENTAL PATIENTS (LADIES)

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

Station: Clapham Common Tube. *Telephone:* Brixton 0494. Apply, MISS THWAITES.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

For the TREATMENT of [illegible] from NERVOUS and [illegible] Voluntary patients [illegible] apply to the Resident Medical Attendant. Telephone: Tamworth 108.

The Hon. Catherine Gibbs is anxious to recommend most highly Miss BAKER'S HOME for invalid and aged gentlepeople at 219, Iffley Road, Oxford. Every care. Terms moderate.

SWISS SPAS

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On the main line Zürich Basle and Zürich Berne The hot springs of Baden were already known to the Romans 17 radio-active wells at a temperature of 118 4°F. They contain sulphur and sodium chloride. The baths are obtainable in the hotels themselves Treatments warm baths, shower baths, massage, electric baths, inhalation, drinking cure, diagnostic therapeutic institute, mechanotherapy. Recommended for metabolic diseases, rheumatism, gout, sciatica, diseases of the muscles, bones, and joints, retarded convalescence after injuries and operations.
Season April 1st to November 1st.
For information apply to: Spa Director, Baden, Switzerland.

OECHE-LES-BAINS.

One hour by electric railway from Loèche (main station on the Simplon route) Mild alpine climate. The baths were already known to the Gauls and Romans The radio active springs contain chiefly sulphate of lime Two swimming pools Every hotel has its own bathing installation. Treatments: warm baths, douche massage, injections, air and sun baths Recommended for: gout, rheumatism, sciatica, anaemia, post operational conditions, convalescence, gynaecological diseases, circulatory disturbances, skin diseases
Season: May to October.
For information apply to: Hotel Association, Loèche les Bains, Switzerland.

ASSUGG.

Near Chur. Situated on a picturesque plateau Mild sub alpine climate Vast forests
Treatments: The Ulricus spring (alcaline muriatic), Belvedra spring (chalybeate), Fortunatus spring (alcaline muriatic with iodine), Helen spring (mildly alcaline and acid), Theopnil spring All varieties of accessory treatment. Dietetic treatment Indications. Diseases of the digestive organs, diseases of the liver and bile ducts, kidney and bladder diseases, diseases of nutrition and metabolic diseases, especially diabetes, arterio-sclerosis, diseases of the blood and tropical diseases
Season May to October
For information apply to: Spa Director, Passugg, Switzerland.

RHEINFELDEN.

10 miles from Basle, on the railway line Zürich Basle. Famous for its vigorous brine, containing 31% salt, and for its "hapuziner" spring, a highly diuretic calcium and boric acid well, and for its "Magdalena" spring, containing sulphates of calcium, sodium, and magnesium 8 bath establishments with up to-date installations. Treatments: brine baths, carbonic acid brine baths, drinking, mud-packs, "Mutterlauge" packs, inhalation, massage, gymnastics, all varieties of electric treatment, dietetic treatment. Recommended for: gout, rheumatism, arthritis, women's diseases, sterility, obesity, children's diseases, arterial hypertension, diseases of the heart, affections of muscles, bones, and joints, convalescence.
Any information and detailed booklet gladly supplied by: Enquiry Office, Rheinfelden, Switzerland

SCHINZNACH.

Railway connections: Basle Brugg Zürich, and Berne Brugg Zürich. The hot springs of Schinznach were in use in Roman times and belong to the strongest radio active sulphur wells on the Continent. Newly equipped, comfortable baths and inhalation rooms. Treatments: baths, drinking, sulphur mud and sulphur water packs, irrigations, inhalatorium, massage, X-rays. Recommended for: gout, rheumatism, affections of bones and joints, non tuberculous catarrhs of the air passages, arterio-sclerosis, diseases of the skin, diseases of women, children's diseases
Season: May to October.
For information apply to: Spa Director, Schinznach Bad, Switzerland.

TARASP-SCHULS-VULPERA.

The chief spa of the Lower Engadine. Glauber salts wells The advantage of this spa lies in the combination of the curative properties of the waters with the alpine air and sun.
10 mineral springs of various composition Up to-date equipment for drinking and baths, air and sun baths, swimming baths, Zander hall, X ray institute, diet Recommended for: affections of the digestive organs, metabolic ailments, nervous troubles, affections of the organs of circulation, of the organs of respiration, of the genito-urinary system, malaria
Information supplied by: General Manager, Kurhaus Tarasp.

The introduction of special dietary tables for diseases of the digestive organs and the kidneys, as well as for diabetes, permits the physician to treat to the fullest extent each patient individually.

For information and the booklet "Swiss Spas and their Mineral Springs" (sent gratis), please apply to the Office of the Swiss Federal Railways, 11b, Regent Street, London, S.W.1.

NEW TREATMENT at **BRIDGE OF ALLAN SPA**

Stirlingshire



Latest method of Intestinal Lavage now installed. The Mineral Waters are unique in Britain for treatment of Rheumatism, Gastric Complaints, Asthma, Bronchitis, etc.

Covered way to Allan Water and Spa Hotel.

For full particulars apply SPA DIRECTOR.

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This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff. Nurse on duty all night. Electric lighting throughout, radiators and wireless (headphones) in all rooms
Dr. Jane Walker, C.H., J.P., Medical Superintendent. **Dr. Eleanor Soltau**, Assistant Medical Superintendent.
For all information apply: **The Secretary**, East Anglian Sanatorium, Nayland, near Colchester.
Telephone: NAYLAND 1.

LINFORD SANATORIUM,

RINGWOOD, NEW FOREST, HANTS.

Established 1908 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—**Arthur de W. Snowden**, M.D., B.Ch.(Cantab.), **A. G. E. Wilcock**, M.R.C.S., L.R.C.P., **Colin Cassidy**, M.B., B.Ch.(Cantab.).

MEETING ON TUBERCULOSIS IN DAVOS

From the 5th to 10th OCTOBER, 1931.

Principal subjects for discussion:

1. DEVELOPMENT AND COURSE OF TUBERCULOSIS OF THE LUNGS.
2. EXTRA-PULMONARY TUBERCULOSIS.
3. COLLAPSE THERAPY.

The following gentlemen have consented to read papers:

Dr. Amstad (Leysin), Prof. Dr. H. Assmann (Konigsberg), Dr. H. Batty Shaw (London), Dr. Bernou (Châteaubriand), Prof. Dr. B. Bloch (Zurich), Prof. Dr. L. Brauer (Hamburg), Dr. J. G. Chandler (London), Dr. F. Cova (Milan), Dr. H. Morriston Davies (Wales), Sir H. Gauvain (London), Prof. Dr. H. Gougerot (Paris), Prof. Dr. S. Graff (Freiburg i. Br.), Dr. F. Häberlin (Davos), Dr. H. Jessen (Davos), Prof. Dr. A. Loewy (Davos), Prof. Dr. F. Lopo de Carvalho (Lisbon), Dr. G. Maurer (Davos), Prof. Dr. E. Morelli (Rome), Dr. W. Morikofer (Davos), Dr. F. Oett (Davos), Prof. Dr. N. Pende (Genoa), Geheimrat Prof. Dr. F. Sauerbruch (Berlin), Prof. Dr. Sayé (Barcelona), Geheimrat Prof. Dr. Schieck (Wurzburg), Prof. Dr. Schurmann (Berlin), Dr. E. Sorrel (Paris), Dr. H. Staub (Davos), Dr. H. Stocklin (Davos), Prof. Dr. E. Stuertz (Cologne), Prof. Dr. N. Ph. Tendeloo (Leiden), Dr. H. Vogel Eysern (Davos), Prof. Dr. H. Wildbolz (Berne), Prof. Dr. A. Winternitz (Budapest), Dr. J. Wolf (Davos), Dr. R. Wolfer (Davos), and others.

Programmes and all information may be obtained from the DAVOS MEDICAL SOCIETY.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL.

THE WINTER SESSION will Open on Thursday, October 1st.

The Hospital is the largest in England. There are 839 beds in constant use. Last year: number of in-patients, 14,256; out patients, 86,554; attendances, 529,545; dental patients, 6,063; major operations, 7,401.

The MEDICAL COLLEGE and DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and the most approved appliances. The STAFF is so large as to permit of individual attention being paid to all Students.

MEDICAL UNIT.—A Clinical Unit in Medicine, under the charge of a whole time Director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research.

RESEARCH FUNDS of approximately £113,000 give unrivalled facilities for Medical Research.

SCHOLARSHIPS and PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £350 and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200.

APPOINTMENTS.—Over 160 Appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations, for the Primary and Final Fellowship Examination of the Royal College of Surgeons, and for the Membership Examination of the Royal College of Physicians.

HOSPITAL PRACTICE.—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

A Clubs' Union, an *Athletic Ground* of over 13 acres, and a *Students' Hostel* promote the recreation, health, and comfort of the Students.

For Prospectus and Particulars apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School.

MILE END, E.1.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL MEDICAL SCHOOL.

(FOUNDED 1816.)

Telephone: TEMPLE BAR 1457. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station)

The Hospital has just been rebuilt and has 86 beds, including fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination Part I and II commence in October.

Out patients are seen daily at 1.30 o'clock. Operations are performed at 3 p.m.

The Pathological and Bacteriological departments will be pleased to report on specimens sent in by Ophthalmic Surgeons or Hospitals.

Qualified medical practitioners and registered students may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

POST-GRADUATE STUDY AT THE NORTH-EAST LONDON POST-GRADUATE COLLEGE

The Prince of Wales's General Hospital, Tottenham, N.15.

Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

Prospectus on application to the Dean.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1931.

A. A General Medical and Surgical Course from August 17th to September 11th.
Fee £10 10s. or £6 6s. for first or second fortnight.

B. Clinical Assistantships in General and Special Hospitals.

Syllabuses and any other information may be had on application to the **Secretary, Post-Graduate Medical Association, The University, Glasgow.**

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(FOUNDED IN 1882)

Principal Mr F S WEYMOUTH, M A (Lond)

POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS

SOME SUCCESSES:

M.D.(Lond.), 1901 30 (9 Gold Medallists during 1913 30)	336
M.S.(Lond.), 1901 30 (including 4 Gold Medallists)	22
M.B.,B S.(Lond.), *Final* 1906 30 (Completed Exam)	269
F.R.C.S (Eng.), *Primary* 1906 30)	162
Final	161
M.R.C.P.(Lond.), 1914 30	192
D.P.H. (Various) 1906 30 (Completed Exam)	300
F.R C S.(Edin.), 1918 30	46
M.R.C S.,L.R.C.P. *Final* 1910 30 (Completed Exam)	467
M.D.(Dur.) (Practitioners) 1906-30	38
M.D. Various By Thesis Numerous successes	

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M R C S, L R C P, or M B of various Universities, also for D P M, D O M S, D T M & H D L O D G O, D M R E, M M S A, L M S S A, etc Numerous successes

ORAL CLASSES.

M R C P, M D, Final F R C S, F R C S (Edin), Final M B, B S, and M R C S, L R C P Museum and Microscope Work Also Private Tuition

MEDICAL PROSPECTUS (48pp.)

CONTENTS – The method and the cost of entering the Medical Profession *Particulars of all Medical Examinations*, Postal Courses and Oral Classes Suggestions for the higher Medical Examinations Suggestions for the higher Surgical Examinations Suggestions for the Special Diploma Examinations Refresher Courses Open Doors for Women Hints for writing theses Medical Prospectus gratis along with list of Successes etc, on application to the Principal, Mr F S WEYMOUTH, M A., 17, Red Lion Sq., London W C 1 (Telephone: HOLBORN 6313)

MIDDLESEX HOSPITAL MEDICAL SCHOOL

MORTIMER STREET, LONDON, W.1.

PRIMARY F.R.C.S. EXAMINATION.

The next Course will start on September 1st, and candidates seeking admission should apply for accommodation at once.

FEE for Anatomy and Physiology, 20 Guineas.

Single subjects 12 Guineas each.

For further particulars apply to the School Secretary.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE,

Special Terms in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men Apply LADY WATTS

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December For Regulations apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W C 1

June 30th, 1931 ROBERT FOLAM, Registrar

DIPLOMA IN BACTERIOLOGY

(University of London)

Applications for admission to the Course of Study for the DIPLOMA IN BACTERIOLOGY at the LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE for the academic year 1931-32, commencing in October next, should be addressed without delay to the

SECRETARY OF THE SCHOOL,
KEPPEL STREET, GOWER STREET, LONDON, W.C.1.

DIPLOMA IN PUBLIC HEALTH

London School of Hygiene and Tropical Medicine

(University of London)

The 1931-32 course of study, which qualifies students to sit for the University of London Diploma, covers a period of nine calendar months in the case of those who devote the whole of their time to the work.

The course will commence on September 28th, 1931.

The inclusive fee of 54 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instructions in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel St., Gower St., London, W.C.1.

NATIONAL POST-GRADUATE SCHOOL OF RADIOTHERAPY.

The Mount Vernon Hospital and Radium Institute, Riding House Street, London, W.1.

Dean - Sir CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S,

An intensive Course in

RADIOTHERAPY

especially in its relation to Malignant Disease

will be held at the above School, commencing Monday, October 5th, 1931.

The Course will be repeated on subsequent dates.

Copy of the syllabus and full particulars may be obtained on application.

In addition, periods of hospital practice can also be arranged.

The Dean will be glad to see prospective entrants by appointment.

THOS. A. GARNER, Secretary.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D T H. must possess the D T.M. of this University)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications ?

Diploma in Psychological Medicine.
Diploma in Ophthalmology.
Diploma in Radiology.
Diploma in Laryngology, Otology, and Rhinology.
Diploma in Gynaecology & Obstetrics.
Diploma in Public Health.
Diploma in Tropical Medicine.
Mastery of Midwifery.
M.D. Thesis (all Universities).
All Higher Medical and Surgical Degrees and Diplomas.

You can qualify for any of the above by our Courses of Combined Postal & Practical Coaching Write at once stating your requirements to the Secretary,

MEDICAL CORRESPONDENCE COLLEGE.

19, Welbeck Street, W 1. Tel Welbeck 6901.

WE SPECIALISE IN POST-GRADUATE COACHING FOR ALL EXAMINATIONS.

Send Coupon below for Free Guide.

Name .....

Address .....

Examination in which interested .....

UNIVERSITY OF BIRMINGHAM

FACULTY OF MEDICINE

(Associated with the General, Queen's, and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 5th, 1931.

The University grants Degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health; also Degrees and a Diploma in Dental Surgery.

The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine.

SCHOOL OF DENTISTRY. (University of Birmingham and Birmingham Dental Hospital.)

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diploma and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46 17s. 0d. is offered annually.

PRE-MEDICAL AND PRE-DENTAL EXAMINATIONS.

The necessary Courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For Syllabus and further information apply to STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Tuesday, September 1st.

Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)

Further particulars may be obtained from Professor WILLIAM WRIGHT M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Tuesday, Sept. 1st.

The Fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

ROYAL COLLEGE of PHYSICIANS of EDINBURGH ROYAL COLLEGE of SURGEONS of EDINBURGH ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QUALIFICATION (L.R.C.P.E., L.R.C.S.E., and L.R.F.P. & S.G.), and the DIPLOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1931-32. Curriculum, etc, may be had on application to Mr. DAVID THOMSON, 49, George Square, Edinburgh, or to Mr. WALTER HURST, 242, St. Vincent Street, Glasgow, Inspectors and Treasurers at Edinburgh and Glasgow respectively.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

Final F.R.C.S. Class.

A Course of instruction, suitable to the requirements of candidates for the Final F.R.C.S. Examination in November, will begin on September 3rd, 1931.

For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The WINTER SESSION will begin on Thursday, October 1st, 1931.

The Medical School provides courses in Preliminary, Intermediate, and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research.

NEARLY 1,000 beds available for teaching, additional clinical material being provided by affiliation to an Infirmary and other Institutions.

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually.

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification.

For further particulars and illustrated prospectus, apply to the School Secretary.

C. M. WILSON (*M.C.*), M.D., F.R.C.P., *Dean.*

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the December Examination will begin on Tuesday, September 1st, 1931, in the following subjects:

ANATOMY AND EMBRYOLOGY;
PHYSIOLOGY AND HISTOLOGY (with Practical Classes).

The classes are conducted by the Professors and Demonstrators in the respective subjects.

Fee for the Course £16 16s., or £9 9s. for either section separately. This fee includes membership of the Students' Club during the period covered by the Course.

For further particulars apply to the School Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

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of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

SOCIETY OF APOTHECARIES OF LONDON.

MASTERY OF MIDWIFERY.

Examinations will be held beginning Monday, November 16th, 1931, and Tuesday, May 17th, 1932.

For regulations, apply to the Registrar, Water Lane, E.C.4.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams, Matric., and Prelims.
Chemistry Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.G. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the Fi[rst] M.B. Examinations, University Scholarships Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing [lec]laboratories, two lecture rooms, science library store rooms, etc., opened in September, 19[31]. Prospectus from Head Master.

SCHOOLS for BOYS and GIRLS

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-[date] knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 145, Cannon St., London, E.C.4. Tel.: Mansion House 5[...]

University of Lond[on]

KING'S COLLEGE.

PRIMARY F.R.C.S.

A Course in ANATOMY and PHYSIOL[OGY] in preparation for the DECEMBER EXAMINATION, will commence on Tuesday, Septe[mber] 1st, 1931, and will continue until the day of the examination.

Fee for the Course: Twenty Guineas.

Applications for admission to the Co[urse] should be addressed to the Dean of the Me[dical] Faculty, King's College, Strand, W.C.2, from whom further particulars may be obtained.

University of Lond[on]

The Senate invite applications for the UNIVERSITY READERSHIP IN PATHOL[OGY] tenable at WESTMINSTER HOSPITAL MEDICAL SCHOOL. The Reader will be Director of the John Burford Carlile Pathological Laboratory at the Hospital. Salary £800 a year. Applications (12 copies) must be received not later than *September 18th*, 1931, by the Academic Registrar, University of London, S.W.7, *from* whom further particulars may be obtained.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full [pre]paratory Classes with DEMONSTRATIONS commence shortly. CORRESPONDENCE Co[urses] for Jan. and later Exams. should begin now. H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edi[nburgh].

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

FACULTY OF MEDICAL SCIENCES.

SPECIAL COURSE FOR THE PRIMARY FELLOWSHIP EXAMINATION OF THE ROYAL COLLEGE OF SURGEONS.

Special SHORT COURSES in ANATOMY and PHYSIOLOGY will begin on Tuesday, September 1st, 1931, in preparation for the December Examination

ANATOMY: J. KIRK, M.B., Ch.B., F.R.C.S.E.
PHYSIOLOGY: H. P. GILDING, M.A., B.M., B.Ch.; W. H. NEWTON, M.Sc., M.B., Ch.B.

The Course in Anatomy (including Embryology) is made up of lectures and demonstrations. Students are permitted to use the Dissecting Room and Museum of Anatomy at other times. The Courses in Physiology, Bio-Chemistry, and Histology consist of lectures and demonstrations, together with revision of practical work in those branches of the subject which are of particular importance in Medical Practice.

Full particulars may be obtained on application to—

University College, London. (Gower Street, W.C.1)
C. O. G. DOUIE, Secretary.

City of Plymouth.

DEPUTY MEDICAL SUPERINTENDENT. MENTAL HOSPITAL.

The Visiting Committee of the above Mental Hospital invite applications from duly qualified and registered Medical Practitioners for the post of whole time Deputy Medical Superintendent of the Plymouth Mental Hospital, Blackadon.

Applicants must hold the Diploma of Psychological Medicine, and must have had considerable experience in the work of a Mental Hospital, and must possess a practical knowledge of Pathology.

The salary on appointment will be at the rate of £500 per annum, rising by annual increments of £50 to £650 per annum, together with emoluments estimated for the purposes of the Asylum Officers Superannuation Act, 1909, as being worth £150 per annum.

Forms of application may be obtained from the undersigned.

Applications, together with copies of not more than three recent testimonials, to be sent addressed to the undersigned and endorsed "Deputy Medical Superintendent," on or before August 15th.

Municipal Buildings, Plymouth. July, 1931
R. J. FITTALL, Town Clerk.

City and County of Newcastle-upon-Tyne.

NEWCASTLE GENERAL HOSPITAL.

TWO HOUSE PHYSICIANS and THREE HOUSE SURGEONS (Male or Female)

Applications are invited for the above posts. The salary in respect of each of the appointments which are tenable for six months, is at the rate of £150 per annum, with board, lodging, etc.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, to be addressed to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

July 14th, 1931.

East Lancashire Tuberculosis

COLONY, Barrowmore Hall, Great Barrow, CHESTER.
(Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.)

ASSISTANT MEDICAL OFFICER (male) required, to take up duties early in September. Salary £275, rising to £300 per annum at the end of six months, with board, residence, and laundry.

The appointment will be terminable by one month's notice.

Preference will be given to candidates with experience in T.B. requires.

The last three Medical Officers have obtained equal appointments in County Service.

Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before July 30th.

Longton Hospital, Staffordshire.

Applications are invited for the post of LADY HOUSE SURGEON to the above Hospital. Salary £120 per annum, with board, residence, and laundry, plus certain fees.

Applications, with copies of three recent testimonials, should be addressed to the Chairman of Board re Longton Hospital, Stoke-on-Trent, to arrive not later than July 29th.

City of Stoke-on-Trent.

ASSISTANT MEDICAL OFFICER (Male).

Applications are invited for the appointment of Assistant Resident Medical Officer at the LONDON ROAD INSTITUTION, near Newcastle, Staffs.

The remuneration assigned to such office is £250 per annum, with board and residence. The period of the appointment will be limited to one year, subject to termination by one month's notice on either side. The Institution accommodates about 1,000 inmates, including 600 in Hospital (which is recognized as a major training school for nurses) and 150 in Mental Wards. The medical service to the adjacent Children's Homes is performed by the Institution Resident Staff, who also are required to lecture to Nurses.

Applications, accompanied by copies of not more than three testimonials of recent date, should be delivered to the undersigned not later than first post on Wednesday, the 29th instant. Applicants should state particulars of qualifications or degrees held, the date thereof, when taken, and experience since qualifying. Preference will be given to those who have had experience in any of the following subjects—viz.: Anaesthetics, Obstetrics, Pathology, and Radiography.

E. B. SHARPLEY, Town Clerk.
Public Assistance Offices, High Street, Stoke-on-Trent.
July 17th, 1931.

County Borough of Merthyr TYDFIL

ANTE-NATAL CLINIC.

Applications are invited from Lady Medical Practitioners who are prepared to conduct one or more weekly Ante-Natal Clinics in the Borough.

Preference will be given to applicants having experience in conducting such Clinics.

The salary will be according to the scale of the British Medical Association.

Applications, stating age and previous experience, must reach the undersigned by August 1st next.

Further particulars may be obtained from the Medical Officer of Health.

Town Hall, Merthyr Tydfil. July 17th, 1931.
T. ANEURYN REES, Town Clerk.

County Borough of Walsall.

MANOR HOSPITAL. (270 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified gentlemen for the appointment of Junior Resident Assistant Medical Officer. The appointment will be for a period of twelve months, and the salary at the rate of £150 per annum, together with the usual residential emoluments.

The person appointed will be required to act under the general direction of the Medical Officer, from whom particulars of the appointment may be obtained.

Applications, stating age, professional qualifications, and experience, accompanied by not more than three copies of recent testimonials, should be sent to the undersigned at once.

C. S. FOTHERGILL, Public Assistance Officer.
29, Leicester Street, Wal-all.
July 17th, 1931.

County Borough of Halifax.

ST. LUKE'S HOSPITAL.

The Health Committee of the Halifax Corporation invite applications for the post of HOUSE SURGEON at the above Hospital for a period of six months, at a salary at the rate of £250 per annum, with the usual residential allowances.

Applications, stating age and qualifications, together with copies of three recent testimonials, must be forwarded to the undersigned not later than August 3rd.

By Order,
Town Clerk's Office (Carlton Street Branch), Halifax. July 17th, 1931.
PERCY SAUNDERS, Town Clerk.

Manchester Babies' Hospital, Burnage Lane, LEVENSHULME

Applications are invited immediately for the post of JUNIOR RESIDENT MEDICAL OFFICER. Appointment is for six months. Salary at the rate of £50 per annum, with laundry.

Applications, together with copies of testimonials, should be sent to the undersigned and marked "J.R.M.O."

ANGELA LOPEZ, Secretary.

Holland (Lincs) County Council.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Practitioners, holding the Diploma in Public Health or an equivalent qualification, for the post of Assistant Medical Officer of Health (male). Candidates must not exceed 40 years of age.

The person appointed, who must have had post-graduate experience in the diagnosis and treatment of tuberculosis, will be required to carry out all the duties assigned to him by the County Medical Officer, under whose direction and supervision he will act. He will be required to devote the whole of his time to the duties of the office, and to reside in such part of the County as may be required. He will not be allowed to engage in private practice.

The salary will be £500 per annum, to be increased by increments of £25 per annum, to a maximum of £700 per annum, together with travelling expenses according to the Council's scale.

Applications, which must be made on a form obtainable from the undersigned, together with copies of not more than three recent testimonials, must be sent to the County Medical Officer of Health, County Hall, Boston, not later than Wednesday, August 12th.

County Hall, Boston. July 18th, 1931.
H. C. JENNINGS, County Medical Officer of Health.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

LAKE HOSPITAL, and DARNTON HOUSE, ASHTON UNDER LYNE, near MANCHESTER

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of Junior Resident Medical Officer at the above Hospital, and Institution, at a salary at the rate of £150 per annum.

Candidates should be unmarried.

The appointment will, in the first instance be for a period of six months; the successful applicant, however, will be eligible on satisfactory service for re-appointment for a further period of six months at the end of that period.

In addition to the salary the Junior Resident Medical Officer will be provided with the usual residential allowances.

The Hospital comprises 300 beds, and the Institution 600 beds.

Applications, accompanied by copies of not more than two testimonials, should be forwarded to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than August 8th. Envelopes should be endorsed "Junior Resident Medical Officer."

County Offices, Preston. July 18th, 1931.
GEORGE ETHERTON, Clerk of the County Council.

Kent Education Committee.

SCHOOL MEDICAL SERVICE.

SCHOOL MEDICAL INSPECTOR (Temporary)

The Kent Education Committee invite applications for the appointment of a temporary whole time School Medical Inspector to act under the supervision of the School Medical Officer.

The appointment will be for an approximate period of three months commencing September 21st next, and the successful candidate will be required to work in the East Kent district.

The salary offered is at the rate of £12 12s. per week, together with travelling and subsistence allowances.

Application, stating age and full qualifications and accompanied by copies of three recent testimonials must be forwarded to the undersigned not later than August 4th.

ALFRED GREENWOOD, M.D., School Medical Officer
Sessions House, Maid-tone. July 8th, 1931

Leicester Public Medical SERVICE.

PATHOLOGIST

The Board of Management propose to form a Pathological Department of the above Service, and invite applications for the post from the Local Medical Profession.

Applications should be forwarded not later than August 7th, addressed to the undersigned, from whom all particulars may be obtained.

38a, East Lord St., Leicester. T. W. LAWRENCE, Manager.

Ancoats Hospital, Manchester.

UPCOMING VACANCIES

RESIDENT MEDICAL OFFICER September 1st next *Appointment for six months* Salary £150 per annum, with board residence, etc Previous experience in a similar position preferred
HOUSE PHYSICIAN September 1st next
HOUSE SURGEON (Orthopaedic) September 1st next
HOUSE SURGEON (General) September 1st next Salary for each of the above £100 per annum, with board, residence, etc.

Applications, stating age, qualifications, experience, if any, to be forwarded to the undersigned on or before Wednesday, August 5th

By Order of the Board,
HERBERT J DAFFORNE,
Gen Supt & Secretary.

All Saints' Hospital (for Genito-Urinary Diseases)

In patient Dept 91, Finchley Road, N W 8.
Out patient Dept & Secretary's Office 49/55, Vauxhall Bridge Road, S W 1.

HOUSE SURGEON (male) required immediately for periods of three months as Junior House Surgeon (non resident), followed, *subject to the approval of the Board of Management*, by a period of three months as Senior House Surgeon (resident) Salary will be at the rate of £150 per annum, with board and laundry during the resident period The duties of the non resident House Surgeon consist of attendance at the Out patient Dept every afternoon and three evenings weekly

Applications, stating age, experience, and qualifications, and enclosing copies of recent testimonials, should be sent immediately

D H EADE, Secretary

Warrington Infirmary and Dispensary.

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male) unmarried

Applicants, who must be of British nationality, must be duly qualified Medical Practitioners

Salary £175 per annum, with board, apartments, and laundry Applications, stating age, with copies of three recent testimonials, should be sent in at once to the undersigned

By Order,
HENRY L BOOT,
July 20th, 1931 Supt & Secretary

Whitehaven and West Cumberland Hospital, Whitehaven.

(90 Beds)

Wanted, JUNIOR HOUSE SURGEON (male or female) Salary £100 per annum, including board residence, and laundry Twelve months' appointment After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum

Applications, stating age, nationality, etc, together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," at once

R HIGGINS Secretary

Great Yarmouth General Hospital (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments)

Applicants must be male and unmarried Salary at the rate of £140 per annum, with board, residence, and laundry

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned

FRANK JENNINGS,
Secretary

Darlington General Hospital.

(120 Beds)

Wanted, JUNIOR HOUSE SURGEON Salary £150 per annum, with board, residence, and laundry Maternity, Orthopaedic, Eye, Ear, Nose Throat X ray, U V R Departments

Applications from British male candidates, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to the undersigned

ARTHUR RIDDLE, Secretary.

Durham County Hospital,

(100 Beds)

Two HOUSE SURGEONS are required immediately Salary £150 per annum, with board and lodging Applications by ladies will be considered

Applications with copies of testimonials, to be sent to W R WILSON, Secretary, 79, Saddler Street, Durham

Royal Sea Bathing Hospital for Surgical Tuberculosis, Margate

A Male HOUSE SURGEON will be required shortly The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry

Candidates for the post must be legally qualified and registered

The appointment is for six months, but may be extended for a further period of six months

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R S B H Offices, 15, York Buildings, Adelphi, London, W C 2

Royal United Hospital, Bath.

SENIOR HOUSE SURGEON (male) required Salary £175 per annum, with board, residence, and laundry. Previous Hospital experience necessary.

The gentleman appointed will be attached to the Senior Honorary Surgeon and the Honorary Gynaecologist

The appointment is for six months, but the successful candidate is eligible for reappointment

Applications, stating age, qualifications, and experience, together with copies of three testimonials, to be addressed at once to the undersigned.

J. LAWRENCE MEARS,
July 17th, 1931. Secretary Supt

Seamen's Hospital Society, Greenwich, S E

RESIDENT MEDICAL OFFICER required at QUEEN ALEXANDRA MEMORIAL HOSPITAL, MARSEILLES, from September 1st Salary at the rate of £250 per annum, with board, residence, and laundry British State Registered Nursing Staff Candidates must be male, and some knowledge of French is essential

Applications, with copies of three recent testimonials, to be sent in by August 15th to the undersigned, from whom further particulars can be obtained.

Greenwich R E V. BAX,
July 16th, 1931. Secretary.

The Lady Chichester Hospital, Hove (For early nervous breakdowns)

(50 Beds)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, and laundry, and honorarium at the rate of £50 per annum The successful candidate will be required to enter on her duties as soon as possible

Applications must be made in writing, and be *accompanied* by testimonials, and sent to the Secretary, Mr. A F GRAVES, 117, North St, Brighton

June 23rd, 1931

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered Number of beds 50 Salary £150 per annum, *with board and lodging*

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before August 4th

Town Hall, W. H WARHURST,
Accrington Hon. Secretary

Victoria Central Hospital, Wallasey.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150

Candidates chosen would be appointed for six months

Applications, with copies of testimonials, to be sent to the Secretary

The Jessop Hospital for Women, Sheffield (146 Beds)

Gynaecological and Maternity Departments

The Board of Management invite applications for the post of ASSISTANT HOUSE SURGEON (male) for a period of six months

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be addressed to the undersigned immediately.

H B. SHELSWELL, Secretary.

Hull Royal Infirmary.

(370 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (male) to the SURGICAL BRANCH HOSPITAL The Branch is a separate contained General Hospital of 100 beds There are two Resident posts

The appointment will be for six months in the first instance, and will be determinable by one month's notice on either side

Salary at the rate of £160 per annum, with board, residence, and laundry,

Applications, stating age, qualifications and nationality, together with copies of testimonials should be sent to the undersigned on or before August 11th

R J CARLESS
July 20th, 1931 House Governor

Walsall General Hospital

The Committee invite applications from women for the post of HOUSE PHYSICIAN Salary at the rate of £150 per annum

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials

Duties include the supervision of medical cases and assisting in Special Departments

The appointment will be for six months

The Hospital contains 100 beds, and is equipped in all Special Departments

Applications, stating age, qualifications and nationality, must be received by the undersigned *not later than first post, Tuesday, July 28th*

WALTER FRANCOMBE, Secretary.

Chesterfield and North Derbyshire Royal Hospital

(190 Surgical and Medical Beds)

HOUSE SURGEON

Applications are invited from fully qualified men for the above post There are five Resident The *appointment is for six months*

Salary at the rate £150 per annum, with board, apartments, and laundry

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned on or before July 30th

G SUNNUCH
July 20th, 1931. Supt and Secretary

Huddersfield Royal Infirmary

(210 Beds)

(Officially recognized for the Surgical Practice required of Non members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England)

Male HOUSE SURGEON required to commence duty as early as possible Salary £150 per annum, with board, residence, and laundry Appointment for six months, subject to renewal for further three or six months Applications, with copy testimonials, to be addressed to the Secretary immediately.

Midland Hospital, Easy Row, Birmingham

A vacancy will occur for the post of HOUSE SURGEON, lady or gentleman, at the above Hospital, on August 9th Salary £150 per annum, with board, residence, and laundry

The work includes Surgery, Gynaecology, Dermatology, etc

Applications, stating age and qualifications accompanied by recent testimonials, should be forwarded at once to—

JAMES O AYRES, Secretary

Coventry and Warwickshire Hospital (307 Beds)

RESIDENT CASUALTY OFFICER (male) wanted Salary £125 per annum, with board, laundry, and attendance provided Candidates must be duly qualified and registered

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before July 28th

(Miss) R HOOPER, Secretary

Aberdeen Royal Infirmary.

The Board of Directors invites applications for the post of a JUNIOR ASSISTANT SURGEON

Twelve copies of applications and testimonials should be lodged with the Subscriber, not later than July 31st

230, Union St, JOHN A McCONACHIE
Aberdeen Clerk & Treasurer

House Surgeon required, male or female, British nationality, for ASHFORD HOSPITAL, KENT. Salary £150 per annum

Please state experience and qualifications Candidates must be unmarried, and under 35 years of age Duties to commence August 1st Applications, with three recent testimonials, to be sent to the Hon Secretary immediately.

County Borough of East Ham.

ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified Practitioners for the position of Assistant Medical Officer whose duties will be primarily in connection with Maternity and Child Welfare work Age not to exceed 45 years Salary £500 rising annually by £25 to a maximum of £700 per annum, subject to 5 per cent deduction for superannuation

Previous experience in a similar appointment under a local authority will be regarded in calculating the commencing salary of the person appointed

The successful candidate will be required to give full time service and act under the supervision of the Medical Officer of Health

Candidates must have had definite experience of Children's Diseases The possession of the Diploma in Public Health or similar qualification is desirable, and preference will be given to those who have had previous experience in Maternity and Child Welfare work

The successful candidate will be required to pass satisfactory a medical examination, and to reside in the neighbourhood

Forms of application can be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope and must be returned by 9 a.m. on Tuesday, September 1st

Canvassing the members of the Council, either directly or indirectly will disqualify

By Order
C EUSTACE WILSON,
Town Clerk

Town Hall,
East Ham E.6
July 20th 1931

Lurgan Union (Northern IRELAND)

Applications for the post of MEDICAL OFFICER are invited from qualified Medical Men under 40 years of age The candidates must possess the Fellowship of one of the Royal Colleges of Surgeons Full scope for private and consultant practice is allowed, and a new Hospital is in process of reconstruction which will be available for private patients

The salary is £300 per annum, in addition to certain extra remuneration

Applications with certificates of registration, and proof of age will be received by the undersigned up till 11 a.m. on August 20th

By Order
J CALVERT
Clerk of the Union

Clerk's Office,
The Union Lurgan N.I.
July 18th 1931

The Manchester and District RADIUM INSTITUTE MANCHESTER

ASSISTANT RADIUM OFFICER

Applications are invited for the above appointment (male) which offers excellent opportunities for acquiring experience in Radium Therapy

Previous Clinical experience necessary previous radiological experience an asset, but not essential

Appointment for six months in first instance, but with view to permanency

Salary £300—£500 per annum, dependent upon qualifications and experience

Applications giving full details (with testimonials) to be submitted to the Hon Secretary by July 31st

The Royal Infirmary, SUNDERLAND

BACTERIOLOGICAL LABORATORY

Applications are invited from registered Medical Practitioners for TEMPORARY DUTY at the above Laboratory for at least a calendar month commencing August 10th

Remuneration £12 12s per week, with the usual First Class travelling expenses

Vacancy would permanent staff will shortly occur

Applications with copies of three testimonials, to be addressed to the undersigned

S C BRYERS
House Governor and Secretary

Monkton Combe School, SOMERSET

The post of MEDICAL OFFICER (non resident) which is vacant as from the commencement of the Michaelmas Term Full particulars may be obtained on application to the Head Master

Bradford Children's Hospital.

HOUSE PHYSICIAN (lady) wanted immediately fully qualified Salary £120 with board residence and laundry Applications by letter with copies of testimonials not later than

J W BUCKLEY Secretary Superintendent

Sussex Eye Hospital, BRIGHTON

HONORARY CLINICAL ASSISTANT required

The Committee of Management hereby give notice that a meeting of the Committee will be held on August 20th for the purpose of appointing an Honorary Clinical Assistant to help in the Out patients Department only on Tuesdays and Fridays at 12 30 The appointment to be for two years The successful candidate to be eligible for re appointment at the end of that period

Applications in writing for the vacancy, with testimonials must be sent to the Hospital addressed to the Assistant Secretary, on or before Wednesday, August 12th Candidates must be registered under the Medical Acts

No candidate can hold the appointment unless he resides in Brighton or Hove

Board Room
Queen's Road
Brighton July 16th 1931

A E GRAVES
Assistant Secretary

Manchester Northern Hospital FOR WOMEN AND CHILDREN, Park Place Cheetham Hill Road, MANCHESTER

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON both duly qualified who are to commence duties on October 1st

Senior House Surgeon salary £130 per annum with board and residence Junior House Surgeon salary £100 per annum, with board only

Applications stating age and experience with copies of recent testimonials to be sent to the Secretary, Mr JAMES C DANIELS 38 Barton Arcade Manchester, not later than the first post August 31st

The Royal Infirmary, Sheffield (500 Beds)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON and SECOND ASSISTANT CASUALTY OFFICER The salary attached to the appointment is £80 per annum with board and residence

The resident staff numbers 14 and after six months' service salary is at the rate of £100 per annum

Applications with copies of testimonials to be sent to the undersigned forthwith

JNO W BARNES F C I S,
Board Room Gen Supt & Secretary
July 14th 1931

The Royal Infirmary, Sheffield. (500 Beds)

The Weekly Board of Management invite applications for the post of OPHTHALMIC HOUSE SURGEON The salary attached to the appointment is £80 per annum with board and residence, rising to £100 after six months service There are 66 Ophthalmic beds and the post offers exceptional opportunities of gaining experience

Applications with copies of testimonials, to be forthwith

JNO W BARNES, F C I S,
Board Room Gen Supt & Secretary
July 14th, 1931

The Children's Hospital, SHEFFIELD (107 Beds)

Applications are invited for the post of WHOLE TIME MEDICAL REGISTRAR PATHOLOGIST (non resident) The appointment is for one year but is renewable annually Salary £350 per annum

Candidates must be fully qualified medically

Applications with copies of testimonials, to be sent at once to the undersigned

T H G GARTLAND Secretary

The Sheffield Royal Hospital. (340 Beds)

Required RESIDENT ANAESTHETIST, salary at the rate of £80 per annum rising to £100 per annum in six months also CASUALTY OFFICER, salary £150 per annum, with board residence, and laundry There are twelve resident medical officers (the Casualty Officer being second in seniority) Applications should be forwarded at once to—

W H POOTH,
July 7th 1931 Supt & Secretary

The Sheffield Royal Hospital. (340 Beds)

Required OPHTHALMIC HOUSE SURGEON Salary £120 per annum with board residence and laundry There are twelve resident medical officers Applications should be forwarded at once to—

W H BOOTH
July 7th, 1931 Supt & Secretary

Joint Counties Mental Hospital, CARMARTHEN

JUNIOR ASSISTANT MEDICAL OFFICER

The Committee of Visitors of the above Institution (652 patients) require a duly qualified male not over 35 years of age Junior Assistant Medical Officer, at a commencing salary of £350 rising by annual increments of £25 to £450 per annum, together with emoluments (full board residence, laundry, and attendance) valued at £156 15s per annum for the purposes of the Asylums Officers Superannuation Act 1909, subject to the provisions of which and the previously existing terms of service the appointment will be made terminable by three months notice on either side, but the Committee expressly reserve the right to terminate the appointment on marriage

The possession of the D P M Diploma and practical experience of Pathological methods, together with a knowledge of the Welsh language will be deemed desirable, further qualifications and applications, accompanied by copies of three recent testimonials must be delivered in sealed envelopes marked 'J A M O' to the undersigned on or before Monday, August 31st

34 Quay Street
Carmarthen
July 18th 1931

W J WALLIS JONES
Clerk to the Visitors

The Middlesex Hospital, W.1.

RESIDENT ASSISTANT ANAESTHETISTS

Applications are invited from qualified registered Medical Men for the appointments of Senior and Junior Resident Assistant Anaesthetists

The senior appointment will be for one year from September 1st 1931, and carries a salary at the rate of £120 per annum The Junior appointment will be for six months from October 1st 1931, with salary at the rate of £80 per annum

Board and residence are provided and the successful applicants will be eligible to apply for re appointment

Preference will be given to candidates who have had previous clinical experience

Applications with copies of not more than three testimonials, should be sent to the undersigned before Saturday, August 15th

S R C PLIMSOLL
Secretary Superintendent

Bury Infirmary, Lancashire.

Applications are invited for the post of THIRD HOUSE SURGEON who must have both Medical and Surgical qualifications The appointment is for six months at a salary at the rate of £150 per annum, with board, residence, and laundry

Applications stating age, qualifications and nationality, with copies of three recent testimonials to be sent to the undersigned not later than August 1st, endorsed Third House Surgeon

Particulars of duties may be had on application

ALEX W MAITLAND,
Honorary Secretary

West Herts Hospital, HEMEL HEMPSTEAD (110 Beds—24 miles from Euston)

Applications are invited for the appointment of a RESIDENT MEDICAL OFFICER to commence duties about the middle of August Salary £150 with room board and laundry

Preference will be given to male candidates

Particulars to be obtained of and applications, stating essential particulars and enclosing copies of recent testimonials to be sent at once to—

ROBT J BUTTERFIELD,
Clerk to the Hospital

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON vacant August 10th

The appointment is for six months renewable (determinable by three months notice on either side)

Salary at the rate of £150 per annum with board lodging and laundry

Candidates (male) should forward applications stating age nationality etc together with copies of testimonials to the Secretary at once

Worthing Hospital.

Applications are invited for the post of HONORARY CONSULTING ORTHOPAEDIC SURGEON

Applications should be sent to the Secretary by August 12th

City of Liverpool.

SMITHDOWN ROAD HOSPITAL

MEDICAL SUPERINTENDENT.

Applications are invited from fully qualified Medical Practitioners, with the necessary knowledge and experience of Hospital administration, for the appointment of full time Resident Medical Superintendent at the above Hospital, at a salary of £1,000 per annum, together with apartments, fuel, light, and laundry, valued for superannuation purposes at £150 per annum Any fees received in connection with the appointment to be handed over to the City Council

The gentleman appointed will assume control of the Hospital under the direction of the Medical Officer of Health, and be responsible for the work of the Medical, Nursing, and Administrative Staffs in accordance with the requirements of the Public Assistance Order, 1930

The Hospital has accommodation for approximately 1,300 patients, with a resident staff of Assistant Medical Officers, Visiting Specialists, and a Nursing Staff of 140 Provision is made for Medical and Surgical cases, with an extensive Maternity unit The Hospital is a Training School, recognised by the General Nursing Council and the Central Midwives Board, and the Medical Superintendent will be required to organise the necessary lectures in connection with the training A considerable portion of the Hospital will be set aside for the reception of Mental Patients prior to their transfer to County Mental Hospitals, etc, and a knowledge of this class of work is essential

The appointment will be made subject to the Local Government and Other Officers Superannuation Act, 1922 (Substituted Scheme), and the Standing Orders of the Council, determinable by three calendar months' notice on either side

Applications for the appointment, giving full particulars as to age, qualifications, experience, etc, together with copies of three recent testimonials, should reach the undersigned not later than Friday, August 28th

Canvassing of members of the Council will be regarded as a disqualification

Town Clerk's Office, Liverpool — WALTER MOON, Town Clerk.
July 20th, 1931

City of Liverpool.

SMITHDOWN ROAD HOSPITAL

DEPUTY MEDICAL SUPERINTENDENT

Applications are invited for the appointment of a full time Resident Deputy Medical Superintendent at the Smithdown Road Hospital (approximately 1 300 beds), at a salary of £500 per annum, together with the usual residential allowances valued for superannuation purposes at £130 per annum Any fees received in connection with the appointment to be handed over to the City Council Applicants must be single, fully qualified, and registered, and have had considerable Hospital experience since qualification The person appointed will be required to assist the Medical Superintendent in the administration of the Hospital, training of Nurses etc, and will assume control of the Hospital in the absence of the Medical Superintendent

The appointment will be made subject to the Local Government and Other Officers Superannuation Act, 1922 (Substituted Scheme), and the Standing Orders of the Council, determinable by three calendar months' notice on either side

Applications, giving full particulars as to age, qualifications, appointments held, etc, together with copies of three recent testimonials, should reach the undersigned not later than Friday, August 28th

Canvassing of members of the Council will be regarded as a disqualification

Town Clerk's Office, Liverpool — WALTER MOON, Town Clerk
July 20th, 1931

Pontefract General Infirmary.

Wanted, RESIDENT MEDICAL OFFICER Work largely Surgical (60 beds—1,500 in-patients) Salary £200/£300, according to qualifications (board, apartments, and laundry provided)

Send three copies of recent testimonials to HERBERT HOLMES, Secretary, Ropergate, Pontefract

A Locum Tenens (female) is

required for the post of RESIDENT HOUSE SURGEON at the ROYAL VICTORIA HOSPITAL FOLKESTONE, KENT, for a period of three months to commence duties immediately Applications to be sent to Capt R W REID, Secretary Superintendent, Royal Victoria Hospital, Folkestone, Kent

Cornelia and East Dorset

HOSPITAL, POOLE, DORSET.
(105 Beds.)

HOUSE SURGEON.

Applications are invited for the post of House Surgeon (male) Salary £150 p a, with usual emoluments Duties to commence September 1st next for seven months.

Applications, stating age, experience, and qualifications, and accompanied by three recent testimonials, must reach the undersigned at the Hospital by 12 noon, August 4th

E. S. FOLEY, Secretary.

Caernarvonshire and Anglesey

INFIRMARY, BANGOR.
(General Hospital.)

HOUSE SURGEON wanted Salary £200 per annum, with residence, board, and laundry Duties to commence September 1st Hospital contains Orthopaedic, Ear, Nose, and Throat, X-ray, and V D Departments

The post offers good opportunity for practical Surgical experience

Applications, stating age, nationality, and experience, with copies of three recent testimonials, to reach the Secretary not later than August 6th

Stockton and Thornaby Hospital,

STOCKTON ON TEES
(Three Residents—140 Beds)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months. Duties to commence on or about August 1st. Salary £150, with board, residence, and laundry Candidates must be duly qualified and unmarried Applications, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned

JOHN WILKINSON, Secretary.

The Children's Hospital,

SUNDERLAND. (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female) Candidates must possess double qualifications (registered). Salary £100 per annum, with board, residence, and laundry The appointment is for six months Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned

S. C FRYERS,
House Governor & Secretary.

Bradford Royal Infirmary.

Three HOUSE SURGEONS (male) wanted for September 1st Candidates must be single and legally qualified. Salary £150 per annum each, with board, residence, and washing.

There are 215 beds and six resident officers

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Wednesday, July 29th

J. J. BARRON,
July 7th, 1931. Secretary Supt

Buchanan Hospital,

ST LEONARDS ON SEA, SUSSEX.
(Beds 115)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male or female) at a salary of £125 per annum, with board, residence, etc Eligibility for Senior position after six months' service. Applications, with testimonials, to be sent to the Secretary, Buchanan Hospital, St Leonards, as early as possible

Acton Hospital, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required Salary £100 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered Applications, stating age, nationality, and qualifications, together with a copy of three recent testimonials, should reach the Secretary, Acton Hospital, Gunnersbury Lane, W.3, by Tuesday, August 4th.

July 21st, 1931.

Royal Berkshire Hospital,

READING (245 Beds)

RESIDENT ANAESTHETIST (male) wanted now for six months Candidates must be fully qualified and registered Remuneration at the rate of £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned

F. A. LYON, Secretary.

Birkenhead General Hospital.

Applications are invited for the following resident posts for the six months commencing October 1st next, viz:

SENIOR HOUSE SURGEON Salary £150 per annum, with board, residence, and laundry

HOUSE PHYSICIAN. Salary £100 per annum, with board, residence, and laundry

CASUALTY OFFICER Salary £100 per annum, with board, residence, and laundry

Applications, stating age, nationality, and qualifications, together with three recent testimonials, to reach the undersigned as early as possible.

W H DAMELS
Secretary Superintendent

New Cross Hospital,

WOLVERHAMPTON

Applications are invited from single gentlemen, duly qualified, for appointment as ASSISTANT (RESIDENT) MEDICAL OFFICER.

Salary will be at the rate of £200 p r annum, with apartments, board, attendance, etc

The appointment is limited to a term not exceeding one year.

Applications, stating age, qualifications and experience, and accompanied by copies of recent testimonials, must be addressed to—

A. G ALDRIDGE
Wolverhampton. Public Assistance Officer

King Edward Memorial Hospital,

Ealing (106 Beds)

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Junior Resident Medical Officer, vacant on August 1st. Salary £150 per annum, with usual residential allowances

Applications, stating age, experience, and qualifications, together with copies of two testimonials, to be sent to the undersigned immediately.

R A. MICKELWRIGHT,
Secretary Superintendent

National Sanatorium, Benenden,

KENT.

RESIDENT ASSISTANT MEDICAL OFFICER (male) required at Benenden Sanatorium (147 beds) early in September Salary £300 p r annum, rising by annual increments of £25 to £350

Preference given to candidates with experience in Tuberculosis and Pneumothorax Treatment.

Applications, with copies of three recent testimonials, should be sent to the Medical Superintendent not later than Thursday, August 6th

Queen Mary's Hospital for the

EAST END, E 15

Applications are invited for the post of HONORARY OPHTHALMIC SURGEON at the above Hospital.

Candidates must be Fellows of the Royal College of Surgeons of England

Applications, with copies of three recent testimonials, should be forwarded to the undersigned not later than Thursday, August 6th

RAPHAEL JACKSON (Major), Secretary

Bootle General Hospital,

BOOTLE, Near LIVERPOOL

Applications are invited for the post of HOUSE PHYSICIAN for the period ending December 31st

Salary at the rate of £150 per annum, with board, residence, and laundry.

Duties to commence as soon as possible.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned immediately.

J A BEARDSALL, Secretary Supt

Rotherham Hospital.

(130 Beds)

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials to be sent to the Secretary, G W ROBERTS, 8, Moorgate Street, Rotherham

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN, qualified Salary £180 p a, with board, residence, and laundry, to have charge of Out patients and minister Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G W ROBERTS, 8, Moorgate Street, Rotherham

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	GREENOCK CORPORATION. *(Assistant to Medical Officer of Health—Lady.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 155, Macquarie St, Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St, Brisbane	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

July 22nd, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Altrincham General Hospital.
(100 Beds)

Applications are invited for the posts of SENIOR and JUNIOR HOUSE SURGEONS. Salaries at the rate of £150 and £100 respectively, with board, residence, and laundry.

The appointments are for six months in the first instance, to commence on September 1st.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, Cheshire, not later than August 5th

Burslem Haywood and Tunstall
WAR MEMORIAL HOSPITAL.

Wanted, SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males or females). Salaries £175 and £140 respectively, with board and residence. Must be fully qualified.

Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me.

F. C. POWELL, F.C.I.S., Secretary.
Public Offices, Price St., Burslem

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months commencing August 10th. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Secretary, Medical Staff Committee, not later than [illegible]

Swindon & [illegible]
HOSPITAL.

Wanted, a RESIDENT MEDICAL OFFICER (male). Salary £125 per annum, with board, residence and laundry. Candidates must be registered under the Medical Act. Appointment for the minimum of six months. Applications, stating age, etc., and accompanied by copies of not more than three recent testimonials, should be sent to the undersigned

K. S. KNAPP, Secretary.

Manchester and Salford Hospital
FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months. Salary £100 per annum, with board and residence. Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, July 29th

JOHN NALL, Secretary.

Hospital for Women at Leeds.
(For the Treatment of Diseases Peculiar to Women.)

HOUSE SURGEON wanted to commence duties on August 1st next. The appointment is for six months. Salary at the rate of £100 per annum, with board, quarters, and laundry.

Applications, together with copies of testimonials, should be sent to the undersigned immediately.

B. L. JEAFFRESON, Hon. Secretary to the Faculty.

General Infirmary, Salisbury.
(General Hospital—161 Beds.)

HOUSE PHYSICIAN (male) required, to commence duty at the end of August.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Salary £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned.

PERCY G. BROOKS, Secretary.

Gravesend and North Kent
HOSPITAL. (100 Beds.)

JUNIOR HOUSE SURGEON.

The Board of Management invite applications from fully qualified men for the above post, which is of twelve months' duration.

Salary at the rate of £100 p.a., first six months, £150 p.a., second six months, plus board, lodging, washing, and certain fees as perquisites.

The successful applicant will be required to commence duties on September 1st

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN, Secretary.

City of London Hospital for
DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2
('Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on September 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Friday, August 14th

GEORGE WATTS, Secretary.

The Liverpool Eye and Ear
INFIRMARY, Myrtle Street

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than mid-day, July 28th, to—

CHARLES W. WRIGHT, Esq., 9, Harrington St., Liverpool.

(Appointments continued on p. 42.)

British Medical Journal,

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Wanted. — Assistantship, with view, by male M.B., Ch.B., Scot, single, aged 25, ex H.S. and H.P.; six months' experience G.P. Midlands and country preferred.—Address, No 4557, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to PARTNERSHIP, in old established general Practice in country town in Midlands. University man, aged about 30 Well equipped Cottage Hospital.—Address, No 4414, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Aug. 9th, Assistant, Glamorgan Colliery Practice, within easy reach of Cardiff and Swansea £400, outdoor. Prospects if suitable Abstainer preferred Usual bond — Address, No. 4562, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to Partnership worth £1,200, in Midland Town with Hospital Terms £450, attractive house, and car allowance Practice mixed. M.B. Cantab.—Address, No. 4478, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (male), who has held an Ophthalmic or other Hospital appt £7 weekly (indoor) If married, accommodation can be arranged Send photo, state height, etc.—Address, No 4632, B.M.A. House, Tavistock Square, W.C.1

Wanted. — Assistantship (outdoor) by M.B., B.Ch. (1924), age 33, ex H.S. and H.P., post grad midwifery, experienced in both private and panel practice.—Address, No 4574, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, with view, in good Practice in Lancs town Salary £350 per annum to start, with furnished rooms, light, coal, and attendance. —Address No 4560, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, male, indoor, end of September, for mixed Practice in West Riding. Salary £300. Write, stating age, nationality, experience, etc.—Address, No 4639, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant, (indoor) for London area Experience private and panel. State full particulars.—Address, No 4580, B.M.A. House, Tavistock Square, W.C.1

Wanted, Sept., outdoor, male ASSISTANT, single, Birmingham Practice established over 40 years, good industrial, middle class, and panel (2,900) Good prospects for energetic man with some experience. State age, experience, and other essential particulars. —No. 4637, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, Indoor, young, single, male Protestant Panel and private practice, Sheffield. Recently qualified preferred. Salary £250 p.a. State age, height, and full particulars — Address, No 4640, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, single, male, in South Wales General Practice. Salary £300 per annum, with rooms, attendance, light, etc. Usual bond.—Address, stating age, references, etc., No 4553, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant. (male) for Colliery Practice in Durham. Commence duties Aug. 10th. English or Scotch. salary £450—£500 p.a. Previous exper. essen. —Address, with recent testimonials and photo, No. 4636, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—An Indian Assistant soon in mixed Practice. Scope for surgical work. Salary according to qualifications.—Address, with photo. and testimonials, No. 4577, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistant wanted to live at Surgery, all found. Salary £300, car available Male, unmarried.—WATTS, 136, High Road, Ilford, Essex.

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Indoor Assistant with view to Partnership wanted General practice Western London. Good-class district, with panel Young Scotsman preferred. Exceptional opportunity for ambitious man. Send parties. —No 4567, B.M.A. House, Tavistock Sq., W.C.1.

North Wales.—Wanted, Welsh-speaking outdoor ASSISTANT, with or without view, for General Practice, private and panel Salary £400, car allowance Usual bond References required.—Address, No 4563, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor, 7 years' experience panel and private, knowledge of Eye work, desires PART-TIME or OUTDOOR ASSISTANTSHIP. W. or N.W. area. Drives own car.—Address, No 4569, B.M.A. House, Tavistock Square, W.C.1.

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M.R.C.S., L.R.C.P., age 28, late H.S. and H.P., experienced in panel and private practice, requires post of LOCUM for August and September Own car.—Address, No 4634, B.M.A. House, Tavistock Sq., W.C.1

Woman, M.B., Ch.B., D.P.H., 9 years' Hospital and G.P. experience, requires LOCUM from August 1st onwards Own car.—Address, No. 4555, B.M.A. House, Tavistock Square, W.C.1.

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The successful candidate will be expected to obtain the D.P.M. (which carries with it an addition of £50 per annum to the salary stated) as soon as possible after appointment. There is every scope for original research, the Hospital having a modern laboratory and full equipment for the latest methods of treatment

Time will be arranged for attendance at lectures at Manchester University.

Preference will be given to candidate with Bacteriological experience.

Applications, stating qualifications, with copies of three recent testimonials, to be sent to the Medical Superintendent by the 29th inst

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH

HOUSE SURGEON (male, British nationality) required Salary £150 per annum, with board, lodging, and washing The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act. Applications, stating place of birth, with *copies of three testimonials,* to be sent immediately to the undersigned.

Women and married men are ineligible
GORDON M SAUL,
July 20th, 1931. Secretary

Beckett Hospital & Dispensary, BARNSLEY (153 Beds)

HOUSE PHYSICIAN required immediately Applicants must be registered, and preference will be given to those who have held a previous Hospital post, and having Pathological experience Salary £200 per *annum,* with board, residence, and laundry

Applications, together with testimonials, should be sent to the undersigned
ARTHUR L BOURNE,
July 21st, 1931 Secretary Supt

The Royal Liverpool Children's HOSPITAL.

There on October 1st next for TW SURGEONS at the CITY t The appointments *will be for a period of six months* Salary in each case at the rate of £100 per annum

Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street Liverpool, on or before Saturday, August 1st

Worcester General Infirmary. (Voluntary Hospital—132 Beds)

JUNIOR HOUSE SURGEON required (man or woman), to commence duties September 1st Salary at the rate of £120 per annum, including board, residence, and laundry

Applications, stating age, experience, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned not later than Saturday, August 8th
PERCY N GLASS, B Sc (Lect)
General Secretary

Royal Devon and Exeter HOSPITAL EXETER (255 Beds)

Appointment of (a) HOUSE PHYSICIAN (b) HOUSE SURGEON to Special Depts

Applications invited from qualified and registered candidates for each of the above appointments now vacant

Engagement for six months candidates being eligible for subsequent appointment

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Exeter July 15th 1931 S. S. COLE Secretary & Manager

Royal Sussex County Hospital, BRIGHTON (Beds 246)

CASUALTY HOUSE SURGEON (male) required after the middle of August next

Salary £120 per annum, with board residence and laundry

Candidates must hold Medical and Surgical qualifications of the British Empire and be duly registered under the Medical Act

They must be unmarried and when elected under thirty years of age

Applications with copies of recent testimonials should be sent to the undersigned immediately

L. L. W. LANCASTER GAVE Secretary Superintendent

The Mount Vernon Hospital, NORTHWOOD (The National Centre for the Treatment of Cancer)

A HOUSE SURGEON will be required on September 1st Candidates must be fully qualified and registered Salary at the rate of £150 per annum board residence etc Six months appointment Applications accompanied by copies of three testimonials to be addressed to the undersigned on or before July 31st

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East Suffolk and Ipswich HOSPITAL IPSWICH (265 Beds—7 Residents)

Applications are invited for the post of CASUALTY OFFICER Salary £120 per annum or more according to experience Board, residence and laundry

Applications from British (male) candidates stating age qualifications and experience accompanied by three recent testimonials to be sent to the undersigned

The Hospital Ipswich June 1st 1931 ARTHUR GRIFFITHS Secretary

Manchester Victoria Memorial JEWISH HOSPITAL CHEETHAM, MANCHESTER (Non Sectarian)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male) The appointment is for six months to commence duty September 1st Salary at the rate of £125 per annum with board residence and laundry Applications stating age and qualifications, together with copies of three recent testimonials to be forwarded to the undersigned not later than August 4th

FRED BARNES Superintendent and Secretary

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum with residence board etc

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H. J. NORTH Secretary

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ACCOUNTANCY.

The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 HOME COUNTIES. — Partnership in Country Practice of £3,700 p.a. Panel 2,230. Choice of houses. Premium for five twelfths share 2 years' purchase.

2 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000 Premium for one-fifth share 2 years' purchase.

3 LONDON, W. — Partnership in an old-established mixed Practice of £3,600 p.a. Panel 3,912. Good house and garden on lease. Premium one-half share £3,750.

4 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb. Panel £100. Modern house (3 bedrooms). Premium £1,100

5 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort Panel 520. Hospital. Good house and garden Premium 1½ years' purchase.

6 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden to rent. Prem. £1,100.

7 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of London. Panel about 1,000. House (6 bedrooms) with small garden for sale Educational facilities and sport. Prem. 1½ years' purchase.

8 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., in first rate town Panel about 3,000. Suitable house obtainable. Scope for increase. Premium one-third share 1½ years' purchase.

9 E. MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport Premium £1,350.

10 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district Panel 2,525. Scope for increase Premium one-third share 2 years' purchase.

11 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500. Detached house with garage and small garden, to rent. Sport of all kinds Premium one third share 2 years' purchase. Preliminary Assistantship

12 LEEDS. — Very compact mixed Practice over £1,200 p.a. Panel 1,300. Large well-situated detached house (4 bed and dressing rooms), with large garden, to rent on lease Premium 1½ years' purchase.

13 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 350. Convenient semi-detached house (4 bedrooms) with good garage and secluded garden, for sale. Great scope. Premium £860.

14 CO. DURHAM.—Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale. Premium for one-half share only £1,000.

15 OPHTHALMIC Practice in flourishing Town within easy distance of London. Receipts over £450 (one day's attendance per week) Fees mainly £1 1s. Rent £60. Good Hospital. Premium £800.

16 S. COAST. — Non-dispensing Practice of £1,635 p.a. in fashionable health resort. Panel 879. Well situated house (6 bedrooms), with garage and garden, to rent. Premium £3,000, or nine-twentieths share at 2 years' purchase.

17 ESSEX.—Partnership in middle and working-class Practice of £3,440 p.a. in industrial town within 25 miles of London. Panel 1,830. Detached double fronted house (5 bedrooms), garage and garden, for sale. Premium one-half share 2 years' purchase.

18 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p.a., in beautiful hunting centre. Applicant should be aged about 30 ('Varsity man preferred). Cottage Hospital. Scope for Surgery. One-fourth share at 2 years' purchase. Preliminary Assistantship.

19 SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 200. House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,300.

20 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town. Panel about 2,400. One-third share at 2 years' purchase, payable by arrangement if desired.

21 N.E. COAST. — Ear, Nose, and Throat PRACTICE of about £1,800 p.a. in seaport town.

22 S. OF ENGLAND.—Partnership in good non-dispensing Practice of about £6,000 p.a., in attractive Watering-place. No panel. Suitable house obtainable. Incoming Partner must be well qualified (Oxford, Cambridge, or London) and experienced in Medicine. Share of one-sixth to one-fourth at first at 2 years' purchase.

British Medical Bureau

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Practices and Partnerships for Disposal (continued).

23 MIDLANDS. — Good-class non-dispensing PRACTICE of nearly £1,800 p.a. in best residential suburb of first rate City. No panel. Large and beautiful house in excellent position to be rented on lease. Premium 1½ years purchase.

24 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 660. Detached house (6 bedrooms) with garage and beautiful garden to rent. Hunting, shooting, fishing, etc. Premium 1½ years purchase. Suitable for retired Service man.

25 S. DEVON.—Partnership in Practice over £1,800 p.a. in beautiful country district near the borders of Dartmoor. Suitable house available. Hunting, shooting, fishing. Premium for one half share 1½ years purchase.

26 LONDON, E.C.—City Practice. Receipts 1930 over £1,300. Consultations mainly £1 1s. some £1 11s. 6d. and £3 3s. Excellent consulting rooms. Premium 1½ years purchase.

27 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast. Receipts average £300 p.a. (including £100 from panel). Large convenient house with good Surgery and nice garden to rent. Premium 1 years purchase.

28 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

29 LONDON, W.—Partnership in sound non-dispensing Practice of nearly £2,300 p.a. close to West End. No panel and very little night work. Partner should be aged about 35 and used to good class Practice. One third share 2 years' purchase.

30 MIDLANDS.—Partnership in easily worked good class non-dispensing Practice over £4,000 p.a. in beautifully situated county town. Panel about 1,600. Hospital in town and incoming Partner must be a good Surgeon. One fifth share at first at 2 years purchase.

31 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one half 2 years purchase. Up to date Cottage Hospital.

32 DEATH VACANCY. — N. DEVON. — Country PRACTICE of over £1,600 p.a. in beautiful part. Panel over 600. House (6 bedrooms) garage, and good garden, for sale or rent.

33 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,300 p.a. Suitable house to purchase. Premium one fourth share £2,000. Preliminary Assistantship.

34 S. COAST.—Partnership in good-class non-dispensing Practice, over £4,000 p.a., in favourite residential town in seaside resort. No panel and not much midwifery. Large suitably situated house (4 or more bedrooms) to rent on lease. Incoming Partner should be Oxford, Cambridge or London man (aged about 30) who has held Hospital appointments. One third share at first at 2 years purchase.

35 LONDON, W.—Steadily increasing Practice doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

36 S. OF ENGLAND.—Partnership in Practice about £2,800 p.a. in favourite seaside resort. Delightful house (5 bedrooms) garage and nice garden, to rent. Incoming Partner should be a Surgeon (preferably F.R.C.S.) Hospital and appointment on staff. Premium one fourth share 2 years purchase.

37 MIDLANDS. — Partner required in sound lucrative Practice in residential town close to large city. Small panel. Very good Cottage Hospital. Share of £1,000 p.a. at 2 years purchase. Applicant should be well up in his work.

38 S. COAST.—Partnership in non-dispensing Practice in seaside resort. Incoming Partner must hold the F.R.C.S. Hospital Scope for Surgery. Share worth about £1,000 p.a. (after short preliminary Assistantship) at 2 years' purchase.

39 LONDON, S.W.—Practice about £500 p.a. in suburban district. Panel 650. No midwifery. Semi-detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

40 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwifery. Six roomed house to rent. Prem. £700.

41 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p.a. in manufacturing town. Panel over 1,300. Pleasantly situated double fronted house (4 bedrooms), with garden, for sale. Premium 1½ years purchase.

42 LONDON, E.—Cash Practice of £850 p.a. in populous neighbourhood. Panel over 1,000. House (3 bedrooms) in main road, to rent. Premium 1½ years purchase.

43 S. COAST.—Small Seaside Place —Nucleus of PRACTICE, with very good semi-detached house (3 bedrooms). Would suit semi-retired Practitioner who could wait a while as place is developing quickly. Price for freehold house £1,400.

44 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms) garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

45 S. OF ENGLAND.—Partnership in steadily increasing Practice about £6,000 p.a. in small town. Panel 3,300. Suitable house could be purchased. One-seventh share at 2 years' purchase. Preliminary Assistantship. London Graduate preferred.

46 MIDDLESEX.—Steadily increasing Practice about £800 p.a. in growing district. Panel about 600. Very good house (5 bed and dressing rooms) garage and excellent garden, for sale. Ample scope. Premium £900.

47 N. OF ENGLAND.—Partnership in lucrative Practice in large city. Panel over 5,000. Small house (3 bedrooms and attics) for sale. A share of £1,650 or £2,500 would be sold at 1½ years purchase.

48 DEVON.—Partnership in Practice averaging £3,000 p.a. in small town. House to rent. Hunting, shooting, fishing, etc. Premium one-third share 2 years purchase. Hospital.

49 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p.a. in developing industrial district. Panel 1,870. Small house available. Large Cottage Hospital. Prem. two-fifth share 2 years' purchase.

50 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London. Panel 300. Attractive house (7 bed and dressing rooms) in grounds of 2 acres with garage, to be sold or let. Very suitable for Resident Patients. Good scope. Premium 1 years purchase.

51 N. MIDLANDS.—Partnership in Practice over £1,400 p.a. in first rate city. Panel 1,800. House, with 2 reception rooms and 4 bedrooms to rent. Premium one half share £1,100. Preliminary Assistantship entertained.

52 MIDLANDS.—Practice of over £2,100 p.a. in manufacturing town. Panel 820. House (4 bedrooms) to rent, on lease. Premium 1½ years purchase.

53 SURREY.—Ophthalmic Practice of about £300 p.a. in desirable town within 15 miles of London. Fees mostly £3 3s. Good detached house (4 bedrooms etc.) for sale. Plenty of scope to one devoting whole time. Premium £300.

54 HANTS. — Small easily worked Practice about £400 p.a. in beautiful country district about 50 miles from London. Select panel 50. Detached house (5 bedrooms), with good garden for sale. Scope. Premium £400.

55 STAFFS. — Partnership in Practice over £2,000 p.a. in an industrial town. Panel 3,000. Suitable house (5 bedrooms) to rent. Ample scope. Premium one half share 1½ years purchase.

56 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years purchase.

57 N. WALES.—Country Practice of £1,230 p.a. in Welsh-speaking district. Panel about 550. Convenient and well situated house with electric light, etc., for sale. All kinds of sport. Premium for a quick sale 1 years purchase, or even slightly less.

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1 CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old established lucrative and increasing middle and working class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000. A fifth share is for disposal, with increase to a third later. Suitable accommodation available. Premium 2 years' purchase.

2 NORTH MIDLANDS.—WITHIN 3 MILES OF FAVOURITE TOWN.—Old established good middle class PRACTICE, offering large scope. Cash receipts for last 12 months £1,332, including panel of over 1,000. Fees from 3/6. Mid from 2 gns. Exceptionally nice house, in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc., containing 3 reception, 6 bedrooms, etc. Freehold for sale. Premium 1½ years' purchase.

3 WEST MIDLANDS.—Small Country Town.—PRACTICE is situated in *very attractive district within easy reach of two good towns*. Cash receipts average over £1,000 p.a., including panel of 500 and an appt. worth £150. Very nice house, standing in its own grounds, with 2 reception, 5 bedrooms, etc. Price for freehold £1,600, part on mortgage. Premium £1,500.

4 BORDERS OF CHESHIRE AND STAFFS.—Well established middle and working class PRACTICE, situated in pleasant district (pop. 10,000) and producing about £900 p.a., including panel of over 1,300, increasing. Visits 2/6 to 5/-. House, with good accommodation (5 bedrooms, etc.), garden, garage. Rent £75 on lease. Prem. £1,200.

5. SURREY.—PARTNERSHIP.—A one half share is offered in rapidly increasing good mixed class Practice, having large scope for increase. Gross cash receipts for immediate past 12 months about £1,800, including panel and good appointments. Fees from 2/6 to 7/6. Mid 5 gns. Choice of houses. Premium 2 years' purchase.

6 NOTTINGHAM SUBURB.—Well established middle and good working class PRACTICE, in residential district (pop. 20,000 to 30,000), worth last year over £1,000, including panel of about 880. Visits 3/6 to 7/6. Very little midwifery. Attractive house, standing in about 3/4 of an acre of garden, with ample accommodation. Price for freehold £1,850. Premium £1,550, to include drugs, etc. Sport of all kinds, and educational facilities.

7 SANATORIUM.—SOUTH-WEST OF ENGLAND.—(Within 20 miles of County Town).—Very old established. Receipts average over £10,000 p.a. for past 3 years. Middle and upper class patients. Accommodation for 45. Price for goodwill, freehold house and grounds (65 acres), furniture, fixtures, etc., only £10,000.

8 NEAR HUDDERSFIELD.—PARTNERSHIP.—A half share is offered in a very well established good mixed class Practice, having considerable scope for increase. Average gross cash receipts for the past three years £4,000, last year £4,273. Panel of 3,500. Fees from 3/6 to 7/6. Midwifery 1½ to 7 gns., about 50 cases. Very good house, with 4 reception, 6 bedrooms, etc., and 1½ acres of garden. Price for freehold £2,500, or would be let on lease. Prem. 1½ years' purchase.

9 NORTH MIDLANDS.—PLEASANT MARKET TOWN.—PARTNERSHIP.—A one third share is offered in a very old established sound mixed-class Practice, rapidly increasing, and producing for the immediate past 12 months over £3,000. *No appointments*. Panel of nearly 1,400. Fees from 3/6 to 2 gns. Midwifery 2 to 10 gns. Suitable house available on rental, or, if single, purchaser could reside with Vendor on very advantageous terms. Ingoing Partner must be able to do Surgery, as there is very good scope for this work. Hospital with 60 beds. Premium 2 years' purchase, half down, and balance by instalments.

10 MANCHESTER.—Semi-residential Suburb.—Very old established non-dispensing mainly middle class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 5 gns. Well situated house, with good accommodation. Price (freehold) £1,600. Premium £3,750.

11 SURREY.—PARTNERSHIP.—Residential town within easy reach of London.—A one fifth share (with increase later) is offered in a very well established mainly middle class Practice. Practice will produce about £3,500 p.a. or over, including panel of nearly 2,500. Fees from 3/6 to 21/-. Lowest midwifery 5 gns. Suitable house, with 2 reception, 4 bedrooms, etc. Price for freehold £1,200, of which £1,000 could remain on mortgage. Premium 2 years' purchase.

12 SOUTH DEVON.—PARTNERSHIP.—Very pleasant agricultural district, within easy reach of coast.—A one half share is offered in a very old established Practice producing £1,850 p.a., including panel and appointments bringing in about £1,000 p.a. Fees 3/6 to 21/-. Mids. 2 to 5 gns., about 40 cases. Accommodation suitable for bachelor. Premium 1½ years' purchase. Sport of all kinds.

13 BIRMINGHAM.—RESIDENTIAL SUBURB.—PARTNERSHIP.—A one-eighth share, to commence with, is offered in a very old established mainly *better class non dispensing* Practice, averaging approximately £8,000 p.a. Small selected panel. Fees 2/6 to 10/6. Midwifery 5 to 15 gns. Suitable house, containing 2 sitting, 6 bedrooms, etc. Good garden. Rent on lease £80 p.a. Premium 2 years' purchase.

14 LINCS.—PLEASANT MARKET TOWN.—PARTNERSHIP.—A half share, with possible succession in two years' time. Average income for past three years £1,900, including appointments and panel producing £500. Advice and medicine 3/- upwards; visits from 5/- Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200. Sport of all kinds and excellent schools for boys and girls. Premium 2 years' purchase payable £1,000 down, remainder by arrangement.

15. EASTERN COUNTIES.—PARTNERSHIP.—A one third share, with increase later, is offered in a very good mixed class Practice, situated in pleasant town near sea. Average gross cash receipts nearly £4,5 including panel of about 3,000. Visits 2/6 to 30/-, with medi extra. Very nice house, in large garden, containing 3 recep 6 bedrooms, etc. Price for freehold £2,000. Premium 2 years p

16. FAVOURITE SOUTH COAST TOWN.—PARTNERSHIP.—A share representing about £750 a year (with increase later) is offered in a g mixed class non dispensing Practice, held by the Vendor for 7 years. Panel of 900. Gross cash receipts nearly £1,700. Fees from 3/6. *Centrally situated house*, with 3 reception, 6 bedrooms, etc. V rent, on lease, £90 p.a. Premium 2 years' purchase.

17. SOUTH COAST TOWN.—PARTNERSHIP.—A one third share (w increase later) is offered in a mainly better class non panel Practice. Average gross cash receipts for the past three years £4,150. Fees from 10/6. Not much midwifery. Well situated house, with 3 rec tion, 8 bedrooms, etc. Can be rented on lease at £135 p.a. Pr mium 2 years' purchase.

18 WITHIN TWELVE MILES OF MARBLE ARCH.—Middle and working class PRACTICE, steadily increasing, and producing this year about £800, including panel of 250. Fees from 3/-. Suitable hou with 2 reception, 4 bedrooms, etc., secluded garden. Price for free £1,650, of which £900 could remain on mortgage. Premium £80

19. ESSEX.—Very old established PRACTICE, situated in pleasant country district, in growing area about 30 miles from London, and from the sea. Cash receipts average nearly £900 p.a., incl panel of 600. House contains surgery and waiting room, 3 rec 5 bedrooms, bathroom, etc. Garden. Garage. Gas, but electric li available. Moderate rental. Premium 1½ years' purchase.

20 PARTNERSHIP.—YORKSHIRE.—LARGE CITY.—A one third sh with succession to the whole Practice in about one years time offered in a rapidly increasing PRACTICE, producing for the *12 months approximately £2,300, including* panel of 1,500 appt. worth £150. A suitable house will be vacant shortly. mium £1,200. Large scope for further development.

21. LONDON (WEST END).—Old established non dispensing and non p PRACTICE, averaging over £4,700 p.a. Visits (very few) and sultations from one guinea upwards. No midwifery. Suitable ac modation available on rental. Premium £6,000. Good introduc given. Personal application desired.

22 WITHIN 20 MILES OF LONDON (WEST).—Rapidly developing trict.—PARTNERSHIP.—A half share in a well-established g middle class Practice, averaging over £3,500 p.a. Panel of 1 and appts. worth £100 p.a. Fees 3/6 to 21/-. Good corner ho with 3 reception, 6 bedrooms, etc. Garden. Price for free £2,100. Premium 2 years' purchase.

23 SURREY.—COUNTRY PRACTICE.—Very old established, and situ s cash receipts for past 12 months £2 700. Fees from 2/6 to 21/. Midwif nice house, with 2 reception, 6 bedroo and professional rooms. Nearly 2 acres of garden. Price for Prac and house £5,000.

24 CHESHIRE.—NEAR COAST.—Old established good mixed class PR TICE, averaging for the past 3 years nearly £1,600, including p of 1,280. Very good house in 3 acres of ground, with 2 recep 4 bedrooms, etc. Rent on lease £85 p.a. Premium £2,300.

25 WITHIN 30 MILES OF LONDON.—In a delightful residential di (well populated and growing rapidly), a small PRACTICE, produc last year £406, including panel of 300, and capable of consider development. Very good residence (suitable for resident patient about 2 acres of ground. Price, freehold, £4,000. Mortgage arr Premium £400. Excellent schools, good society, and sport.

26 FAVOURITE COAST TOWN.—*Old established* good middle and l class PRACTICE, producing over £1,800 p.a. Selected panel of 400. Fees 3/6 to 10/6. Very little midwifery. Commodious h with 2 reception, 6 bedrooms, etc. large garden. Freehold for Premium £3,000.

27. HOME COUNTIES.—Within 40 mins.' run of London.—Old e tab mixed PRACTICE, situated in small town pleasa receipts average £1,725 p.a., inclu appt. House with good accommodation small garden. Price for freehold £2,500. Premium 1½ years chase. Educational facilities.

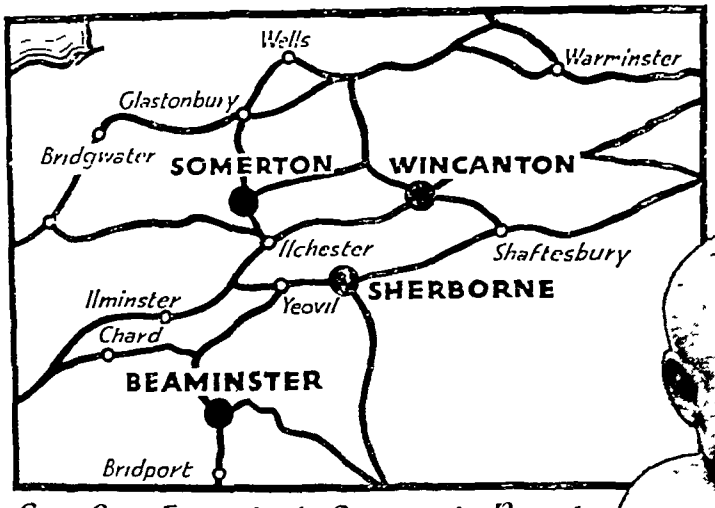
28 SURREY.—Increasing residential district, with good train serv town.—Well established good general PRACTICE, offering Surg scope. Gross cash receipts for last 12 *months* nearly £3 200, panel of about 900. Visits 5/- to 21/-. Suitable house, with 3 *tion, 7 bedrooms, etc. Can be bought or* rented on lease Pr 1½ years' purchase.

29 NORTH OF ENGLAND.—GOOD TOWN.—A one third share is o in a very sound PRACTICE averaging about £5 000 p.a. In partner must be well qualified, not over 35, and interested in med Suitable house available. Premium 2 years' purchase.

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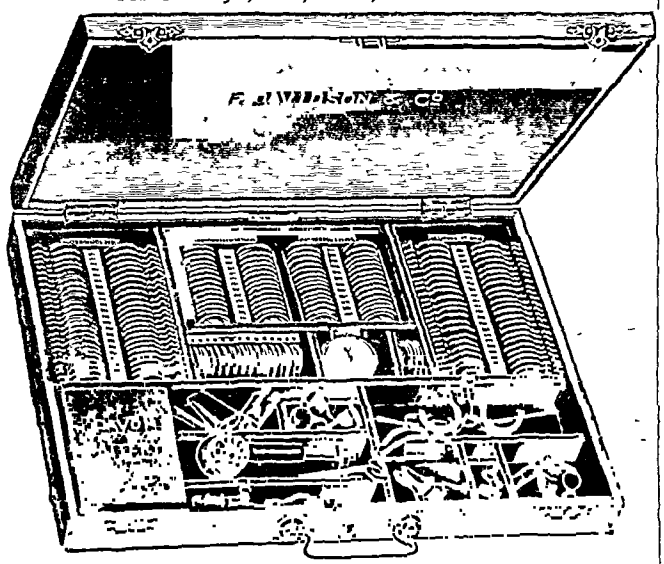
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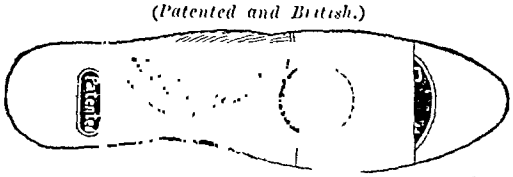
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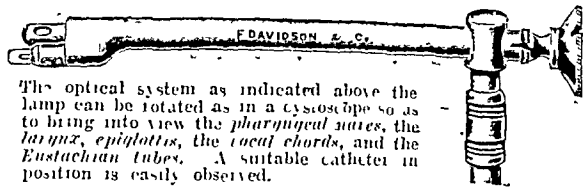
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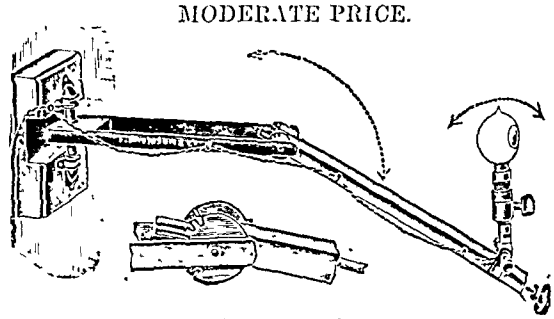
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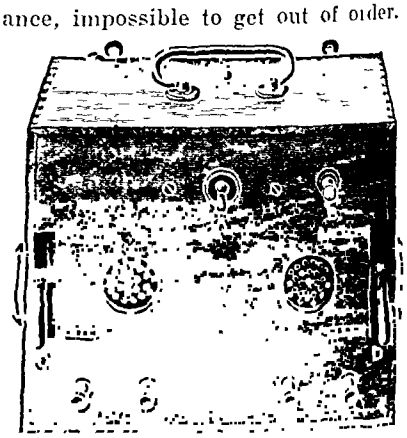
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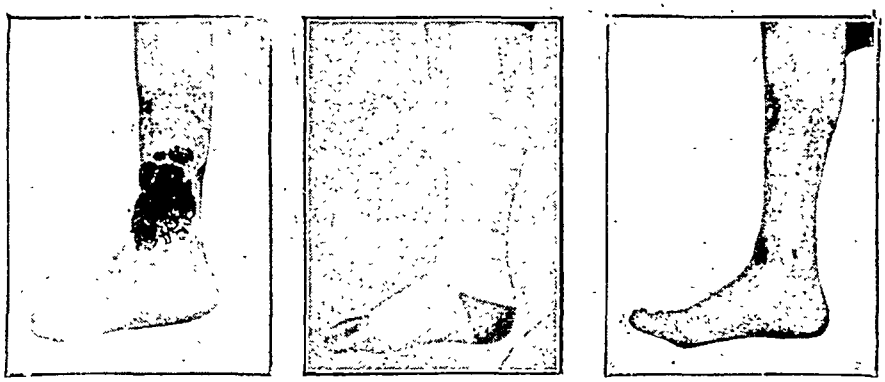
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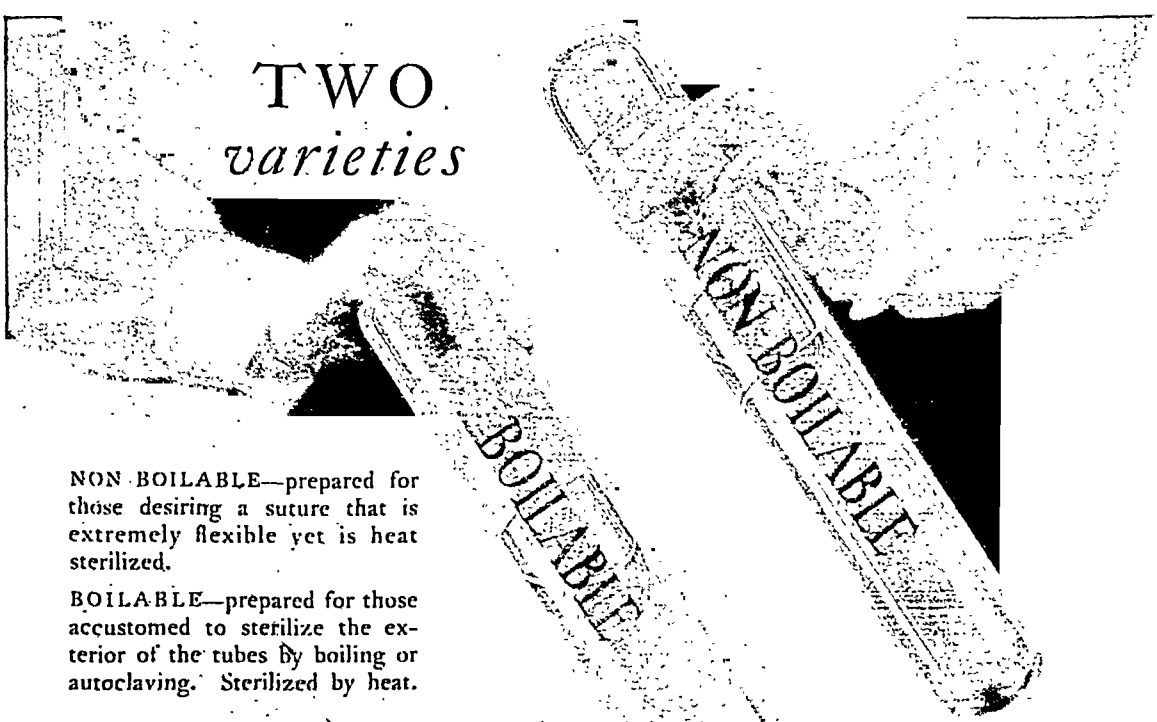
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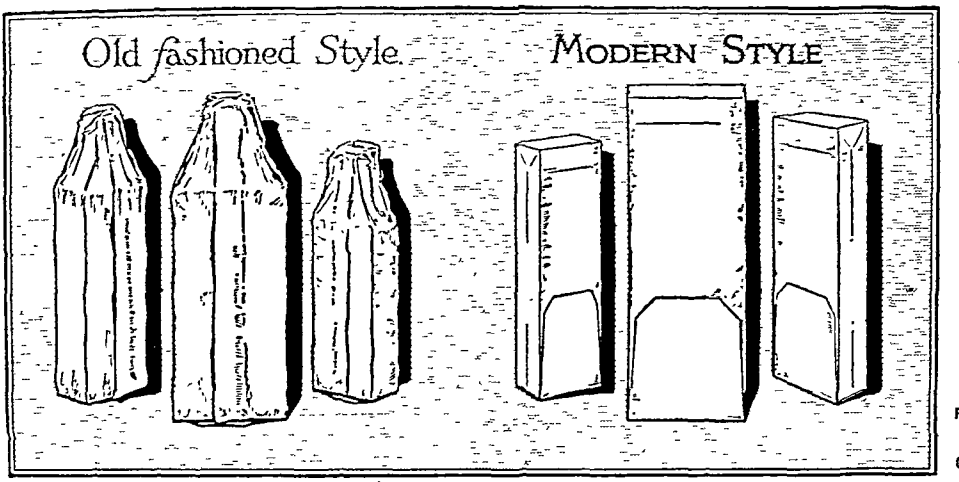
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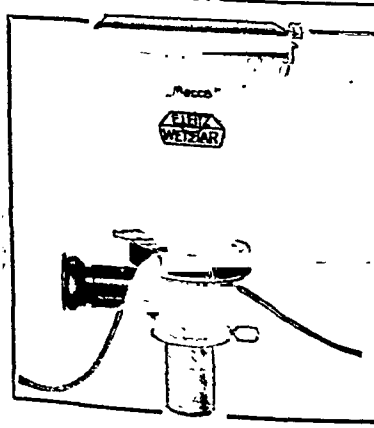
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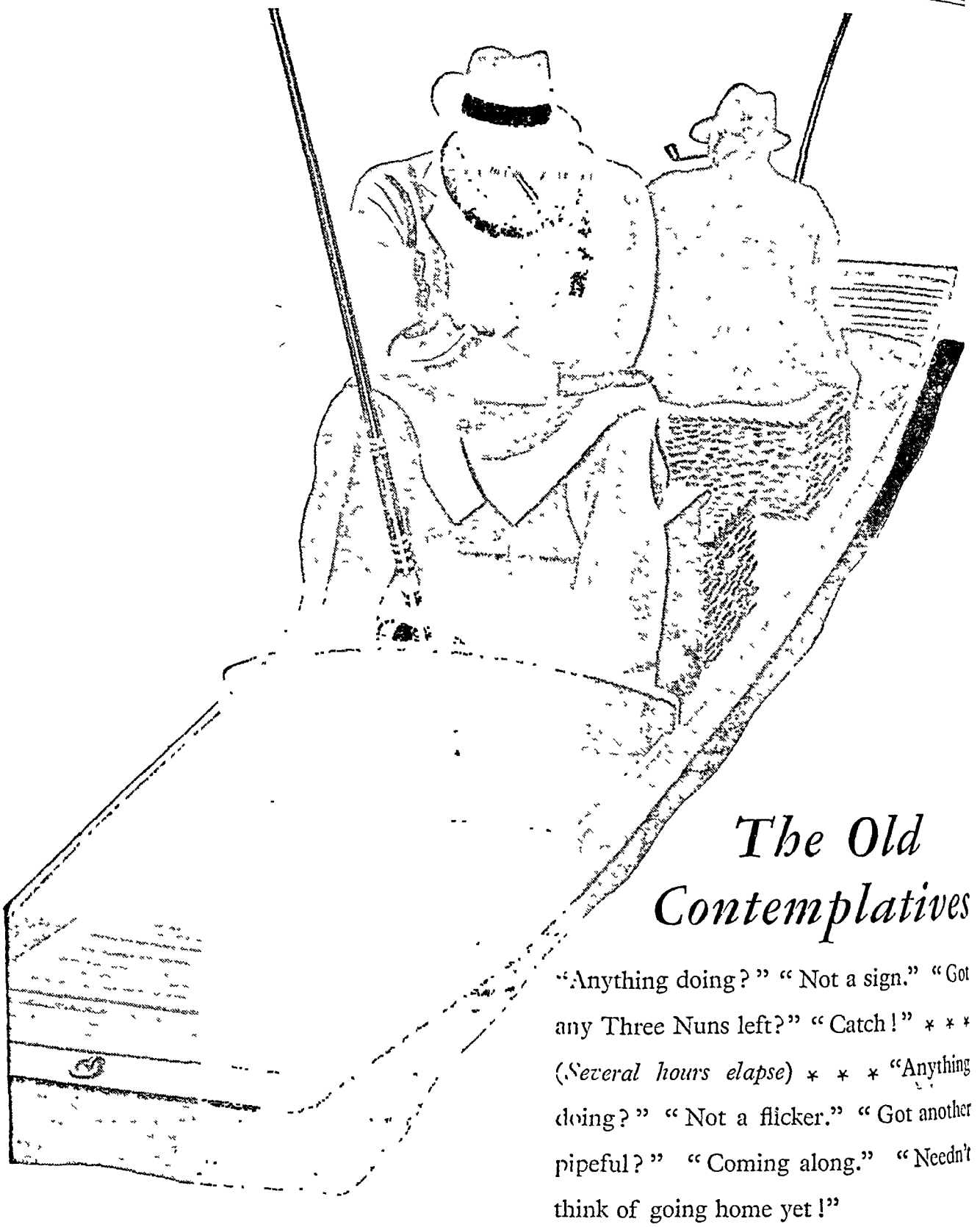
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Ash	1.54
Protein (N × 6.38)	7.2
Fat (ether extract)	7.9
Lactose	9.5

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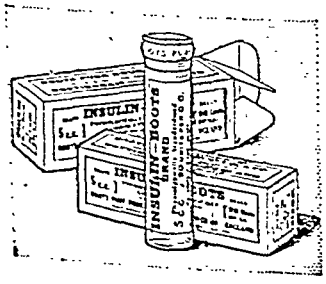
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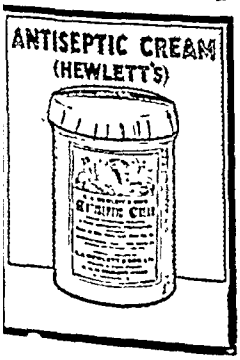
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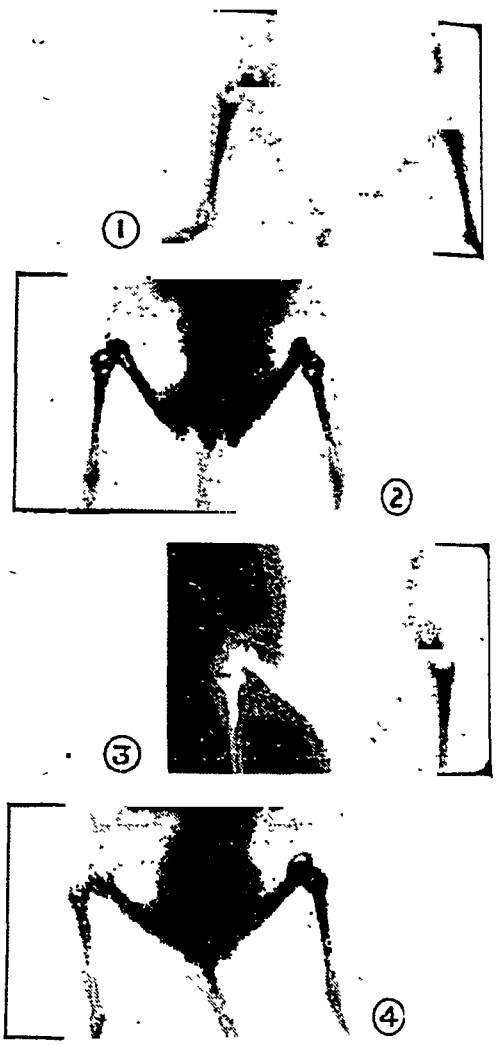
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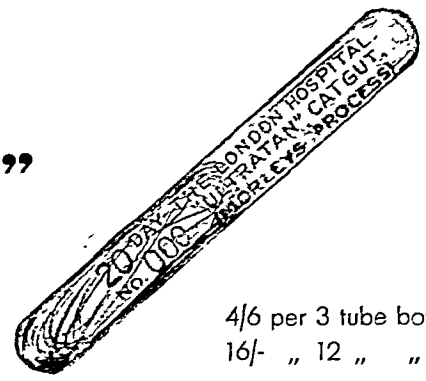
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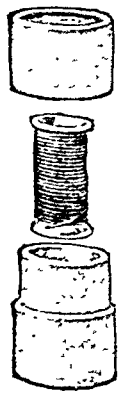
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(See Wellcome's Medical Diary, 1931, pages 111-113)

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The initial letter here reproduced is from a manuscript of his edition of the Vulgate, produced at Tours, where he spent his later years as Abbot of St. Martin's monastery.

DATE:—Educational work of Charlemagne and Alcuin began A.D. 782. The MS., A.D. c. 850.

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A Paper
ON
RECENT ADVANCES IN DIAGNOSTIC METHODS IN RENAL AFFECTIONS*

BY
R OGIER WARD, M Ch , F R C S
ISTANT SURGEON ST PETER S HOSPITAL SURGEON WITH CHARGE OF GENITO-URINARY DEPARTMENT, MILLER HOSPITAL

was in 1929 that a most important advance in the gnosis of renal affections was made, and speedily be me established as a method of examination of great lue—namely, excretion urography , that is, the process obtaining photographs of the urinary tract by means substances which, when injected into the blood stream, e selectively excreted by the kidneys, and, inasmuch as ey are opaque to X rays, can be recorded on a photo aphic film The value of this method is at once obvious is useful, therefore, to consider briefly the technique ployed, also the indications for its use, and some of e results that are obtained

Urology is to day very fortunate in the accuracy of ie various means available for diagnosis The cystoscope, st developed into a serviceable instrument in 1890, was ie earliest and greatest advance In 1896 the first diag osis of stone was made by X rays Radiology has made ntinuous progress since then, and there is no reason suppose that the limit of its usefulness is yet approached

Instrumental Pyelography

A great advance occurred when pyelography was stablished in 1906 by Voelcker and Von Lichtenberg This ethod as is generally known, consists of the passage f a cystoscope, and by means of this, of a ureteric catheter p to the renal pelvis and through this slender catheter s run into the pelvis and into the calyces leading from it, ome radio opaque substance Collargol was one of the arliest of these, but to day sodium iodide or bromide is mployed or one of the new contrast substances such s uroselectan Without entering into any detailed escription it may be said that the pyelogram is then nade by allowing the opaque fluid to enter in sufficient uantity to fill the kidney cavities As soon as these re filled pain is felt in the renal angle, and at that moment he process is stopped and the X ray photograph is taken

Instrumental pyelography needs practice and care, ranted these conditions it is a safe and accurate method f examination, and gives very well defined pictures of he renal pelvis, and of the ureter also if the ureteric atheter be withdrawn until its end lies only just above he bladder

When it is remembered that these are photographs, ot of the actual objects themselves, but only of the hadows cast by the radio opaque substance with which he cavities of the kidneys are filled, then we must surely e thankful that the results have the extreme accuracy which we confidently expect, and which is almost in ariably obtained It is a matter for our most generous ppreciation that one of the inventors of the method of nstrumental pyelography, namely, the distinguished urolo gist Professor von Lichtenberg, of St Hedwig's Kranken haus Berlin, is the man who has now developed the method of excretion urography to its present high efficiency, there by making a further and even more valuable advance in the diagnostic methods of renal affections

* Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association Eastbourne, 1931

Excretion Urography

Many publications dealing with this important subject have appeared during the last two years, and there is no need to allude to them in any detail now, except to mention that before this success was obtained many attempts had been made to find a non toxic radio opaque substance which the kidneys would excrete with the urine in a concentration suitable for X ray photography Voelcker and Von Lichtenberg realised that this might prove possible and made some experiments in 1905, soon after they had successfully established instrumental pyelography , but these early attempts did not succeed In 1923 Rowntree gave twenty grammes of sodium iodide by the mouth and found that this was excreted by the kidneys, for radio grams showed the bladder to contain this opaque substance, no shadows of the renal pelvis could, however, be obtained Ziegler and Kohler administered sodium iodide with urea by the mouth, and also compressed the ureter to hold up the drug Roseno, before this, had used the intravenous route, injecting a compound of sodium iodide and urea Heritage and myself repeated both these methods and found, as others had, that the pelvis and ureters could be made faintly visible in special cases These attempts, though unsatisfactory, gave clear proof that urography by kidney excretion was a practical method

It was with the assistance of Binz and Raeth, professors of chemistry in the University of Berlin, that the first very successful drug known as uroselectan (5 iodo pyridin N acetic acid sodium) was produced, and has been used by Von Lichtenberg and his assistants in more than 2,000 cases It has been used considerably in this country, and so has a Bayer product, Abrodil Many other chemical compounds have been tried before and after these, but the latest and most successful is D 40, better known as uroselectan B It is another pyridine derivative containing 51 per cent of iodine compared with the 42 per cent in its predecessor, it has been produced by the same chemists and tested in Von Lichtenberg s clinic It is interesting to note that a large amount of iodine is not essential, as only 15 grammes of uroselectan B are used for each injection, compared with 40 grammes of the original uroselectan The special success of uroselectan B is due chiefly to the fact that the kidneys eliminate it in the urine in high concentration and very promptly, namely, in a quarter of an hour, and with a diuresis which is just sufficient to cause it to flow through the urinary tract in an intensity suitable for X ray work Enough has been stated to show that this work has only been brought to success after a great deal of careful research on the part of many different people and with much team work Meanwhile, the two distinguished chemists mentioned are studying the production of suitable bromide compounds in place of iodides, amongst other advantages such compounds may prove to be cheaper

Technique of Injection

A few words as to technique may perhaps be of use Urosclectan needs to be freshly prepared Abrodil and uroselectan B are both sold as sterile solutions the latter in sealed ampoules of 20 c c which contain 15 grammes of the iodine compound, and is the dose used for adults The solution is warmed to body temperature and then injected intravenously , for this quantity a syringe is very suitable There is no need for the injection to be made slowly Naturally, care must be taken to inject it into the lumen of the vein, and serious results have been reported when considerable amounts of some contrast substances (as these compounds are so often called) have been

by mistake injected outside the vein, tissue necrosis having resulted. A syringe with a metal or glass piston will be found suitable; its nozzle should not be placed centrally but at one side, as in the syringes commonly used for injecting N.A.B., etc., and the needle should be a No. 2 hypodermic Record or one of Weintraud's intravenous pattern, 17 gauge, and cut to a short bevel. The needle is best thrust in with the aperture of the bevel facing down towards the skin, since thus it will lie best when it has entered the lumen of the vein; the skin should first be perforated to one side of the vein and the latter pierced with a second movement; this little manœuvre is a much more certain one than that of trying to perforate both skin and vein simultaneously. No tourniquet is necessary if the arm is allowed to hang down for a few minutes before making the injection. An assistant is desirable, though not essential, and should keep the patient's forearm fully extended and thus the veins in the antecubital fossa well exposed, and this is best done by using one hand to support the elbow from beneath it, while with the other the patient's wrist is held down to prevent any flexion of the elbow joint. The patient is then asked to make a tight fist two or three times, and at the same time his upper arm can be compressed with one's left hand in order to obstruct the venous return, leaving one's right hand free for syringe and needle. It is an essential precaution to allow a few drops of blood to flow, or be sucked back, into the syringe before starting to inject; this ensures that the needle's point is in good position within the vein. The syringe must be held quite steady until the injection is complete.

Another method is to employ a similar needle attached to the end of a fine rubber tube, about 3 feet long, with a small glass funnel at the top; in this case it is advisable first to run in a little normal saline, and after the drug, again some more saline to wash it all in. A short piece of glass tubing fitted in the rubber tubing close to the needle acts as a useful window, and thus one can see that no air is allowed to pass into the vein.

The injection of abrodil or of uroselectan B is best made with the patient on the radiological table, for the reason that the first photograph, especially when the latter substance is used, should be taken within a quarter of an hour. This and one subsequent photograph taken half an hour after the injection will often suffice, although, of course, in many conditions further X-rays are required. Some of the films should always include the whole of the urinary tract, others may be confined to special parts of it. Unless it is desired to photograph the bladder when it is distended (and this is not usually the case) the patient must micturate immediately before each exposure, as otherwise the bladder shadow will obscure the lowest parts of the ureters. It is important to prevent this happening, since these should always be very carefully examined; for excretion urography has made possible the special study of this region, and from it there is sometimes much to be learnt.

Contraindications and Precautions

The contrast substances now employed are not broken up in the blood or in any part of the body, and therefore are not dangerous in that respect. Uroselectan produces in some patients a passing but decidedly unpleasant feeling of heat all through the body. Uroselectan B and abrodil produce no discomfort and appear to be entirely non-toxic. Von Lichtenberg's investigations and the researches of his assistants have satisfied him on this point, and have also excluded harmful effects on the mucous membrane of the urinary tract. Many experiments on the isolated frog's heart and kidney have been made with this object and are still being continued. By others, careful researches have been made on the dog, using uroselectan, and no harmful effects have been found to result. Clinically, as has already been stated, over 2,000 cases have been investigated in Von Lichtenberg's practice, and the experience gained there, and by others who have employed these recently produced substances, makes it possible to state with certainty that there exist only very few contraindications to the practice of excretion urography: Of these the most important is uraemia, either present or impending. Therefore, one very obvious precaution to be taken before making use of it, is to estimate the patient's blood urea and kidney function, whenever there is any reason to suspect that renal insufficiency exists. If the kidneys are much diseased, it has been proved by experiment that the liver has to undertake, in part at any rate, the excretion of the drug; therefore the method should not be used if severe liver disease exists. If any serious general illness co-exists then very special caution should be exercised before it is decided to make this examination. Iodine idiosyncrasy rarely manifests itself, and will in any case cease to be a risk if the experiments with bromide compounds are successful. In very acute inflammation of the urinary tract, excretion urography should be avoided. In chronic inflammatory conditions, however, it may be safely employed, and is indeed, in these cases, often of special value.

Elimination of Uroselectan

The experimental work of Hughes and Schaffhauser has shown that uroselectan is chiefly eliminated through the glomeruli. Now it is not the glomeruli but the tubules of the kidney which suffer early and most severely in surgical kidney diseases, especially when obstruction and back pressure exist, the glomeruli being much less affected. Hence, the striking results so often obtained in these cases, for the diseased organ retains the power to secrete the contrast substance in the urine, whilst an obstruction below causes it to accumulate in increasing amount in the pelvis and the ureter. If the renal damage is more severe, then the appearance of the opaque substance is delayed, though when obstruction is also present it sometimes goes on accumulating for a long period after it has been injected. If the kidney is devoid of excretory function then at no time can any contrast substance be demonstrated in that organ. It is obvious, therefore, that excretion urography provides indications of renal function in addition to demonstrating damage to the anatomical structure of the kidney. Now a dense shadow formed by these substances within a kidney may not be evidence of health, but of disease, and often shows in this manner a clear contrast between the sound and the diseased side.

Healthy glomeruli excrete the drug easily, as has already been remarked, and so also healthy tubules ensure that it reaches the calyces promptly; moreover, if the unstriped muscle of the calyces, of the pelvis and of the ureter is intact, both physiologically and anatomically, then the contrast substance is quickly discharged into the bladder so much so that in difficult subjects it may not be very easy to see it in the upper parts of the urinary tract. But, apart from the density of the shadow produced by the contrast substance and the time of its appearance and disappearance, it may be mentioned here that excretion urography makes possible in two other ways the estimation of renal function, namely, by observing the rise in the specific gravity of the urine up to 1,050 or 1,060, which follows the injection within a quarter of an hour to an hour, and secondly by estimating the total amount of the chemical substance found in the urine, a process rather too complicated for general clinical purposes, though of interest because it has been shown that about 64 per cent. of uroselectan B can usually be recovered from the urine.

and that this figure varies with the nature of the disease, being affected specially by the extent to which the glomeruli may have suffered. The variations are, however, also related to anatomical and physiological defects of the pelvis, ureters and bladder, and any considerable hold up of urine by an obstruction will clearly affect the hourly amount of drug available for estimation. Neither of these latter procedures, namely, observations of specific gravity or chemical estimations, will, of course, show the difference of function between the two kidneys. As it is just this discrimination which is so essential in urology, it will be realised that as a measure of function in disease, excretion urography is not a perfect method, for when using it we must depend for this information upon the shadows cast by it, and these may be difficult to interpret, and it will not, therefore, replace the standard and accurate tests carried out with the cystoscope, namely, that of investigating the specimens of urine obtained from each kidney through ureteric catheters and estimating the percentage of urea in them, nor does it necessarily enable us to dispense with infiltration (cystoscopic) pyelography. In some cases it certainly indicates disturbances of renal functions more easily than does the excretion of indigo carmine observed through a cystoscope, as it colours the ureteric effluxes.

Fresh Light on Urinary Mechanisms

One of the most interesting results brought about by this new method of investigation is the fresh light that is shed upon the neuromuscular mechanisms of the urinary tract. Therefore it will help us much in the study of the pathology and treatment of hydronephrosis. This disease is the result of a defect in this mechanism; the law which governs the working of a system of unstriped muscle has broken down, contraction occurs in one segment, but no relaxation in the segment below, probably owing to the disturbance of sympathetic control. The early result of this is a colicky pain, and the later result is distention of the viscus above the offending segment, distension, but not necessarily complete atrophy, of the muscle fibres. This is a most important fact, for upon it depends the success of any operation designed to reconstruct a damaged renal pelvis; instead of adopting the simpler, and, it should be added, according to some authorities the sounder, expedient of nephrectomy. A pyelogram demonstrates clearly a hydronephrosis. Excretion urography sometimes shows the same hydronephrosis but of considerably larger size. This is because in the latter case the kidney has filled the pelvis at a rate to which it is accustomed, whereas in instrumental pyelography the opaque fluid has been run in through the ureteric catheter much more rapidly, and the pelvis has resisted the process. This gives us a clear proof that, though damaged, the pelvic neuromuscular mechanism is not destroyed; and this is an encouragement to the surgeon who wishes to perform upon it a plastic operation. It may be mentioned that this recovery of tone is easily demonstrated in another manner, namely, by draining a hydronephrosis for a few weeks by a nephrostomy; under these conditions it contracts down to a more normal size, just as a bladder distended by an obstruction below contracts down after cystostomy is performed.

The physiology of the pelvis and ureters in a normal subject, though perfectly demonstrated by this method of excretion of contrast substances, requires much study. It is easy to recognise obstruction, because these contrast substances accumulate above it, but in health the drug is quickly swept along in the urine, the calyces are not all full at the same moment, the waves of contraction passing down the ureters cause some segments to be full whilst others are empty, so that the faint shadows are only apparent in a first-class radiogram; and this must be examined very carefully, and with the help of the best form of illumination. The early photographic films are the most suited for this, as later gas accumulates in the intestine and often makes the reading of them very difficult. But already the process is so well established that one may reasonably hope before long to see this study still further advanced by the cinematograph, and above all, by the method of retarded cinema-photography. When this is achieved we shall begin to understand the dynamics of the urinary tract in health and disease.

There are certain conditions in which excretion urography is of special value for other reasons, namely, when it is undesirable or impossible to pass the cystoscope, as, for example, in the presence of a urethral stricture or an enlarged prostate, or severe cystitis. And, again, in circumstances preventing the passage of a ureteric catheter, such as a ureteric kink, or a ureteric calculus. Many other similar surgical conditions might be mentioned, for its striking use in urinary tuberculosis is only one of them. Pyelitis of pregnancy and ectopic kidney are other examples. These are special and important uses, but of less general interest.

We must regard excretion urography first and foremost as a means for the study of the urinary tract as a whole in a manner hitherto impossible. There is no need to claim that it has made unnecessary the standard methods of investigating the urinary tract, or even that it has supplanted pyelography, for this still retains its special value of demonstrating anatomical deformities with unrivalled clearness, and is often usefully combined with the newer method of obtaining shadow photographs. Indeed, excretion urography should not be considered a rival, but rather as a supremely valuable ally.

BURNS AND SCALDS*

BY

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Deaths from burns and scalds are in this country the subject of a coroner's inquest and, consequently, it may be assumed that the Registrar-General's figures give an accurate picture of the mortality from these accidents. Changing social conditions have done much to diminish the frequency of burns and scalds, and particular mention must be made of the Children's Act of 1908, alterations in lighting, better housing and the trend towards smaller families. Fatalities are certainly diminishing but it must be realised that they still average nearly 1700 per annum in England and Wales.

Burns and scalds are classed together because their lesions are similar but it is a matter of general observation that scalds are a good deal commoner than burns. Donald[2] analysed the London Hospital's figures for the last thirty years and found that the percentage of scalds in the total number of deaths from the combined causes shows a tendency to increase and is now in the neighbourhood of 70. We are thus still faced with a considerable death roll which no doubt is largely made up of young children. Although legislation and social improvements may continue to restrict the number of burns it seems likely that the wastage of child life from scalds will continue so long as the teapot and kettle exert their fascination on youthful minds.

Burns and scalds have always been looked upon as dangerous accidents but it must have surprised many to

* Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

learn from Fraser's Edinburgh series published in 1926 that the mortality was 38.7 per cent. in children under 10 years old admitted to hospital. Prognosis depends upon the area burned and the age of the patient more than upon the depth of the burns. Involvement of 12 per cent. of the body surface may end fatally but an even smaller area has caused death in the very young.

The immediate effect of a burn is to produce shock and this may be the direct cause of death. The clinical picture in no way differs from shock due to other causes, and its effects are due to stagnation of blood in the capillary system throughout the body and a consequent profound fall in blood pressure such as occurs in fainting. When death follows it is consequently death from a physical mechanism. The stage of shock lasts for a variable time and is sometimes surprisingly slight after severe injuries. In the course of some hours, or it may be a day or two, the patient who survives enters a state of toxaemia or else passes on to recovery.

Toxaemia may follow with quite dramatic suddenness at a time when things seem to be going well. The temperature rises to perhaps 104°, the pulse frequency is increased, restlessness supervenes and passes into unconsciousness and death. It has been shown by experiment that this remarkable condition depends upon absorption of certain poisonous substances from the burned area. These substances are protein and amongst them is histamine. Death from toxaemia is consequently death from a chemical mechanism in contradistinction to the physical process which brings about death in the stage of primary shock. These facts must be remembered when we come to treat the two conditions.

General Treatment

The immediate treatment of a burn or scald is the treatment of shock, and attention should thus be focused from the outset on the general condition of the patient. Occasionally it may be wise to postpone removal from the scene of the accident for a few hours, and in such instances morphine hypodermically and fluids by the mouth should be generously given. More often the patient can safely be moved to a hospital or institution and this should be carried out with a minimum of attention to the burned area. Anything that can be done to it under emergency conditions is likely to increase shock and the best routine course is to withhold all dressings. In particular the popular linseed and carron oils should be avoided. A burned patient demands so much medical and nursing care that home conditions are rarely ideal for the treatment of such a case. His prime needs an hour or two after the injury are rest, warmth, fluids and morphine. These should all be supplied as soon as possible and two or three hours may often be advantageously spent in this way before attending to the burns. During this time the patient is given a chance to contend with shock and by making haste slowly he will sometimes avoid disaster.

Local Treatment

Many different applications have been used in the local treatment of burns, but the introduction of a 2½ per cent. aqueous solution of tannic acid by Davidson of the Henry Ford Hospital, Detroit, in 1925 marks an important step forward.

It was known that the dangerous condition of toxaemia was due to the formation of autolytic products of protein decomposition in the burned area and their subsequent entrance into the blood stream. Tannic acid does what the much-used picric acid tries to do, that is to say it coagulates the damaged proteins and prevents their absorption into the circulatory system. In consequence, the constitutional disturbances are minimized, pain is strikingly lessened and scarring is generally slight. Most important of all, there seems good reason to believe that the mortality is greatly reduced. Details of the method and its results have been fully described by E. C. Davidson[1] and later by W. C. Wilson.[2] It will be sufficient here to give a brief outline of its practical application.

As soon as the patient has made some recovery from the initial shock he is anaesthetized with gas and oxygen and the burned area carefully swabbed with ether. Dead and damaged tissue is snipped away with scissors, vesicles are opened and their outer wall removed. A flat, clean surface is thus produced and tannic acid is applied in 2½ per cent. freshly prepared aqueous solution with an ordinary throat spray.

The whole area except the face is thus treated and the patient put back to bed under electric lamps with no other dressing on the burns. The spraying is repeated hourly seven or eight times until the burned area is tanned dark brown. Meanwhile, such toxins as have already entered the system are diluted by copious fluids given by the mouth, rectum, subcutaneously or intravenously.

Subsequent Course after Tannic Acid Treatment

Under this treatment fever and pain subside, the dangerous toxins are locked in a coagulum and the general comfort and well-being of the patient is often remarkable.

If treatment is applied soon after the accident and the toilet has been efficiently performed there may be no sepsis. Sometimes, however, pus forms underneath the scab and fever reappears. Under such conditions there is a temptation to resort to fomentations or other moist dressings. These are harmful because they release the toxins from the inert coagulum and re-establish the condition of toxaemia which we most want to avoid. The proper treatment at this stage is to liberate the pent-up fluid by cutting channels in the coagulum with pointed scissors and so providing mechanical drainage without moistening the scab. During this time the patient remains beneath the electric light cradle which dries up discharge and maintains body heat.

In about two weeks the coagulum spontaneously separates though it takes longer when the burns are deep. Beneath will be found healthy epithelium or granulation tissue. The latter may be dressed with flavine (1 : 1000) in paraffin or with sterile vaseline, since the danger of toxaemia has been removed with the coagulum.

Blood Transfusion

Before the introduction of tannic acid one has seen a timely blood transfusion apparently save life. Robertson of Toronto obtained splendid results by his method of exsanguination-transfusion in which the patient was bled immediately before receiving the transfusion. Though both these methods aim at the dilution of circulating toxins, exsanguination first removes a large amount of toxin and then dilutes the remainder by the blood transfusion.

Prevention is better than cure and it seems reasonable to imagine that if toxaemia can be prevented there will be no need for blood transfusion. Such indeed has been my experience with tannic acid and though there are still occasions—(e.g. in well-established toxaemia) when blood transfusion is a valuable auxiliary method of treatment in burns and scalds, yet nowadays one rarely finds it necessary.

Deformity and Disfigurement

I have said nothing of the deformities and disfigurements which these accidents leave in their wake. Some of my audience may come from industrial areas where their daily round brings them in contact with such cases, and others may recollect unfortunate naval ratings burned

by cordite. My own work in this field of surgery has largely concerned the young and I should like before concluding to touch briefly on this aspect of the matter.

The pictures I show are merely illustrations of the fascinating sideline which we call plastic surgery, a branch of our art which owes much to the patience and skill of Sir Harold Gillies. Opportunities are considerable even though the difficulties in small patients are greater than in adults. Moreover, it is possible that tannic acid will increase their number in much the same way as the introduction of diphtheria antitoxin increased the frequency of post-diphtheritic paralysis by saving the lives of many severely stricken children who would otherwise have died.

Conclusion

In conclusion, I return to our main theme and you will have gathered from my preceding remarks that I gard the introduction of tannic acid as an important ent. Perhaps in the past there has been a tendency forget the excellent adage that we must treat the tient and not the disease. The general treatment of e burned and scalded will always remain of paramount portance and I have failed signally in my task if I have ot brought this home to you. It does, however, seem om our growing experience with tannic acid that we ve in it a substance which treats both disease and tient inasmuch as it forms a local application of first-te efficacy and, when applied early, goes far towards reventing the onset of those calamitous symptoms which e call toxaemia.

Time has not permitted me to cover the whole ground nd though I am highly conscious of the honour of being llowed to open this discussion, I am very well aware hat much remains to be said. In particular, I hope to ear from subsequent speakers whether they find it possible to treat these patients in their private homes; to vhat extent those who have used tannic acid find sepsis lifficult to combat, and how far they use it successfully n late cases as well as early.

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INDUSTRIAL PROBLEMS FROM THE STANDPOINT OF GENERAL PRACTICE *

BY

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The practice of Industrial Medicine is not limited to the problem of occupational diseases. Its frontiers include within them a large area of clinical study common alike to it and to general practice. In order, however, to appreciate these common interests to the full and to devise suitable methods of investigation and study it is necessary to consider not only industrial processes but to an even greater extent to review the whole phenomenon of modern industrialism and the effects which this strange new growth has had, and is having, on the population as a whole. Only in this way can certain otherwise obscure factors be properly evaluated. If the remarks which follow appear in places to be somewhat in the nature of digressions I must ask indulgence for an attempt to outline what I believe to be some important etiological agents in the clinical problems which confront the general practitioner in dealing with industrial incapacity.

Human evolution is the resultant of a continual battle between emerging biological factors and environmental conditions. No history of man; no study of his successes or failures, his health or disease, his hopes or his fears or his mental or physical attributes can be of any value if it ignores the evolutionary value of environment. There have been phases in which the conditions of life have remained more or less constant for long periods, and during these man has been able to adjust himself gradually and on the whole successfully; there have been other phases in which rapid alterations have taken place to which groups of humanity, both large and small, have either failed to adapt or have done so with an inadequate measure of success.

In the last 200 years a wholly new phenomenon has appeared. Man has entered the age of applied science in which for the first time he has deliberately set out not so much to adapt himself to changing environment but by means of his acquired knowledge to modify environment to suit himself. This constitutes an epoch-making break with the past, and the present industrial age is but a stage of this new development. In a bare 150 years man has so changed the face of Western Europe that today in this country over 80% of the population are town dwellers removed from the necessity of direct struggle with nature, relying for their living on industry and commerce and comparatively unmindful of the precariousness and essential instability of their position. Thus the population of Britain is almost entirely dependent on the smooth functioning of a still immature economic system. It is not only surrounded by a mechanised environment of an entirely novel kind but inherited racial memories form no reserve of experience on which man can draw for support in times of difficulty, since biologically the time available for adaptation to new circumstances has in many respects been inadequate as yet to permit of the necessary mental and physical adjustments.

Health, mental and physical, is the measure of successful adaptation to environment and it is therefore less dependent on pathological hazards than we have hitherto been led to believe. Once we get outside the individual, and begin to study the external forces at work on him, we see how important it is to form clear impressions of mental processes; and we see, too, how very subservient physical conditions are to the influences of the mind by means of which alone full personal adaptation can be attained.

When the science of medicine began to supplant the practice of magic its first concern was the body of the sufferer; later the study of community health led to the formation of the public health service which was until recently concerned almost exclusively with physical conditions. As an offshoot of public health administration there has arisen the subsidiary branch of industrial medicine which, by studying and improving the hygiene of factories, workshops and industrial processes, has conferred a great measure of increased health and happiness.

These services are indispensable for the health and well-being of the community and the progress of the past few years must not only be encouraged but in many spheres advances must be accelerated, though the possibility of success along traditional lines is definite and in fact limited, since the psychological factors at work in the community far transcend the purely physical.

The general practitioner has watched official public health activities with much interest even if at times he

* Read in opening a discussion in the Section of Public Health (including Tuberculosis and Occupation Diseases) at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

has begun to wonder where, in a not far distant future, his own sphere of usefulness will lie, ground as he feels he is between the upper millstone of clinical specialism and the nether one of administrative medicine. The day of the general practitioner is, however, not waning but only dawning. In his hands lies the ultimate responsibility for co-operating with the public health services in extending the boundaries of their mutual spheres in order to produce the harmonious integration of those mental, physical and spiritual factors whose combination forms the only possible basis for the intellectual growth and adaptive development of the industrial West.

Health is essentially bipolar, it has a physical pole and a mental pole and only in a correctly balanced appreciation of both can we truly assess the biological problems of man as a whole and see them in proper focus against the background of modern western mechanistic, or industrial, civilization. This constitutes a field of study of supreme importance to the general practitioner.

We must consider briefly three aspects of this new orientation of medicine. First, the chief phenomena of cultural and environmental development; secondly, the reactions of man to these forces; and, thirdly, the means necessary in order to achieve a greater measure of individual and community health which is, as we have seen, nothing more than a proper system of adaptation, resulting in the fully integrated man at home in his environment and endowed with adequate means for modifying it to his needs and where this is impossible modifying himself to it.

Without doubt the outstanding element in a mechanistic civilization is the power that lies in human hands for modifying and controlling the forces of nature. This is the direct result of the application of scientific knowledge to economic problems. It has developed rapidly into an immense power quite beyond the ability of single individuals to control, and as a result an intricate and highly complex system of co-ordinated action has been evolved in which in innumerable ways the individual is subordinated to the community, the man is merged in the citizen and the personal is incorporated in the impersonal. In the agricultural and pre-agricultural age the terrifying forces of nature necessitated rationalizing explanations based on the assumption that the tribal god was by such means manifesting a power of arbitrary interference which could be averted only by propitiation and sacrifice. In the industrial age these natural forces do not affect the town dweller to any marked degree and he has been taught to look upon them for what they really are—namely, effects produced by causative agents operating under immutable natural laws; and since, too, he has been endowed with means of dealing with them by economic, scientific and material weapons the old claims of instinctive and primitive theology have to a large extent ceased to exert their influence over him. Nevertheless racial memory dies hard and in our modern world there are [illegible] endless relics of primitive magic—charms and taboos—have no claim in reason but which exert their in[illegible]hr[illegible]h the operation of inherited feeling states. Many different [illegible]e as an instrument of divine wrath has, treatment of burns, [illegible]ced by a new fear—that of the com- aqueous solution of tandern life which crushes remorselessly Ford Hospital, Detroit,' homage. Fear, sense of inferiority forward. [illegible] be confused with rational con-

It was known that the da[illegible] religion throughout the ages, was due to the formation of [illegible]t influences at work in our decomposition in the burned [illegible]nder modern conditions to entrance into the blood stream. [illegible]of individuality, and to the much-used picric acid tries to [illegible]us to clutch fearfully coagulates the damaged proteins [illegible]and from our grasp. absorption into the circulatory system. [illegible] environment of the constitutional disturbances are minimito the terrible congestion of the towns which bequeathed to us a l[illegible] of slums and human damage, but of recent years th[illegible] power of industry has been directed towards a progress[illegible] amelioration of the physical conditions of life. We f[illegible] our people better fed, housed and clothed than ever before; science has tackled disease and the economic conditions of the wage earner have been greatly improved. Such eloquent figures as those for expectation of life, infant mortality and tuberculosis indicate most forcibly that physical improvements have reacted favourably on the health of the community. When, however, we come to study the *cost* of sickness and the *amount of time* lost due to it, we find a very serious state of affairs. Sir Walter Kinnear has recently referred to the "almost inexplicable increase in the rate of sickness" and in point of fact at first sight it certainly does appear inexplicable that in the ten years 1920–1929 the increase in lost time should have been so great. During this period for an increase of but 10.2% in the number of insured persons, from 13,579,000 to 14,963,500, there has been steady and progressive increase in lost time as follows:

Year	Lost Time in Weeks (approx.)		
	Sickness	Disablement	Total
1920	9,988,500	4,077,500	14,066,000
1929	16,000,000	13,500,000	29,500,000
Increase ...	60.2 %	231.1 %	109.7%

Long absences absorb more time than formerly by 231.1%, while absences of less than 26 weeks account for the much smaller but still very large increase of 60.2%. It is impossible to believe that the physical condition of our population has deteriorated at this alarming pace and I suggest as explanation that the increased sickness is largely psychogenic and reveals the existence of a state of mind which must be more widespread and productive of a vastly greater amount of latent incapacity than is manifest in the figures for actual absenteeism, since it must be remembered that these figures take no account of sickness of less than three days' duration nor of the periods of relative inefficiency preceding and following absence from work. The figures with which we are now dealing represent actual incapacity which must always be looked on as an end-result of a failure of preventive or therapeutic measures. The blame for this rests as I think largely with a system of education which still pays far too little attention to the mental and intellectual growth of the child and far too much to the mere inculcation of knowledge.

When one reviews medical certificates it is impossible not to be struck by the number of such conditions as "nerves," "neurasthenia," "debility," and "anaemia," while clinical observation shows an increase in intractable dyspepsias, many dermatoses, enteroptosis, cardiac irregularity, neuralgias and countless other symptoms for which on careful physical examination no organic basis can be found, and it is, I think, impossible to resist the conclusion that at least a prima facie case has been made out for reviewing the whole matter *de novo* from a psychological standpoint.

It is my object to suggest certain etiological factors for this serious medico-economic problem and to offer tentative proposals for a method of dealing with it, because if this widespread increase of sickness is due to psychogenic causes, then as a nation we are suffering from neurosis on the grand scale and if we wish to hold our own in the modern industrial world we must do something about it not only effectively but at once.

It may be helpful to enumerate some of the possible causative agents of community ill-health and by placing our patients against the background not of individual industries but of industrial civilization to see how man tends to react to it.

The vast machine of modern life is at times a terrifying thing. It even looms larger to many than did the old idea of a wrathful and avenging Deity, and I think there is little doubt that the present restless craving for sensation, pleasure and vicarious eroticism is no more than an overcompensation for a very widespread, if unconscious, appreciation of this fact. In the face of such forces as unemployment; mechanical displacement of labour; the competition of girls with men and the success of the former in handling machines and in executing small repetitive processes at lower cost; the economic difficulties of the home and the resulting problems of sexual adjustment, there is a tendency for many, and males especially, to develop a feeling of inadequacy to life which is liable to be rationalized in consciousness as illness rather than to be acknowledged frankly for what it really is—namely, a fear of the unknown and the intangible. The pressure at which modern business is conducted and the anxieties and worries of this very difficult time can produce nervous strain to a marked degree, and the very fear of being ill further tends to increase the difficulties of both doctor and patient even in respect of purely physical diseases.

In the homes we find economic difficulties in the way of early marriage leading to anxiety neuroses in the young; we find, owing partly to the competitive raising of the standard of living, married couples labouring under the most serious financial difficulties once their families exceed a very definite maximum number; and we find, too, that in the absence of proper teaching on sex hygiene and contraception there are very serious disorders of the love-life—the basis on which the well-being of any community must ultimately rest.

In industry compensation for accident and disease is being sought as an end in itself rather than as a means towards restored function, and the result is not only to burden the employer unduly but to militate against the best interests of the workman. Owing to a failure to appreciate the full significance of personal idiosyncrasy, in which the mental factor is a very large one, conditions are often ascribed to occupation which strictly speaking are no more than the hazards of an every-day life pregnant with vast possibilities for the development of such states.

In the sphere of health education there has been a very serious secondary effect which few could have foreseen. In addition to the increasingly sound teaching in elementary hygiene in schools, which is doing much to improve the physique of our adolescents, there is a spate of health propaganda in the lay press partly in the form of articles, [illegible] masquerading as "news," which is having the effect [illegible] introspection and an undue concentration on [illegible] purely [illegible] factors [illegible] reactions [illegible] with much [illegible] physi[illegible] is a great strain on man, not so much by [illegible] as by reason of the short time, biologically [illegible], that has been available for him to make the necessary readjustments. The pace is fast and it is increasing, and we must face the whole problem frankly and ask ourselves what we can do to restore the balance. It seems as if we must include within the definition of public health a large tract of knowledge and study hitherto regarded as quite outside its scope, and it is along these lines that I believe the solution is to be found which shall lift our industrial civilization out of the swamp in which it is at present in danger of foundering.

In the face of the problems of modern life there appear to be two outstanding reactions of the mind—fear and the sense of inferiority. It is impossible to estimate to what extent fear is present in the minds of the industrial masses but there can be no doubt that it is a most powerful factor. Machinery in this transitional period has without doubt contributed temporarily to the total of world unemployment. There is a surfeit of manufactured goods and of cheap raw materials, and while it is probable that this difficult phase will in time pass we are to-day faced with the paradox of millions in want largely because there is too much merchandise in the world, and, since no one really understands why this has all come about, fear of an inexplicable situation is widespread.

Fear is manifested *inter alia* as fear of mechanism, fear of economic forces, fear of war and an unreasoning fear of losing religion which too few are as yet either able or willing to dissociate from primitive and mediaeval systems of theology.

Inferiority, which in varying degrees is an attribute common to us all, is a relic of our racial reactions to the "Father-Image" which in present-day life is represented for us by Authority, be it ecclesiastical, governmental, educational or economic. The patriarchal system is by no means dead and it still operates to prevent individuals from working out their own destinies, thinking their own thoughts and standing on their own legs. It tends to produce in children a dull normality and in adults dependence on omniscient authority to protect us from the pitfalls of life, and it tends also to so prop us from cradle to grave that the vitalizing sparks of individual personality and responsibility are, among large classes of the community, in danger of being extinguished.

Unemployment is disastrous to the body and mind, not only among those who are actually out of work but among those who wonder whose turn it will be next. Whether we have 2½ millions entirely workless or 25 millions in work for shorter hours the inevitable result of mechanization is and will be an increase in non-working time. This can be styled unemployment or leisure—it all depends on how wide the process is spread. The use of machinery in modern economic life undoubtedly means less man-hours of work, not as a mere humanitarian stunt but as a necessary corollary to a situation which 25 years ago very few could have visualized, but the adjustment calls for concerted action on an international basis.

Education in the right use of leisure is therefore an urgent necessity unless leisure is to be allowed to degenerate into pathogenic idleness, a foretaste of which is already evident in our sickness statistics

The present economic situation is producing a wholly novel set of problems which include *inter alia* anxiety and apprehension as to the stability and permanence of work which no system of mere monetary payment can alleviate; the need for the limitation of families; the difficulty of providing for old age and incapacity; a sense of inadequacy to the demands of a complex life; and a demand for a new set of values against which to place, compare and judge new needs, new satisfactions and new frustrations.

It is necessary at this point to consider what is, I believe, a vitally important matter. Scientific methods of investigation applied to formalized religions have exposed many theological fallacies, have in fact demolished countless spiritual props and left men wondering where it will all lead to. Many people fail to realize that religion and dogmatic theology are distinct and different and that natural intimate and personal religious experience, which is a supreme and vital human necessity, is unaffected by the demolition of theological dogma Large numbers of men and women are afraid that in rejecting theology they must dispense with religion as well, and they thus tend to lose faith in the future because, being endowed with insufficient independence of judgement, they are unable to devise an individual and personal philosophy. To lose

faith in the future, to be unsure of oneself, and to doubt the sublime realities of spiritual experience are matters of grave importance as regards man's ability to integrate himself and adapt harmoniously to his environment. But the fact remains that while science has revolutionized the economic life of man it has also gravely disturbed his spiritual life, and in the latter case the disturbance is due to the fact that man has failed to appreciate the aims, methods and limitations of scientific investigation, and has confused its legitimate application to theology with its complete dissociation from personal religious experience.

All these factors are important not only as sociological phenomena but as fundamental issues in the question of individual and community health. I believe that in a study of human psychology along these lines we can discover the key to our industrial and commercial problems, remembering always that commerce, the mainstay of our lives, rests *au fond* on faith and credit which Sir Josiah Stamp believes to be mainly psychological phenomena. Careful interrogation of patients suffering from the conditions previously enumerated will bring to light case after case which exemplify the various points just mentioned. It would be foolish to press the point too far but if only a case is made out for further research along these lines my object will have been attained.

I believe that the future of the public health lies as much in the hands of general practitioners as it does in those of Medical Officers, and for this purpose both must make a study of industrialism and of human psychology—not so much in order to practise psychotherapy as to understand why men act and react as they do.

With regard to constructive proposals. The bulk of the general practitioner's time and effort must of necessity be concentrated on treating the sick though from the point of view of the community preventive medicine is of the utmost importance. Nobody can be indifferent to it, but if most of the doctor's time has to be spent in treatment how can he take a share in prevention? I believe it can be achieved by collaboration with those who have facilities for training the minds of both young and old but who are as yet outside the boundaries of preventive medicine. First and foremost, educationists, teachers and parents; secondly all who give spiritual guidance and will adapt their teaching to modern needs; and thirdly all who are engaged in the handling of men and women in industry. Stated in few words their task amounts to this: to teach, encourage and instruct everyone, especially the young, how to grow intellectually as individual men and women, self-dependent and, as Aristotle says, self-sufficient, solving their problems by constructive thought rather than by second-hand formulae. Dr. Charles Richet, the famous French physiologist, in his book *L'homme stupide* has shown how since the emergence of man he has generation after generation taken the beliefs of his forefathers, modified them but slightly and handed them on, so that to-day the mass of mankind acts and thinks not as rational beings reacting directly to their environment but as puppets of racial memory bound by tradition, shackled by prejudice and dependent on the good opinion of the mass of their fellows. It seems as though man has conspired against himself to close his eyes to truth. It is now possible, however, largely through the inspiring influence of science to blow a breath of fresh air through many ancient conceptions and to realize that nothing can save man but man himself.

Man has been propped by theology: dogma is collapsing and he finds himself in the dark, prey to fear and to neurosis. Here the Church can help to set him on his feet, show him the way to develop a dynamic religious philosophy of the simplest kind and by restoring his morale encourage him to spiritual growth and mental health. Children have for too long been filled with information and their creative individuality allowed to wilt in the process of moulding them into model citizens and standardized types. The love of truth has been encouraged in them so little that the Headmaster of Harrow has recently been led to assert that accuracy of thought is an attribute of few outside the followers of the exact sciences.

In the face of ignorance we cannot deal adequately with great and pressing problems, ever increasing in complexity and ever changing in their appearances. It is necessary to go to the heart of our modern civilization and from our study to evolve stable judgements by which our people may be enabled to react more harmoniously and rhythmically to their environment. Out of such adaptations sound health alone can flow. Nothing, I submit, is more urgent than the widespread cultivation of a scientific conscience; namely, to observe honestly, classify carefully, evolve reasonable hypotheses and test these fearlessly against facts in the evolution of new laws of life. This is an ideal which can be modified to suit the most meagre intellects.

Since adequate treatment for psychoneuroses is economically impossible except for a minority of cases the future of medicine appears to me to rest largely in the therapeutic and preventive power of educational influences.

Of recent years much work has been done in studying the psychological problems of specific industries and occupations. The Industrial Health Research Board and the National Institute of Industrial Psychology have in many directions broken new ground, but the larger problem, that of industrial civilization and its effect on individual and corporate health, has so far been rather neglected. These matters concern the general practitioner but they also call for radical changes in our system of public education.

In industry steps are being taken slowly but surely to establish clinics within factories. These can not only treat industrial accidents and occupational illness but can do something to attack the mass of psychogenic incapacity which masquerades under such a large variety of labels. The industrial clinic either in a large factory or in connection with a group of smaller ones, can be a very important link in the chain of public health work, but it can only serve its true purpose by collaboration with general practitioners and educationists.

If there is one particular point that I would desire to emphasize in this paper, it is that the burden of sickness—which is not only causing vast loss of time and money by actual absence but which is also sapping the general vitality of a far greater number than those who actually "go sick"—is in the main a psychological problem, and it is necessary for us all, whether we consciously practise psychotherapy or not, to grasp some at least of the essential workings of the mind which modern psychopathological research has unfolded before us. Armed with this knowledge a vast amount of successful work can be accomplished on the very simplest lines without embarking on the dangerous and highly technical sea of analysis or the more difficult forms of psychotherapy. Working on simple lines my own sickness records for the past five years show a steady decline in lost time from psychogenic causes from 1921 working days per year per 1000 workers in 1926 to 822 working days per 1000 in 1930. The results are hopeful and I believe significant of what we can achieve.

Modern industry can be either the means towards our higher destiny or the agent by which western civilization is ultimately to be drowned in the sea of its own complexity. It rests with educational and medical science and especially with those engaged in general practice to direct the course which we are to pursue, relieve us of the great burdens of invalidity and incapacity, and so enable industrialized man to take his place as an integrated individual in the eternal scheme of things.

THE INCIDENCE OF TUBERCULOUS INFECTION AND ITS RELATION TO CONTAGION IN CHILDREN UNDER 15

An Analysis of 1,220 Children from the Brompton Hospital Research Department

BY

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Last year we published a report on tuberculosis mortality in children[1] which included the results of an investigation into the fate of 1,192 children born of parents who had attended the Brompton Hospital, London. This work has been followed by an investigation, also at the Brompton Hospital, into the incidence of tuberculous infection in children and its relation to contagion. The figures deal for the most part with families of an urban working-class population. All children under the age of 15 attending the hospital have been tested, together with a number of contact children.

The majority of workers in tuberculosis are of the opinion that, from the standpoint of accuracy, the quantitative intracutaneous test of Mantoux is the best for determining tuberculous infection. However, as extensive work has been recently done in America and Norway with the Pirquet test, we carried out a preliminary investigation on just over two hundred children with this method before going on to the main part of our work—that is, an investigation of one thousand cases with the Mantoux test. We have thus been able to give our opinion as regards the delicacy of the two tests.

The Pirquet Test

The flexor surface of the left forearm was cleaned with ether; a drop of Old Tuberculin—Human (T)—was dropped on to the skin from a pipette and the skin under the drop was incised with a vaccination lancet. The size of the scratch and the amount of tuberculin used in each case was approximately the same. The arm was left exposed to the air for at least fifteen minutes. The child was seen in forty-eight hours and any reaction at the site of the test was noted. To begin with, a control was always done on the opposite arm, but as no reaction ever occurred with it this was given up as being unnecessary.

The results are given in five-year age groups in the following table.

Table I

Age.	Number of Cases	Number Positive	Per cent. Positive
0-5	52	7	13.5
5-10	130	34	26.2
10-15	35	18	51.4
0-15	217	59	27.2

Our figure of 27.2 per cent. agrees closely with that of Chadwick and Zacks,[2] who tested 101,118 school children and found that 28 per cent. gave a positive reaction. The above 217 cases were further divided into three classes: (1) Children who had lived or were living in contact with a person or persons suffering from pulmonary tuberculosis with positive sputum (Contact T.B.+). (2) Children who had lived or were living in contact with a person or persons suffering from pulmonary tuberculosis who had no sputum, or in whose sputum tubercle bacilli had never been found (Contact T.B.−). (3) Children who had never lived in contact with a tuberculous person as far as was known (No contact). Results are shown in Table II.

Table II

Age	1. Contact T.B. +			2. Contact T.B.−			3. No Contact with Tuberculosis		
	Number Tested	Number Positive	Per cent. Positive	Number Tested	Number Positive	Per cent. Positive	Number Tested	Number Positive	Per cent. Positive
0-5	20	5	25.0	15	2	13.3	17	0	0
5-10	53	23	43.4	27	3	11.1	50	8	16.0
10-15	7	4	57.1	11	5	45.5	17	9	52.9
0-15	80	32	40.0	53	10	18.9	84	17	20.2

It will be noted that twice as many children under the age of 15 are infected with tuberculosis when in contact with a person with positive sputum as compared with the other two groups. This fact will be dealt with more fully later

The Mantoux Test

Having examined 217 children with the Pirquet test, we applied the intracutaneous test of Mantoux to 1,003 children. For this purpose a sufficient quantity of Old Tuberculin of one brew (T. 1586) was kindly supplied by Dr. O'Brien of the Wellcome Research Laboratory, to whom we are grateful for many suggestions. Dilutions of (*a*) 1 in 10,000 tuberculin, (*b*) 1 in 1,000 tuberculin, and (*c*) 1 in 100 tuberculin, were made in sterile water to which had been added 0.5 per cent. phenol. The dilutions were always freshly prepared.

A 1 c.cm. glass Record syringe fitted with a No. 214 needle (Burroughs Wellcome) was used, and 0.1 c.cm. of 1 in 10,000 tuberculin was injected into the skin of the flexor surface of the left forearm. The site of injection was examined after forty-eight hours, and any reaction was carefully noted. If no reaction had occurred, 0.1 c.cm. of 1 in 1,000 tuberculin was injected intracutaneously, and the arm was again examined in forty-eight hours. If this was still negative, a third

Table III

Age	Boys			Girls			Total		
	Number Tested	Number Positive	Per cent. Positive	Number Tested	Number Positive	Per cent. Positive	Number Tested	Number Positive	Per cent. Positive
Years 0-1	0	0	0	0	0	0	0	0	0
1-2	2	0	0	2	0	0	4	0	0
2-3	17	3	17.6	14	1	7.1	31	4	12.9
3-4	25	5	20.0	14	7	50.0	39	12	30.8
4-5	43	11	25.6	22	5	22.7	65	16	24.6
5-6	67	15	22.4	56	15	26.8	123	30	24.4
6-7	63	26	41.3	52	25	48.1	115	51	44.3
7-8	61	24	39.3	45	19	42.2	106	43	40.6
8-9	54	23	42.6	34	14	41.2	88	37	42.0
9-10	68	28	41.2	38	21	55.3	106	49	46.2
10-11	52	22	42.3	39	21	53.8	91	43	47.3
11-12	40	25	62.5	33	18	45.2	73	43	54.4
12-13	29	19	65.5	22	15	68.2	51	34	66.7
13-14	34	17	50.0	26	16	61.5	60	33	55.0
14-15	21	17	81.0	24	20	83.3	45	37	82.2
0-5	87	19	21.8	52	13	25.0	139	32	23.0
5-10	313	116	37.1	225	94	41.7	538	210	39.0
10-15	175	100	56.8	150	90	60.0	325	190	58.3
0-15	576	235	40.8	427	197	46.1	1,003	432	43.1

injection of 0.1 c.cm. of 1 in 100 tuberculin was made and examined in forty-eight hours, and any reaction noted.

Many workers, both in this country and abroad, regard 1 c.cm. of Old Tuberculin as being equal to 1,000 mg., and classify their results of the Mantoux test according to the reaction to:

0.01 mg (0.1 c.cm. of 1 in 10,000 O.T.);
0.1 mg. (0.1 c.cm. of 1 in 1,000 O.T.); and
1 mg. (0.1 c.cm. of 1 in 100 O.T.).

We agree with Bandelier and Roepke[6] that the milligramme notation should be entirely dropped, and all results should be recorded according to the dilution of the O.T. used.

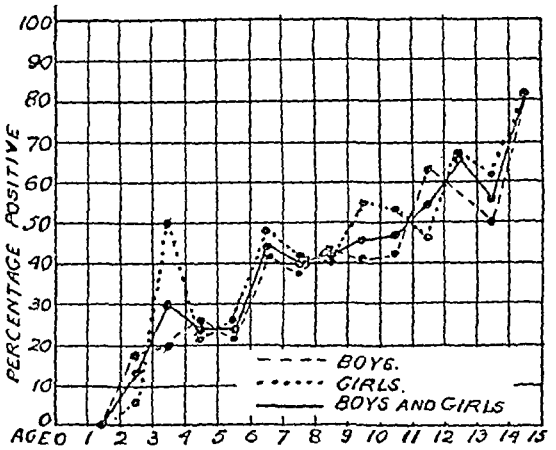


FIG. 1.—The percentage of children who reacted to the Mantoux test according to age and sex groups.

For various reasons it was not found possible to do the three tests in all the children. No difficulty was experienced in carrying out the tests even with the youngest; compared with the Pirquet method the technique of the Mantoux test is, if anything, simpler. The results are given in Table III and Fig. 1.

The foregoing graph, although somewhat irregular, shows that the incidence of tuberculous infection increases gradually from infancy to the age of 15. This irregularity of the graph becomes less obvious by grouping the children into larger age groups.

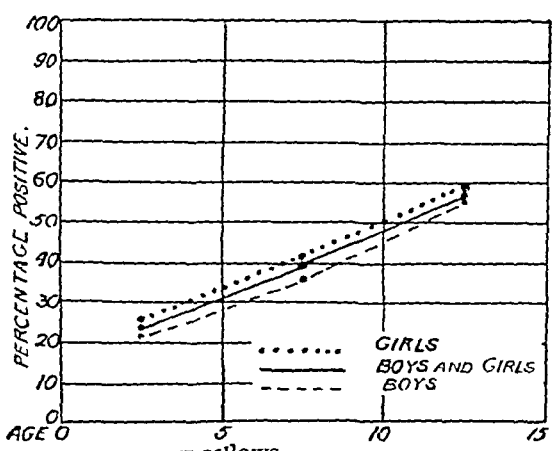


FIG. [illegible] ...ldren in different age groups ...ellows.
[illegible] ...rcentage of chi... who reacted to the Mantoux test.

From this it will be seen that ...23 per cent. of children ...etween 5 and 10 years, from birth to 5 years, 39 per cent. ... years old have been and 58 per cent. between 10 and 15 ...ome time or other, infected by the tubercle bacillus at ... ...erculous infection From our figures the incidence of tu... 5 years is 43 per in children between the ages of 0 and ... 23 children, 279 ...nt. It should be added that of the 1,0... these figures had been exposed to tuberculosis. Comparin... me... are rather with those of other workers, we find that they ... based ower than those of Opie and McPhedran,[3] ...

their results on a large number of school children in Philadelphia, while they are higher than those of Dick[7] and Seitz,[1] working in San Francisco (Fig. 3).

As already mentioned, we found it impossible to test every child with 1 in 100 tuberculin, and so it is not unreasonable to suggest that the number of positive reactions would have been somewhat higher if this had been done. Of the 1,003 Mantoux tests which were performed in children under 15 years of age, 268 children, or 26.7 per cent., were positive to 0.1 c.cm. of 1 in 10,000 tuberculin. Of the 735 who were negative, 668 were re-tested with 0.1 c.cm. of 1 in 1,000 tuberculin, and of these 122 were positive. This brings the number of positives up to 390,

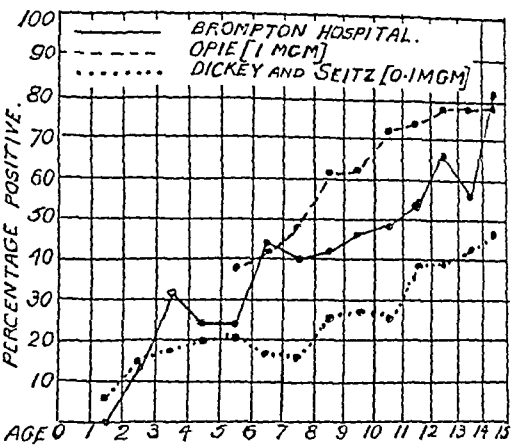


FIG. 3.—The percentage of children at different ages who reacted to the Mantoux test, as given by various workers

or 38.9 per cent. Now if all the 735 who were negative to 0.1 c.cm. of 1 in 10,000 tuberculin had been re-tested, instead of only 668, the number of positives would presumably have been 402, or 40.1 per cent., an increase on our figures, so far, of 1.2 per cent. Of 421 tested a third time with 0.1 c.cm. of 1 in 100 tuberculin 42 were positive, making a total of 432, or 43.1 per cent.—the figure which we gave as showing the incidence of tuberculous infection in children up to the age of 15. If all the 601 who would have been so far negative to 0.1 c.cm. of 1 in 1,000 tuberculin had been tested with 0.1 c.cm. of 1 in 100

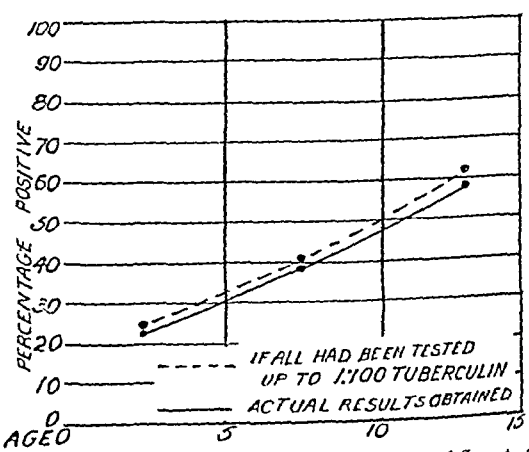


FIG. 4.—The percentage of children in different age groups who would presumably have reacted to the Mantoux test if all had been tested up to 1 in 100 tuberculin, compared with our actual findings.

tuberculin, 60 would presumably have been positive, making a total of 462, or 46.1 per cent. We may therefore say that the incidence of tuberculous infection in children up to the age of 15 attending the Brompton Hospital is somewhere in the region of 46 per cent. This figure may be adversely criticized as being too high for the general population of this age, because this is a special hospital for diseases of the chest, and for this

eason more children exposed to tuberculosis, or suspected if being tuberculous, are brought for examination.

It will be noted that the figure 26.7 per cent., which epresents the percentage of children under 15 who are ositive to 1 in 10,000 O.T., is practically the same as the 7.2 per cent. positive when the Pirquet method was used. This agrees with the conclusion reached by Happ and Casparis[5] about the two tests. By using 1 in 1,000 O.T. the number of positives was increased from 26.7 to 38.9 per cent., which makes a large difference in results, and by still further using 1 in 100 O.T. a further increase of 4.2 per cent. was obtained, making a total of 43.1 per cent., which would have been still higher (46.1 per cent.) if all had been tested up to this amount. From this it appears that by using the Mantoux test rather than the Pirquet, more accurate results are obtained in estimating the incidence of tuberculous infection, while the Mantoux test has also the advantage that a fixed amount of tuberculin is used in each case. Our figures show that the incidence of tuberculous infection in girls is slightly higher than in boys (see Figs. 1 and 2).

Analysis of Contact and Non-contact Groups

We have further subdivided our cases into the same three groups which were mentioned when dealing with the Pirquet test. The results for these three groups are given in Table IV and Fig. 5.

Table IV

Age	1. Contact T.B.+			2. Contact T.B.−			3. No Contact with Tuberculosis		
	Number of Cases	Number Positive	Per cent. Positive	Number of Cases	Number Positive	Per cent. Positive	Number of Cases	Number Positive	Per cent. Positive
0–5	21	15	71.4	15	3	20.0	103	14	13 6
5–10	87	66	75 9	47	18	38.3	424	126	31.2
10–15	76	58	76.3	33	14	42.4	217	118	54.4
0–15	184	139	75.5	95	35	36.8	724	258	35.6

The results show that up to the age of 15 twice as many children living in contact with a person suffering from pulmonary tuberculosis with positive sputum are

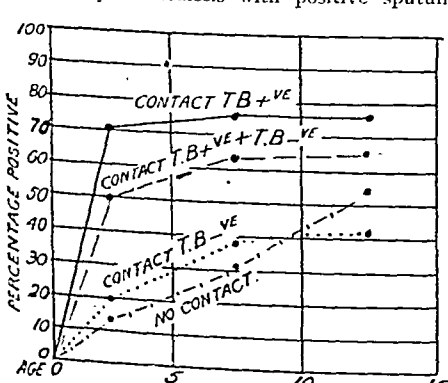


Fig. 5.—Percentage of contact and non-contact children who reacted to the Mantoux test, arranged in age groups.

infected with tuberculosis as compared with those children living in contact with a person with pulmonary tuberculosis with no sputum or negative sputum, or where there is no known contact with the disease, the figures being 75.5, 36.8, and 35.6 per cent. respectively. It is noteworthy that there is no marked difference between the curves of children in contact with parents diagnosed as suffering from pulmonary tuberculosis, but with negative sputum, as compared with the non-contact group.

In considering the three age groups 0–5, 5–10, and 10–15 years, a very striking difference in the graphs of the contact and non-contact cases will be observed. These show that the percentage of positive reactors in the children exposed to open tuberculosis is almost identical

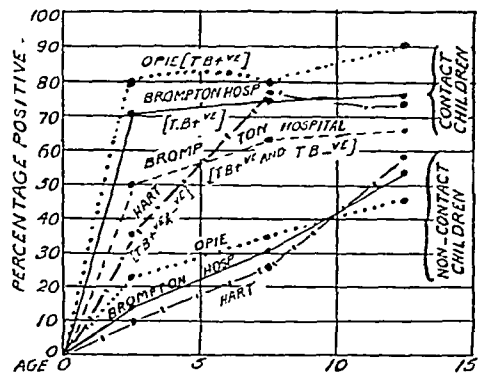


Fig. 6.—Percentage of children in contact and non-contact groups who reacted to the Mantoux test, as given by various workers.

in the three age groups, the average being about 75 per cent. On the other hand, the percentage of positive reactors in the non-contact children increases steadily with each age group. In the 0–5 year age group, the percentage of positive reactors is five times higher in children in contact with open tuberculosis than in the non-contact children.

These findings agree very closely with those of Opie and McPhedran[6] and Schlesinger and Hart[7] as is shown in Fig. 6. Opie included those children living in contact with open tuberculosis, while Hart included all children living in contact with all forms of pulmonary tuberculosis.

The group of children living in contact with a person with tubercle bacilli in the sputum was further analysed according to the relationship of the contact.

Table V

	Number of Cases	Number Positive	Per cent. Positive
1. Mother T.B.+ (father healthy) ...	50	34	68.0
2. Father T.B.+ (mother healthy) ...	74	57	77.0
3. Both parents T.B.+	4	4	100.0
4. Mother T.B.+ father T.B.− ...	2	2	100.0
5. Other contacts T.B.+	54	42	77.8

The above figures show that children exposed to a tuberculous father with positive sputum react more frequently than children exposed to a tuberculous mother with positive sputum. Although the difference is only slight, it is of interest to note that in our previous report[1] we found that the mortality rate from tuberculosis was greater in the children of fathers with positive sputum than of mothers with positive sputum.

Environment

We have found that the incidence of tuberculous infection is higher in children from homes in which there is a case of pulmonary tuberculosis with positive sputum. It may be that this increased tuberculization can be accounted for in part by the environmental conditions. It is difficult to classify home conditions in a really

satisfactory way, but an attempt has been made to divide homes into three groups—namely, " bad " homes, " fair " homes, and " good " homes. This was done after consideration of (*a*) total income, (*b*) locality, and (*c*) general hygienic conditions. In a series of 494 homes in which there was no tuberculous person living, 110 were classified as " bad," 154 as " fair," and 230 as " good." The incidence of tuberculous infection in each of these groups was practically the same, the figures being 30.9, 37.6, and 35 per cent. respectively. In 228 homes where there was a person suffering from tuberculosis, the corresponding figures were 86.4, 76.8, and 68.6 per cent. These figures would seem to show that where there is no known tuberculosis in the home, the incidence of tuberculous infection is much the same, whether the home conditions are " bad," " fair," or " good," while in the case of the tuberculous household there is a considerably lower percentage of tuberculous infection in the " good " home than in the " fair " home, and much more is this the case when comparing the " good " with the " bad " home.

Conclusions

1. The Mantoux test is more delicate than the Pirquet test. The Pirquet test is equivalent to 0.1 c.cm. of 1 in 10,000 tuberculin given intracutaneously.

2. The incidence of tuberculous infection in children increases gradually from infancy to puberty.

3. The incidence of tuberculous infection up to the age of 15 years is 43.1 per cent.—23.0 per cent. are infected between 0 and 5 years, 39.0 per cent. are infected between 5 and 10 years, 58.3 per cent. are infected between 10 and 15 years.

4. The incidence of tuberculous infection is slightly higher in girls than in boys.

5. The incidence of tuberculous infection in children between 0 and 15 is doubled when there is contact with open tuberculosis.

6. The incidence of tuberculous infection from birth to 5 years is five times greater when there is contact with open tuberculosis than when there is no contact with the disease.

7. The incidence of tuberculous infection in children of tuberculous fathers with positive sputum is slightly higher than in children whose mothers have positive sputum.

8. Our figures suggest that the incidence of tuberculous infection in contact children in " bad " homes is higher than in contact children in "good " homes.

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THE NEED OF EDUCATION IN QUESTIONS OF SEX *

BY

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It would be a mistake to suppose that education in sex matters refers solely to physiology. There is plenty of evidence that ignorance of the body may breed sex-mismanagement; but there is also evidence that physical knowledge, while, no doubt, protecting informed people from the worst physical consequences of sex-mismanagement, by no means ensures correctness of conduct. By sex-education I mean the physical, but also, the social, the moral, and the emotional (or what may be called the psychological) aspects. Again, while believing in the need of education in this more comprehensive sense, I do not believe that education alone, however complete in these ways, can be counted on to do more than point the way and ease the burden. As you would expect of me, I hold that as body must be directed by mind, so mind must be informed and empowered by God Himself. This recognition of man as what we clergy call a spiritual being does not, perhaps, concern doctors as a professional matter, but I should run the risk of being completely misunderstood if I omitted all reference to it. I put it now in the forefront because of its supreme importance; I do not propose to say more about it because it is my business to open a discussion on those other aspects of our subject which give common ground to us all.

The first of these to consider is the mind of the educator; and here we are faced with the difficulties which inevitably belong to a period of transition. The required instruction must often be given by those who have not completely escaped from the atmosphere of ignorance, negation, fear or disgust in which they themselves were brought up. When harm is alleged to result from education in sex we may suppose that it is nearly always due to the fact that the information is given in the wrong way. Wrong attitudes of mind in the educator may be briefly summarized: his own experience of life may lead him to over-emphasize dangers, sins, abnormalities; or he has escaped from the view that he is dealing with a dark and mysterious subject, but still keeps it in a water-tight compartment and deals with it in a highly specialized manner instead of as a universal part of life as a whole; or his approach is over-emotional, and he cannot speak of the physical side of sex in that matter-of-fact manner which we find and envy in those who profess the science of medicine. He is furtive where he means to be reverent, alarming when he means to be cautionary, and over-stimulating through his ardour for righteousness; or, worst of all, his own interest in the subject is morbid, obsessional.

The result of wrong attitudes in the educator must often be injurious to the boy or girl to be educated; the pupil is needlessly stimulated or frightened, and may, even after some instruction, regard sex-energy as a force to be suppressed rather than as a creative faculty to be directed aright and to be controlled for that end. Hence the need of emphasizing the importance of educating the educators. The Lambeth Conference indicated parents as the people directly responsible and the Church as the quarter to which parents should look for guidance and equipment. But it would be useless to ignore the fact that a majority of parents are incompetent for the task, and only a minority of clergy possess, at present, the knowledge required to provide the right guidance. During this transitional stage it may be necessary that certain people, men and women, chosen for the purpose, should be available as educators of educators, working to widen the area of competency.

Be that as it may I venture, as a father myself, to illustrate the part to be played by parents in very early stages. There is much to be said, which for lack of space must be here omitted, about the atmosphere of the home, the way in which father and mother treat each other, and

* Read in opening a discussion in the Section of Medical Sociology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

ogether treat the children; I omit too questions of general raining of children in the home; it should be obvious, or instance, that the spoilt child, the child who has everything he wants and never learns to "use the world and ot ab-use it," is likely, some day, to regard any control f sex-desire as absurd. I will pass at once to a particular oint which, while it seems to me of great importance, is learly one upon which the opinion of medical men and omen would be valuable if not decisive. I refer to proper nstruction in the physiology of the evacuation of waste naterials from the body. I urge the importance of this or two reasons. (a) The child's curiosity about and nterest in evacuation normally appears in consciousness efore interest in sex-matters. Thus a chance is presented f giving information about the general working arrangements of the body before any special sex-instruction comes; nd so the latter, when it becomes opportune, does not ppear to the child as an isolated and peculiar excursion nto bodily affairs; it fits into a field of information into which the child has already been led. From the very start sex is connected with and not divorced from ordinary life nd ordinary treatment of life. Elementary biology and botany may serve as a very useful preamble to sex-instruction, but science should surely figure in education at a very early stage and not appear first, or only, as the vehicle of instruction in sex. That would be to give to sex just that touch of peculiarity which is undesirable. But to play her part aright along these lines the mother needs double help; she must have correct information, and usually and rightly distrusts such information if it does not proceed from a medical source. But even if she has a cheap and trustworthy handbook, she often needs assistance in translating technical description into the language and idea agreeable to the child-mind. When the child asks "Where does my food go when I swallow it?" the answer should not contain the word "oesophagus"; it is possible to make the food's journey and use adventurous and interesting without so much as mentioning a "colon." But at present there is too wide a gulf between technical knowledge and language on the one hand and the needs of the parental educator on the other.

There is (b) a further reason why correct instruction about evacuation will render sex-instruction the easier. At present the uninstructed boy and girl are faced, even though unconsciously, with a truly disastrous confusion. When, in adolescence, they become physically aware of sex, the sensations occur in a locality of the body which is bound up, in their thoughts, with what is dirty, shameful, unworthy. Small wonder that father looked furtive and mother grew hot at any reference to procreation! It is all connected with dirt! This is at any rate one reason why the walls of public lavatories for men are so constantly the scene of lewd drawings and remarks. Against such a background in the mind of the child, to present sex as sacred or noble is often a herculean task; for it means not only teaching, but un-teaching—the most difficult educational performance.

I beg to submit for criticism an estimate of the correct background, collecting into one speech the fragments of teaching given at one time or another by parents or nurse:—"Good health depends more than anything else on our having clean insides to our bodies. Those parts of your body which help it to keep clean, by getting rid of waste stuff which is not wanted, do one of the most important duties for the body, and are to be honoured accordingly. Yes, I know you go to a separate place to get rid of this stuff; and you do so largely for the same sort of reason that you don't (if your house is large enough) brush your teeth or wash your hands at the table where the meal is laid. It is because what is got rid of is dirty or even poisonous; the parts of your body used to get rid of unwanted parts of food are very important, must be kept clean themselves and guarded from interference, like your eyes. Later on you will learn of an even more honourable place in life taken by that part of your body or by another very close to it."

The duties of parents towards young children do not end with the supply of a decent background for later instruction in the physiology of sex. An immense opportunity is presented by the questions asked by children. There are two things to be said about the matter, and one about the manner of the answers to be given. The question must be answered truthfully; that is the first thing. It is almost impossible to exaggerate the harm done by lie or evasion, especially where the offender is the child's parent. It is permissible to say "I don't know" or "You wouldn't understand if I told you now; ask me again a bit later on." If the question is asked in the presence of a visitor it is permissible to say "Mrs. X knows all about that, and I don't want to bore her; I'll tell you when we're alone." It is not permissible to say "Sh! Sh! You mustn't ask questions like that." The impression made on the visitor matters hardly at all; if she is of the kind to be shocked by truth, shocked let her be; for the impression made on the child may well be of life-long importance. There are very good reasons for giving a child all the possible information demanded; in the first place unsatisfied curiosity is a strong ally of sex-irregularities; in the second place the questions of a child have their own right to be answered; in the third place the questions of children about sex are not usually difficult to answer for anyone who has taken the trouble to acquire the information and to translate it into non-technical terms.

If the first rule about children's questions is to answer truthfully, the second is not to say more than is asked. An illustration will make this clear: The boy of 4 or 5 asks "Where was I before I was born?" The father replies "Mummy was keeping you warm and safe in her body." In 999 cases out of 1000 the enquirer is satisfied for the time being; his question is answered; the present need of his curiosity has been met, and the mood very quickly passes. But, unfortunately, while his mind is proceeding from the location of babies to a painter on a ladder at the house next door, father is conscientiously availing himself of the "heaven-sent opportunity"; he launches his set speech about bees and flowers or the marital customs of domestic animals. At best the child is bored; at worst his intelligence is over-stimulated on the subject and he carries away the impression, to which as an older boy he will return, that on this subject of birth and babies his father is heavy and unnatural. Why?

This brings us to the one essential rule about the manner of imparting information; this must be natural, ordinary, unstrained. The boy is playing bricks on the floor and asks why the milk is delivered in bottles; his father answers from the arm-chair without lowering the book which he is reading. Five minutes later the boy asks a sex question; the father must answer in the same manner as he replied previously; if he puts down the book and prepares for a conversational high-dive he introduces into the atmosphere a tension which will not escape the sensitiveness of most children. And so we return to the mind of the educator as the most important factor in sex-education.

I do not pretend that the subject of how to present sex to the child-mind is exhaustively laid out in the foregoing remarks; I have sought to dwell in some detail on points of importance which seem to be commonly disregarded. It is impossible to give even so much detail to all the different stages of sex-education. There are two stages in the whole concern which are, I believe, of greate

moment than any others; one is that which has already occupied our attention. That view of its importance is thus described by the Bishops in the 12th Resolution of the recent Lambeth Conference: "It is important that before the child's emotional reaction to sex is awakened definite information should be given in an atmosphere of simplicity and beauty." My claim would be that those words justify the emphasis given in this paper to the mind of the educator and to the treatment of quite young children.

The other vital point seems to me to be preparation for marriage, and to that we shall come. But in between lies that vast tract of territory which comprises later childhood, adolescence, courtship, and what may be called "involuntary celibacy." Before an audience such as this I presume that it is unnecessary to spend time in arguing the need of right sex-instruction for these stages; I therefore merely single out a few items for special emphasis. For instance, I do not believe that the instruction of adolescents should be done in groups, whether in school or Confirmation Class. The botanical or other general scientific background—the positive teaching which links the subject healthily to creative activity in life as a whole; yes; but when one comes to the specific application to the sex-development of boy or girl, and to the warnings and advice required, personal instruction is necessary. It may not be always possible; I know the difficulties, but if they can be overcome so much the better. For the physical and emotional development of different boys and different girls varies very greatly; what in the group-teaching may be suited to one boy is too puerile for another boy and too advanced for a third; besides, many groups will contain the joker, the decadent, or loose liver who may afterwards ridicule or otherwise degrade and misuse the teaching which has been given.

At this juncture I have in mind the minister of religion, the scoutmaster, the school-teacher, the club-leader and others who are connected with adolescents, rather than the parent. For in so many cases the home is unable, or if able unwilling to perform the duty. Is there any general method which, though it may admit of many exceptions, is to be recommended? I believe that there is, and it is most important that such a recommendation should be in terms of the ordinary man or woman; it may assume good sense and goodwill, but it will be of little practical value if it assumes expert omniscience. Hence literature, perhaps of two kinds, is required; certainly a choice of booklets for the young person, and perhaps a booklet or book of a more advanced type for the preparation of the educator. The latter will select the booklet which he judges to be the best suited to the age and development of the particular boy. He will give the booklet to the boy to read; if it can be avoided the literature should not be lent to be taken away, but read on the spot and returned. If so the educator must strive to be unhurried; he will not fuss around or cause the boy to feel "under observation"; he will, for example, turn to his table and get on with his own occupations. When the boy has comfortably finished, a conversation will start from the matter which has just been read; a suitable opening remark often is, "Well, how much of that did you know already?"

It is again necessary to stress the importance of the educator's own mental condition during such an interview. He must not be tense or strained; he may be bound to talk about emotional matters, but he must not talk about them emotionally. If he cannot conform to this principle he is not a suitable person to give the instruction. Where the words "boy" and "man" have here been used the words "girl" and "woman" may also be read. There are very few exceptions to the rule that a man (other than a doctor, and then only in special cases) should never instruct an adolescent girl in the physiology of sex. If clergy were to tell me that they do this successfully with girl confirmation candidates, I could only suppose that they omitted essential parts of the information required. For a man to include it all, in talking to an adolescent girl, would be to run the grave risk of stimulating her in the wrong way; at best the normal girl would be consumed with shyness. Besides which the right woman can obviously perform this duty better than a man. One of the first duties of the clergy in sex-education is to secure the services of the best woman available, to whom the adolescent girl may be passed on.

The assumption which lies behind all this is that the required literature is available. This is not so. There is some good literature, but it is not widely known. We should notice that here are really two quite separate points: (1) the existence of the literature, (2) its availability. The Lambeth Conference precisely defined this double difficulty when it stressed the need "to review the available literature and to take steps for its improvement and its circulation."

Now there are three objections, one or more of which apply to a great deal of the literature in use for sex-education: (1) The fear-motive is too prominent. I do not say that this motive has not its due place; certainly it has. But any pamphlet which starts from it or harps on it, any pamphlet which deals too exclusively with sex-error and its consequences, and treats sex as a dangerous rather than as a creative faculty, stands self-condemned for ordinary use. (2) The pamphlets tend to become out of date. The divergences may not be very serious, but in view of the enormous strides made in recent years by medical researchers (not forgetting psychologists) in this subject, we clergy need protection from the suspicion in our minds that we are handing out physiological or psychological information which would be contradicted by the scientist. (3) Many of the existing pamphlets quote as authorities medical names which altogether lose their impressiveness on investigation. Disguise is best achieved here by exaggeration, so I will exaggerate. In a pamphlet I read that a very distinguished man of medicine has stated that "For the normal man or woman continence need never be injurious to health." I am impressed. But, not knowing him by name, I investigate. The gaps in my knowledge of medical history are revealed, for I find that this man was once at the head of his profession, having been Court physician to one of the Hanoverian kings. This discovery sobers me considerably, and I ask myself, "Is this impressive name retained in this pamphlet, because no physician of like eminence could be persuaded in more modern times to utter in favour of continence?"

In answer to me on this third point it may be said that distinguished medical men and women have in recent years corroborated the opinion just quoted. But here comes difficulty about publicity or circulation. "The statement was published by some society; but by what society? and what was it called? How can I get hold of it? My bookseller doesn't know; nor does my Rural Dean." But even if I can discover it there remains a certain objection to the authority of a document signed in their individual capacity by people, however eminent. It carries the weight of those people's reputation, but can be and is contradicted by other members of their profession; for doctors, and not clergy alone, have been known to contradict each other's opinions.

It would scarcely be appropriate that this meeting should discuss how the Bishops of the Anglican Communion should translate into action the desire about literature expressed in the 12th Resolution of the Lambeth Conference. But let us make the hopeful assumption that soon the suggested review of literature and of its availability

nade, and that some body of people is commissioned to the gaps. I am sure that in the future, as in the past, ding medical men and women will help the Church to fill existing gaps in the best possible way. But I suggest it more is required. We need some seal upon any such blication, to assure those who use it that the scientific ormation contained in it is substantially correct. Such imprimatur could easily be so worded as to make it ar that reference was being made only to the scientific tements of fact, and not necessarily to the use to which ey were put. The literature so certified could be recom-nded the more confidently by Bishops to their clergy d by clergy to their people. Medical societies are a eater mystery to the laity than ever can be clerical chap-rs or assemblies to the doctor; so I do not profess to ow exactly by what body or in what way this suggestion uld be carried out. But I hope that a Section of the itish Medical Association is not an improper place at hich to ventilate the idea. Could not some authoritative edical body, with a reasonable claim to speak for a ajority of the profession, issue, through a Committee ppointed by its Council, some such certificate for sex-erature, the medical part of which was approved? The fer of such help to the Archbishops would be a graceful, nd I should guess, valued response to the appeal of the ambeth Conference for co-operation between our two pro-ssions; it is true that that appeal was not in the context sex, but no subject could benefit more greatly by an crease of such co-operation.

It remains to comment in some detail upon part of that ivision of sex-education which is becoming known as 'preparation for marriage." The selection of this division f the subject has been made for two reasons; in the first lace it is a form of education which until quite recently as been ignored; in the second it appears, at least to he writer of this paper, and not to him alone, the most mportant section of sex-education as a whole because o much hinges on it. We have had occasion to note hat the present is a period of transition; we recog-nize the importance of early teaching for children, yet re bound to admit that only a minority of married couples have the knowledge and willingness to perform this duty. At some later stage the competent educator is handicapped by the fact that he is late in the field; there is so much to unteach; so much harm has already been done. Thus there is a sort of vicious circle; every phase is important, yet in each there is liable to be a handicap. I believe the most important point at which to break through is marriage. For proper preparation for that may not only increase the number of happy marriages, but it should be the door through which may be secured right educa-tion for the children of those marriages. Thus it may herald the slow dawn of a new era. I would say nothing to discourage the efforts of those who are addressing them-selves to other phases of the general problem of sex-educa-tion; a general effort is needed all along the line, but in that effort marriage is a crucial point.

The Bishops have not yet amplified or defined their Lambeth appeal for "some further preparation for those members of the Church who are about to marry," but it may be safely assumed that they meant very much more than physiological instruction. There is definitely religious instruction, practical common-sense advice of the give and take, the mutual adjustments required in the married state, the law of the Church and so forth. There is much to be said about the conduct and influence of the home, about the technique of self-control in the most intimate relationships of married life. I do not wish even to seem to reckon any of these of small account, through omitting them now, nor to imply that doctors, whether as men and women, or in their professional capacity, have no voice in these matters and no oppor-tunity and duty of influence. But in order to make the best practical use of the time remaining to me I will con-fine my remarks to that part of the subject which obviously commands medical interest.

The respect in which the contracting parties to a marriage greatly need education is in their mutual ignor-ance, man of woman and woman of man. The cynic may retort that on the man's side at least this might be remedied by premarital recourse to prostitution. Actually the reverse is true; the professional or promiscuous woman does not reflect the physical and emotional reactions of a decent woman, and the man who treats his wife in inter-course as he has treated other women before may lay the house of married love in ruins. But the difficulties of the situation are not confined to the man of previous experience of some kind. Man is, for example, ignorant of woman in that he does not know that her inclination towards intercourse is normally much more gradual than his, and that when intercourse has begun her progress to-wards complete experience, physical and emotional, tends to be slower than his own. Whether or not, at all, such ignorance is to be found within the medical profession, there is, I submit, enough evidence to support the state-ment that such matters go beyond the sheer physiological instruction received by the average medical student. A mechanic in a motor-works knows the different parts of a car; he is constantly manipulating them; he can teach another man their position and functions. But this know-ledge does not render him completely competent to drive a car, still less to teach someone else to drive it. On the other hand the car may be driven extremely well by someone who has very little technical knowledge of the insides of the car.

Now herein lies our great difficulty in what may be called the physiological part of preparation for marriage. It is a kind of No Man's Land. Your profession may claim it as "medical." You may say "Send your pro-spective bridegroom to a doctor." But can you accom-pany that advice with any assurance that the average local general practitioner is competent to deal with the situation? If you cannot yet give that assurance will you help the married clergy to give the right help to men, and selected married women to give the right advice to women about to marry? I will not delay you now with any consideration of the organization required in the ministry of the Church to meet the need which I am outlining; that must be and can be thought out and provided. I will only add a few other illustrations of the existing need.

There is a very common and injurious assumption that consummation must take place the first night of married life or at the very first opportunity afterwards; to this is attached the rumour that the experience must be painful or at least unpleasant for the woman. Neither man nor woman is equipped with any knowledge of how to deal with this situation; the man is anxious to get the business over; has not his wife just promised to "obey"? Nervous roughness on his part—in some classes of life deliberately reinforced by alcohol—may produce disgust in her. What was meant to be sacramental, the outward expression of a love which combined body, mind, and spirit in man and woman, becomes degraded into the satisfaction of the body of one alone. For the union is not merely physical and it cannot so be labelled; it is mental, emotional, moral, spiritual—at least, in true marriage, it should be so.

The following may be listed as some of the causes of divorce, and of many more unhappy marriages, due to an ignorance neither invincible nor unavoidable, an ignor-ance which, by the efforts of Church and Medicine, must be removed: Nervous impotence on the man's part; lack of response on the woman's; the folly of the

deliberate avoidance of any children; indulgence which is one-sided; over-indulgence and lack of any system of control; to such major causes might be attached many important, though in a sense, minor matters. I do not mean that these difficulties and failures should be treated negatively, as things against which cautions should be given; they are to be avoided by quite simple positive information before marriage. It may be urged, of course, especially against such preparation for marriage, but also against the whole idea of the need of education in questions of sex, that any such education is highly artificial; that sex is natural in man and woman, and should function spontaneously. It is perhaps hardly necessary to take such an argument very seriously before a medical audience. The history of civilization at its best is the history of an increasing understanding and control of natural forces that they be directed towards the noblest ends; from that progress we cannot now step back. The choice is quite clear; either back to the jungle from which long ages ago we emerged; or on to the City of God.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

CALCIUM LEVULINATE FOR INTRAVENOUS AND SUBCUTANEOUS INJECTION*

In recent years it has become obvious that in certain cases calcium must be administered more rapidly and efficiently than is possible by the oral route. Thus, in the case of tetany following thyroid operations, in the vomiting of intestinal obstruction, and also in some recently discussed conditions such as osteitis fibrosa cystica and coeliac rickets, the tetany has been relieved by the intravenous and subcutaneous administration of calcium salts. Again, the use of calcium salts intravenously has been recommended for pre-operative treatment in various surgical conditions, especially in jaundiced patients.

The use of the simple inorganic salts (for example, calcium chloride) for intravenous injection is undesirable, as ulceration usually follows if extravasation occurs. For this reason various organic salts of calcium have been tried, but these have all suffered from the disadvantage of their relative insolubility. With some, however, the desired concentration can be attained by using a supersaturated solution, as is done, for example, with calcium gluconate; but since this method is rather limited, it was felt that a more soluble calcium salt suitable for injection should be sought. It was found that the calcium salt of levulinic acid possesses the desired properties. This salt, which has the composition expressed by the formula $(CH_3.CO.CH_2.CH_2.CO_2)_2Ca.2H_2O$, contains 13.1 per cent. of calcium. It is very soluble in water, stable 25 per cent. solutions being obtainable with ease. Stronger solutions are syrupy. The solutions are stable at 100° C. The reaction of a 10 per cent. solution lies between *p*H 7 and *p*H 8.

In case the levulinate ion should prove to be strongly toxic, the effect on the blood pressure of an anaesthetized cat of a solution of calcium levulinate was compared with that of a supersaturated calcium gluconate solution of the same calcium content. The depressor effects of the two solutions were approximately the same. A dose of 33 mg. of calcium per kg. as 25 per cent. calcium levulinate was also given intravenously to each of three rabbits without any mishap.

The effect of injecting 20 c.cm. of 10 per cent. calcium levulinate intravenously into a normal person was investigated. No unpleasant result ensued. A similar solution was given intravenously in four cases of tetany, and in the pre-operative treatment of five jaundiced patients. There were no reactions whatsoever; and, further, ulceration does not seem to follow extravasation, for in one case where the latter accidentally occurred no sloughing resulted, although there was a fairly severe haematoma. We would point out that owing to its great solubility calcium levulinate is particularly suitable for subcutaneous injection.

We have to thank the Crookes Laboratories for preparing for us the pure calcium levulinate referred to above.

G. D. Greville.
E. C. Dodds.

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CAESAREAN TWINS

I wish to place on record the following case of Caesarean twins on account of the extreme physical deformity of the mother, her ante-natal care, her rapid post-operative convalescence, and the extremely healthy condition of her children.

Mrs. X was born in 1897, and at the age of 4 was treated in Edinburgh for "curvature" of the spine. For three years she was kept in bed, and occasionally in plasters, till the hump became established and the pain from movement less acute. Her deformity became permanent in time. She first consulted me in August, 1925, on account of severe pain in her spine. I then made the following entry on her case sheet. "Marked kyphosis and scoliosis, large permanent hump on right side, pain on left side, due to pleurisy, enlarged glands in the right iliac fossa, and enlarged septic tonsils." She was treated medically, with slight improvement in her general condition, but she always remained a chronic suffering invalid. A spinal support was ordered for her, and she was instructed to wear it during the daytime only when she was on her feet. In March, 1928, I enucleated her tonsils under a general anaesthetic. Her health subsequently improved to a great extent, and she became pregnant in spite of the fact that she was still a virgo intacta, there having been on no occasion any penetration during sexual intercourse. Even digital examination was impossible. She was admitted to Nell Lane Auxiliary Hospital and *x*-rayed there. The pelvis was found to be flat, the outlet was very narrowed, and the promontory was bulging forward. The uterus was lying high up, and the cervix could hardly be touched by the finger. It was decided not to interfere with her condition, and she was allowed to carry on to full term.

She had no morning sickness, no albuminuria, and her chief complaint was backache. As there was no space in the right hypochondrium, where the ribs rested on the iliac crest, the uterine body at first occupied the left half of the abdominal cavity, later it became anteverted and almost fell out of the abdomen. From the fifth month onwards the patient lay in bed day and night; her uterus was placed on special pillows beside her. There was complete atony of the muscles of the abdominal wall, and special care had to be taken to carry the uterus when the patient left the bed.

On November 25th, 1928, when she was 8½ months pregnant, labour pains started at 4 p.m. I was sent for at 11 p.m., and at 1 a.m. I performed Caesarean section at Nell Lane Hospital and delivered her of twins. There was no difficulty in removing the two placentae, which were joined. There was no undue haemorrhage, the contraction of the uterine muscle being remarkably good in spite of the distension. She made an uninterrupted recovery, and was discharged from the hospital in three weeks' time. The babies weighed 3 lb. 10 oz. and 3 lb. 12 oz., which is very remarkable in view of the fact that the mother weighed only 5 st. before she became pregnant, and her height was 4 ft. 5 in.

To-day the children are remarkably healthy. They weigh 1 st. 13 lb. and 1 st. 11 lb., and have suffered from no illness except a mild attack of bronchitis. They have been brought up on a patent food.

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Reports of Societies

EVOLUTIONARY TENDENCIES IN THE JAWS

At an address to the International Orthodontic Congress at the Savoy Hotel, London, on July 20th, Professor G. ELLIOT SMITH discussed evolutionary tendencies in the jaws and teeth.

He said that in seeking for an explanation of the strange vicissitudes to which the teeth were liable in the course of their development in man, it was important not to lose sight of the factors involved in the making of the human face and in providing it with new functions in addition to those it performed in other living creatures. For the changes which affected the jaws and teeth in the evolution of man were in large measure due to the growth of the brain and the enhanced significance of the face which the higher powers of visual discrimination and understanding conferred upon it. It became not only the most distinctive label of individual men and women, whereby their fellows could recognize them, but also the chief instrument for expressing the feelings and thoughts in a way that played so vital a part in social intercourse and in enabling human beings to express their own personalities and influence the behaviour of others.

Profound changes were effected in the face in man's remote ancestors during the process of acquiring the higher powers of vision, which were made possible by changes in the position of the eyes, the reduction and transformation of the snout, and what amounted to a profound reconstruction of the jaws and consequential changes in the number, form, and sequence of eruption of the teeth. Moreover, the growth of the larger brain and the cultivation of its complicated functions called for much more time than was required for the development of other creatures, and during the years occupied in those processes the eruption of the teeth was delayed. Most of the problems which were responsible for the creation of the orthodontic profession arose out of the circumstances created by these delays in the growth of the jaw while the brain was growing. If aesthetic considerations and men's interest in faces played some part in creating the demand for orthodontia, the growth of the brain was chiefly responsible for disturbing the orderly process of uniform growth of the jaws from which the dental troubles arose. Man had inherited from his immediate ancestors the same number, type, and order of development of his teeth. Even if nothing more of fossil apes and men had been recovered than their teeth, it would still have been possible to establish so complete a series of links as to bridge the gap between the living apes and men by following their respective lines of divergent ancestry back step by step to a common parent akin to the fossil ape such as *Dryopithecus*, which lived in the Indian Sivaliks in the Miocene period. Quite apart from all the other corroborative evidence, the morphology of the teeth, as Professor William K. Gregory had so clearly elucidated, and the structure of their enamel, as Mr. Thornton Carter had shown, were enough to establish the reality of man's simian ancestry.

The chin was the peculiar distinction of modern man. In the extinct members of the human family the lack of chin development became more pronounced as one successively compared with *Homo sapiens* men of the Neanderthal and of the Heidelberg species, until in Piltdown Man and Peking Man the deficiency became so pronounced that some anthropologists still refused to admit that they were human. It was not only the form and structure of the teeth and jaws of these primitive men, however, that were increasingly ape-like, but also the order of their eruption. In the human child there was a delay of four years after the milk teeth were erupted before the permanent teeth began to be "cut," and another ten or fifteen years might be occupied in completing the permanent dental equipment. In the apes the process of eruption of the second teeth followed more closely on that of the first teeth, and the second permanent molar erupted before the deciduous molars were replaced by the premolars. In the children of Neanderthal Man the surprising fact was now revealed, as Dr. Magnus Degerbøl of Copenhagen had recently pointed out, that the simian type of sequence was still retained in the eruption of his teeth. There were reasons for the inference that Neanderthal Man's defective chin development might be associated with this fact—that the precocious "cutting" of his teeth permitted the tooth-bearing part of the jaw more nearly to keep pace with the growth of the rest of the jaw. Modern man probably developed a chin because the growth of the tooth-bearing part was restrained by the long delay in the eruption of his teeth. There had been much speculation as to why this should be so, especially in recent writings of the late Professor Bolk, Dr. Degerbøl, and Professor Mijsberg. Yet it was strange that none of them had referred to the fact (so strikingly emphasized by Professor Elliot Smith's colleague Dr. H. A. Harris in the *Lancet* of March 28th, 1931, and elsewhere) that the human child until the seventh year, during the pause in his dental development, was growing a phenomenally large brain and for another fifteen years or so, and that while relatively sluggish in his dental affairs, he was occupied in learning how to put his complicated cerebral instrument to the biological uses which were vitally essential for human existence. The delay in tooth and jaw development was undoubtedly due to these momentous events. The salient chin was a manifestation of the great events which conferred mind upon its predecessor—it was an index of "mental" development in the psychological as well as the anatomical sense of that term.

Professor Elliot Smith, in conclusion, said that the wider vision of the evolution of the face enabled many false claims repeatedly being made about human tendencies to be viewed in truer perspective. The reduction in size or absence of the third molar was often claimed as a sign that man was destined to lose that tooth in the near future. In Peking Man, supposed by some palaeontologists to have lived as many as a million years ago, the third molar was smaller than the others. The same condition was not uncommon in apes and monkeys. It was, in fact, a tendency which the whole order of primates inherited, but there was no just reason for assuming that either the third molar or the second incisor was about to disappear in man in the near future. Nor did there seem to be any justification for the belief that dental troubles, such as crowding and displacement of teeth and the consequential difficulties, were due to evolutionary changes that were now active. There was no evidence that, apart from the results of racial mixture, any detectable changes were taking place in the jaws and teeth. The same irregularities and deficiencies in the teeth were occurring fifty centuries ago. Contrasts in the form and proportions of the jaws were just as marked. Civilization could not be held responsible for these things except in so far that it promoted a freer intercourse among people of different antecedents and so conduced to racial admixture and the conflicting tendencies in jaw and tooth development. Evolution worked with exceeding slowness, and there did not seem to be any certain evidence that any effects that could be attributed to recent evolution had yet been detected in modern man's jaws and teeth. In the process of admixture of peoples of different strains it must happen that, as the rigid and unalterable forms of the enamel caps of the teeth had to be lodged in the more plastic bone, disharmonies in the inherited proportions were certain to emerge, even if the jaw was endowed with wide powers of adaptation to exceptional conditions.

Reviews

X-RAY EXAMINATION OF THE RESPIRATORY TRACT

Professor ÉMILE SERGENT'S book on the Radiological Examination of the Respiratory Apparatus[1] is not so much a theoretical treatise on the subject as a practical description of the various appearances seen both on the film and on the screen examination. He has been ably assisted by Drs. BORDET, DURAND, and COUVREUX, the last dealing with the technical details of the subject. The photographs, which constitute the material of the book, are taken from a number of radiograms and pathological specimens collected during the course of ten years' clinical work. The authors consider the subject from the clinical point of view, always comparing the radiological appearances with pathological findings. They have attached to the various images an interpretation which would agree with the signs and symptoms recorded by other methods of examination, and which are controlled by the findings at necropsy. Indeed, as Professor Sergent has expressed it, "a radiological examination is an autopsy of the living."

One of the greatest difficulties that beset an author of a work of this kind is that of obtaining a faithful reproduction of the details furnished by a good film. It is true that the respiratory apparatus lends itself better than any other system to a radiological examination. It reveals itself by the normal contrast of light and shadow, yet a good technique is essential to show the fine details of the bronchial and vascular arborescences. It is these that are difficult to reproduce in a book. They disappear if the reproduction is too much reduced. In consequence, the authors have used a folio page to maintain the dimension of the film, and have reproduced several enlargements of particular zones to render the fine details more apparent. The photographs are reproduced particularly well on a thick heavy paper, which renders the division of the work into two volumes ("for foreigners") a boon. The book is divided into three parts: the first describes the technique; the second the normal findings, accessory methods of examination, such as lipiodol, and the different types of opacity and translucency; while the third details the radiological appearances observed in the various affections of the respiratory apparatus. The volume is beautifully illustrated; indeed, there are no fewer than 639 plates, mostly radiograms. Each is described clearly and concisely, but otherwise the text, though good, is of secondary importance. The inclusion of photographs of pathological specimens beside radiograms of similar conditions is a very instructive feature. This is an excellent work—a credit to authors and publishers alike. It is more than an atlas, being full of practical details, and is interesting from start to finish.

THE SURGERY OF INJURIES

Surgery has been more subdivided and specialized in the United States than in Europe, so that the invention of the terms "traumatotherapy" and "traumopathy" has found acceptance there, and Dr. JOHN J MOORHEAD is director of the department of traumatic surgery in the New York Post-Graduate Medical School. In the preface to his book, *Traumatotherapy: The Treatment of the Injured*,[2] Dr. Moorhead makes no excuse for his specialty, having satisfied himself by the reception of his previous work, *Traumatic Surgery* (1917), that the superficial treatment of the subject is acceptable to his colleagues. Seeing that the technique of treatment is of supreme importance in this branch, he has attempted in this volume to detail the actual management of all the usual and most of the unusual, effects of trauma. In this way the treatment of the usual effects of trauma has become almost standardized since the experiences of the great war and the rising flood of industrial and transport accidents, but in practice it is to be feared that the technical skill and ability necessary for the successful application of the theory is not so widespread as could be desired. Therefore a work which lays down the principles of treatment of injuries clearly, and teaches the details of their application, is to be commended.

Some idea of the scope of the work may be got from a perusal of the chapter headings. These are:

I, Contusions; II, Wounds; III, Dislocations; IV, Fractures; V, Closed cavities trauma; VI, The traumatic neuroses; VII, Injury by electricity, *x* ray, radium, ultra-violet light; VIII, Amputations; IX, Bone plastics; X, Soft tissue plastics; XI, Osteoma—exostosis—myositis ossificans, Malignant Trauma and malignancy; XIII, Post-traumatic deformities and disabilities; XIV, First-aid treatment—standardized procedures; XV, Antiseptics—drugs—dressings; XVI, Splints and apparatus; XVII, Anaesthesia; XVIII, Restoration of function; XIX, Treatment of injuries in the young; XX, Treatment of injuries in the aged; XXI, Treatment of old injuries; XXII, Manipulation in certain joint injuries; XXIII, Combined traumatotherapy and after-care; XXIV, Medico-legal and allied aspects; XXV, The prone pressure method of artificial respiration; XXVI, The Carrel-Dakin technic.

Having in mind the fact that this is a book on treatment and not on pathology, we think that the author has represented his subject-matter as fully and as clearly as is possible in 574 pages and 625 illustrations, and that its readers should gain much valuable knowledge, always remembering that technique cannot be fully acquired by reading books, but that actual practice is necessary to complete the instruction given by lecture or textbook.

A SHORT HISTORY OF BIOLOGY

Although there doubtless exists, among educated people generally, a wide interest in the subject of biology, it is probably equally true to say that there is great ignorance of the scope of the science and of its present position. A concise account, in non-technical language, is therefore likely to prove useful, provided it includes a comprehensible exposition of the science as it stands to-day, such as may be found in Dr. CHARLES SINGER'S *Short History of Biology*.[3] Several excellent histories of biology could be mentioned the value of which, to the general reader at least, is heavily discounted because they stop at some convenient point in the history which dispenses with the task of exhibiting the present position of the science. The latter, however, is what the general reader wishes to understand. He has been fully informed on certain well-ascertained facts—that science originated with the Greeks, declined under the Romans, revived in the thirteenth century, and made rapid progress on the introduction of the inductive method, with its classifications, systems and geographical and geological explorations. His difficulties arise with the present; for example, he has accepted the Darwinian theory of evolution, but experiences some confusion of ideas when told that Darwin's reasoning on natural selection is based on a series of fallacies. Nor are his difficulties diminished by a tendency exhibited by some authors, to blurr the distinction between theory and ascertained fact—to exhibit

[1] *Exploration Radiologique de l'Appareil Respiratoire*. Par Émile Sergent, Francis Bordet, et Henri Durand, avec la collaboration de J Couvreux. Paris: Masson et Cie. 1931. (Pp. 464, 639 figures, of which 580 are radiographs. Bound, 350 fr. the two volumes.)

[2] *Traumatotherapy: The Treatment of the Injured*. By John J Moorhead, B.Sc., M.D., F.A.C.S. (D.S.M.) Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 574; 625 figures. 32s. 6d. net.)

[3] *A Short History of Biology*. By Charles Singer. Oxford: At the Clarendon Press; London: Milford, Oxford University Press. 1931. (Pp. xxxv + 572; 194 figures. 18s. net.)

inclination to leave open questions open The shifting gmas are confusing to the general reader, who is not vays able to distinguish dogma from legitimate pothesis

The virtue of Dr Singer's book lies in his regarding e present position of biology as embodying a number of solved problems He mentions the main themes which e engaging the attention of biologists, and traces, his rically, the manner in which they have emerged—mely, the evolutionary history of living forms, the gnificance of the cell doctrine, the nature of vital tivity, the interrelation of the various organic functons, the origin of life, and the mechanisms of sex and redity In the discussion of these problems a comprenension of their bearing is greatly assisted by many dicious comments on the part of the author On the ew adopted by Dr Singer, biology may aptly be com ared to a number of converging streams, which have ready been traced for a certain distance from their ource, but the lower reaches of which are unknown and main to be explored The subject is one, therefore, in hich there is much room for the exercise of the open ind and the avoidance of dogmatic assertion

EUGENIC STERILIZATION

n the *Journal* of December 7th, 1929 (p 1069), we eviewed a book, entitled *Sterilization for Human Betterent*, by E S Gosney and Paul Popenoe Both these uthors are prominently connected with the Human letterment Foundation of Pasadena, California , indeed, he former is its founder, and has been alone responsible or its finances on a large scale, while the latter may be lescribed as its pamphleteer and propagandist The book eferred to was a summary of the results of 6,000 steriliza ion operations in California during the twenty years prior o 1929, and there has now been issued, under the uspices of the Foundation, an irregular volume of pamphlets, entitled *Collected Papers on Eugenic Steriliza ion in California* [1] These pamphlets appear to have been ublished between the years 1927 and 1930 inclusive , all ut one or two are by Dr Popenoe, and they deal with he same 6,000 cases as the book already reviewed, ogether with a relatively small number of additional ases The volume will be convenient for those who like o have these papers to refer to, but its value is not reat The statements made about the book—that it as well informed within its compass and relatively temerate in statement—are true about the pamphlets for he most part , but unfortunately neither of the volumes s characterized by a really scientific outlook The point of view is biased throughout, arguments are twisted to suit he immediate needs of the writer regardless of consistency, nd sweeping conclusions are repeatedly drawn from meagre statistics or a very small number of cases The contention is that all " persons in the community whose children would be a liability rather than an asset to future generations because of their inherited natures " should be sterilized, and that California offers an example to the world in that a large proportion of those entering or leaving institutions for the insane or the mentally deficient are subjected to sterilization, and that there are a large number of sterilization operations voluntarily submitted to outside these institutions The " results " of all this are discovered in the various pamphlets to be in accordance with the wishes of the writer The material for the separate papers is usually inadequate and the argument often puerile Good behaviour *although* sterilized, and good behaviour *because* sterilized, are frequently used and stipulated just as Dr Popenoe thinks fit It is admitted that a large number of the patients will have to remain in institutions all their lives, and that a very large proportion of the others really behave themselves when placed in the community under some supervision as well as the rest of the population Nevertheless sterilization is claimed as the right procedure for all A remarkable paper is that entitled " The number of persons needing sterilization," for it illustrates alike the disregard of the need for accurate figures, the vague guessing at percentages, the loose statements about human heredity in general, and the tendency to widen to an absurd degree the categories of those to whom sterilization should be applied The curious, but evidently welcome, conclusion is reached that, even if these calculations are inaccurate, and even though at first it may not be advisable to sterilize all of those included, there will still remain enough people requiring operation to keep the surgeons and hospitals of the United States continuously busy. The whole question of sterilization, its proper sphere, its limitations, and the conditions under which it might be legalized, is now being seriously considered in this country It is to be feared that the experiences of California, as set out by Dr Popenoe and the Human Betterment Foundation, will not be found of much value or help in this connexion

A short pamphlet entitled *Psychiatric Indications for Sterilization*,[2] by Dr ERNST RÜDIN—an abridged translation from the German—is on a different plane It is a temperate and scientific statement, maintaining that, in a certain limited number of insanities and diseases of the nervous system, the advisability of sterilization has been proved Everyone will not accept even this conclusion as settled, but all will agree with the main purpose of the pamphlet, which is to urge the need for immediate and active research in hereditary prognosis The author says " To judge the case *post hoc* is easy enough, but we ought to be able to give sound advice before the appearance of those unhappy individuals whose birth we aim at preventing ' , and, again, " careful and authoritative pronouncements in regard to the laws of hereditary transmission are imperatively required Vague general statements as to suitable cases I hold to be of very little use "

HUMAN EMBRYOLOGY

A Textbook of Human Embryology,[3] by Professor SIMKINS of Tennessee Medical School, affords further evidence of the importance attached in the schools of America, not merely to the subject of embryology, but also to the manner in which it is presented Professor Simkins has had the advantage of being able to consult the works of others, such as those of Arey, Dodds, Kellicot, Jordan, and Kindred, to mention a few recent publications, and also to benefit by the use of their illustrations—no small benefit in a subject so dependent for its adequate treatment on the art of the draughtsman The figures of wax plate reconstruction models are particularly successful, and of these Professor Simkins avails himself unstintingly The book is on the whole clearly written, although, as in the account of the development of the visceral cavities, the author relies a little too much on the illustrations for his meaning , further, he has made every effort to bring the reader abreast of the latest knowledge, a desire which at times leads him into details which, as, for example, in the account of the segmental arteries and their anastomoses, tend to obscure the main outlines The subject is at the present day, we are

[1] *Collected Papers on Eugenic Sterilization in California*. With an Introduction by Guy Irving Burch. Pasadena, California: The Human Betterment Foundation. 1930.

[2] *Psychiatric Indications for Sterilization*. By Dr Ernst Rüdin. Abridged translation. London: Eugenics Society, 1931. (Pp 19. 6d.)

[3] *Textbook of Human Embryology*. By C. Cleveland Simkins, Ph.D. Philadelphia: F. A. Davis Company. 1931. (Pp. xiv + 469, illustrated. 4.50 dollars net.)

inclined to think, from the student's point of view sorely in need of judicious abridgement and of concentration on the main facts and principles. A very welcome feature of the book is the attention paid to "anomalies," for these are not only of great practical importance, but often serve to drive home certain fundamental facts in an interesting and impressive way. The book can be warmly recommended to the student for its accuracy and comprehensiveness, but we hope that in any future edition the proof-reader will be less at fault and avoid the complications which may arise from such bibliographical references as "Keeth, Embry., Morph and Arnold."

NOTES ON BOOKS

At the King Edward Medical College, Lahore, a post of *lecturer in anaesthetics* has lately been created, and the first incumbent of it is Dr. K. E. MADAN, who has promptly produced a textbook of *Elementary and Advanced Anaesthesia*[1]; primarily, we may suppose, for the use of his own students, but also, as he states himself, for practitioners of all types, including post-graduates. It is very possible that Dr. Madan is an expert anaesthetist with a firm grasp of the principles and practice of his specialty, but he has certainly not succeeded in expounding them in print. The impression left by the book is that it might have been produced by someone with an encyclopaedic knowledge of the literature of the subject, but with limited practical experience of the operating theatre. It may well be that this impression is not a correct one, and that it is due to Dr. Madan's inexperience in authorship; but it spoils the value of the book as a guide for the student and the practitioner. To give one very brief instance, the chapter on the choice of anaesthetics (quite one of the most important in any textbook on this subject) contains the following pronouncement, which is not qualified in any way, or modified by its context: "Chloroform is always indicated in all respiratory troubles—for example, of the larynx, trachea, bronchi, lungs, and pleura." We feel sure that Dr. Madan never meant this sweeping assertion to be accepted as literally true; but he has committed himself to it so categorically that his students must think he did mean it.

We have received the first issue, published in June, of the *Proceedings* of the Scientific Committee for the Investigation of Circulatory Disorders, whose headquarters are the William G. Kerckhoff Institute at Bad Nauheim, founded in 1929 by Mrs. Louise E. Kerckhoff in memory of her husband, and opened on April 12th. The issue contains the address delivered at the opening ceremony by Dr. Hamel, president of the German Ministry of Health, followed by a lecture by Professor Franz M. Groedel, director of the institute for circulatory disorders, and an account of the first meeting of the committee.

In *The Danger Signs of Disease*,[2] by "A Scotch Doctor," will be found a number of useful hints, warnings, and reflections on the subject of health and disease which may be of value to the observant and discriminating layman. The author says that his "main purpose is to enable people to appreciate whether any symptoms from which they may be suffering are dangerous or not and to go forthwith to their doctor for confirmation; and to convince them to consult a person thoroughly qualified to give them an honest and experienced opinion." The aim is worthy, but perhaps more difficult of achievement than the author has realized. His presentation is, no doubt designedly, dogmatic and his wording brief. This easily leads to occasional statements which to the doctor are not strictly accurate, and to the layman may be misleading; and it does not lend itself to a clear distinction between symptoms and signs which suggest quite rare conditions, or serious conditions, and those which indicate disorders of less moment. If the book proves to supply a real want of the public a little expansion might remedy these defects, and at the same time more emphasis might be placed on preventive measures of personal hygiene, such as those briefly mentioned in the last chapter on baths and cleanliness, on ventilation, on clothing, and on exercise.

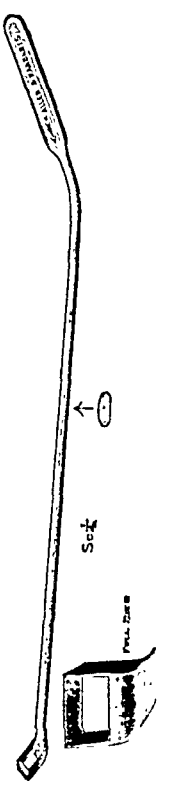
The ninth volume of the *Guide to Current Official Statistics of the United Kingdom* contains a list of the statistical publications issued during 1930 by Government departments in Great Britain and Northern Ireland, together with an index of their contents arranged alphabetically according to subject, with information of the time and place to which the statistics relate. It is therefore possible to discover without delay the official statistics available for any particular purpose, and the names and prices of the publications in which they are to be found. The volume is obtainable at H.M. Stationery Office, price 1s. net.

PREPARATIONS AND APPLIANCES

A SIMPLE FASCIA CUTTER FOR LIVING SUTURES

Mr. A. WILFRID ADAMS, M.S., F.R.C.S. (Clifton), writes:

The instrument shown in the accompanying figure was designed to obviate the long incision down the thigh necessary for procuring strips of fascia for hernioplasty, etc. It works subcutaneously, does not get out of order, and is cheap. At the outset I experimented with Mayo's vein enucleator, and on that idea the fascia cutter is modelled.



Cutting is effected by tiny knives, which form the sides of the fenestrated end of the long steel shaft, which is 16 inches long. The handle is at an angle of 15 degrees with the shaft.

A 2-inch vertical incision is made over the fascia lata at the knee. After exposing it an end of fascia is raised of the required width, 1/4 to 1/2 inch, and is then pulled through the opening in the cutter by a pair of artery forceps. While the forceps hold it taut, the cutter is driven subcutaneously upwards and towards the great trochanter. The progress is automatically arrested by the bulky flesh of the tensor fasciae femoris blending with the origin of the fascia. At this stage the upper end of the cutter is made prominent by pressing the handle against the patient's knee. A transverse incision, 1 inch long, through the skin at the prominence reveals the cutter carrying the upper end of the fascial strip. It is easy to divide and then withdraw the latter ready for use as a suture; adherent fat, if any, is cleaned off it.

Many such sutures may be prepared by an operation which takes five minutes and has been free from complications.

Messrs. Allen and Hanburys have manufactured the instrument for me.

A TWO-PIECE GLASS SYRINGE

We have received from Messrs. Burroughs Wellcome and Co. a two-piece "Agla" syringe, graduated in minims and tenths of 1 c.cm. It is made of glass, and the blue tip of the piston enables one to tell at a glance the quantity of fluid in the syringe. Fitted with a rustless steel needle (protected by a metal guard) the assembled syringe fits closely into a glass container filled with spirit, the piston acting as a stopper. The whole is enclosed in a cylindrical metal case which can be clipped on to the pocket. The spirit and containing tube can be replaced in the metal case without risk of spilling while the syringe is in use. This type of syringe is supplied in 1 c.cm., 5 c.cm., and 10 c.cm. sizes, with a model graduated in twentieths of 1 c.cm. for insulin administration. It is very convenient for hypodermic emergencies

[1] *Elementary and Advanced Anaesthesia*. By Dr. K. E. Madan, M.D., D.O.M.S. Lahore: Students' Popular Depot. (Pp. 366; 25 figures, 5 plates. Rs. 5.)

[2] *The Danger Signs of Disease*. By a Scotch Doctor. London: The St. Catherine Press. 1931. (Pp. 90. 2s. net.)

British Medical Journal

SATURDAY, AUGUST 1st, 1931

THE EASTBOURNE MEETING

One more Annual Meeting of the British Medical Association has come and gone, and the members who attended it have nothing but happy memories of their week of work and play in the tonic sea-coast air of Sussex. As there is thought to be some peculiar diagnostic significance in the number "99" we have put the ninety-ninth meeting to the test of auscultation, and are able to report that the voice of the medical visitors to Eastbourne was clear and resonant and unanimous in praise of all the arrangements; and we may add that no other method of examination could detect a trace of dullness anywhere among the social proceedings. If the amount of sunshine earlier in the week fell short of Eastbourne's proverbial record, this was more than made up for by the warmth of the welcome which the local profession and the municipality offered to their guests. Not the least agreeable feature of an enjoyable meeting was the obvious pride and pleasure felt by his colleagues and fellow townspeople in the circumstance that their honoured friend and leader Dr. W. G. Willoughby should be the first full-time medical officer of health to hold office as President of the British Medical Association.

The attractions of Eastbourne as a well-ordered health resort, and the fact that many members had been unable to travel to Winnipeg last year, assured a good and very appreciative attendance, including delegates from Branches and Divisions in distant parts of the Empire. It was a matter for real regret by everyone that Professor Harvey Smith could not undertake the long journey from Canada and install his successor in the presidential chair. We have already begun publication of detailed reports of the medico-political and other professional work of the Annual Meeting; here it will suffice to say that many valuable communications were made, and that, through the accounts printed widely in the newspapers, much public attention was focused on the debates in the Representative Body and afterwards on the less technical papers discussed in the fourteen Sections. Taken as a whole, the clinical and scientific topics chosen for discussion this year were of more than usual interest from the point of view of general therapy and diagnosis. Several of the introductory papers are published in full to-day in our opening pages; the others will follow week by week until the end of the year. It was a great convenience to those wishing to make the best use of their time that all but a few of the largest Sections held their meetings under one roof in the class-rooms of Eastbourne College, near the reception room and the exhibition of drugs and appliances at Devonshire Park; and that the Pathological Museum, with its instructive collection of specimens bearing on the work of the Sections, was housed little more than a quarter of a mile away at the Technical Institute.

No previous Annual Meeting has been better served in the matter of street signs and other aids to locomotion, and for its effective help in this and other ways a word of thanks is due to the Automobile Association. But the organization throughout was admirable. All contingencies had been foreseen and provided for by the local Executive; the quiet, unhurried efficiency of the staff work must have been plain to everyone except perhaps to the sort of person (rare, we hope, among doctors and their families) who takes such things for granted. Where, as at Eastbourne, a considerable number of men and women worked together as a team, it seems invidious to pick out two or three for mention, but the Honorary Local General Secretary, Dr. P. W. Mathew, bore so large a part of the burden before and during the event that his name must be printed here in grateful recognition, and with it that of his deputy, Dr. H. G. Estcourt. Special acknowledgement should be made also to the Mayor, Lieut.-Colonel R. V. Gwynne, both for what he did in his official capacity on many occasions, and for his personal share in entertaining visitors. The Annual Meeting of 1931 will long be remembered for its entertainments (in particular for the delightful functions at Devonshire Park and at Folkington Manor, where the Mayor and Corporation acted as hosts), and for the number and variety of well-planned excursions to places of interest in the county of Sussex. It is right that this side of the proceedings should be brought out in a brief general review, because while the political and scientific business is fully reported, the social activities, which mean so much to the success of a large conference of this nature, cannot claim record in the same detail.

It was evident to all who took part in the Annual Meeting of 1931 that Eastbourne welcomed with both hands the opportunity to act as host to the British Medical Association. The Association had never met there before, and in the nature of things it must be many years before it pays a second visit. The guests of Eastbourne are grateful for the material good things offered them in abundance last week by Dr. Willoughby and his colleagues, and they appreciate even more that intangible grace which is the soul of true hospitality.

THE OUTLOOK OF INDUSTRIAL MEDICINE

The thoughtful and suggestive paper with which Dr. L. P. Lockhart opened the discussion in the Section of Public Health at Eastbourne, and which we print this week, cannot fail to have impressed all who heard it, and is so important that the attention of our readers may well be specially directed to it. The title, "Industrial problems from the standpoint of general practice," scarcely does justice to the fullness of its content, the freshness of its outlook, and the far-reaching effects of its conclusions. It should be of special interest to general practitioners. In his Presidential address to the Association Dr. Willoughby

pointed out that the very office of public health medical officer was one of the developments rendered possible only by the general advance in the science and art of medicine, and that the work of the general practitioner in the sphere of preventive medicine was ever becoming more important and extensive. So Dr. Lockhart, regarding industrial medicine as something much wider than the mere problem of occupational disease, declares that " the day of the general practitioner is not waning but only dawning. In his hands lies the ultimate responsibility for co-operating with the public health services in extending the boundaries of their mutual spheres in order to produce the harmonious integration of those mental, physical, and spiritual factors whose combination forms the only possible basis for intellectual growth and adaptive development. This constitutes a field of study of supreme importance to the general practitioner."

Dr. Lockhart's main thesis, cursorily summarized, is that the industrialization of Western civilization is so recent and has been so rapid that man is very imperfectly adjusted to his new environment, that " racial memory dies hard, and in our modern world there are countless relics of primitive magic—charms and taboos—which have no claim in reason, but which exert their influence through the operation of inherited feeling states. The fear of Nature as an instrument of divine wrath has been replaced by a new fear—that of the complex mechanism of modern life which crushes remorselessly those who fail to pay it homage." This leads to " neurosis, warped judgement, loss of individuality, and to a tendency to clutch fearfully at the *status quo* as it slips inevitably from our grasp." We have survived the first effects of industrialism on the physical environment—congestion, slums, and all that follows in their train—and the explanation of the present unsatisfactory state of the public health and of the increased sickness of recent years is largely psychogenic, revealing a state of mind which is widespread and productive of a great amount of incapacity. " The vast machine of modern life is at times a terrifying thing. In the face of such forces as unemployment, mechanical displacement of labour, the competition of girls with men and their success in handling machines and executing small repetitive processes at lower cost, the economic difficulties of the home and resulting problems of sexual adjustment, there is a tendency for many to develop a feeling of inadequacy to life which is liable to be rationalized in consciousness as illness rather than to be acknowledged frankly for what it is—namely, a fear of the unknown and the intangible. . . . In industry compensation for accident and disease is being sought as an end in itself rather than as a means towards restored function." Seen thus against the background of modern industrial civilization, with the vast uncertainties and seemingly inexorable power of its daily movements, there seem to be two outstanding reactions of the mind—fear, and a sense of inferiority. With the appearance of a wholly novel set of anxiety problems, certain props have been removed. Ignorance has been exposed and theological dogma is collapsing. The education of the young is as yet often misdirected, and " that natural intimate and personal religious experience which is a supreme and vital human necessity " is in large numbers of men and women not realized or developed.

Few will dissent from Dr. Lockhart's conclusion that at least a prima facie case has been made out for reviewing the whole situation afresh from a psychological standpoint, and that " if we wish to hold our own in the modern industrial world we must do something about it, not only effectively, but at once." It cannot be denied that full health is at least as much a mental as a physical matter, and that incapacity or otherwise may depend very largely upon the spiritual outlook. It has been emphasized in our columns that health and education are but different aspects of one subject, and that medical practice is not a thing by itself, apart, but may be regarded as one social service among many others with which it is increasingly bound up. Dr. Lockhart reinforces this point. Believing that " the burden of sickness, which is not only causing vast loss of time and money by actual absence, but which is sapping the general vitality of a far greater number than those who actually go sick, is in the main a psychological problem," he maintains that " it is necessary for us all, whether we consciously practise psychotherapy or not, to grasp the essential workings of the mind which modern research has unfolded." He points out how much can be done by a progressive Church and an enlightened scheme of education, and presses for the co-operation of the general practitioner. The industrial clinic, he says, either in a large factory or in a group of smaller ones, can be a very important link in the chain of public health work, but it can only serve its true purpose by collaboration with general practitioners and educationists. He believes that the future of public health lies as much in the hands of general practitioners as in those of medical officers. " For this purpose both must study industrialism and human psychology—not so much to practise psychotherapy, but to understand why men act and react as they do." It is probable that in ordinary medical practice, perhaps especially in hospital practice, too little regard is paid to the psychological aspect of illness. This aspect may explain much that seems mysterious in the recent increase in sickness claims, and it is well that Dr. Lockhart should so emphatically have insisted on its importance.

CANCER DIAGNOSIS BY SPECTRO-PHOTOMETRY

Dr. S. G. T. Bendien of Zeist, Holland, claims to have elaborated a laboratory method for the diagnosis of carcinoma, and a representative of the British Empire Cancer Campaign (Dr. Alfred Piney, secretary of its Investigation Committee) has personally begun an investigation of this matter. Dr. Piney travelled to Holland with thirty-eight tubes of blood serum which had been collected by an independent physician from patients suffering from certain diseases such as cancer, diabetes, and rheumatism ; with them were some specimens of serum from normal persons to serve as controls.

This physician had prepared a list of the diagnoses, which was placed in a sealed envelope Dr Bendien was able to examine only twenty-one of the specimens, five of which he diagnosed as being the serums of patients suffering from carcinoma When his diagnoses were compared with those in the sealed envelope they were found to correspond In one instance he made a tentative diagnosis of carcinoma , this patient was a man on whom prostatectomy had been performed, but unfortunately no histological report was available It appears that Bendien's technique consists of two parts The first is a flocculation method in which the serum is precipitated with various mixtures of acetic acid and sodium vanadate , the precipitate is dissolved in 2 per cent sodium bicarbonate solution, which is submitted to spectro photometric examination From a series of spectrograms the extinction coefficients are obtained, and it is on the basis of the curve so plotted that the diagnosis is made [1] Dr Bendien's view is that cancer is a local disease which can develop only if a specific abnormality of the serum is present He has expressed the hope that it may be possible to elaborate a therapeutic method capable of causing such abnormal serums to become normal, and thus unsuitable for the growth of carcinoma He is not satisfied yet that he can obtain an accurate diagnosis in every case of carcinoma, but he claims that a positive reaction is never seen in cases of any other disease A matter of very considerable interest is the fact that Dr Bendien has been unable to discover any specific characters in the serum of cases of sarcoma The British Empire Cancer Campaign, while agreeing that a definite advance in the diagnosis of cancer appears to have been made, issues the very necessary warning that some time must elapse before the full value of the method can be ascertained A careful investigation is being started immediately at the Cancer Hospital, London

JUVENILE CRIME

The Home Office Report on criminal statistics for England and Wales in 1929[2] embodies an interesting introduction in which, among other things, an attempt has been made to determine the factors underlying the increase in certain crimes In 1929 the number of indictable offences known to the police was 134,581 or 4 112 more than in 1928, the incidence per million population having risen from 3,305 to 3,398 This rise is continuous with similar rises that have occurred since the war There was a marked decrease in the number of persons over 16 charged with indictable offences during the years 1914–18 , after the armistice the figures went up again, but have now fallen to the pre war level The number of juveniles charged, however, was doubled during the war, fell directly after its close, and has recently tended to rise The introduction of the Probation of Offenders Act has swelled the numbers of those juveniles, dealt with in the juvenile courts whom magistrates in 1907 were reluctant to convict But even allowing for this, the figures are startling In 1907 the number of boys under 16 convicted was 6 956 , in 1929, with a male population in this age group 12 per cent less, the number was 10,382—an increase of 49 per cent A comparison of other age groups with the above is interesting In 1907, for example, 7,728 males between the ages of 16 and 21 were convicted, and in 1929 the number was 9,209 The total and relative numbers for the age groups 30–40, 40–50, and over 60 were actually smaller in 1929 than in 1907 In the juvenile class the crime which attracted most offenders was shop-breaking, and in the same class of boys under 16 there were two and a half times as many sexual offences in 1929 as in 1907 What has been the cause of this increase in juvenile crime? According to the statistics, which show an exemplary decrease in crime in men over the age of 30, it would not appear to be due to boys imitating their fathers, or, for that matter, their mothers, as there has been an unequivocal decrease in crime among mature adult women in the twenty-two years from 1907 to 1929 "This fall," the present report states, " confirms the view that in spite of woman's increased activities the total volume of crime among women has not increased " Would not the substitution of *because* for *in spite of* represent the true state of affairs? The great rise in the number of juvenile offenders during the years 1914–18 is reasonably attributed to the intermittence of parental control under war conditions " It does, however, appear," the report continues, " that during the last few years there has been an increase in juvenile crime, and it remains to see whether some factor, operating decisively since the war, has gone to increase the juvenile crime rate " This factor Mr Arthur Locke, who prepared the introduction to the report, considers to be industrial depression There are a few points, however, which appear to us to indicate that this is by no means the whole truth During the general strike in 1926, for example, the greatest rise in the crime rate was in persons over the age of 16 Of these, the greatest percentage rise (75 per cent) was in the age group 16–21, a group which, as the report points out, constituted the juvenile group of the war years So that during one of the greatest industrial crises of the post-war period the main increase in crime was in the age groups over 16 The children aged 15 in 1929, the year under consideration, were born in 1913–14, and so passed the most impressionable years of their lives during the war In the early part of 1918 the first epidemic of encephalitis lethargica made its appearance in Great Britain, and between 1919 and 1925 there were 12,054 notifications of this disease Cases wrongly diagnosed as influenza, etc , especially at the beginning, constitute an undetermined number It is well known to what extent behaviour disorders occur in children as a sequel of encephalitis lethargica and this is now recognized by magistrates , but how many juvenile criminals are examined by doctors specially qualified in neurology or psychology or in both? We suggest, then, that the inclusion of the four war years in those first most impressionable seven years of childhood, and the after effects of encephalitis lethargica, are two factors which must be taken into consideration in any study of juvenile criminality An interesting comparison between the crime incidence in the North and South of England shows a definite increase in the North where the industrial depression is most severe. On the other hand, in the South there has been a

[1] Bendien S G T *Specifische Veränderungen des Blutserums Carcinom Fischer* 1931
[2] Criminal Statistics England and Wales 1929 London H M Stationery Office 1931 (3s 6d net)

growing tendency among men of the age group 21–30 "to commit crimes of adventurous lawlessness and violence." More people attempt to commit suicide. In 1921 the number was 1,380; in 1929 it had risen to 3,094. Taking all things into consideration Mr. Locke concludes that "the general outlook appears to be not unfavourable."

INTERNATIONAL UNION AGAINST TUBERCULOSIS

The annual meeting of the council of the International Union against Tuberculosis, whose chairman is Professor Frölich (Norway), was held in Paris on July 9th, when delegates from seventeen countries attended. It was decided that the next conference of the Union would be held at The Hague from September 6th to 9th, 1932, and that the three following subjects, selected from a list of questions submitted by the various countries belonging to the Union, would be inscribed on the agenda. Biological subject: "The relationship between allergy and immunity"; the opening report will be read by a person to be designated later. Clinical subject: "Gold therapy," opening report by Professor Sayé (Barcelona). Social subject: "After-care schemes for the tuberculous," opening report by Dr. B. H. Vos (Hellendoorn). According to the method adopted at the Oslo conference, ten speakers, chosen from different countries, will be designated to open the discussion on each of the three main subjects. The scientific session was held at the Pasteur Institute, in the new tuberculosis laboratories, which the members of the council visited under the guidance of Professor Calmette. The meeting was devoted to the report of Dr. Soper (United States) on "A standard anti-tuberculosis plan," read in his absence by Professor Opie. Professor Valtis (Greece) then explained the steps taken in regard to the anti-tuberculosis campaign in his country. These reports were followed by a discussion in which Professor Léon Bernard, secretary general of the Union, Professor Knud Faber (Denmark), Colonel Rudzki (Poland), and others took part. On the same evening the members of the council dined at the Indo-Chinese pavilion in the Colonial Exhibition, where they were the guests of the French National Committee for the Campaign against Tuberculosis. M. Blaisot, Minister of Public Health, attended, and in the name of the French Government gave an address of welcome to the members of the council.

EDWARD JENNER AND OTHER NATURALIST-PHYSICIANS

At the Cambridge meeting of the British Medical Association in 1880 Sir Michael Foster, in his address on physiology, showed that all distinctions between it and pathology were fictitious, and illustrated this thesis by inquiring what would be said of the kindred science of meteorology if it were divided into separate sciences of fine and foul weather! Sir William Gairdner took "The physician as naturalist" as the title for his introductory address to the medical students of Glasgow in 1882, and quite recently Dr. J. A. Ryle spoke to the Cambridge University Medical Society on the same attractive subject. Of the broad-minded attitude which regards medicine as human biology and encourages medical men to be students of nature there have been many exponents in the past, and of these Edward Jenner, whose *Note-Book*,[1] now in the possession of the Royal College of Physicians of London, and published with an introduction by Dr. F. Dawtrey Drewitt, is an outstanding example. It is doubtful if Jenner could have a more sympathetic and suitable interpreter than the author of the charmingly written *Romance of the Apothecaries Garden in Chelsea*, now deservedly in a third edition, who has undertaken this labour of love at the request of Sir John Rose Bradford when President of the Royal College of Physicians of London. As an ornithologist-physician Dr. Dawtrey Drewitt has given an account, at once authoritative and intriguing, of the immoral habits of the mother cuckoo and her offspring, and it does not demand much stretch of imagination to recognize the personal touch in the following paragraph:

> "Very many years ago—probably it is so now—if a boy at Winchester, during the months of May and June, put on his football dress, and waded up to his waist among the reed-beds in the River Itchen, he could always find reed-warblers' nests suspended in the reeds, and containing cuckoo's eggs. In colour and markings their resemblance to the other eggs in the nest was striking."

In the reference to Jenner's observations on the order in which birds begin their morning songs the commentator cheers the reader by the kindly message that "the early-morning-wakefulness of advanced age does not trouble the old naturalist." Jenner's *Note-Book* from 1787 to 1806 records a number of experiments on exchanging eggs in the nests of different birds, describes necropsies on birds, including the cuckoo, and observations on the incidence of hydatids. The history and description of this manuscript note-book, now printed for the first time, are provided by A. C., initials which happen to be the same as those of the Harveian Librarian of the Royal College of Physicians of London.

THE PROPHYLAXIS OF LEPROSY

In the first general report of the Leprosy Commission of the League of Nations Health Organization Dr. Burnet, the secretary, summarizes the conclusions reached after several years' investigation of this problem in both the Eastern and Western Hemispheres. In the light of recent advances made as the result of the improved treatment of leprosy, it is now possible to lay down general lines of prophylaxis, subject to modifications according to local conditions in different countries. The new outlook on this ancient problem is emphasized by the subject of "treatment" being first dealt with as "the most important line of attack, in addition to that by isolation," which was for many centuries the only prophylactic measure, but one which may now be gradually made less rigorous. The removal of debilitating diseases, a diet rich in vitamins, and exercise, are also necessary. The use of ethyl esters and soaps of chaulmoogra oils is declared to be the chief method of special treatment, although further technical studies in this matter are required. The serious drawback of isolation is that it promotes con-

[1] *The Note-Book of Edward Jenner*, in the Possession of the Royal College of Physicians of London. With an introduction on Jenner's Work as a Naturalist by F. Dawtrey Drewitt, M.D., F.R.C.P. London: Milford, Oxford University Press. 1931. (3s. 6d. net.)

[2] League of Nations Health Organization. The Principles of the Prophylaxis of Leprosy. First General Report of the Leprosy Commission. Geneva, April, 1931. London: G. Allen and Unwin. 6d.

cealment of cases, with delay in the all important early treatment, this should be overcome by applying it only to those which are infectious, and by permitting early uninfective cases to be treated as out patients at dermatological clinics when numbers are small, or, when great, at special leprosy clinics To ensure this, all medical students, medical practitioners, and health officers in leprous countries should have special courses of instruction in the modern treatment of leprosy, and every such country should have at least one centre for the clinical and scientific study and teaching of leprosy, and for the organization of propaganda to combat "indifference" to the disease on the one hand, and "blind panic" on the other, and "to bring home to the people that leprosy, though contagious, is a remediable disease, resembling tuberculosis in this respect" Uninfective patients may require to be provided for in special colonies, and all discharged and apparently recovered patients should be kept under surveillance and periodically re examined The children of lepers should be removed from their parents as soon as possible after birth, especially when born in leper institutions, where marriages and the propagation of children should be discouraged in every way possible School children in leprous countries should be examined for symptoms and removed for treatment in the earliest stage of the disease These propositions will receive general endorsement by modern leprologists, as will the conclusion that "there is no reliable system of prophylaxis without treatment, and it is generally accepted that the earlier the treatment is instituted the better will be the results"

MEDICAL RESEARCH COUNCIL

By an Order of the Committee of Privy Council, made after consultation with the Medical Research Council and with the President of the Royal Society, the Right Hon Lord Dawson of Penn, G C V O, President of the Royal College of Physicians, and Extra-Physician to the London Hospital, and Dr Edward Mellanby, F R S, Professor of Pharmacology in the University of Sheffield, are appointed members of the Medical Research Council in succession to Professor T R Elliott, F R S, and Professor J B Leathes, F R S, who retire in rotation on September 30th

DEATH OF LORD KNUTSFORD

We have to announce with deep regret that Viscount Knutsford, chairman of the London Hospital and of the Research Defence Society, died suddenly on the evening of Monday, July 27th, within the walls of the great hospital which he served for many years with such conspicuous ability and devotion He had been ill for several weeks, and lately underwent a severe operation We hope to publish a memoir next week.

ANNUAL MEETING NOTES

RECOGNITION OF DR. COX'S SERVICES

The first meeting of the general committee, called together on the initiative of Dr E R Fothergill of Hove to conduct the project for recognition of the services of the retiring Medical Secretary (Dr Alfred Cox), was held at Eastbourne after the close of the session of the Annual Representative Meeting on Saturday, July 18th The members of the general committee already number over 140, and the oversea members' list is incomplete There was a very large attendance at the meeting Dr H G Dain (Birmingham) was elected temporary chairman

Dr Fothergill said that he had received a large number of letters, all of them approving the proposal, and some containing practical suggestions Discussion first took place on the election of chairman of the general committee The first name proposed was Sir Robert Bolam, who said however, that while nothing would give him greater pleasure than to support the movement in every way possible, he felt there was a distinct advantage in appointing as chairman someone outside the official circle of the Association, and who could be said to represent the profession at large Dr Brackenbury and Dr Hawthorne spoke to the same effect Eventually it was proposed and unanimously agreed to that Sir Humphry Rolleston be approached with a view to taking the position of chairman of the general committee, which would carry with it membership *ex officio* of the executive presently to be appointed Certain proposals as to the form of recognition were then brought forward by Dr Fothergill on the basis of opinions which he had collected in correspondence

It was agreed after a brief discussion, that a fund be formed to provide the British Medical Association with a painting in oils of Dr Alfred Cox to provide Dr Cox himself with a cheque, and, if he desired it, with a copy of the painting, that steps be taken to engage an artist of the first rank, and that arrangements be made whereby medical bodies and members of the medical profession would be enabled to purchase, if so desired, an engraved copy or photogravure of the painting, which should be autographed by the sitter The amount of the subscriptions to be expected from each member was then discussed After Dr Brackenbury and others had stated that the recipient would almost certainly appreciate a large number of small personal subscriptions, rather than large amounts of a less personal character, it was agreed that directly and through the medical press an appeal should be made to members of the British Medical Association for subscriptions not exceeding ten shillings per member, and that while accepting subscriptions from medical societies, local medical and panel committees, and non members of the Association, no direct appeal be made to such It was also agreed that the names and addresses of subscribers to the fund should be entered in a book for presentation to Dr Cox The meeting then proceeded to the appointment of the nucleus of an executive committee, and the following names were agreed to

Chairman Sir Ewen Maclean
Treasurer, Mr Bishop Harman
Honorary Secretary, Dr E R Fothergill
Members Dr Brackenbury Dr Dain Dr C O Hawthorne, Dr Arnold Lyndon Dr Christine Murrell Sir StClair Thomson and Dr W G Willoughby

It was agreed that these should have power to co opt others, and it was announced that the first meeting of the executive would be held the following evening to begin to take steps to carry into effect the above recommendations, and to take such action as might be necessary to complete the proposal at the time of the Centenary Meeting The meeting accorded a hearty vote of thanks to Dr Fothergill for his action in the matter For Sir Ewen Maclean's statement on this subject at the close of the Annual Representative Meeting, and the discussion thereon, see the *Supplement* this week (p 116).

POPULAR LECTURE: DISEASES OF ANIMALS TRANSMISSIBLE TO MAN

The final event of the Annual Meeting week was the Popular Lecture, which was delivered in the Town Hall, Eastbourne, on the evening of July 24th, by Professor F. T. G. Hobday, Principal and Dean of the Royal Veterinary College. The chair was taken by Dr. W. G. Willoughby, President of the Association, and there was a large audience, which almost filled the assembly room.

Professor Hobday said that there were at least two very obvious reasons why those who owned, or associated with, animals should keep them as far as possible in good health. The first was for the sake of the animal itself, on both sentimental and economic grounds, and the second was on the ground of public health, in view of the transmissibility of certain animal diseases to man. Prevention was always better than cure, and as many of these diseases could be prevented, to be forewarned was to be forearmed. This subject was of importance not only to the agriculturist who dealt in live-stock, but also to the townsman who kept domestic animals as pets. One recent illustration was afforded by the outbreak of psittacosis, a disease derived from parrots, from which a number of human beings had died, with the result that not only had a large number of parrots in England been destroyed, but cargoes of the birds from South America were still forbidden to enter the country. That was only one example of the necessity for interchange of experience between practitioners of human and veterinary medicine. It often happened that the veterinary practitioner was asked to state the extent of the risk run by children when the domestic dog or cat became ill, or when there was some contagion which made it advisable to isolate the animal.

The lecturer, whose remarks were illustrated by lantern slides and by a cinematograph film, put aside the large field concerned with tropical disease, and concentrated on diseases of the horse, cow, dog, and cat. From the horse, he said, sundry diseases might be contracted, the chief of which were glanders, mange, and ringworm. Glanders had now disappeared from Great Britain, having been stamped out entirely by the measures taken under the Contagious Diseases of Animals Act, administered by the Veterinary Department of the Ministry of Agriculture. Only twenty years ago some 1,800 horses in London alone were slaughtered on account of this disease, and eight or nine persons died annually from glanders contracted from the animal. In the South African war many thousands of animals had to be destroyed on account of glanders, but in the European war, notwithstanding the great numbers of horses employed, glanders was completely eradicated. This was due to the rigorous application of what was known as the mallein test for glandered horses, whereby it was possible to tell whether a horse had even a single nodule of the size of a pin-point. So effective was this test that when the war was over more than 70,000 Army horses were sold to the British public, and yet no case of glanders was reported. Glanders, when it reached the human subject, was one of the most fatal of illnesses. Formerly it was specially dreaded in cab and omnibus stables, but now, owing to the effective supervision, it had disappeared from horses, and consequently from human beings also. Mange and ringworm in horses were also transmissible to man, and other animals which could pass ringworm on to the human subject were the cat, the rabbit, and the hedgehog.

The next great problem of veterinary science was the presence of tuberculosis in the cow. That cattle suffered from tuberculosis was well known to all who had to do with animals on a farm. At the present moment there were about one million tuberculous cattle in England; it must not be taken, of course, that these were all dairy cows, with regard to which supervision was very strict. New regulations compelled the owner of a dairy cow having anything wrong with the udder to call in a veterinary surgeon. Here, again, in bovine tuberculosis, a most insidious condition, the necessity was illustrated for close co-operation between human and veterinary medicine. America was far ahead of us in measures for dealing with bovine tuberculosis, and in very many districts of the United States there were herds guaranteed free from the condition. It might be asked why tuberculosis was not eradicated here by destroying all cattle suffering from the disease, but to destroy a million tuberculous beasts would mean an immediate shortage of beef and milk, and the problem was not quite as simple as it might at first appear. There were, however, numerous herds in this country which were free from the disease. If hospitals, general practitioners, and housewives would unite in demanding that milk must be guaranteed tubercle-free, it would greatly accelerate matters. The milk supplied to households should be of Grade A (T.-T.) quality —that is to say, free from tuberculosis. The mere fact that it was Grade A was not a sufficient guarantee. In other countries, notably Germany and Russia, all meat went to the public abattoirs, but in England there remained a certain number of private slaughterhouses, and some of these were not as strictly supervised as they ought to be. If we were not a people who cooked our meat to the extent we did, tuberculosis would be much more widely contracted from eating tuberculous meat.

Anthrax, foot-and-mouth disease, and cow-pox also could be transmitted from cattle to man. Anthrax was a very serious condition. In Bradford and other centres where wool from other countries was handled, disinfection was insisted upon. If once anthrax were eradicated from the animal, its eradication from man would follow, for it always originated from an animal or an animal product. The prevalence of foot-and-mouth disease had led to a good deal of misleading and unjust criticism in the public press of the veterinary advisers to the Ministry. Although the cost of dealing with outbreaks of foot-and-mouth disease amounted to a very considerable sum, it was a mere flea-bite compared with what might have been, and with what in fact was, the cost in other countries, notably Holland, Germany, Belgium, and Denmark. There not only was the cost very much greater than here, but they never seemed to get any nearer to exemption. Professor Hobday produced a table showing that in England last year there were only eight outbreaks of foot-and-mouth disease (seven in September and one in November), whereas in Germany and Holland as many as 5,000 outbreaks were recorded in a single month.

Turning to the dog and cat, he said that rabies was by far the most dreaded of all the diseases to which the dog was subject, and both the medical profession and the general public had reason to be grateful to the veterinary surgeon because this disease had been eradicated and prevented from readmission into this country. The measures taken involved some days in quarantine for the animal, but that was surely better than to allow the possibility of the importation of animals which would spread the disease. Like glanders in the horse and rinderpest in cattle, which formerly cost this country great sums, rabies in the dog and cat had disappeared, and as long as the veterinary experts of the Ministry were allowed to carry out their duty in this regard, so long would the practitioner be able to tell a patient who had been bitten by a dog or cat that he need have no fear of this terrible consequence. A disease which was transmissible from the dog or cat to man was follicular mange. If one fondled a dog or cat suffering from this "itchy" condition, the parasite of mange might transfer itself, and although something prevented it from breeding in the human host, it would live out its life-cycle under the skin, perhaps for

about forty days, so that discomfort would persist for that time, apart from the possibility of fresh infection from the same source In Egypt mange was frequently caught by attendants on camels He mentioned one case in which the attendants, the night being cold, covered themselves with the camel cloths, and suffered a severe infection with follicular mange In conclusion, the lecturer said that there were a number of other diseases in animals which, although not recognized as definitely contagious, had their interest from the point of view of the public health service Cancer, for example, was recognizable in horses, dogs, cats, birds, and even in fish, and it had often happened that theories on which research workers had proceeded on the basis of observation upon human beings alone had been proved to be erroneous when comparative medicine was studied

THE OFFICIAL RELIGIOUS SERVICE

The religious service at St Saviour's Church, Eastbourne on the afternoon of Tuesday, July 21st, was preceded by a brief ceremony at the war memorial, whither the members went in procession, wearing their academic gowns, and preceded by the symbolic staff The Mayor and Town Council headed the procession, which included also the Bishop of Chichester and clergy A wreath was deposited at the foot of the memorial by Dr Willoughby, the President, and after prayer the "Last Post" and "Reveille" were sounded, and the procession returned to the church, where a brief but impressive service was held The Lesson, from the Wisdom of Solomon, was read by the President, Dr Willoughby It was followed by Charles Kingsley's hymn, "From Thee all skill and science flow," after which the sermon was preached by the Bishop of Chichester Dr Bell based his sermon on a passage taken from the Lesson "All things that are either secret or manifest I learned, for she (Wisdom) that is the artificer of all things taught me" Wisdom, he said, was, to begin with, learning, for it could hardly be said to exist without a knowledge of the facts The knowledge of the physician was certainly intended in the catalogue of that which the wise man knows, for the wise man, in this old Wisdom of Solomon, had "an unerring knowledge of the things that are the natures of living creatures and the ragings of wild beasts the violences of winds and the thoughts of men, the diversities of plants and the virtues of roots But wisdom for the physician, the Bishop continued, was not only the learning of facts, which might by themselves be of little use, wisdom was the possession of the principles behind the facts and governing the facts, and an insight into the constitution of man's body The good physician in all his work was governed by law He proceeded according to the laws of science—and wisdom was science "Physicians are like kings, said Duke Ferdinand in Webster's play, "they brook no contradiction" Those of them who were patients appreciated the truth of that remark, but the patient assented to the doctor's direction because he knew that the doctor himself was under authority—the authority of the laws of science and the laws of nature which, like kings, brooked no contradiction To obey these laws, whether in general practice, in the consulting room, in the hospital as medical officer of health, or as a research worker, was to be the servant of wisdom, to disobey them, or to forget their application to a particular condition, was not only to do injury to the patient's life, but to sin against wisdom There was, however, a further aspect of this service of wisdom which the ancient writer held to be the deepest of all Wisdom, he said, was 'the breath of the power of God, the unspotted mirror of the work of God, and the image of His goodness" To be a servant of wisdom, therefore, from this deepest point of view, was to be a worshipper of God, even as it were a living being through which the breath of the power of God was breathed Wisdom was thus to be linked up with the source of life itself It was dangerous for a layman, continued the Bishop, to attempt even a humble excursion into scientific fields, but he hoped that without undue rashness he might suggest that some little light was thrown on what he was trying to set forth by the words of William Harvey, in his treatise on the motion of the heart, in which he compared the heart to the sun, which might be designated the heart of the world, "the household divinity which discharges its functions, nourishes, cherishes, quickens the whole body, and is indeed the foundation of life, the source of all action" Substitute 'wisdom" for 'the heart,' and apply it to the whole scheme of things, and his congregation would see the situation which he was trying to reveal Men of science like those he was addressing, just because of their acquaintance with the facts and their knowledge of the laws which governed the natural world, should find it far less difficult than ordinary folk to perceive wisdom to be the 'household divinity' in the constitution of the universe, discharging those functions of which Harvey spoke "I am moved to offer these reflections, concluded the preacher, "because it is surely well, in the midst of the Annual Meeting, necessarily taken up with questions of business and administration, including issues of a more controversial character, to let the mind rest for an hour on those deep truths on which all faithful practice is founded You hold this service year by year, wherever you assemble, as an acknowledgement that in following your vocation you are servants and worshippers of the Almighty" The service concluded with a collection taken for Association charities

THE LAPARO-TRACHELOTOMY FILM

On the afternoon of Wednesday, July 22nd a large gathering assembled at the Town Hall Eastbourne to witness a "sound film illustrating the technique of the lower uterine segment Caesarean section The operation was performed and the explanatory talk in connexion with it was given by Dr Joseph B De Lee of the Chicago Lying in Hospital The film began with a description by Dr De Lee of the indications for the operation, and the surgical anatomy of the parts involved He strongly recommended the employment of local infiltration anaesthesia, adding that he never used any other himself the sites for injecting and the method of making the injections were very clearly shown A close up view of the procedure in all its stages followed films of operations on several different patients demonstrated particular forms of difficulty—for example, the technique required when the vertex or breech presented or the presenting part had sunk well down into the pelvis The film provided a remarkably vivid illustration of the various stages of the operation, its exhibition was due to the courtesy and enterprise of the Western Electric Company After it had been shown there was an informal discussion, during which it was mentioned that there was in Chicago, in course of erection, a medical institute in which all the operating theatres and clinics would be equipped for the preparation of sound films with the special purpose of aiding post graduate instruction It was generally agreed that this kind of film offered extraordinary facilities for supplying to medical practitioners widespread instruction in medicine and surgery even if they could not spare time to attend regular post graduate courses at recognized training centres

The number of members who registered their attendance at the Annual Meeting this year was 1,163 This total does not include ladies accompanying members

NINETY-NINTH ANNUAL MEETING

OF THE

British Medical Association

Held at Eastbourne, July, 1931

THE SECTIONS

SUMMARY OF PROCEEDINGS

During the next few months there will be published in the *British Medical Journal* the opening papers communicated to the Scientific Sections of the Annual Meeting at Eastbourne. The summaries of discussions in this and successive issues are intended to give members who were not present a general idea of the proceedings.

SECTIONS OF MEDICINE AND SURGERY

Wednesday, July 22nd

TREATMENT OF SEPTICAEMIA

A joint discussion on the treatment of septicaemia was held by the Sections of Medicine and Surgery, with Dr. R. A. YOUNG, President of the Section of Medicine, in the chair.

Sir THOMAS HORDER, in opening the discussion, dealt first with the difficulties in defining septicaemia; he excluded those cases where the bacteriaemia was merely a temporary and not a fundamental factor, but pointed out that even in septicaemia the bacteria might leave the circulation or be undemonstrable by ordinary methods. The great problem of septicaemia centred about the general infection of the body by the *Streptococcus* and *Staphylococcus aureus*. Reviewing the treatment of septicaemia, he said that the earliest effort lay in the direction of expectant methods, which aimed at getting control of the disease rather than at "curing" it, and which should be exploited to the full and as early as possible. Institutional treatment was far better than home treatment; rest, fresh air, abundant water, sun, alkali and glucose to combat acidosis, haematinic drugs, nucleic acid and other leucocytic stimulants, and hydrotherapy were the chief constituents of the expectant method. Proper sleep and relief from pain must be secured. The arrival of immunology led to bacteriotherapy: first serum, then vaccines, sensitized vaccines, and immuno-transfusions. Bactericidal serums had been disappointing, but the advent of "antitoxic serum" offered hope. Antigen therapy had been more disappointing still, but sensitized vaccines, perhaps, still had their place. Immuno-transfusions, after ten years of trial, had little left to their credit. Then came a swing back of the pendulum to chemotherapy. Chlorine derivatives were at first popular, but these gave way to aniline dyes and mercury. Mercurochrome was now the most popular, but it had certain dangers—for example, a tendency to produce thrombosis and possible damage to the kidneys. Blood transfusions were useful at a later stage, but it was possible that some of the reputed benefits of this form of treatment might really be due to a form of "protein shock." Chemical shock he left to those who understood the teaching upon which it was based. With regard to surgery, he looked upon close co-operation between physician and surgeon as essential, especially in the earliest stages if the primary focus was known. In the later stages a thorough survey must be made almost daily for metastases; these were to be dealt with preferably by aspiration. In general, the individual case must be studied; expectant measures were to be mobilized at the earliest moment; and although all the therapeutic eggs must not be put in one basket, the patient must not be flogged with too many treatments.

Professor D. P. D. WILKIE (Edinburgh) divided cases of septicaemia into three groups. (1) Cases following accidental (especially punctured) wounds—here he asked for restraint in using the knife, for many lives had been lost by premature surgery. Passive venous congestion by Bier's method should be applied from the earliest moment, and anti-streptococcal serum should be given freely and early. (2) Following idiopathic infections—for example, osteomyelitis, or deep cellulitis. Here surgery might be imperative, because rigid walls prevented the deployment of natural resistant forces, and incision permitted expansion and the entry of protective elements. In general, he looked upon the administration of anti-streptococcal serum as of the first importance in raising the patient's powers of resistance. It must be given in the very earliest stages, before cellular damage had occurred, and must be given in adequate amount (60 c.cm. repeated daily). Copious quantities of fluid must be given by mouth, by rectum, or subcutaneously if necessary. With the fluid, alkalis and glucose were to be given freely. Vaccines he had found of no value, and immuno-transfusion had only been followed by any benefit when the patient was weak and anaemic. (3) Cases following operation in infected areas, especially those on the lower bowel. In these cases it was his custom to immunize by giving vaccines of *B. coli* and streptococcus before operation, and injections of nucleic acid.

Dr. R. A. O'BRIEN said that the serum of horses injected with *Streptococcus viridans* from cases of subacute endocarditis had not been effective. Reports on the use of antitoxin to *Streptococcus haemolyticus* varied from "dramatic cure" to "no effect." The observations of Okell and Parish explained this discrepancy. Toxin was lethal to rabbits, but antitoxin gave complete protection, and the rabbits survived in good health. Living cultures also killed rabbits, and antitoxin or anti-bacterial serum gave protection; but in this case the protected rabbits a fortnight later suffered from arthritis and other metastases—in other words, the antitoxin neutralized the toxic attack of the streptococcus, but not the pyogenic attack. Antitoxin should therefore be given at once in the treatment of septicaemia, and in large doses intravenously. Clinical reports on the newer staphylococcus antitoxin were as yet few, but were highly encouraging.

Sir WILLIAM WHEELER (Dublin) said that when the primary focus could be found and adequately dealt with the prognosis was good. He emphasized the danger in too early intervention, and especially in certain situations, such as carbuncles about the lip. He also warned against the danger in operating on prostate cases which had been previously treated with radiotherapy. Prophylactic measures should include the exclusion of infection by carriers. When no focus could be found and blood culture was positive he put the greatest faith in anti-streptococcal serum. He had never observed any benefit from chemotherapy, but stressed the need for quantities of fluid, with glucose and open-air treatment.

Mr. N. E. WATERFIELD related a personal experience after a punctured wound, and spoke of the relief given by incision.

Dr. R. KELSON FORD (London) pointed out that bacteriaemia might be latent and pass into septicaemia, and that this would occur when a suitable area of tissue of lowered resistance was provided—for example, tuberculosis of bone, osteomyelitis. Successful treatment of the first manifest focus did not necessarily imply cure of blood infection. With regard to prevention, he had found dietetic measures with vitamins, as suggested by Mellanby, of great advantage

Dr. SUTHERLAND gave his experience in treating a large number of institutional cases—namely, puerperal septicaemia and post-scarlatinal infection—and he strongly advocated the use of the milder salts of arsenic—for example, metarsinobilol in very small doses—given intramuscularly, so that absorption was slow. Colonel TOWNSEND (India) said that in dealing with large numbers of cases in India he had found no benefit from the use of mercurochrome or intravenous acriflavine. Dr. FLORENCE STONEY advised the use of zinc ionization or surgical diathermy, and medical diathermy to induce leucocytic activity. Mr. G. H. STEELE (Guildford) related two cases—one of staphylococcal and one of streptococcal blood infection—which had given a dramatic response to blood transfusion. Mr. V. H. HUDSON stressed the advantages of giving vitamins in the expectant treatment. He advised delay in using the knife, and related one case where the post-mortem examination suggested that the success which had sometimes attended Bier's treatment might be due to thrombosis of the vein preventing dilatation. Mr. C. A. JOLL pointed out that in certain cases of osteomyelitis amputation might save life. He preceded blood transfusion by blood-letting, when the patient's condition allowed it. Dr. R. A. YOUNG summed up the discussion, and Sir THOMAS HORDER replied.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Wednesday, July 22nd

BREECH PRESENTATION

Mr. EARDLEY HOLLAND, President of the Section, took the chair at its first meeting. The opening paper, on foetal injuries and mortality, was read by Mr. G. F. GIBBERD (London). He pointed out that the foetal mortality rate in breech labours was usually underestimated, and he thought it a pity that a classification tending to hide the dangers had been so widely adopted. In general, a breech labour in a primipara was classified as a "complicated" case; it would be better to regard a "complicated" breech as one in which some additional obstetric abnormality was present, and under the term "uncomplicated" to include primiparae and cases with extension of the arms. With this classification the gross mortality rate for uncomplicated cases was about 30 per cent. for primiparae and about 20 per cent. for multiparae, and, all things considered, the foetal death rates of 28 per cent. and 15 per cent. respectively represented the minimum estimate of the dangers of breech labour itself. Of non-fatal accidents to the foetus, injuries to the limbs occurred in about 5 per cent. of cases. Early diagnosis of the injury was all-important, since early treatment was usually rewarded by excellent recovery. The late results of non-fatal intracranial injuries were at present uncertain, and in the absence of sufficient reliable observations the formation of definite views was not justified.

The ante-natal treatment of breech presentations was discussed by Dr. GERTRUDE DEARNLEY (London). She said that, whereas breech presentations were found very frequently up to the thirty-fourth week of pregnancy, after this time they were much less frequent, as spontaneous version occurred in a large proportion of cases. The reasons for preventing breech labour as often as possible were the higher foetal mortality and the disadvantages to the mother because of the greater risks of exhaustion and of sepsis from lacerations and damage to the pelvic floor. It was not necessary to interfere until after the thirty-fourth week. The ideal time for performing external version in a primipara was about the thirty-fifth week. She had never seen any serious complications after version, though cases of fairly severe ante-partum haemorrhage under anaesthesia had been reported. Dr. Dearnley then described the method of performing external version, emphasizing the necessity of ensuring that the presenting part was pushed out of the pelvis, most failures to turn being due to neglect of this preliminary movement. Sometimes raising the foot of the bed on chairs would accomplish this; otherwise the presenting part could be pushed up per vaginam. She recommended the application of a binder after version, especially in the case of multigravidae. If version failed it was advisable to wait for a few days, when in a number of cases it would be found that spontaneous version had occurred as a result of the manipulations. After failure to do version an *x*-ray photograph was instructive in showing exactly the position of the child. If it was revealed by *x* rays that the legs were extended, but not close to the child's head, it was possible to turn the child without risk under anaesthesia, but if, in addition, there was also extension of the child's body, it was wiser not to attempt version.

Mr. ALECK W. BOURNE (London), in an exposition of the management of breech labour, first considered the particular dangers to which the child was exposed. Such a consideration would, he thought, assist to an understanding of the reasons for the rules of management. He described the difficulties due to extended legs, extended arms, and in connexion with delivery of the head. In practice, cases might be divided into three clinical types. The first was that of a multipara who had delivered herself of the legs, body, and arms, normally and easily. Here it could be assumed that the head was flexed, and the only manipulation necessary was to grasp the feet in the right hand and lift them gently and gradually up to the mother's abdomen. The second was that of a primigravida who had been slow and "difficult." Here the head might not be fully flexed, and therefore a finger should be passed up to the chin, to feel whether it was pressed well down to the sternum. If it was flexed, delivery could be accomplished by gripping the child in such a manner as to allow some harmless traction to be made—that is, by the so-called Prague manœuvre. Great care should be taken to deliver the chin and the face slowly from under the perineum, a pause being made as soon as the mouth and nose were liberated, for the sake of both the head and the perineum. The third type was that in which it could be assumed the head was extended. Here the jaw traction method should be adopted.

The PRESIDENT (Mr. Eardley Holland), thought that the two points which would specially engage speakers were, first, the mortality, and secondly, the management of these cases.

Professor F. J. BROWNE said that Miss Dearnley had admirably described the prophylaxis of these cases. He was glad that she had emphasized the importance of version in multiparae as well as in primiparae. There was a tendency for difficulties to increase after many labours. She had been singularly fortunate in performing external version. He had not been so fortunate, and no longer regarded the operation as a minor one. Premature separation of the placenta might occur; entanglement of the cord was another possible complication. Slowing of the foetal heart, possibly due to shock, nearly always happened. Face presentation occasionally complicated external version. An *x*-ray picture before carrying out version was advisable. He agreed with Mr Gibberd about the uselessness of the hot towel; on the whole he thought it was an impediment. He thought Mr Gibberd had been singularly fortunate in regard to visceral injuries. He had never brought down a foot in the manner described by Mr Bourne, as he thought that the frank breech was a better dilator of the cervix than a half-breech. The application of forceps to the after-coming head was a most useful manœuvre.

Mr. D. W. Roy quoted statistics from the General Lying-in Hospital to show a foetal mortality of 6 per cent. in primiparae. He had had three cases of ante-partum haemorrhage after version. With regard to extended legs, his practice was not to interfere. External version should be attempted in all breech cases between the thirty-fourth and thirty-seventh weeks. The real cause of death in the majority of cases was extension of the arms and, in a lesser degree, of the head. The arms should always be sought for after birth of the umbilicus.

Dr. Fairmy (Edinburgh) said that he had analysed the figures of breech cases for three consecutive years. He was appalled at the mortality in uncomplicated cases, which, in their series in multiparae, was higher than Mr. Gibberd's. Hospital statistics were hardly a reliable criterion, as the deliveries were carried out by house-surgeons who, in the first weeks of appointment, could not be regarded as competent obstetricians. He did not agree that extension of the legs was general in primiparae; his figures suggested that it occurred in about one-third of the total number of cases. He was inclined to leave frank breeches alone unless definite difficulty was anticipated. It was most important to wait, before bringing down the arms, until the axilla had appeared. The fundus should be left severely alone when the arms were being brought down. The hot towel was of no great value, though it gave a better grip of the child. He did not believe that the child could aspirate liquor amnii and be drowned.

Dr. W. H. F. Oxley pointed out that the number of successful versions was about equal to the number of cases which were delivered as breeches. Among the unturned cases the majority were probably those with extended legs. At the East End Hospital in 1930, 219 cases were turned, and 316 went into labour as breeches. In his experience extended legs was not general in primiparae. The great difficulty to contend with was extension of the limbs. Turning had not reduced the death rate; rather, it had tended to increase it. There was no evidence that the proportion of successful versions was going up. If the training schools were not successful in turning all cases, was it likely that greater success would be obtained elsewhere? He thought that attention should be directed to perfecting their methods of delivering breech cases. He had recorded 316 cases with only 4 deaths, and a further 65 cases with only 1 death. All cases were attended by a midwife, and the doctor was not called until the os was three-fifths dilated; therefore a team of three—anaesthetist, obstetrician, and midwife—was necessary. Forceps were ready boiled. The hand was then introduced, and gently insinuated past the breech; the legs were brought down outside the vulva, care being taken that the cord did not descend. The arms were almost always folded across the child's chest. They were felt for and brought down. Extension of the arms was almost always due to traction on the body. The head should be pushed through the brim by pressure by the midwife.

Mr. Stacey (Sheffield) disagreed with all previous speakers about the classification; all cases with extended limbs were, he thought, complicated cases. A good deal could be done by Potter's method of ironing out the perineum. He advocated bilateral episiotomy after the legs had been brought down. Forceps to the after-coming head was of great assistance in increasing flexion of the head. In the elderly primigravida Caesarean section should be considered, especially when the limbs were extended.

Dr. Murray put forward the view of an experienced general practitioner. He urged that having a team or sending for a consultant was not practical politics. Much of what had been advocated savoured of meddlesome midwifery. Nature should not be interfered with. What had been said might be all right if there was going to be a specialized service.

Professor Dawson (Otago) said that he had been engaged for many years in teaching abroad, in Australia and New Zealand. Errors persisted in the textbooks, and the sooner they incorporated modern teaching the better. He most emphatically disagreed that, because a woman had had no difficulty in previous pregnancies, therefore no difficulty need be anticipated in later pregnancies. He confirmed the uselessness of the hot towel; it prevented the child from breathing. It was of the greatest importance to teach the student to prepare his equipment as a routine. He thought bilateral episiotomy was a mistake, except in occasional cases.

Dr. Pollock said that he would henceforward be less eager to use a hot towel. In some cases he thought it was extremely difficult to diagnose breech presentation. Dr. Moir had seen one or two unfortunate cases of foetal death *in utero* after version had been performed under anaesthesia. Too deep and too prolonged anaesthesia was a great danger to the foetus. Forceps gave complete control over the after-coming head, for the easy extraction of which he advocated a single episiotomy.

Mr. Eardley Holland said that he had made a careful study of breech labour for a number of years. He commented on the extraordinary divergence of opinion on mortality. He had always maintained that the great difference between the hospitals and other institutions was due to the staffing of the hospitals by comparatively junior resident officers. The death of the foetus occurred at the vaginal outlet. In 75 per cent. of cases there was evidence of pressure on the head. He agreed that episiotomy was of the greatest assistance. It was almost his universal practice to do this when the buttocks were distending the perineum. He advocated delivery with the woman on her back. He totally disagreed with Mr. Bourne about bringing down the legs. Extended legs should only be brought down if they were causing a delay of from fifteen to twenty minutes. Getting down the arms was a complicated process, entailing six or seven movements. External version should be done in every case. The anaesthetic was a real danger to the baby. Mr. Gibberd, in reply, thanked Dr. Oxley in particular, and Mr. Roy also, for his figures. Dr. Dearnley thought that the cord might be wrapped round the body by spontaneous version as well as by external version. She agreed that the anaesthetic was a danger, and had rarely found one necessary. Mr. Bourne thought that obstetricians did not see a large number of normal cases. He never had an anaesthetic given in any circumstances when doing a version.

SECTION OF DISEASES OF CHILDREN

Wednesday, July 22nd

Jaundice in Childhood

With the President, Dr. H. C. Cameron, in the chair, Dr. A. C. Hampson opened the discussion on jaundice in childhood. Taking excess of bilirubin in the blood as a measure of the condition under review, he briefly summarized modern opinions on the mechanism of production of jaundice. With regard to the type of jaundice undoubtedly due to toxins, he emphasized that morbid processes were seldom due to one factor only, and besides the question of the "seed" and the "soil" there were often factors which might be called "fertilizers." It had been observed, for example, that poisons which exerted their toxic effect on the liver usually showed a maximal effect in the infant. Dealing next with jaundice of the newly born, the speaker pointed out that probably all infants at birth showed an excess of bilirubin in the blood; when obvious jaundice appeared it was usually not visible before

the second day, and the condition was likely to be more marked in premature babies. With regard to the causation of this condition, Dr. Hampson said that his own work showed there was a very high value for bilirubin in the umbilical vein at birth, and it was, in his opinion, possible that in the case of the newborn infant the jaundice was due to changes occurring during parturition. It was suggested that this was connected with a comparatively slow assumption of its new duties on the part of the liver, but further observations went to show that in many ways the jaundice of the newly born resembled haemolytic anaemia. Biochemical observations on the reaction of the plasma and the red blood cells confirmed this, and suggested that a haemolytic element in such forms of jaundice must certainly be considered. This benign form of icterus had similarities with the so-called icterus gravis neonatorum, and, in his opinion, too many lives were still being lost from this severe form of jaundice, which was open to successful treatment. Acting on the haemolytic theory for the physiological form of jaundice, and on other findings, he had had very good results in the grave forms with the injection of human serum in doses of 15 c.cm. daily for three or four days, combined with mercurial inunction. Turning next to congenital obliteration of the bile ducts, the speaker discussed the various theories about this condition, summing them up under the heads of developmental narrowing and maternal toxins. Here, also, he recommended the use of mercurial ointment. Syphilitic and toxic jaundice were briefly dismissed, and Dr. Hampson dealt then with epidemic infective or catarrhal jaundice. He stressed the fact that the real condition present was a hepatitis, which might produce a toxic cirrhosis. He spoke of the infectious nature of the disease, which had a definite incubation period, and in more serious cases he recommended intravenous glucose, together with small doses of insulin, as a good form of treatment. In conclusion, he briefly considered a number of other conditions in childhood with which jaundice is associated.

Dr. J. C. SPENCE (Newcastle), speaking of catarrhal jaundice in children, said that the modern view of this as a form of hepatitis was a useful one, and emphasized that, although the causal organism was unknown, it was certainly not the leptospira discovered in association with jaundice in the war. From the clinical aspect, he said, the epidemics of catarrhal jaundice did not differ from the jaundice of campaigns, and, like such cases, also showed the occurrence of acute or subacute necrosis of the liver, in some cases terminating fatally. This supported the view that hepatitis was the real lesion present, which received further confirmation from the fact that liver tolerance tests showed a diminished liver function, most marked in the early stages of the disease. Mentioning the importance of treating catarrhal jaundice, Dr. Spence said that the giving of easily assimilable carbohydrate was of great value. Turning next to the question of cholaemia, the speaker described the term as a bad one, but worth retaining, and then described a typical example of the condition in a young boy, where the symptoms at first strongly suggested meningitis. There was a restless state, with curious attacks of shrieking; the right plantar response was extensor. Convulsive attacks, with opisthotonos, occurred, and nervous symptoms predominated throughout, jaundice only being observed during the last twenty-four hours. He suggested that a study of cholaemia might throw some light on the obscure nervous symptoms of ordinary catarrhal jaundice. With regard to jaundice in the young baby, he emphasized that syphilis was nowadays a rare cause of jaundice; he thought that a relatively common type of case was severe jaundice in the newly born, with a large liver and spleen, where recovery was possible, but might be associated with cerebral diplegia. The various forms of jaundice he had discussed were comparatively rare.

Dr. W. W. PAYNE dealt first with the fragility of the red blood cells in jaundice and other conditions. He employed a naked-eye test, where washed red cells were placed in various concentrations of saline. The normal range showed complete haemolysis between 0.30 and 0.36 per cent. saline, with the range for a trace of haemolysis lying between 0.36 and 0.42 per cent. In jaundice and other conditions where the liver was diseased the cells showed a slight tendency to an increased resistance, and it could be taken as a rule that, unless another diagnosis could be made with certainty, any patient having an abnormally high fragility and a positive van den Bergh reaction was suffering from acholuric jaundice. The degree of fragility was not constant in this condition, and after operation for removal of the spleen in four cases, two only showed a normal fragility; it was possible that in the others an accessory spleen prevented complete return to normality. In the second part of his paper Dr. Payne dealt with liver-function tests. The value of such tests was twofold—either as tests of the function of the liver itself, in given cases of liver disease, or as tests of the function of the liver in other diseases. He gave a brief comparison of the various tests in use, and gave an account of a series of children with asthma, investigated with Dr. Bray, in which the effect of adrenaline injection on the blood sugar and the rise of the blood sugar after the giving of levulose by the mouth had been observed, with seemingly contradictory results in many instances.

Dr. H. H. CHODAK GREGORY spoke about congenital atresia of the bile ducts, bringing forward fresh evidence to support the theory of developmental anomaly. In a case under her observation which came to necropsy, the external bile ducts, though present, were flat and empty, while in the liver substance there appeared to be scarcely any peri-portal bile ducts, although bile capillaries were in full evidence and gorged with bile. In such a case it was the intermediate bile passages which had failed to develop. Discussing other theories of the origin of congenital obstruction of the bile ducts, she pointed out that, although the one which attributed the condition to maternal toxaemia offered most hope in treatment, the evidence was more in favour of a developmental error.

The PRESIDENT emphasized the value of Dr. Hampson's work in discovering the value of human serum in the treatment of the tragic cases of familial jaundice in the newly born. He referred to the similarity between the child with night terrors and the terror-stricken condition in cholaemia, and said that it was by seeing a case of the latter that he was led to try the effect of glucose in children with night terrors. He was interested in the possibility of treating congenital obliteration of the bile ducts by surgical means, but had been disappointed with what he had observed in some cases. Dr. HELEN MACKAY asked if citrated whole blood was as good as serum in the treatment of grave familial cases of jaundice in the newborn. She said that the condition was probably commoner than was usually supposed, and emphasized that so many cases of jaundice in the young baby seemed to be of composite origin.

Dr. ALAN MONCRIEFF asked why haemolysis occurred in young babies (if Dr. Hampson's views were correct), and if it had anything to do with the blood group of the child differing from that of the mother. He described a family where two children had sore throats followed by catarrhal jaundice, while the third child also had a sore throat but developed appendicitis, which suggested that the naso-pharynx was the portal of entry in epidemics of catarrhal jaundice. He mentioned the value of drainage of the gall-bladder in cases of this condition where the jaundice was

unduly prolonged. Mr. E. H. RAINEY (Eastbourne) pointed out that premature babies showed a greater tendency to the so-called physiological jaundice than babies born at full-term, but, apart from this form, he thought the other types of jaundice in the young child were very rare. He questioned the rationale of draining the gall-bladder or attempting any anastomosis in cases of congenital obliteration, as it was likely that the obstruction lay above the origin of the cystic duct. Dr. C. F. HARRIS spoke about the theory of the cause of physiological jaundice, which ascribed the greatly increased number of red blood cells in the foetal blood to a difficulty in obtaining oxygen. When this disappeared with the establishment of pulmonary ventilation at birth, the child had no longer any need for this excess of red cells, which were destroyed, producing the jaundice.

Dr. ELIZABETH GUNN (New Zealand) described a small epidemic of catarrhal jaundice occurring in a children's camp, where the first symptom was slight sore throat. Dr. J. HUTSON (Barbados) spoke of the very high incidence of all forms of jaundice in children in Barbados. Four out of five babies showed jaundice within forty-eight hours of birth. He had also seen many epidemics of catarrhal jaundice which was probably toxic in origin.

SECTION OF PUBLIC HEALTH (INCLUDING TUBERCULOSIS AND OCCUPATIONAL DISEASES)

Wednesday, July 22nd

SOME RECENT POLICIES REGARDING PARTICULAR DISEASES

Sir GEORGE BUCHANAN, President of the Section, opened the proceedings with an address on recent policies in connexion with particular diseases. As an example of the policy of complete exclusion of an infective disease from this country he cited the case of psittacosis, commenting humorously on the surprising need for parrots which became manifest as soon as the importation of these birds was limited. The really difficult point was the determination of the time when they could be readmitted. He then considered the risk of spreading yellow fever in the case of laboratory workers, and also in the more serious contingency of transmission of the infected mosquitos by aircraft. Medical requirements might put some obstacles in the way of aviation in tropical countries. National and international policies on the prevention of malaria were then reviewed. It was possible that drugs more potent prophylactically than quinine would soon be available. Isolation hospitals were becoming more intimately associated with clinical and bacteriological research. Their scope was widening, and they would fulfil an increasingly valuable purpose as centres for the collecting of information. The earlier policy of segregating healthy "carriers" was now less favourably considered, in view of the embarrassment caused to the community, and of the slight amount of benefit obtained. It was too early yet to state that in this country active immunization was becoming the basis of a new public health policy, but distinct tendencies pointed in this direction. In diphtheria and scarlet fever it was possible that simple immunization could be effected by a few injections with no resulting disability.

Sir George Buchanan, discussing the question of vaccination and small-pox, emphasized the need of mass vaccination, and illustrated his contentions by the cases of Italy since 1923, of the French African colonies, the Dutch East Indies, India, and of Russia. Great Britain was profiting from these measures in that the risk of importation of small-pox was thereby lessened. Mass anti-cholera vaccination was playing an increasing part in the East, notably in India in connexion with pilgrims, and in China. In Shanghai last year more than half a million persons had been inoculated on the first appearance of cholera. He then gave a few examples of the communal detection and control of disease. Special attention was being directed to the prevention of acute rheumatism in children; local schemes comprised three factors—namely, ascertainment, supervision, and treatment. Elasticity was an essential characteristic of such local schemes if they were to be successful. Both the State and the municipal authorities were beginning to concentrate against cancer in this country and also abroad—notably in France, Italy, Spain, and the United States. Classification of the patients was furthered, and an educational policy was being pushed; but it was as yet too early for the instituting of a national scheme. Local effort and the co-ordination of all persons and organizations interested were improving. While national uniformity was desirable and standardization often necessary, communities, large and small, should continue to work out and apply new policies of their own; being ready to reconsider these when the time came.

INDUSTRIAL PROBLEMS FROM THE STANDPOINT OF GENERAL PRACTICE

Dr. L. P. LOCKHART (Nottingham) opened a discussion on industrial problems from the standpoint of general practice in a paper which is published in full this week at page 179.

Sir GEORGE BUCHANAN congratulated Dr. Lockhart on introducing so novel an outlook into the subject. Samuel Butler in *Erewhon* had somewhat anticipated him in contrasting the machine and the man. Dr. Lockhart might have some difficulty at first in recasting the present Factory Acts on these principles.

Mr. ERNEST GRIFFITHS, speaking as a surgeon, dealt with the simple fracture in the workman, as a single example of a problem arising out of industrial injuries. The direct causes of failure of the present methods of treatment were: (1) pain; (2) muscular and joint stiffness; (3) muscular weakness and wasting; (4) inco-ordination of muscular movement; and (5) circulatory disturbances. A special fracture hospital was necessary (or a special fracture department in a general hospital), where the fracture could be set immediately under general anaesthesia, and under the special supervision of the director. Adequate immobilization should follow, but this should be associated with full movements of the unaffected parts of the limb concerned, so that, when the plaster was removed, only a few days would be necessary for the restoration of full function. Massage must be used more intelligently; it was at present a menace to the industrial worker, who needed more encouragement to use his limb. Supervision by the patient's own medical attendant should include encouragement to resume work as soon as possible. In the question of compensation in injury, malingering was relatively very rare; but the system of lump-sum settlement operated injuriously in many cases. The capital value attached to the disability made it difficult to treat, and the sooner this matter could be settled the more quickly would healing progress. Getting fit was a whole-time job.

Dr. W. G. WILLOUGHBY, President of the Association, commended to the meeting the *x*-ray photographs of industrial diseases in the exhibition. They had been specially brought over, and were probably unique.

Dr. SYBIL G. OVERTON (Medical Inspector of Factories) urged the importance of recognizing, in workers, the origin of the disease, in the elucidation of which the general practitioner should play a more prominent part. As an aid to this the recognition of trade stigmata was very valuable. In regard to the fear factor some recent work by the Industrial Health Research Board had adduced evidence that the sickness rates were high in those forms of work where the fear factor could be eliminated.

Dr. L. G. IRVINE (Johannesburg) thought that Dr. Lockhart had skated rather lightly over the psychical effects of unemployment. Work-shyness was rather apparent, and might be associated with a higher sickness incidence. Unemployment insurance had the tendency to accentuate natural human indolence, and might increase invalidity.

Dr. W. F. DEARDEN (Manchester) agreed that the health problems of industry were more associated with general practice than was admitted to-day, but he thought that, though every general practitioner was a psychologist, the extended aspect of the question as presented by Dr. Lockhart was rather more than he would like to take up. He believed that it was from those holding similar appointments to that of Dr. Lockhart that the investigation required would be most successfully carried out. He added, however, that in his view the general practitioners should know more about industrial problems and diseases than was the case, and referred to the principles laid down in this connexion over 200 years ago by Ramazzini. There were so many Government regulations on the subject that this knowledge had now become a necessity.

Dr. LOCKHART agreed that malingering was rare. He had seen ringworm fungus in two cases diagnosed and treated as bakers' dermatitis, so increased diagnostic care was necessary. He cited an incident in the printing industry, where the introduction of a new machine had thrown many men out of work. Fear of losing work in such circumstances was almost inevitable. It was not the dole which was upsetting man. Naturally indolent, he had, nevertheless, a biological need of work, which could not be satisfied by payment. Dr. Lockhart quoted a case of generalized eczema which invariably recurred as soon as the patient was discharged fit for work. Other fear causes were enteroptosis, functional and imaginary cardiac irregularities, and neuralgias. Psychogenic causes were more prevalent than was generally realized.

SILICOSIS IN INDUSTRY IN SOUTH AFRICA

Dr. L. G. IRVINE (Johannesburg) maintained that the risk of silicosis in South Africa was mainly limited to gold mining. The subject was important in view of the increased disability coincident with the growth of this industry. Free silica existed to the extent of 70 to 80 per cent. in gold ore, and numerous persons were concerned in dealing with it. He described the development of the industry and the progress made in detecting and preventing silicosis. Two methods of prevention were used; in one water was employed, and in the other avoided. Blasting could be timed so that persons could be out of the dust-laden atmosphere. Great progress had been made by combining both methods; but cases of silicosis were still occurring. The provision of ample ventilation was of primary importance; had this been realized thirty years ago most troubles could have been prevented. When water methods were first introduced it was thought that the problem had been solved; but a very fine dust still remained, and was carried with tubercle bacilli into the lungs by the water-laden air. Medical measures were centred in the work of the Miners' Medical Bureau, a highly organized and well-equipped organization, which had been established in 1916. All new recruits to the industry were examined, and men with tuberculosis or other diseases were excluded. Thus the "new Rand miners" so examined were of good physique, and were gradually replacing the old-time workers. Awards were granted for those who became ill. The Bureau examined men at work, decided claims, and assessed benefits to be granted. Post-mortem examinations were made. All natives were weighed every six weeks, and carefully examined if there was any loss. All falling sick had their chests examined as a routine procedure. About 140,000 native miners came under these regulations. Dr. Irvine gave details of the number of cases dealt with, showing how the disease had been reduced. During the past ten years there had been a progressive but not uninterrupted decline; this was illustrated by a graph which showed the percentage attack rates at different periods. The ultimate outlook was now more encouraging, and further decline in the incidence of disease was possible. Three classes were recognized—namely, silicosis, silicosis with tuberculosis, and pure tuberculosis; the second class was now described as "cases of silicosis of *infective* type." Silicosis and tuberculosis were distinct pathologically, though similar as regards symptoms and histology. The Bureau had now been able to define diagnostic standards. A properly taken radiograph was a trustworthy, though not the sole, criterion, and could indicate the extent of the silicotic process. The only specific radiographic sign was a discrete mottling which appeared first in the upper half of one or both lung fields, but later became more generalized. It resembled somewhat the branches of a leafless tree. In early cases of silicosis there was no impairment of the general health, apart from slight respiratory difficulty and a liability to recurrent colds. When associated with tuberculosis the silicotic progress was modified, a massive fibroid consolidation often resulting which rendered diagnosis more difficult, and might show periods of arrest. Such a consolidation, however, did not always imply tuberculous complication.

SECTION OF PATHOLOGY AND BIOCHEMISTRY

Wednesday, July 22nd

POST-MORTEM EXAMINATIONS

The President, Professor E. B. CATHCART, took the chair.

Dr. EDWARD F. HOARE, Coroner for the Lewes District of East Sussex, in opening the discussion on post-mortems, their object and performance, said that there were three groups of practitioners: (*a*) those who had no wish to do coroners' post-mortems; (*b*) those who wished to do them as a protest against the increasing tendency to limit private practice; and (*c*) a small group who were eager to do them. All three groups generally admitted that it was years since they last did a post-mortem. A coroner could only direct a post-mortem in suspected cases of sudden, violent, or unnatural death, and there must be reasonable grounds for suspicion; he could not hold either a post-mortem or an inquest merely at his will. About twenty thousand post-mortems a year were directed by coroners, and under the Act of 1887 they might summon "any legally qualified medical practitioner who attended the deceased at his death or during his last illness," or if not so attended, "any legally qualified medical practitioner who is at the time in actual practice in or near the place where the death happened." But the newer Act (1926) adds: "He may further request any other legally qualified medical practitioner to make a post-mortem examination and report" The compellability depends on practice in the place; other practitioners, including specialists, may be "requested," which request could be refused.

The purpose of the post-mortem examination was only incidentally to ascertain the cause of death, and to a coroner was only of interest if it shed light on the question of "how the deceased came by his death." Until it was realized that the medical interest lay in the pathological cause of death, whereas the legal interest was in the manner thereof, there would be conflict and misunderstanding between doctors and coroners. A disease of the heart might suggest a cause of death, but without examination of the brain or kidney, how was a granular kidney or a cerebral haemorrhage to be excluded as a cause? And

if the latter were a cause, the question of its origin—whether by disease, accident, or assault—would at once arise. Yet frequently the brain was not examined if a possible prior cause was found. Dr. Hoare said that his own scheme was to employ pathologists when possible, police surgeons as an alternative, and odd practitioners in occasional cases. He submitted that the legal fiction of equality of practitioners applied only to legal status and their potential abilities. Their particular superiority in any branch depended on opportunity and experience, and only implied a particular, and not a general, superiority. He maintained that a trained pathologist was superior to either surgical or medical consultant, or to a general practitioner, for this particular work.

Dr. G. Roche Lynch said that he fully concurred with Dr. Hoare that the conduct of the post-mortem examination and the proper interpretation of results could only be satisfactorily achieved by those who had made a special study of pathology, and that accuracy and reliable evidence was not only necessary in the coroner's court, but absolutely essential if justice was to be administered in the higher courts. The following case, though not criminal, was illustrative. A couple were found dead in their flat; suicide was presumed. At necropsy the doctor was satisfied that cyanide was the cause of death (mainly because of bright colour of blood and the mistaking of post-mortem digestion of stomach for corrosive poison). Coroner decided on an analysis; CO was found, and it was subsequently decided that death was accidental, due to faulty gas heating apparatus. This was not all, for the executors sued the makers of the gas apparatus in the High Court, and got substantial damages. Speaking as a toxicologist, he would like to add that their knowledge of the action and effects of poisons was still very imperfect, in many instances they had to rely on recorded cases which occurred fifty or more years ago. If any real advance was to be made they must have not only material for investigation, but also accurate observation and inference. Many other countries had made provision for the investigation of medico-legal cases by trained observers, but in this country they were slow to follow.

Dr. H. W. Webber (Plymouth) said that it would be most regrettable if the proposal to centralize all post-mortem work in every large city and in county areas was carried out. Midwifery was handed over to the nurse midwife, surgery to the hospital surgeon, dispensing was done by the chemist, and now post-mortems were to be done by specialists. If a general practitioner was a general practitioner in deed he would undertake all branches of practice, calling in the specialist for the more difficult cases. The argument had been advanced that the general practitioner had not sufficient knowledge to do justice to the work. He suggested that in every city and large district a mortuary should be established in which all bodies requiring it could be examined by the practitioner. Dr. Webber said that, in the discussion in the *Journal* last year, he wrote, "Let us do our own work and face our responsibilities." He still held strongly to that opinion.

Dr. A. J. Hawes (Wisbech) said that, although a general practitioner, he held the not very popular view that most general practitioners should not do post-mortems, because they could not be expected to do them properly. It seemed right that the proper person to do a certain task was the one who could do it best, and that the general practitioner should cease to do those things that could be better done by others. Specialism had certainly captured some of their hunting-grounds, and they took care that everybody heard about it; but they did not talk about the rich new pastures which every advance in knowledge had opened up for them. The general practitioner was not losing ground; he was only shifting his ground.

Colonel H. A. Smith (Hawkhurst) believed that special work should be carried out by those specially trained or experienced in it. From the first post-mortem examination he made he learnt that the examination itself should be complete and thorough, and that the medical man should be prepared to answer any questions which might be put to him at the inquiry. Before death, where there was any suspicion of poison, he strongly urged the examination of the urine and the removal of the patient from his immediate surroundings.

Professor A. Murray Drennan (Belfast) said that in his experience practitioners did not want to do post-mortems, as they were a great deal more trouble than they were worth. One never knew when a post-mortem might require further bacteriological, chemical, or histological investigation, on the result of which might depend the life and liberty of some individual. The practitioner had no facilities for this kind of work. Even the pathologist as such might not be an ideal medical jurist; he needed special experience of medico-legal matters—such as points of identification, signs of putrefaction in different media, special injuries occurring in violent death, and so on. He had seen quite good post-mortems done by practitioners, who could not, however, become expert, even after a course of reading and short attendance at some large centre, as suggested by Dr. Webber, so that, as far as possible, trained pathologists should do this work. Dr. P. G. Stevenson Davis said that, if general practitioners were to be divorced from pathology by the employment of pathologists at all post-mortems, they should at least be provided by right (and not as a favour) with a fairly detailed report of the post-mortem findings. Without this they were quite unable to check the diagnosis made during life, or to refute tales of the discoveries made post mortem. A practitioner was often quite unable to attend the post-mortem personally because of his work.

Dr. W. G. Barnard said that a newly qualified practitioner had only the vaguest idea of how to make a post-mortem examination, and practically no experience in interpreting his findings. He might do no post-mortems for years in his practice, so that, however keen he might be, it was quite impossible for him to be a competent person in this work. With regard to the suggestion of Dr. Davis, he felt sure that no coroner would object to the presence of the practitioner at the post-mortem examination, and that pathologists would welcome it. Dr. A. G. Shera (Eastbourne) thought it would be an advantage if the clinician could be paid a fee for a full history of the case, or, if the clinician's presence were made compulsory at the post-mortem examination, a fee should also be paid. Dr. H. W. C. Vines said that a factor in the difficulties general practitioners had in performing post-mortems was the inadequacy of their training in the subject. Dr. E. H. Hunt drew attention to the difficulties found in out-of-the-way parts of the world by practitioners who had had little experience and were suddenly called on to do post-mortems. He received no sympathy if he confessed that he had been unable to find a cause of death. Dr. C. W. Cunnington suggested that, when a pathologist was directed by the coroner to make an examination, the general practitioner should be invited to attend if he desired to do so.

Dr. Hoare, in his reply, said that there were not enough post-mortems to give a general practitioner sufficient experience or training as a pathologist, and the expense of paying both a pathologist and a practitioner would prohibit fees being paid to both. He had, however, persuaded his council to pay 10s. 6d. for letters from clinicians when these materially assisted the inquiry.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Wednesday July 22nd

CEREBRAL HAEMORRHAGE

The first day's proceedings were devoted to a discussion on cerebral haemorrhage due to causes other than arterio sclerosis The President, Sir JAMES PURVES STEWART, was in the chair, and the discussion was opened by Dr JAMES COLLIER After a brief historical review, the opener dealt with the causes of the type of haemorrhage under discussion These included injuries during birth or following trivial concussion, haemorrhagic pachy meningitis, encephalitis, poliomyelitis, tuberculous *meningitis*, *sinus thrombosis*, abnormal blood states, such as leukaemia, anthrax infection, neoplasms, aneurysm—infective in ulcerative endocarditis, etc, aneurysms occurring in coarctation of the aorta and in polyarteritis acuta nodosa, congenital aneurysms, and syphilitic aneurysms Of these causes Dr Collier con sidered the three most important to be (1) encephalitis, (2) *neoplasms*, and (3) aneurysms Many cases of encephalitis lethargica, confirmed by histological examina tion, have been complicated by subarachnoid or cerebral haemorrhages He considered encephalitis also of interest in connexion with the subject, as many cases of subdural, of subarachnoid, and of cerebral haemorrhage from rup tured aneurysms had been recorded in which the clinical picture was hardly distinguishable from that of encephal itis lethargica Soft neoplasms were important causes of cerebral haemorrhage, which might occur before the appearance of any local or general signs The opener dealt especially with haemorrhages occurring from the berry like and often multiple aneurysms which have been called congenital Such lesions were the commonest cause of cerebral haemorrhage in younger subjects They were commoner than was generally supposed, and might exist without giving rise to symptoms In cases proving fatal from haemorrhage it was sometimes not possible to demon strate the aneurysm post mortem, as it was often em bedded and lost in blood clot Although aneurysms at the base of the brain were frequent, they were not so rare on the convexities of the cerebral hemispheres as had been supposed For subarachnoid haemorrhage from such aneurysms Dr Collier emphasized that his practice was always to drain freely the subarachnoid space by means of repeated lumbar puncture as long as the symptoms of increased intracranial pressure persisted He showed an admirable series of lantern slides of specimens of intra cranial aneurysms

Professor A J HALL (Sheffield) limited his remarks to the subject of subarachnoid haemorrhage The occur rence of massive albuminuria in this condition had to be borne in mind, in such cases at post mortem examina tion the kidneys might be found normal Korsakow s syndrome sometimes occurred as a sequel, and lasted for a considerable time Recovery from this condition was the rule From time to time symptoms might occur indicating leakage from an aneurysm, finally a blow or sudden exertion might determine a fatal haemorrhage—A medico legal aspect of this was important

Dr W J ADIE referred to the association of cerebral aneurysms with polycystic disease of the kidneys Intra cranial aneurysms might give rise to symptoms resembling those of migraine, especially headache and vomiting The symptoms of aneurysm differed from those of migraine in that the hemicrania was always on the same side and the visual aura did not reach a climax in a gradual manner but developed more suddenly He considered that aneurysmal rupture had a seasonal incidence and that it was more frequent during the summer months The condition known as ophthalmoplegic migraine must always give rise to a suspicion that the symptoms were really due to the presence of a leaking basal aneurysm

Mr HUGH CAIRNS discussed the surgical treatment of intracranial haemorrhage, quoting cases both of subdural and intracerebral haemorrhage that had been treated successfully by operation He emphasized the importance of small bilateral subdural explorations under local anaesthesia in every case in which subdural haematoma was suspected At the present time accurate diagnosis of this condition was not always possible by clinical methods alone A case was cited to illustrate the good results that could be obtained from removal of large blood clots from within the brain itself

Dr J PURDON MARTIN mentioned a case of sub-arachnoid haemorrhage from an intracranial basal aneurysm in which the cerebro spinal fluid withdrawn by lumbar puncture on the fifth day of illness was free from blood This was a most unusual occurrence Sub-dural haemorrhage as a sequel to a head injury might be very widespread without any fracture of the cranial bones, such a condition might be fatal or give rise to chronic subdural haematoma The localizing signs of the latter were often vague and deceptive In elderly subjects the injury giving rise to a subdural haematoma might often be of a trivial nature even jerking of the head might cause such a haemorrhage Following the injury there was often a latent period of weeks or months during which only slight or vague symptoms might be present, signs of cerebral compression developing later In some cases the extravasated blood did not clot, but appeared to undergo defibrination

Dr J G GREENFIELD limited his remarks to the so-called 'berry" aneurysms In his experience, these had been found most frequently on the arteries of young or middle aged subjects who had shown either no trace of atheroma or only small isolated plaques Abnormalities of the cerebral or systemic arterial systems had been commonly described in patients who had died from rup tured *intracranial aneurysm*, which supported the theory that malformation of vessels was the cause of these aneurysms In this connexion a most important observa tion was that of Wiley Forbes He had shown that there was primarily a defect in the muscular coat of the artery, and had demonstrated its presence not only at the point *where the aneurysm formed* but at practically every bifurcation of the cerebral vessels in these subjects Dr Greenfield had examined the cerebral arteries in five non atheromatous cases of cerebral aneurysm, and had found such a defect present in all The speaker illustrated his remarks with lantern slides showing the defects in the arterial muscular coat in several cases

Mr A A MCCONNELL (Dublin) described a case of sub dural haematoma in a man, *aged 70 in whom headache* appeared two days after jerking the head In the course of a week focal symptoms—paresis of left arm and leg—made their appearance At no time was consciousness impaired although cerebration was slow Mr ASTLEY CLAPPE (Leicester) mentioned hilarity as an early and only symptom in a case of basilar artery aneurysm at the age of 24 He quoted two further cases in which laughing of an unusual character was observed as an early symptom Dr HINDS HOWELL referred to a case of subdural haematoma in which operation was performed The patient improved for twenty four hours and then became semi conscious At necropsy a subdural [illegible] was found on the opposite side of the brain In sub arachnoid haemorrhage [illegible] might occur in addition to albuminuria [illegible] of diagnosis Following the [illegible] discussion, Dr COLLIER briefly replied

SECTION OF OTO-RHINO-LARYNGOLOGY

Wednesday, July 22nd

SORE THROATS OF OTHER THAN TONSILLAR ORIGIN

The chair was taken by Mr. W. M. MOLLISON, President of the Section. In opening the discussion Mr. BEDFORD RUSSELL deplored the tendency to consider all sore throats as due to inflammation of the tonsil. He described the type of case in which sore throats persisted after removal of tonsils, some infection eventually being found in the nose. In other cases sore throats were entirely cured by treatment of nasal sepsis without the tonsils being interfered with. Laryngitis, besides pharyngitis, was very often secondary to nasal disease. The common nasal condition was that of infection of the maxillary antrum, and persistent or recurrent inflammation of the cavity gave rise to a considerable proportion of sore throats. Transillumination was very valuable in these cases, and any infection at all should be treated by intranasal drainage and lavage. It was rarely necessary to perform the Caldwell-Luc type of operation. The ethmoidal or sphenoidal sinuses might also be the cause of sore throats, and should be treated appropriately.

Mr. J. B. HORGAN (Cork) considered that dental sepsis also caused many sore throats, especially in connexion with erupting molars. He also mentioned pharyngeal paraesthesia in women. Mr. J. F. O'MALLEY remarked that nasal obstruction, besides infection, could cause sore throats. Nasal ventilation was very important, and a healthy antrum would clear itself of infection if it had adequate ventilation. Mr. HORSFORD described a case of recurrent sore throat lasting four years after tonsillectomy, and entirely due to an infected antrum. Mr. E. D. D. DAVIS said that in some cases, when the nasal trouble had been cleared up, tonsillitis remained, but he agreed with Mr. Russell in his stand against indiscriminate tonsillectomy. Mr. TILLEY and Mr. SCOTT RIDOUT mentioned the inflamed lymphoid masses behind the posterior faucial pillars as a frequent source of sore throat.

Mr. LOWNDES YATES drew attention to the possibility of infection being kept up by some other member of the family or household.

TREATMENT OF OESOPHAGEAL CARCINOMA

Mr MUSGRAVE WOODMAN (Birmingham) opened the discussion on the treatment of malignant disease of the oesophagus. He said that the oesophagus was fixed at either end, but freely movable in the rest of its course. It had no serous coat, and there was no barrier to the spread of disease. There was a very free lymphatic drainage, and once the preliminary resistance had been overcome spread was very rapid and wide. It was difficult experimentally to produce any protective thickening of fibrous tissue around the oesophagus by irritative substances or otherwise. Radium could be applied centrally, intramurally, or peripherally. The last method across the pleural cavity was practicable, but not followed by the good results of intramural implantation of radon seeds, in which it was only possible at first to reach the upper part of the growth. Central insertion of radium could deal with the whole length of the stricture, and was applied by rubber tubular holders, which had the advantage of accommodating themselves to the oesophageal movements. Diathermy just failed because it produced no protective thickening, but it did cause much relief. Further work was needed on the dosage and screening of radium, and on the radio-sensitivity of oesophageal growths.

Mr. W. M. MOLLISON, the President, considered that diathermy was of great value in these cases, and enabled patients to swallow. Gastrostomy was also extremely useful, and rested the oesophagus. Mr. SCOTT RIDOUT said that radium caused a great regression of the growth, and he found that radon seeds were the best method of application. Preliminary gastrostomy was very helpful. Sir JAMES DUNDAS-GRANT said that after large central doses of radium there was considerable relief for a time, but later extension or necrosis through the wall of the oesophagus took place. Mr. E. D. D. DAVIS thought that with Mr. Woodman's tubes it would be possible to apply smaller doses of radium for longer periods, which was desirable; but the tubes could only be tolerated in growths of the medial portion of the oesophagus. Mr. WOODMAN, in reply, said that soft vascular growths responded best, and that large doses of radium gave rise to massive necrosis. He was not very enthusiastic about gastrostomy.

ANOMALIES OF THE UPPER JAW AND NASAL SURGERY

Mr. J. B. HORGAN (Cork) read a paper on the developmental and anatomical peculiarities of the upper jaw in relation to surgery of the nose and accessory sinuses. He mentioned the changes in the upper jaw associated with contracted arched palate—lengthening of the face, lowering of the alveolar margin, with narrower nasal passages, resulting in obstruction of the antral orifice. The floor of the antrum might be lowered, giving rise to a marked recess below the level of the floor of the nose. He considered that intranasal antrostomy was unsound, practically and theoretically. He always operated through the canine fossa, which enabled him to deal thoroughly with antral infection, polypi, etc., and which gave him a very good access to the ethmoidal region and to the sphenoidal cells. Mr. O'MALLEY said that intranasal methods gave rise to very good results. Sir JAMES DUNDAS-GRANT placed great value on the Canfield operation. Mr. TILLEY said that a mild infection could be treated intranasally, but a heavy infection with polypi usually called for more radical measures. Mr. FORSTER considered that the high-arch palate might not always be due to nasal obstruction, but was in some cases hereditary.

ASTHMA AND NASAL CONDITIONS

Sir JAMES DUNDAS-GRANT read a paper on the nasal factor in spasmodic asthma. Asthma often occurred with, but might occur without, nasal abnormalities, and abnormalities might occur without asthma. There must be other predisposing factors. These might be psychic or due to some lesion elsewhere. They might be anaphylactic or allergic, or due to faulty feeding, especially with too great a proportion of farinaceous material. Intestinal intoxication was also a very important factor. In many cases, however, there were definite nasal conditions which seemed to produce asthma, and if corrected the asthma disappeared. The commoner conditions were enlarged middle turbinal, enlarged anterior lip of the hiatus semilunaris, nasal polypi, and deflected septum. In a great many cases cure was produced by correction of these conditions; in many more considerable relief was obtained. In cases of complete failure other factors must be predominating. In young children in whom asthma persisted after removal of tonsils and adenoids it was usually found that the turbinals were enlarged, and reduction of these brought about disappearance of the asthmatic symptoms.

SECTION OF OPHTHALMOLOGY

Wednesday, July 22nd

OPHTHALMIA NEONATORUM

The chair was taken by Mr. E. E. MADDOX, who expressed his gratification at the honour done him in being elected President of the Section of the "Queen of specialties." He extended a warm welcome to Dr. Crisp of Denver, U.S.A., who was present at the meeting, and who later took a prominent part in the discussion.

Mr. M. S. MAYOU then opened the discussion on ophthalmia neonatorum. He said that his experience

of the subject had been gained entirely in the London area; and especially in St. Margaret's Hospital, an institution set apart by the London County Council for the treatment of ophthalmia neonatorum. Giving figures of the notifications of ophthalmia neonatorum and the admissions to St. Margaret's Hospital, he mentioned that during the years 1919–21, twelve children were discharged blind in both eyes; whereas during the years 1922–30 there were only three such cases. The number of cases notified in London of recent years had not decreased. He then discussed the histology and histo-pathology of the conjunctiva at birth. With regard to the bacteriology of the condition he found that the gonococcus occurred in 60 to 65 per cent. of the cases, and that, of the remaining organisms, the streptococcus was the most dangerous, frequently leading to perforation and panophthalmitis. He laid stress on the question of the development of local immunity as an important factor in the clearing up of the disease, and thought that it was bound up with the round-cell exudation which took place after the acute stage had subsided. He then dealt with the question of treatment and nursing as carried out at Margaret's Hospital. He strongly recommended open-air wards. By comparative methods he came to the conclusion that the best method of treatment was to wash out the conjunctival sac with eusol (1 in 10), after which the sac was filled with acriflavine (1 in 1,500 of castor oil). Mr. Mayou deprecated the use of silver nitrate as a prophylactic. Attention to general health was of enormous importance, and he emphasized the necessity for breast-feeding if the infant was to do well.

Dr. H. HAWARD BYWATER (Liverpool) emphasized the necessity of institutional treatment for ophthalmia neonatorum. Co-operation with the local health authority was essential. He described the arrangements made between the city health authority and the St. Paul's Eye Hospital at Liverpool, which had existed since 1907, when a special ward, the first of its kind, was commenced by the late Dr. Nimmo Walker, into which the mother was admitted along with the child. He gave an outline of Dr. Nimmo Walker's original scheme (*British Medical Journal*, April 5th, 1907) and stated that the Local Government Act, 1929, had made it easier to give institutional treatment. He showed slides demonstrating the hospital treatment at St. Paul's Eye Hospital. Further progress would be made if there were greater co-operation between the ophthalmologist and the obstetrician.

Dr. CRISP agreed with a suggestion made by Mr. Maddox as to the application of heat in the treatment of the condition, and suggested that Shahan's thermophore might be employed. The discussion was continued by Dr. WHITESIDE ROBERTSON and Colonel R. E. WRIGHT, I.M.S.

In reply, Mr. MAYOU said that heat could not be applied strongly enough to kill the gonococcus, but that cold could be so applied, which also prevented swelling of the lids. He discussed the question of prophylaxis and the dangers of tattooing.

SCHOOL MYOPIA

Mr. ARNOLD SORSBY then read a paper on school myopia. He discussed the recent work of Steiger, which emphasized the unity of the different spherical refractive conditions, and showed that some myopes at least must be regarded as normal variations. He stressed the necessity for taking into account the refractive power of the cornea and lens, since there were very great variations in the axial length. He thought it unlikely that the problem of myopia would be solved without intensive study in its breeding-ground—the schools. Contributions to the discussion were made by Dr. INGLIS POLLOCK, Mr. GIRI, Mr. BISHOP HARMAN, Dr. MARION GILCHRIST, Dr. PRIMROSE, Dr. SHURR, and Dr. CRISP. Mr. MADDOX suggested giving calcium and pilocarpine in advancing school myopia.

Mr. BISHOP HARMAN read a vigorous and practical paper on the eyesight of motor drivers, and recommended that the eye tests for drivers should be less narrow, and that the field of vision, the colour vision, binocular vision, and adaptation should also be taken into account. Mr. ELMORE BREWERTON read a paper on sclerectomy, its difficulties and dangers. He gave an account of his usual practice, and discussed the various complications which had come to his notice.

SECTION OF ANAESTHETICS

Wednesday, July 22nd

PROGRESS OF ANAESTHESIA

In his introductory remarks the President, Dr. H. P. FAIRLIE (Glasgow), who was in the chair, referred to the recent death of Dr. Dudley Buxton.

Dr. R. J. CLAUSEN opened a discussion on the progress of anaesthesia. Reviewing the conditions under which anaesthesia was now practised, he said that it was impossible to assess accurately the state or progress of anaesthesia throughout the land, on account of the large number of small institutions in which operative surgery was performed. He considered that insufficient individual attention was paid to the patient, and that the rapidity of operations in hospitals militated against efficient anaesthesia. In his opinion, mask and drop-bottle methods with chloroform and ether were too prevalent, while the value of rebreathing and the dangers of prolonged open etherization were not fully appreciated. Local, regional, and spinal methods of anaesthesia had not been sufficiently exploited, and gas anaesthesia—particularly ethylene anaesthesia—was not adequately utilized. Dr. Clausen emphasized the necessity of adequate premedication. No patient should come to operation without morphine or one of the basal anaesthetics. He mentioned the value both of CO_2 for post-operative ventilation of the lungs, and of the intravenous adminstration of glucose for vomiting. The absence of team work in investigating anaesthetic methods was regrettable, and he suggested that, in teaching hospitals, an attempt should be made to classify and investigate records. The main shortcomings of anaesthesia were twofold, and could be ascribed, first, to tradition and routine, and secondly, to economic considerations which hampered the employment of many special forms of apparatus.

Dr. K. B. PINSON (Manchester) considered that, in spite of the phenomenal success of synthetic chemistry, the future of general anaesthesia did not lie in the advance of chemical science. He was impressed by the outstanding and cardinal virtues of nitrous oxide, but thought that ethylene was a superior anaesthetic, particularly for dental work. This gas had a powerful odour, but this was not appreciated by the patient, he had used it extensively in dental work, and confidently recommended its employment for this purpose. For general surgery circumstances were so different that he felt that nitrous oxide was as good. Dr. Pinson agreed that apparatus for the administration of gas was imperfect. A good apparatus should have large dials indicating the contents of the cylinders, the flow rate, and the proportion of gases in the mixture. Above all, there should be no leaking. Such forms of apparatus were not portable, and he felt strongly that this, together with economic considerations, pointed urgently to the abolition of nursing homes and the reception in hospitals of all classes of patient. Dr. H. W. FEATHERSTONE (Birmingham) said that progress in anaesthesia had been made not merely in the elaboration of

technique but in the judgement of the administrator. The anaesthetist should secure the safety of the patient from the anaesthetic point of view, and insist upon comfort for the patient both before and after operation. Open ether had many advantages. The numerous layers of gauze employed provided a method of securing wide control. Thus with a correct thickness of pad and careful addition of ether, the mask would contain in its cavity a supply of ether gas, instead of the irritating fog of ether particles which might be caused by careless drenching of the mask.

Dr. Ross Mackenzie (Aberdeen) stressed the importance of co-operation between the surgeon and the anaesthetist. The fact that the latter frequently met the patient for the first time in the anaesthetic room did not lend itself to the best results. He considered that the pre-operative use of atropine protected the patient against cardiac inhibition. He had compared the notes of 1,000 chloroform anaesthesias without atropine with those of 1,000 similar anaesthesias with atropine. The latter group rarely gave the slightest anxiety, while the former frequently showed signs of cardiac inhibition. Dr. Bessie Cook (Doncaster) gave an account of 1,109 cases which had been given gas and oxygen, 1,777 chloroform and ether, and 250 local anaesthetics. In the first 500 of the first two series there were 20 deaths following gas and 30 after ether ; 43 per cent. were not sick after ether, and 56 per cent. were not sick after gas, while with the latter group the average stay in hospital was two days less. Dr. C. Langton Hewer considered that operation lists should be curtailed ; after eight or nine major operations neither the surgeon, anaesthetist, nor nurses could give the same degree of skill to the last case as to the first. Most anaesthetic rooms could be improved ; they should be quiet, and the appearance should be as far removed as possible from that of the operating theatre. Co-operation between the surgeon and the anaesthetist was essential for the best results. Dr. Hewer mentioned four notable advances: (1) the great increase in the employment of gas anaesthetics ; (2) the introduction of basal narcotics ; (3) the adoption of " de-etherization " with carbon dioxide ; and (4) the introduction of percaine to local and spinal analgesia.

Dr. A. H. Macklin (Dundee) was glad to find that N_2O with O_2 and CO_2 was returning to favour. In an unselected series of over 500 cases he had secured complete muscular relaxation, even in high abdominal operations, while the post-operative advantages were overwhelming. To secure complete relaxation it was essential to add an asphyxial element ; but with nitrous oxide and oxygen the asphyxiation was under control and differed considerably from the " tissue asphyxia " resulting from all forms of deep surgical anaesthesia. It was necessary, however, to have an apparatus capable of instantly cutting off the anaesthetic supply, and, if necessary, of inflating the lungs with oxygen and carbon dioxide. Dr. Strange (Wolverhampton) said that morphine should not be administered indiscriminately as a pre-operative medicament. He gave 1/50 grain of atropine as routine. Dr. Adams (East London, South Africa) asked for information regarding the most useful forms of gas apparatus.

Spinal Analgesia

Dr. W. Howard Jones opened a discussion on this subject with a paper entitled " Subarachnoid block, general analgesia, ' spinal ' anaesthesia, respiratory paralysis, fallacies and methods." He first mentioned several fallacies regarding this subject, and stated that Barker had been the first to demonstrate the important fact that a drug could not spread upwards in the intrathecal space by a process of simple diffusion. Surveying the present position of spinocain and durocaine, he said that the rate of absorption of the volatile alcohol was more rapid than the non-volatile novocain, and, as a consequence, the dosage of the latter was so high that the amount absorbed into the blood caused a general analgesic state. He then described the method of gravitational diffusion, which was inaccurate, wasteful of power, and uneven in distribution. He quoted Koster's experiment of applying novocain solution directly to the medulla and upper cervical cord of animals, and remarked that the results obtained depended on the direct action of the drug, through the pia mater, upon the conduction tracts. He thought that the danger in intrathecal administration resulted from absorption of the anaesthetic into the blood stream, with subsequent paralysis of the vasomotor and perhaps of the respiratory centre.

Dr. H. K. Ashworth (Manchester) said that with stovaine the drug was fixed by the nerve roots, as it could not be moved ten minutes after injection. Gravitational diffusion proved an accurate method of control with this drug. He criticized all hypobaric solutions, because sooner or later they became isobaric, and finally hyperbaric, but he agreed with Dr. Jones that spinal analgesia was unsuitable for operations above the diaphragm. Dr. Ashworth urged the use of this type of anaesthesia in cases of acute intestinal obstruction. He considered that, theoretically, the combination of spinal anaesthesia with basal hypnotics in non-urgent surgery was ideal, but the greatest drawback to the method in question was our lack of knowledge concerning it.

Mr. T. P. Dunhill described some illustrative cases in gastric surgery which had been operated upon under spinal analgesia. This method was advantageous because there was great muscular relaxation ; post-operative effects were reduced to a minimum, and the patient could breathe deeply and adequately. Mr. Basil Hughes (Bradford) said that the ideal spinal analgesic should contain a drug which could act efficiently in the highest degree of dilution. With a strongly hyperbaric solution absorption of the drug into the blood stream was a very real menace. He had had no anxiety with spinocain, but he could not say that about stovaine. Since the use of a fine lumbar puncture needle the incidence of headache had practically disappeared, and since the universal adoption of spinal analgesia for major abdominal work, his mortality had been reduced by 50 per cent.

Mr. A. Dickson Wright did not regard percaine as superior to novocain. He agreed with Dr. Howard Jones that rapid absorption of novocain into the blood stream caused a fall in blood pressure. Other factors which must be considered in this connexion were paralysis of the sympathetic fibres in the thoracic anterior nerve roots, the severity of the operation, fear, and haemorrhage, which produced a greater fall in blood pressure with spinal than with other forms of analgesia. Mr. Wright regarded Horner's syndrome of small pupils and sunken eyes as a sign of a very satisfactory injection. The tranquil respiration facilitated upper abdominal operations, while this form of analgesia was ideal for intestinal obstruction, fractures of the lower limbs, rectal, bladder, and prostate operations.

Mr. A. Wilfrid Adams (Bristol) said that spinocain was an efficient drug ; but the possibility of a harmful novocainaemia was important, and so he did not, as a rule, give more than 2 c.cm. of spinocain. He regarded this drug as specially suitable for upward controllability. Routine operations were readily performed by the busy surgeon with ether and chloroform, and more than minor virtues were necessary to move him from a well-tried method.

The President stated that he had used percaine, and considered it an ideal drug for cases of intestinal obstruc-

tion. He had not observed post-operative headache since employing this drug, but on one occasion it had failed to produce analgesia. Dr. LANGTON HEWER said that the method of direct injection of dilute percaine in hypotonic saline was, in his opinion, a great advance upon previous techniques for high abdominal surgery. He considered that an injection between the first and second lumbar vertebrae was not uniformly safe, and, accordingly, he advocated a lower puncture. He deprecated the use of spinal anaesthesia for operations above the diaphragm. In reply, Dr. HOWARD JONES stated that he did not like to withdraw large quantities of cerebro-spinal fluid. Answering the President's question, he said that failure with percaine might be due to precipitation, and in this connexion he advocated the employment of buffered solutions.

SECTION OF DERMATOLOGY

Wednesday, July 22nd

PRURITUS ANI

The first meeting of the Section, with Dr. HENRY MACCORMAC (President) in the chair, was devoted to a discussion on pruritus ani, opened by Colonel MACARTHUR, who confined himself to discussing that variety of the disease caused by the threadworm *Enterobius vermicularis*, a variety which, he said, was much more common than was generally suspected. The ingested ova hatched in the duodenum; they lived for the most part in the caecum and appendix, but the gravid females descended to the rectum for the purpose of laying their eggs, which they did just inside the anal canal. It was their wriggling movements which caused the pruritus. Auto-infection was the rule, the ova being conveyed by the fingers contaminated by scratching. In addition to the pruritus—always most intense at night, but ceasing some time before morning, and only occasionally experienced in slighter degree during the day—various reflex phenomena might develop—for example, indigestion and frequency of micturition. These might mask the true diagnosis. Owing to lacerations and abrasions of the anal region, perianal eczema might be set up, but, on the other hand, there might be very little local injury in cases of many years' duration. Nasal itching was very common—possibly a provision of nature for ensuring that the infected hands were brought into the neighbourhood of the mouth. The accurate diagnosis of enterobiasis depended on a rectal washout administered when the pruritus was active. Three or four ounces of saline were all that were necessary to wash out a rectum previously emptied of faeces, and this fluid, returned into a suitable receptacle, must be carefully examined for threadworms. Care must be taken that shreds of mucus, etc., were not mistaken for the worms. Treatment was divided into three parts. The first was prevention of auto-infection. For this reason the hands must be thoroughly washed every time that the surface of the body or an undergarment was touched. Any laxness in this respect would be followed by vexatious re-infections. The second consisted of removal by lavage of the adult female worms which had migrated to the rectum. For this purpose the best thing was a strong solution of salt and water (two tablespoonfuls to the pint). Four ounces was a sufficient quantity, and when it was ejected, after probably not more than a minute or two, the itching would have ceased completely. It was essential that the patient should carry out this treatment himself, as it was useless when the pruritus was not felt. Thirdly, antihelminthic drugs should be given in the hope of destroying the parasites before they migrated to the rectum. These were far less efficacious than the rectal washouts, and patients who had found that the rectal injection gave instant relief preferred as a rule not to be inconvenienced by purgative drugs, even although the course of treatment might be shortened thereby. Finally, the speaker said that he did not know what proportion of cases of pruritus ani were due to enterobiasis, and he submitted that this should be considered as a possible cause in every case of pruritus ani met with in adults.

Mr. W. P. GABRIEL said that pruritus ani was commonly seen at St. Mark's Hospital. He laid great stress on the systematic questioning and examination of patients. He enumerated seven causes of the complaint: (1) lack of cleanliness; (2) excessive local sweating; (3) leak of mucus owing to prolapse and proctitis; (4) as an occasional symptom of high carcinoma of the rectum; (5) leak of liquid paraffin when taken in excess; (6) pruritus due to threadworms, which he had discovered by repeated proctoscopy; (7) a few remaining cases devoid of any obvious cause, in which the pruritus symptom might be elevated into a disease. He spoke highly of A.B.A.—a 3 per cent. solution of aniseed oil—as a form of treatment, which he employed by injecting it round the rectum with a view to interrupting the anal nerves. He had treated sixty-six cases in this way, with good results in forty-two. Only in three cases had he failed entirely.

Dr. HERBERT BROWN (Glasgow) had circularized all the patients he had treated for this complaint during the last ten years, and had been much chastened by the answers received. There had been a large percentage of relapses. Of the dermatological conditions which might cause pruritus he thought the most important was lichen simplex chronicus. No less than 18 per cent. of all his cases showed lesions of lichen simplex chronicus in other situations. He stressed the importance of team work in elucidating the origin of obscure cases. In treatment he had found A.B.A. useful when the irritation was limited to one spot. *X* rays, though undeniably useful, must be given with the greatest precautions.

Dr. DOWLING said there were seven causes of pruritus, of which he considered mycelial infection the commonest. He had had good results from A.B.A. Dr. HALLAM (Sheffield) said that many cases were due to a tag of anal skin. He uttered a warning against the indiscriminate use of *x* rays. Dr. AGNES SAVILLE had treated no fewer than 200 cases, but was still learning. Only lately had she grasped the importance of liquid paraffin as a cause. She emphasized the point that the anal region should be protected from faecal irritation by the use of vaseline before defaecation. Dr. BEATTY (Cardiff) described itching as subliminal pain. Mr. DICKSON WRIGHT had not had much success with A.B.A., but he had in twelve cases divided the nerves feeding the pudendal area through an incision midway between the anus and the ischial tuberosity, with good results. No incontinence had followed. Dr. ANDERSON (Ruthin Castle) said that very few patients went to Ruthin Castle to be treated for pruritus ani. Dr. ROXBURGH advocated the use of alcohol injections round the anus. He found *x* rays useful in clearing up the dermatitis, and in idiopathic cases. Dr. J. D. ROLLESTON mentioned that tabes might be a cause of anal pruritus. Dr. HALL (Brighton) spoke of the frequency of enteroptosis and stasis.

All the speakers without exception expressed their appreciation of Colonel MacArthur's work on enterobiasis, and their resolution to keep prominently before them the possibility of threadworms as a cause of anal pruritus in future. Subsequently the following short papers were read: "Onychia as an occupational disease," by Dr. HALDIN-DAVIS. "The etiology of dyshidrosis," by Dr. G. B. DOWLING. "The treatment of lichen planus by *x* rays to the spine," by Dr. McCaw (Belfast).

SECTION OF ORTHOPAEDICS

Wednesday, July 22nd

COMMON INJURIES OF THE KNEE-JOINT

At the first meeting of the Section of Orthopaedics Mr. A. S. BLUNDELL BANKART was in the chair.

Mr. NAUGHTON DUNN (Birmingham), in opening the discussion on the differential diagnosis and treatment of the common injuries of the knee-joint, said that, with increasing experience of injuries of the knee-joint, he became more and more convinced that accurate diagnosis of the exact nature of the injury was in many cases quite impossible. Referring briefly to the normal anatomy of the knee-joint, he pointed out that, as it connected the two longest bones in the body, the leverage on it is enormous, while to meet this disadvantage Nature had provided it with powerful muscles and strong ligaments, which latter limited all movements except flexion. Rotation was only possible in flexion, and in his experience it was strain of the flexed knee which provided the great majority of injuries to the intra-articular cartilages. Mentioning the twelve bursae which anatomists had described in connexion with the joint, he said that, though surgeons only took note of four as the source of symptoms, possibly affections of some of the less accessible might be responsible for obscure conditions in it. He then reminded the audience that the articular cartilage was avascular, and so had little power of repair; while the synovia, which oiled the joint, was richly supplied with sensory nerves, and thereby a great source of pain. Inflammation of the infrapatellar pad of fat, which was extra-synovial, might simulate swelling of the joint itself. A table was then shown of the diagnoses of 522 consecutive cases of injury to the knee-joint, of which 179 were considered lesions of the internal semilunar cartilage (139 being confirmed by operation), and 71 of the external cartilage (46 confirmed by operation). Lesions of the internal lateral ligament accounted for 34, and loose bodies for another 34—all the other groups being represented by quite small numbers. Many indefinite cases responded to manipulative treatment, suggesting that they were due to adhesions; probably another large group were cases of subacute infective arthritis. The speaker considered that one might safely diagnose a lesion of an intra-articular cartilage, provided there was a history of recurrent locking, with pain and tenderness limited to the attachments of a cartilage, while the knee became normal in function between the acute attacks, and *x* rays were negative. The types of injury found at operation were: tear of the anterior part, and tear of the posterior part, or bucket-handle tear. Several cases were quoted in which the cartilage appeared normal, and yet the symptoms disappeared after its removal. In one or two with internal tenderness and pain it was found that the external cartilage was the one actually damaged. However, when the history had been typical of cartilage trouble and the internal one was found normal, Mr. Dunn advised exploration of the outer side of the joint. He referred to the difficulty presented by a slipping patella, as the patient was seldom seen by the medical attendant during the actual dislocation, while the history might suggest an internal cartilage. He pointed out that the locking caused by loose bodies was seldom a fixed one. Lesions of the internal lateral ligament were caused by trauma to an extended knee, just the reverse of cartilage injuries, and tears were seldom complete, so that many recovered completely without operation. Where damage to both ligament and cartilage was suspected, it was best to wait for healing of the ligament before operating to remove the cartilage. For fractures of the [illegible] joint he advised gradual extension of the joint by fact that [illegible] before operation was resorted to. A specithecal spacin[illegible] the present [illegible] a loose body detached from the back of the femur, which had a bursa round it, and had given rise to very persistent symptoms. In connexion with injuries of the extensor apparatus, Mr. Dunn suggested that the greater the flexion of the knee at the time of injury the higher the level of the lesion. He showed an *x*-ray of a bipartite patella, which might easily be mistaken for a fracture. For crucial ligament injuries he recommended conservative treatment as far as possible; operation, in his experience, had not been able to restore the normal function of the joint. In regard to operation for internal cartilages he advised a small incision, nearly vertical, so as to avoid a branch of the internal saphenous nerve, which had caused a painful neuroma in seven cases after operation.

In the subsequent discussion all speakers congratulated Mr. Naughton Dunn on the thorough manner in which he had covered the field, and on the large material and accurate records on which his paper was based.

Sir ROBERT JONES (Liverpool) agreed with Mr. Dunn that, in many derangements of the knee, diagnosis of the exact lesion was impossible, and that cases with the classical symptoms of cartilage injury might prove to have something quite different. He thought it was usually possible to differentiate between damage to an internal and external cartilage, though "locking" was common to both; but the pain was usually referred to the correct side in the first attack, whereas in recurrent cases it might be felt on the other side, so that a careful history was valuable. It was the unlocking from flexion, sudden and complete, which was of chief diagnostic value; if the flexion only yielded gradually, it was probably not a case of cartilage injury. Clicking was most common with external cartilages, while pain on abduction and adduction suggested a ligament injury. He was surprised at the high percentage of external cartilage cases in Mr. Dunn's figures, as were most of the subsequent speakers, the usual proportion being quoted as from 1 in 7 to 1 in 30, in contrast to Mr. Dunn's 1 in 2½. The speaker pointed out that many cases of cartilage injury had only one attack; therefore he advised reduction by manipulation for the first, care being taken that the reduction was really complete, which it was not until free extension and entire relief of pain had been obtained. He treated cases by two to three weeks' rest in complete extension after reduction. Operation was desirable in every recurrent case, and imperative, if effusion kept occurring, in an athlete. Even if the cartilage appeared normal when the joint was open it should be removed completely.

Mr. H. A. T. FAIRBANK pointed out that in cases where there was no muscle-spasm the extreme wasting of the quadriceps could not be due to fatigue, but must be of the nature of a reflex inhibition. He suggested that sometimes obscure pain might be due to lesions of the popliteus tendon, the ilio-tibial band, or the insertion of the semimembranosus. He advised the use of a blunt hook to bring the posterior end of a cartilage into view at operation, and he recommended that all true ligament tears (not mere strains) should be sutured. He thought that lesions of the articular cartilage were not uncommon, and that fractures of the tibial spine were of two types—a shearing by the internal condyle, giving only slight displacement and not needing operation, and a tear of an anterior strip by hyperextension, which demanded suture or pegging. Dr. W. ATTLEE (Eton) gave a very interesting account of the lesions in schoolboys, the most common being an effusion associated with rapid atrophy of the thigh muscles. This soon cleared up if a few days' rest in bed were followed by regular exercise on a bicycle and rowing. Pain referred to the tibial tubercle was very common in the football season, but cleared up when this was succeeded by the running season, painful heels taking its place. Various *x*-rays were demonstrated,

some showing abnormalities in knees which had no symptoms. Mr. ROWLEY BRISTOW agreed with most of the points made by Mr. Dunn, and emphasized the importance of early exercise after operation for removal of cartilages; he encouraged lifting of the limb off the bed a few days after operation, gave faradism from the sixth day, and got the patient up on the tenth day. Mr. MCMURRAY (Liverpool) said the term "locking" was misleading, and should be abandoned. He again drew attention to his method of diagnosis by flexing the knee completely and then rotating it at each angle as it was extended, which enabled the site of injury to be localized by the pain and click.

Mr. OLLERENSHAW (Manchester) showed lantern slides of some interesting *x*-rays, and Mr. R. C. ELMSLIE, Mr. STUART (Birmingham), Mr. LAMING EVANS, Mr. ROCYN-JONES, and Mr. AITKEN joined in the discussion, to which Mr. DUNN replied.

SECTION OF MEDICAL SOCIOLOGY

Friday, July 24th

THE NEED OF EDUCATION IN QUESTIONS OF SEX

The PRESIDENT (Dr. L. A. Parry) before calling on the speakers, referred to the death of Mr. E. B. Turner, who was to have been a Vice-President of the Section, and whose work in all branches of medical sociology was so highly valued.

The opening paper, by the Rev. T. WENTWORTH PYM, is printed in full on page 186 of the present issue of the *Journal*.

In starting the discussion, Mrs. NEVILLE ROLFE (British Social Hygiene Council) referred to the magnitude of the problem. There were some five and a half million children under 14 in the elementary schools, and between three and four million young people between the ages of 14 and 20, the majority of them already in occupations. During the last fifteen years the scientific outlook on life had been more and more assimilated. Young people could now be appealed to on the ground of scientific knowledge and the application of science to life, but up to now it had appeared as if only those truths in science had been taken and used which would minister to material welfare, and the immense advances made by science in the understanding of human nature had been ignored in organized education. Young people of to-day would only accept teaching of the scientific accuracy of which they were assured, but they did respond to the appeal to their responsibility. What was required in this subject was not a hurried instruction of the physiology of sex unrelated to life, but of life itself. It was the medical profession, particularly the individual private practitioners, who were largely responsible for creating the social values pertaining to conduct in its relation to health, which values in turn influenced our social customs. It was useless for the educationist to talk about moral values if the medical man or woman did not support the line of teaching which the educationist gave. At the present moment, scientific knowledge as to what was normal in sex life was very deficient. The best that could be done was to focus the attention on the need for research. One must be prepared to say "I do not know" when one did not know, and not give hasty answers, based on moral values, to what were really scientific questions; that was not going to be of any help to the teacher. Her council had tried to devise a means of approach to the adolescent, and was now studying the problem of preparation for marriage and the hygiene of marriage. She hoped that the result would be a handbook giving in succinct form the results of physiology, psychology, and anthropology, in so far as they bore on this problem.

The BISHOP OF CHICHESTER confined his remarks to two aspects of the question: the nature of the teaching, and the person who should give it. In one's own case the initiation into these facts took a very considerable time, and even though the instruction given might be more systematic than it was in the youth of those present, the fact that it took a long time was not at all a bad thing. As Canon Pym had said, there were certain questions which a child asked in extreme youth, and other questions which he asked as he grew a little older. Each question should be answered frankly and simply as it came. By the time the child was 8 or 9 it was possible for a considerable amount of knowledge to have been gradually and simply received, thereby forming a basis for the knowledge acquired at a later period. The Bishop felt that the imparting of sex knowledge ought to be on a background of something much wider than sex, and sex ought not to be a special segregated subject. Thoughtful teachers would see the child's response coming during lessons in biology, elementary science, and in physical instruction. He thought that religious teaching also had a very important part to play, and it was well to rely on the Church impressing upon its children that the body was a trust given by God. As to the persons who should give sex instruction, ideally it should be the parents—well-informed and high-minded fathers and mothers, full of discretion. But often that was impossible, and in any case the parents could not do it alone. There must be collaboration, and the teachers, clergy, and doctors should be ready to take their part. The doctors, after seeing a family through illness or through a succession of births, should be ready to help the parents and children to see what was good for them at any given stage. The extraordinary complexity of the problem had to be recognized, including the fact that the information desirable to be given differed widely according to the homes from which the children came. If there was to be a single authority for giving direct instruction in the proper way at the proper time—and that was a large assumption—he thought it must be the school. The matter was not so difficult in public schools for boys. In the elementary schools the problem was much more acute. But if the school was not going to try and devise means, with the help of the medical officer and the parents, to give the instruction at a particular time when the moment had come, he did not know from what source the instruction was to come.

Major STEPHEN FOOT (House Master at Eastbourne College) spoke in the first place of the need for sex education. As a result of his experience as house master he was convinced that the need was vital. Some persons maintained that it was a mistake to tackle the subject at all. They considered that it put ideas into a boy's head and awakened a curiosity he would not otherwise possess. The speaker believed that to be "unadulterated rot." In nine cases out of ten, where a boy went seriously wrong in his sex life, it was due to not having received proper instruction in the functions of the body. An immense amount could and should be done in early years by parents and preparatory school masters, but he did not believe that full instruction in the functions of the body could be provided until the boy reached the age of 14 or 15. He had never yet come across a boy who did not admit that the earlier instruction which he had had failed really to satisfy his curiosity. As to the person for sex education, he started with the idea that the person to give such education was the parent. The first parent he interviewed on the subject, however, was a doctor. He asked him if he had talked to his son, and the father replied bluntly, "No, that's your job," and he went on to give three reasons for saying this. The first reason was that, on account of the personal implications, it was more difficult for a parent to give this instruction to his own child than for anybody else in the

world. Secondly, the task was in any case a difficult one, and one which improved with practice. This particular father said that he thought he would be no good at it until he came to his ninth or tenth son. Finally, this father thought that the matter was best regarded by a boy as part of his education, something that he had to be taught, and therefore it came more naturally from a schoolmaster. He agreed with this doctor that it was a task which the house master should undertake, and if he were a head master he would never appoint a house master unless satisfied that he was prepared to undertake the task and was competent to do so. As to the method of sex education, the speaker had no time then to do more than state his conclusions. It should never be collective. Books were of no use. In the first place, suitable books did not exist; and, as all boys were different, it was necessary to adapt oneself at a moment's notice to a particular case, which could not be done by literature. The method, again, should be thorough and complete, leaving no lurking curiosities, and, finally, it should be regarded as a sacred duty, and one to be approached in the spirit of prayer.

The Rev. James Reid (President, Free Church Council of Eastbourne) held that the proper person to give information was the parent. This was important from the point of view of breaking down the barrier of reserve between parent and child. The maintenance of such reserve in this respect might mean the perpetuation of the barrier into later life. It was also important that the parent should give the information because that would go far to ensure the right feeling and tone. It was not enough to dispel fear. Fear was the guardian of the sacred in undeveloped states, before right values came to bring the proper sanction against abuse. Hence, it was not enough to give the information naturally, as in the case of information about a plant or a machine. The sex function was not neutral to the personality, for body and spirit were intimately related. If these values were to be associated with sex, the information must be imparted by one towards whom affection and respect were given. This meant that the best results depended upon the right kind of home. The speaker concluded by saying that the true object of sex education was not the avoidance of dangers, but guidance into wholesome relationships between men and women, married and unmarried.

Dr. Christine Murrell said that the vast majority of those present would agree that the biological part of sex instruction might be given in classes, though probably it ought to begin ideally with the parent in the home. When it came to other sections of sex instruction, she wished to put in a word for the hygiene of the adolescent period, which should certainly be personal and intimate. On the very difficult question of the instruction of the adolescent as to how to become a full adult and desirable member of human society, to her mind, the question of instruction was really dissolved in the greater importance of the instructor. When it came to a question of advising the young, the vast majority of men and women with good intentions were bewildered. This was not because sex itself was not tremendously honourable, but at the back of the mind was a feeling of shame. This had nothing to do with normal reticence; it was not shame of sex, but was due to the wrong methods and customs of a great many with regard to sex, which created the difficulty. The person who gave instruction, therefore, must be one who had had many years' preparation. Barring certain abnormal cases, ought it not to be the parent himself or herself who chose the instructor? In fact, they could imagine any greater compliment to an older friend than to be asked by a younger for advice on this the present [illegible] young would not ask for such advice unless they "sensed" that the person asked was ready to respond. The young were extremely sensitive to atmosphere; they were reticent, but normally physiologically curious, and they would go to the person who, they felt, would answer the question in a suitable and sympathetic manner. That person might have to impart information, to say what he or she thought desirable, and to instil an ideal, but not to instruct. The ideal, in her view, was self-respect. That was the only safe thing with which a young man or woman could be equipped on going out into the world. It was above all things the character of the older person that was going to help the younger. She had come across cases where the mother was the best adviser for the boy and the father for the girl, but in general she thought it was for the mother to advise the daughter and the father the son. Self-consciousness must as far as possible be banished, and above all things that sugary sentiment, which was really a defence mechanism to hide the fact of shame, must disappear.

Dr. F. E. Fremantle, M.P., pointed out that most of the rising generation had no blind respect for authority and no patience with mystery, with which this whole problem was veiled. If the right of inquiry were conceded to the younger generation, some advance would be made. What was the real force behind the whole of the sex question? It was primarily the necessity for the race to continue. He believed that the true way of approach to this problem was to deal with the question of sex and of marriage as an essential part of the national life, to point out the duty and the necessity of the individual citizen to aim at a pure marriage and a family brought up in the fear of God and the service of the State, and to point out the enormous advantage of a happy—which meant a chaste—married life. The ideal of chastity and chivalry could be made to appeal greatly to boys and girls. He thought that the medical profession had been somewhat to blame for the discredit into which the subject had fallen, because the textbooks of medicine had failed to deal with this matter. He remembered writing to Professor Starling many years ago pointing out that his famous textbook on physiology hardly dealt with sex at all, and Starling's reply was that the subject was too difficult.

Dr. Israel Feldman said that many views had been advanced that morning from which he profoundly disagreed. He distinguished between sex education and sex instruction. As to sex instruction previous speakers had vastly exaggerated the difficulty of imparting knowledge. Such difficulty as there was had been created in an entirely artificial and unnecessary way. He was radically opposed to individual instruction on sex, because that created the artificiality of atmosphere which it was most desirable to avoid. It was all wrong, having given a boy some information, to tell him not to discuss the matter with other boys. It should be an open thing. If he desired to discuss sex, let him do it with the same openness as he would discuss sport. Biology was the royal road of sex instruction, being the explanation of the normal functioning of living things. With regard to sex education, he asked how many medical persons present had ever been taught about the significance of masturbation, or of birth control from the medical point of view, or as to what were the effects of continence. The trouble was that the elders had no philosophy for themselves. That was where the Church had beaten the medical profession, for the Church at any rate had a definite and specified outlook for guidance in sex education, though up to the present it had not been in the position to give sex instruction. The answer of the Church, however, would not satisfy the present generation. The whole matter was in the melting-post, and it would go from bad

to worse if they continued to think that they could tell the young anything which they themselves did not implicitly believe.

Dr. J. L. BASKIN said that Dr. Stoddart, who had interpreted Freud's work, had shown clearly that at 4 years of age children became extraordinarily curious about themselves; later this curiosity was submerged in the unconscious. At 11 years of age it again came to the surface, and the boy or girl took a deeper interest in the matter. Later, at puberty, definite psychological conceptions were formed, and then it was that precise information should be given. It was a great mistake to pick out education on sex matters as apart from education in biology in general. With regard to the method, it was in a general superficial way an excellent idea to give information collectively, but in a class there were always those who wanted a little more than the others. An important thing, hardly touched upon in the discussion, was the question of what was to happen to the young man or woman between 16 and 25. The speaker urged the importance of sport and the preaching of continence. The self-absorption of the elements of procreation would not only imbue the individual who was the recipient thereof with courage and self-reliance and initiative, but would also engender a spirit of tolerance for others who were not gifted in the same way. He desired the formation of a committee of members of the medical profession, clergymen, and teachers, to arrange the requisite advice.

Dr. COURTENAY C. WEEKS (Beckenham) described some lectures in which he had taken part on behalf of the education authorities of Leicester and Derby. A letter was sent to the parents of children who were leaving school stating that lectures on sex hygiene would be given to the scholars, and asking the parents, if they approved, to let the children attend. An increasing number of parents and scholars had availed themselves of these lectures, and it had been a revelation to him to hear what some of the fathers had said following upon the lectures to elementary school children. In many cases a great change had been wrought in the mentality and atmosphere of the school as the boys were admitted into the knowledge of the glorious responsibility and trusteeship of life. Collective instruction of boys and girls on this vital subject was neither impossible nor to be deprecated. The subject should be dealt with normally and concisely, and then left alone. After all, sex was only part of the larger difficulty of the conflict of life. These children called for the exercise of the sympathy of their elders, for at the age of 11 or 12 a child might have the desires and passions of grown men and women without the mental control.

In further discussion Dr. J. K. LOVE (Glasgow) referred to the advantages of a study of Mendelism, which he considered to be the key to all proper sex education for young children. Dr. MOORE remarked that nothing had been said about sublimation—that by some means or other children had to be taught how they were in their own particular case to control their sexual impulses and turn them into a useful channel. Miss BRENDER (Social Purity Worker in the Chichester diocese) asked how boys were instructed in public schools with regard to girls, and whether the highest ideal of womanhood was presented. Dr. JOHN BIRCH (Luton) said that as one who had attended many hundreds of confinements he could bear witness that the first question invariably asked by the parents was: "Is the child sound in body and mind?" In that question lay the whole philosophy of sexual conduct. He deprecated the common view that sexual needs had to find sexual satisfaction; he had lived in mining camps, and had been astonished to find the continence of rough men. The proper way was sublimation. Dr. HARMAN TAYLOR (Liverpool) said that his own education in this matter was imparted by one of the greatest of head masters, Dr. J. L. Paton of Nottingham, who brought to the boy mind the sense of mystery, and explained the subject through the avenues of biological science. The ideal solution of the whole problem was through a schoolmaster who had a personality able to influence boys.

Canon PYM, in a brief reply, said that what he wanted to see were some books giving a full list of the sort of questions that young children asked, and the sort of way in which they should be answered.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY

More than thirty nations took part in the sixth international conference of military medicine and pharmacy, which was held recently at the Hague. The first main topic of discussion was the recruiting and training of the medical personnel, and the relative advantages of approaching medical students and qualified medical practitioners were debated. It was felt that the opportunities offered by the career of military medicine should be advertised more widely, in order that students might be attracted before they had made up their minds to embark on civil practice. Special post-graduate training ought to be more freely available, and there should be more extensive scope for interchange of medical officers between the various nations.

WAR PSYCHO-NEUROSES

In reviewing war psycho-neuroses the conference took note of the fact that these conditions were not created by war conditions, but that confusional states with an emotional basis were present in a latent form before the final stimulus brought them into the open. The subsequent symptomatology, while comparable with that of similar states in civil life, was coloured by the episodes and conditions of active service, and was consequently of a more serious type, both as regards the patients and their relationship to their environment of duties and responsibilities. Moreover, there was the problem of State pensioning in cases where treatment proved ineffective. The existence of border-line cases, presenting a disorder of conduct rather than a definite neurosis, called for the creation of an expert diagnostic organization, and psychiatrists would have to investigate these patients before any question of punishment could be considered. A neuro-psychiatric branch of military medicine should be established in times of peace on the basis of a central army hospital, accommodating patients primarily for the purpose of diagnosis. Cases seriously ill would be sent elsewhere, and only those capable of being cured within a relatively short time would be retained. In connexion with this, special methods of evacuation from the more advanced parts of the fighting line would have to be planned, in co-ordination with the usual arrangements for the sick and injured. Regional neuro-psychiatric centres should be established throughout each country. Here the primary diagnoses would be reviewed and corrected, definite categories being provided for three classes of patients—namely, the gravely ill requiring institutional segregation elsewhere, the transient and easily curable types which could be dealt with on the spot, and the difficult but still curable cases for which special institutions would be necessary. It was agreed that the organization of such a neuro-psychiatric military service would be much more difficult in countries where conscription was not in force.

HAEMORRHAGE ON THE FIELD OF BATTLE

The two final questions discussed were the best means of dealing with urgent cases of haemorrhage on the battlefield, and the treatment of the sequels of wounds of the

jaws and teeth. In respect of the first it was felt that there should be standardized first-aid equipment for the individual as well as for stretcher units, that further investigations should be made of the later complications of ischaemia following tight bandaging, especially when venous rather than arterial haemorrhage was concerned, and that better arrangements were desirable for instructing those dealing with casualties in the firing line. Consideration was also given to the supply of sterile drugs in ampoules for emergency injections.

Emphasis was laid on the importance of ensuring that the early treatment of wounds of the jaws and teeth was devised on right lines, a dental expert acting in association with the surgeon. During peace specialists should be trained to deal with the various contingencies that might arise, and so bring about the diminution of such unfortunate sequels as infected bony fragments, ankyloses, pseudo-arthroses, and subsequent dental degeneration.

POST-GRADUATE MEDICAL WORK IN GERMANY

The following account of present-day courses for medical graduates in Germany is abstracted from an article furnished to us by Professor Curt Adam, general secretary and organizer of the German National Committee for Post-Graduate Work.

There is no diversity of opinion concerning the necessity for medical post-graduate work in Germany to-day. The university turns out its medical students with an education suited to the prevailing demands of science, but science never stands still, and the doctor must follow if he wishes to keep abreast of the times. For this purpose he must attend special courses, since complex methods of treatment are not learned from a journal or from verbal description at a medical gathering or congress.

ARRANGEMENT OF POST-GRADUATE STUDIES

Now the higher education of doctors is not only a matter of individual professional interest, but concerns the health of the nation as a whole. Of what use to humanity are new discoveries in the realm of medicine if they are not put within reach of the great body of general practitioners? If post-graduate work is to be productive in this sense, it is absolutely necessary that as many doctors as possible should participate in organized courses, so that the general standard of practice may be raised. This means that courses must be so arranged that doctors can attend them without undue sacrifice of time and money. Since compulsory methods of ensuring attendance are impracticable certain conditions are necessary: (*a*) the courses must be free, (*b*) they must be given at least in the immediate neighbourhood of the doctor's practice, and (*c*) they must be so arranged that he can attend them without disturbing his everyday work.

Location

In Germany the organization of convenient meeting-places required a far-reaching decentralization. The number of available universities was not adequate for the purpose, and steps had to be taken to ensure opportunities for post-graduate studies wherever there was a great deal of medical activity. Where large hospitals existed the matter was comparatively easy; it was more difficult in small towns and in the country. In the latter the system of travelling teachers was adopted.

Hours for Study

The most convenient periods for study were found to be from 12 o'clock to 2 o'clock, and after 7 o'clock in the evening. Sunday morning was also popular.

Free Courses

The question of free instruction is an important one in medical post-graduate work as it is understood in Germany. Naturally there are people who regard what is paid for as more valuable than that which is given free. While this may be a true and representative opinion of a large part of the medical world, the payment of fees is not the way to increase the popularity of post-graduate work, or to attract the largest number of doctors. In ideal circumstances the teachers would be sufficiently compensated and the students would have free instruction, even being given a certain amount for taking part in the course. But the necessary expenditure on the part of the State and medical organizations would be almost prohibitive. Happily there are still teachers in Germany who are pleased to give their services for this work without stressing the question of remuneration. Were it not for this widespread spirit of self-sacrificing co-operation, post-graduate education in Germany would not be possible.

Organization

The above-mentioned points, which were not sufficiently emphasized when the possibility of post-graduate work was first being considered, led to the creation of a central committee for medical post-graduate work in Prussia in 1901. The foundation of this committee was followed by the establishment of similar committees in the other German States which met in 1908 as a German committee for medical post-graduate work. These committees are unions whose members consist of representatives of the participating State and municipal boards of the universities, of the hospitals, of the medical profession, and of social medical societies, the direction of the work being in the hands of an official or semi-official doctor. The committees receive funds through their respective Governments, which have realized that it is in the interests of the health of the entire population to have a well-educated medical force. Funds, however, are small, because, as mentioned above, the teachers receive no remuneration. The State committees only outline the general rules and provide for the assembly of as many local committees as possible, these local committees being responsible for the actual work. Up to the present committees have been established in eighty German towns. The medical faculties naturally take over these tasks in the university towns; in others the work is concentrated at the large hospitals. In contrast to other countries, Germany has a very large number of promising lecturers, qualified in every respect to act as college professors.

Post-Graduate Work in Small Towns and in the Country

As the local committees described above are generally located in the large towns, travelling lecturers are sent out from the centres of learning, singly or in groups, with material brought with them or distributed locally, to give lectures to the medical societies of the small towns and villages. In addition, half-hour talks on subjects of post-graduate interest are given at wireless stations by the most prominent authorities on Friday evenings. In this way the country doctor supplements his education. Very often the lecture is followed by long and animated discussions.

Post-graduate work is also promoted by the publication entitled *Zeitschrift für Ärztliche Fortbildung*, sponsored by the State committee and published by Gustav Fischer, Jena. In contrast to the more scientific periodicals it is devoted solely to higher medical education, concerning itself only with such matters as have received scientific recognition and are of use in general practice.

The medical post-graduate education of the country doctor has recently been the subject of reform. Unlike his professional colleague in the town, the country doctor must invariably make a long journey to the locality where the courses are held, and arrange for accommodation. During this period he must also give up his practice or find a deputy. These arrangements involve the expenditure of a considerable amount of money. With the object, therefore, of facilitating his attendance without loss of time and money, the chief medical societies, the Reichs insurance bodies, and the medical post-graduate organizations, have combined to supply the necessary funds. Thus the country doctor may be provided with board and lodging, free of charge, at an institution set aside for post-graduate study. The medical post-graduate organizations cover the fee of the lecturer, and the medical

societies pay to each doctor attending the courses the sum of 125 marks to enable him to compensate his deputy. Courses are held in tuberculosis, venereal diseases, children's ailments, and accident disabilities. According to another scheme, the country doctor may be accommodated in hospital or clinic for a short period, say, from two to four weeks, the medical societies reserving the beds for this purpose. He takes full part in the work of the hospital, and boards along with the other doctors. In this way he is afforded the opportunity of participating in the practical treatment of the patients. Of especial importance to the country doctor is the fact that similar arrangements have been made with maternity clinics.

Post-Graduate Courses for Foreigners

The opportunities for post-graduate work mentioned above are intended primarily for the German doctor, but numerous arrangements have been made to provide facilities for the large number of foreign doctors who come to Germany to study. In Berlin an assembly of docents and professors has been formed to arrange for the provision of post-graduate courses in the holidays. These fall into various classes.

1. Post-graduate courses of short duration (two to four weeks) These are partly general courses in some important field such as internal diseases, diseases of the eye, urology, or cardiology, or practical educational courses in some special field—the technique of examining the heart, dermatological treatment methods, and so on. The courses are held generally in March and October, but they have also been arranged in other months.

2. Post-graduate courses of longer duration. Provision for these is made in the large town hospitals, where, after a general preparatory course, the students do practical work in the sick room, laboratory, and on the dissecting table.

Information Bureau

Of particular interest to the foreign doctor is the bureau in the Kaiserin Friedrich-Haus fur das ärztliche Fortbildungswesen (Berlin, N.W.6, Luisenplatz 2-4), which deals with all questions relating to post-graduate work, facilitates attendance at clinics, and promotes social intercourse. It also gives information about rooms, cost of maintenance, and similar matters. Doctors should get into touch with this bureau before they start on their journey, or as soon as they arrive in Berlin, so that they may derive the greatest possible benefit from their sojourn in the country.

Nova et Vetera

DR. WILLIAM GILBERT

Discoverer of Terrestial Magnetism and Founder of Electrical Science

In the list of Past-Presidents of the Royal College of Physicians of London we find the name of "William Gilbert 1600"; and in the College calendar, opposite the date November 30th, we read: "Dr. William Gilbert died 1603"

Most medical men will not know anything about William Gilbert; others may remember reading, in their early student days, of Dr. Gilbert, physician to Queen Elizabeth, who discovered terrestrial magnetism, and devoted much time to the study of frictional electricity; but few will know anything of his great work. Yet William Gilbert was one of the most distinguished scientific men of his age, and a man to whom physics owes so much. He was born at Colchester, Essex, in 1540. At the age of 20 he took the degree of B.A.Cambridge He had been a student at St. John's College, and later was elected a Fellow of his College. He became M D Cambridge in 1569. For four years he travelled in Italy, and then settled in London in 1573. He became a Fellow of the Royal College of Physicians, then censor, later treasurer, and finally President of the College in 1600.

We are told that Gilbert was a man of means, that he spent money freely (estimated at £5,000) on his books, instruments, magnets, and experiments, and that for twenty years he experimented and speculated on magnetism and frictional electricity. His great life's work in science was his large book on this subject. He worked at it for eighteen years; it was published in 1600, only three years before his death. The title of the book is *De Magnete* ("magneticisque corporibus, et de magno magnete tellure, physiologia nova"). A copy of this large book, in Latin, is in the library of the Royal College of Physicians, London; and an English translation, by P. F. Mottelay, was published in London in 1893. Gilbert set forth in this book his great theory that the globe of the earth acted as an enormous magnet, or loadstone, and that this action accounted for the tendency of the magnetic needle to point in a polar direction. In his book he describes the numerous experiments on which he based his theory of terrestrial magnetism: he also considers the magnetic movements, the direction, variations, and dip of the magnet, and he adds a detailed account of magnets and loadstones

Gilbert also made numerous experiments by means of a loadstone ground into a globular form, having thus the shape of the earth. This globular loadstone he named a "terrella" or little earth. He placed magnetic needles on this "terrella," and made a large number of observations thereon. The results of these observations were similar to those noted with respect to the magnetic needle and the earth. And so the building up of his theory of terrestrial magnetism was aided by his observations on the magnetic needle and his "terrella"

Gilbert's book is devoted mainly to magnetism, but in one chapter (II) he deals with another subject, which has now become of such enormous importance in science and daily life In this chapter he describes a large number of phenomena which differ from magnetic phenomena It is said that Thales, who lived about 600 B.C., discovered that amber when rubbed acquires the power of attracting light bodies, such as pieces of pith or cork. Now Gilbert showed by his experiments that this attractive power could be developed by rubbing other substances besides amber He showed that wax, sulphur, glass, and many other substances, when rubbed with a piece of dry flannel, were then also able to attract small fragments of paper, cork, and other light bodies To this attractive power he gave the name of *electricity* (electricitas), from the Greek word for amber—ἤλεκτρον We thus owe to Gilbert the word electricity, and from this word numerous other terms have been derived Gilbert discusses the reasons for this attraction power, and excludes the views previously held He also compares and contrasts the attraction of electric and magnetic bodies The distinction between electricity and magnetism was therefore first established by Gilbert and the study of electrical science commenced with his work

Thus the foundation of the science of terrestrial magnetism and of electrical science was laid by Gilbert in his marvellous book It is full of original observations and records of experiments, and in it he demonstrated the value of experimental methods of investigation before Bacon's celebrated writings appeared At the end of the book Gilbert put forward views which he describes as a "new physiology" Some of these views are remarkable and interesting, especially in a work on physical science In this section of his book Gilbert remarks: "If there is aught of which man may boast, that of a surety is soul, is mind At a meeting of the Royal Geographical Society in 1903, to commemorate the reign of Queen Elizabeth, Professor Silvanus Thompson, in an

address on William Gilbert, describes him as the father of electrical science, and points out that before Gilbert there was no electrician.

Gilbert was successful in his practice, and was appointed physician to Queen Elizabeth, and afterwards to James I. In the town hall at Colchester is a painting, by Mr. Acland Hunt, representing Gilbert demonstrating his electrical and magnetic experiments to Queen Elizabeth and her Court. On the facade of the town hall is a statue of him, and in the public library a copy of his portrait. Gilbert's remains rest in Holy Trinity Church, Colchester, where a mural tablet tells briefly his life record. His monument, as Professor S. Thompson remarks, is his book in which he laid the foundation of terrestrial magnetism and of the experimental science of electricity. For this the world will always honour him, and medical men will be glad he was a physician.

R. T. WILLIAMSON.

Ireland

Vital Statistics for the Irish Free State

During the first quarter of the present year 14,301 births were registered in the Irish Free State. This number represents a birth rate of 19.4 per 1,000 of the estimated population, being 0.6 below the average rate for the first quarters of the ten years 1921–30. The equivalent figure for Northern Ireland was 20.6, and for England and Wales 16.3. Deaths registered during the quarter numbered 13,680, or a rate of 18.5 per 1,000. This rate is 1.3 above the rate for the first quarter of the previous year, and 1.1 above the average rate for the first quarters of the preceding decennium. Of the deaths registered, 1,271, or 9.3 per cent., were those of infants under 1 year, the number of deaths of infants being equivalent to 89 per 1,000 births, compared with 67, 52, and 71 for the three previous quarters respectively. The mortality in the Irish Free State from the principal epidemic diseases was higher than that for the first quarter of the preceding year, representing an annual rate of 0.7 per 1,000, compared with an average rate of 0.6 for the first quarters of the five years 1926–30. This higher death rate is attributed mainly to an increase in the mortality from measles, diarrhoea, and enteritis (of children under 2 years), and in a lesser degree to an increase in deaths from scarlet fever. Deaths from all forms of tuberculosis numbered 1,048, or an annual rate of 1.4 per 1,000 ; while the number of deaths ascribed to accidents and diseases of pregnancy and childbirth was 59, or a rate of 4.1 per 1,000 births registered.

Treatment of the Insane in Ireland

An attractive and detailed account of *The History of the Care of the Insane in Ireland up to the end of the Nineteenth Century* has now been published by Dr. T. Percy C. Kirkpatrick, registrar of the Royal College of Physicians of Ireland. The author opens with a brief account of the ancient views held about madness in Druidic times, and recalls that, during the codification of the ancient laws of Ireland about the time of St. Patrick, very definite regulations were defined for the protection of persons of unsound mind, provision being also made for their children. Later, monastic hospitals undertook the care of such patients, but after one or two abortive attempts at providing special institutions for them, the practice of confining dangerous lunatics in prisons continued until well on into the nineteenth century, though cells were provided at certain workhouses for them. St. Patrick's Hospital in Dublin was opened in 1757, and although very inadequate as regards accommodation, it had to suffice for the entire country for many years. At the beginning of the nineteenth century it was still the only public hospital exclusively devoted to the care of the insane, but a private asylum had been opened near Cork in 1799, and many insane persons were being maintained in the "Houses of Industry" of Dublin, Cork, Limerick, and Waterford. The Cork institution—which had been established in 1787—developed subsequently into one of the largest lunatic asylums in Ireland. The early years of the nineteenth century saw the birth of active interest in the treatment and classification of the insane, thanks mainly to Dr. Alexander Jackson, who concerned himself actively with the foundation of the Richmond Asylum in Dublin, and the private asylum at Farnham House. During the next forty years a great advance was made in the care of the insane, and various asylums came into existence in different parts of the country. This booklet, which is printed at the Dublin University Press by Ponsonby and Gibbs, represents a useful contribution to the history of what is now recognized as a definite branch of medicine.

Mayo Mental Hospital

In the annual report of the Mayo Mental Hospital for 1930 the resident medical superintendent, Dr. Sheridan, states that during the year 133 patients were admitted, 76 were discharged, and 73 died, the daily average number resident being 812. The most prevalent form of mental disorder was melancholia (recent), of which there were 33 cases, followed by dementia praecox (25). Other forms were: mania, 13 ; delusional (non-systematized), 9 ; recurrent mania and melancholia, mental deficiency, and senile dementia. Heredity was the cause or a factor in 29 cases, mental stress in 2, critical periods in 24, mental deficiency in 12, and alcohol in 6 cases. Other causes were bodily diseases—nervous, gastro-intestinal, and pulmonary. The number of discharged patients was below the average, the percentage of recovery on the number of admissions being 44.3. This was due chiefly to the unfavourable and relapsing type of cases under care ; also to the fact that many of the acquired forms of mental disease supervened on a condition of mental deficiency in some degree. Deaths numbered 73, or 8.6 per cent. of the daily average number. All deaths were due to natural causes. Phthisis and other forms of tuberculous diseases accounted for 20, respiratory and cardiac diseases for 13, atrophy and senile decay for 12. Other causes were malignant disease, exhaustion from mania or melancholia, and organic brain disease. Of the patients who died, 29 were about 70 years of age.

Scotland

New Edinburgh Chair

Through a grant from the trust fund of the late Mr. Edward Clark, printer, Edinburgh, a chair of child life and health, known as the Edward Clark Chair, was recently founded in the University of Edinburgh. The University Court has now appointed Charles McNeil, M.D., F.R.C.P.Ed., to be the first occupant of this chair. Professor McNeil was born at Stranraer, and was educated at George Watson's College, Edinburgh. He took the M.A. degree at Edinburgh in 1901, and graduated M.B., Ch.B. with first-class honours in 1905. After acting as resident physician to the late Sir Thomas Fraser in the Royal Infirmary of Edinburgh, he became resident for a time in the Royal Edinburgh Hospital for Sick Children, and house-physician to the East London Hospital for Children at Shadwell. In 1910 he became a member of the Royal College of Physicians, and Fellow in 1913. At present he is physician to the Royal Edinburgh Hospital for Sick

Children. During the war Professor McNeil served on the staff of the Scottish Red Cross Hospital at Rouen. He has made numerous contributions to medical literature on the occurrence of disease in early life.

Edinburgh Medical Graduation

The summer graduation ceremony of the University of Edinburgh took place in the McEwan Hall on July 22nd, under the presidency of the Vice-Chancellor, Principal Sir Thomas Holland, who conferred the degrees. It was announced that the Cameron Prize in practical therapeutics for the present year had been awarded to Madame Marie Curie, Paris, in recognition of the therapeutic results which had been made possible by her discovery of radium. The M.D. degree was conferred on eleven persons, and the degrees of M.B., Ch.B. on about 130. After the capping ceremony the graduates were addressed by the promoter, Professor D. Murray Lyon, who said he wished to take advantage of the opportunity to direct their attention to the claims of medical research. The large amount of information which was compressed into five years of medical study was far from being either complete or final. The late Sir James Mackenzie had remarked that the intelligent practitioner before he had been long in practice discovered that he was unable to recognize the ailments of the great majority of his patients, and that many of the aspects of their illnesses had never been presented in his hospital training. Medicine had become one of the most complex of the sciences, although it still remained largely an art. Although the general death rate had been reduced by one-half in the last two hundred years, the cause of cancer remained unknown, while organic disorders of the kidneys and blood vessels were still responsible for much ill-health, and at intervals the country was swept by epidemics of influenza, as yet beyond control. There was a tradition in medicine that no discovery could be kept secret for the advantage of an individual, any advance being at once made public so that the new knowledge became available to all. The individual who made a contribution to medical knowledge derived no personal gain, though his success might favour academic promotion. Some years ago Parliament had encouraged investigation by a grant administered by the Medical Research Council, and this had been of great assistance; much more, however, was required.

England and Wales

Mental Deficiency

The annual report of the Board of Control, to which reference has been made in recent issues, states that the total number of mentally defective patients resident in institutions and under guardianship on January 1st, 1931, in England and Wales amounted to 30,354. On the mental deficiency side the question of accommodation again assumes a place of primary importance. Three new institutions have been opened during the year, and these, together with changes at other institutions, have provided 1,255 new beds. A number of local authorities are taking active steps to provide accommodation for mental defectives, but the need for further provision is still acute. The Board reports that it has received the recommendations of a special committee, under the chairmanship of Mr. Walter Hedley, K.C., which was appointed to advise on the requirements of colonies for mental defectives. This committee states that "the supervision exercised by the Board of Control in regard to the expenditure on colony schemes has been effective, and we find it very difficult, even after close scrutiny, to cut their requirements much finer." At the same time the committee makes valuable suggestions which will, it is hoped, conduce to further economy in construction. The Board observes that there has been a steady fall in the cost per bed, and that recent contracts indicate that the cost of construction, excluding the cost of land, may now be taken as slightly exceeding £300 a bed for a complete colony. A point of considerable interest arises in connexion with the provision of these colonies. The Board again draws attention to the difficulty of finding superintendents with any real experience of mental deficiency work for the new colonies which are being established, and it emphasizes the importance of devising means by which these officers may familiarize themselves with modern methods of handling and training defectives. On the controversial issues of marriage and sterilization the Board repeats the view previously expressed that the marriage of defectives under order should be prohibited by law. As regards sterilization it observes that the question deserves close and scientific study, but that the necessary data are not yet available to enable any judgement to be formed on the social and physical consequences of legislation legalizing sterilization.

Birth Control Clinics

Reference was made in this column on April 4th (p. 600) to the memorandum on birth control clinics issued by the Minister of Health in March last. Finding that misconceptions have arisen in regard to the views therein expressed, the Minister now brings certain matters to the notice of local authorities in Circular 1208, dated July 14th. This emphasizes the point that the Government is advised that local authorities have no general power to establish birth control clinics as such. The memorandum was issued solely for the purpose of explaining the views of the Government on the use of institutions controlled by local authorities for the purpose of giving advice to women on contraceptive methods, and the question of providing facilities for giving such advice within the limits laid down in the memorandum is a matter entirely within the discretion of the local authority. Under the Maternity and Child Welfare Act, 1918, the powers of local authorities are limited, so far as women are concerned, to making arrangements for attending to the health of expectant mothers and nursing mothers. If an authority decides to provide facilities for giving birth control advice at a maternity and child welfare centre their use must be strictly incidental to the purpose for which the centre is established, and they can be made available only for married women who are either expectant or nursing mothers already in attendance at the centre and in whose cases further pregnancy would be detrimental to health. If action is taken under the Public Health Acts to establish a clinic at which medical advice and treatment would be available for women suffering from gynaecological conditions, the use of any facilities provided at the clinic for giving advice on contraceptive methods must be strictly incidental to the purpose for which the clinic is established—namely, the treatment of sick persons. Only women who need medical advice and treatment for gynaecological conditions can properly be admitted to the clinic, and contraceptive advice can properly be given only to married women in attendance at the clinic in whom pregnancy would be detrimental to health. It is obviously desirable for a local authority to obtain the services of an officer specially experienced in the clinical advice and treatment needed at a gynaecological centre of this sort. The Minister does not consider it desirable that a gynaecological clinic should be established at a maternity and child welfare centre, and if an authority is satisfied that there is need for such a clinic it should be provided in separate premises or at a hospital. Expectant and nursing mothers in attendance at such

centres who are found to need medical advice and treatment for gynaecological conditions could then be referred to the clinic. The Minister considers it important that no existing officer of a local authority should be prejudiced in any way by a decision of the authority to provide facilities for birth control advice within the limits laid down in the memorandum. He is of opinion that this work should not be regarded as falling within the scope of the normal duties of the medical officers of a local authority, who should be free to undertake it or decline it.

Out-patient Clinics under Mental Treatment Act

Out-patient clinics for persons suffering from mental disorders have been established at three general hospitals under the management of the London County Council—namely, St. Mary (Islington), St. Charles' (Notting Hill), and the Mile End Hospital. They have been in operation since early in May, and a very useful work has been begun, which is believed to be susceptible of development on larger lines. The clinics are under the general direction of the medical superintendent of the Maudsley Hospital, and a medical officer from the staff of that hospital has been detailed to act at each clinic. It is hoped to attach medical officers from other mental hospitals. Students from the London School of Economics who have been receiving practical instruction at the Maudsley Hospital as part of a mental health course have voluntarily given their services at the associated out-patient clinics as social workers to secure information essential to the medical officer in dealing with his patients. This arrangement, however, cannot continue after the end of July, when the students who have finished their course will be replaced by beginners unable for a time to give useful service. The London County Council, therefore, proposes to employ one psychiatric worker, trained in scientific methods, to serve all three clinics, and to be attached to the staff of the Maudsley Hospital.

Correspondence

PLUMBISM

SIR,—I have just been reading with the greatest interest the two instructive and valuable papers on lead poisoning in the *Journal* of July 18th, by Dr. Edwin Bramwell and Dr. Norman Porritt. On first reading these communications it seemed as though every possible source of the poison and its mode of entry had been exhausted; but yet there is another which, in my knowledge as a doctor practising in a rural district in Wilts whose experience goes back to 1871, was the cause of more than 50 per cent. of the many scores of cases of plumbism which I was called upon to treat. The cause I allude to is the drinking of "home made" wine fermented in a red glazed pan; the glaze for these utensils was made from a lead compound, but it was readily dissolved by the acid of the fruit, with which it was in contact for some days. The cottagers nearly always had good gardens, and grew quantities of fruit, such as gooseberries, currants, rhubarb, plums, and in a few cases even grapes were to be seen on their walls. Parsnips and elderberries, though much used, did not seem to be such great offenders—probably from having less free acid in their contents. I found after some years, on a few occasions, where it was possible to exclude every kind of wine (and, of course, other recognized sources), that the same consequences ensued from the drinking of ginger-beer made with lemons and ginger and sugar, and fermented in a red glazed pan. The symptoms were of the acute kind—abdominal pain, much vomiting, obstinate constipation, a sallow complexion, yellowish conjunctivae, and the blue line on the gums. I noted also one other very easily overlooked source of the poison. A cider press with a leaden tray to catch the expressed apple juice went round to many farms in the district, and left in its trail many blue lines, yellow eyes, and much stomach ache!—I am, etc.,

R. LEWIS WILLCOX, M.R.C.S., L.R.C.P.

Salisbury, July 20th.

SIR,—I was much interested to see the papers on plumbism contributed to the *Journal* of July 18th by Drs. Bramwell and Porritt, as for a considerable number of years I have been studying this question in my own area.

I am in thorough agreement with Dr. Porritt that there are two types of plumbism—that is, a classical type, which is quoted in textbooks, and a mild and insidious form, which very often escapes notice, and which may only be found out by a sudden exacerbation of symptoms. I have noticed the following types of illness occur, due to the taking of minute quantities of lead:

Marasmus, wasting, and general debility in young infants.
Premature birth, and congenital debility in infants.
Infantile convulsions.
Neuritis of various forms.
Diarrhoea.
Constipation.
Mental depression and, in one case, encephalitis.
Severe anaemia, followed by death.
Abortion.
Epileptiform convulsions in adults.

During last year the infantile mortality rate, in an area I know of, supplied with a very lead-soluble water, was 134, while that of an area in the same district in which the water had been treated to prevent lead solubility was 56; the following causes of deaths were noted among children in the lead-soluble area:

1. Prematurity.
2. Infantile convulsions and infantile enteritis.
3. Convulsions and enteritis with jaundice.
4. Prematurity.
5. Epileptiform convulsions } Twins both died within four-
6. Inanition } teen days after birth.
7. Prematurity.

In this area lead is found in the water supply of every house in which there is a lead pipe, and in Cases 5 and 6 the mother had been living, just up to confinement, in a house in which the amount of lead in the water was found to be 0.47 grain per gallon, or nearly 1/2 grain per gallon. I see Dr. Porritt found that 1/14 grain could cause symptoms. In this particular supply nearly all the samples show an amount of lead greater than 1/10 grain, and some as much as 3/4 grain per gallon. I might state that this supply is being dealt with, and a filtration and dosing plant will be installed very shortly to prevent the action of the water on the lead pipes, so that the residents in this area in future will have an exceedingly pure supply, because the water itself is of a most excellent quality (prior to going into the pipes).

For a number of years an investigation of the water north-west of Derbyshire was carried out by Dr. Thresh and myself, details of which will be found in the book, *Examination of Water Supplies*, by Thresh and Beale. In this investigation we found that it was the length of water-service pipe that was the determining factor in causing large amounts of lead to be dissolved, rather than the pressure of water. We came to the conclusion also that 0.05 part per 100,000 of lead was the largest amount that could be taken with safety, and also that silicate of soda was effective in some instances in preventing lead solubility. I am inclined to think, however, that the addition of lime to the silica would render it more effective.

Dr. Porritt mentions lead as being the cause of maternal mortality. I thoroughly agree with him, and I would like to suggest that in those districts with a high maternal and infantile mortality in which there is any suspicion of the water being lead-soluble the supply should be examined for the presence of lead (that is, supply from the tap).—I am, etc.,

ERNEST MILLIGAN, M.D., D.P.H.,
July 20th. M.O.H., Glossop and Glossop-dale.

AFTER-EFFECTS OF IRRADIATION OF UTERUS

SIR,—I was interested to read the letter from Mr. R. S. Pilcher in your issue of July 18th (p. 122). I hope sincerely that University College Hospital, which has done such good work on the problem of creating artificial menopause, will continue to follow up its cases, as in ten years' time such figures will be of real value in the question of radium treatment as prophylaxis for carcinoma of the cervix uteri.

It is difficult to follow Mr. Pilcher's suggestion that in the case quoted the radium was responsible for a malignant cyst of the ovary. Surely the most that he can argue from this one case is that the irradiation will not prevent the growth of an ovarian cyst, and a malignant one at that. I have myself seen an ovarian cyst arise some time after irradiation, but fortunately it was not malignant.—I am, etc.,

London, W.1, July 22nd. MALCOLM DONALDSON.

IMMUNITY AND MALIGNANT TUMOURS

SIR,—I notice in Dr. Thomas Lumsden's paper entitled "Tumour immunity; the effects of eu-globulin and pseudo-globulin fractions of anti-cancer sera on tissue cultures" (*Journ. of Path. and Bact.*, 1931, iii, 349) he states that serums, made by repeated inoculation of human breast cancer into a sheep, kill cancer tissue cultures. He associates this action with the euglobulin of the anti-cancer serum, and concludes that "the euglobulin fraction contains all the antibodies which are specifically toxic to cancer cells." He considers that his many experiments demonstrate "beyond doubt the existence of antibodies having a specific affinity for cancer cells."

Now the bactericidal property of immune serum in bacterial infections, as usually interpreted, depends on two substances acting together—amboceptor and complement. The amboceptor resists heat, and the complement is thermo-labile—thus resembling an enzyme.

Dr. Lumsden prepared his anti-cancer serums (and others) by the method I described in 1913 at the Therapeutic Section of the International Congress of Medicine—namely, by inoculating human breast cancer repeatedly into a sheep or other animal. He attributes the destructive effect he obtained to the action of the "euglobulins (and pseudo-globulins) *plus* complement." As stated, "the isolated globulins are re-dissolved in the appropriate fresh normal serums. The fresh normal serums supply the complement which is required in all these reactions." He omits any reference to my previous work, and does not allude to any part that might be played by ferment action in immune processes as applied to cancer (as mentioned in my letter in the *Journal* of April 25th). May I be allowed, therefore, to add some further remarks, and to suggest that induced ferment action, in my opinion, is the important factor in the destruction of mouse and human cancer in Dr. Lumsden's tissue culture experiments?

In the *British Medical Journal* (1927, i, 78), and in a publication in 1912, by analogy with bacterial infections I compared the activators in cancer serum, cancer extracts, and filtrates in their activating effect on lipase, with amboceptor and complement. In this connexion I found in 1909 that cancer serous fluid (oedema) from the arm of a patient, as well as cancer serum, increased the action of lipase in pancreatic extracts. Normal and cancer serum, and cancer extracts, activated *inactive lipase* in pancreatic extracts, separated from its *co-enzyme* by Rosenheim (1910). I also showed activation on inactive lipase (prolipase) of human pancreatic juice, which was obtained (1912) from a fistula of a pancreatic cyst involving the duct.

If bactericidal serum made by immunizing an animal against bacteria is heated, its power to kill the organism is lost. If normal serum is now added to the inactivated heated immune serum the mixture again becomes bactericidal.

In 1915, in my paper on the action of serum on the lipase of pancreatic juice (*Journ. of Physiology*, xlix. 4, 216), I described that (1) lipase activity in pancreatic juice, carefully collected, was always low; that (2) if one portion of the fresh juice was taken and heated it was rendered inactive—that is, it had no action on fats; and that (3) when the other portion of the fresh juice was added to the portion inactivated by heat the mixture became markedly more active than the original juice. In this process the heated portion of the juice or activator may be compared to the amboceptor in the heated bactericidal serum, and the untreated portion (fresh juice) or *prolipase* to normal serum. Thus, in this I showed the similarity of the mechanism of lipolysis to that of bacteriolysis. Further, in my table of cases I showed (1) that normal blood serum, whether heated or not, could replace the heat-inactivated portion of pancreatic juice; (2) that this activating property of the serum was distinctly lessened in persons suffering from cancer, and in the acute stages of infectious diseases; and (3) that in two patients who recovered from inoperable cancer the lipase-activating *titre* of the blood serum, as previously demonstrated with human pancreatic juice, from being distinctly lowered before treatment, was markedly raised above normal. At the same time the anti-tryptic power of the serum was definitely reduced to normal or subnormal.

I have more particularly referred to these experiments because, though the separation of pancreatic juice into two parts at the time was considered a surprising result, its bearing on the problem of immunity and in relation to cancer seems to have been lost sight of.

According to the above view, in Dr Lumsden's experiments the activator (or activators) contained in the added normal sheep serum, which by itself does not split fats, may be expected to activate the lipase in the cancer cells of the cultures, with digestive action on the fat content of the cancer cells (with fatty acid products), and rapid destructive effect on the cancer cultures. The lipase (with other intracellular enzymes) in cancer cells has long been known. "Euglobulin, which belongs to the same class of serum proteins or globulins as fibrinogen," as I have stated, "is one of the agents I have found in conjunction with Dr. A. Sykes (Physiological Laboratory, King's College, 1911) which increases the lipolytic or fat-splitting ferment *in vitro* and *in vivo*, with marked increase of weight of the animals (normal mice). Cancer extracts and filtrates, heated and unheated, have activating properties on lipase, though less than normal tissue extracts, so that the activator in the cancer cells of the cultures conversely may activate the proenzyme complement contained in the added normal fresh sheep serum.

Dr. Lumsden states that "The presence of fat granules in cultured cancer cells . . . represents merely the storage of food material." The view long held is that in cancer

cells there is an excess of fats, lipoids, and phosphorized fats (lipins)—for example, lecithin. Lecithin, I found, is split by lipase—as others had previously shown. The Liverpool research workers, I have reason to believe, have found more recently that there is an absolute increase in the phospholipins—for example, lecithin content of cancerous cells.

These fats and lipins (phosphatides), as I mentioned in the *British Medical Journal* (August 11th, 1923), are soluble in the usual solvents and have antigenic properties. The introduction of them, as well as of proteins and other normal or specific co-enzymes or activators, into the blood activates the prolipase which is common to all tissues.

The importance of the demonstrated facts, and of ferment production and action, as factors in immunization, lies, as it seems to me, in their application to clinical work.

Alcohol, ether, and chloroform extracts of cancer tissue, with or without saponification, have long been prepared and employed by me, not only in diagnostic methods in cancer, but advocated in treatment, in addition to the normal fatty acids (soaps). Similar preparations were made from tuberculous tissues and tubercle bacilli for therapeutic use, and suggested also from other pathological tissues.—I am, etc.,

J. A. SHAW-MACKENZIE, M.D.Lond.

London, July 16th.

RAISED BLOOD PRESSURE

SIR,—Professor Hay's admirable lecture tempts one to ask whether it is not possible to amplify it by the preparation of a gramophone disk recording the sounds heard with the stethoscope, with a commentary demonstrating, among other things, the point at which the diastolic reading should be taken.

There are several different teachings on this point, and even in normal cases the sequence of the sounds is not always the same. This makes it difficult to compare one observer's results with another's, and it also leads to trouble with insurance companies in life examinations. Some societies, accustomed to one method, will inquire why the diastolic pressure reads so high, while other societies will pass it.

If a record could be made including the more common sequences of sounds (not omitting the case where there is no sequence at all, but the sounds simply fade away as the pressure gets lower), and emphasizing the diastolic point, it would be extremely valuable to many practitioners who are no longer in daily contact with the schools, and who wish for some definite standard to refer to.—I am, etc.,

Leigh, July 25th. JOSEPH JONES, M.D.

SIR,—The remarks made by Dr. Pines in his letter on this subject in the *Journal* of July 25th are of much interest and importance. It is quite true that diagnosis of the condition is often first made with the ophthalmoscope; but, on the other hand, in well-marked cases ophthalmoscopic examination may be negative.

I should be very grateful if Dr. Pines would let us know what signs he finds ophthalmoscopically at an early stage. Gross changes—such as haemorrhages, nipping of veins, silver-wire arteries—anyone can see; and when they are present the signs are obvious without the use of an ophthalmoscope. Would it be correct to say that long before the walls of the retinal vessels are visible (normally only the blood column being seen) the sign that has to be depended on is a narrowing of the lumen of the arteries, and that this is not always capable of being recognized with certainty?—I am, etc.,

Stoke-on-Trent, July 25th. W. DUNCAN LAWRIE.

REFRESHER COURSES FOR SHIP SURGEONS

SIR,—Having been a ship surgeon for more than ten years, I read with interest the communications of Dr. Haslett Frazer (*Journal*, June 27th, p. 1139) and of Dr. T. Gwynne Maitland (July 18th, p. 123) on the refresher courses for ship surgeons.

Dr. Maitland has the advantage of being in a position to see things from both the ship surgeon's point of view and that of the owners, having had several years of sea-going experience, and being now medical superintendent of one of our most important shipping companies. To my mind Dr. Maitland, without waste of words, has proved the necessity for these post-graduate studies put forward by the British Medical Association; but I cannot help feeling more than a little sympathy with Dr. Frazer's plea for a course of practical experience in emergency operative surgery, particularly dealing with the acute abdomen. Dr. Maitland does not deny that urgent operations should be performed at sea; but I cannot help thinking that the inexperienced or timid ship surgeon, on reading Dr. Maitland's letter, may be led to persuade himself that all operations are best left alone until the patient can be taken to hospital ashore. The most inexperienced surgeon should take heart, and remember that operation done in time, even in the crudest hands, will give good results in imperative cases, in which delay until the case is placed in most expert hands ashore will result in almost certain disaster. One of our greatest difficulties, on the rare occasion where operation is required, is to get a satisfactory anaesthesia; here familiarity with the spinal method would be a great advantage. It is most important, above all for ship surgeons, as Dr. Maitland points out, to be able to recognize when operation is imperative and when a case can be left for shore hospital. If a refresher course could instil this vital matter thoroughly into the ship surgeon's mind it would have justified the trouble taken, and time would not be wasted.

With regard to the diagnosis of the exanthemata and various forms of conjunctivitis, these present no greater difficulties to a ship surgeon as such than they do ashore. On the North Atlantic nowadays, with the curtailment of emigration and previous examination ashore, one rarely or never sees a case of trachoma or of other serious form of conjunctivitis. As for ship hygiene, shipping Acts, and quarantine procedure, most ship surgeons know the quarantine procedure from experience; but the embryo ship surgeon would benefit by instruction in this matter. It must be admitted by a great many of us that we know precious little about ship construction, and are therefore not in a position to give expert opinion with regard to ventilation, water, food storage, etc.; hence the justification for inclusion of ship hygiene in the special courses. I do not agree with Dr. Frazer that one rarely sees tropical diseases on board ship; any surgeon on a ship which cruises in the Tropics (a common occurrence nowadays) should have a fair knowledge of the commoner tropical diseases that he may be called on to treat. I have seen surgeons very puzzled by a large number of dengue fever cases, both in the East and West Indies; they had never seen dengue cases, and consequently were at a disadvantage in the prognosis of their passenger patients, who become more anxious about themselves at sea. Amoebic and other dysenteries, sprue, and malaria—to mention only a few of the diseases commonly associated with the Tropics—are ordinary occurrences, and even cholera sometimes makes its appearance, so that no excuse seems necessary for including tropical diseases in the post-graduate curriculum. I was glad to read of Dr. Frazer's experience of venereal disease at sea, and must pay a tribute to the clean living of

members of the crews of various ships on the North Atlantic trade. It will surprise readers to learn that in ten years I have not seen more than a dozen cases of venereal disease at sea, and those included passengers as well as crew, all members of which are examined every voyage.

Dr. Frazer's suggestion of a six months' house-surgeoncy is a good one, if we could obtain the necessary positions. The managers of all big shipping companies are quite aware that much is expected of the ship surgeon by the travelling public of to-day, and are more than generous, in normal times, in arranging the necessary leave for post-graduate work, encouraging their surgeons to keep up to date with modern teaching in all branches of our profession.—I am, etc.,

London, July 24th. J. T. BRENNAN, F.R.C.S.I.

EPIBLASTIC DEFECTS

SIR,—Dr. Rutherfurd's article in the *Journal* of July 4th upon certain dental defects stimulates me to record the following case. My patient is a boy aged 3 years and 4 months. A full-term child, he appeared perfectly normal at birth, but he did not thrive for the first few weeks of life. At 2 months, however, he was average in weight and healthy, and continued normally in every respect, except as regards his teeth and hair. His first teeth did not appear until he was 2, when two fang-like teeth erupted in the position of upper lateral incisors. They are now long, very sharply pointed, strong teeth, with a marked antero-posterior curve. As no more teeth erupted during the next six months an *x*-ray photograph was taken, and revealed six more teeth—four upper and two lower molars. At the age of 3 the posterior upper molars erupted without difficulty, since when there has been no change in his condition. His hair is extremely scanty and of lanugo type, and is less than an inch long. Dr. Rutherfurd notes that absence of sweat glands has been recorded in this type of case; this child has never been observed to perspire, and certainly did not do so, despite the heat of the weather, during a sharp attack of asthma. Two preceding generations, all without trace of this defect, are traceable in this case, and two older brothers have normal dentition.—I am, etc.,

Newcastle-on-Tyne, July 15th. IAN E. MCCRACKEN, M.D.

BURST PILCHER'S BAG

SIR,—Dr. Hefferman's account, in the *Journal* of July 18th, of the extraction of a broken catheter from the urethra and bladder reminds me of a similar incident which occurred in connexion with a Pilcher's bag, used to prevent haemorrhage following prostatectomy. The bag, being old, burst *in situ*, and was pulled by the extension weight down the urethra, where it stuck just beyond the membranous portion. Efforts to pull it out resulted in both the attached pieces of rubber (one through the suprapubic wound, the other through the urethra) breaking off just at their junction with the bag. With manipulation and sinus forceps introduced up the meatus, we eventually managed to pull the offending item down to the meatus, where it stuck for twenty minutes, and eventually had to be released by a meatotomy, done under local anaesthesia. The patient, who rendered us every possible assistance in his awkward and painful predicament, was none the worse, and still treasures the bag, which we allowed him to keep.—I am, etc.,

Birmingham, July 18th. J. C. HAWKSLEY.

BROKEN CATHETER IN URETHRA

SIR,—I was interested in Dr. Hefferman's memorandum (July 18th, p. 104) describing a case of a catheter broken off in the urethra. I have had a similar case. The patient was an old man, who was occasionally troubled with retention of urine, due to prostatic enlargement. He kept a rubber catheter in a cupboard, with his cigars, over the fireplace. After a birthday dinner, on a cold night, he had to use the catheter, which had become quite hard, and which broke off in the urethra. He failed to extract it, and came to hospital with three broken fragments in the urethra. I extracted them with a pair of "crocodile" forceps, which were pushed into the lumen of the catheter, a finger being placed in the perineum to prevent the broken fragments slipping backwards. When both blades of the forceps were inside the catheter the forceps were opened and gripped the fragment (from inside), so that it was removed easily without any damage to the mucosa.—I am, etc.,

R. K. DEBENHAM, F.R.C.S.

Selly Oak Hospital, Birmingham, July 22nd.

Obituary

F. H. G. HUTCHINSON, C.I.E., M.B., C.M.

Major-General I.M.S. (ret.)

We regret to announce that Major-General Francis Hope Grant Hutchinson, C.I.E., Indian Medical Service (ret.), died at Bedford on July 25th, aged 60. He was born on October 28th, 1870, the son of the late Surgeon General J. A. C. Hutchinson, I.M.S., and was educated at Bedford and at Edinburgh University, where he graduated M.B. and C.M. in 1892. Subsequently he took the diplomas of D.T.M. and H., and D.P.H. at Cambridge in 1907. After filling the post of house-surgeon at the Cheltenham General Hospital from 1893 to 1896, he entered the I.M.S. as surgeon lieutenant on July 28th, 1897, attained the rank of colonel on April 19th, 1924, and of major-general on April 1st, 1926, retiring on April 3rd, 1929. His first few years' service were spent as medical officer of the 5th Bombay Cavalry, the Sind Horse. In 1906 he entered civil employ in the sanitary department as deputy sanitary commissioner in the Bombay Presidency. In 1913 he became sanitary commissioner of Bombay, and in 1919 public health commissioner with the Government of India, and on promotion to major-general was posted as surgeon general to the Government of Madras. He served in the China war of 1900, receiving the medal. He received the C.I.E. on January 1st, 1922, and on October 1st, 1926, was appointed Honorary Surgeon to the King.

After his retirement General Hutchinson joined the Council of the British Medical Association as representative of the Indian Medical Service, but had been in very bad health since he returned to England. He was also a member of the Naval and Military Committee in 1930-31. In 1899 he married Eileen FitzGerald, second daughter of Colonel G. H. W. O'Sullivan, late R.E., and leaves a widow, three sons, and two daughters.

By the death of Dr. PERCY ROSE, who passed away in a nursing home at Barnet on July 18th, the Stratford Division loses one of its most zealous and active workers in the cause of medical organization and advancement. Born in London, and educated at Christ's Hospital, Percy Rose received his medical training at Guy's. He qualified in 1887 and shortly afterwards settled in Canning Town, where he remained in practice for forty-four years, and only retired from work during the last three months. His first experience of public work was as a member of

the West Ham Board of Guardians, but it was during the 'nineties, when there was a general ferment in the ranks of medical practitioners dissatisfied with the condition of practice that he and a few other medical men founded a local medical society. This society was primarily medico-political in character, and sent a delegate to the Manchester conference, which later led to the reform of the British Medical Association and the creation of the new Divisional units, and the Annual Representative Meeting came into existence. Dr. Rose acted as the representative of the Stratford Division until the end of 1912, and was a member of the Contract Practice Subcommittee, when this committee was dealing with the National Insurance Bill. In recognition of his unselfish services the Stratford Division presented him with a gold watch and chain. Another question in which Dr. Rose interested himself was the payment of doctors called in to assist midwives, under the Midwives Act. In a paper contributed to the *Lancet* in 1904, he drew up a scale of fees for the different emergencies which might require medical assistance, and advocated that the local authority should make itself responsible for these fees. He could not carry his point then, but later, during the war, the Central Midwives Board found it necessary, owing to the scarcity of doctors, to adopt this plan. During the great war, though no longer of military age, Percy Rose offered his services to the R.A.M.C. and served with the forces for three years, with the rank of Captain.

The death took place, on July 15th, at his residence in Somerset Place, Glasgow, of Dr. JAMES GALBRAITH CONNAL, one of the oldest throat specialists in the country. Born in 1859, he graduated M.B., C.M. at Glasgow in 1886, and joined the Royal Faculty of Physicians and Surgeons, Glasgow, in 1900. For many years he was surgeon to the Glasgow Ear, Nose, and Throat Hospital, and lecturer on aural surgery in the Anderson College Medical School, contributing numerous papers dealing with the clinical aspects of his subject. Dr. Connal was vice-president of the Section of Otology at the Annual Meeting of the British Medical Association in 1922.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The adjournment of the House of Commons for the Summer Recess was arranged for July 31st. During the week the House discussed the Estimates for the Mines Department, the Home Office, and for the health services. In the last-named debate, on July 29th, discussion was expected on the Poor Law, vaccination, dumps, health insurance, mental deficiency, and the utilization of research. A vote for salaries and expenses of the Ministry of Health was carried on July 28th without debate.

The Bethlem Hospital (Amendment) Bill passed through committee and was reported to the House of Commons on July 28th.

A resolution calling for Government legislation to regulate the disposal of London refuse has been signed by members for London and the Home Counties.

On July 27th, on the motion of Mr. Short, a return was ordered to be prepared showing the number of experiments carried out under licence on living animals in 1930.

The House of Lords also sat this week, and adjourned for the Recess.

Cerebro-spinal Fever

Mr. TURBERVILL asked Mr. T. Shaw whether the junior division of the Officers' Training Corps had been compelled this year, and, if so, for what reason; and whether, owing to the continued prevalence of cerebro-spinal meningitis throughout the country, he would collect boys of a susceptible age from the camp.

Mr. SHAW replied: Boys who would have attended camp but for the cancellation would, for purposes of "efficiency," be deemed to have attended.

On the same day Mr. SHAW told Mr. Marjoribanks that the number of deaths from cerebro-spinal meningitis in the British Army at home during the years 1928, 1929, and 1930 was 2, 9, and 10 respectively.

On July 27th Miss LAWRENCE gave Dr. Fremantle provisional figures, relating to civilians only, of the number of cases of cerebro-spinal fever notified in England and Wales in the four weeks ended July 18th last. These figures showed that for the week ended June 27th there were 41 cases; for the week ended July 4th, 39 cases; the week ended July 11th, 43 cases; and the week ended July 18th, 43 cases. Of these 166 cases, 72 were notified in the West Riding of Yorkshire and 22 in Lancashire. Dr. FREMANTLE asked if Miss Lawrence thought that, as a result of these figures, it was advisable to stop the congregation of people on their holidays. Miss LAWRENCE said she drew no such conclusion. Dr. FREMANTLE asked if the Minister had advised the War Office to cancel camps in consequence of this disease. The question was not answered.

On the same date Mr. WESTWOOD informed Dr. Fremantle that the numbers of cases of cerebro-spinal fever notified in Scotland during the past four weeks were: week ending June 27th, 11; week ending July 4th, 5; week ending July 11th, 13; and week ending July 18th, 6. Of these 35 cases, 19 were notified in Glasgow. Dr. FREMANTLE gave notice that he would raise the matter on the discussion on the Appropriation Bill.

Mr. SHAW assured Mr. Marjoribanks, on July 27th, that every precaution was being taken against meningitis in the Army at home. Special precautions had been taken in sterilization of utensils and ventilation, against overcrowding, and, above all, to the persons who were suspected of being carriers of the disease. He did not think there was need to make special provision in the permanent buildings of the Army.

Certification of Insured Persons

Replying to Mr. Lewis, on July 23rd, Mr. GREENWOOD said steps to ensure that medical practitioners only issued certificates of incapacity to insured persons who were genuinely unable to work by reason of sickness had been taken by the amendment of the Medical Benefit Regulations and by the issue of a memorandum on certification to all insurance doctors. The object was to ensure that claims on the funds of approved societies were not supported by medical certificates in any case in which the claimant was not incapable of work. Mr. LEWIS asked Mr. Greenwood to provide that the cost of sickness visitation undertaken by approved societies should be borne out of the funds payable by approved societies towards the cost of medical treatment, until such time as he was satisfied that medical practitioners were issuing certificates strictly in accordance with the regulations. Mr. GREENWOOD said the suggestion appeared to be based on the assumption that sickness visitation was required solely as a check on medical certification, and he could not promise to consider it favourably. Mr. LEWIS asked if additional supervision was asked from the societies on account of increased sickness. Mr. GREENWOOD replied that this might be so, but he did not accept the assumption that in consequence there was need for increased visitation.

British-made Instruments

In reply to Mr. Hannon, on July 16th, Mr. GREENWOOD stated that the expenditure on surgical instruments and appliances by his Department for the last financial year amounted to £337, of which £62 was for foreign instruments. It was the policy of the Department to purchase British-made instruments whenever they could be obtained in this country at a competitive price and of a comparable quality. He had no information as to the expenditure incurred by local authorities for this purpose, but had requested them to make use to the utmost extent practicable of goods and materials of home production.

In reply to another question by Mr. Hannon, on July 16th, Mr. SHAW said that, during the year ended March 31st, 1930, £4,428 was spent on the purchase of surgical instruments and appliances by the Army, and this total included £18 of foreign

they are present at...
an ophthalmoscope. ...
long before the walls of ti...
(normally only the blood colu...
has to be depended on is a nar...
arteries, and that this is not ...
recognized with certainty?—I ar...

Stoke-on-Trent, July 25th.

equipment. Mr. AMMON told Mr. Hannon that the sum expended by the Admiralty on surgical instruments and appliances during the financial year 1930 was £4,400, of which less than £60 was for foreign instruments. It was the policy of both departments to buy British-made instruments.

Mr. MONTAGUE, replying to Mr. Hannon, on July 21st, said that during the year ended June 30th last the amount expended by the Air Ministry on surgical instruments and appliances was £1,410, of which £96 was in respect of foreign-made articles. It was the policy of the department to purchase British-made instruments whenever they were of suitable quality and could be obtained at a competitive price.

Capital Punishment

Mr. CLYNES told Mr. Rhys Davies, on July 22nd, that only one person under 21 has been executed in England and Wales during the last five years. Five persons have been executed in England and Wales since the Select Committee on Capital Punishment presented its report. Nineteen persons have been executed in Scotland since 1900. From January to June, 1931, eight persons in England and Wales were sentenced to death and three executed.

Mr. Clynes does not see his way to propose legislation to give effect to the recommendation that capital punishment should be suspended for five years. This was made by the Select Committee on the subject.

From 1921 to 1930 34 males and 46 females, who had been found guilty of murder but insane, were released from Broadmoor Criminal Lunatic Asylum.

During the five years 1925 to 1929, in England and Wales eight women were sentenced to death and one was executed; 35 charged with murder were found guilty but insane; 3 were found insane before trial and 24 insane on arraignment.

Mr. CLYNES told Colonel Moore, on July 23rd, that during the years 1924 to 1929 110 women were proceeded against for, or were convicted of, infanticide. In reply to Mr. LOVAT-FRASER, on the same date, Mr. CLYNES stated that during the five years following the passing of the Infanticide Act, 1922, two women convicted of infanticide were ordered by the court to be sent to institutions for mental defectives.

Mr. SHORT, replying on July 27th to Mr. Sorensen, said that no case could be traced in which a person sentenced to death in England and Wales between 1925 and 1929 had been reprieved solely on the ground that he was suffering from mental deficiency. In various cases a degree of mental instability was considered, with other grounds, in advising commutation.

Street Noise

Miss LAWRENCE told Mr. Freeman, on July 22nd, that the effects of noise and vibration were still under investigation by the Industrial Health Research Board. The Minister of Health did not see a need for a special inquiry on the lines of the Commission of Health of New York upon city noise, into the injury done to public health by noises such as riveting, pneumatic drills, motor horns, and steam whistles. Mr. HERBERT MORRISON, in an answer on the same day to Mr. Freeman, said he was not aware of any evidence that the fumes emitted by motor vehicles of any type in their ordinary use on the highways were a danger to public health. Progress had been made in reducing vibration from motor vehicles by the use of pneumatic tyres and by improvement of road surfaces.

Street Accidents in London

During a discussion on the Ministry of Transport Estimates, on July 23rd, Mr. HERBERT MORRISON said that in the first quarter of 1931 fatal and non-fatal highway accidents in the Metropolitan Police area decreased by 10 per cent., compared with the previous period. The Road Traffic Act and the Highway Code were producing results.

Midwifery Fees

On July 23rd Sir ERNEST GRAHAM-LITTLE asked Mr. Greenwood if he knew that the provision in the Midwives and Maternity Homes Act, 1926, requiring claims to be sent in by medical men for their fees within two months from the date of attendance on patients inflicted hardship on medical men who sent their accounts out only twice annually. Mr. GREENWOOD replied that representations on this matter were made to the Departmental Committee on the Training and Employment of Midwives, whose report included a recommendation on the subject. The question would be borne in mind in any legislation for the amendment of the Midwives Acts, but he had no power to make a regulation providing that medical men to whom fees were due under this section might send their accounts to the local authority on the next occasion of sending out their accounts after attendance on the patients.

Dental Benefit

Answering Mr. Thomas Lewis, on July 23rd, Mr. GREENWOOD said that the total amount spent by approved societies on dental benefit from the commencement of the benefit to the end of the year 1930 was approximately £10,500,000. It was impossible to state what effect this had upon benefit funds, but its importance in reducing liability to ill-health was recognized.

Climate and Mosquitos.—Mr. GREENWOOD said, in reply to *Major Carver on July 16th, that he was advised that the* seasonal conditions of the present year, taken with those of last winter, had in general resulted in an unusual abundance of mosquitos of sylvan species. No specific information regarding the increase of other insects had been brought to his notice, nor any evidence of new or exceptional danger to health from insect prevalence.

A "Remedy" for Tuberculosis.—Mr. GREENWOOD told Mr. Smithers, on July 16th, that his attention had been directed to a treatment for tuberculosis called umckaloabo, but it had not been examined by his Department. Claims made in regard to this alleged form of treatment for tuberculosis did not appear to differ in character from those made for many other so-called "remedies" which had been advertised and afterwards found valueless. He did not consider there was sufficient ground for instituting a clinical investigation.

Foot-and-Mouth Disease.—On July 20th Dr. ADDISON told General Clifton Brown that, since June 17th, sixty-nine cases of foot-and-mouth disease had been confirmed in Great Britain. The animals treated with foot-and-mouth disease serum during the period were: 1,057 cattle, 2,089 sheep, and 56 pigs. Of these, one animal contracted the disease.

War Pensions.—In the House of Commons, on July 21st, Major COHEN asked leave to introduce a Bill to repeal Section 5 of the War Pensions Act, 1921. He said that at present large numbers of ex-service men were suffering from something which they genuinely believed to be due to war wounds, but, more than seven years having elapsed between their discharge from the Army and the time when their wounds or disease became manifest, they were debarred from making a claim or from going to an appeal court. The passage of the Bill would give a right of appeal in all claims. Leave was given to bring in the Bill.

Teeth of School Children.—Replying to Mr Harris, on July 23rd, Mr. LEES-SMITH said that during the year ended December 31st, 1930, 2,840,000 children in public elementary schools in England and Wales were inspected by school dentists. Of these, 1,975,000 were found to require treatment and 63.4 per cent. of this latter number received treatment under arrangements made by the local education authorities.

Nurses in Mental Hospitals.—Answering Sir N. Grattan-Doyle on July 23rd, Mr. GREENWOOD said the number of women nurses now employed in the nursing of male patients in public mental hospitals was approximately 320; they were mainly employed in the infirmary wards. The principle had been the subject of careful consideration by the central and local authorities for many years, and the practice of employing women in the nursing of selected male patients was of long standing. The Royal Commission on Lunacy, which reported in 1926, recommended more general employment of women nurses in certain male wards.

Superannuation of Asylum Officers.—In reply to Mr. Ramsbotham, on July 23rd, Mr. GREENWOOD said he could make no statement on the action which he intended to take in

consequence of the actuarial investigation into the superannuation of asylum officers The investigation was on the point of completion

Transfer of Poor Law Institutions —Mr GREENWOOD told Mr Somerville Hastings, on July 23rd, that appropriation of transferred Poor Law institutions for the purposes of the Public Health Acts had been effected by the London County Council and by the county borough councils of Birmingham, Bradford, Bristol, Cardiff, Coventry, Derby, Halifax, Leicester, Manchester, Middlesbrough, Newcastle on-Tyne, Oldham, Plymouth, Reading, Rochdale, Southend on-Sea, Sheffield, Southampton, Sunderland, Warrington, and West Bromwich Applications for consent to such appropriation were under consideration from the county councils of Glamorgan and the North Riding of Yorkshire, and from the county borough councils of Burnley and Preston.

Milk for School Children —Two education authorities in Scotland—West Lothian and Selkirk—have adopted schemes for the supply of milk to school children under the provisions of the Education (Scotland) Act, 1930

Notes in Brief

Replying to Mr Sorensen, on July 16th, Mr Greenwood stated that admission hospitals had been provided, or were under construction, at about a quarter of the public mental hospitals

The conveyance by road of dangerous substances, including vitriol, is receiving the attention of the Home Secretary

The Home Secretary has recently circulated for purposes of discussion draft regulations dealing with head lights on motors

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY —*Part II:* W Addey, W Ahern, G S Bhargava, H W Davies, G C. Fairchild, C P Goswami, J J O'Grady, T Simpson

UNIVERSITY OF LONDON

On the occasion of the centenary meeting of the British Association, to be held in London in September next, the Senate has decided to confer the degree of Doctor of Science *honoris causa* on the President of the British Association, General the Right Hon J C Smuts, C H , F R S , on Sir Frederick Gowland Hopkins, D Sc , M B , President of the Royal Society and on Lord Rutherford of Nelson, O M , Sir Charles Scott Sherrington, O M , G B E , M D , and Sir Joseph J Thomson O M , Master of Trinity College, Cambridge Past Presidents of the Royal Society

At the June matriculation examination there were 197 successful candidates in the first division, and 1,007 in the second division , in addition, 41 took the supplementary certificate in Latin

LONDON HOSPITAL MEDICAL COLLEGE

The following University entrance scholarships, open to students of Oxford and Cambridge, have been awarded

Price Scholarship in Anatomy and Physiology (value £100) T L H Shore (St John's College, Cambridge) Freedom Research Fund Scholarship in Pathology (value £100) A M Barrett (Pembroke College, Cambridge)

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

The following scholarships, etc have been awarded

Burney Yeo Scholarship H H Bayley Burney Yeo Exhibitions A M Lester, J H Walters, C E Greenwood, W H A Picton Raymond Gooch Scholarships R H Gardiner, G B Davis, W L Kerr Epsom College Scholarship G D Pirrie Seaman Scholarship E A Evans Senior Scholarship and Special Prize for Surgical Pathology G H Newns Jelf Medal, Burridge Prize for Forensic Medicine, and Class Prizes for Medicine, Surgery, and Pathology J W Summerhayes Class Prizes Obstetric Medicine and Forensic Medicine, Muriel Long , Forensic Medicine and Hygiene, G I Cook , Psychological Medicine, L S Everett

UNIVERSITY COLLEGE

The following awards have been made in the Faculty of Medical Sciences

Entrance Scholarship F A Chrenko (Chelsea Polytechnic Secondary School) Bayliss Starling Memorial Scholarship (Physiology and Biochemistry) E G Murphy Cluff Memorial Prize (Anatomy Physiology, Pharmacology, and Chemistry) K C Eden and G Quist (equal) Anatomy and Embryology Senior Class—Gold Medal, J H Kellgren , Junior Class—Silver Medal, H H F Barns Histology and Embryology Silver Medal, H H F Barns Physiology Senior Class—Gold Medal, W R Merrington , Junior Class—Silver Medal, J H Cobb Pharmacology Senior Class—Silver Medal, P B Fernando Organic and Applied Chemistry Silver Medal, H Nicholson

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

The following scholarships and exhibitions have been awarded.

Goldsmid Entrance Scholarships E E Pochin (St John's College, Cambridge, and W R Merrington (University College, London) Goldsmid Entrance Exhibition Miss M D Baker (Welsh National School of Medicine) Filliter Entrance Scholarship in Pathology N Whittaker (Trinity Hall, Cambridge)

UNIVERSITY OF EDINBURGH

A graduation ceremony was held in the McEwan Hall on July 22nd The following medical degrees and diplomas were conferred

M D —*R S Begbie, Major W Bird, R A M C, †A Bloom, M C , E M R Fraser, H H C Fuller, Major A Hood R A M C, Lieutenant F M Khan, I M S , D I Mackie, †J Macqueen, †P A Pritchard, J O Reid.*

D Sc —D Mainland

D P H —*J C David, R Gaddie*

M B , B Ch —*N S Alcock, D M Anderson, ‡W M Arnott, J B Arthur, C E S Bailey, G M Balfour, J Barnetson, J C Barnetson, I M Bell, C H Bentley, J A Berry, B S Bindra, W G Bisset, A D Broatch, ‡J J M Brown, D G Brownlie, A A Buxton, A J Campbell, J R Candy, ‡G Carpenter, J K Chappell, R T Cooke, A M Cooper, W J Cowan, P N Cutner, C G Cutting, J Davidson, J L Dobbie, I I Feiner, P J K Ferguson, H H Fernando, I Feuer, F S Fiddes, T M S Findlater, W H Fost, F A Franklin, G A Fraser, N S Fraser, M Gaffney, E J D Gillespie, G C Gillison, G A D Gordon I Gordon, A R Graham, E R Gunson, E Gunstensen, ‡J G M Hamilton, J S Hamilton, M L Hart, W D Henderson, A Van Hoesen, R G Hood, A W Hopkins, R S Howard, A M Hunter, Janet C Hyslop, Miriam Jansen van Vuuren, A Jeffrey, R G Johnson, M S Jones, P Kansadalya, R J Kellar, Isobel O Kennedy, A J Kotze, A Kramer, R A H Krynauw, F Lederfeind, A Lees Low, W M Leslie, M J Liebenberg, R S Lind, D C Logan, E W Low, R M S M'Conaghey, W G M'David, P C M'Kinlay, Flora S MacNaughtan, A R M'Pherson, C J Massey, G H Meiring, S Melmed, H O Merewether, H Meyer, R L H Minchin, J C G Mitchell, P K Morrison, Rosa Morrison, C S Morrow, M T Murchison, S Nechemias, J Neill, M E Neuman, M M Parker, A R Parkes, J W R Paton, D Pecker, Margaret I Porteous, F P Reid, F M Rifkin, A A Robertson J H G Robertson, R Ropner, Alice M Ross Frances F T Ross F F Ross, B Rubin, E J Samuel, S S Sawaf, H H Sawicky, J A Scott, H Shaffer, A F A F Shahin, E H G Shepherd, J I Skene, Ruby J B Slater, I S Smillie, J Spark Silverson Dorothy M Stuart, D B Swart, Grace H Thomson, Helen Turner, C Evelyn van Rooyen, J Y Walker, H Waters, R E Waterston, G W Watson, A Watt, A M Watt, I I Weiss, Barbara C Welsh J H Wilson, R B Wilson, R Woodrow*

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE —*A A F Brown, W R Duff*

DIPLOMA IN RADIOLOGY —*A Campbell, R J W Charlton, A J Groenewald, D G Maitland, W S Shearer*

* Highly commended for thesis † Commended for thesis
‡ Passed with honours

The following prizes were presented

Cameron Prize in Practical Therapeutics Madame Marie Curie Syme Surgical Fellowship J Bruce Gunning Victoria Jubilee Prize in Surgery I G W Hill Lauder Brunton Prize in Pharmacology and Therapeutics C M Scott Lttles Scholarship and Leslie Gold Medal, and Allan Fellowship in Clinical Medicine and Clinical Surgery, J G M Hamilton Murchison Memorial Scholarship in Clinical Medicine W M Arnott and R J Kellar (equal) M'Cosh Graduate's and Medical Bursaries H A Rudburn Mouat Scholarship in the Practice of Physic P C M'Kinlay Buchanan Scholarship in Midwifery and Gynaecology, Annandale Gold Medal in Clinical Surgery, and Wightman Prize in Clinical Medicine R J Kellar James Scott Scholarship in Midwifery A Lees Low and J A Scott (equal) Beaney Prize in Anatomy and Surgery G Carpenter Conan Doyle Prize I Gordon Murdoch Brown Silver Medal in Clinical Medicine W M Arnott Royal Victoria Hospital Tuberculosis Trust Gold Medal J H Wilson Thomson Memorial Medal in Diseases of Children W S M'R Craig Scottish Association for Medical Education of Women Prize Jean W R Paton Dorothy Gilfillan Memorial Prize Isobel O Kennedy and Jean W R Paton (equal) Pattison Prize in Clinical Surgery, J J M Brown Wellcome Medals and Prizes in the History of Medicine Gold Medal, J M'Whan , Silver Medal, H W Dyerre Cunningham Memorial Medal and Prize in Anatomy, R W Armour Whiteside Bruce Bursary A G Proverbs

NATIONAL UNIVERSITY OF IRELAND

At a meeting of the Senate on July 16th, the reports of the examiners on the results of the summer examinations, 1931, were considered, and passes, honours, etc , were awarded in connexion therewith.

The following appointment was made Lectureship in Clinical Pathology in University College, Cork, William J. O'Donovan, M B , B Ch , B Sc , D P H

The following representatives of the University were appointed to the 250th anniversary celebrations of the Royal College of Physicians of Edinburgh: Professor Henry F. Moore, M.D., D.Sc., Professor P. T. O'Sullivan, M.D., and Professor Thomas Walsh, M.A., M.D.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

A quarterly meeting of the Royal College of Physicians of Edinburgh was held on July 21st, with the President (Sir Norman Walker) in the chair.

Dr. George Hector Percival, Dr. David Lees, D.S.O., Miss Margaret Black Martin, and Dr. Joseph Ryland Whitaker, *M.C.*, all of Edinburgh, were introduced and took their seats as Fellows of the College.

Dr. Thomas Douglas Inch, O.B.E., *M.C.* (Gorebridge), Dr. Walter John May (Durban), Dr. Edward Robert Charles Walker (Aberdeen), and Dr. David Taylor Mackie (Exeter) were elected Fellows of the College.

Dr. James Collier, F.R.C.P.Lond., was appointed Morison Lecturer for 1932.

Kirk Duncanson Fellowship for Medical Research

In accordance with the bequest by Mrs. Isabella Kirk Duncanson to commemorate the late Dr. J. J. Kirk Duncanson, the Council of the Royal College of Physicians of Edinburgh will award the Kirk Duncanson Research Fellowship in October, 1931. The Fellowship will be awarded annually for a period of one year. It may be renewed to the same beneficiary for two additional periods of one year each. The emolument will be upwards of £150 for the first year, about £250 for the second year, and about £350 for the third year. In recognition of Dr. Kirk Duncanson's interest in diseases of the ear, nose, and throat, in making this first award special consideration will be given to the claims of candidates who propose to devote themselves to that branch of medicine. Applications and recommendations, with particulars of the special line of research contemplated, and of the place where the investigations are to be conducted, should be in the hands of the secretary of the College by October 15th, 1931.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

At a meeting of the Royal College of Surgeons of Edinburgh held on July 23rd, Dr. James Haig Ferguson (President) in the chair, the following twenty-six successful candidates out of ninety-six entered, who passed the requisite examinations, were admitted Fellows.

G. G. Ambegaokar, D. W. Bawtree, A. J. Brown, J. R. J. Cameron, C. N. L. Cantor, H. Carter, J. J. Coulthard, D. S. Davies, J. B. Dewar, D. I. C. Finlayson, H. P. Forster, N. G. C. Gane, R. G. Hutchison, J. G. Kingsbury, L. E. Lane, J. C. Mavo, J. H. Otty, L. B. Patrick, R. G. Paul, T. M. Reid, E. M. Robertson, E. H. T. Rutherford, R. Sampson, W. N. Searle, B. C. Smeaton, D. Wardrop, Miss Rebecca E. Roulston.

The Ivison Macadam Memorial Prize, consisting of a bronze medal and a set of books, was, after a competitive examination in organic and inorganic chemistry, awarded to Miss Marjorie B. Morton, who was also awarded the Henry Arthur Dalziel Ferns Bursary.

Medical News

Lord Moynihan, President of the Royal College of Surgeons of England, sailed for South America on July 24th, to take part in the forthcoming medical conference at Buenos Ayres.

The Fellowship of Medicine and Post-Graduate Medical Association announces that, from August 4th, continuing through the month, a course in urology will be held at the All Saints' Hospital; fee, £2 12s. 6d. The Queen's Hospital for Children will undertake an all-day course from August 17th to 29th, instruction being entirely by demonstration of cases, medical as well as surgical; lunch and tea are provided by the hospital authorities; fee, £2 2s. The Brompton Hospital will hold a course from September 7th for one week, the Bethlem Royal Hospital from September 8th to October 3rd, the Infants Hospital from September 14th to 26th, the Central London Ophthalmic Hospital from September 14th to October 10th, the Westminster Hospital from September 14th to 26th, and the Metropolitan Hospital from September 28th to October 10th. Detailed syllabuses may be obtained from the Fellowship, 1, Wimpole Street, W.1. (Langham 4266).

The Medical Research Council announces the follow awards of Dorothy Temple Cross Fellowships for 1931- under the terms of the benefaction in that name research fellowships in tuberculosis: Charles Allan Bir M.D., M.R.C.P., senior medical registrar and tutor, Ro Infirmary, Liverpool; Roy Lars Vollum, M.A., D.Ph demonstrator in pathology, University of Oxford. Birch has received a Fellowship for the study of proble of tuberculosis at industrial centres in the United Sta Dr. Vollum will study recent developments in meth for the investigation of tuberculosis in Germany Austria. The Fellowship awarded last year to Lieuten S. M. Burrows, R.A.M.C., late clinical assistant, tuber losis department, St. Thomas's Hospital, has been renev for a further year.

For the second year in succession a group of Ameri medical men are about to pay a visit to the princi thermal stations of France. The party, led by Dr. Cha Gordon Heyd, president of the Medical Society of State of New York, are due at Havre on August 7th, will be given an official reception by French Governm authorities. In Paris they will be received at the Colo Exhibition by Marshal Lyautey, the General Commissio and four days will be spent at Vichy.

We are asked to announce that the out-patient dep ment of the National Hospital, Queen Square, will closed on all out-patient days during the first three we in August.

Lord Balfour of Burleigh has been elected President the Royal Sanitary Institute, in succession to the Duke of Northumberland.

The forty-second international post-graduate course the Vienna University Faculty of Medicine will be h from September 28th to October 10th, the subject be recent therapeutic advances in all branches of medic The fee for the course is 50 Austrian shillings, and furt information may be obtained from the secretary, Dr. Kronfeld, Porzellangasse 22, Vienna, IX.

An interesting microphone and loud-speaker installa has recently been carried out in the surgical clinic of University of Milan. The apparatus is intended for use of the professional staff when performing or direc operations, to describe the surgical manipulation to students who sit in a gallery surrounding the opera theatre, but separated by glass from it. The installa consists of a bar microphone, a 1½ W. mains ampli and a protos loud speaker.

The Kerckhoff Institute for the study of affections the heart, built from a donation of a million dollars Mrs. Louise E. Kerckhoff of Los Angeles as a memo to her husband, has been opened at Bad Nauheim. building, in classic style, consists of two main cut structures with a connecting wing. It contains auditorium seating 600 persons and intended for gresses, and a smaller lecture room. A medical libr and a museum with representations of methods of trea circulatory disturbances, physical diagnosis and ther balneological collections, etc., are at the disposal investigators. The institute will conduct special contin tion courses open also to foreign physicians. It is divi into five main departments: one for patients sent to Nauheim under the German social insurance system statistical department devoted to research into the ca of cardiac diseases; a department for educating the pu as to causes and treatment of such diseases; another their study and treatment; and a department cove treatment by physical methods, especially baths. Profe Groedel is at the head of the institute, for the ma tenance of which Mrs. Kerckhoff has provided a f of one million marks

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology, Westcent, London*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westcent, London*

MEDICAL SECRETARY, *Mediocra, Westcent, London*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams *Bacillus, Dublin*, telephone 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams *Associate, Edinburgh*, telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Effect of Prolonged Injections of Insulin on Subcutaneous Tissue

"D M" writes: In the *Journal* of June 27th and July 4th are inquiries about loss of subcutaneous tissue resulting from insulin administration. This can be a very real trouble to a diabetic. I have under my care a lady who has required very heavy doses of insulin for nearly seven years, all four limbs being used for injections. For over five years no loss of tissue was observed, but for about eighteen months the thinning of the parts used for injection has been very striking. I should be glad to know from someone with wide experience of insulin treatment (1) any explanation why this should occur in exceptional cases, (2) whether the occurrence has any relation to large doses and prolonged administration.

Lochnera Rosea

Dr JOHN M DALZIEL writes from The Herbarium, Royal Botanic Gardens, Kew: I shall be grateful for any information with regard to the medicinal use of the "Madagascar periwinkle"—*Lochnera* (*Vinca*) *rosea*. The leaves are said to be a remedy for diabetes in South Africa, and a proprietary medicine called "covinca" is in use there. Is there any published record of investigation either of its properties or of its clinical value in that disease?

The Cigarette Habit

"BUNGALOW" would be glad of any "tips" to help a weak-minded patient to overcome excessive cigarette smoking.

A Cosmetic Query

Dr I G BRIGGS writes: I have a lady patient, aged 30, who uses the ordinary good class cosmetics for the face, but for some ten days before to five days after the menses suffers from a few pimples (which are negligible), and a condition in which the pores are very widely open, causing an unpleasant "greasy" feeling (no perspiration). The patient is a demonstrator for cosmetics, and in this condition, when powder is applied to the face as it has to be during her employment the enlarged pores show very noticeably, and are a hindrance. Can any reader suggest treatment? The patient has tried astringent lotions.

Tennis Blisters

"L E P" writes, in reply to "T W S" (Surrey): Blisters on the feet (and hands in tennis players) are generally due to free sweating. This can be arrested and the skin made hard and dry by painting with a saturated solution of picric acid in spirit, allowing it to evaporate, and then washing in many changes of water to prevent staining of bedclothes, etc. The drawback to this method is the ugly discoloration of the skin, and more particularly of the nails which—negligible in the case of the feet—is very noticeable in the case of the hands. However, it is *effective*.

Income Tax

Claim for Sundry Expenses

"B W" inquires whether he can deduct as professional expenses the cost of (1) advertising for an assistant (2) drawing up agreement in connexion with the assistant and (3) renewal or replacement of such books as the *Medical Directory*.

*** The answer is in the affirmative in each case, with one possible qualification. If the agreement with the intended assistant contemplates his becoming a partner, to that extent it deals with the constitution rather than the actual carrying on of the practice, and in such circumstances the claim to deduct the costs of his engagement would be incorrect, at least as regards a part of such costs.

Car Transactions

"F F S" sold a car in April, 1931, for £175 and bought another in replacement for £330. What can he claim?

*** He can claim the out-of-pocket expense of £330 - £175 = £155 as a professional cost of running the practice during the year 1931. If, however, the car sold cost less than £330, he can claim only the excess of the cost over the £175, the balance in such a case representing the cost of improving the car equipment.

LETTERS, NOTES, ETC.

The "Medical Directory"

Messrs J and A CHURCHILL, publishers of the *Medical Directory* (40, Gloucester Place, Portman Square, W.1) write: The annual circular has been posted to each member of the medical profession. If the form has not been received a duplicate will be sent on request. We shall be grateful for the return of the forms by an early post.

"The Hawker Nuisance"

Dr E H. STRANGE (London, E.5) writes: Owing, no doubt, to the prevailing trade depression the hawker of doubtful preparations and appliances seems this year a more than usually frequent visitor to one's consulting room. The technique is in all cases the same. An individual of immense self-assurance at once lets forth a flood of patter as to the merits of a preparation, it may be, to keep one's professional plate and car bright and untarnished for several months, or of a device to sterilize instruments in a tumbler or a jug in two minutes. He claims to be the inventor of the preparation or appliance, and claims that it is new. He shows one by the counterfoils in his order book that many of one's neighbours and friends have fallen for his patter. He makes great play with the fact that he is not taking money at once, one pays C.O.D. later. But the medical man is never allowed to test a sample or examine the appliance at leisure. Goods thus hawked around are trash at the price demanded. The guinea appliance was not invented by the hawker, neither is it new. It can be bought from any electrical firm for about a quarter the price the hawker asks. The preparation with the fancy name for which he asks 15s. 6d. for four ounces is an old one, which can be bought at a few shillings a pint. It would be a service to many a busy practitioner if medical men would tell every hawker, including the hawker of medical books, at once two simple and obvious truths: (1) firms of repute do not hawk their goods around (2) goods which are hawked around are made to be hawked around, and would not be saleable by any other means than high power salesmanship and bluff. The price demanded is far above the market value.

Corrigendum

Our account of the presentation to Dr Arnold Lyndon (July 11th, p. 72) contained a slip which should be corrected. Dr Lyndon was chairman of the Surrey Panel Committee from 1920 to 1931, a period of eleven years. His predecessor in the chairmanship (1913 to 1920) was Dr Cecil Lankester of Guildford.

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals, will be found at pages 43, 44, 45, 46, 47, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *120*.

BABY'S ONLY FOOD FROM BIRTH TO 2½ YEARS

ROSARIO
18th May, 1931

To Messrs. Cow & Gate, Ltd.
Guildford, ENGLAND

Dear Sirs,

Until two months ago Baby has been existing only on Cow & Gate milk, as she refused to take any solid food. Everyone told me she *ought* to be eating other food, but *evidently* what she *did have* made up for it, and everyone remarked how bonny she was and what strong bones and muscles she had. We would not be without it for worlds and thoroughly recommend it to all our friends.

She still has three breakfast-cups a day—one on getting up in the morning, one at siesta time and one on going to bed—and thoroughly enjoys it and has never had one minute's discomfort, even during our extremely hot summer days. She is very intelligent and bright.

I remain, Yours very truly Hilda J. Taylor.



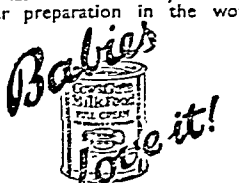
Name:
ESME HILDA TAYLOR
Born:
27th August, 1928
Photo Taken
10th May, 1931
Age
2 years 8½ months
Weight.
33 lbs.
Height:
3 ft. 1 inch



Cow & Gate Milk Food

"Cow's milk made safe and suitable for baby"
it is said, has saved more baby lives than any other preparation in the world





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ORTHOPAEDIC BANDAGES

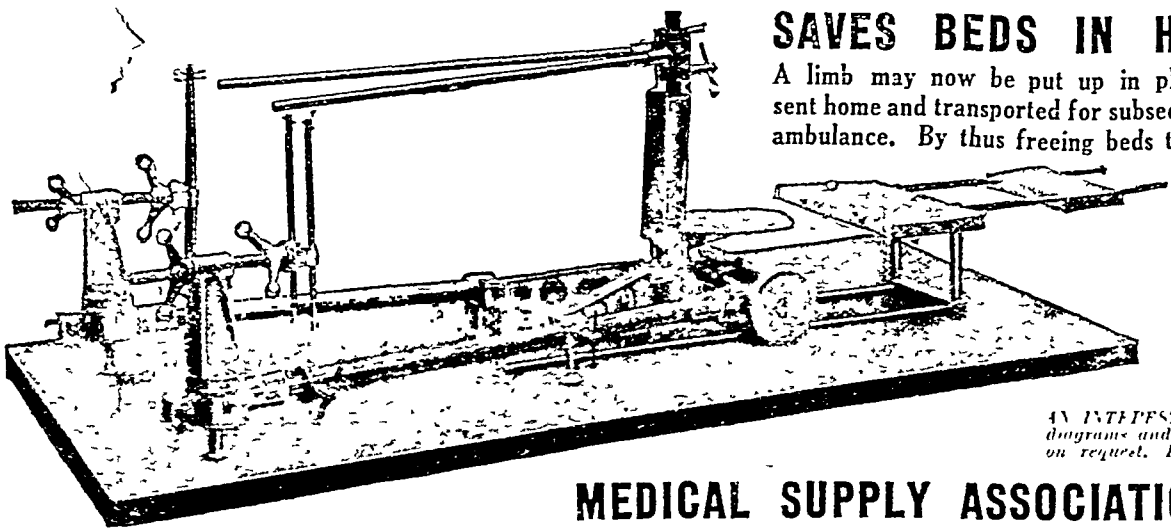
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Portable Traction Apparatus

An exceedingly efficient and convenient apparatus for putting up in plaster the lower limbs or trunk; also when applying bone plates or Parham and Martin's Bands to long bones of the lower extremity. Provides the more essential movements of expensive and bulky Orthopaedic tables at a fraction of the cost.

Quickly adaptable for the following positions:

Extension of whole lower limbs.
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SAVES BEDS IN HOSPITALS

A limb may now be put up in plaster, the patient sent home and transported for subsequent treatment by ambulance. By thus freeing beds this new apparatus saves its cost many times over.

Folds compactly for storage or transit in plywood case 35 in. × 15 in. × 11 in.

AN INTERESTING LEAFLET giving diagrams and instructions for its use on request. Please ask for a copy.

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London Telephone: Terminus 5432 (6 lines)

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SALTAIR

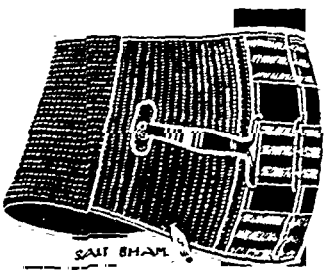
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SALT'S PATENT KIDNEY BELT



THIS Belt is designed in conjunction with eminent Medical Men; it affords general abdominal support, retaining the Kidneys in their normal position—BUT this support is given without pressure on the Kidney.

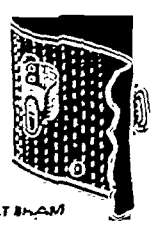
SALT'S
Patent Kidney Belt

can be made in materials and styles to suit the tastes of all patients.

Descriptive Surgical Reference Books (embodying simple Order Forms) sent free on request to all qualified Practitioners.

'Phone B'ham: Midland 5455.
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London Consulting Rooms:
"OAKLEY HOUSE,"
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Female Fitters in attendance Monday to Friday.
Orthopaedic Mechanician Wednesdays only.
By Appointment.



Sectional view showing spring pressure on inner inflatable pad

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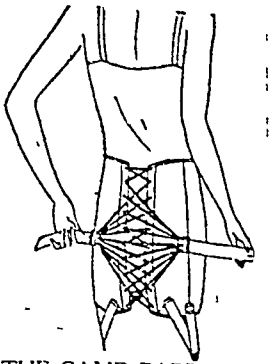
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Elastic Plaster BANDAGE

MADE from a specially woven selvedge material, possessing very elastic properties, evenly spread with an Antiseptic Zinc Oxide Paste. Self-adhesive, readily conforming to the shape of the limb, and when carefully applied forms an even surface dressing which will not crease or slip. Firm support. Easy to remove. Extensively used in many well-known hospitals for the treatment of VARICOSE ULCERS, VARICOSE VEINS, SURGICAL and ORTHOPAEDIC CASES, etc. Their application for treatment of Varicose Ulcers, etc., does not necessitate the patient lying-up; in fact, permits the continuance of light duties. Ensures rapid healing.

SUPPLIED in WIDTHS

2"	2½"	3"	
1/7	**1/9**	**2/-**	EACH

When stretched measure six yards (approximately).

SAMPLE 3 in. "VARIBAN" ELASTIC PLASTER BANDAGE sent POST FREE on receipt of P.O. for 2/3.

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"The paste-bandage constitutes a definite improvement upon the methods so far available, both in convenience of application and in the results obtained."
(Vide article on page 560, "B.M.J.," Oct. 4th, 1930.)

SAMPLE BANDAGE 1/- Post Free

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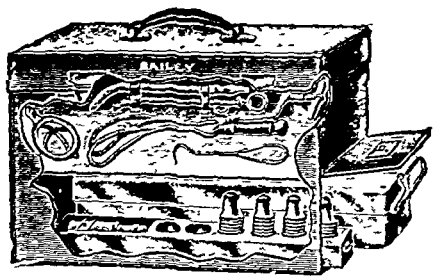
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S.C. 1350.—Bailey's large size Surgeon's Midwifery Case, made in best Cowhide, fitted with Slide Tray, to take six 1-oz bottles in metal cases, and Chloroform Drop Bottle, in separate compartment at side of Sterilizer.

Size 17 × 10 × 7 . £3 15 0

Ditto, fitted with best nickel-plated stamped out seamless 16-in Steriliser (with lamp and tray) £5 15 0

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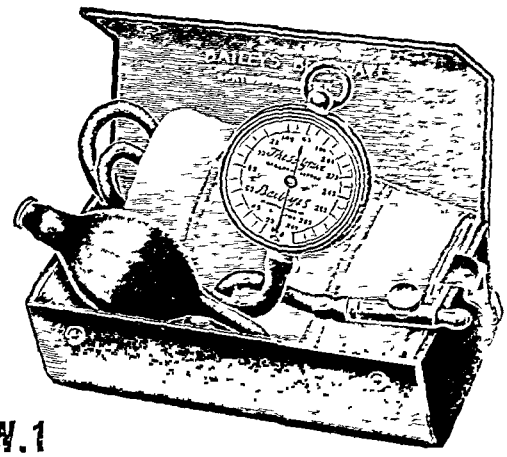
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The Tubes may remain attached to the dial as the interior of the case allows sufficient room to prevent kinking

An essential apparatus for the General Practitioner.

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We can supply smaller quantities at slightly increased rates.

	Per 1,000.
Blaud's (Sugar coated), gr. 5	... 3/10
Nitroglycerini, B.P., gr. 1 50th ...	... 6/-
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One Tablet in 1 pint of water is equivalent to 1 in 1,000.

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Ung. Acid Boric., B.P., 28 lb. pail @ 11d. lb.
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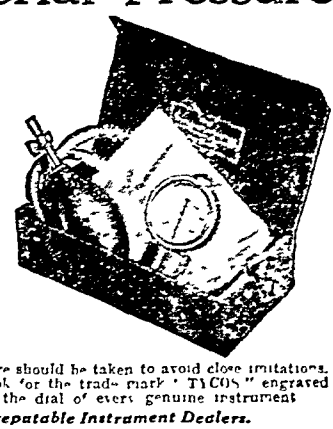
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Care should be taken to avoid close imitations. Look for the trade mark "TYCOS" engraved on the dial of every genuine instrument

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Publishers of *"Blood Pressure Simplified,"* 4s. 6d net.

"The Rose Corset-Belt"

for Accurate Abdominal Support and Comfort

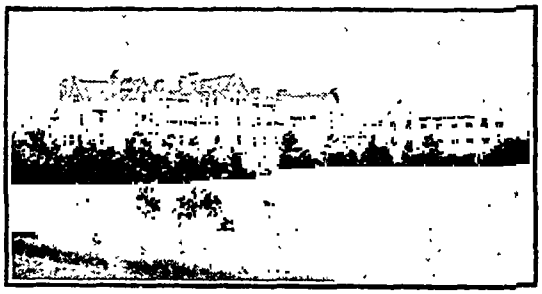
Extract from the "British Medical Journal," Dec. 10th, 1927—

"Visceroptosis is the cause of so much discomfort and ill health and an ill-fitting or wrongly applied belt or corset may aggravate rather than diminish the subjective effects of this condition . Madame Rose has for many years devoted special attention to this problem, and we have good reason to believe that she has given help and comfort to a considerable number of sufferers We have received assurances from medical men, who have sent patients to her, that she gives personal attention to each patient, that she takes great care in adapting and adjusting the support to the particular needs of the case "

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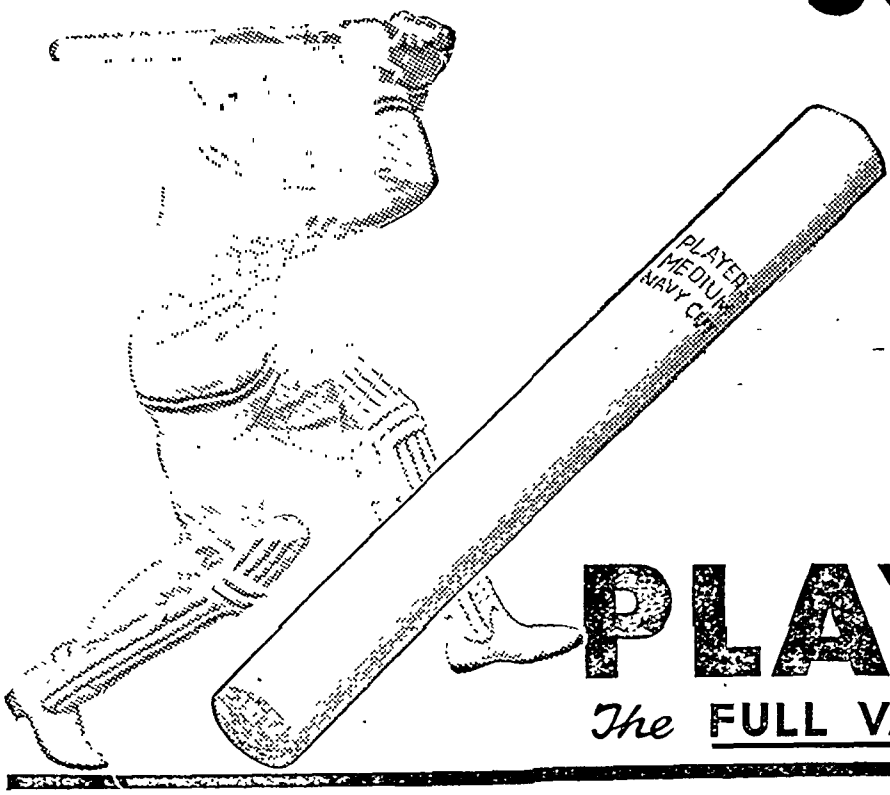
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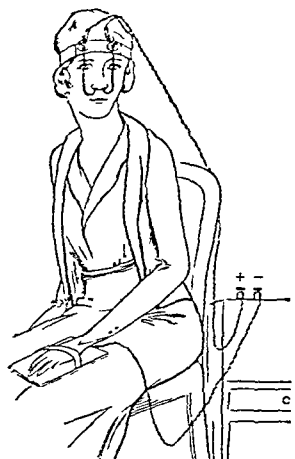
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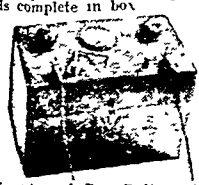
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Time: 11 miles from Manchester.

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Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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Six acres of ground, highly situated, facing Finsbury Park
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This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S S E in a very sunny district Special treatment by artificial Pneumothorax (X-ray controlled) Ultra-violet Ray treatment is available for suitable cases Mation and full nursing staff Nurse on duty all night Electric lighting throughout, radiators and wireless (headphones) in all rooms

Dr. Jane Walker, C H , J P , LL D , Medical Superintendent Dr. Eleanor Soltau, Assistant Medical Supt

For all information apply The Secretary, East Anglian Sanatorium, Nayland, near Colchester

Telephone NAYLAND 1

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...is beautifully
...r and natural Treatment 000 for the treatment of Tuberculosis Miles of carefully graduated walks through pine-clad hills, ...is carried out on the ...principles, both physi...ntain views Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc ...under the supervision of light, central heating, wireless Special milk supply from tuberculin-tested herd Full day and ...Dr. A. F. Carver M.D., D ...er particulars from ...Marsham Street, Lab ..., J. A. Hennessy, M B , Ch B , Mation Miss S. A. Eddy, S R N , Late Sister-in-Charge, ...of urgency 'phone ... Sheffield

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...plaint, electri... ROTHERHAM.
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...ing, M D (Cant... for the recept... Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all ...Hospital Annexe... ladies suffering fr... Both certifi... Approved ...ect S S W., sheltered from North and East, elevation 800 feet Pure bracing air ...particulars apply ... ...ived ...is a large counter... ...mothorax (X-ray controlled), Tuberculins, Medicated Inhalations by means of ...ds and park, five... ...nd Ultra-Violet Rays is available, when necessary, without extra charge X-ray ...Grange Lane, ...Telephone ...and cold basins, and Wireless in all rooms Full day and night Nursing Staff ...Physician. ... ...HOFFMAN, B A , M B , T C Dub , and MARGARET A HARRISON, M B , B S Lond

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Every kind of Bath Plombiere Lavage
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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

Final F.R.C.S. Class.

A Course of instruction suitable to the requirements of candidates for the Final F.R.C.S. Examination in November, will begin on September 3rd 1931

For syllabus and full particulars apply to the DEAN Medical College, St. Bartholomew's Hospital London E.C.1

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Prospectus from Head Master

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE, SCHOOL OF PHYSIC.

The usual Three Weeks POST GRADUATE COURSE for General Practitioners will be given this Autumn from Sept. 14th to October 3rd. The Course will include clinical instruction in Surgery, Medicine, Obstetrics Orthopaedics Laryngology, Ophthalmology and Diseases of the Skin Laboratory instruction will be given each afternoon in the Medical School in *Anatomy, Physiology, Pathology, and Bacteriology*. There will also be demonstrations on the use of the Electrocardiograph and the use of Radium and lectures on Medicine and Therapeutics

As far as possible arrangements are made to enable those members of the class who so desire to live in College rooms and dine on Commons

For further particulars apply to—
A. FRANCIS DIXON
School of Physic, Trinity College, Dublin

LONDON SCHOOL OF DERMATOLOGY.

St. John's Hospital for Diseases of the Skin,

Leicester Square, W.C.2

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals Lectures and Demonstrations every Tuesday and Thursday at 5 p.m., from October to March and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays 2 p.m. only. Pathological Laboratory for Instruction or Research work.

For further particulars fees, etc., apply to J. F. M. WIGLEY, M.B., Dean

GUY'S HOSPITAL MEDICAL SCHOOL.

FINAL FELLOWSHIP COURSE
September—November, 1931

A Course of instruction in preparation for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday, September 2nd 1931
T. B. JOHNSTON, Dean

University of London.

KING'S COLLEGE

PRIMARY F.R.C.S.

A Course in ANATOMY and PHYSIOLOGY, in preparation for the DECEMBER EXAMINATION, will commence on Tuesday, September 1st 1931 and will continue until the date of the examination

Fee for the Course Twenty Guineas

Applications for admission to the Course should be addressed to the Dean of the Medical Faculty, King's College, Strand, W.C.2 from whom further particulars may be obtained

University of London.

The Senate invites applications for the post of UNIVERSITY LECTURER in Physiology tenable at the LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

John Burns Lecturership in Public Health at the Hospital Salary £800 a year. Applications (12 copies) must be received not later than September 18th 1931 by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained

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The Secretary,
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Sir,—Please send me your "Guide to Medical Examinations" by return

Name ..
Address ..
Examination in which interested ..

BETHLEM ROYAL HOSPITAL,

Monks Orchard, Eden Park, Beckenham, Kent.

A COURSE OF LECTURES and PRACTICAL INSTRUCTION
FOR THE
DIPLOMA IN PSYCHOLOGICAL MEDICINE
(of the Universities of London, Cambridge, Durham, &c., and the Conjoint Board)
WILL BE GIVEN at the above Hospital, COMMENCING SEPTEMBER, 1931.

For Syllabus and further particulars apply to the PHYSICIAN-SUPERINTENDENT.

POST-GRADUATE COURSES IN ENGLISH.

MEDICAL FACULTY OF THE UNIVERSITY OF BERLIN.

Under the auspices of the Association of Lecturers (Dozentenvereinigung) for Medical Post-Graduate Work of the University of Berlin, there will be regularly held, beginning September 1st, 1931, Post-Graduate Courses in English, practical as well as theoretical, at the seat of the Association, the Kaiserin Friedrich Haus, and all the principal hospitals, especially the "Charité," the largest of these hospitals, and in direct communication with the Kaiserin Friedrich Haus (in all over 20,000 beds).

About 200 of the prominent professors have joined the lecturing staff of the newly [illegible] Section, so that unrivalled opportunity for post-graduate work all the year round will be offered to [illegible] members of the medical profession.

Upon registration a life membership fee of £1 3s is payable; the monthly dues during stay in Berlin amount to 10s.

Diplomas will be awarded after 300 hours during a stay of at least 4 months.

Applications should be addressed to the "Organising Secretary, Dozentenvereinigung (English Section), Kaiserin Friedrich Haus, Berlin, N.W.6, Louisenplatz 2—4." In Vienna, information may be obtained through Mr. P. G. Friend, Vienna I. Freyung 1. Telephone U 29-3-35.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1931.

A. **A General Medical and Surgical Course** from August 17th to September 11th.
Fee £10 10s. or £6 6s. for first or second fortnight.

B. **Clinical Assistantships** in General and Special Hospitals.

Syllabuses and any other information may be had on application to the **Secretary, Post-Graduate Medical Association, The University, Glasgow.**

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ALL students and Qualified Practitioners admitted to the Practice of this Hospital. Unrivalled clinical facilities are afforded of seeing Obstetrical Complications and Operative Midwifery [illegible] of the total admissions being primiparous cases). Over 2,400 patients are [illegible] annually, and in the Ante-natal Department there are over 18,000 [illegible] under the supervision [illegible] required by the various Examining Bodies.
Dr. A. E. CARVER, M.D., [illegible] ARTHUR WATTS, Secretary.
Further particulars from [illegible] 40, Marsham Street, [illegible]
In cases of urgency 'phone [illegible]

DEFECTS. [illegible] Cases, non-[illegible] Square,

THE GRANG[illegible] [illegible] holi-[illegible]erms
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[illegible] Licensed for the recept[illegible] of Ladies suffering fro[illegible]tswol[illegible] disorders. Both certifi[illegible]nect S[illegible] [illegible]ts received. Approved [illegible]motho[illegible]re shortly. CORRESPONDENCE COURSE [illegible]ts. This is a large country [illegible]nd Ultra-[illegible]nd later Exams. should begin now.—[illegible]ful grounds and park, five [illegible]and cold F.R.C.S., Surgeons' Hall, Edinb'h.
Station: Grange Lane, Sheffield. Telephone: [illegible]
Resident Physician: [illegible]
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Near MACCLESFIELD, CHESHIRE,
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F.R.C.S.(Edin.).
CLASSES or POSTAL TUITION. Full pre-[illegible]tory Classes with DEMONSTRATIONS will [illegible] later Exams. should begin now.—F.R.C.S., Surgeons' Hall, Edinb'h.

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POST-GRADUATE MIDWIFERY.
Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

F.R.C.S.(Edin.).
CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
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F.R.C S (Eng.),	*Primary* 1906 30) *Final*	162 161
M.R.C.P.(Lond.),	1914 30	192
D.P.H.	(Various) 1906-30 (Completed Exam)	300
F.R.C.S.(Edin.),	1918 30	46
M.R.C S.,L.R.C.P.	*Final* 1910 30 (Completed Exam)	467
M.D.(Dur.)	(Practitioners) 1906 30	38
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Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M R C S, L R C P, or M B of various Universities, also for D P M., D O M S., D T M & H., D L O., D G O., D M R E., M M S A., L M S S A., etc Numerous successes.

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CONTAINS —The method and the cost of entering the Medical Profession *Particulars of all* [illegible] s, and Oral er Medical higher sur the Special nurse. Open theses with list of tutors etc, on application to the Principal Mr E S WEYMOUTH, M A., 17, Red Lion Sq., London W C 1. (Telephone HOLBORN 6313)

County Borough of Walsall.

MANOR HOSPITAL (270 Beds)

ASSISTANT MEDICAL OFFICER

Applications are invited from duly qualified gentlemen for the appointment of Junior Resident Assistant Medical Officer The appointment will be for a period of twelve months, and the salary at the rate of £150 per annum, together with the usual residential emoluments

The person appointed will be required to act under the general direction of the Medical Officer, from whom particulars of the appointment may be obtained.

Applications stating age, professional qualifications and experience accompanied by not more than three copies of recent testimonials, should be sent to the undersigned at once

C S FOTHERGILL,
29 Leicester Street, Walsall Public Assistance Officer

July 17th, 1931

County Borough of Preston.

SHAROE GREEN HOSPITAL, FULWOOD

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER Candidates must be duly qualified and registered under the Medical Acts Duties include work in any ward of the Hospital as required, and also in the Maternity Home adjoining

The appointment is for a temporary period of 12 months only Salary at the rate of £156 per annum with board, lodging, etc

Applications, endorsed "Junior Medical Officer," accompanied by copies of three recent testimonials to be sent to the undersigned not later than noon on Wednesday, August 12th

Town Hall, Preston ALFRED HOWARTH, Town Clerk

July 30th 1931

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PRE-MEDICAL EXAMINATION

This Examination will commence on Tuesday, October 6th, 1931

SECOND EXAMINATION (OLD REGULATIONS)

This Examination will commence on Thursday, October 8th 1931

FIRST EXAMINATION (NEW REGULATIONS)

This Examination will commence on Thursday, October 8th, 1931

THIRD OR FINAL EXAMINATION

This Examination will commence on Monday, October 12th 1931

Candidates who have completed the prescribed courses and who desire to present themselves for examination must forward the necessary schedule or schedules through the post, to the Examination Hall Queen Square, London, W C 1, twenty one days before the Examination commences

HORACE H REW,
July 27th 1931 Secretary

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

DIPLOMA IN PUBLIC HEALTH

Part I of this Examination will commence on Friday, October 2nd, and Part II on Friday, October 9th, 1931.

DIPLOMA IN GYNAECOLOGY AND OBSTETRICS

This examination will commence on Thursday, October 29th, 1931

Particulars of these examinations, dates of entry, etc may be obtained from the Secretary, Examination Hall, 8 11, Queen Square, London, W C 1.

HORACE H. REW,
July 27th 1931 Secretary

Westminster Hospital,

Broad Sanctuary, S W 1

THE "WANDER" SCHOLARSHIP IN DISEASES OF CHILDREN

Applications are invited for the office of "WANDER" SCHOLAR AND REGISTRAR TO THE CHILDREN'S DEPARTMENT Salary £250 per annum Duties to commence Sept 1st Candidates must be registered Medical Practitioners who have held a resident Hospital post or posts, one of them preferably in diseases of children The office is a whole time one and is tenable for one year Applications together with six copies of three recent testimonials, should be submitted to the undersigned, from whom further details regarding the duties of the office can be obtained, not later than Friday, August 14th

By Order of the House Committee,
CHARLES M POWER Secretary

County Borough of East Ham.

ASSISTANT MEDICAL OFFICER

Applications are invited from duly qualified Practitioners for the position of Assistant Medical Officer, whose duties will be primarily in connection with Maternity and Child Welfare work Age not to exceed 45 years Salary £500, rising annually by £25 to a maximum of £700 per annum, subject to 5 per cent deduction for superannuation

Previous experience in a similar appointment under a local authority will be reckoned in calculating the commencing salary of the person appointed

The successful candidate will be required to give full time service, and act under the supervision of the Medical Officer of Health

Candidates must have had definite experience of Children's Diseases The possession of the Diploma in Public Health or similar qualification is desirable, and preference will be given to those who have had previous experience in Maternity and Child Welfare work

The successful candidate will be required to pass satisfactorily a medical examination, and to reside in the neighbourhood

Forms of application can be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope, and must be returned by 9 a.m on Tuesday, September 1st

Canvassing the members of the Council either directly or indirectly, will disqualify

By Order
C EUSTACE WILSON
Town Hall, East Ham, E.6 Town Clerk
July 20th, 1931

Royal College of Surgeons of ENGLAND

LICENCE IN DENTAL SURGERY

Notice is hereby given that the next FIRST PROFESSIONAL EXAMINATION will commence on FRIDAY SEPTEMBER 25th 1931 and that the SECOND PROFESSIONAL EXAMINATION will commence on FRIDAY, NOVEMBER 6th 1931

Candidates are required to give not less than twenty one days notice in writing of their desire to present themselves for the examinations to Mr H H REW Examiner Hall Queen Square London W C 1 from whom all particulars relating thereto may be obtained

DIPLOMA OF FELLOW

Notice is hereby given that the next PRIMARY and FINAL EXAMINATIONS for the Diploma of Fellow will commence on TUESDAY, DECEMBER 1st and THURSDAY, NOVEMBER 12th 1931, respectively

Candidates are required to give not less than fourteen days notice of their desire to present themselves for either of the examinations

Particulars relating to the examinations may be obtained from Mr H H REW as above

HORACE H REW
July 27th, 1931 Director of Examinations

City of Plymouth.

DEPUTY MEDICAL SUPERINTENDENT MENTAL HOSPITAL.

The Visiting Committee of the above Mental Hospital invite applications from duly qualified and registered Medical Practitioners for the post of whole time Deputy Medical Superintendent of the Plymouth Mental Hospital Blackadon

Applicants must hold the Diploma of Psychological Medicine, and must have had considerable experience in the work of a Mental Hospital and must possess a practical knowledge of Pathology

The salary on appointment will be at the rate of £500 per annum, rising by annual increments of £50 to £650 per annum, together with emoluments estimated for the purposes of the Asylum Officers' Superannuation Act, 1909, as being worth £150 per annum

Forms of application may be obtained from the undersigned

Applications, together with copies of not more than three recent testimonials, to be sent addressed to the undersigned and endorsed "Deputy Medical Superintendent" on or before August 15th

Municipal Buildings, Plymouth R J FITTALL Town Clerk

July 1931

County Borough of Dewsbury.

DEPUTY SCHOOL MEDICAL OFFICER AND DEPUTY MEDICAL OFFICER OF HEALTH

Applications are invited from duly qualified and registered Medical Practitioners for the post of Deputy School Medical Officer and Deputy Medical Officer of Health

Applicants should have had at least three years' experience since qualification Experience in Eye work and Infectious is essential The possession of the D P H, and previous experience in School Medical Inspection and the work of a School Clinic and in Tuberculosis and Child Welfare, will be considered important additional qualifications

The inclusive salary will be at the rate of £600 per annum Particulars of the duties and conditions of appointment together with application forms may be obtained from Dr P M Galloway Medical Officer of Health Market Place, Dewsbury to whom all applications accompanied by copies of not more than three recent testimonials should be delivered not later than Saturday August 22nd

Town Hall, Dewsbury HOLLAND BOOTH Town Clerk

July, 1931

Manchester and Salford Hospital

FOR SKIN DISEASES

HOUSE SURGEON

Applications are invited for the post of House Surgeon Must be registered The appointment is for six months Salary at the rate of £100 per annum with board and residence

Applications with copies of three testimonials to be sent to the undersigned Qualified Manchester men only before July 31st

JOHN NAIL Secretary

Liverpool Heart Hospital.

HONORARY ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician Candidates must be registered Medical Practitioners Applications should be sent to Miss Hart 34 Cook Street Liverpool, not later than Oct 5th

West Bromwich and District
GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the posts of—
(1) HOUSE SURGEON;
(2) HOUSE PHYSICIAN;
(3) CASUALTY HOUSE SURGEON.

Candidates (male or female) must be doubly qualified and unmarried. Salary, in each case, at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on September 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned on or before August 12th.

By Order,
Edward Street, West Bromwich. FRANK I. HANCOCK, Secretary & Supt.

Walsall General Hospital.

The Committee invite applications from Women for the posts of HOUSE PHYSICIAN and HOUSE SURGEON.

Salaries at the rate of £150 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials

The appointments—equal in status—will be for six months each.

The Hospital contains 100 beds and is equipped in all Special Departments

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post, Tuesday, August 4th

WALTER FRANCOMBE, Secretary.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the two undermentioned posts:
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.

The salary attached to each appointment is £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Gen. Supt. & Secretary.
Board Room
July 24th, 1931.

Seamen's Hospital Society,
GREENWICH, S.E.

RESIDENT MEDICAL OFFICER required at QUEEN ALEXANDRA MEMORIAL HOSPITAL, MARSLILLES, from September 1st. Salary at the rate of £250 per annum, with board, residence, and laundry British State Registered Nursing Staff Candidates must be male, and some knowledge of French is essential

Applications, with copies of three recent testimonials, to be sent in by August 15th to the undersigned, from whom further particulars can be obtained

Greenwich R. E. V. BAX,
July 16th, 1931. Secretary.

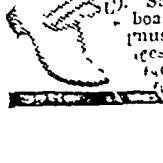
Addenbrooke's Hospital,
CAMBRIDGE

Applications are invited for the post of HOUSE PHYSICIAN The appointment will be for six months from August 23rd, but is terminable at an earlier date by one month's written notice on either side Salary at the rate of £130 per annum, with board, residence, and laundry Candidates (male), who must be unmarried and duly registered, are requested forward their applications, stating age, qualifications, etc., together with copies of not less than four testimonials, to the undersigned on or before Wednesday, August 12th.

W. H. HEAD,
Secretary Superintendent

Dr. A
Furth
40,

Addenbrooke's Hospital,
CAMBRIDGE.



The are invited for the post of ANESTHETIST and EMERGENCY (male). Salary at the rate of £130 per annum, board, residence, and laundry. must be unmarried and duly requested to forward their applications, qualifications, etc., together with not more than four recent testimonials, signed as soon as possible.

H. HEAD,
Secretary Superintendent.

The Guest Hospital, Dudley.
(General Hospital—107 Beds.)

Applications are invited for the following posts:

HOUSE SURGEON. Salary £200 per annum, with furnished apartments, board, and laundry. Duties to commence immediately.

ASSISTANT HOUSE SURGEON. Salary £170 per annum, with furnished apartments, board, and laundry. Duties to commence August 23rd.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
The Guest Hospital, Dudley. House Governor and Secretary.
July 25th, 1931.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.
(121 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

The post is that of Senior Resident Officer, and the work being chiefly Surgical, preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months commencing on October 1st.

Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 9th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

The King Edward VII Memorial,
ELIOT HOSPITAL, HAYWARDS HEATH.
(Incorporated.)

The Board invite applications for the post of SURGEON to the Ear, Nose, and Throat Dept.

Candidates will please state whether they are engaged in Consulting Practice in this branch of surgery.

Applications, with copies of testimonials, should be sent to the Hon. Secretary, The King Edward VII Memorial, Eliot Hospital, Haywards Heath (Incorporated), Haywards Heath, Sussex, not later than August 15th next

CHAS. HALES,
July 24th, 1931. Hon. Secretary.

Elizabeth Garrett Anderson
HOSPITAL, Euston Road.

Wanted, fully qualified Medical Women as CLINICAL ASSISTANTS in the following Departments:

Ophthalmic Department. Tuesday mornings; Thursday evenings.
Surgical Department. Wednesday afternoons
Medical Department. Saturday mornings.
Children's Department. Monday and Thursday mornings.

These appointments to commence from September 1st next.

JEAN R. MURRAY, Secretary.

Midland Hospital,
Easy Row, BIRMINGHAM.

A vacancy will occur for the post of HOUSE SURGEON, lady or gentleman, at the above Hospital, on August 9th Salary £150 per annum, with board, residence, and laundry.

The work includes Surgery, Gynaecology, Dermatology, etc.

Applications, stating age and qualifications, accompanied by recent testimonials, should be forwarded at once to—

JAMES O. AYRES, Secretary.

Buchanan Hospital,
ST LEONARDS ON SEA, SUSSEX.
(Beds 115)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male or female) at a salary of £125 per annum, with board, residence, etc Eligibility for Senior position after six months' service. Applications, with testimonials, to be sent to the Secretary, Buchanan Hospital, St. Leonards, as early as possible

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management. Post now vacant.

Royal Infirmary, Doncaster.
(185 Beds.)

HOUSE PHYSICIAN (male) required immediately. Appointment is for six months The House Physician will also act as House Surgeon to the Ophthalmic, Ear, Nose, and Throat Depts The position offers opportunity of gaining good Medical experience.

The successful candidate is eligible for re-appointment. Salary £175, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by August 8th.

WALTER R. SMITH,
Secretary Superintendent

Hull Royal Infirmary.
(370 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (male) to the SUTTON BRANCH HOSPITAL The Branch is a self contained General Hospital of 100 beds There are two Resident posts.

The appointment will be for six months in the first instance, and will be determinable by one month's notice on either side.

Salary at the rate of £160 per annum, plus board, residence, and laundry.

Applications, stating age, qualifications, and nationality, together with copies of testimonials, should be sent to the undersigned on or before August 11th.

R. J. CARLESS,
July 20th, 1931. House Governor

The Royal Infirmary,
SUNDERLAND.

BACTERIOLOGICAL LABORATORY.

Applications are invited from registered Medical Practitioners for TEMPORARY DUTY at the above Laboratory, for at least a calendar month commencing August 10th.

Remuneration £12 12s per week, with the usual first-class travelling expenses

A vacancy on the permanent staff will shortly occur.

Applications, with copies of three testimonials, to be made to the undersigned.

S. C. FRYERS,
House Governor and Secretary.

Hospital for Women at Leeds.
(For the Treatment of Diseases Peculiar to Women)

HOUSE SURGEON wanted to commence duties on August 1st next. The appointment is for six months. Salary at the rate of £100 per annum, with board, quarters, and laundry.

Applications, together with copies of testimonials, should be sent to the undersigned immediately.

B. L. JEVTTRESON,
Hon. Secretary to the Faculty.

National Sanatorium, Benenden,
KENT.

RESIDENT ASSISTANT MEDICAL OFFICER (male) required at Benenden Sanatorium (147 beds) early in September. Salary £300 per annum, rising by annual increments of £25 to £350.

Preference given to candidates with experience in Tuberculosis and Pneumothorax Treatment.

Applications, with copies of three recent testimonials, should be sent to the Medical Superintendent not later than Thursday, August 6th

Victoria Central Hospital,
WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

Hulme Dispensary,
Dale Street, Stretford Road,
MANCHESTER.

Wanted, a RESIDENT MEDICAL OFFICER, male or female, single, duly registered and fully qualified.

Applications, with testimonials, at once to Honorary Medical Secretary. Salary £300, with apartments, attendance, coal, and light.

Sussex Eye Hospital, BRIGHTON.

HONORARY CLINICAL ASSISTANT required

The Committee of Management hereby give notice that a meeting of the Committee will be held on August 20th for the purpose of appointing an Honorary Clinical Assistant to help in the Out-patients' Department only on Tuesdays and Fridays at 12.30. The appointment to be for two years. The successful candidate to be eligible for re-appointment at the end of that period.

Applications, in writing, for the vacancy, with testimonials, must be sent to the Hospital, addressed *to the Assistant Secretary, on or* before Wednesday, August 12th. Candidates must be registered under the Medical Acts.

No candidate can hold the appointment unless he resides in Brighton or Hove.

Board Room, Queen's Road, Brighton. July 16th, 1931

A. F. GRAVES, Assistant Secretary.

Ancoats Hospital, Manchester.

FORTHCOMING VACANCIES

RESIDENT MEDICAL OFFICER. September 1st next. Appointment for six months. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred.

HOUSE PHYSICIAN. September 1st next.

HOUSE SURGEON (Orthopaedic). September 1st next.

HOUSE SURGEON (General). September 1st next. Salary for each of the above £100 per annum, with board, residence, etc.

Applications stating age, qualifications, experience if any, together with copies of three recent testimonials to be forwarded to the undersigned on or before Wednesday, Aug. 5th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST required, part time only. Salary £200 per annum.

Applications stating age, qualifications, experience, etc., with copies of three recent testimonials to be forwarded to the undersigned on or before Wednesday, August 12th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Preston and County of Lancaster ROYAL INFIRMARY

RESIDENT SURGICAL OFFICER

Applications are invited for the post of Surgical Officer, with resident charge of Medical administration and Maternity wards. Twelve months' appointment from September 1st.

A higher Surgical qualification and post-graduate experience in Obstetrics will be a recommendation.

Salary £300, *with board, residence, and* laundry.

Applications stating age, qualifications, and experience, together with copies of recent testimonials, to be forwarded immediately to—

Mr. JOHN GIBSON,
Superintendent and Secretary.

Chesterfield and North Derbyshire ROYAL HOSPITAL

(190 Surgical and Medical Beds)

HOUSE SURGEON

Applications are invited from fully qualified men for the above post. There are five Residents. The appointment is for six months.

Salary at the rate of £150 per annum, with board, apartments, and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned immediately.

July 20th, 1931

G. SUNNUCK,
Supt. and Secretary.

Leicester Royal Infirmary.

(472 Beds)

RESIDENT MEDICAL OFFICERS

PRELIMINARY NOTICE

Vacancies are expected on October 1st for HOUSE SURGEONS and HOUSE PHYSICIAN. Salaries at the rate of £125 per annum.

Applicants must have held a resident Hospital appointment and have similar experience of Hospital work. Election about the middle of September. Applications to the House Governor and Secretary.

Woolwich and District War MEMORIAL HOSPITAL

Shooter's Hill, London, S.E.18
(General Hospital—112 Beds)

The Board of Management invites applications from suitably qualified male candidates for appointment as HOUSE SURGEON for a period of six months as from September 1st. In addition to his Surgical duties he will have the care of a Maternity Unit of 8 beds.

An honorarium of £100 per annum will be paid in respect of this appointment, plus board, residence and laundry.

Applications, accompanied by not more than three recent testimonials should be addressed *to the Secretary (at the Hospital), to reach him* not later than first post on Monday, Aug. 17th.

Royal Sea Bathing Hospital for SURGICAL TUBERCULOSIS, MARGATE.

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months, but may be extended for a further period of six months.

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

Evelina Hospital for Children, Southwark, S.E.1.

Applications are invited for the post of HOUSE SURGEON (male) for six months (first *two months in Casualty and Out-patient Depart*ment). Salary at the rate of £120 per annum, with board and residence.

Applications, stating age, experience and qualifications, accompanied by copies of four testimonials, to be sent at once to the undersigned, from whom rules and other particulars can be obtained.

By Order of the Committee of Management,
W. H. SIDNELL,
July 25th, 1931 Secretary Supt.

Manchester Northern Hospital FOR WOMEN AND CHILDREN, Park Place, Cheetham Hill Road, MANCHESTER

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON, both duly qualified who are to commence duties on October 1st.

Senior House Surgeon, salary £130 per annum, with board and residence. Junior House Surgeon, salary £100 per annum, with board only.

Applications stating age and experience with copies of recent testimonials to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than the first post, August 31st.

Huddersfield Royal Infirmary.

(210 Beds)

(Officially recognized for the Surgical Practice required of Non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.)

Male HOUSE SURGEON required to commence duty as early as possible. Salary £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal for further three or six months. Applications, with copy testimonials, to be addressed to the Secretary immediately.

The Sheffield Royal Hospital.

(540 Beds)

There are two vacancies for Residents.

OPHTHALMIC HOUSE SURGEON. £120 per annum.

ANAESTHETIST. £80 per annum, rising to £100 in six months.

Applications to—

W. H. BOOTH,
Superintendent & Secretary.

Royal Berkshire Hospital, READING. (243 Beds)

RESIDENT ANAESTHETIST (male) wanted now for six months. Candidates must be fully qualified and registered. Remuneration at the rate of £150 per annum with board, residence, and laundry. Application, with copies of testimonials, should be sent to the undersigned.

F. A. LYON, Secretary.

Royal Sussex County Hospital, BRIGHTON. (246 Beds)

CASUALTY HOUSE SURGEON (male) required about the middle of August next.

Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire and be duly registered under the Medical Acts.

They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent to the undersigned immediately.

L. L. W. LANCASTER GAYE,
Secretary Superintendent.

East Suffolk and Ipswich HOSPITAL, IPSWICH

(265 Beds—7 Residents)

FORTHCOMING VACANCIES

Applications are invited for FOUR HOUSE SURGEONS and a HOUSE PHYSICIAN, vacant in September at salaries of £120 per annum, board, residence and laundry.

Applications from British male candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

The Royal Hospital, WOLVERHAMPTON

(Incorporated under Charter.)

Amalgamating The General Hospital, The Women's Hospital, The District Nursing Association.

HOUSE SURGEON required for the Women's Hospital. Candidates must be *registered under* the Medical Acts. Salary £100 per annum, with board, furnished rooms, and laundry.

Applications, accompanied by not more than three recent testimonials, to be addressed to the House Governor, from whom further particulars may be obtained.

W. H. HARPER,
July, 1931 House Governor.

District Infirmary, ASHTON UNDER LYNE

(A General Hospital of 200 Beds, mainly Surgical.)

Wanted a HOUSE SURGEON for September 1st. Six months' appointment renewable. Salary at the rate of £150 per annum with board, residence and laundry.

The resident Staff comprises a Resident Surgical Officer and three House Surgeons.

Applications with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
July 27th, 1931 Gen. Supt. & Sec.

District Infirmary, ASHTON UNDER LYNE

(A General Hospital of 200 Beds.)

The Governors invite applications for the post of HONORARY ASSISTANT PHYSICIAN. Particulars of the duties may be obtained from the undersigned. Applications with testimonials and certificates of age and of registration will be received up to September 4th.

The Infirmary, Ashton under Lyne. FRANK OLIVER, Gen. Supt. & Sec.
July 29th, 1931

Swansea General and Eye HOSPITAL. (316 Beds)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

Applications stating age, nationality, qualifications and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS,
Secretary Superintendent.

Victoria Hospital, Accrington.

The Governing Body of the Hospital invites applications for the post of HOUSE SURGEON. Candidates must be fully qualified and registered. Number of beds 50. Salary £100 per annum with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned to whom applications with copies of testimonials, should be sent on or before August 10th.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
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All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted at once, outdoor ASSISTANT (male), mixed practice. North-East Coast Town. Dispenser kept. Commencing salary £400, rising to £450 at end of one year. Junior Partnership on easy terms to suitable man at end of two years. Ex H.S., with some experience of general practice. Catholic preferred, but not essential.—Address, No. 4788, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Lady Assistant, outdoor. Salary £300 p.a. Self-contained house, furnished (essentials). Commission midwifery and operations. £42 p.a. upkeep of Assistant's own car. Garage provided. Situation Lancashire. Mixed Practice.—Address, with photo and references, to No. 4786, B.M.A. House, Tavistock Square, W.C.1.

Wanted, October 1st, Assistant, married preferred, for large mixed Practice in Midland town. Must be young, energetic, keen on midwifery. State age, nationality, experience, etc. Good salary to right man. Usual bond.—Address, No. 4705, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (married or single), with Hospital and general experience. Refractions a recommendation. Six gns weekly (indoor) with prospects if suitable. Usual bond.—Address, with photo, No. 4733, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to PARTNERSHIP, in old-established general Practice in country town in Midlands. University man, aged about 30. Well-equipped Cottage Hospital.—Address, No. 4414, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship, outdoor, by male M.B., Ch.B., married, aet. 27, 2 years' experience with busy practices. Well received. Excellent references. Free September. Own car.—Address, No. 4737, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Aug. 9th, Assistant, Glamorgan Colliery Practice, within easy reach of Cardiff and Swansea. £400, outdoor. Prospects if suitable. Abstainer preferred. Usual bond. — Address, No. 4562, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, Indoor, young, single, male. Protestant. Panel and private practice, Sheffield. Recently qualified preferred. Salary £250 p.a. State age, height, and full particulars. — Address, No. 4640, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, single, male, in South Wales General Practice. Salary £500 per annum, with rooms, attendance, light, etc. Usual bond.—Address, stating age, references, etc., No. 4555, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, salaried Partnership or Post, preferably in or near London, by Conjoint, Barts., aged 29, married, ex H.S., R.M.O., 2 years G.P.; free end August. — Address, No. 4715, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, with view, Eastern Counties. £400 per annum, and house. Should own car; running expenses of which, paid by principal.—Address, No. 4730, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistantship by M.R.C.S., L.R.C.P., 1918. St. Barts. English, married, aged 38. Ex H.P. 10 years' exper. G.P. Recently disposed own practice (8 years), reason good. Own car. Free Sept.—Add., No. 4728, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.--Assistant, Gentleman, unmarried, end of September. Salary £400. Mixed Practice in Country Town. Able to drive car. Usual bond. State age.—Address, No. 4723, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship (outdoor), preferably with view. M.B., Ch.B. Aberdeen. Aged 31. Five years' experience G.P. In or near London; nice locality.—Address, No. 4713, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant in September, outdoor, in a Country Town Practice (with Hospital), North Wales. Able to drive car. Work light. — Address, No. 4736, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, young, single, male. Mixed Practice. South-West Lancashire. Salary £275 p.a. State full particulars. Usual bond.—Address, No 4720, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant (female) immediately for General Practice in London. Salary £200 per annum.—Address, No. 4789, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Junior Outdoor ASSISTANT in large mixed Practice in town near Manchester. Salary £400 per annum. Usual bond.—Address, No. 4739, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, an Assistant, for panel and private practice, London. E. Live in.—Address, No. 4711, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for mixed Practice in Yorks; British. Unfurnished house available. Prospects to suitable man. £450 and car allowance. State age, experience, references, etc. — Address, No. 4787, B.M.A. House, Tavistock Square, W.C.1.

Assistant (man or woman) indoor, wanted. Country town. Public health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essential particulars are stated. No. 4712, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship required by wellexperienced Woman, M.B., B.Ch. Own car. Free September 15th. London preferred, but not essential. Interview. Excellent references. — Address, No. 4710, B.M.A. House, Tavistock Square, W.C.1.

Doctor who has been ill, age 41, would be prepared to ASSIST in Day Work in return for Hospitality. Not a crock, but not able to stand up to heavy work yet. Interview.—Address, No. 4717, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.Ch., D.P.H. (Honours), Woman, desires ASSISTANTSHIP with possible view to Partnership; ex H.S. and A.R.M.O., exp. T.B. and Ophth. (Moorfields), 3 yrs.' exper. G.P., includ. Mid., Gynæc., etc. Young, energetic, drive car. Interv. if desired. —No. 4731, B.M.A. House, Tavistock Sq., W.C.1.

M.B., Ch.B., ex H.S., H.P., Teaching Hospital, experienced G.P., aet. 30, married, no capital, desires outdoor ASSISTANTSHIP at £450—£500 p.a., with view to Partnership out of income if possible.—No. 4734, B.M.A. House, Tavistock Sq., W.C.1.

North Wales.—Wanted, Welsh-speaking outdoor ASSISTANT, with or without view, for General Practice, private and panel. Salary £400, car allowance. Usual bond. References required.—Address, No. 4565, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

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After Office Hours: Epsom 9142.

Wanted. — Locums by Lady Doctor, L.R.C.P.S., L.M., D.P.H. Accus. sole charge and dispen. 5 years' experience. Free from middle of September. Moderate terms for seaside (South Coast preferred, but not essential). — Address, No. 4718, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Locums by Medical Woman. Experienced. Accustomed sole charge. Own car. Free August 7th—September 4th. Go anywhere.—Address, No. 4780, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenency desired by wellqualified Doctor, preferably South or South-West.—Address, No. 4703, B.M.A. House, Tavistock Square, W.C.1.

M.R.C.S., L.R.C.P., late H.S. and H.P., age 28, experienced in private and panel practice, requires post of LOCUM. Free September 1st. Own car available. — Address, No. 4781, B.M.A. House, Tavistock Square, W.C.1.

Woman Locum wanted August 29th to September 12th. West Country Town Practice, light work. Own car or bicycle. £4 week and expenses.—Address, No. 4732, B.M.A. House, Tavistock Square, W.C.1.

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PARTNERSHIPS.

Wanted.—Partner in industrial Practice in North of England. Panel nearly 3,000. Share worth £650 (guaranteed) offered to begin with. — Address, No. 4729, B.M.A. House, Tavistock Square, W.C.1.

Partnership or Practice wanted in or near Hampstead by experienced Practitioner, with ample capital. Strict confidence.—Address, No. 4735, B.M.A. House, Tavistock Square, W.C.1.

Third Partner required in high-class Practice, owing to death of partner. Non-panel. Applicant must be well qualified, and possess necessary capital. Share for sale £1,250 at 2 years' purchase.—Address, No. 4727, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS. DISPENSERS, etc.

Wanted. — Lady Dispenser-BOOKKEEPER and SECRETARY, for South of England. Experienced. State qualifications, age, and salary. Testimonials. — Address, No. 4701, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Medical Officer, fully qualified for Whaling venture sailing last week August—Write, No 494, KEITH & Co, Advertising Agents, Edinburgh

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN Preparation for Examinations — Write, wire, or 'phone (Park 0969) Secretary, 7, Westbourne Park Road, W 2

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Ex Medical Student, with knowledge of Bookkeeping Shorthand, and Typewriting desires Clerical or Secretarial POST to Doctor or Institution Excellent references — Address, No 4704, B M A House, Tavistock Square, W C 1

M D, M.R.C.P., D.P.H. (36), wishes to hear of Insurance Industrial or other PART TIME POST in London Available now as Locum—Address, No 4785, B M A House Tavistock Square W C 1

Part-time work wanted.—Mornings and evenings by M D (Edin) in London, W, S W, or N W Experienced in private and panel practice special knowledge of diseases of women and children Own car Live in or out View to succession or partnership Can bring in small clientele Would undertake Locumship of some duration No Agencies Refs as required—Phone Wallington 2386 or 'P,' North Lodge, North St, Carshalton Surrey

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The Incorporation of National INSTITUTIONS FOR PERSONS REQUIRING CARE AND CONTROL invite applications from registered Medical Practitioners, with adequate Hospital experience, for the post of MEDICAL OFFICER (male) of the STOKE PARK COLONY, BRISTOL The remuneration will be £600 rising to £800, a year The appointment will not be pensionable Forms of application, with further particulars, can be obtained from the Warden, 14, Howick Place Victoria Street, S W 1, and must be completed and returned not later than August 17th

The Royal Army Medical Corps ASSOCIATION 85 Eccleston Square, S W 1 (Telephone Victoria 2722) supplies qualified Dispensers, Bookkeepers, Laboratory Assistants Sanitary Assistants, Male Nurses Mental and Special Treatment Orderlies, Dental Clerk Orderlies Porters Caretakers, etc, without charge to Prospective employers

Well educated young lady desires SECRETARIAL POST to West End Surgeon or Physician Shorthand typist, Thorough knowledge of Medical terms Several years Secretarial experience Excellent testimonials — Box 31, ALDRIDGE'S ADVERTISING SERVICE, 34, Paternoster Row, E C 4

Trained Nurse-Dispenser, Apothecaries Hall, and C M B, special experience in Contraceptive work seeks Post, Doctor or Clinic —Address No 4792, B M A House, Tavistock Square, W C 1

Young gentleman, aged 24, clerk in Public Health Dept, experienced car driver would like permanent position as SECRETARY CHAUFFEUR, and would help in garden Splendid references medical men Salary secondary consideration South West preferred —BM/HMAE, Box T143, WILLINGS, 86, Strand, W C 2

PRACTICES

Wanted. — Practice £1,200 up. Large panel or appointments Any town, with Hospital, London, or Midlands preferred Scope E N T Surgery House to rent some terms Free end August Partnership, with early succession considered Address No 4784, B M A House, Tavistock Square, W C 1

Wanted. — Eastern Counties, Market or Coast Town mixed PRACTICE Income £1 200 £1 500 Panel 600—800 Good moderate sized house (with garden and garage) preferably to rent Strict confidence—Address, No 4716, B M A House, Tavistock Sq W C 1

Wanted, by experienced Cambridge man, Country PRACTICE Southern half of England preferred Good house to rent £1,000—£1 500 Strict confidence — Address No 4480, B M A House, Tavistock Square W C 1

Wanted, by experienced Practitioner, PRACTICE panel and private £700 to £800 p a in residential area of town S or S W of England Capital available—Address No 4714, B M A House, Tavistock Square, W C 1

Wanted, in a few months, by experienced man (aged 41) PRACTICE or PARTNERSHIP, within reach of sea £1,500—£2,000 Good panel Schools Capital available Strict confidence—Address No 4725, B M A House, Tavistock Sq, W C 1

Wanted in Glasgow, panel and private PRACTICE yielding £1 500 to £2,000 per annum, about half from panel Ample capital Strict confidence—Address, No 4558 B M A House, Tavistock Square W C 1

Wanted, by experienced Medical Man in the Autumn a Country PRACTICE by the Sea Panel and private Income about £1 000 House to rent—Address No 4566, B M A House, Tavistock Square, W C 1

Wanted, cash Practice, London. Panel over 500 Do tor advertises—Address, No 4722, B M A House, Tavistock Square W C 1

Exchange with another Practitioner two or three weeks, from August 8th or 15th (near) London or South Coast Doctor and mother Comfortable conveniently situated house in historic Edinburgh Light Practice — Address No 4708, B M A House, Tavistock Square, W C 1

For Sale, in important seaside South Western Town an easily worked established PRACTICE Good scope for development An easy panel bringing in about £300 in addition to good cash takings at surgery etc Mild climate House, pleasantly situated for purchase or short lease School facilities and all kinds of sport Favourable terms for cash No agents—Address No 4719, B M A House, Tavistock Square, W C 1

For Sale. — Excellent small PRACTICE in good residential part of Manchester Receipts about £650 (£100 from panel and appointments) Excellent house garden and garage on lease at £70 Premium £600 on easy terms to suitable man—Address No 4782 B M A House, Tavistock Sq W C 1

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For Sale.—Practice or Partnership in Midlands, in rapidly increasing district About 1,000 houses being built Receipts 1928 £231, 1929 £540, 1930 £862 —Address No 4724, B M A House Tavistock Square, W C 1

For Sale. — Country Practice, Patella Bridge York (formerly carried on by the late Dr Lumsden M O H Full particular —ATKEY, SON & ATKINSON, Solicitors Harrogate

General Country Practice for Sale Northern County Good house etc, rent £50 p a Practice value £660 will accept £500 for immediate sale—Address No 4758, B M A House, Tavistock Square, W C 1

General Practice and Nursing HOME for Sale in delightful country district near London Receipts 1930 about £7,000 Price £5 000 cash Suit two friends Vendor's ideal premises can be bought or leased —Address No 4709, B M A House, Tavistock Square, W C 1

Lancs Town —Old - established Receipts £2 000 Excellent scope for Surgery Panel 1 850 Appointments £120 Nice house, garden garage £80 Price 1½ years purchase part deferred—MANCHESTER MED & SCHOLASTIC ASSOCIATION 6 Brown St

London, W —Nucleus for Sale Doctor going abroad owing to illness Established 3 year Receipts over £300 Good panel 100, plenty of scope Premium £500 or near offer (including furniture) Eminently suitable for bachelor — Write, COOPER, 14, Briardale Gardens, Hampstead, N W 3

Manchester Suburb.—Old-established Nice house garden, and garage £65 Receipts about £1 100, excellent scope Price £1,250, part deferred — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street

Medical Man in Country Practice, 30 miles from town would EXCHANGE for seaside Cornwall preferred for part August and September Small house, large garden tennis etc Lovely country—Address No 4707, B M A House Tavistock Sq W C 1

Old-established Practice in one of the prettiest Villages in Sussex 4½ miles from the sea and near the Downs Average income about £1 100 Appointments and Panel (660) £500 Scope for increase Delightful house with walled garden, could be bought or rented—Apply, WINTER & Co, 16, Bedford Row, London, W C 1

Practice wanted, North half of Scotland, immediately Good class in Country Town in Nairn, Moray Perthshire Banffshire Speyside preferred Doing £800—£1 500 Special price offered for suit Practice —No 4790 B M A House Tavistock Sq W C 1

Scotland, South.—Country Practice for Sale Panel 560 Income for last year £1,167, increasing House garden and garage to rent Premium £1 200—Address, No 4791, B M A House, Tavistock Sq W C 1

Suburb, South Coast Town — Scope for Surgery half mile away PRACTICE averaging £650 last three years including panel and small club about £400 (accountant's figures) Separate surgery and waiting room adjoining House two large entertaining rooms three bedrooms usual offices good garden double garage freehold £2 750 house Practice drugs surgery fittings—Address No 4204 B M A House Tavistock Sq W C 1

Seaside — Sussex —Exceptional opportunity for Children's CONVALESCENT HOME with select PRACTICE offered (£400 a year) for special available term £60 a year and opportunity of acquiring land for building in most fashionable neighbourhood Three miles from town—Address No 4497, B M A House Tavistock Square W C 1

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£600 p.a.—Good-class cash PRACTICE; Panel 370 (selected); other appointments about £120 p.a. Main road, Mile End, London, E.1. Accept £300 for immediate sale.—Address, No. 4726, B.M.A. House, Tavistock Square, W.C.1.

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Wanted, from October, by M.B., D.P.H.(London), returning from Tropics, HOUSE in location with scope. Doctor has complete equipment for Ophthalmology, X-ray, and Electro therapeutics. Liberal prem. paid for good house or suggest, where to start practice with good prospects. Partnership consid. or arrangement with Nursing Home for use of equipment.—No. 4785, B.M.A. House, Tavistock Sq., W.C.1.

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Cleveleys. — For Sale. — Large Freehold BUNGALOW, in own grounds, in rapidly growing fashionable seaside resort. Population has increased, according to census, from 3,000 to 10,000 last ten years. Most suitable opening for Medical Man. Very little opposition. Garage. Electric light and gas. Price £3,200.—Dr. HARRINGTON, Preston.

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Doctor's widow in North London having large house, garden, car, good staff, would like some PAYING GUESTS. Terms moderate.—Address, No. 571, B.M.A. House, Tavistock Square, W.C.1.

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North-East England.—For Sale.—Good PRACTICE, private work, midwifery, panel, club. Good house and garden on sea front. Garage. House to go with Practice. Introduction to suit purchaser. Owner taking up surgery.—Particulars, in confidence, from BROWN, FERGUSON & Co., Solicitors, 227, St. Vincent Street, Glasgow, C.2.

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The Binoscope.—See the B.M.J. of May 16th for the Physiological Treatment of Strabismus, Heterophoria, and Asthenopia. Price 7/6.—D. GREAVES, 24, Wood Rd., Haywards Heath, Sussex.

The Owner of British Patent No. 219996 for "Apparatus for the massage of living animal tissues, in particular *human skin*," *is desirous of entering into* negotiations with one or more firms in Great Britain for the purpose of exploiting the above invention, either by sale of the Patent rights or by granting licences to manufacture under Royalty. Enquiries should be addressed to No. 4706, B.M.A. House, Tavistock Sq., W.C.1.

For Sale. — Hoisting Apparatus for transporting invalid's chair or bed up staircase. Platform folds when not in use. Suitable spinal case or nursing home.—Apply, Dr. LAPAGE, Forest Row, Sussex.

APPOINTMENTS.—Contd.

Wolverhampton and Midland COUNTIES EYE INFIRMARY.

HOUSE SURGEON wanted. Ophthalmic experience preferred. Duties to commence early in September. There are 50 beds for In patients, and large Out-patient Department. Salary £150 a year with furnished apartments, board, and laundry. Ladies and gentlemen applying should state age and experience, and send copies of three recent testimonials, to reach the Secretary not later than August 11th.

EUSTACE LEES,
July 27th, 1931. Secretary.

Liverpool Maternity Hospital, OXFORD STREET.

HOUSE SURGEON required for the six months commencing October 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Hon. Secretary of the Medical Board, on or before August 29th.

Rotherham Hospital. (130 Beds.)

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN, qualified. Salary £180 p.a., with board, residence, and laundry, to have charge of Out-patients, administer Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male), qualified. A knowledge of Eye work is desirable. Salary £200, with board, residence, and laundry. Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Down Mental Hospital.

DOWNPATRICK, NORTHERN IRELAND.

ASSISTANT MEDICAL OFFICER.

The Committee of Management of above Hospital, at its meeting on August 15th, will consider applications for vacant post of Junior Assistant Medical Officer. Salary £300 per annum, *rising by annual increments of £25 to* £400 per annum, and with allowances of furnished apartments, rations, laundry, fuel, light, and attendance, valued for pensionable purposes at £130 per annum. A deduction of 3 per cent. will be made from the salary and value of allowances under the Asylums Officers Superannuation Act, 1909.

Candidates must be unmarried, and not more than 32 years old, except that a deduction may be made for time served in the Army or Navy during the Great War.

Form of application, giving further particulars, may be obtained from the Resident Medical Superintendent until August 8th.

Birkenhead & Wirral Children's HOSPITAL, Woodchurch Road, BIRKENHEAD.

HOUSE SURGEON.

The Board invite applications for the post of House Surgeon (female) for a period of six months from October 1st. Honorarium at the *rate of £100 per annum, with board, residence,* and laundry. Applications, together with copies of testimonials, should be addressed to the Secretary at the Hospital not later than August 10th.

SECOND HOUSE SURGEON.

The Board invite applications for the post of Second House Surgeon (female) for a period of six months, from October 1st. Honorarium at the rate of £75 per annum, with board, residence, and laundry. Applications, together with copies of testimonials, should be addressed to the Secretary at the Hospital not later than August 10th.

Manchester Royal Infirmary.

ASSISTANT RESIDENT MEDICAL OFFICER AND RESIDENT CLINICAL PATHOLOGIST.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will be vacant on September 1st.

Applicants (men only) must be registered and hold a Medical and Surgical qualification, preference being given to those who have held a resident appointment at the Manchester Royal Infirmary.

The appointment is for twelve months, subject to the provisions of the By-laws as to notice, etc. Salary £100 per annum, with board, residence, and allowance for laundry.

Applications, with testimonials, and stating age, to be sent to the Chairman of the Medical Board not later than August 19th.

By Order,
FRANK G. HAZELL,
July 25th, 1931. Gen. Supt. & Secretary.

Midland Hospital, EASY ROW, BIRMINGHAM.

A vacancy will occur for the post of HOUSE SURGEON, lady or gentleman, at the above Hospital on August 9th. Salary £200 per annum, with board, residence, and laundry. The work includes Surgery, Gynaecology, Dermatology, etc.

Applications, stating age and qualifications, accompanied by recent testimonials, should be forwarded at once to—

JAMES O. AYRES, Secretary.

Nottingham and Midland Eye INFIRMARY.

RESIDENT HOUSE SURGEON required early September. 54 beds. Large Out-patient Department. Salary £200 per annum, with board and laundry. Applicants (gentlemen) should state age, qualifications, experience, and send copies of three recent testimonials to the Secretary, The Ropewalk, Nottingham.

Princess Louise Kensington HOSPITAL FOR CHILDREN, St. Quinton Avenue, North Kensington, W.10.

CLINICAL ASSISTANT required for Out-Patient Session (Medical) on Wednesday afternoons from 2 p.m. Some women patients are also seen at the session. Applications, giving details of qualifications, together with copies of two testimonials, should be sent to the Secretary of the Hospital.

City of London Hospital for DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.

(Bus, Tram, and Rail, Cambridge Heath, L. & N. E. Railway.)

The Committee invite applications for the post of REGISTRAR (male). A salary is attached to the post.

Applications, accompanied by copies of three testimonials, should be sent to the undersigned on or before Saturday, August 8th.

GEORGE WATTS, Secretary.

Coventry and Warwickshire HOSPITAL. (307 Beds.)

Applications are invited for the posts of RESIDENT HOUSE PHYSICIAN, salary £160 *per annum, and* RESIDENT CASUALTY OFFICER, salary £125 per annum, with board, lodging, and attendance. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, to be sent to the undersigned immediately.

(Miss) R. HOOPER, Secretary.

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Eastern County. — Woman's PRACTICE. Over £500 p.a. Panel 385, increasing. Fees 3/6 to 7/6. House, 5 bed, to rent.—No. 8886.

Central Wales. — Share worth £600 or more. Small panel. Non-dispensing. Good fees. Easy terms to *good* man.—No. 8885.

South Midlands. — £3,700 p.a. Panel £1,450 p.a. Appts. £300. Country district. Visits 2/6 to 10/6. Large house and garden to rent. 5/12ths share. £2,000 down bal. on terms.—No. 8884.

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Liverpool (Central). — Lock-up. £600 p.a. cash. Panel 200. Clubs £55. Fees 2/6 to 5/-. Good premises on lease. Premium £600, or near offer.—No. 8881.

Warwickshire. — Country Prac- TICE. £350 £400. Ample scope. Fees 5/- to 10/-. Panel 345 Premium £400. Choice of houses.—No. 8880.

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Kent Suburb. — Residential. Non-dispensing. Average £897. Panel 386 Appts. £72. Fees mostly 7/6 and 10/6. Large house (7 bed., etc.) to rent or sell cheap. House optional. Low premium.—No. 8872.

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Manchester Suburb.—Over £700 p.a. Panel 150, but scope. Visits 5/- to 21/-. House, 5 bed., etc., to rent. Premium £700 or near. Very easy terms.—No. 8870.

Manchester. — £1,500. Panel 50. Great scope. Visits 5/- and 7/6. *Detached corner house*, 5 bedrooms, etc., rent £50. Premium only £1,250.—No. 8869.

Midlands.—Share worth £1,000, increasing to £2,000. Small panel. Fees 5/- to 15/-. Good house at £80. Partner about 35, well qualified.—No. 8868.

London, N.—Average £1,230 p.a. Panel 1,200. Fees 2/6, 3/6, etc. Lock-up premises, but limited accommodation. Good lease.—No. 8866.

Leics.—Half share of £2,000 p.a. Country, near Town. Visits 5/- up. Panel 1,600. Roomy house to buy, others to let.—No. 8855.

South Midlands. — Within 40 miles.—£900 p.a. Unopposed. Panel 897. Good appts. Visits 5/- to 10/6. Large house and garden to rent.—No. 8859.

Lancs.—Partly Surgical.—Over £2,000 p.a. Panel 1,305. Visits 5/6 to 12/6. Major ops., 10 to 50 gns. Suitable house.—No. 8853.

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31 LONDON, E.C.—City Practice. Receipts 1930, over £1,300. Consultations mainly £1 1s., some £1 11s. 6d. and £3 3s. Excellent consulting rooms. Premium 1½ years pur.

32 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast. Receipts average £300 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 years pur.

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34 LONDON, W.—Partnership in sound non-dispensing Practice of nearly £2,300 p.a., close to West End. No panel and very little night work. Partner should be aged about 35 and used to good class Practice. One-third share. 2 years purchase.

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38 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,300 p.a. *Suitable house to purchase.* Premium one fourth share £2,000. Preliminary Assistantship.

39 S. COAST.—*Partnership in good-class non-dispensing* Practice, over £4,000 p.a., in favourite residential town in seaside resort. No panel and not much midwifery. Pleasantly situated house (4 or more bedrooms) to rent on lease. Incoming Partner should be *Oxford, Cambridge* or London man (aged about 30), who has held Hospital appointments. One third share at first at 2 years' purchase.

40 LONDON, W.—Steadily increasing PRACTICE doing about £750 p.a., month from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

41 S. OF ENGLAND.—*Partnership in* Practice, about £2,800 p.a., in favourite seaside resort. Delightful house (5 bedrooms), garage, and nice garden, to rent. Incoming Partner should be a Surgeon (preferably F.R.C.S.) Hospital and appointment on staff. Premium one fourth share 2 years pur.

42 MIDLANDS. — Partner required in sound lucrative Practice in residential town close to large city. Small panel. Very good Cottage Hospital. Share of £1,000 p.a. at 2 years' purchase. Applicant should be well up in his work.

43 S. COAST.—Partnership in non-dispensing Practice in seaside resort. Incoming Partner must hold the F.R.C.S. Hospital. Scope for Surgery. Share worth about £1,000 p.a. (after short preliminary Assistantship) at 2 years' purchase.

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46 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p.a. in manufacturing town. Panel over 1,300. Pleasantly situated double-fronted house (4 bedrooms), with garden, for sale. Premium 1½ years purchase.

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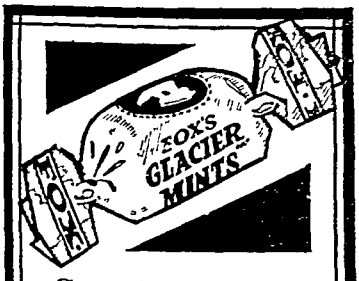
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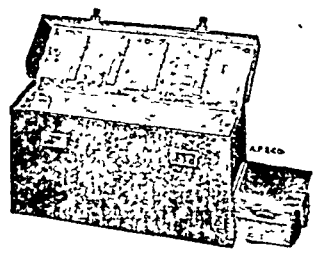
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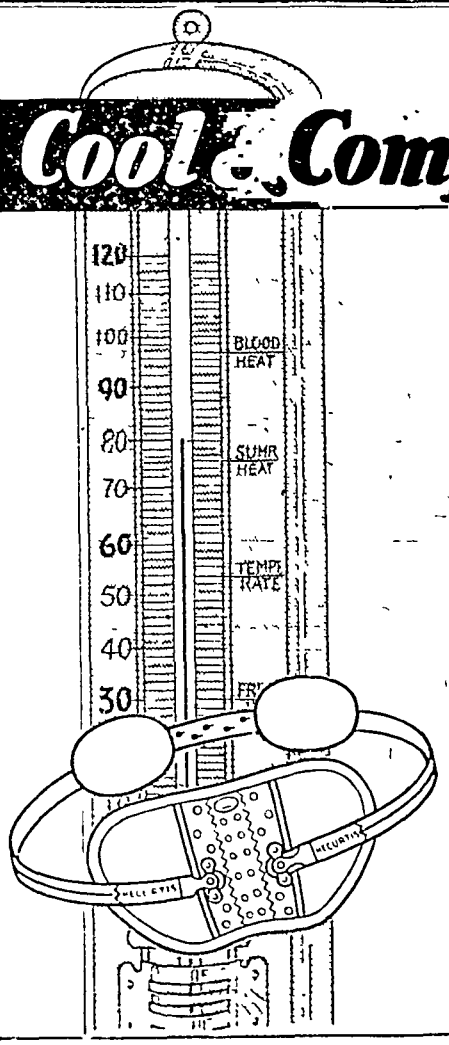
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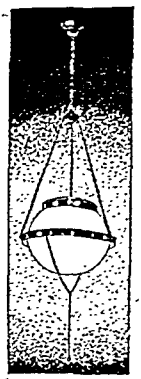
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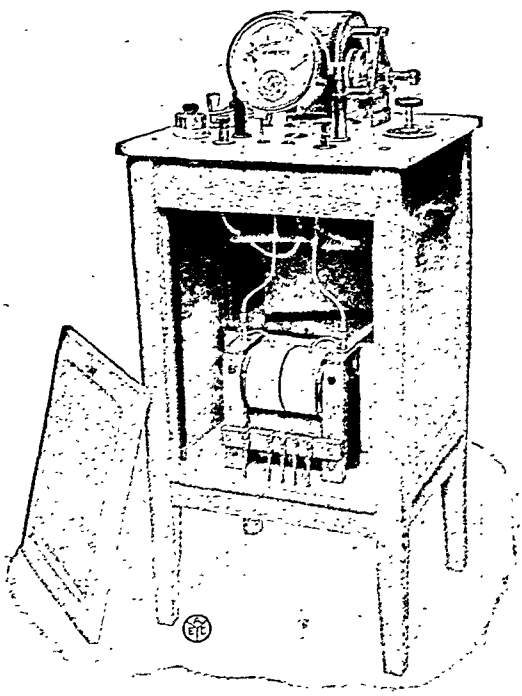
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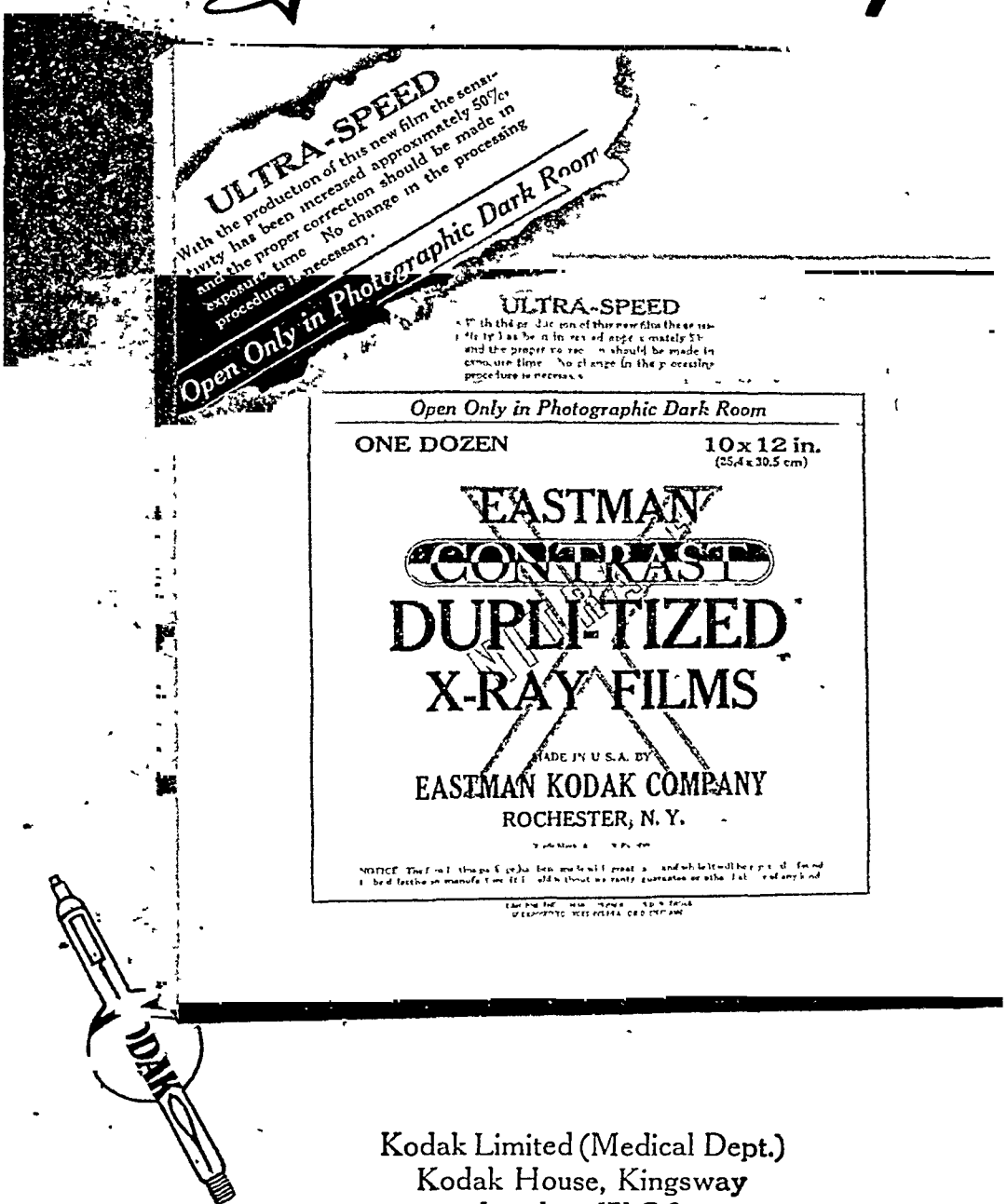
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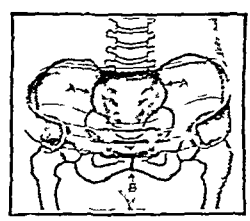
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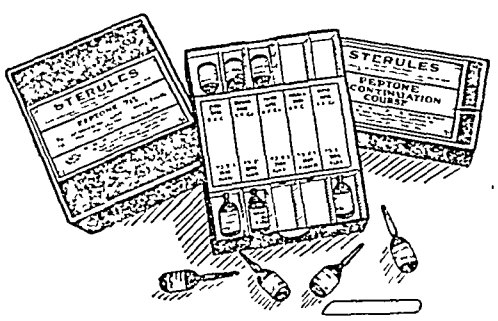
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Lancet, April 11th, 1931, p. 805. *Leaflet on application.*

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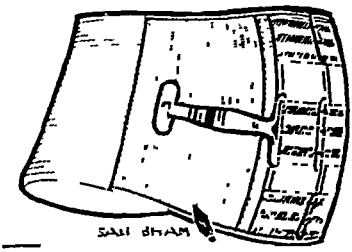
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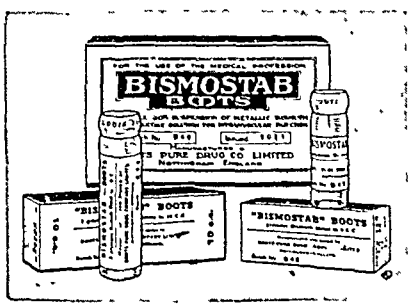
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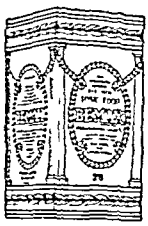
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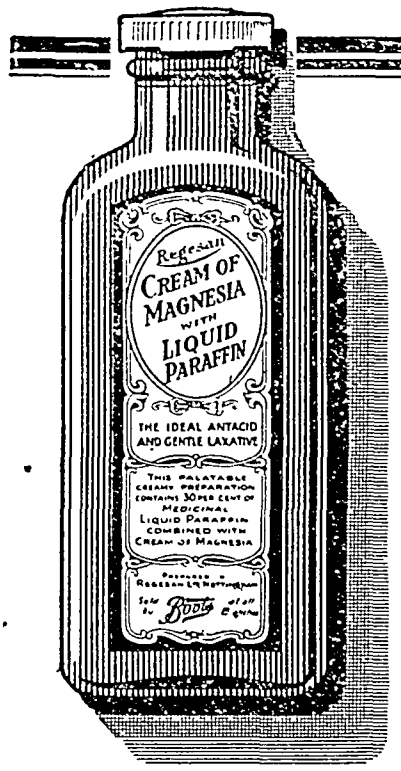
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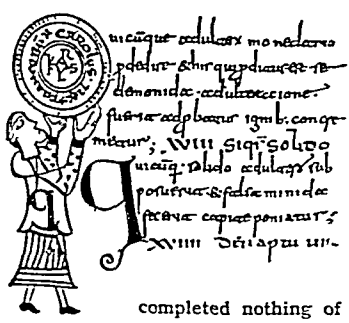
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The British Medical Journal, April 18th, 1931. p. 692.

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The Practitioner, May, 1931. p. 584.

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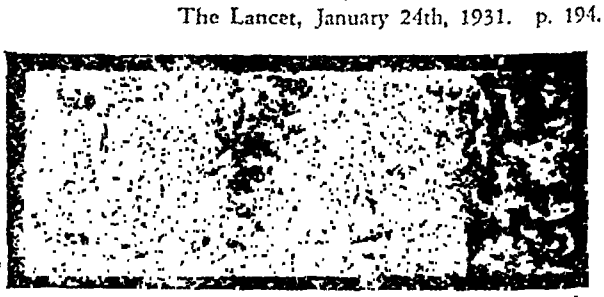
The filter-tip . . . retains bodies which are generally held to be the principal cause of throat irritation. Additional advantages of the filter-tip comprise *protection of the lips, teeth and fingers from unsightly stain,* and prevention of fragments of tobacco from getting into the mouth.

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The Lancet, January 24th, 1931. p. 194.



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Observations

ON THE

FACTORS DETERMINING THE DIFFERENCE BETWEEN AN EPIDEMIC OF ONE DISEASE AND THAT OF ANOTHER*

BY

M. GREENWOOD, D.Sc., F.R.C.P., F.R.S.
PROFESSOR OF EPIDEMIOLOGY AND VITAL STATISTICS, UNIVERSITY OF LONDON

A critical examination of the title alone of this discussion is enough to show how hard a task we shall have to be precise. We should all find it difficult to devise a better title and yet it is almost as naïve as the question of a child to its elders. What *is* a disease? What are we to understand by the term epidemic? In the record of infectious diseases which is prepared in the division of epidemiology of the London School of Hygiene and rendered weekly to the Medical Intelligence Division of the Ministry of Health, one item is enteric fever. Week by week we compare the recorded incidence with what we call the expected incidence—namely, an average based on the experience of 1922-30. In this work no distinction is attempted between typhoidal and paratyphoidal infections because, from the administrative point of view and the etiological point of view of an epidemiologist, whose unit of observation is a group, not an individual, these biologically distinct infections lead to the same result. For the purpose in view they lead to but one disease, as we say. But, from the standpoint of prophylactic immunization, to bring together typhoidal and paratyphoidal infections would be ridiculous; from *that* point of view, they are two diseases. With still greater boldness, and the same practical justification, we do not distinguish between the influenzas of different years, although, in many respects, these are as different as phenomena can well be. In fact, we cannot provide a criterion of difference, or sameness, which will be satisfactory to all users of the term "disease." Similarly we cannot define epidemic adequately, any more than the victim of the sophist could tell when a heap of stones from which one stone at a time was subtracted, ceased to be a heap of stones. Yet, when this is said, we all feel that dialectical difficulties should not be allowed to frighten us from discussing a question which has interested members of our profession for thousands of years.

HISTORICAL AND STATISTICAL METHODS OF STUDY

The epidemiology of classical and Hellenistic Greek science was logical and self-consistent. According to Galen, there were three factors—two innate or acquired aptitudes of the body, the temperamental and procatarctic; and one external, the atmospheric katastasis. This latter determined the quality, and the two former the severity, of an epidemic.

> "So often as the katastasis of the atmosphere departs from its proper nature into the hot and humid, pestilential diseases must needs arise, yet will those chiefly be affected who were beforehand saturated with excrementous moisture while those who labour moderately and are temperate in diet remain refractory to such diseases." (*De Febrium Differentiis*, I.)

Translating from an obsolete notation into one more congenial to our habits of thought, Galen's view is that it is rather the condition of those exposed to infection than the nature of the infection which determines the difference, in the sense of our title, between one epidemic and another. He would explain the difference between the influenza of 1918-19 and that of 1931, not in terms of the katastasis, or, as *we* should say, specific differences of the infecting agent, but in terms of contrasting resistances.

Sydenham, on the other hand, enormously extended the sphere of the katastasis. He freed it from the naïve implications of such terms as hot, cold, moist, and dry, in modern speech, and popularized, if he did not actually invent, the doctrine of the epidemic constitution. He would have held that the influenza of 1918-19 differed from that of 1931 *essentially*, just as the port vintage of 1887 differed essentially from the vintage of 1897, because the complex of essential biological and cosmic factors had changed.

To some this will seem no more than archaeological triviality. What in the world have we, in the year of grace 1931, to do with Galen and Sydenham? The answer is that we are still wrangling about *their* problems, changing nothing but the notation. Some hold that the proper way to find out the truth is to do what Sydenham advised—to go back to Hippocrates's method and write the history of the epidemic constitutions not of Thasos but of the civilized world. Those who give this advice certainly resemble Sydenham in one respect, namely, in despising contemporary methods of research. They have no more use than Sydenham himself for statistical methods of study, except in so far as these methods can be directed against the abhorred bacteriologist. They say, quite rightly, that the statistical method is limited and selective; that it selects some only of the possible objects of study and these, perhaps, not the most important. I respect the ideals of epidemiologists of this class: I share their enthusiasm for medical history: I agree that there are many more things in heaven and earth than are recorded in the annual reports of the Registrar-General, or are amenable to the calculus of correlation. I can even bring myself to believe that Ballonius, Sydenham, or some wise man whose works I have not read, did really possess the key to all the mythologies of epidemics. But although we owe to students of history valuable criticisms, their creations have been less valuable. Perhaps Ixion was not the last person who mistook a cloud for the queen of heaven and engendered a race of centaurs.

On the other hand, the laboratory bacteriologist falls into the opposed error of over-simplification. His little world of individual experimentation is a very imperfect model of the world of men and women, and the inferences from the former extended to the latter have often made him fair game of the epidemiologists who have studied "real" epidemics.

In my view, a *via media* between the over-elaboration of the disciples of Sydenham and the over-simplification of the academic bacteriologists must be chosen. We must, by a deliberate limitation of the field of observation, try to discover which of the vast number of possibly influential factors are likely to repay study in the world of "real" epidemics. Within that limited field we must use the methods of statistical description which, although they have not enabled us to solve the problems of epidemicity, have at least been valuable instruments of sanitary administration. That is the case for experimental epidemiology.

The Section will, I think, be more interested in the bacteriological and immunological aspects of work in this field than in its purely statistical features. I shall therefore merely summarize what I believe to be probable epidemiological conclusions before making way for those more competent to deal with other sides of the work.

* Made in opening a discussion in the Section of Pathology and Bacteriology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

Scope of Experimental Epidemiology

Experimental epidemiology is an attempt to simplify the study of general epidemiology by (1) limiting the number of variable factors (for example, by rigorously excluding from the herd under observation all but one extraneous infection); (2) taking as the object of study a herd of short-lived animals, so that the time-scale of observations is magnified. These advantages are purchased, of course, at a heavy price. We can undoubtedly control many of the conditions of life of a herd of mice; but, on the other hand, our knowledge of the social biology of mice is more scanty than our knowledge of the social biology of men, and the conditions of life we can secure for our herds are no doubt very different from those appertaining to a colony of mice living, not in Gower Street, but in the sylvan world of mice. The application of our results to the elucidation of the problems of human epidemiology is therefore analogical at two removes. There is a gap between our mice and mice in general and a still wider gap between mice in general and men in general. We are, however, no rasher in this way than other experimental biologists are forced to be.

Outline of Investigation

A large majority of our studies have been of herds deliberately exposed to infection by either *Past. muriseptica* or *Bact. aertrycke*. Experimental herds have been assembled by bringing together naturally infected animals (survivors of previously infected herds) and healthy animals or inoculated and healthy animals. The herd so formed has been recruited either from healthy animals, healthiness being guaranteed by an extremely rigid process of quarantine, or from animals which have fulfilled other specified conditions. The results observed have been summarized or described in various ways. For the main purposes of this discussion, I shall use two. (1) The daily death rate at ages, which is precisely equivalent to the death rate at ages of our human vital statistics, save that age, in our studies, is cage age; entrance to the herd is, for our purposes, birth. (2) The expectation of life limited to the next sixty days. In human vital statistics, the expectation of life at any age, say 10 years, limited to any period, say 60 years, is the average number of years of life lived by persons aged 10 during the next sixty years of existence. All those who survive to 70 will be credited with sixty years each, all those who die between 10 and 70 will be credited with the number of years they survived. For mice, which live, perhaps, a thirtieth of the normal span of human existence (much less in infected herds) sixty days from entrance reduces the population of contemporary entrants to 10 per cent., or less, of its original strength, so that this measure, although subject to the objection which can be urged against *all* concise statistical measures, namely, that it ignores important details, is a comprehensive one. It is better than the complete expectation of life, that is, the average survivorship to the end of life, because this may be greatly influenced by the fates of a small number of exceptionally hardy individuals.

Secular Features of Herds

Before taking up the points to which I wish specially to direct your attention, I shall say a word on the ordinary secular features of the herds. Our experience is that the secular mortality of a herd undergoes vicissitudes graphically similar to what is seen in the mortality statistics of a community observed over several generations. [illegible] no more successful than have students of [illegible] in discovering a real "law" of periodicity [illegible] of the students of experimental epidemiology in other countries, we have not been able to satisfy ourselves that either seasonal variations or modifications of the diet determine the epidemiological history of the herd, under the conditions existing in our experimental series. We have, however, [illegible] once a herd has been infected with *morbi*, the resultant disease will [illegible] the herd for many generations, emerging [illegible] quiescence which, in terms of human [illegible] be very long, provided the herd be regularly [illegible] *healthy*, non-immune stock. We also think that [illegible] in the rate of additions usually—although not [illegible] —diminishes the secular rate of mortality and [illegible] the substitution of an irregular zig-zag curve of mortality for a high and *relatively* constant rate.

Age and Mortality

Passing now to age and mortality, some idea of the nature of events is conveyed by the comparison of the limited expectations of life at entrance of (1) mice under the most favourable conditions; (2) mice under "ordinary" infected conditions, and (3) mice under "optimum" infected conditions. By the first class I mean mice living in a herd under the same conditions as the experimental herds but not exposed to infection. Their expectation is fifty-seven days. By the second I mean the ordinary entrants to herds exposed to aertryckal infection. Their expectation of life is twenty-five days. By the third I mean mice admitted to the last-mentioned herds after artificial immunization by the methods which proved most effective. Their expectation of life is thirty-two days. The maximum span is sixty days, so that the first class enjoyed 95 per cent., the second 42 per cent., and the third 53 per cent. of the maximum possible.

If we consider the course of mortality with age of each of the three types, the results are as follows. For the first class our data are not complete enough to permit of any quite conclusive inference, but it seems probable that "healthy" mice conform reasonably closely to what has been called Gompertz's law of mortality, namely, that the force of mortality (for present rough purposes we may say rate of mortality) increases geometrically with age. It is at least certain that such mice do not exhibit an increase of mortality to a maximum early in life, that is, at an age at all comparable with the epoch of maximum in the second and third classes (see below). These classes contrast with the first in showing a regular and rapid increase of mortality with age to a maximum between the fifteenth and thirtieth day of cage life (the maximum is later in aertryckal than in pasteurellal infections); from this maximum the rate descends more or less smoothly to a level which is thereafter maintained; the trend from about the fortieth to the fiftieth day of cage life oscillates about a parallel to the axis of zero mortality, parallel to that axis but much above it. The maximum of the third class is much lower than that of the second, but sooner or later the curve of the former rejoins that of the latter and, had we only under examination the rates of mortality at ages over 50 days, we should be unable to distinguish the two sets. The advantage derived by pre-immunization is, in respect of exposure to risk, early in cage life. That ultimately the two curves of mortality should approximate is intelligible, but it might, perhaps, have been hoped that the ultimate rates of mortality of survivors should approximate to those of mice not exposed to the infection, that by virtue of active immunization and survival of the fittest we should eventually produce a population of, in a Pickwickian sense, elderly mice fit, like Macbeth, to laugh to scorn the specific dangers of the herd. As in Macbeth's own case, the dangers are rather more complex than appeared.

Selection and Immunization

A first point of interest is how far the relative protection acquired by survivors beyond cage age 30 is a consequence of survival of the fittest or of active immunization We have carried out a series of experiments to determine that question The method was to recruit a herd from two sources One source was ordinary, healthy, quarantined immigrants the other was a set of mice which had survived varying periods in a herd within which the infection (the subject of the experiments) was raging Upon either hypothesis, that of selection or of immunization, the mice which had survived varying periods in the testing herd would be expected to compare favourably with the untested immigrants to the experimental herd in respect of longevity

TABLE I

Cage B All A Mice and all C Mice (Specific deaths only)

	Length of Exposure in Cage A (Days)	Number in Group	Length of Life in Cage B Limited to 60 Days	
C mice	0	887	22 37±0 36	
A mice	10	173	21 34±1 10	All A s 28 43±0 99
	20	163	29 90±1 13	
	30	128	32 99±1 28	
	40 & 45	90	33 08±1 52	
	50 55 & 60	73	37 39±1 60	
	65 70 75 80 90 & 165	58	30 20±1 00	

Difference between A s and C s = 6 07±0 66

We found that the superiority increased with length of survivorship in the testing herd not indefinitely but up to a comparatively early maximum, mice which had survived forty or more days did not succeed better than mice which had only survived thirty days in the testing herd We also found that mice which had been exposed in the testing herd during a period of comparatively low mortality had an advantage over the untested immigrants, less indeed than mice which had lived through more strenuous times in the testing herd, but still quite substantial Hence, on a general balance of the evidence, we concluded that the factor of active immunization was probably more important than that of selection of the fittest in conferring an advantage

TABLE II

A Mice whose time of exposure in cage A was at an average death rate of <0 00750 and C Mice

	Length of Exposure in Cage A (Days)	Number in Group	Length of Life in Cage B Limited to 60 Days	
All C mice	0	887	22 4±0 36	
C mice corresponding to these A s	0	433	20 9±0 49	
A mice	10	59	23 3±1 60	All A mice 25 08±0 84
	20	38	23 8±1 99	
	30	39	25 4±1 97	
	40	30	26 6±2 24	
	50	9	34 6±4 10	
	60	10	33 7±3 89	
	65	9	22 4±4 10	
	70	8	31 25±4 35	
	75	10	14 9±3 89	

Difference between these A s and all C s=2 71±0 92 days
Difference between these A s and contemporary C s=4 2±0 97

I do not, of course, mean to suggest that we attach little importance to innate variations of natural resistance and to the elimination by death of the less resistant, but merely that, in our judgement, the chance factor (as it can be loosely termed) of varying dosage of infection and the actual biological change effected in all or in a large majority of the exposed to risk by previous sub lethal infections, together constitute at least as important a factor of the general situation

Effect of Pre immunization on Animals Exposed to Risk

With respect to the effect of pre immunization on animals exposed to risk—evidently a matter of great practical and theoretical interest—the following table is instructive.

TABLE III

Probability of Surviving Five Days Specific Deaths

Cage Age in Days	E, F, G	Controls	Difference	Column 2 / Column 3	Graduation of Col 2
0	0 9963	0 9925	0 0043	1 004	1 001
5	0 9946	0 9715	0 0231	1 024	1 009
10	0 9879	0 9151	0 0728	1 080	1 029
15	0 9351	0 8291	0 1060	1 128	1 113
20	0 8211	0 6969	0 1242	1 178	1 217
25	0 7164	0 5641	0 1473	1 261	1 274
30	0 6052	0 4875	0 1178	1 241	1 229
35	0 5004	0 3813	0 1191	1 312	1 196
40	0 4019	0 3270	0 0749	1 229	1 161
45	0 3121	0 1984	0 1137	1 573	1 111
50	0 2329	0 1210	0 1089	1 910	1 062
55	0 1786	0 0890	0 0896	2 007	1 020

This herd was exposed to aertryckal infection and the E, F, G mice were effectively immunized before admission It will be seen that their advantage in respect of average chance of surviving during the next five days exposure increases to a maximum about the twenty fifth day of cage life and that the advantage increases to, and declines from, this maximum in an approximately symmetrical way This demonstrates well the very great advantage of pre immunization when the period of exposure to risk is limited For instance, by the thirtieth day only about 30 per cent of controls will survive, of effectively pre immunized mice more than 50 per cent—an immense advantage But the mice which survived to the thirtieth day are much less sharply differentiated and those which survived to the fortieth hardly at all At that age one of the control groups had a limited expectation of life intermediate between the best and the worst of the three pre immunized groups

Commentary

The ultimate approximation of the rates of mortality of the different groups might be explained in terms of many hypotheses I suggest that the simplest is on the following lines It is unlikely that any artificially induced immunity would ever be more effective than that conferred in the ordinary course of herd life upon the survivors of continuous exposure to infection The advantage derived from pre immunization—a very substantial one—is to bring the survivors at a certain date into as good a position as the surviving controls without having made them pay the price in high mortality which occurred in the controls Divide a set of ordinarily intelligent persons into two batches, leave one batch to their own devices, provide the other with good teachers of some subject, and examine both batches at regular intervals, admitting no candidate to a subsequent examination who has been ploughed in the one before We should find the proportion of ploughs in the earlier examinations much higher among the self taught, but ultimately we should expect the percentages to approximate and the quality of the ultimate survivors of both groups to be much the same That in our case the ultimate survivors of both groups still experience a heavy mortality is, I suggest due to the impossibility in infections of this type of raising the standard of resistance above some critical value Neither by pre immunization nor by natural immunization can we produce mice which are impervious to the continued bombardment of infection which the conditions of herd life impose

Summary

The further discussion of this matter would take me beyond the boundaries of statistical analysis and I will conclude by summarizing the points which seem to me well established —

1 In herds of mice exposed to heavy risk of infection of the type we have investigated, the regular addition of

healthy animals, and careful exclusion of new infection, will lead to the perpetuation of the disease through many generations. In small herds the infection may cease, in large herds it will probably be perpetuated indefinitely.

2 We can find no conclusive evidence that environmental, non-specific factors, modify in any significant way the secular course of epidemicity in our herds.

3 Pre-immunization will greatly lower mortality during the early herd-life of the pre-immunized animals. Ultimately the rates of mortality of pre-immunized and naturally immunized animals approximate to a level much above zero. In these infections a solid immunity—namely, an approximation of the specific mortality of the herd to zero—cannot be attained by any method which has so far been tested.

ADDENDUM

Since this opening paper was written we have gained enough experience to authorize us to suggest that in virus infections herd immunity develops on lines other than those illustrated in the bacterial infections we have studied. The kindness of Miss J. E. Marchal, of the National Institute of Medical Research, has enabled us to study in herds the virus disease, infections *Ectromelia*, which she first described in 1930 (*Journ. Path. and Bact.*, 33 *ii.*, 1930, 713.) Miss Marchal discovered this infection in a stock of mice ; it is clinically characterized by an oedematous swelling of a foot followed by gangrene and separation, but often goes on to generalized illness and death. Miss Marchal proved that the essential *materies morbi* was a virus, and that animals which had passed successfully through an attack were very resistant to the injection of virus-containing substance. We have, down to June 30th, 1931, had two herds infected with *Ectromelia* under observation respectively for 224 days and 166 days. In the former 672 mice and in the latter 495 mice have been at risk, and the aggregate mouse-days of exposure were 25,168 and 16,374 respectively.

So far as experience during the early days of cage life is concerned, these heavily infected communities differed in no material way from the similarly treated herds wherein either *Past. muriseptica* or *Bact. aertrycke* was the *materies morbi*. But when the rate of mortality began to decline the fall continued, passed below the asymptotal line which characterized the bacterial infections, and ultimately reached a level differing in no important way from that of the rate of mortality of uncontaminated herds. The table (Table IV) compares the limited expectations of life of *Ectromelia* herds, a *P. muriseptica* herd (P_2), and of a herd not exposed to any infection. The latter, of course, enjoy an expectation which, even at entry, falls but little short of the theoretical 60 (their slight inferiority to mice kept under conditions as nearly ideal as can be realized in captivity is attributable to the fact that, in a large herd, battle, murder and sudden deaths are of more vital statistical importance than in small groups). The *Ectromelia*—and the bacterially—infected herds have expectations of life at entrance less than half the theoretical value, and, as we have already seen, the bacterially infected do n[illegible], at any age, attain a value much above 50 per cent. [illegible]the ideal. By the 50th day of herd life the survivors [illegible]e virus infection are almost on a par with the normal r[illegible]d the evidence suggests that this advantage will n[illegible]t, that the survivors in these highly infected h[illegible]itting unsalted immigrants are as little endar[illegible]heir environment as the parents of children [illegible]n an urban community.

TABLE IV.

EXPECTATION OF LIFE LIMITED TO 60 DAYS.

Cage age in days	*Ectromelia* 1 (18.11.30–30.6.31)	*Ectromelia* 2 (16.1.31–30.6.31)	P_2 (6.3.21–30.4.23)	Normal mice (4.10.29–27.5.30)
0	26.86	28.37	22.49	56.79
1	26.13	27.66	21.82	56.86
2	25.39	26.89	21.31	56.76
3	24.61	26.13	21.05	57.02
4	23.92	25.42	21.28	57.10
5	23.14	24.70	21.48	57.37
6	22.39	23.98	21.86	57.29
7	21.85	23.57	22.32	57.21
8	21.66	23.38	22.57	57.12
9	22.33	23.70	23.00	57.03
10	22.69	24.04	23.48	57.12
11	23.35	24.28	23.55	57.03
12	24.47	25.02	23.76	57.39
13	25.35	26.30	24.04	57.22
14	26.51	26.66	24.54	57.14
15	27.56	27.58	24.96	57.05
20	36.48	34.62	29.62	56.79
25	42.98	42.53	33.12	56.72
30	47.07	44.53	34.41	56.69
35	51.13	48.46	34.74	57.65
	51.12	48.81	33.81	58.30
	54.17	50.92	32.63	58.42
	54.24	53.28	32.23	58.37
	53.42	54.99	31.70	58.52
	[illegible]14	55.74	32.06	58.47
	[illegible]	56.64	32.37	58.44
		56.96	32.93	58.62

SUICIDE FROM THE SOC[illegible] ASPECT*

BY

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Suicide, from whatever aspect it is approached, is undeniably an important subject. It is one which for many years has interested me ; and, for a number of years, it has been my habit to collect newspaper cuttings and other records of suicides in the hope that opportunity may present itself to gather together the special points which have occurred to me in the course of their perusal. My collection is quite a haphazard and miscellaneous one, and is much too large to permit analysis of it at short notice for the purpose of this discussion. Without any such analysis, certain points, however, have forced themselves on my notice, of which two or three may be appropriate to this discussion.

SUICIDE A MEDICAL PROBLEM

For instance, the almost complete failure to realize the existence of medical problems beneath every case of suicide, coupled with the fact that most of these problems require for their right handling an adequate knowledge of mental disorders. As a consequence, is that contentment which exists with the present often far from effective procedure; and, with respect to inquests in cases of suicide and to charges of attempted suicide, the further failure to see the place they occupy in problems of Mental Health and the peculiarly valuable opportunity they offer for promoting Preventive Medicine. With rare exceptions, those, in whose hands lie inquests and charges of attempted suicide, not only treat these occurrences as *prima facie* crimes, as is their duty according to present law in England and Wales, but they proceed to treat the parties concerned entirely upon socio-legal lines, and almost invariably ignore or mishandle the medical or psychological aspect. It is not my wish to cast any aspersion or adverse criticism on these men and women either individually or collectively. Quite the reverse. Over and above professional attainments (to praise which on such an occasion as the present would be an impertinence), coroners and magistrates, for these it is who are mostly concerned, we know to be

* Read in opening a discussion in the Section of Neurology and Psychiatry, at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

shrewd, common-sensed and kind; and, even from the summaries of proceedings which appear in the newspapers, it is not difficult to discern either the close and anxious care given to these inquiries, or, in cases of attempts, the kindly efforts to rehabilitate the would-be suicide. All that and much more is willingly granted: my point is that either the psychological aspect is ignored, or it is dealt with by *obiter dicta* which, however well intended, are, in point of fact, often erroneous or else are in the nature of platitudes, and which, while they may deal with the situation for the moment, quite fail to go to the root of the matter. Again I ask not to be misunderstood: I am casting no stones and making no attack upon persons, the difficulties of whose task we, of all people, ought to realize; for these difficulties are part of our daily work, and without thorough training and knowledge of psychological medicine there is no reason to imagine that we should be more effective.

In one particular I should like to lodge an actual protest: namely, against the practice frequently made of putting questions, at inquests or in magisterial proceedings, as to the existence, present or former, of insanity or of instances of suicide in other members of the family. "Evidence must be relevant" is a Rule, the strictness of which in English law might be sufficient, in my opinion, to rule out the admissibility of such questions, especially in the light of the well-known unreliability of statistics relating to family history in mental disorder. Apart from the legal aspect of this point, and however valuable medically such information may be, thus to catechize persons as to insanity or suicide in their family is surely to seek it in the wrong manner and in the wrong place. The practice is, in my view, highly pernicious. It spreads ill-founded, possibly false, doctrines as to the influence of heredity in the causation of suicide and mental disorder; to my own knowledge it sometimes causes deep pain and distress, and is apt to foment a dread of liability to insanity or suicide. This already much too common and generally needless dread should be dissipated at every possible opportunity, as part of mental health propaganda. In truth, I could cite several cases of suicide—and some of my hearers doubtless must know of other cases—in which I am convinced the act was mainly due to the doer's belief that suicidal propensity was inherent in the family; and still more numerous are the cases of mental disorder that I have known, and know now, in which the attack seemed clearly to have been precipitated by unhealthy rumination upon the fact that relatives have been mentally ill, in the light of unwarranted and mischievous statements as to heredity and insanity. Well indeed, with Job, might such patients say—and, in fact, some of them have said to me—"For the thing which I greatly feared is come upon me, and that which I was afraid of is come unto me."

It is, I believe, a fact that, throughout the whole of my collection of records of suicides and attempted suicides, there is not a single instance of evidence of determined and enlightened inquiry as to what steps were taken by the relatives and friends to prevent the occurrence by securing really adequate treatment; nor, in the case of attempts and in discharging the accused, either on his own undertaking or to the care of friends, is there a single instance reported of insistence on adequate medical treatment and inquiry as to where that treatment will be obtained. Alas! were such inquiries made and pressed, too often would it be discovered that means of treatment are far from satisfactory; but that is just where such inquiries could render great service. Under the Mental Treatment Act there is complete opportunity to organize thoroughly effective treatment; and, now that mental hospitals are a charge on county and county borough funds, to provide, should coroners and magistrates desire it, for the attendance of doctors with expert knowledge of mental disorders. The position, as I have ventured to depict it, cannot be regarded as satisfactory. It is not a question of finding someone to blame. We are all of us in our respective spheres responsible. Its rectification is part of the general problem of Mental Health; and, besides the lead and help which the Central Authority can give, and indeed are giving, it can best be dealt with, I suggest, by a Mental Health Committee in each area, formed by a unification, as permitted by statute, of the statutory committees under the Lunacy and Mental Deficiency Acts; and by assigning to it wider powers and duties than those devolving on it under those Acts. It most assuredly should not be approached by any anti-suicide campaign.

Suicide as a Subject for Attention

That, in works on Psychiatry and Psychology, so comparatively brief notice is taken of suicide has been long a matter of astonishment to me; and that it is in need of renewed and much further study from a symptomatological and psychological standpoint I am in no doubt. The truth, I believe, is that it has failed to get the clinical study which other symptoms and disturbances or perversions of instinct have had, because, on return to convalescence or, at any rate, to "accessibility," there have been a fear and unwillingness—groundless and mistaken, in my opinion—to remind the patient of so serious an event as the attempt to commit suicide. In point of fact, this is one of the particularly favourable moments for vigorous psychotherapy. Such study should include, as suggested by Professor Robertson, of Edinburgh, careful inquiry, with the aid of trained social workers, into the environment, circumstances and personal history of a series of consecutive cases, of both suicide and its attempt. Attention on these lines is perhaps rather from the medical and psychological, than the sociological, aspect. In truth, it is not easy to maintain any sharp separation between these two aspects. For the purposes of both of them, and particularly of sociology, we are badly in need of up-to-date and easily accessible statistics of suicide and attempted suicide, related to the statistics of certain social and perhaps cosmic phenomena which experience has shown may have a bearing on them. Such statistics for our own country need careful study in the light of comparable ones for foreign countries and those of the Dominions and other parts of the Empire. With but six weeks' notice of this discussion, the utmost that I have been able to do is to get together and to consider, in the light of earlier figures, some figures for England and Wales belonging to certain years selected because they were Census years.

Let me admit a one-time impression, gathered from general comments in papers and others in relation to individual cases of suicide, that its rate has been increasing with somewhat disturbing velocity, and that a position perhaps was approaching which might demand attention and the consideration of means for its redress. I think, too, that there is a fairly widespread belief to that effect, coupled with the further notion that it is especially the suicides of persons in adolescence and early maturity that are responsible for the alleged rising rate. This implication of adolescents and young adults is certainly not justified; and, while there can be no doubt that, as already stated, the subject of suicide is ripe for much closer medical study than it has received, I greatly doubt whether, at any rate in our own country, it is, or is likely to be, a problem of serious moment. On the other hand, if it can be shown to be a matter for deservedly grave concern in other countries, it rightly behoves us not to over-

look the possibly false security of our own position. In this connection, is it not desirable to emphasize the value that might accrue from giving psychological medicine a place worthy of its importance in the Health Office of the League of Nations?

There are two reasons against the reality of any alleged increasing propensity to commit suicide. First, the intimate relation of suicide to mental disorder, as to which my belief is so firm as to amount to a strong doubt as to the existence of sane suicides. That attitude, I am aware, is contrary to legal doctrine and to the law, and goes considerably further than is taught in text-books on psychiatry; but I feel sure that the more closely individual cases are studied the more it will be realized how difficult, if not impossible, it is to be sure at the time of the act, even if only an attempt, that the doer was not mentally disordered. On this assumption follows my second reason —namely, the stability (approaching, indeed, rigidity) of the ratios expressing certain incidences, in particular those relating to mental disorders. The longer it falls to my lot to examine and to handle yearly statistics of notifications to the Commissioners, the more strongly does this uniformity or stability of ratios impress itself upon me. It has formed one of the principal topics in the short course of William Witherington lectures which it has been my privilege to give this term in the University of Birmingham; and, in its further study and right understanding which I do not think has been reached yet, I feel sure lies the correction of some mistaken beliefs and the key to questions that hitherto have baffled us.

That there is good ground for my scepticism and that the incidence of suicide presents no position for alarm is borne out, in my opinion, from the figures which presently shall be laid before you. It should be remembered that, in speaking of "suicide" and of the "suicidal propensity," consideration should not be limited to the completed act, but should take cognizance of statistics relating to attempts at suicide; and that both these acts are merely the overt phenomena of an urge to commit suicide—a mental condition and a reversal of the *lex nostrae conservationis* itself. Is not this law too elemental and too strong to allow the possibility of any increase in the propensity itself? Maybe the number of suicides and of attempted suicide, or rather their ratios to the population, has varied and will vary. Doubts have been cast even upon the reality of this variation, save within narrow limits, but, assuming its occurrence, the probability of its cause being external and accidental seems to me very great—to be dealt with partly, and mainly, as a medical matter and partly on sociological lines, but not as a

touch upon only the following few references—as being the more important ones.

Statistics concerning suicide can perhaps be said to date from 1750 as to Sweden and 1783 as to Switzerland and Paris. Most of those subsequently published, few of which were earlier than the second quarter of the nineteenth century, were collated into the well-known and remarkable book by Morselli of Turin, which may be said to include all available data up to 1876. For subsequent information upon the subject, especially as regards our own country, various books, papers and articles are available; but no work of anything like its comprehensive nature has appeared since that of Morselli.

It is the frequency of suicide, and of attempted suicide, considered also in relation to sex and age, and to mode of death, to which main attention has been given; but, in relation to its causation, endeavour has been made (evidently at the cost of much patient labour but with not very convincing results) to correlate numerous cosmic and social factors—climate, altitude, barometric readings, phases of the moon, seasons, months and time of day, races, religion, morality, occupation with noteworthy facts as to armies, state of trade, density of population, and the difference between urban and rural life, celibacy and parenthood, alcoholism and heredity, and the relationship to the psychoses. Some of the conclusions savour of the fantastic; others are highly interesting; but, even of the latter, there is no time to touch upon more than two or three.

Facts as to sex, age and mode of death are repeated and confirmed in my own statistics, and will be mentioned with them. My figures do not include attempts at suicide, and it is of interest to note that, in them, the predominance of males (with its average of 3 to 1) is not so marked as it is in cases of the completed act. Of interest, and perhaps of more importance than at first thought would seem likely, is the apparently well authenticated fact that the transitional period between spring and summer in northern countries has tended to show the highest proportion of suicides. To be able to compare these figures with those for New Zealand and antipodal parts of Australia would add to the interest. Instead, however, of the explanations offered for this phenomenon, I should be inclined to suggest that those who uphold the potency of septic foci as a cause of mental disturbance would have, as part of their thesis, a much more understandable theory to offer, and one moreover that can be adequately tested. With either the justification or wisdom of laying stress on heredity as a cause of suicide, I am not in agreement, but there are not wanting

ive years. That he took a gloomy and serious view of he situation is plain from such expressions as—"The errible increase of suicide at the present time" (1879), 'the suicidal epidemic of our age," "the alarming increase of this social calamity" and "this fatal plague of ur age." Were all this not a serious over-statement or xcept there had been in the meantime a gratifying halt n this "plague's progress," it might be difficult to find djectives lurid enough to describe the present position s to suicide in our midst; particularly when we must onfess that, despite the warning some fifteen years earlier n the *Times* coupled with much sound advice, neither as the pace of life, said then (1864) to be excessive, lackened, nor has any of its advice been taken. Need hat seriously disturb us, and may we not take it as a esson not to be too easily moved by alarums? For, since the article was written, the pace of life, or what nost people mean by that expression, has been vastly ccelerated; whereas, so it seems to me, the position with espect to suicide has not altered materially.

INCIDENCE OF SUICIDE IN ENGLAND AND WALES DURING THE PAST 40 YEARS

The comparatively brief time at my disposal during the past six weeks has limited my statistical contribution to this discussion to a statement of the number of suicides which occurred in England and Wales during each of the four Census years 1891, 1901, 1911 and 1921, and during the year 1929. With the help of Mr. G. F. Williams and Mr. E. H. Warland in our Board's statistical branch, these have been set out in age-periods; and, with the exception of those relating to the year 1929, they have been expressed as proportions to each 10,000 of the population, the gross numbers of which have been shown also. Corresponding ratios have not been given for the 1929 incidence because it would have been against only an estimated population that they could have been worked out. Had this discussion been timed for next year or should it perchance then be re-opened, it would be possible of course to contrast the ratios of five Census years; and, with the extra time at our disposal, it would be possible also to elaborate the calculations in several serviceable directions. It is hoped, however, that such figures as there has been time to compile will prove sufficiently impressive to warrant certain deductions, the making of which is much facilitated by the additional five lists, one for each of the Census years and for the odd year, in which the methods adopted for suicide are classified and set out numerically, both in gross and in a percentage to the respective total number of suicides. The special importance and value of looking into the method of suicide adopted will become apparent in the course of my remarks.

The selected age-periods are eight in number, following the precedent of our Board's office which, in the main, is that of the Registrar General. These age periods are: under 15, 15-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and upwards. It will be observed that the first, and especially the last, lend themselves least to comparison with the others; and that, of the other six periods, two are quinquennia and four are decennia, so that for purposes of comparison with the decennia, 15-19 and 20-24 should be grouped together. It, however, at once can be said that the cases of suicide in the period "under 15" are so few—ten boys and six girls in 1891 and, in more or less diminishing numbers down to one of each sex in 1929—that, although no doubt these in all 44 cases of suicide in children afford valuable opportunity for cognate medical study of a most instructive kind, yet for the purposes of my remarks they can be ignored.

Age-periods 15-19 and 20-24

Since they together form a decennium and as the remaining five periods, with the exception of the terminally indefinite one, are decennia, it will be convenient for purposes of comparison to take these two simultaneously. It will be noticed that all the ratios in the later quinquennium exceed those in the 15-19 period except in the cases of three pairs, each of them female, in which there was equality. As between the four Census years (1891 to 1921) and considering the sexes separately, there is a noteworthy approach to equality between the ratios; but the closeness is not so striking in all the later periods, doubtless because the actual number of suicides in these years of adolescence and post-puberty is so comparatively small: only 8.1 per cent. of the total suicides. Thus, the male ratios in the 15-19 period are 0.3, 0.3, 0.4, 0.3, and in the 20-24 period they are 0.7, 1.0, 1.0, 0.6, the corresponding two sets of female ratios being 0.3, 0.5, 0.4, 0.3, and 0.3, 0.5, 0.5, 0.3. By combining the two quinquennia together into the decennium 15-24, the four Census years show 0.5, 0.6, 0.7 and 0.4 as the suicide ratios per 10,000 males; and 0.3, 0.5, 0.4 and 0.3 as the corresponding ratios for women. Whatever increase the ratios of the later age-periods and of the totals may suggest in the incidence of suicide, it is abundantly clear that there was no increase of it among young people. On the contrary, there was during that period of life a tendency for it to decrease: so slightly, however, that the impression left is that the incidence was stationary. The actual number of suicides during 1929, 61 males and 50 females during the 15-19 period and 128 and 72 respectively during the 20-24 period, cannot be expressed yet in ratios; but, except that there has been a notable fall in the total number of persons at these ages, there is no reason to think that the position is less stationary. Before leaving these two quinquennia, it is of importance, in relation to what we shall find in subsequent periods, to note in the 15-19 period how closely, for all four Census years, the male and female ratios approximate to each other—0.3-0.3, 0.3-0.5, 0.4-0.4, and 0.3-0.3: indeed, with one exception, they are identical. In the next quinquennium, 20-24, they begin to diverge and a male preponderance begins to appear—0.7-0.3, 1.0-0.5, 1.0-0.5, and 0.6-0.3. By merging the two quinquennia into one decennium, for better comparison with the four later decennia, the four pairs of male and female ratios then become—0.5-0.3, 0.6-0.5, 0.7-0.4, and 0.4-0.3: this is a numerical preponderance of male suicides over females of about 1.3 to 1. We shall find that, in the next two decennia, it quickly reached 3 to 1; that thereafter it increases, fairly steadily, until in the last period, 65-and-upwards, it is about 6 or 7 to 1; and that the final average is very closely 3 male suicides to every female suicide.

The Four Decennia 25-34 to 55-64 and the Period 65 and Upwards

Nothing will be gained were each of these five periods taken by itself, and, by considering them together, it is, in fact, easier to emphasize the stability, fixedness and almost rigidity of the ratios from Census to Census, and the tendency, after 45 years of age, for the average male preponderance of 3 to 1 to become still greater. The only noteworthy exceptions to this general statement are in the figures of the 1921 Census, where three ratios, both male and female, in the period 25-34, and the male ratio in the period 35-44, show a distinct drop. Thus, in the 25-34 period, the male ratios were 1.4, 1.5, 1.5 *and* 0.9, those for women being 0.5, 0.5, 0.6 *and* 0.4; in the 35-44 period, those for men were 2.4, 2.4, 2.3 *and* 2.0, whilst those for women were 0.8, 0.8, 0.7 and 0.7. Through the remaining three periods they rise with remarkable regularity, except that in the period 65-and-upwards, where the ratios at the four Census years have reached 4.9, 5.0, 4.5 and 5.1 for men, and 0.7, 0.8, 0.8 and 0.8, the latter, instead of a rise, show a reduction when compared with 1.0, 1.1, 1.1 and 1.2 which were the ratios for women in the immediately preceding 55-64 period.

Proportion of Suicides as to Sex

In both the previous paragraphs reference was made to this matter which has its interest, if only because of the attention it has received in previous inquiries and in all countries. In my set of figures, its uniformity of behaviour, clearly noticeable in each of the four Census years, perhaps is best seen in those for 1901. There it can be seen that in the under-15 period the male and female ratios, as it happens, were equal, 0.01 and 0.01; they began to oscillate in the next two quinquennia, with a tendency for the male ratio to preponderate, 0.6 and 0.5, when the period is looked at as a decennium; in the next two decennia they exhibited exactly the average of 3 to 1, 1.5 and 0.5 in the 25-34 period, and 2.4 and 0.8 in the 35-44 period; in the next decennium the male preponderance, 3.7 and 1.0, began to exceed the average, still more so in the 55-64 period, where the ratios were 4.9 and 1.1; until in the 65-and-upwards period, where they were 5.0 and 0.8, suicides in men outnumbered those in women by rather more than 6 to 1.

Ratios for all Ages

The stability and uniformity of the ratios, as probably was to be expected, is still more marked when they are worked out for the totals irrespectively of age-periods. Thus for the four Census years, the ratios of suicides per 10,000 population are 1.3, 1.5, 1.5 and 1.5 for males, and 0.4, 0.5, 0.5 and 0.5 for females; and, for both sexes together, they are 0.9, 1.0, 1.0 and 1.0. It will be observed, too, that the sex proportion is almost exactly 3 to 1.

The year 1929 is the latest for which the number of suicides has been published. They were 3,480 males and 1,504 females. These numbers can be expressed as ratios upon only an *estimated* population. So calculated, they are 1.8 for males and 0.7 for females, and 1.3 taking both sexes together. If these are reliable, which I am inclined to doubt, they show a distinct and noteworthy rise of about 30 per cent. in the suicide rate, more for women than for men, and they show a departure from the hitherto very stable sex ratio of 3 to 1. It is impossible, until the population at the 1931 Census is available in age-periods, to say more as to the reality or otherwise of this rise in the ratios. Assuming there has been a rise, it is, however, quite possible to suggest something as to its nature. This comes out when the means adopted for committing suicide is considered.

Form or Means of Committing Suicide

These have been analysed for me for each of the four Census years 1891-1921 and for the year 1929; and the figures for each form, separately as to sex, have been set out also in percentages of 100 suicides from all forms. The results are highly instructive; the stability and uniformity of the percentages is so marked as to be startling, were it not that attention has been drawn in previous inquiries to a good many of the points which thus emerge. It is to be noted, however, that while the figures and percentages for the four Census years thus closely correspond, those for the year 1929 contain marked differences, and that the commencement of these departures can be recognized in the two Census years 1911 and 1921.

As has been pointed out often, each method of suicide is favoured by one sex more than the other. It, however, has not, I think, been pointed out how marked is this favouritism; that is, that there is no method used at all even-subjevhich comes at all near to an equal division present positiexes. Although this statement does hold vious ascertainmespect to methods of suicide less often

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instruments; during the four Census years the male percentages were 20.5, 18.6, 20.3 and 21.6, those for females being 13.1, 8.8, 13.6 and 11.2; for the year 1929 there was a marked drop in the extent to which this method was used as respects both sexes—16.7 and 7.9.

Until the new method of suicide by the use of coal gas, between the years of 1911 and 1921, came to be frequently employed, drowning was by far the commonest method adopted by women. Thus, during the four Census years, the male percentages for drowning were 18.7, 17.5, 19.0 and 21.2, whilst those for females were 34.0, 34.2, 33.1 and 32.4; for the year 1929 both showed a very marked drop, namely, to 15.7 and 21.9 respectively. Resort to hanging or strangulation is had habitually more by males than females, the two sets of four percentages being 30.9, 29.3, 27.8 and 24.5 for males and 20.2, 17.7, 18.7 and 16.7 for females; a like marked drop to 19.8 and 9.0 respectively being shown for the year 1929.

Suicide by Solid or Liquid Poisons and Corrosive Substances, Including Poisonous Gas

This is the remaining head in the list of means of suicide. Except at tedious length, it is scarcely possible to set the percentages out as has been done for the other forms, owing to their complication by the coming into fashion of the use of coal gas. The figures of my four Census years indicate that suicide by poisoning has been a fairly favourite method throughout the whole of this period, especially by women: the percentage frequency for the two sexes being about 11 for males and round about 25 for females. In 1901 eight men and one woman committed suicide by the use of poisonous gas, 77 men and 28 women in 1911, 233 and 132 respectively in 1921, and as many as 824 males and 461 females in 1929. Expressed in proportions, 23.7 per cent. of all male suicides and 30.7 per cent. of all the female suicides in 1929 were due to the use of poisonous gas, which has become, by far and away, the most common form of suicide in both the sexes. According to my reading of the figures, its use has not affected the occasional resort that is had to crushing, jumping from high places, firearms and to certain rarer methods; but it has considerably reduced the popularity of all other methods, that is of all the commoner methods. The figures further suggest to me that *resort has been had to the use of coal gas by an appreciable—but not at all an alarming—number of persons who, but for its ready availability and the nature of its action, would not have committed suicide.* With reference to alarmist statements as to the number of young folk who use this method, the figures, to my reading of them, are all against the truth of any such belief. In the period 15-19 there were (in 1929) 14 youths and 12 girls who used this method, and, in the period 20-24, 22 males and 21 females; in other words, at least 95 per cent. of the males and 92 per cent. of the females were 25 years and upwards. It is perhaps of interest to add that between 11 and 12 per cent. of the gas suicides in each sex were in the 25-34 decade, 17.1 per cent. of the males and 20.6 per cent. of the females in the next decade, 26.1 per cent. and 30.4 per cent. respectively in the next, 25.4 per cent. and 18.4 per cent. respectively in the period 55-64, and 15.3 per cent. and 12.1 per cent. in the period 65-and-upwards.

The net statistical result of resort to coal gas as a means of suicide appears to me to have raised what was a very stable and uniform suicide rate of 1.5 per 10,000 males and 0.5 per 10,000 females (or 1.0 for both sexes) to 1.8 for males, 0.7 for females (1.3 for both sexes). It may be that when more details of the 1931 Census figures are available, these proportions will need slight correction; but, from certain anticipatory results which have been kindly allowed me from official sources, I believe it will be found that they are very closely correct.

means the whole of these acts, and probably does not entirely do so to-day

Neither the Suicide rate nor that of Attempts represents the full Incidence of Suicide However great is the accuracy now of the returns, it is not possible to estimate and to include in them the frequency of the urge to commit suicide which is really the true suicidal incidence The number who attempt or complete the act is partly determined by external and accidental circumstances, including ease and availability of some new method of committing suicide, especially if that new method is closely allied to the normal process of sleep

Former rises in Suicide rate position ultimately stationary The suicide rate for England and Wales has shown, ever since statistics have been available, a fairly steady, but nevertheless an ultimately diminishing, rate of rise How far these variations in the rate were due to actual changes in the number of suicides in proportion to the population, or how far they were due to increased accuracy in the returns, it is not possible to say It is, however, noticeable that, according to the returns in the first three Census years of the present century, a position of great stability had been reached thus, the number of annual deaths from suicide in each 10 000 of the population living at all ages was, during each of the years 1901, 1911, and 1921, 1 5 for males, 0 5 for females, and 1 0 for both sexes together [1]

Rise in Suicide rate during the Decade since 1921 There is evidence that, since the 1921 Census and to a slight extent during the previous ten years, there has been a growing tendency to resort to inhalation of coal gas as a means of suicide with the result that some persons have used this method instead of some other means and many more have used it who probably would not have taken their lives otherwise As a consequence, the suicide rate per 10 000 of the population seems to have risen during the year 1923 to 1 8 for males, to 0 7 for females, and to 1 3 for both sexes together These proportions may need slight correction when fuller details are published of the Census figures for 1931

Suicide by inhalation of Coal Gas Poisoning by inhalation of coal gas was the method used with fatal result by 824 males and 461 females in the year 1929 It accounted for 23 7 per cent of male and for 30 7 per cent of female suicides during that year It is now the most frequently used method, the next in frequency being hanging in males and drowning in females Of those who resorted to this use of coal gas, less than 2 per cent (14 cases) of the males and less than 3 per cent (12 cases) of the females were in the 15 19 age period and less than 3 per cent males and less than 5 per cent females were aged 20 24 in other words, 92 per cent were 25 years old and upwards The period of life showing the greatest frequency of its use was 45 54 years of age, in which 26 1 per cent of the male and as many as 30 4 per cent of the female suicides by coal gas took place in no other period was there a higher percentage for either sex Notwithstanding this use of coal gas and a consequent probable rise in the suicide rate, the latter in no sense constitutes a "problem,' nor is the position at all alarming It is however, desirable that consideration should be given to the possibility of rendering coal gas less easy to use as a means of suicide

Doubtful utility of retaining Suicide or its Attempt as a Crime While it is desirable and necessary that the question whether death was due to suicide or not should remain a matter for legal inquiry, it is very doubtful if any good results from retaining either it or attempted suicide as possibly a crime

Need for more thorough Study of Suicide as a Medical Subject Suicide, as a subject, is in need of much greater medical study than it has received, both in this country and internationally In addition to the advantage to Psychological Medicine which such study would afford, it probably would provide the best means of determining how to prevent the occurrence of a considerable number of cases that now take place

Help which Coroners and Magistrates could give Coroners and Magistrates could do much both to direct the object of suicide into proper medical channels of inquiry, and, by such action on their part and by directions which Magistrates may find themselves in a position to give, much could be done to stimulate the provision of out patient treatment of mental illness and of nerve clinics, as contemplated by the Mental Treatment Act It may be desirable to consider how Coroners and Magistrates can be approached upon the matter

[1] This general statement and these proportions tally fairly closely with those summarised in *Elements of Vital Statistics* by Sir Arthur Newsholme (1923 ed pp 306-8) in which particulars are cited from Part III of the Supplement to the Twenty fifth Annual Report of the Registrar General (1921-10) His proportions per million living at all ages were calculated upon a standardised population

THE PSYCHOLOGY OF SUICIDE*

BY

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Suicide is man's great retreat from life He has recourse to it when he feels no longer able to endure suffering in the present or pain in the future It is therefore a failure of adaptation and constitutes a final regression from reality The motives underlying suicidal acts are numerous and complex It is impossible to ascertain them with any degree of certainty unless we are intimately acquainted with the patient's psychic life It is certain that evidence given and conclusions reached in Coroners' courts can be regarded as adequate only in a minority of cases The importance of social influences can easily be exaggerated although such influences are frequently operative It will be convenient to group the motives of the suicide under three headings —

(1) Physical pain including frustration of instinctive demands

(2) Social sufferings and fears

(3) Doubts and dreads pertaining to the hereafter

Pain and Frustration

In the first group we have the suicides due to physical pain It is commonly agreed that this causes far fewer suicides than one would expect Halbwach places it ninth in his list of twelve major causes It is also noteworthy that acute pain does not seem to drive men to self destruction as frequently as some of the gross discomforts The pain of trigeminal neuralgia is said to be accountable for a few cases, but it is probable that the incessant discomfort of tinnitus aurium is a more prolific cause Still more noteworthy is the fact, which is not likely to be contested, that men commit suicide more frequently on account of anticipated pain than actual suffering, however acute I imagine that few women have committed suicide when a malignant tumour of the breast was diagnosed, yet there are an appreciable number I believe, who when they observe a nodule in the breast are so terrified that it will prove to be cancer that they take their lives It is difficult to obtain any data about war cases but my impression is that very few wounded men took their lives however acute their suffering on the battlefield On the other hand it is quite certain that of the unwounded who committed suicide many did so from dread of a painful death

We are probably justified in concluding at any rate for civilised man that he is more capable of adjusting to physical pain than to anticipatory dread of it And this

* Read in opening a discussion in the Section of Psychological Medicine at the Annual Meeting of the British Medical Association in Leicester, 1931

conclusion brings up a somewhat analogous phenomenon in a different field. The fear of insanity certainly deserves to rank among the major causes of suicide. In the pre-psychotic stage a man may pass through a phase of tendency to suicide and may even attempt it. Yet when the psychosis declares itself in a delusional manifestation the suicidal tendency may pass completely. To put it in another way, loss of insight allays the mental distress that previously impelled the patient towards suicide. The man who could hardly adjust himself to life with the shadow of insanity upon him can adjust himself to life when he is insane by reason of the insanity itself. This is one example that shows how superficial is the popular view that suicide is evidence of insanity.

In this first group that we are discussing I have included "frustration of instinctive demands." It is probably true that more suicides have been occasioned by thirst than by hunger. It is very certain that when hunger and thirst are both extreme it is only the latter that counts.

But in normal civilized life it is the sex instinct which meets with most frequent frustration and which in consequence accounts for the largest number of suicides in this group. In the first place there is the unmarried woman who feels she can no longer endure the pangs of sex starvation. There must be, I imagine, a few married women, who, on account of dyspareunia or conjugal taunts of frigidity, determine to escape from marriage and therefore from life. I have known at least one woman who gave this as the reason for her attempted suicide. Sterility may perhaps drive a few women to despair. I have never come across an attempt, but one patient, who was bitterly disappointed by her sterility and who knew that her husband was almost as greatly distressed, discussed with me in the most detached way the possibility of suicide, basing her contention on her husband's right to marry a woman who could make him a father.

Both men and women commit suicide on account of homosexuality. But in these cases the issue is almost always confused and can rarely be classed as mere instinct frustration. Conflict over homosexual tendencies in themselves, fear of social discovery, repressed inferiority for not being as others are—these and similar factors come into the etiology. The factor of the exhibitionist suicide is hard to evaluate. We are all familiar with it in the half-hearted suicidal attempts of the hysteric, but there can be no doubt that it contributes to not a few determined and successful suicides. This factor of pose recalls a case cited by Fraser. A rejected suitor in Vienna craved a final interview with the object of his affection. When they met he asked her to return the engagement ring. He placed it over his heart, the muzzle of his revolver against it and shot himself. The ring was found imbedded in the myocardium! Surely a dramatic exit of this type can have been little influenced by instinctive or other basic motives!

In men the factor of sex-frustration probably counts less than in women. The main reason for the difference is manifest, namely, that man has his sexual destiny much more in his own control than has woman. The incidence too is different. With the male the problem tends to be acute in late adolescence and early senescence. With woman on the other hand it is in the late thirties that despair is likely to seize her. Judging from analytical experience one would feel inclined to surmise that many of the suicides of males in the early twenties are due to sex conflict mainly centring on hypogonadism. The feeling of not experiencing sex impulses that one's fellows claim to experience; the haunting doubt as to whether one will ever be able to fulfil the role of the husband; the horror of being revealed as an imperfect man—these things are so often described in the course of analysis that they must surely enter into the motivation of many suicides. In this connection it is important to recognise the passive suicide by starvation. We call this, inappropriately enough, anorexia hysterica; sometimes it is dysphagia hysterica. It should be regarded not as a psychoneurosis but as a definite pre-psychotic suicidal equivalent. It is essentially the great retreat of the late adolescent, and in my own experience it is invariably associated with evidence of hypogonadism. The following case illustrates these points.

A youth of 21, well over 6ft. in height and weighing less than 7 stone, collapsed on a motor-cycle run. He was then in his second year at the University. He had actually begun compulsive abstinence when he first went to his public school. This was the result of an auto-erotic conflict and some ill-judged statement in a pamphlet about sex. When he left school the compulsion gained strength, and by the time of his collapse he had reached a dangerous state of inanition. He was taken to a nursing home on a stretcher; his extremities were profoundly cyanosed. On investigation the acuteness of his sex conflict was revealed. His fear of sex experience was extreme. After a few days in the home he mutilated his penis with a pair of nail scissors to the extent of requiring three stitches. Subsequently he recovered completely and is now both a husband and a father.

This case shows well the way in which many a young suicide retreats from life because of sex fear, and attempts to terminate his existence as a generalized castration reaction. And just as the self-mutilation may be expiatory or self-punitive, so the compulsive abstinence has the same origin.

The climacteric suicides in males are generally attributed to insomnia. The high degree of respectability which belongs to this complaint makes it an eminently suitable explanation for mourning relatives, coroners and journalists. It is however a very unsatisfactory explanation for the psychopathologist. The cases of which he may have accurate information are not infrequently cases of early impotence associated with aggravating emotional factors—for example when a middle-aged man has married a young wife, or when the man attributes his impotence, rightly or wrongly, to a venereal infection in youth, and so on.

Social Sufferings and Fears

Passing on to the second group—social sufferings and fears—we find a large number of cases in which the motivation is much simpler and less liable to misinterpretation. The men who commit suicide on account of bankruptcy, or because they have lost their employment, or in the face of legal proceedings which will expose their misdeeds—all these are familiar enough and reveal the extent to which herd values may eclipse the instinctive desire to live. In many cases one sees only an exaggerated self-love incapable of accepting social humiliation at any price. In others there may be a factor of remorse for wrongs committed, and an impulse towards expiation. Among women illegitimate pregnancy is probably one of the chief causes of the social suicide.

In this connection we may take a special group, difficult to classify, namely, the suicides by identification. Usually the impulse reveals itself by depression and a phobia of committing suicide. A man in the early forties will gradually become depressed, confess that he fears he may do away with himself, and then add, "You see, my mother took her own life when she was 45." In such cases the underlying motive is based on an unconscious feeling that it would be disloyal to the beloved parent to outlive her. The conscious version is "I have inherited from my poor mother a suicidal tendency at the age of 45."

DOUBTS AND DREADS

Finally we come to the last group—doubts and fears of the hereafter. These feelings tend to have an inhibitory effect, but that effect wanes as dogmatic religion, embodying a system of eternal rewards and penalties, loses its hold on the community. In some social systems self-destruction is, under certain circumstances, regarded as a virtuous act liable to secure eternal advantages. In Christianity suicide has been uniformly denounced. But even so there are a certain number of suicides with a religious significance. Sometimes the father complex demands an act of self-punishment whereby alone the individual feels that it will be possible to face the divine Judge. Sometimes the suicide is Messianic in character, a supreme sacrifice of the total personality for some redemptive purpose. Sometimes the compulsion towards purification based on a guilt complex develops into a suicidal act.

In the short space available there is no possibility of dealing with many other important aspects of this subject. The frankly psychotic suicides—especially the melancholics and cyclothymics—are primarily problems of supervision rather than of active therapy. The groups described cover the majority of cases that occur among those who still rank as sane.

SUICIDE FROM THE MEDICO-LEGAL ASPECT*

BY

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Suicide connotes to the legalist a crime and to the physician a state of emotional disorder. It was originally an ecclesiastical offence but was transferred to the King's Courts when the separation between ecclesiastical and civil courts was completed, and judge and bishop no longer sat together in court to hear cases.

Bracton, who wrote on criminal law in the early part of the thirteenth century, records that a person who committed suicide in order to avoid conviction for a crime forfeited his lands. Other suicides forfeited their goods only. According to Stephen this distinction was forgotten before the time of Staundforde, a judge in the reign of Queen Elizabeth, who published a work on the Pleas of the Crown.[1] In other respects the law remained unaltered till 1870 when forfeitures were abolished (33 & 34 Vic. C. 23).

There appears to have been no legal authority for the ancient custom of burying a person, against whom a coroner's jury had found a verdict of *felo-de-se*, at four cross roads with a stake driven through the body. Stephen[2] suggests that it originated, like gibbeting, without legal warrant in circumstances now forgotten. It was abolished in 1823 by a statute (4 Geo. 4. C. 52) which enacted that thenceforth it should not be lawful for any coroner to issue his warrant for the interment of a *felo-de-se* in any public highway. He was to order the body to be buried privately in a churchyard, or other burial ground, without any stake being driven through the body, between nine and twelve at night, and without any religious rites. This statute has been repealed by the Interments (Felo-de-se) Act 1882, which provides that the body may be buried in any way authorized by the Burial Laws Amendment Act 1880, that is without religious service or with such Christian and orderly religious service at the grave as the person having charge of the body thinks fit.

Suicide, in English Law, is a felony, self-murder, and the distinctions between murder and manslaughter have been said to apply to this, as far as they are applicable, as well as to the killing of others.[3] But there is no such offence as self-manslaughter (R v Burgess), and Stephen quotes authorities to show that the true definition of self-murder seems to be where a man kills himself intentionally, and according to Hale, also accidentally, if by an act amounting to felony: as when a man striking at another and intending to kill him misses and strikes himself. Conversely if a person, in making an attempt to kill himself, should accidentally kill any of the bystanders, he will be guilty at least of manslaughter, and in most cases of murder.[4]

The abetment of suicide may be as great a moral offence as the abetment of murder, and if two persons encourage each other to self-murder, and one kills himself, but the other fails in the attempt, the survivor is guilty of murder of the other; and if one person encourages another to commit suicide and is present abetting him while he does so, such person is guilty of murder.

A modification of the former principle is suggested sometimes in suicide pacts. In a recent trial at the Old Bailey a man was acquitted of murder: he was found lying with a woman on a bed in a gas-filled room with a gas tube between their heads, and the women died. Wright J. while reaffirming the legal doctrine suggested that it was a law which Parliament might well alter. There is no doubt, however, that sometimes the survivor enters into a suicide pact to free himself from responsibilities he refuses to accept. In connexion with the second principle it may be observed that at the last Liverpool Winter Assize the prosecution alleged that a girl, whose body was found mutilated on the railway line, committed suicide after agreement with the accused, and MacKinnon J. ruled that as the survivor of a suicide pact must be present when the other dies in order to support a charge of murder counsel must confine themselves to the charge of being an accessory before the fact.

The blameworthiness of suicide has been a frequent matter of dispute among lawyers and medical men. Stephen considered that it would be a pity if Parliament were to enact any measure tending to alter the feeling with which suicide is, or ought to be, regarded. Dr. Mercier held that a suicide committed an offence if and when by his act he evaded obligations to the State, or to individual members of the State. He considered also that there were other circumstances that would make the act an offence, as when an epidemic of suicide, restricted to women, occurred in Edinburgh in the sixteenth century, and ceased when it was proclaimed that in future the bodies of the suicides would be exposed naked in the market place.[5]

A person who insures his life while *compos mentis* and later dies by his own hand forfeits the contract of insurance if the coroner's jury return a verdict of *felo-de-se*, on the general principle that a man may not profit by his own criminal act.[6] But if the act of suicide takes place when the assured is insane, then, whether he be beneficially interested in the insurance or not, the policy is not avoided, unless the contract contain a special condition inserted with a view to meet such a contingency.[7] Many modern policies however provide that in the event of suicide during insanity the policy shall be treated as surrendered, and the surrender value paid to the personal representative or other beneficiaries. Cases of this nature are of particular interest to medical men as it may be disputed on the one hand that the deceased committed suicide, and on the other that he was insane when he committed the act.

A coroner may hold an inquest on a body without a jury subject to certain exceptions,[8] but he cannot, sitting

* Read in opening a discussion in the Section of Neurology and Psychological Medicine at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

alone, return a verdict of *felo-de-se*. Both coroners and juries usually attribute suicide to insanity, and out of 4,846 inquests on suicides in the year 1928 the verdict of *felo-de-se* was only returned in 88.[9] But although the memory of the deceased may be so relieved from the stigma of a crime his relations may be burdened with an unnecessary dread of insanity. If the alternative verdict to *felo-de-se* was "suicide the result of mental illness" the modern outlook and phraseology of the Mental Treatment Act, 1930, would be represented.

An analysis of 1,000 consecutive cases of attempted suicide examined by me some years ago showed that only about one-fifth were certifiable as insane, and the experience gained by the examination of more than 2,000 additional cases confirms this view. But many patients suffer from temporary mental disorder at the time of the attempt, and mere trivialities often cause determined attempts at suicide.

An attempt to commit suicide by a person of sane mind, being an attempt to commit a felony, is in law an indictable misdemeanour, and the offender may be committed for trial at the Assizes or Quarter Sessions, and is punishable under the provisions of the Hard Labour Act, 1882 by imprisonment with hard labour. The case can be dealt with also in a court of summary jurisdiction with the consent of the accused.[10] The suicide must be of sound mind and have attained the years of discretion (1 Hale P. C. 411; 3 Inst: 54), therefore, it is no crime for a person to take his life before reaching that age. The mere fact of drunkenness is no excuse for the crime of attempted suicide, but it is a material fact for the jury to consider before coming to a conclusion whether the accused really intended to destroy his life (R v Doody).

The number of cases of suicide and attempted suicide reported to the police are affected probably by many factors. No doubt the increased sobriety of the community during recent years, the receipt of unemployment benefit, trade depression, and the modern policy not to take proceedings in cases of attempted suicide unless detention for a time is in the interest of the person, or for other sufficient reason, operate in one or other direction. And although the number of persons coming before the courts on this charge in 1928 was considerably more than double the average number in the years immediately preceding the war, the number of persons now sent to prison for this offence is about halved. Many of these recognize that they need care and supervision, but would be unwilling to remain for a sufficient period in a mental hospital as voluntary patients under the Mental Treatment Act, 1930, and are ineligible for detention as temporary patients under Section 5 of the Act. And as they cannot be certified, a short term of imprisonment under medical care is inevitable sometimes: it is usually accepted with equanimity and often with gratitude.

The mental condition of an accused person charged with attempted suicide is frequently a matter for special consideration in a criminal trial. In the summary courts an insane person is usually dealt with by transfer to a Public Assistance Institution or private mental hospital. If the Grand Jury at Courts of Assize or Quarter Sessions ignore the bill of indictment the accused is forthwith released from the custody of the court whatever his mental condition may be. If, however, he is found to be insane on arraignment or guilty but insane he is sentenced to be detained during His Majesty's Pleasure. A plea of guilty is sometimes made in order to avoid this, and if the court is satisfied with the medical evidence the prisoner may be considered a proper person to be detained in a mental hospital. A recent decision of the Court of Criminal Appeal is of interest in this connexion. The appellant after pleading guilty to an offence at Liverpool Assizes in May 1929 entered into a recognizance to be of good behaviour for two years, and to remain in a mental institution until he was discharged. The breach of recognizance with which he was subsequently charged, and for which he was sentenced to ten months imprisonment, consisted in his escape from the institution. At the time when he entered into the recognizance he was a certified lunatic, and the Court of Criminal Appeal held that the certificate raised a presumption of insanity which prevented the recognizance from being binding on the appellant, and that there had been no evidence to displace that presumption. The Court allowed the appeal and quashed the sentence (R v Green-Emmott).[11]

The association of murder with suicide is important. The Criminal Statistics for England and Wales in the years 1927 and 1928 show that one murderer out of four commits suicide—66 out of 234. The figures of attempted suicide are very similar, for in a series of 182 persons convicted of murder, whose mental condition I examined, 41 attempted suicide in connexion with the crime. The suicidal act is due sometimes to the certainty of conviction and to the desire to end an intolerable situation. It is also the result of insanity, and Dr. H. P. Foulerton informs me that of 527 admissions to Broadmoor during the last 20 years following charges of murder, 149 attempted suicide at the time of the crime.

In some insane persons the suicidal intention precedes the homicidal; thus the altruistic melancholiac having decided to kill himself first kills his wife to save her from disgrace, suffering, or the necessity to fight the world alone. But the homicidal intention precedes the suicidal in many senile, alcoholic, and delusional murderers and may result from vindictiveness, revenge or hate based on insane beliefs and false premises.

Bogus suicides appear to be uncommon in free life but are sometimes staged in an attempt to defraud an insurance company or for another purpose. Feigned attempts at suicide are made in prison for ulterior gain also; they constitute nearly 70 per cent. of the attempts and are of medical importance as they sometimes miscarry and end fatally.

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VERTIGO IN SUPPURATIVE CONDITIONS OF THE MIDDLE EAR*

BY

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Vertigo is defined as "a disordered condition in which the person affected has a sense of whirling either of external objects or of himself, and tends to lose equilibrium." (O.E.D.) It may be due to a variety of causes, labyrinthine and non-labyrinthine, but labyrinthine vertigo is by far the more common.

It is generally believed that normally both labyrinths are in a state of equal tonic activity and send continuous

* Read in opening a discussion in the Section of Oto-Rhino-Laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

impulses to the higher centres. If both labyrinths are stimulated equally, however great the stimulus may be, there is no vertigo; the slightest difference in stimulation between the two labyrinths immediately produces vertigo. Labyrinthine vertigo is the result of unequal activity of the two labyrinths. The most common cause of such inequality is some affection of the ear, which may be non-suppurative or suppurative. Between these two kinds of vertigo there is a distinction literally vital. Aural vertigo of non-suppurative origin may make a patient's life a burden to him; aural vertigo in the presence of suppuration may mean that his life is in danger.

I propose to confine myself to vertigo associated with aural suppuration. In these conditions we are concerned with the perilymphatic space. The only barrier between perilymph and endolymph is the flimsy wall of the membranous labyrinth; therefore, if the perilymphatic space is invaded, we are justified in assuming that the endolymph space will also be invaded. The perilymphatic space communicates with the cerebro-spinal spaces by the pia-arachnoid sheath of the eighth nerve and by the aqueduct of the cochlea; the endolymphatic space is not in communication with the cerebro-spinal space, as the saccus endolymphaticus lies between the layers of the dura. Thus any infection of the perilymphatic space puts the patient's life in immediate peril.

The perilymphatic space is separated from the middle ear and its accessory cells by two layers, the dense bone of the labyrinth wall and the lining endosteum. At the fenestrae the bony layer is absent, and the only barrier is the endosteum, reinforced at the fenestra ovalis by the footpiece of the stapes. It may be laid down as a rough clinical rule that, so long as the barrier is adequate against invasion the signs will be due to irritation of the affected labyrinth; once the barrier is passed and the perilymph space invaded there will be a brief period of intense irritation followed by destruction, and all signs will then be due to the unopposed activity of the healthy labyrinth.

When vertigo occurs in the presence of suppuration it is probably due to the suppuration, but we must not overlook the possibility of some independent cause—for instance, a patient with a suppurative otitis media on one side may suffer from vertigo which has been produced by blockage of the eustachian tube on the side which has been regarded as normal. On the other hand vertigo must never be attributed to "neurasthenia" or "bilious attacks." Vertigo can certainly cause neurasthenia; under modern traffic conditions a sufferer from vertigo is in danger of his life whenever he crosses a street, and certainly the neurasthenia can aggravate the vertigo, but it is very doubtful if it can ever cause it. Vertigo is often associated with severe nausea and vomiting, but the most intense gastric disturbance cannot cause vertigo. "Gastric vertigo" is a term that should never be used. We still see cases of acute suppurative labyrinthitis which have been diagnosed as "bilious attacks."

In vertigo due to aural suppuration past or present we can distinguish three principal groups of cases:

1. Cases where the labyrinth wall is intact.
2. Cases where the labyrinth wall has yielded to infection to a greater or less degree—the labyrinthites.
3. Cases where infection has reached the posterior fossa—cerebellar abscess—retro-petrous abscess.

WHERE THE LABYRINTH WALL IS INTACT

These cases are characterized by increased irritability of the affected labyrinth. This may be due to: (a) Changes of pressure at the fenestrae; (b) abnormal sensibility caused by exposure of the inner tympanic wall.

Changes of Pressure

Ankylosis of the ossicles. Dundas-Grant and others have described cases in which vertigo was caused by malleo-incudal ankylosis. The probable explanation here is that the stapes is driven in and thus the normal give-and-take between the fenestrae is altered. This alters the intra-labyrinthine pressure and so disturbs the balance between the two labyrinths. Similar phenomena are observed in unilateral eustachian obstruction, as has been described by Sydney Scott.

Fluid or granulations in the middle ear may alter the play of the fenestrae in the same way as an ossicular ankylosis. In these cases the proper treatment is to provide drainage or to remove the ossicles by one or other of the mastoid operations.

Abnormal mobility of the stapes can cause vertigo by irregular alterations of pressure in the affected labyrinth. Such cases are not uncommon in congenital syphilis, but they are fortunately rare in suppurative or post-suppurative conditions. If the stapes is loosened during active suppuration, invasion of the labyrinth usually follows. If the stapes is loose when suppuration is extinct (for example, after a radical mastoid operation) it is possible that we might be driven to destroy the labyrinth. This will be discussed later.

Abnormal Sensibility due to Exposure of the Inner Tympanic Wall

This condition is sometimes found with a large dry perforation of the membrane, and more often after a radical mastoid operation. Vertigo is usually caused by sudden changes of temperature, especially a cold wind. The unprotected inner tympanic wall is cooled and the victim endures an unregulated "cold caloric test." One patient of mine with a large radical cavity, suddenly fell down with a violent attack of vertigo when walking along an exposed sea-front on a cold and windy night. As a rule the condition can be remedied by closing the meatus with a plug of greased cotton wool. This condition may be a danger if the patient swims or dives, the sudden rush of cold water may cause a "caloric response" which completely incapacitates the victim.

If the patient is seen during an attack considerable relief is often given by painting the promontory with 5% cocaine and packing the meatus with gauze or wool soaked in warm paraffin. Accumulations of cerumen or débris in the cavity are often responsible for the attacks. An important point in these cases is that the patients are often abnormally sensitive to sudden falls of blood pressure. Ephedrine is useful in meeting this emergency. Of other drugs chloretone and luminal are sometimes useful, and Dundas-Grant has obtained good results with small doses of quinine, which is believed to diminish the labyrinthine activity.

As a rule in these cases of labyrinthine hyper-sensitivity after a radical operation the condition gradually passes off and compensation between the two sides is reached. Occasionally this does not take place, and the patient's misery makes us consider the advisability of destroying the labyrinth. This may be necessary as a last resort, but only as a last resort. However severe the vertigo may be it is not dangerous to life, and opening an uninfected labyrinth in an ear that has been infected, even though the infection appears extinct, is accompanied by a certain degree of risk, slight it is true, but present. Probably the simplest and safest method is that suggested by Mollison, opening the external canal at the torus, and injecting alcohol into the vestibule through the opening.

If, in spite of an adequate radical operation, granulations persist on the inner tympanic wall and vertigo continues, the probability is that there is a labyrinthine infection.

Lastly we must remember that there is no reason why a patient with a radical mastoid cavity should not suffer from Ménière attacks entirely independent of his suppurative condition. On the law of averages it is unlikely, but the possibility must not be overlooked.

Where the Labyrinth Wall has Yielded to the Infective Process

This group comprises all cases of labyrinthitis of suppurative origin. In these cases we are faced by an entirely different situation. As has already been stated, once the labyrinth has been invaded by a septic infection the free communication between the perilymph and the cerebrospinal fluid implies the risk of spread to the subarachnoid space and consequent meningitis. Labyrinthitis of septic origin, therefore, is a surgical problem, and the suitable surgical solution is determined by the extent to which infection has advanced. Thus in any septic labyrinthitis vertigo and other labyrinthine symptoms are important only as indications of the degree of invasion of the affected labyrinth.

The whole sensory area of the labyrinth is so small that we are entitled to believe that invasion of the labyrinth cavity must quickly cause destruction of the labyrinth function. From this it follows that so long as the labyrinth preserves any trace of function it is unlikely that the cavity is infected, and until that infection is complete the risk to the patient's life is very small.

Varieties of Labyrinthitis

The usual classification of the different forms of labyrinthitis is admittedly faulty, especially in the inaccuracy of the terms employed, but it usefully emphasises important clinical distinctions. Three principal varieties are recognised: (1) Circumscribed labyrinthitis; (2) serous labyrinthitis; (3) diffuse suppurative labyrinthitis, which may be either (a) "latent," or (b) "manifest."

It is possible that an infection of the lumen of a canal might be localised by adhesions, but in practice circumscribed labyrinthitis usually means an incomplete breach of continuity of the labyrinth wall without invasion of the lumen. The bony wall may be eroded until the endosteum is exposed, but as soon as the endosteum is penetrated invasion of the cavity follows, and the characteristic features of the condition are lost.

This probably corresponds to the "sympathetic" effusions into serous cavities. It may be regarded as an inflammatory reaction to a septic process outside the labyrinth. The labyrinth wall has remained as an adequate barrier against the invasion of organisms but has been traversed by the toxic products of infection. Such entrance might be made through the fenestrae or through endosteum exposed by erosion of the bony wall.

Diffuse suppurative labyrinthitis is the result of microbic invasion of the cavity.

In acute suppurations of the middle ear the invasion is usually through one of the fenestrae, either by destruction of the membrana secundaria of the fenestra rotunda, or by loosening of the footpiece of the stapes. It is stated in the textbooks that infection through the fenestra rotunda is the more common; in the few cases of invasion through a fenestra which I have seen this has not been the case, the invasion has been through the fenestra ovalis. Occasionally in acute suppurations, especially in those due to the pneumococcus mucosus capsulatus, infection has entered through an erosion on the torus of the external canal. In chronic suppurations invasion usually takes place through an erosion made by the growth of cholesteatoma. Such erosions are more common on the external canal, but are occasionally found on the promontory. The course of the disease differs according to the site of invasion. If infection enters through the promontory or the fenestrae the main cavity of the vestibule is attacked at once, and destruction is much more rapid than when the infection enters by the narrow lumen of the external canal. For this reason suppurative labyrinthitis is more dangerous in the acute middle ear suppurations than in the chronic. This accounts for the fact that in the acute suppurations meningitis is more common than intracranial abscess.

The distinction between "manifest" and "latent" labyrinthitis is entirely clinical. While the signs and symptoms of recent destruction exist the labyrinth is "manifest," when the affected labyrinth is paralysed and the labyrinth of the other side has taken over all the vestibular functions of equilibration, that is to say, when compensation is complete, the labyrinthitis is "latent." Some cases of so-called "latent labyrinthitis" would be better described as "residua of obsolete labyrinthitis," for the whole cavity of vestibule, cochlea and canals is filled with fibrous tissue. Other cases are really labyrinthine necrosis; the greater part of the labyrinth wall lies as a sequestrum in an abscess cavity in the petrous. In other cases the labyrinthine cavity remains, filled with pus and granulations, an ever-present danger to the adjacent meninges.

We have stated a preliminary axiom that, so long as the infection has not reached the perilymphatic space, the signs and symptoms will be due to irritation of the affected labyrinth; when the perilymphatic space is invaded there will be a brief period of intense irritation followed by destruction. As the destruction proceeds signs are more and more due to the unopposed activity of the healthy labyrinth. When the destruction is complete the surviving labyrinth assumes double duties and we have the stage of compensation of "latent labyrinthitis."

Of the signs that enable us to diagnose between the different forms of labyrinthitis, excepting always the "latent," vertigo is the most prominent. This must not be taken as implying that our decision can be based on the vertigo alone; it is a subjective symptom and the evidence that it affords must always be rigorously checked by the labyrinth tests and examination of the nystagmus and of the alterations in hearing.

Of the labyrinth signs the slow, or labyrinthine component of the nystagmus, the pointing error, and falling are away from the more active labyrinth. The quick, non-labyrinthine component of the nystagmus and the direction of the sensation of falling or movement during vertigo are towards the more active labyrinth. This may be stated as a general rule, but the sensation of the direction of vertigo is unreliable. During the stage of destruction the vertigo is so severe that the patient often describes the sensation as one of being "thrown about" without any particular direction of movement. This is probably due to the combination of irritation and paralysis at this period.

More important than the direction of sensation are the periodicity of the vertigo, either continuous or intermittent, and its severity.

In circumscribed labyrinthitis as the perilymph space is not invaded the signs are those of irritation; the affected labyrinth is often hypersensitive to the caloric test, hearing is affected only by the casual middle ear lesion, and vertigo is intermittent and rarely severe. The attacks of vertigo are sudden and transitory, often brought on by sudden movements of the head and accompanied by a brief nystagmus, usually directed to the affected side. If the lesion progresses until there is an erosion of the bony wall with exposure of the endosteum

of the canal the "fistula sign" can usually be elicited. Under this term we may include all conditions in which sudden changes of pressure in the external auditory meatus —as, for example, pressure on the tragus or suction by a Siegle's speculum—produce vertigo and nystagmus. The reaction is produced by the transmission of the pressure to the perilymph and so to the endolymph. Movement is started in the endolymph and the endolymph wave stimulates the sensory endings of the cristae or maculae as the case may be. It is a clinical application of Ewald's experiment.

Two points in connection with the fistula sign deserve special mention:

1. The presence of the "fistula sign" is positive proof of the activity of the affected labyrinth. It follows that the term is a misnomer, for if there was a true fistula the lumen of the canal would be invaded and destruction would quickly follow. If the "fistula sign" can be obtained it is safe to say that the endosteum is intact.

2. It is seldom possible to diagnose the site of the erosion from the direction of the nystagmus and vertigo produced by the "fistula test." We may hazard a guess but it is no more, and is usually wrong.

Serous labyrinthitis is characterized by the prolongation of the irritative stage and the incompleteness of the paralytic stage. The preponderance of irritation or paresis depends on the degree of permeation of the labyrinth wall. It may be said that in all cases of serous labyrinthitis there is a well marked irritative stage. This is emphasized by Baldenweck, who points out that the more usual nystagmus of a serous labyrinthitis is towards the affected side, that is to say a nystagmus of irritation. Vertigo is always present during the earlier stages of serous labyrinthitis, and at this period a fistula sign is sometimes found; this is to be expected as serous labyrinthitis is often a sequel to the circumscribed form. But the vertigo, though troublesome, is rarely severe, often it is only noticed during movement, and the fistula sign when present is never as dramatic as it is in true circumscribed labyrinthitis. The most likely reason is that although the labyrinth in the early stage of a serous labyrinthitis is unduly irritated it is not really even normally irritable. The irritation is due to the increased stimulus of the intralabyrinthine effusion, which overcomes the commencing paresis. This explains the paradox that a labyrinth showing signs of irritation often shows also a diminished sensitivity to the caloric tests. It will be remembered that an analogous reaction is sometimes found in cases of the so-called "Ménière syndrome." When the irritative stage of a serous labyrinthitis passes off the subjective symptoms often disappear. The labyrinthine paresis may advance so gradually that the sound labyrinth never exerts itself violently. Compensation is acquired gradually and without discomfort. The labyrinthine functions of the affected side, cochlear and vestibular, are diminished but never lost, and traces of hearing and vestibular activity survive.

Diffuse suppurative labyrinthitis presents a very different picture. The irritation is short but violent, and the swiftness of destruction allows no compensation before the full activity of the healthy labyrinth comes into play. Thus the vertigo is of the utmost intensity, continuous and prostrating, usually accompanied by nausea and vomiting. The slightest movement of the head accentuates the victim's distress. A patient once told me that it surpassed the most violent miseries of seasickness. Anyone who has seen a case of diffuse suppurative labyrinthitis in the stage of invasion can understand the cryptic statement that in the Wide-Awake Club of which Mr. Jorrocks was recorder "no member was drunk if he could lie without holding." The vertigo may be so violent that the subject feels as if he were being "thrown out of his bed."

Vertigo gradually passes off when destruction is complete, but until full compensation is reached transitory attacks may be brought on by sudden movement. It is a clinical observation, which is not easy to explain, that compensation occurs much more rapidly if the affected labyrinth is opened and drained, even though prior to operation no trace of function can be elicited by the caloric tests. With the vertigo appear the other labyrinth signs. The period of irritation may be so brief that the typical nystagmus to the affected side with falling and pointing to the sound side are lost in a violent nystagmus in both directions and total incapacity to stand or even sit upright. This stage is quickly succeeded by the signs of complete destruction, total loss of labyrinthine function, cochlear and vestibular, on the affected side, with labyrinthine signs from the sound labyrinth.

When compensation is reached nystagmus, falling and pointing cease, the caloric test is negative but the rotation tests are normal. This normality of rotation tests with a dead labyrinth (Ruttin's reaction) must be due to some change in the healthy labyrinth which alters the normal relations of ampulli-petal and ampulli-fugal currents in the canals and makes the stimulus equal in either direction.

SOME GENERAL PRINCIPLES

Details of the operative technique are not germane to the present discussion, but we may consider some general principles.

In the first place, in the suppurative labyrinthitis the aim of surgery is not to alleviate the vertigo, but to ensure against meningitis. It will now be generally admitted that, in the first enthusiasm for labyrinthine surgery far too many labyrinth operations were done, and sometimes ill-judged operations precipitated the very disaster which the surgeon hoped to prevent. On the other hand many of us believe that the reaction has now gone too far; the belief that no labyrinth operation should be done until meningeal signs appear is responsible for dangerous delays. No meningeal signs can be found until the meninges are irritated, and in the most dangerous infections massive invasion precedes irritation.

On this basis it is possible to formulate some general rules.

1. So long as the labyrinth preserves any function it is unlikely that infection of the cavity has taken place.

2. When the labyrinth is destroyed in the presence of a middle ear infection, it is legitimate to assume that the labyrinth is itself infected.

3. When the cavity of the labyrinth is infected, and not till then, the meninges are in danger.

On these rules our treatment will be as follows:—

1. In circumscribed labyrinthitis the labyrinth cavity is unaffected. A mastoid operation, either partial or complete, must be done so as to expose the diseased area of the labyrinth wall. The diseased area must not be interfered with in any way. No labyrinth operation must be done. The only exception is in the rare cases where the erosion does not heal, although the rest of the mastoid cavity does, and incapacitating vertigo persists. In this condition it may be necessary to destroy the labyrinth in order to relieve the patient. The best way of doing this is by injection of alcohol into the labyrinth through the fistula. The operation, although simple, is not devoid of risk, and must only be undertaken as a last resort.

2. In serous labyrinthitis the defences are obviously adequate. Unless signs of a suppurative invasion appear no operation of any sort should be done until all the signs of the attack have passed off. Then a radical mastoid should be performed.

a right angle to the handle, and covered with rubber. With this instrument the skin of the face is plucked and stroked in various ways, sufficiently explained by the terms " massage-expression," " massage-pincement," and " massage-flagellation." The author claims that this instrument is the modern representative of the ancient strigil, which, as classical scholars will remember, was employed by the athletes and ladies of Rome for keeping the skin in good condition. The author's rubber-covered forceps may also be used as a means of producing local anaesthesia, for if a piece of the skin be grasped between the blades and held there for a few minutes it will become sufficiently numb for minor operations. Naturally the chapters on *x* rays and radium form an important portion of the book, and Dr. Acquaviva's remarks on these important subjects are informed both with a modern outlook and with sound common sense. In the treatment of hypertrichosis, the bane of both practitioner and patient, he prefers diathermy to electrolysis ; and, due precautions being observed, is not unfavourably disposed to the employment of an ointment containing thallium. This book is certainly worth the attention of all those who are interested in the treatment of cutaneous blemishes ; they will probably glean some valuable hints from it. The illustrations and diagrams are clear and useful.

Dr. A. BOUTELIER has written a very readable account of the commoner cutaneous diseases to which infancy is liable,[5] and very properly the longest chapter of all is that which deals with eczema. He treats of it in three parts: eczema in babyhood, in the " second infancy " (by which he means children between the ages of 2 and 8 years), and in the " third infancy " (or over the age of 8)—but at this age the disease does not differ in any important particular from the forms in which it is found in the adult. In the much-discussed subject of the etiology of eczema the author does not take us very far, although he attaches importance to visceral troubles, endocrine disturbances, milk diet, and cutaneous sensitiveness. Elaborate directions for treatment are given, prefaced by warnings of what not to do. For the most part we cordially agree with the prohibitions given, but it is difficult to understand the suggestion that the little patients should not be admitted to hospital for fear of exposing them to a rapidly fatal septicaemia. In our experience this is a groundless apprehension, and in-patient treatment is often the only hope of securing amelioration in a severe case. Nor is it very necessary to warn against curing eczema too quickly for fear of resulting complications ; the difficulty, rather, is to cure it at all, even slowly. We are aware that sudden death in infantile eczema is traditional, and that it is supposed to follow the sudden disappearance of the eruption ; but it is certainly very rare. Remaining sceptical, we prefer the view that what really happens is that as the circulation fails the erythema fades away. But, in general, there is little to find fault with in Dr. Boutelier's description of the dermatoses of infancy and in the directions given for their treatment. The illustrations—for the most part photographs of cases—are good and well reproduced. We need hardly say that there is no index ; there never is in French medical books.

Since the introduction of carbon dioxide snow some twenty-five years ago, cryotherapy has been practised with more or less enthusiasm by most dermatologists. Within the first few years of its employment it was used for the most diverse forms of skin disease, including lupus erythematosus, epithelioma, acne, lichenification, etc. At the present time its use is confined by most practitioners to the treatment of superficial venous naevi and warts, and within these limitations it gives very good results. Dr. LORTAT-JACOB has always been a keen cryotherapeutist ; and those who desire an authoritative account of the whole subject, and wish to know to what diverse ends the pencil of carbon dioxide snow may be applied, will find his treatise[6] on the subject very interesting. There is scarcely any form of dermatosis which cannot be ameliorated, if not cured, by solid carbon dioxide. Even the nodules of leprosy may be diminished by its application, although it is only fair to state that Dr. Lortat-Jacob does not claim the striking results described by a Polish writer, who states that not only do the nodules actually treated disappear, but also others which have been left untouched. This authority thinks that the frozen nodules provide a kind of vaccine which has far-reaching effects. Dr. Lortat-Jacob has also devised a useful apparatus for the application of CO_2 snow, by means of which the area of treatment may be limited to any required dimensions. The technique is explained in this volume.

ANOMALIES OF THE COLON

Le Dolichocolon,[7] by Drs. CHIRAY, LOMON, and WAHL, presents a point of view. Historically, the first evidence of variations in the size and position of the large bowel came from the anatomists and morbid anatomists. Next, the surgeons, working on volvulus and on the effects of chronic intestinal stasis, drew attention to the pathological part played by elongation of segments of the colon. With the introduction of *x*-ray observation of the colon, particularly when filled by an opaque enema, further light was thrown on the frequency of enlarged and elongated portions of the large intestine. Dr. Chiray and his collaborators point out that these variations and their pathological consequences are far from being recognized by the medical profession even to-day. The book is an attempt to define a syndrome which has as its anatomical basis an elongation of the colon, and is built on an analysis of the symptoms and associated conditions in a series of cases in which *x*-ray examination had shown an elongation of one portion or the whole of the colon to be present. The authors differentiate an acquired form characterized by elongation of the whole or some segment of the colon, which they therefore name " dolichocolon," from the megacolon of Hirschsprung's disease, which is a congenital abnormality.

In the causation of dolichocolon chronic constipation is of prime importance. The onset is often insidious, and the condition is not usually established till adult life is reached. When established, a triad of symptoms commonly occurs—constipation, excessive gas in the colon, and crises of abdominal pain. The constipation may be spasmodic, and does not yield to laxatives, or even energetic purgation. The excessive gas is not necessarily related to increased fermentation or putrefaction of bowel contents, but seems rather to be due to stasis and defective elimination of gas. The abdominal pain associated with dolichocolon varies in character, but is not related to food ; it is often exaggerated by walking or riding in a car, and in certain postures. It may be little more than discomfort, or severe and colicky, with nausea and even vomiting, as in a partial obstruction. Secondary symptoms may occur—dyspepsia, palpitation, sense of incomplete evacuation of the bowel, and even colitis, though the condition may persist for a long time without evidence of colitis. In the later stages the patient loses weight, is febrile, and may be icteric.

[5] *Quelques Dermatoses Communes de l'Enfance*. Par Dr. A. Boutelier. Paris: Gauthier-Villars et Cie. 1930. (Pp. 231 ; 28 figures. 30 fr.)

[6] *La Cryothérapie*. Par L. Lortat-Jacob et G. Solente. Paris: Masson et Cie. 1930. (Pp. 246 ; 38 figures. 35 fr.)

[7] *Le Dolichocolon*. Par M. Chiray, A. Lomon, R. Wahl. Paris: Masson et Cie. 1931. (Pp. 209 ; 44 figures, 26 radiographs. 40 fr.)

The authors have analysed twenty-eight cases in which a dolichocolon was demonstrated by *x* rays after an opaque enema, and illustrate their thesis with some excellent reproductions of radiograms showing redundancy of the whole or of parts of the colon. In the literature anything from 4 to 10 per cent. of cases examined with opaque enema show redundancy of the whole or of some segments of the colon, and the discovery of this condition does not necessarily lead to a useful result. Moreover, the treatment advocated by the authors—purgation and enemata—does not alter the anatomical condition, and so cannot be expected to improve the patient's health. The case records and illustrations are good, but the book is worth reading rather than studying.

INTERPRETATION OF BLOOD EXAMINATIONS

The making of haematological books is becoming almost a nuisance. Unfortunately the compilation habit is too easily acquired. *The Clinical Interpretation of Blood Examinations*,[8] by R. A. KILDUFFE, is compiled chiefly from American medical and scientific journals, and is intended to appeal to readers in and about Atlantic City. There are some sections which are not conceivably useful to any physician, but the greater part of the book will be read with interest and profit, especially those chapters dealing with the estimation of haemoglobin, with blood groups and transfusion, the classification and description of white cells, and the diagnostic and prognostic values of leucocytosis and leucopenia. The account of sedimentation tests seems disproportionally extended, and will be of doubtful interest to the busy physician. The serological tests for malignancy are of more historical than practical value, serving only to increase the size and weight of the volume. The text suffers from repetition, though that may perhaps help to underline rather than delay reading. This book is among the best examples of its class, and contains within one binding much sound information for those who have time for study.

SURGERY FOR NURSES

The small book of some four hundred pages, on *Surgical Nursing*,[9] by Dr. HUGH CABOT of the Mayo Clinic and Professor MARY DODD GILES of Vanderbilt University, will interest many practitioners as well as the nurses for whose instruction it is primarily intended. It is impossible in writing a book of this sort to draw a hard line between knowledge necessary for nurses and such knowledge as is purely surgical and to be found in the textbooks. Dr. Cabot has wisely allowed himself to roam in the fields of pure surgery in many parts of the book. These excursions render it all the more interesting to nurses and instructive to surgeons, who should profit by many hints on practical treatment of surgical conditions. Erysipelas is a disease of more importance in the United States than in this country, if we may judge by the space devoted to its treatment and nursing in this book. The instructions for the nursing of patients suffering from trigeminal neuralgia, before and after operation on the Gasserian ganglion, strike us as particularly useful. We cannot say as much for the part on fracture of the neck of the femur, in which the danger of hypostatic pneumonia is not dwelt on, as it is in the paragraphs on nursing after prostatectomy. The remarks on the necessity for early use of the catheter before distension comes on, after various injuries and operations in the pelvic neighbourhood, are evidently the outcome of experience and sound judgement, and should be taken to heart. Fractures are dealt with somewhat cursorily.

[8] *The Clinical Interpretation of Blood Examinations.* By Robert A. Kilduffe, M.D., F.A.S.C.P. London: H. Kimpton. 1931. (Pp. xvi + 628; 60 figures. 30s. net.)

[9] *Surgical Nursing.* By Hugh Cabot, M.D., C.M.G., F.A.C.S., and Mary Dodd Giles, B.S., R.N. Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 428; 123 figures. 14s. net.)

NOTES ON BOOKS

The demand for a fifth edition of *Clinical Electrocardiography*,[10] by Sir THOMAS LEWIS, little more than two years after the fourth, proves the continuing usefulness and popularity of this manual. No attempt is made to deal with academic problems or experimental work, the contents being limited to those electrocardiographic abnormalities which are likely to be met in clinical medicine. This electrical method of investigating rhythm and myocardial function has not reached the dead end that some would have us believe. The fourth edition was enlarged by the inclusion of a section on the electrocardiographic changes in coronary thrombosis, and the present volume shows a very different outlook upon bundle-branch lesions and premature beats than did the third. As Sir Thomas Lewis remarks in reference to the principal types of bundle-branch block, "which of these two types represents the human levogram and which the dextrogram has recently developed into a matter of debate." The trend of opinion, especially in the United States, forecasts a revolution in our interpretation of these and other electrocardiographic abnormalities. There seems little doubt that further editions of *Clinical Electrocardiography* will be demanded within the next few years. The lucid and precise exposition of future advances by Sir Thomas Lewis will be eagerly awaited by all clinicians.

The second edition of his work on sexual diseases,[11] by Professor ROBERT OTTO STEIN of Vienna, who was for many years assistant to Professor Finger in Vienna and Professor Jadassohn in Berlin, has been brought up to date by inclusion of the acquisitions to our knowledge since the first edition in 1921. The book therefore contains a description of lymphogranulomatosis inguinalis, the recent additions to the therapeutics of syphilis such as myosalvarsan and preparations of bismuth, and of new methods for diagnosing and treating gonorrhoea. Condyloma acuminatum, herpes genitalis, pseudo-syphilis, and ulcus vulvae acutum are discussed in the appendix. The text is liberally interspersed with coloured plates of wax models from the clinics of Professors Finger, Pirquet, and Knoepfelmacher at Vienna.

Sir JAMES CRICHTON-BROWNE, with his wonderful vitality, has followed up his popular "What the Doctor Thought," published a year ago, by *The Doctor's Second Thoughts*,[12] which date back at least as far as 1862, when the author was in Paris and collected some stories about Piorry's supreme faith in the diagnostic powers of his pleximeter. The numerous readers who know Sir James as the prince of after-dinner speakers will naturally expect a wealth of good stories in these recollections of Victorian, Edwardian, and Georgian times, and they will not be disappointed. Speaking at a dinner in London, he remarked that there was a specialty for every organ in the body except perhaps the umbilicus, whereupon Sir Samuel Wilks whispered to him, "You forget the Royal Naval Hospital." There are many interesting recollections of the men and manners of the past, and thus, though the first person singular is little in evidence, it is not difficult to get an idea of the veteran author's many-sided interests and friends.

In a handy little volume, entitled *The Medical Evidence before the Royal Commission on Licensing, 1930*,[13] Dr. COURTENAY C. WEEKS has ably summarized in seven chapters the medical evidence presented by sixteen medical witnesses from the various standpoints of history, social hygiene, physiology, psychiatry, therapeutics, legislation, and embryology.

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THE TRAINING OF THE OBSTETRIC SPECIALIST

In contemplating the establishment of a National Maternity Service it is generally recognized that this must be built upon the threefold foundation of general practitioners, midwives (or nurse-midwives), and obstetric specialists. A great deal of consideration has been given to the provision of general practitioners and midwives, especially to their original training as students and to their subsequent periodic re-education when in practice. It is time to face the question "How are the obstetric specialists to be provided?" Unless they are available, in large enough numbers and fully equipped for their work, the National Maternity Service will not yield the results which are expected of it. That obstetric specialists, adequately trained and in sufficient numbers, exist at the present time must not for a moment be assumed. Where are they to come from? It will probably be admitted by all who have given consideration to the matter that, generally speaking, the men who become consulting physicians, or surgeons, or specialists in this country are not, in fact, trained for their most responsible work except in a certain desultory and haphazard manner. The acquisition of certain diplomas, it is true, is regarded as essential; beyond this the requirements are almost entirely unspecified, and in so far as practical training is concerned there are no accepted standards. So little has practical training been valued in the past that it has on occasions happened that a great medical school has appointed to its staff a brilliant man who was, in fact, almost entirely inexperienced in the work of the department placed under his care. It is even conceivable that a university chair in midwifery might be filled by one who had never held a resident hospital appointment as an obstetric officer.

In midwifery the need for the intensive practical education of medical students has been repeatedly emphasized; it is even more important that the men who teach them should themselves have been adequately trained and taught. In a recent address by Professor Whitridge Williams of Johns Hopkins University the opinion has been expressed that it requires "four or more years of hospital residence to make a thoroughly competent practical obstetrician."[1] Even if this should be regarded as a hard saying it cannot be disputed that midwifery, in a peculiar degree, is a subject which can be learned only by assiduous devotion to the routine of hospital work, where alone familiarity can be acquired with the unforeseen emergencies and the rapid alternations from normal to abnormal, which form the salient features of obstetric practice. There are very few, if any, obstetric teachers, either in this country or in the United States, whose training before appointment had reached the standard suggested by Whitridge Williams. There are very few lying-in institutions in Great Britain and Ireland where one person can remain in residence as junior graduate for more than twelve months; the annual number of men who can receive even this extent of practical training is therefore strictly limited. The great bulk of the men and women to whom is committed the nationally important task of educating medical students in midwifery start with an inadequate practical equipment, and must strive to make themselves efficient as they proceed with their task. The perfunctory methods which have been tolerated heretofore will not suffice in the new era which is opening up before us. The bad training in midwifery of our students in the past has not been entirely due to the lack of bedside facilities; the shortcomings of the teachers and of the methods they have employed have played a part, probably an important part, in our inability to produce skilful obstetric practitioners, and in the consequent national failure to lower the maternal mortality rate. It is coming to be recognized that a lying-in institution requires continuous service, not only from the junior members of its staff, which it enjoys at present, but also from the senior members of long and wide experience. Under prevailing conditions it often cannot command the services of its senior members at the times when they are most urgently needed. Only when this grave defect in organization has been remedied will our lying-in institutions be able to measure themselves beside the great obstetric clinics of the Continent.

Apart from the obstetric teachers, a second class of junior obstetric specialists is required to work a National Maternity Service. These will be men in general practice who by training and by practical work have fitted themselves for the duty of acting as local consultants. Such men will naturally endeavour to secure one of the diplomas in midwifery which have recently been established. They must acquire their special practical training after graduation; but how and where is it to be obtained? Facilities for post-graduate instruction in midwifery are practically non-existent in this country at the present time, but it is assumed that a beginning will shortly be made by the projected British Post-Graduate Hospital and School. Generally speaking, the now existing opportunities for clinical teaching of midwifery are barely sufficient to meet the needs of training for medical students and pupil midwives. The provision of the additional facilities for post-graduate education which are now so urgently needed is a necessary preliminary to the launching of a National Maternity Service, and the generous allocation made for the Post-Graduate Medical School by the present Minister of Health shows that the Government is aware that the duty of making provision for post-graduate training is one which the nation itself must share with the medical profession and the voluntary hospitals.

These matters all have a direct bearing upon the problem of maternal mortality; to overlook them will be to envisage the problem incompletely, and to jeopardize the full success of a National Maternity Service when the time comes to put it into operation.

[1] *Journ. Amer. Med. Assoc.*, June 20th, 1931.

THE PROBLEM OF SUICIDE

The discussion on suicide at the Annual Meeting of the British Medical Association at Eastbourne has focused attention upon an important problem of everyday life. The social, forensic, and psychological aspects were mainly considered, as will be seen from the three opening papers published this week. Suicide is a many-sided topic, and lack of time doubtless forbade more than brief allusion to the cultural, ethical, and religious, and even the more truly medical and psychiatric points of view. Suicide we have always with us: the average number of successful suicides in England and Wales now reaches some 5,000 a year, or about 14 suicidal deaths every twenty-four hours. This figure usually causes great surprise to those who hear it for the first time. And the vast majority of the suicides are not in any ordinary sense of the word insane, *pace* Sir Hubert Bond—unless the act of suicide itself defines insanity, which by the present law, as Dr. East showed in his paper, it clearly does not. It is worth remarking in this connexion that only about 50 of the annual total of successful suicides occur in the certified insane. While 5,000 cases per annum is an alarming number, it is important to have Sir Hubert Bond's demonstration that, except possibly in the year 1930, there has been no substantial increase in the number of suicidal deaths in this country. The experience of other countries, such as Germany, warns us, however, to expect an increase in times of extreme financial depression, such as the present. On the other hand, the number of attempted suicides reported to the police in England and Wales has risen considerably in recent years, and it is quite certain that the number so reported is far short of the real total.

The discussion will have served a very useful purpose if it draws the attention of the medical and legal professions to three or four main points: the state of the law in the matter, and the mode of execution of the relevant statutes; the absence of any systematic provision for the care and treatment of those who attempt to take their own lives; and the need for technical investigation, along psychological and social lines, of the causes of suicide, attempted or accomplished. The last point was illustrated by the paper of Dr. Crichton-Miller on the psychology of suicide, which is not only of interest in itself, but stimulates the reader to an awareness of the need for exact and individual research on this point. It is a curious fact that such a humane field of research on a contemporary problem should have been so neglected as to make it impossible to find a comprehensive book on the subject written in this country for many years past. Research is not, however, an essential preliminary to the devising of more satisfactory methods than exist at present for dealing with the person who has attempted suicide. Magistrates, police court missionaries, and hospital chaplains do nobly and well in this matter; but there is no definite organization, and as a rule there is no recognition of the fact that a medical man with special training in mental aberrations of all degrees, aided by a psychiatric social worker, would be a highly useful link in a co-operative advisory chain for the rehabilitation and future stabilization of the person who has attempted suicide. Psychiatrists believe that they have a definite social contribution to make in this way, if the chance were more often afforded.

Steps in this direction would be facilitated by a change in the legal attitude; although again the latter—such is the wisely elastic practice of the law—is not a necessary preliminary. Nevertheless, the law regarding suicide is productive of various anomalies, some of them more hurtful than advantageous. It is a familiar paradox, but worth propounding again, that if a man succeeds in committing suicide he is nearly always declared insane, and therefore irresponsible; whereas, if he fails he is nearly always considered responsible, and is liable to imprisonment. It is true that imprisonment is now used, as Dr. East showed, in a kindly and protective way, but it is illogical nevertheless; and there is very little doubt that a period of sojourn in a mental hospital would be far the more beneficial procedure, for although most persons who have attempted suicide are by all ordinary criteria sane, they do as a rule suffer, as Sir Hubert Bond pointed out, from some kind of mental disorder. It is true, also, that some contend that the purpose of the law in treating successful suicide as a felony is to deter prospective suicides from their fatal act; but this is surely a psychological absurdity. If religious scruples are absent (and it is interesting that the suicide rate tends to be lowest in Roman Catholic countries and districts) then a legal deterrent is not likely to avail against an act committed as a rule only in the extremes of personal adversity, real or imagined. Again, when a suicide has been successful, it is not unequivocally comforting to the relatives (except from the insurance point of view), nor does it always represent the actual truth, that a verdict of "suicide while temporarily insane" should be returned. But in the present state of the law of England, which regards the act as a crime in a sane person, and demands in every instance a coroner's inquest, any other verdict is in most cases necessarily more unkind. In all these matters the debate at Eastbourne calls attention to the need for reconsideration and reform.

CLINICAL TRIALS OF NEW REMEDIES

The Medical Research Council announces that it has appointed a Therapeutic Trials Committee to advise and assist it in arranging for properly controlled clinical tests of new products that seem likely, on experimental grounds, to have value in the treatment of disease. The members of the committee are: Professor T. R. Elliott, F.R.S., physician to University College Hospital (chairman); Sir E. Farquhar Buzzard Bt., Regius Professor of Medicine, University of Oxford; Dr. H. H. Dale, Sec.R.S., Director of the National Institute for Medical Research; Lord Dawson of Penn, President of the Royal College of Physicians of London; Professor A. W. M. Ellis, physician to the London Hospital; Professor Francis R. Fraser, physician to St. Bartholomew's Hospital; Sir John Parsons, F.R.S.,

ophthalmic surgeon to University College Hospital ; Dr. J. A. Ryle, physician to Guy's Hospital ; Sir John Thomson-Walker, consultant urologist to King's College Hospital ; Mr. Wilfred Trotter, F.R.S., surgeon to University College Hospital ; and Professor D. P. D. Wilkie, surgeon to the Royal Infirmary, Edinburgh. The secretary is Dr. F. H. K. Green. Conditions have been the subject of discussion and agreement between the Medical Research Council and the Association of British Chemical Manufacturers, under which the Therapeutic Trials Committee will be prepared to consider applications by commercial firms for the examination of new products, submitted with the available experimental evidence of their value, and will arrange appropriate clinical trials in suitable cases. The committee will work in close touch also with the existing Chemotherapy Committee, which is engaged for the Medical Research Council in promoting researches aimed at the discovery and production of new remedies. The Therapeutic Trials Committee will invite suitable experts in particular branches of medicine or surgery to undertake the clinical tests of preparations accepted for trial. The reports upon the results will be published under the authority of the committee. We welcome this announcement, on behalf of the profession generally. Machinery for securing an impartial and authoritative verdict on new remedies has long been an urgent need.

THE NATIONAL ECONOMY REPORT

The report of the Committee on National Expenditure was issued on July 31st as a Blue Book.[1] Five of the seven members recommend drastic economies which, if adopted by Parliament, would effect a total cut of more than £96,500,000. Of this sum £66,500,000 would be saved out of the cost of unemployment insurance, £13,600,000 out of the education estimates (mainly in respect of teachers' salaries), and £7,865,000 out of the Road Fund. These are large figures ; but the number of persons concerned is in each instance correspondingly large. Other retrenchments include £2,599,000 on the pay of the Defence Services of the Crown (including the medical branches), £1,000,000 under National Health Insurance, and postponement of an Exchequer grant of £1,500,000 for the development of a National Maternity Service. Everyone knows that sacrifices all round are needed to cope with a national emergency, and everyone knows that most of the sectional interests affected will resist an attack on the standard of life of their members. The Minority Report agrees to the proposed cuts in the pay and pensions of the fighting forces, and to the cut of a shilling in the capitation fee of insurance medical practitioners, but it dissents from the recommendations in respect of unemployment insurance and from the suggestion to withhold an annual State grant for extension of maternity services. The Cabinet has appointed a subcommittee of five to consider these reports during the parliamentary recess, and the Chancellor of the Exchequer is expected to make a statement to the House of Commons when it reassembles. In the meanwhile, political parties and organized bodies representing the interests concerned will no doubt have something to say. Beyond observing that the medical profession has never been behindhand in putting the public interest before its own, we refrain from comment at this stage, and will merely quote para. 409 of the Majority Report, which appears to express the opinion of all the members of the Committee on National Expenditure:

"We are . . . of the opinion that the payments to the doctors are too high in present circumstances. These consist of a flat capitation allowance of 9s. per annum for every insured person in a doctor's list, in addition to mileage allowances in rural areas, amounting, in the aggregate, to £250,000, and equivalent on the average over the whole of the medical panels to about 4½d. per insured person. It is common knowledge that the standard of remuneration of the medical profession has been greatly increased as a result of the Health Insurance Scheme, and there has been growing difficulty in filling salaried medical posts under the Government and the local authorities at rates of pay corresponding to those in other classes of public service. In present circumstances we should not regard a reduction of the capitation rate to 8s. as unreasonable. This would represent a saving to the scheme of about £750,000, and enable it to meet the cost of central administration to this additional amount."

[1] Cmd. 3920. London: H.M. Stationery Office. 1931. (4s. net.)

CHOLESTEROL IN MENTAL DISORDERS

Attention has been directed in recent years to the possible relationship of changes in cellular metabolism to morbid processes, such, for example, as malignant disease. In the case of mental disorders such a factor cannot be lightly disregarded in view of the enormous amount of oxygen consumed by the brain of a waking animal—namely, 360 mg. per minute, as compared with 4 mg. by the skeletal muscles, and 28 mg. by the salivary glands. In the brain, moreover, there is present a very large percentage of phospholipins, substances intimately associated with the activation of vital processes, and the cerebral cholesterol content is in great excess as compared with that of other tissues. In view of these facts Dr. B. H. Shaw, medical superintendent of the Staffordshire County Mental Hospital, in collaboration with Dr. J. S. Sharpe, has investigated the significance of cholesterol and lecithin in metabolism.[1] Among the facts demonstrated was an inhibiting influence of cholesterol on haemolysis, and its activation by lecithin ; also the presence of a thermolabile ferment in the serum, which activated haemolysis, and which appeared to vary directly with the blood cholesterol content. Cholesterol was shown to be an influential controlling factor in oxidation processes, its power being best exercised in relation to lecithin when the relative amounts of these two substances were those normally present in blood. Lecithin was also shown to have a power of attracting potassium ions, and the presence of cholesterol in the cell membrane definitely retarded the diffusion of this metal. In certain states of mania, hypercholesterinaemia was demonstrated, bringing about anoxaemia of the tissue cells, though with relatively less destructive effect on the neurons, since ferment action was also inhibited. The brains of general paralytics were found to be remarkably deficient in cholesterol, and the authors suggest that some deficiency of this kind may in certain cases of syphilis have a bearing on the initiating of infection of the central nervous system. In contrast with the manic states, the blood cholesterol content in dementia praecox is greatly diminished. As regards treatment in such cases

[1] *Journal of Mental Science*, January, 1931.

of cholesterol deficiency, the obvious indication is to restore the normal blood cholesterol as quickly as possible and before the neuron is irretrievably damaged. In pyretotherapy the increased body temperature tends to mobilize the cholesterol, increasing it temporarily in colloid form in the body fluids. A high protein diet was found to have no effect in stimulating metabolism in dementia praecox, and in such cases the authors are endeavouring to increase the cholesterol blood content directly by parenteral injections of this substance dissolved in olive oil, and also by feeding with cholesterol emulsions and colloids. They report the case of a woman, aged 25, suffering from dementia praecox. On admission her blood cholesterol content was 0.03 gram per cent. Parenteral injections of 0.25 gram cholesterol in olive oil were given every third day, and a special diet was devised with a view to promoting cholesterol production. After a month she was given by the mouth daily doses of half a gram of cholesterol in emulsion, and this treatment was continued for a further two months. Steady and continuous mental improvement ensued, with synchronous increase of the blood cholesterol, which regained the normal figure at the end of three months. She then appeared to have recovered completely, and has remained well since. The etiological interest of this research is undeniable, and it gives further support for the more careful consideration of possible biochemical factors in mental disorders.

PREVALENCE OF POST-VACCINAL ENCEPHALITIS

According to the minutes of the last session of the Permanent Committee of the Office International d'Hygiène Publique, held in Paris in May,[1] post-vaccinal encephalitis seems to be definitely on the decrease in Great Britain, Germany, and Holland. Only a few cases have occurred in Great Britain since the summer of 1930. In Germany, where each case notified is seen by a neurologist, and then examined by a special commission, 9 cases and 1 doubtful case were verified in 1930, against 20 and 22 in the two preceding years, 2 to 2½ million vaccinations having been done annually. In Holland no fresh case has occurred since May, 1930, although about 25,000 vaccinations have been done. From 1924 to 1931 the average was 1 case among 4,695 vaccinations, and 1 death among 16,000 vaccinations, but among children under 2 years of age the proportion was only 1 case to every 25,000 vaccinations. As in England, primary vaccinations of children at school age, which are obviously the most dangerous, are much less frequent than formerly. In the United States very few cases were known before 1928; in the last three years there have been 40, of which 18 were in 1930. Five of these cases occurred simultaneously in a town among children about 6 years of age, vaccinated by means of one insertion only. One case was notified at Stamboul in Turkey out of 1,000 vaccinations. Thirty cases of encephalitic syndromes following various infectious diseases were notified in Great Britain in 1930. Seventeen cases of acute disseminated encephalomyelitis occurred spontaneously in Poland, in which the anatomo-pathological lesions are said to be the same as those of post-vaccinal encephalitis.

[1] Paris: 195, Boulevard Saint-Germain.

SOUTH LONDON

An exceptionally interesting and valuable survey of social conditions and activities in the poorer parts of London will be found in a small volume by the Bishop of Southwark entitled, *In the Heart of South London*.[1] It is valuable because it contains the results of direct and unbiased observations by one who is exceptionally fitted by knowledge and experience to observe truly, to infer correctly, and to suggest wisely. It is interesting because of its straightforward, smooth, and attractive style, and of its pervasive human sympathy and spiritual appeal. The purpose of the book is to give some account of the social conditions in South London, with special regard to the evil effects of overcrowding on the health and happiness of those who live there. South London for this purpose means the district on or near to the right bank of the Thames from Wandsworth to Woolwich. The individual instances given are all taken from that district, and this is true also of the actual social agencies described; but of course the general description of the conditions of life and conduct, and the problems arising out of these, apply to corresponding parts of other metropolitan districts, and, indeed, to many provincial towns. The book, therefore, should make a wide appeal. Dr. Garbett fully and gratefully acknowledges all that has been done towards the amelioration of distress and the betterment of social evils by communal, municipal, religious, and private agencies. He specially mentions in more than one place the work of the medical officers of health. In spite of a really remarkable improvement, however, it is evident that appalling conditions still prevail in many districts, and that these affect many thousands of human lives in a way devastating both to health and to morals. The Bishop of Southwark tells of these effects, in successive chapters, on the children, the adolescents, the adults, and he shows that in all cases the root of the matter is in overcrowding, and the solution in dealing suitably with the housing problem. His chapters on this subject are powerful, sane, reasonable, and full of sensible and practicable suggestions. The book gives a wide and true, but of course not exhaustive, survey of its subject. It is to be hoped that it will be widely read, and that it will be a means of stimulating the social sympathy, personal interest, and financial help which are so much needed.

WOAD

The only association of this word in the minds of most people is with the ancient Britons, as described by Caesar in his Commentaries, where he tells us that they painted themselves blue with woad in order to appear more horrible in fight. Those, however, who have read *The Woad Plant and its Dye*,[2] by the late Dr. Jamieson B. Hurry, must realize that the product of the woad plant, or *Isatis tinctoria*, was for hundreds of years of the greatest commercial importance. The dye prepared from it was almost the only blue used for colouring cloth, until it was displaced by the oriental indigo. Whole districts of France and Germany were enriched by its culture, and in Italy and England the

[1] *In the Heart of South London*. By the Right [illegible] F. Garbett, D.D., Lord Bishop of Southwark. London and New York: Longmans, Green and Co. 1931. (5s. 6d. net.)

[2] *The Woad Plant and its Dye*. By the late [illegible], M.D. London: Milford, Oxford University Press. 1930. (21s. net.)

plant was widely grown until the beginning of the nineteenth century. How the Britons and Picts came to know that this yellow-flowered member of the great order of Cruciferae could be made to provide a blue pigment is a mystery. Probably they did not prepare woad themselves, but obtained the pigment ready for use from the Continent. It was only by a process of fermentation of the powdered leaves that the blue dye was obtained.

> "Anything green that grew out of the mould
> Was an excellent herb to our fathers of old,"

and woad was no exception to this rule. It is to be found, judging from the wealth of quotations given by Dr. Hurry, in almost every herbal or pharmacopoeia until the eighteenth century, when James, in his medical dictionary published in 1745, wrote:

"Woad is restringent [that is, astringent] and drying and sometimes us'd to stop both inward and outward bleedings. It is, also, applied with good success, for Ruptures and Strains and to strengthen the Joints. It is an ingredient in the Emplastrum ad Herniam. It is esteemed an excellent vulnerary."

Nowadays, whether as a medicament or a dye-stuff, woad is obsolete, but Dr. Hurry, with great erudition and almost incredible industry, has rescued it from mere oblivion in this book, into which we think he has put all that is known or can now be known of the history of the plant, the methods of preparing the dye, the laws which in sundry lands regulated its sale and use, and the taxes and customs which were levied upon it. We deeply regret that the author's death, at the beginning of last year, sets *finis* to the list of his works on medical subjects, and on the history and archaeology of Reading, which he loved so well.

INFANT MORTALITY IN SOUTH AMERICA

Following a conference held at Montevideo in 1927, inquiries have been made into the causation and prevention of infant mortality in certain parts of South America. The results obtained were discussed at a second conference held at Lima last year, and now form the subject of a League of Nations Report by Professors R. Debré and O. E. W. Olsen.[1] Urban and rural districts in the Argentine Republic, Brazil, Chile, and Uruguay were investigated, and the data obtained carefully analysed, each report being fully discussed in order to throw light on the problems peculiar to each country. The results of European inquiries were also before the conference as a sort of background, although direct comparisons were not attempted. Statistics, economics, ethnology, and the medical causes of infant mortality were the main subjects discussed. Statistical returns were unsatisfactory for various reasons, including the fact that in certain districts the practice of secret burial still exists. Social and ethnical considerations were complicated by the question of illegitimacy, the number of illegitimate children being very high in the poorer quarters. Many couples live together without contracting legal marriage, and, in some districts, they are even more numerous than those legally married. Children in such homes, though illegitimate, are brought up under much better conditions than the children of prostitutes, and this has to be borne in mind in making deductions. Housing and climatic conditions deserve further study, but undoubtedly the most serious factors affecting infant mortality are ignorance and a low level of education, as will be seen when the principal medical causes of death are reviewed. The three main groups of deaths are: (*a*) from digestive disorders; (*b*) from infectious diseases, including diseases of the respiratory system; and (*c*) death during the obstetrical period. The first group accounts for the highest proportion of deaths, due, undoubtedly, to the combined effects of climate, unsuitable diet, bad nursing, and an inadequate supply of good milk, while the methods and material of artificial feeding were found to be deplorable. Respiratory complications of whooping-cough and measles are common, and favoured by the climate on the Pacific coast, where very cold nights follow very hot days. The general conclusions of the conference are set out under several headings. Most stress is laid upon co-ordination between central authorities and local enterprise, whether private or public, for the provision of child welfare and maternity institutions. Various economic and legislative measures, concerned with maternity benefits in industrial areas, to encourage breast-feeding and to prevent the abandonment of the child under the pressure of poverty, are also recommended.

[1] League of Nations Health Organization, No. CH. 938 (1). London. Allen and Unwin, Ltd. (1s.)

BOARD OF CONTROL: ADVISORY COMMITTEE

The Board of Control, with the approval of the Minister of Health, has appointed the following to advise the Board upon questions arising in connexion with scientific and ancillary mental health services: Mr. L. G. Brock (chairman), Sir Hubert Bond, M.D., Mr. Robert Bruford, Mr. W. E. Lovsey, Dr. T. S. Good, Dr. Adeline Roberts, Mr. J. C. Grime, and Professor J. Shaw Bolton, M.D., with Mr. P. Barter as secretary. The Mental Treatment Act, which came into operation on January 1st, confers upon local authorities powers to provide for out-patient treatment, and for the after-care of mental patients, and, subject to the approval of the Board of Control, to undertake or to contribute to research in regard to mental illness. The Board has appointed the Advisory Committee to assist it in the consideration of schemes of research submitted for the Board's approval, and in regard to such questions as the organization of social services in connexion with out-patient treatment and after-care, on which local authorities may seek the Board's guidance. On technical questions relating to research the Advisory Committee will have the expert advice of members of the Medical Research Council's Committee on Mental Disorders.

RECOGNITION OF DR. COX'S SERVICES

The executive committee appointed at Eastbourne on July 18th (see *British Medical Journal*, August 1st, p. 199) met on the following day, when the resolutions adopted by the general committee were considered in detail. It was decided that the appeal for subscriptions should be issued in October next, and that an account should be opened with the Tavistock Square Branch of the Westminster Bank, in the name of the honorary treasurer of the fund, Mr. N. Bishop Harman. A sub-committee was appointed to choose an artist to paint the portrait of Dr. Cox.

THE PATHOLOGICAL MUSEUM AT EASTBOURNE

The Museum Committee is to be congratulated on the excellent way in which it arranged the large number of exhibits, which consisted of about eight hundred specimens, illustrations, charts, photomicrographs, and x ray plates They were grouped as far as possible in sections corresponding to the Sections of the Annual Meeting, so that it was easy to find specimens illustrating the various papers given The instructive series in the first room was lent by the Princess Alice Memorial Hospital, Eastbourne, and the East Sussex County Mental Hospital, Hellingly Perforation of the arch of the aorta by tuberculous ulceration, a brain from a case of juvenile general paralysis of the insane, and a portion of stomach from a case of suicidal cyanide poisoning were particularly interesting On the surgical side, the collections of specimens, drawings, photomicrographs, fractional test meal charts, and *x*-ray photographs illustrating various types of carcinoma of the stomach, formed a fairly complete unit—a graphic commentary on all aspects of this disease On this side, too, there were specimens from the local hospital, among which was a carcinoma of the appendix from a girl, 14 years of age

The *x* ray photographs were especially well displayed and included a series of pyelograms illustrating the excretion and ureter catheter method, and another the recent diagnostic methods in renal affections A very clear and demonstrable collection of ventriculograms, with excellent descriptions and reasoned diagnosis, was shown An exhibition of radiograms of the chest in cases of silicosis was of general as well as of special interest, since it included specimens from patients working in eighteen different occupations, varying from asbestos workers to pearl cutters, and from gold miners to gannister workers A series of exhibits illustrating physiological changes in the sex organs of monkeys was one of the features of the obstetric and gynaecological section The injected transparencies of the mammary glands of monkeys were excellent examples of the advance made in the methods of preparing specimens for demonstration It was a pity that more information did not accompany the specimens for although it was obvious enough that the mammary glands varied in size, there was no note of the size of the monkeys from which they were obtained In this section there was also a fine assembly of mounted specimens water-colour drawings, and microscope slides illustrating endometrioma of the pelvic organs Here too, it was refreshing to find that the good old diagnosis of adenomyoma has not been entirely abandoned by all gynaecologists

The feature of the pathological collection was a series illustrating infarction of the myocardium Here there was an exceptionally good group of skiagrams showing the coronary arteries in health and disease, and with them a description of the apparatus used for injecting these vessels Similar x ray photographs of a normal and of an arterio sclerotic kidney demonstrated the wide use of this particular method Celloidin casts of coronary arteries and a series of hearts and photomicrographs showing infarcts of the myocardium and their results excited general interest Specimens showing necrosed tissue the granulation tissue reaction to this, fibrosis, aneurysm formation, and rupture with and without aneurysm of the myocardium, were also exhibited in this collection In a series of normal and diseased adrenal glands were two associated with virilism—in one there was nodular, and in the other diffuse, adrenal hyperplasia an adrenal melanoma was another rarity in this group Recent experimental work on cancer was clearly demonstrated in a small exhibit of specimens, photomicrographs, charts, formulae, and graphs Other exceptional or interesting specimens in this room were a carcinoma of duodenum, a mottled stomach from a case of melancholia, and six photomicrographs taken with the 'super microscope' In the public health section in addition to the radiograms of silicosis already referred to, there was an exhibit by the National Association for the Prevention of Tuberculosis, and a series of photographs illustrating the production and distribution of milk from non reacting cows Aneurysms of cerebral arteries formed the bulk of the exhibits in the section of neurology In the oto rhino-laryngological section were a number of dissected specimens of the temporal bone, and one showing an impacted dental plate in the upper part of the oesophagus Coloured drawings, and antique and modern ophthalmological instruments made up the greater part of the ophthalmological section The dermatological section contained numerous photographs of skin conditions, including varicose ulcers, and illustrations of the use of thalium acetate in the treatment of ringworm of the scalp This section was also distinguished by good coloured transparencies Seven groups of *x* ray photographs showing abnormalities of the upper end of the femur in childhood and their effects formed the principal exhibit in the section of orthopaedics Charts and posters were shown in sections of hydrology and medical sociology

In the past the museums of the majority of medical schools have been for the most part uninspiring collections of more or less unrelated pickled specimens, coloured poorly or not at all, suspended in round jars which distorted or exaggerated their outline Many of them were in the hospital museum for no other reason than the wish of a clinician to perpetuate his triumph or in a few cases to point the moral of his mistake Recently this state of affairs has been gradually giving place to order arrangement, and more enlightened methods of display It is in this connexion that temporary museums such as that at Eastbourne, showing the latest *methods of colour preservation mounting* and *general* arrangement, are useful The inclusion of photomicrographs photographs, *x* ray photographs, charts, and diagrams with the bottled specimens can do much to add interest and life to any collection The casts and the *x* ray photographs of the coronary arteries, the injection of mammary glands, and subsequent clearing and bulk staining were all evidence of how a little ingenuity can make obscure specimens demonstrable The specimens arranged in series, such as those of myocardial infarction, illustrated how clear an idea of a process can be obtained from such a sequence It is perhaps too much to hope that museums of the future will contain only fully labelled specimens, supported by photomicrographs, pictures, x ray plates and charts but a corner might be devoted to this kind of collection even if the major part is full of unlabelled pots used as pegs for students to guess at and over which teachers and examiners can become facetious If the museum at Eastbourne assists in raising the standard of medical museums generally it will prove to have been something much more than an interesting feature of this year's British Medical Association meeting

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The fifty sixth annual report of the Mission to Lepers deals with the year 1930 and is entitled A record of privilege In addition to a review of the progress made in different parts of the world in the treatment of lep— —in which it is mentioned that the work of the M— now extends to twenty countries and is being ca— at over 100 centres—illustrations are given of— lines along which it is hoped to develop further The note of cheerfulness which characterizes the report would seem to be well justified

THE SECTIONS

SUMMARY OF PROCEEDINGS

(Continued from page 217)

SECTION OF MEDICINE

Thursday, July 23rd

VARIETIES OF SECONDARY ANAEMIA AND THEIR TREATMENT

At the second meeting of the Section Dr. A. DEANE (Eastbourne) was in the chair.

Dr. L. J. WITTS, in opening the discussion, confined himself to a consideration of the clinical entity, chronic microcytic anaemia. In an analysis of 183 cases of anaemia at Guy's Hospital 26 per cent. fell into this group. This was a condition far more common in women than in men, and largely confined to the reproductive period, from 20 to 50 years of age. It was characterized by a low colour index, a negative van den Bergh reaction, with a slight degree of splenomegaly in 30 per cent. of the cases. Glossitis was present in 50 per cent., koilonychia in 25 per cent., dysphagia in 15 per cent., and achlorhydria in 81 per cent. The achlorhydria preceded the anaemia, and might be a familial characteristic; it persisted after the cure of the anaemia. The treatment was by massive dosage of iron; Blaud's pill 30 grains a day, or iron and ammonium citrate 90 to 120 grains a day, cured practically every case; the larger the dosage the more rapid the cure. Transfusions were to be used only in cases of emergency. As regards other methods of treatment that had been tried, removal of septic foci alone had only been successful in 5 per cent. of cases; liver had been of no value, and hydrochloric acid was no good as regards the anaemia, though it benefited the general condition. Relapses occurred in 50 per cent. of cases two years after treatment ceased. Lack of success in treatment was due to too small a dosage, or too short a duration of treatment. Dr. Witts gave a warning with regard to proprietary medicines; almost all of those which he had tried contained far too little iron, and were quite useless in the treatment of this condition. In giving iron by injections very large quantities were necessary, and were very painful.

Professor STANLEY DAVIDSON described a series of cases showing the effect of massive dosage of iron in cases of secondary anaemia. In addition to its use in the type of case referred to by Dr. Witts, he demonstrated its value in the preoperative treatment of cases of gastric ulcer and malignant disease. In cases where the anaemia had been treated before operation the operative risk was appreciably less. He also pointed out that the same lines could be adopted in quite young children; he had given 30 grains of reduced iron daily to children of 1 year and less with the most beneficial result. A rise in the reticulocytes was not to be expected, nor did it occur with iron treatment. With regard to simple achlorhydric anaemia, [illegible] were the returns were unsa[illegible] to the difficulty in diagnosis between including the fact that in certain [illegible]ion of all the systems of secret burial still exists. Social [illegible]isease before arriving siderations were complicated by illegitimacy, the number of illegitimate[illegible] classification of very high in the poorer quarters. Mar[illegible] their response to together without contracting legal mar[illegible] which responded some districts, they are even more numero[illegible]liopathic micro- legally married. Children in such hom[illegible]rhage, chronic illegitimate, are brought up under much bet[illegible] Dr. Vaughan tions than the [illegible]ildren of prostitutes, and thi[illegible]er haemor-

[1] League of Nations [illegible] Health Organization, No. CH.[illegible]ted with London, Allen and Unwin [illegible]. (1s.)

massive iron dosage. The treatment gave rise to no increase of pain or other untoward symptoms. (2) Secondary anaemia reacting to large doses of iron and liver. There were those due to chronic haemorrhage, starvation, deficient dietary in children, past sepsis, and carcinoma. (3) Secondary anaemias responding to vitamin C, of which anaemia due to scurvy was the outstanding example. (4) The anaemias benefited by arsenic—for example, myeloid leukaemia. (5) Those benefited by transfusion—for example, aplastic anaemia and erythroblastic anaemia. Professor HENRY MOORE (Dublin) gave further support from clinical experience to the value of massive iron treatment in the type of anaemia described by Dr. Witts. He drew attention to the association of this type of anaemia with diabetes and hyperthyroidism, and pointed out in this connexion that achlorhydria occurred with undue frequency in both these conditions. Dr. ASTLEY CLARKE (Leicester) mentioned the great value of insulin given with glucose in the extreme forms of anaemia to tide over a few days of danger. He also recorded a case of pernicious anaemia treated with dramatic success by beef-muscle incubated with human gastric juice. Dr. FREWEN MOOR (Westgate-on-Sea) spoke of the anaemias associated with high blood pressure, and asked Dr. Witts for information on the effect of ultra-violet light. In his experience this form of treatment, if it was going to be successful, always showed its effect after one or two treatments. Dr. GEORGE GRAHAM reminded the meeting that ferrous salts were much more efficacious than ferric, and advised that Blaud's pill was best given in powder. Old pills were frequently passed unchanged in the stools. Dr. E. P. POULTON gave further evidence on this point. Dr. WATERHOUSE asked for information as to the blood volume in Dr. Witts's cases. Dr. HUTCHINSON (Worthing) described the beneficial effect of iron treatment in cases of anaemia in varicose ulcer, acute eczema, and hyperpiesia. In one case, where the blood pressure had been consistently in the neighbourhood of 200, after iron treatment the pressure had come down to 140, and remained about that level. Professor MEYER RABINOWITZ (New York) spoke particularly of the anaemia associated with nephritis. In his experience it was found in acute nephritis with hydraemia, and in chronic nephritis with nitrogen retention; in the latter group the anaemia might be of the pernicious type, and responded to liver treatment. Dr. J. EASON (Edinburgh) mentioned the secondary anaemia due to syphilis, and drew attention to the frequent association of myxoedema with microcytic anaemia, and asked Dr. Witts whether, in view of the frequent association of myxoedema and achlorhydria, the hypothyroidism might not possibly be the basal factor. Dr. RUSSELL emphasized that Blaud's pills must be fresh. Dr. R. A. YOUNG spoke of the use of copper. He had given 1/8 grain of copper in a pint of water daily to one patient with success, and thought that injections of collosol copper were of some value in the secondary anaemias of malignant disease. Dr. WITTS replied to many of the questions put to him.

SECTION OF SURGERY

Thursday, July 23rd

RECENT DIAGNOSTIC METHODS IN RENAL AFFECTIONS

At a meeting of the Section of Surgery, with the President, Mr. CECIL A. JOLL, in the chair, Mr. R. OGIER WARD opened the discussion on recent advances in diagnostic methods in renal affections, with the paper printed in full last week at page 175.

Dr. E. J. H. ROTH emphasized the importance of the radiologist as a link in the clinical chain formed by the surgeon and the pathologist. He said that radiological examination combined with surgical procedures should

be carried out in a special radiological theatre, and that a special table was also essential. Photographs illustrating the new table designed for the radiological department of St. Peter's Hospital were shown. Radiograms could be taken in the erect position by means of this table, which was a combined radiological and urological couch. The modifications of technique made necessary by ascending and descending pyelography were discussed in detail. The contrast shadows cast in these procedures were necessarily of a relatively faint density, and adequate preparation of the patient was imperative.

Mr. R. J. WILLAN (Newcastle) said that intravenous pyelography was still in its infancy, and that he had not yet full confidence in its use. Renal function tests were first carried out in all cases before excretion urography was performed. The speaker had not obtained such good results with abrodil as with uroselectan, but thought that possibly he had not had photographs taken soon enough after injection. He had never seen any ill effects from pyelography or urography—only occasional flushings in patients after the use of uroselectan. He then showed a series of eight completed cases which had been investigated both by uroselectan pyelography and by excretion urography, and which had been followed by operation. They included hydronephrosis, new growth of the kidney, congenital cystic kidney, and tuberculous kidney. The usefulness of excretion urography was ably illustrated by these cases. In conclusion, he said that excretion urography was very useful in cases where urethral catheters could not be passed. Mr. KENNETH HERITAGE said that while they had not yet reached the ultimate in the employment of excretion urography, from its use had crystallized out several conditions where it is of paramount value. In renal tuberculosis, hydronephrosis, and ureteric obstruction this was the case. Previous speakers had shown a very excellent and instructive series of urograms well illustrating positive findings. He would like to mention the importance of recognizing and assessing negative findings. It had frequently been said that a normal kidney might on occasion inexplicably fail to give any excretion shadow on a series of radiograms. To explain this it had been suggested that the kidneys might work alternately. Other more bizarre explanations had been put forward. If, however, it was a fact that a normal kidney might give no shadow, then, as Professor von Lichtenberg had said, the very foundations of excretion pyelography were shaken. But this was not so. In his experience, in every case in which no shadow had been seen, there had been ample explanation of this fact later, and one had often wondered at the tenacity with which a diseased kidney continued to secrete the drug. This was no doubt due to glomerular activity. Faulty preparation and technique might explain many apparent negative results. He regarded preliminary fluid restriction as important, and always took an early film five minutes after the injection, under light abdominal compression with the Potter-Bucky belt. The value of excretion urography in renal tuberculosis was well instanced by several cases. Mr. J. F. DOBSON said that at first he was disappointed at the absence of clearness in the outline of the shadow produced by uroselectan, but later appreciated the extreme value of this method. Excretion urography did not supplant infiltration pyelography, but was a very useful ally. He did not think that this new method was so certain in the diagnosis of malignant disease as the older method of procuring photographs of the renal pelvic outline. Excretion urography was of great value in tuberculous disease of the kidney, especially in bilateral cases. He was of the opinion that it was dangerous to perform bilateral simultaneous ascending pyelography in cases of tuberculosis. In the future he believed that intravenous urography would be practised as a routine, in the same way as a complete *x*-ray investigation. Dr. PHILLIPS quoted a case of hydronephrosis situated in the female pelvis, which was diagnosed by means of excretion urography. Mr. A. H. BURGESS said he thought that ascending and descending pyelography were better terms than those used by the previous speakers. He agreed with Mr. Dobson that bilateral pyelography by instrumentation was very dangerous in cases of tuberculous disease, in which descending pyelography was much safer. The main advantage of the excretion method was that the shadows seen were the result of the kidneys working under their usual physiological conditions, and that their true physiological function was thereby estimated. Mr. VAUGHAN HUDSON referred to a case of Dietl's crisis investigated by this method. No shadow was seen immediately after an attack, but was only obtained by injecting another dose of uroselectan some time later.

The PRESIDENT said that the position of descending pyelography was assured as a means of investigation. He thought that the excretion method would be of great service in controlling the results of operation such as nephropexy, etc.

Mr. OGIER WARD, in reply, said that healthy kidneys usually showed a shadow, but that there was a risk of missing it, since the shadow was only faint. This was very easy to do, especially in fat people, in cases badly prepared, and when the photograph was taken too late. He considered that the term "excretion urography" was the best term to use for this method.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Thursday, July 23rd

MENORRHAGIA NOT DUE TO UTERINE DISEASE

The subject chosen for consideration by the Section at the second session was the causation and treatment of menorrhagias not due to uterine disease. The discussion was opened by Dr. A. S. PARKES with a paper on the physiological aspects of menstruation. Dr. Parkes took up the standpoint of the experimental physiologist, and in an endeavour to homologize the menstrual cycle of the primates with the oestrous cycle of the lower mammals first considered certain of the fundamental processes involved in the latter. He said that all Old World monkeys appeared to menstruate, and to have a cycle essentially comparable with that occurring in the human. It was necessary to suppose that whereas the pre-menstrual development of the uterus was dependent upon the presence of the corpus luteum, the actual factor causing necrosis and breakdown of the epithelium was not set in action by the atrophy of the corpus luteum, though operating at the same time, and that it was independent of any morphological ovarian cycle. Evidence had lately become available as to the site of origin of the substance concerned, which was probably hypophyseal. From the point of view of the factors concerned in menorrhagia unaccompanied by uterine disease it was evident that the necrosis factor was of prime importance. In cases of menorrhagia the morphological cycle in the ovary might be abnormal, or even entirely suppressed, and a condition might be found analogous with that in the non-ovulating monkey, except that the period of destruction of the endometrium was prolonged indefinitely. This appeared to point to the possibility that the factor causing necrosis lost its normal cyclic activity, and functioned persistently. If such an explanation could be substantiated an important basis would have been found for the experimental attack upon the problems of menorrhagia.

Dr. J. YOUNG (Edinburgh) followed with a paper in which the pathology, clinical features, and treatment were discussed. Briefly, he concluded that except after a recent

puerperal infection or gonorrhoea, inflammation of the endometrium or myometrium was a rare cause of irregular or excessive uterine bleeding. There was evidence that in a large majority of such cases the uterine pathology —the endometrial proliferation and congestion, and the myo-hyperplasia—and the symptoms were dependent upon aberration of ovarian function. The most common recognizable causes of this aberration were childbirth and general organic disease. The speaker considered that the terms "chronic endometritis," "chronic metritis," "fibrosis uteri," and "subinvolution," applied to the pathology found in irregular and excessive uterine bleeding, were quite inappropriate. The diagnosis in such cases rested upon an absence of a gross pathology—tumours, placental remains, tubo-ovarian inflammatory masses, etc. —and the appearances found in the endometrium after curettage. The treatment consisted of curettage, ovarian therapy, or, in intractable cases, the use of sterilizing doses of radium or *x* rays.

Professor FRITZ LAQUER (Frankfort) spoke on the influence of hormones upon menorrhagia. The ovaries and the pituitary glands exercised particular action upon the female generative organs. The hormone was present in large quantities in the urine of pregnant women. It was not absolutely necessary to use a crystalline preparation. Standardization by animal tests should be carried out. A certain number of cases were benefited by ovarian hormone, but cases remained in which no effect was observed. The therapeutic value of corpus luteum hormone was very little known. In the speaker's opinion its function could very often be taken over by the hormone of the anterior pituitary. The presence of this hormone could also be demonstrated in the urine of pregnant women, and this could be used as a means of diagnosis of early pregnancy. The watery solution of anterior pituitary was not very stable, being very susceptible to high temperatures. For therapeutic uses small doses stimulated, while large doses inhibited, ovarian activity. Combined treatment by ovarian and hypophyseal hormones should theoretically make it possible to control the action of the ovary.

Dr. H. GARDINER-HILL, speaking as a physician, referred to the relation of menorrhagia to general medicine. The cases presenting no obvious pathological lesions were usually related either to circulatory disturbances, the haemorrhagic diathesis, or to disturbances of the endocrine system. Hypertension was a not uncommon cause of bleeding. In the second type of case there was generally a history of epistaxis, or bleeding from the intestines, and so on. This was associated with a diminished number of blood platelets. In the endocrine type precocious development was frequently found, and skeletal abnormalities were present. This favoured the view that the ovarian secretions were abnormal. As regards the thyroid, if myxoedema developed before the climacteric—a rare occurrence—instead of amenorrhoea, menorrhagia was very commonly met with. In his own experience, on the other hand, hyperthyroidism was also more generally associated with amenorrhoea. Pituitary abnormalities were also associated with amenorrhoea.

Mr. J. ST. GEORGE WILSON (Liverpool) outlined the treatment of polymenorrhoea. The simplest method was curettage; a high proportion of cases were cured by this measure alone. Another form of treatment was by resection of the ovaries, or excision of the obvious cystic portions of them. Hysterectomy nowadays he thought was generally unnecessary. He advocated the vaginal route if hysterectomy had to be performed. As prolapse was often present as well, this rendered the operation comparatively easy. The treatment he employed now was curettage, followed by the introduction of radium. The dosage of radium employed was of importance; he usually used 2,500 mg. hours in multiparous patients. He had found deep *x*-ray therapy very satisfactory with old multiparae. The treatment of younger women was not so simple, since castration was not aimed at. There was one drawback—with frequent applications, patients were inclined to get dissatisfied, and to cease attending.

Dr. ZUCKERMAN discussed the oestrous cycle in monkeys. Two theories had been advanced to explain the cause of menstruation: one that some influence had been removed, the other that some exciting cause was responsible. Hartman had found that injections of anterior pituitary lobe invariably caused bleeding so long as the ovaries were present. Bleeding occurred some little time after the injections had been stopped; this suggested that the bleeding might be due to removal of this substance. Dr. W. LANGMUIR WATT recalled his experiences when working under Kelly and Bland-Sutton, and in Vienna and Dublin. The treatment of these cases with deep *x*-ray therapy was comparatively simple. The complete ovarian dose was 35 per cent. of the dose which would cause erythema of the skin. In his cases of temporary sterilization the earliest return of function was in three months, the longest was in three years. In women over 40 the full dose could generally be given. As a general rule, there was one period after treatment, generally a severe one. Severe menopausal symptoms did not usually occur. *X*-ray treatment of the pituitary had been followed by marked improvement in the symptoms; when indicated, it was safe, and gave good results. Dr. MARTINDALE made a plea for the use of *x*-ray therapy in non-malignant cases. She had used it since 1914, and was, as far as this country was concerned, a pioneer. Now that the technique was so greatly improved she thought that the method should be more generally employed. The patients felt so well afterwards. She did not see much advantage in radium, except that it was practically fool-proof. The after-results of radium were not yet well known. Dr. DAWSON (Otago) had thought until this discussion that the anterior pituitary hormone could act only in the presence of the ovaries. That theory was apparently now blown sky high. Mr. EARDLEY HOLLAND thought that the discovery of the connexion between the pituitary and the sex functions was as romantic as the discovery of insulin. As gynaecologists they must be physicians as well. Blood counts, platelet counts, and coagulation times should all be estimated in cases like these. He would like to have a clear explanation of the influence of the thyroid gland on menstruation. He felt doubtful whether a very high blood pressure in itself could cause menorrhagia. As regards the relative merits of radium and *x* rays, he confessed that his own faith in radium was somewhat shaken. With *x* rays temporary sterilization could be procured; with radium such effects were very uncertain. The advantage of radium to the gynaecologists was that they were able to carry out the treatment themselves. Mr. ERIC STACEY (Sheffield) said that no one had yet suggested what activated the anterior lobe of the pituitary. He had noticed that many of these cases had ovaries which were over-folliculized. So far, they had arrived at no satisfactory method of hormonic treatment of menorrhagia. Dr. PAYNE wanted to know whether the early diagnosis of pregnancy could certainly be made by finding the presence of hormones in the urine. Professor LAQUER replied that a positive decision could be made in almost all cases of early pregnancy as early as fourteen days. Certain pathological conditions gave a positive finding, but these were very rare. Dr. PARKES thought that it would probably be found that anterior pituitary preparations acted upon the accessory sexual organs quite apart from any action on the ovaries themselves. Dr. YOUNG (Edinburgh) thought that the day of extirpation of pelvic organs for this type of case had gone by. Preg-

nancy diagnosis tests were now carried out in various laboratories in this country. In 98 per cent. of cases the result of the test was correct.

SECTION OF DISEASES OF CHILDREN

Thursday, July 23rd

WORK OF A CHILD GUIDANCE CLINIC

In his opening paper on this subject Dr. BERNARD HART explained that the child guidance clinic had come into being to deal with a fairly well-marked group of patients known to every practitioner, and commonly called "difficult" or "problem" children. The list of disturbances from which such children suffered had long been recognized, but their effective treatment presented many difficulties. Of recent years there had been a change in the method of approach, which the speaker described as a progression from an ethical to a physical conception, and thence to one predominantly psychological and biological. Only when all the complicated factors involved in the child's condition had been thoroughly investigated and appraised could appropriate treatment be instituted. It was important to begin with a conception of the child as a psycho-physical organism reacting to an environment composed of material, mental, and social constituents, any of which could be at fault; the preliminary investigation must concern itself with all these things. After this there must be some adequate machinery for securing a modification of environmental conditions where necessary. The requirements of this machinery, said Dr. Hart, could obviously not be met under the usual conditions in a hospital out-patient department; and in sketching the development of the idea of the child guidance clinic he referred to the pioneer work carried out in America, and extended to this country through the generosity of the Commonwealth Fund. The essential feature of such a clinic consisted in the employment of a team of three persons, a psychiatrist, a psychologist, and a social worker. The psychiatrist was the head of the organization, and in addition to the investigation of the child's mental state he should also be responsible for a general physical examination, paying particular attention to the metabolic disturbances so frequent in difficult children. The psychologist had to investigate the child's intellectual equipment, while the social worker obtained full information with regard to the environmental conditions and past history of the child. In discussing the general objects of the child guidance clinic Dr. Hart spoke of the prevention of delinquency and the close association between the clinic and the children's courts. A further prophylactic function of the clinic was concerned with the psycho-neuroses, and possibly also with actual psychoses which it was hoped might be prevented in later life by adequate attention to the child. Dealing finally with certain criticisms Dr. Hart admitted the disadvantages of the team approach, but thought that these were clearly outweighed by the advantages. The costliness of the scheme was formidable; but an important function of the clinic was training of the workers to carry on the ideas underlying the work to the schools, juvenile courts, etc.; this must be set against the cost of an individual case. He pleaded, in conclusion, for a catholic point of view, so that each case could be considered from the widest possible angle and not treated along the narrow lines of any one school of thought.

Dr. W. MOODIE described in more detail the actual working of a child guidance clinic. Despite the description of the team employed, he said, the clinic was not so complex as it sounded. It was possible in many cases to give direct advice to parents on the first visit and so clear up the child's troubles, or it might be necessary in slightly more difficult cases to enlist the help of the educational psychologist, who was a very valuable help to the clinic, since 20 per cent. of all patients had some difficulty in learning as a basis of their trouble. In another group of cases something further was required, and the parent or child had to be seen more than once; while with a residue of about one-third of all the cases handled the full services of the clinic were called upon. Dr. Moodie likened the psychologist and the social worker to the laboratory and the *x*-ray department of the ordinary hospital out-patient department. The psychologist had to apply the intelligence tests in a highly skilled manner, while the social worker was of inestimable value in effecting changes in the environmental factors so often behind the child's disorders of conduct. He thought the child guidance movement went further than individual methods could ever go, but it was a mistake to suppose that the clinic merely made things easy for the child.

Dr. NOEL BURKE, dealing with the methods used in a clinic, emphasized the necessity of impartiality between the various schools of psychological theory and between the mental and physical views on the causation of problem children. He described the methods developed in the child guidance clinic of the Jewish Health Organization since 1927, and showed how each member of the team attempted to get as wide a view of the case as possible. He gave a brief analysis of the results of the first 200 cases, in which three-quarters were benefited in a varying degree and only nineteen could be called failures. He pointed out that clinics were expensive to run, but justified the high cost on the grounds that the community would gain in the long run and the next generation would grow up with a better idea of parenthood. Dr. G. M. BLUETT (Guildford) asked what practitioners were to do when there was no guidance clinic within easy reach, and whether there was any literature available for mothers who could not get to one of the clinics. Dr. J. HUTSON (Barbados) asked if the psychologist at a child guidance clinic was a medical practitioner.

The PRESIDENT (Dr. H. C. Cameron) said he had first observed many years ago how many cases of functional nervous disorder in childhood masqueraded as physical defects, and that the mother was responsible for this in the vast majority of cases. He also mentioned how much fatigue one saw in a maladjusted child, which was closely linked to the metabolic side of the question. He was not a great believer in propaganda by means of pamphlets. Dr. D. NABARRO referred to the relation between congenital syphilis of the nervous system and the delinquent child.

CONTROL OF INFECTIONS

Dr. D. NABARRO opened the discussion with a paper by himself and Dr. A. G. SIGNY on the prevention and control of measles, scarlet fever, and diphtheria in institutions and the home. Dealing first with diphtheria, the speaker outlined the present-day knowledge of the Schick test, pointing out that the "diphtheria period" of greatest susceptibility lay between 6 months and 5 years of age. He then described various methods of active immunization, recommending a toxoid-antitoxin mixture ("T.A.M.") as the safest. For the prevention of diphtheria in institutions he urged that all patients admitted should be swabbed for the possible presence of diphtheria bacilli; all sore throats or nasal discharges occurring in hospital should also be swabbed. Everyone in contact with a patient with a positive swab should be Schick-tested and the Schick-positive cases passively immunized with concentrated antitoxin. Dr. Nabarro especially suggested that all permanent staff should be immunized on admission. Dealing next with scarlet fever he described the Dick test, pointing out that in an early case it did not give much help in diagnosis. In an

epidemic, passive immunization with concentrated serum was of great value, and active immunity was also a useful method to apply to the permanent staff. In cases of operation on the nose and throat it was a good plan to Dick test the patient beforehand and to give a prophylactic dose of serum to those who reacted positively. With regard to measles Dr. Nabarro mentioned the difficulties of obtaining human convalescent serum, and pointed out that recently good results had been reported by using the blood of any adult who had previously had measles. The serum might prevent an attack of measles altogether, or the attack might be attenuated. He recommended a dose of 5 to 7 c.cm. of serum according to age, and reported that out of 625 cases injected with serum where he had observed the results 98.1 per cent. were protected, and only one severe attack of measles occurred in this group.

Dr. R. MASSINGHAM outlined a few of the measures which could be used in the control of infectious diseases, in addition to those made possible by the modern discoveries of the Schick and Dick tests. He emphasized how convalescent serum had revolutionized the outlook on measles, stressing the complete harmlessness of its use. Not only were patients protected against what might be a fatal disease, but in institutions the tedium and worry of quarantine was removed. The production of the attenuated attack was probably what should be aimed at. He found patients very willing to give blood for this purpose, and 500 c.cm. could be easily and safely taken. With regard to the spread of diphtheria and scarlet fever Dr. Massingham stressed the part played by the sick nurse who remained on duty too long before reporting sick, under a quite mistaken idea of what her moral code should be. Bed isolation, with a scrupulous use of separate utensils, instruments, gowns, etc., was a most important measure in institutions, and sterilization by means of steam was of great value. It was also important to see that toys, pencils, etc., did not get passed from child to child in schools. He thought that a rather stronger dose was needed in the Schick test for workers in institutions, and preferred the T.A.F. preparation for immunization against diphtheria.

Dr. A. I. SIMEY (Exeter) spoke particularly of the prevention of the infectious fevers in schools. He had found diphtheria and scarlet fever comparatively rare in a big public school, and did not consider routine skin testing and immunization advisable unless an epidemic broke out. He had found concentrated scarlet fever antitoxic serum very valuable, not only for that fever, but also for septic conditions; both for this and for diphtheria routine swabbing was of great help. With regard to measles Dr. Simey thought that this should be "got over" before the public school age, either by some scientific measure or by some more primitive method of allowing children to catch it from a known case and have the disease under proper supervision. He emphasized the importance of a pure milk supply in preventing the infectious fevers, and in conclusion said that he thought much could be done by scientific dietetics towards building up a satisfactory resistance to disease in childhood. Dr. K. TALLERMANN asked if there was any scientific evidence to support the often quoted opinion that immunity to diphtheria in infants was conveyed through the *mother's milk*. Dr. J. D'EWART (Manchester) spoke of the difficulty of the nasal carrier of diphtheria, and mentioned that he had recently had success with the ray treatment of such cases. He doubted if immunization of all entrants to hospital against scarlet fever was worth while, in view of the mild nature of the disease. He noticed that the surgical patients developing puzzling hematous rashes after operation were nearly always admitted immediately prior to the operation; perhaps other children became immune after a short stay in the general wards. He had used simple parental blood in the prophylaxis of measles with great success. Dr. TERTIUS CLARKE pointed out that there were no cases of scarlet fever in Malaya; and yet the infant population was largely Dick-positive, and slowly became Dick-negative, just as it did in countries where scarlet fever was rife.

SECTION OF PATHOLOGY AND BIOCHEMISTRY

Thursday, July 23rd

UNDULANT FEVER CONVEYED BY MILK

Sir WELDON DALRYMPLE-CHAMPNEYS, opening the discussion, said that systematic examination of milk supplies in Great Britain, if possible by guinea-pig inoculation, were badly needed. But if, as could hardly be doubted, these revealed that a considerable proportion of unpasteurized milks contained *Br. abortus*, what was the explanation of the small number of human cases of undulant fever so far discovered? Thirty-four definite cases of endemic origin in England and Wales and five in Scotland were known to him. In Rhodesia, where contagious abortion was not so rife as in this island, Bevan reported more than two hundred human cases, and in the United States 1,305 cases were reported during 1929. The speaker predicted that further investigations would show that undulant fever was much commoner with us than would appear at present, a large proportion of the infections being so slight that the patients never called in a doctor. It should not on this account be taken lightly, for undulant fever was a disease full of unexpected tricks, with an epidemiology still shrouded in mystery.

Dr. A. G. SHERA (Eastbourne) gave an account of four cases of undulant fever. The first patient was a youth of 16 years admitted to hospital, the second a member of the visiting surgical staff, the third a boy in one of the schools, and the fourth a former house-surgeon. The visiting surgeon had not been in actual attendance on the first case, but had attended the school in which the third case had occurred. The house-surgeon was engaged to be married to the sister in charge of the ward in which the first case had been nursed. The last two patients became ill simultaneously, but direct contact between them all had not been definitely established. The source of the infection had not been traced. There had been, however, an outbreak of contagious abortion within a few miles of the farm where the first patient lived. Blood cultures in cases one, two, and four, had failed to demonstrate the organisms. The maximum agglutinations were 1 in 5,000, 1 in 2,500, and in two 1 in 250. The titres, the speaker thought, ran parallel with the severity of the cases, and a drop was a good prognostic sign.

Dr. A. V. NEALE (Birmingham), in a paper on infantile diarrhoea, said that the rapid depletion of tissue fluids and loss of the normal intestinal secretions was a serious matter to the infant. Ketosis, together with disturbance in the acid-base equilibrium, was soon effected, and a variable degree of acidaemia or alkalaemia occurred. The delicate protective mechanisms in the bowel were quickly removed, and, by absorption, highly toxic products might enter the body. Renal, hepatic, and myocardial functions were often seriously disturbed by the dehydration and intoxication, and failure of the functions of these organs might directly determine a fatal issue. Three clinical varieties might be described. The first was acute ileocolitis of sudden onset, with diarrhoea, mucus and blood usually, and clinical evidence of abdominal pain and tenesmus. The disease was due to local infection of the bowel and absorption of powerful bacillary toxins into the circulation. The second or fermentative diarrhoea

was associated with acidic, gaseous, frothy, highly irritating, offensive stools causing excoriation of the skin. Dehydration was sometimes extreme, and the infant suffered from this, combined with starvation and physical discomfort. It might arise from irregular feeding or overfeeding with carbohydrates and fats. The third was acute alimentary intoxication in which there was severe diarrhoea with watery stools, vomiting, general collapse, subnormal temperature, rapid feeble pulse, scanty urine, clammy skin, pallor, and sighing respiration. Many of the characters of this illness suggested acute anaphylactic shock, and in great probability the cause was of this nature. As a rule little morbid anatomical changes could be seen in the bowel in any of these groups. In treatment first-class nursing was essential; the introduction of fluids to replace the excessive loss and the problem of feeding were the next concern. Blood transfusion was often invaluable.

Professor J. W. BIGGER (Dublin) said that they were ignorant of much concerning the relation of *Br. abortus* to man, but there were some points about which they were certain. Epizootic abortion was common in cows; *Br. abortus* was common in cow's milk, and might occasionally cause undulant fever in man. He could not agree with Sir Weldon that failure to diagnose the disease was responsible for the comparative rarity of undulant fever in the British Isles; on the contrary, he believed that critical examination would throw doubt on the validity of the diagnosis in many cases. He based this view on the fact that the diagnosis of the majority of cases was made dependent on the agglutination reaction, which he regarded as a very uncertain foundation on which to erect a diagnosis. If they accepted any mild fever and a positive agglutination as diagnostic of undulant fever they would undoubtedly have many cases, but Professor Bigger did not regard this as legitimate. For diagnosis the isolation of *Br. abortus* was the ideal, and failing this only a typical clinical condition, together with a high agglutination, should be accepted. The agglutination titre of serums (submitted for the Wassermann test) against *Br. abortus* had been tested in two series. One was carried out by himself at a temperature of 54° C., and the other by Dr. A. H. Thompson at 37° C. In both series they found a much higher proportion of positive results than those observed in other countries. Professor Bigger had obtained 20 per cent. positive at 1 in 20, and Dr. Thompson 32 per cent. at 1 in 25. In one individual Dr. Thompson observed a rise in titre from 1 in 25 to 1 in 1,000, and a fall to 1 in 125 during a period when the patient was under constant medical observation, and yet exhibited no evidence of undulant fever. The speaker believed that the organism could invade without infecting, and so give rise to the appearance of agglutinins; but these cases or those with only a mild fever should have some other name. They should not be called undulant fever.

Major L. P. PUGH said that he had had a case of infection in a man caused as the result of using live vaccines in a herd of cows. The organisms in this particular case appeared to be more virulent than usual, since a number of the animals became ill following injection. The Ministry of Agriculture's policy of using live vaccines was, he felt sure, the right one on the score of its success in treating heavily infected herds, and particularly because it diminished the tendency to complications such as endometritis, salpingitis, and sterility. He was interested in Dr. Neale's description of ileo-colitis in infants, because it had its counterpart in young calves; it would be worth considering whether there might be a direct transference from calves to infants. The investigation of these diseases called for a closer collaboration between the medical and the veterinary professions. Mr. E. M. PERRY said in his experience Mr. Rabagliati's estimate that 50 per cent. of the herds in this country were infected with *Br. abortus* was not an overestimate. He further pointed out that of infected herds from 30 to 90 per cent. of the individuals might be affected. This being so it was difficult to believe that ordinary strains of this organism were pathogenic to man. The usual method of entry of the disease into a herd was the introduction of a fresh beast which might slip her calf, or even carry it the full time and thus be a source of unsuspected infection. One or two abortions might occur during the first year, the number increasing during the second and third years, after which there was a dropping off until the herd became immune. The disease itself was a specific catarrhal metritis, and infection in the majority of cases resulted from the ingestion of contaminated foodstuffs.

MILK-BORNE STREPTOCOCCAL INFECTIONS

Lieut.-Colonel E. WILKINSON, I.M.S. (ret.), said he would deal only with scarlet fever and sore throat, quoting an epidemic of each. In the scarlet fever outbreak sixty-six persons were attacked in ten days, forty-four of them being attacked on the fourth and fifth days of the outbreak. At the same time about one hundred people were reported to be suffering from sore throat. All these persons were consumers of either milk or cream from an old-established firm of good reputation, and its premises, which included a milkshop, were clean. Haemolytic streptococci of scarlatinal Type II were obtained from the throats of some of the patients and from the dairyman's son, who, in the early stages of the outbreak, suffered from a "rough throat" and later desquamated. In the sore throat outbreak members of over one thousand families were affected, and sixty-five deaths occurred. The primary illness was in most cases follicular tonsillitis (often severe) which was in many instances accompanied or followed by complications, mostly of a septic character. All the patients were consumers of milk from a particular dairy, which was exceptionally well equipped with modern appliances, its milk being obtained from a number of local farms. Samples of milk from each farm were taken, and one of them was found to contain abundant streptococci; when the use of this milk was stopped the epidemic ceased. The farm supplying this milk proved to be a model of its kind; some of the cows, however, had been suffering from inflammatory conditions of the udders. Cultures from the milk failed to establish a definite connexion between the cows and the streptococci causing the throat infections. Some of the cows had been removed from the farm and could not be examined, so that positive proof was not established. In spite of this it seemed likely that when the milk from this farm—alone of the many supplying the dairy—was stopped and the outbreak ceased, the infection of the milk was secondary to infection of cows.

Dr. R. A. GLEGG (Lewes) observed that the second of the two outbreaks described by Colonel Wilkinson was of such magnitude as to call for special preventive measures. Medical practitioners could assist in tracing milk-borne infection if they ascertained and stated the source of milk supply when submitting throat swabs to municipal authorities. Representations had been made to the Ministry of Health to make compulsory the notification of sore throat and diarrhoea among persons employed in handling milk. Dairy farmers should be asked to post notices in their cowsheds asking employees to report if they or any of their families suffered from sore throat or other illness. The agriculture committees of the county councils should not be content to leave the inspections of the farms, dairies, and cows to the already overworked sanitary inspector, but should provide experts to assist him in this important part of his duties. Dr. E. N.

DAVEY said that he had seen two cases of undulant fever, and although unable to grow the organism he considered that an agglutination titre of over 1 in 125, an undulant fever chart, and leucopenia with relative lymphocytosis, provided sufficient data upon which to make a diagnosis. In three years' routine agglutination reaction of all serums submitted as possibly typhoid only 3 per cent. showed any reaction with *Br. abortus*. In a carefully guarded herd an outbreak had occurred apparently as a result of introducing a new bull, as the first three cows served by him aborted, although there had been no previous abortions in the herd for the past eight years. Dr. M. MAIZELS remarked that in infantile diarrhoea he found otitis media in 40 per cent. of post-mortems. He asked if the ears of all infants suffering from this condition should be drained. The administration of sodium chloride in these cases was not without risk, for it might displace the bicarbonate from the blood into the urine and increase the acidosis. Dr. H. W. C. VINES said that as a result of this discussion it would appear to the general public that another nail had been heavily hammered into the coffin of fresh milk as a food, for it was becoming increasingly evident that this fluid was merely a suspension of more or less pathogenic organisms. He felt that it was becoming a matter of real urgency that the public should be given clear guidance whereby diseases such as those discussed might be avoided.

Sir W. DALRYMPLE-CHAMPNEYS said, in reply, that he could not agree with Professor Bigger that any distinction could be drawn between invasion and infection. The agglutination test appeared to him, from the many hundreds of papers he had read, to be a reliable diagnostic method.

SECTION OF PUBLIC HEALTH (INCLUDING TUBERCULOSIS AND OCCUPATIONAL DISEASES)

Thursday, July 23rd

PUBLIC HEALTH PROBLEMS OF AIR TRAVEL

Sir GEORGE BUCHANAN, President of the Section, took the chair at the second session. He referred briefly to the importance of the subjects to be discussed, and mentioned that the Ministry of Health was taking an active interest in the hygienic problems which were developing as a result of increasing travel by air.

Dr. A. MASSEY (Coventry) outlined the novel public health contingencies introduced by aerial navigation, pointing out that journeys from distant infected countries could now be accomplished within the incubation periods of the major infective diseases. It would be necessary, therefore, for the health department of the passenger's ultimate destination to arrange for him to be kept under observation until the incubation period for such diseases scientific plague, cholera, small-pox, or typhus fever was over. of allowing er of introducing the mosquito hosts of yellow nd have the dis but special precautions would have to mphasized the imp ts in yellow fever zones to ensure that reventing the infecti ere mosquito-free. The holds of air- h t he thought much could to be safeguarded from rats. The ociards building up a satis ft crossing land might originate Ir. J.dhood. Dr. K. TALL reta were deposited in water itment ntific evidence to spect of such releasing would ettage ; aat immunity to diph system of excreta disposal isure alonough the mother's on long-distance machines. ion o the spoke of the diffic each centre of population tions and mentioned th us associated with these gene ly unne x-ray treatme eful consideration by the te if hy erectonization of all entr ublique and the Inter- often present a orth while, in v ion ; it was likely that paratively easy. had noticed tha ntrol of aircraft would ttage, followed by erythematous r nations. Dr. Massey e of radium emplo those admitted air-ports would com- health point of view, with seaports. He showed plans outlining the systems of water supply and sanitary provision on board the airships R 100 and the late R 101 ; these had been specially supplied by the Director of Airship Development, Carding-ton. Thanks to the steps being taken, there was no danger of any risk to the public health consequent on aerial navigation.

Sir GEORGE BUCHANAN said that progress had been made towards a general agreement on sanitary control. Dr. Massey's clear statement of the position had been very helpful. The degree of control to be exercised at the various air-ports would differ, but the previous history of seaport regulations had taught them not to impose too hurriedly panic restrictions, which would later become both inconvenient and unnecessary. Instances were cited to illustrate the way in which such limitations had already hampered air travel. It was necessary to think out the matter in advance. Influenza, encephalitis, and such infections with short incubation periods, might also constitute dangers ; these were already being considered by the Ministry of Health.

Sir MALCOLM WATSON congratulated Dr. Massey on his paper. There was one aspect of the yellow fever problem which he had not mentioned—the danger of the disease reaching the East Coast of Africa. The speaker regarded this as a probability almost amounting to a certainty, unless a strong sanitary policy was pursued. If a case of yellow fever reached East Africa in its incubation period it would almost certainly not be diagnosed ; and, even if it were, the disease would at once produce an epidemic. The Americans had the greatest difficulty in stamping out the disease at Panama. It was done by an elaborate anti-larval campaign, isolation of the patient in a mosquito-proof ward, and—to make the security greater—in a mosquito room inside the mosquito-proof ward. Even these precautions were not enough, and the city of Panama was fumigated three or four times in order to destroy the adult mosquitos. If such strict precautions were necessary in Panama, it would be realized that, in the absence of such, yellow fever would spread on the East Coast of Africa. The next step would be from Africa to Asia by steamer, and this appeared to him inevitable in view of the mosquito conditions existing in Bombay, Colombo, and other ports. Sir Malcolm reminded his audience that twenty or thirty ships without crews sometimes lay for months in South American ports. An epidemic of yellow fever in Asia would paralyse Eastern trade, and that would have a repercussion on Europe that would bring modern civilization to a standstill. If rubber alone, quite apart from foodstuffs like rice, etc., were not available from Asia (which supplied about £00,000 out of the £30,000 tons used), all electrical apparatus would be put out of action. Without electricity, ships and other transport, telephones, telegraphs, etc., it seemed to him that the dense populations of Europe would starve, and it would be a generation before things returned to anything like normality. Originally the danger of yellow fever spreading to Asia was considered as likely to come from the Panama Canal. So far back as 1915 he had pointed out that the real danger was the West Coast of Africa, and that as soon as it was possible to travel across Africa in ten days the danger would be great and the prevention of the spread of yellow fever be the most serious sanitary problem of the time. It was probably now possible to cross Africa by train and steamer in six days, if connexions were caught ; but air travel, which was making rapid progress in Africa, had brought the problem to the front. The speaker asked the President if he could give them any information as to the precautions now being taken to prevent the spread of yellow fever in Africa.

Dr. R. A. O'BRIEN asked if the smuggling of pet dogs in aircraft had ever caused rabies. Dr. E. H. R. HARRIES (Birmingham) asked if the incubation periods of plague

and cholera were correctly stated in the paper. Dr. L. P. LOCKHART (Nottingham) asked about the possibilities of transmitting disease as a war-time measure. Sir GEORGE BUCHANAN agreed with Sir Malcolm Watson about the importance of taking steps; the international consultations now in progress were actively cognizant of such conditions as those in Africa. The port of departure, not the port of arrival, was the vital point of attack.

Dr. MASSEY, replying, said his paper had been specifically limited to the conditions in Great Britain, but the needs of our Dominions were equally being considered. He had no special knowledge about the risks of the importation of rabies, but thought they required attention. The incubation figures in his paper were the outside limits

FUNCTION OF THE ISOLATION HOSPITAL IN MODERN PRACTICE

Dr. E. H. R. HARRIES (Birmingham) read a paper embodying an inquiry into the extent of the success achieved by the isolation hospital in respect of segregation and treatment, and also as a centre for teaching and research. Isolation had proved less effective in endemic than in epidemic diseases, but it was at times necessary view of local circumstances. Immunization on a large ale was so far only a counsel of perfection. The accom dation of these institutions was not being used to the best advantage, numbers of patients being admitted without sufficient justification from the standpoint of either preventive or curative medicine; this was especially so in diphtheria. The value of swabbing was overestimated, many apparently positive cases being proved eventually by the Schick test to be negative. On the other hand, the value of a timely dose of antitoxin on suspicion had been underestimated. Convalescent patients often occupied beds unnecessarily, the danger of infection in the later stages of disease having been overemphasized in the past. Many cases of scarlet fever could well be treated at home, especially now that the disease was so mild, and specific antitoxic therapy was available. This would necessitate altering the public outlook in the case of this disease easles and whooping-cough, however, ought to be more ten treated in hospital; again, the public should be educated in this matter. In treatment an important factor was team work; thus in toxic diphtheria repeated estimations of the blood sugar, and the administration of dextrose and insulin, should be associated with the taking of serial electrocardiograms. The case mortality in the Birmingham City Hospital had been reduced by nearly 13 per cent. as the result of such co-ordinated observation and therapy. More use should be made of the clinical material in isolation hospitals for instructional purposes, and medical students might well clerk in the wards. Research in this country was backward as compared with that on the Continent and in the United States. British studies were largely repetitive, and not original. The fever hospital (really a large children's hospital) was practically the only institution receiving cases of tonsillitis, and the early stages of rheumatic conditions might well be studied in it. Definite provision should be made for organized research, preferably in connexion with the universities and medical schools, so as to prevent unnecessary overlapping. The younger medical officers should be encouraged and helped to conduct original investigations, time being systematically allotted for this. Research workers from outside should also be given facilities.

Sir GEORGE BUCHANAN said that now was the time for stocktaking in public health, and for preparing new advances. This applied both to administrative questions and to the promotion of research. Dr. J. D. ROLLESTON agreed with Dr. Harries that the functions of an isolation hospital were those of isolation, treatment, teaching, and research. He quoted figures showing that a large number of patients were needlessly sent to hospital, as they were subsequently found to have no obvious disease, or at least were not suffering from any admissible infectious disease. In the serious infectious diseases isolation was desirable, not because it was hoped to reduce their incidence, but in order to secure adequate nursing and medical attention, removal to an isolation hospital of mild infections was needed in the case of inmates of schools and hospitals or institutions, where isolation could not adequately be provided. Dr Rolleston emphasized the need of impressing upon the student the importance of a study of fevers, whatever his subsequent career might be, and suggested that his attendance at a fever hospital should take place at an early stage of his clinical training, as such a study would bring him into relation with many other branches of medicine. In conclusion, Dr Rolleston maintained that the Metropolitan Asylums Board in the last years of its existence, and the London County Council had encouraged research in their fever hospitals and that as a result a not inconsiderate amount of work had been done in many fields. Dr R A O BRIEN asked how all could be considered well when medical students paid "a breathless series of visits" to isolation hospitals and later, as practitioners, never treated a case, while, on the other hand, 30 to 45 per cent. of patients certified as having scarlet fever or diphtheria were incorrectly diagnosed. Clerking was one way out of the difficulty. The speaker asked boldly for a re-examination of the whole system. Why not, he said, attach annexes to general teaching hospitals? Scarlet fever was not the scourge it had been in Murchison's time, and Dr Nabarro was showing in another Section of the Annual Meeting how efficient was the hospital control to-day of ward outbreaks of diphtheria, measles, and scarlet fever by Schick and Dick testing, and by subsequent active and passive immunization. The constant presence of the breezy criticism of the student in the wards was a good thing. Apart from carrier nursing, could one honestly say that this country had contributed anything original in the last thirty years to compare with intubation, Schick and Dick control, or measles control with serum? Had their able clinicians and medical administrators in the fever services been provided with a proper complement to their work by way of a research organization they might have been able to answer this question with confidence. Why was a pathologist thought essential in an average general hospital while there were, outside London, probably 30,000 beds in fever hospitals, the superintendents of which were pleading in vain for full-time pathologists? How many fever hospitals used to-day in suspected scarlet fever, as a routine, the helpful immediate smear, and the often decisive overnight culture on a blood plate?

Dr. W. E PORTER (Eastbourne), discussing the overcrowding of fever hospitals, pointed out the difficulties thrust on the patients' families and the general practitioner if such segregation of scarlet fever cases was not practised. Dr. D SUTHERLAND (Manchester) said that there was a great difference in various teaching centres as regards what was arranged in the way of lectures and demonstrations on fevers. In some this was very inadequate, and even in D P H courses there was carelessness in fulfilling the regulations at present in existence. The universities and the General Medical Council should take more definite steps. Classes were too large for good instruction. In Germany he had been much impressed by the success attending the practice of providing an annexe for infectious diseases in association with general hospitals. Such a scheme would centralize and intensify the work, and would benefit the training of nurses simultaneously. Economy and general convenience would be promoted by this arrangement. Dr. A T HAWLEY (Coventry) agreed that the teaching of medical students was inadequate. Nursing instruction on typhoid fever

was sadly deficient. Dr. L. P. LOCKHART (Nottingham) thought that clinical assistantships in fever hospitals should be multiplied. Dr. R. GELLATLY (Huddersfield) said that in the smaller hospitals there was a sad lack of pathological facilities, and great delay in diagnosis ensued. Notification was enacted by law, and the public health expert rather than the general practitioner should bear the responsibility for mistakes in diagnosis. The fever hospitals were also concerned in preventing the secondary results of infections, and could prosecute research if they were better centralized. Dr. MORGAN REES (Pontypridd) agreed about the inconvenience caused to the family. Mistakes were inevitable. Dr. J. HUTSON referred to a system in Barbados for segregating suspected cases. He thought it might be applied with advantage to Great Britain. Dr. HARRIS, replying, welcomed the discussion which had resulted. He felt that original research was still deficient, and urged the need of doing more in this respect.

ORGANIZED TREATMENT OF INFANTILE PARALYSIS

Dr. G. MURRAY LEVICK, opening a discussion on the organization of treatment for infantile paralysis, said the acute attack should be distinguished from its after-effects, and it was essential to deal with this disease in a less haphazard manner than was the custom at present. He outlined the diagnostic criteria, and described how, in East Sussex, skilled assistance had now been made available for general practitioners, both as regards swift diagnosis and immediate serotherapy. Details were given of the various lines of treatment, and slides shown of these being conducted at the Heritage Craft Schools, Chailey. Heliotherapy was of decided value, and the adverse report issued by the Medical Research Council should be disregarded. Intense red light was very beneficial for paretic muscles. Out-patient treatment for the later stages was provided at clinics, and the whole East Sussex area was now linked up with its central hospital. Correct posturing of the affected parts at the very outset of the disease, and the avoidance of pressure on the muscles by bandages, were of paramount importance. One of the commonest mistakes was giving excessive faradic stimulation for anterior poliomyelitis; only the single stimuli of the interrupted galvanic current should be employed at this time. All patients suffered concurrently from a profound neurasthenia, which needed special measures. Dr. Murray Levick pleaded for the provision of more facilities for the treatment of children coming from families with small or moderate means; at present, he added, only the very rich or very poor were being properly dealt with. It was surprising also that physical treatment was not included in the examinations or curriculum of the medical student. It was being carried on, consequently, without competent medical supervision. At the conclusion of his lecture Dr. Murray Levick demonstrated two cases to show how the methods described resulted in full development of function and bodily health to the utmost limit that could be expected. One important sequel was the mental recovery and intellectual development, attributable largely to the light treatment and the influence of the open-air life at Chailey.

Dr. E. H. R. HARRIES, who had taken the chair owing to the departure of Sir George Buchanan, referred to the public health aspects involved. Great patience was required, and protracted treatment was necessary for good measure to be obtained. Dr. H. B. GIBBINS (Eastbourne) asked how long the scanty costume of these children was generally under the weight or thickness of the wind-proof cotton coverlet was especially when sudden

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Thursday, July 23rd

THE PROBLEM OF SUICIDE

In this Section the day's proceedings were devoted to a consideration of the problem of suicide. The discussion was opened by Sir HUBERT BOND from the sociological aspect, by Dr. H. CRICHTON-MILLER from the psycho-pathological aspect, and by Dr. W. NORWOOD EAST from the medico-legal standpoint. These three introductory papers are printed in full in this issue of *the Journal*.

Dr. L. A. WEATHERLY (Bournemouth) considered that Dr. Crichton-Miller had possibly laid too much stress on the sex instinct and its frustration as a cause of suicide. With reference to the half-hearted attempts at suicide of some hysterics, some, unfortunately, were successful. When insomnia was a prominent symptom it needed prompt and definite treatment. Most unfortunately, the physician who attempted to get rid of mental pain and induce refreshing sleep was sometimes stigmatized as a creator of a drug habit. In his many years of practice Dr. Weatherly had prescribed many such drugs, and he was not aware of having created a drug habit in any single individual. Dr. A. LEWIS pointed out the importance of investigating the total biological changes in the patient, and the inadequacy of explanations in purely "psychological" terms. He discussed the biological and psychological factors in relation to suicide, and pointed out the important bearing of current social and ethical values on the incidence of suicide. Suicides could be divided into three main groups: (1) psychotics, (2) psychopaths, and (3) those mentally and physically normal. Dr. N. E. WATERFIELD (Great Bookham) did not consider that fear of the consequences determined a murderer to commit suicide. The suicide was rather part of the same act, since it was carried out in almost every instance immediately after the murder. Were fear of the consequences the determining factor, the suicide was more likely to be deferred. He also cited cases illustrating the contention that many suicides occurred as an overwhelming desire to escape from an intolerable situation. Dr. T. W. SCOTT (Malay States) quoted a case of successful suicide, and gave an outline of the arguments by which he tried to dissuade the victim from his act. He inquired if any other effective measures could have been taken. Dr. E. F. HOARE (Lewes), speaking as coroner for East Sussex, said he was very glad to find so much interest in the subject. For a long time he had kept a record of the cases of suicide with which he had to deal. As regards motive, he would classify his cases as follows: mental diseases, 26; domestic and financial worry, 20; disease or dread of disease, 13; insomnia, 7; love disappointments, 4; grief, 4.

The PRESIDENT, Sir James Purves-Stewart, was sceptical as to the value of statistics. He considered it very important to ascertain the family history in every case of suicide, as an inherited tendency to mental disease was frequent. Some suicides occurred from the highest possible motives; Captain Oates of the Scott polar expedition was an example. Dr. R. G. GORDON (Bath) asked if the origin of suicide were not something deeper than the product of symptoms such as insomnia. It was possible that the real understanding of suicide would arise from a study of the psycho-biological make-up of the individual. If the personality was harmoniously organized, suicide was not possible. Was there any way of recognizing those cases which were not capable of such harmonious organization, so that we might know of potential suicides and undertake preventive treatment? Dr. D. RICE (Norwich) referred to a group of non-intentional or accidental cases of suicide who resorted

to self-injury as a physical counter-irritant to pain, physical or mental, with fatal results. Such cases as he had seen of successful starvation had all been shown to have serious disease of the gastro-intestinal tract. Dr. J. BIRCH considered that heredity had no significance in suicide, but that suggestion was of the greatest importance. He gave instances of consecutive suicides in a particular district, the later ones apparently being induced by the preceding suicides. Dr. F. R. P. TAYLOR (Hellingly) spoke of the value of the social worker and the out-patient clinic in attempting to deal with early mental disorders. It was hoped that many potential suicides would thus be assisted.

SECTION OF OPHTHALMOLOGY

Thursday, July 23rd

OCULAR PALSIES

The meeting was opened by Dr. GORDON HOLMES with a paper on ocular palsies. He laid stress on the three main and distinct groups into which these could be divided: (1) paralysis of the ocular muscles due to disease of their motor nerves or nuclei; (2) conjugate palsies; and (3) supranuclear palsies. Paralyses of ocular muscles were of great importance to the ophthalmologist owing to their relative frequency, and these could be divided up into (*a*) nuclear palsies, (*b*) stem palsies, and (*c*) root palsies. These three groups were discussed at length from the point of view of etiology and differential diagnosis; and the importance of root palsies in cases of arterio-sclerosis of the arteries at the base of the brain was stressed. Dr. Gordon Holmes ended his most instructive paper with a description of the conjugate and supranuclear lesions, with diagrams showing the probable site of the lesions in different cases.

Mr. O. GAYER MORGAN discussed a group of cases where certain abnormalities of the pupil were associated with a pathological absence or diminution of the tendon-jerks. He pointed out that the recognition of this benign condition was of great importance, as it might so easily be mistaken for a specific one. The differential diagnosis could be made by a careful consideration of the exact reaction in convergence, as pointed out by Dr. Adie—the reaction being brisk in the true Argyll Robertson pupil and extremely slow in the case of the group under discussion. The Wassermann reaction in these cases was always negative.

Dr. THEODORE WHITTINGTON read a very interesting paper on the results of his investigations into the post-encephalitic ocular complications of 174 children. He pointed out that epidemic encephalitis was of interest to the ophthalmologist because of the following points: (1) as regards diagnosis, because the ocular phenomena were of great importance, both in the acute and chronic stages; (2) the peculiarity of the ocular signs, some of the most extraordinary of which only occurred in this disease; (3) the correlation of the symptoms in this disease helped to throw light on the neurology of the ocular movements; (4) the great benefit obtained by the use of the belladonna group of drugs in chronic Parkinsonism, and some of the visual effects of these drugs. In the acute stage the presence of papilloedema was decidedly against the diagnosis of encephalitis. Among the chronic cases the main points to be noted were the infrequency of ptosis, the number of cases with diminished or absent pupil reactions, the absence of paralytic squint—but the remarkable number with concomitant external strabismus—and the onset of oculogyric crises. He ended his paper with a description of some of the visual effects of large doses of stramonium—paresis of accommodation and dilatation of the pupil—which could be counteracted by glasses or by eserine.

In the discussion Mr. MADDOX, the President, raised the question as to why they saw so few cases of spastic paralysis of the ocular muscles. Others who took part in the discussion were Mr. GIRI, Colonel WRIGHT, Mr. BISHOP HARMAN, and Mr. MASON.

DR. SHEEHAN'S THERMOPHORE

The main discussion was followed by an interesting paper by Dr. WILLIAM H. CRISP of Denver, Colorado, on the thermophore of Dr. Sheehan as an aid to treatment of inflammatory conditions or tumours of the eye. He showed the instrument itself, and explained the method of its use, giving some personal experiences in the treatment of serpiginous ulcer and growths at the limbus. The instrument contained its own thermometer, and the actual heat used at the nickel-plated brass applicator varied with the type of tissue under treatment. This temperature had been worked out with great care by Dr. Sheehan in experiments on animals. Dr. Crisp gave some remarkable figures of the treatment of a series of twenty-two cases of serpiginous ulcer. He concluded by describing the type of anaesthesia required and the method of application by firm and continuous pressure. Colonel WRIGHT said that he had used the apparatus, and thought very highly of it. The meeting concluded with a series of lantern slides, chiefly of orbital conditions, by Dr. CLARK SOUTER (Aberdeen). The photographs excited general admiration for the way in which they demonstrated quite minor points by their perfect definition.

Before concluding its business the Section adopted two resolutions: one recommending the Council of the Association to urge on the Ministry of Transport the desirability of having road signals which depend on form as well as on colour; the other recommending the Council to point out to the General Medical Council the desirability of giving students opportunities to study the care and treatment of ophthalmia neonatorum, the best time for such instruction being during attendance on the course of fevers.

SECTION OF ANAESTHETICS

Thursday, July 23rd

CARBON DIOXIDE IN POST-ANAESTHETIC RESPIRATORY COMPLICATIONS

At the second session of the above Section, Dr. S. THOMPSON ROWLING, a vice-president of the Section, occupied the chair. Dr. J. Ross MACKENZIE (Aberdeen), opening a discussion on this subject, read a paper entitled "Observations on carbon dioxide gas as a prophylactic and curative agent of post-anaesthetic respiratory complications." He emphasized three important advantages which accrued from the use of this gas: (1) the prophylactic action of carbon dioxide against the onset of respiratory complications; (2) the protection afforded to patients who came up for operation with concomitant respiratory disability; and (3) the curative action of carbon dioxide when post-anaesthetic respiratory complications had occurred. As a result of hyper-ventilation with this gas the respiratory system was continuously in the position of inspiration, with the bronchioles and the air sacs expanded. Records of a series of consecutive abdominal operations demonstrated the extreme rarity of serious respiratory sequels provided the pulmonary system was kept patent during the surgical procedure and for twenty-four hours afterwards. Such complications as did occur invariably cleared up rapidly when treated by hyper-ventilation with carbon dioxide. Describing his technique, Dr. Ross Mackenzie said that the percentage of carbon dioxide, the duration of the period, and the frequency of administration should be regulated to the requirements of the individual patient. He remarked that the only untoward effect upon the organism as the result of inhaling 6 per cent. carbon dioxide during a

period of two hours was diuresis and increased acidity of the urine. In conclusion, he said that carbon dioxide gas should be available in every operation theatre and in every surgical ward; that, when used with discrimination, the gas was a valuable adjunct to general anaesthesia.

Dr. S. THOMPSON ROWLING (Leeds) said that this gas was of great value in that it enabled the patient to leave the theatre with a brisk corneal reflex. The PRESIDENT considered that practical difficulties militated against the extensive use of this gas in nursing homes; it was not easy to transport heavy apparatus from place to place, and, also, it was necessary to instruct nurses in the proper method of administration. Dr. F. T. EVANS said that he had found carbon dioxide of considerable value in relieving hiccup. He cited a case in which he had employed this method of treatment, and inquired if there was any objection to the prolonged administration of the gas. Dr. R. J. CLAUSEN congratulated Dr. Mackenzie on his results and on the systematic application of the method. He suggested that a simple machine was required which did not need the constant attendance of an expert. In this connexion he mentioned the "Carbetha" apparatus made by Messrs. Siebe, Gorman, and Co., Ltd.; although designed primarily for industrial use, it provided an efficient and safe method for administering the gas. He thought that a mixture of carbon dioxide and air could advantageously replace a mixture of the former gas and oxygen.

Replying to the points raised in the discussion, Dr. MACKENZIE said that it was only necessary to give carbon dioxide until the patient was breathing deeply; its use could then be temporarily discontinued. He had observed no harmful effects from repeated administrations.

PRE-MEDICATION

Dr. E. S. ROWBOTHAM said the modern conception of pre-anaesthetic medication implied that the patient should be unconscious in bed before the administration of the anaesthetic. Reviewing the drugs for this purpose he described the properties, methods of administration, and cases illustrating the use of paraldehyde, tribromethyl-alcohol, and the barbiturates. Dr. Rowbotham confessed a personal preference for either paraldehyde or nembutal; he preferred the former for children, because the barbiturates must be administered by the mouth or by the rectum. For adults nembutal gave equally good results, and post-operative restlessness, when present, was slight. Combinations of drugs acted more powerfully than when they were administered alone; what was known as basal narcosis marked a distinct advance in the administration of anaesthetics.

Dr. HUGH R. PHILLIPS stressed the importance of the use of morphine or omnopon (with atropine and hyoscine if desired) in every case in which paraldehyde, avertin, or any of the barbiturates were used. He regarded paraldehyde as the best form of pre-medication in children, but he administered the drug in saline and not in oil. He found nembutal satisfactory when given in capsules, but, in his experience, surgeons objected to intravenous pre-medication. An important point was the increase of work for the nursing staff entailed by the use of basal narcotics. Dr. I. W. MAGILL paid a tribute to Dr. Rowbotham's pioneer work on the use of paraldehyde as a rectal anaesthetic. Basal narcosis, he considered, had passed the stage of mere experiment, but it remained for anaesthetists to learn how to make use of them. It was advisable to warn the surgeon and the patient's attendants of the long somnolent state which might follow anaesthesia. Dr. Magill preferred nembutal to other basal narcotics; but in children, in whom intravenous injection was difficult, he preferred rectal paraldehyde, with its wide margin of safety. The perfect drug had yet to be discovered, but the principle of basal narcosis before anaesthesia was, in his opinion, quite definitely established. Dr. RONALD JARMAN considered that it was essential for the patient to have adequate pre-medication in order to allay fear. It should be the aim of anaesthetists to put the patient asleep in bed, and allow him to wake up only when all discomfort was over. Basal anaesthesia made it possible to reduce the amount of volatile anaesthetic administered. He thought avertin ideal, and considered that paraldehyde was very successful. He had had one serious case with sodium amytal, and he preferred to administer nembutal intravenously rather than by the mouth. Dr. F. T. EVANS preferred avertin to other basal narcotics. He detailed his experiences with this drug in combination with spinal analgesia. The rule he adopted was to give avertin, and, if the fall in systolic blood pressure did not exceed 20 mm. Hg, to proceed with spinal analgesia; if the fall in blood pressure was greater than this figure he withheld it.

Dr. F. B. PARSONS (Cambridge) drew attention to the chemical and pharmacological properties of the basal narcotics. He was interested to hear Dr. Rowbotham state that fatty degeneration of the liver was found post mortem in a case which terminated fatally after the administration of avertin, because animal experiments had led him to believe that this might be a possibility. He stated that, as a rule, non-volatile anaesthetics were slowly excreted while volatile anaesthetics were eliminated rapidly by the lungs. Paraldehyde should therefore be regarded as a volatile anaesthetic. Dr. PUGIN MELDON (Dublin) mentioned that at first he was afraid that nembutal might destroy blood corpuscles, on account of the high pulse rate which frequently followed its administration. He had heard of two cases of attempted suicide with the drug, in which 30 grains were taken. The only effect was prolonged coma. Dr. R. J. CLAUSEN was glad that Dr. Rowbotham's early work with paraldehyde had received adequate recognition. He hoped that the newer drugs would not cause the older remedies such as morphine and hyoscine to be forgotten. It would be unfortunate if the use of these drugs became universal for there was always the danger that they would be used without adequate experience and care, and, possibly, in excessive dosage. Dr. E. W. STRANGE (Wolverhampton) detailed a personal experience when he received morphine and hyoscine as preliminary medication. Subsequently he had no recollection of receiving ether. The PRESIDENT considered that very good results could be obtained with morphine and hyoscine. He regarded the use of avertin as risky.

In reply, Dr. ROWBOTHAM stated that basal narcotics, in addition to abolishing fear, made it possible to obtain anaesthesia with a smaller quantity of volatile anaesthetic.

A paper by Dr. R. C. GARRY (Glasgow), on the pharmacological properties of iso-amyl-ethyl barbituric acid (amytal), was read, and subsequently Dr. S. THOMPSON ROWLING (Leeds) read a paper on the administration of anaesthetics.

SECTION OF DERMATOLOGY

Thursday, July 23rd

VARICOSE ULCER

With the President, Dr. H. MACCORMAC, in the chair, Mr. A. DICKSON WRIGHT opened a discussion on varicose ulcer.

He said that the term varicose ulcer was incomplete, and that the disease should properly be called gravitational ulcer, for in all cases the final cause of the ulceration was gravity, and in many cases there were no varicose veins. The essential of all successful treatment of ulceration of the leg was constant support. In practice the treatment must be such as not to involve hospitalization; it must

also be simple, and within the reach of all medical practitioners, and not too laborious and time-consuming. The treatment employed by the speaker consisted essentially in supporting the leg by means of a bandage of elastic sticking-plaster, which could not move when once applied, and which adjusted itself to the shrinkage of the leg. The bandage was wound smoothly in a continuous spiral, and was changed only at considerable intervals—at first, perhaps, once in three days, and later, as the case progressed towards recovery, at longer periods. In healing ulcers a single bandage might be allowed to remain *in situ* for a month or even longer. The method was of practically universal application, there being only two contraindications—associated arterial disease and diabetes. The commonest cause of failure in the treatment was looseness of the bandage. The speaker had cured many cases referred to him as failures merely by applying the bandages more tightly. In some cases eczema developed under the adhesive plaster, and occasionally became generalized; but only in two cases had it compelled him to abandon the treatment. Blisters sometimes formed under the bandage, becoming a source of pain and discharge; but he had never had to stop the treatment on this account. Cutting of the bandage into the skin at times produced linear ulceration in very oedematous legs, but could be avoided by placing longitudinal strips of plaster along the leg as splints. Pain was occasionally increased at first by the pressure, and the speaker had found powdered aspirin sprinkled on the floor of the ulcer an excellent local analgesic, which lasted from four to seven days. He then illustrated the treatment by accounts of difficult cases, one of the most dramatic being that of a woman, the mother of nine children, whose ulcer measured 67 square inches, and the girth of whose leg at its upper border was 15 inches. At the end of thirteen weeks' treatment—consisting merely of the application of the elastic sticking-plaster bandages, aided by the implantation of skin grafts from the forearm under the granulations on four occasions—the ulcer was completely epithelialized, and the girth of the leg was reduced from 15 to 12 inches. Mr. Wright summarized his results by saying that, in all, he had cured 525 cases of ulcer of a total area of 25 square feet. The largest single ulcer he had treated successfully had been one of 180 square inches. He then showed a most interesting cinematograph film illustrating his methods of bandaging, skin grafting, injecting varicose veins, etc., and also many patients before and after treatment.

Dr. TWISTON DAVIES (Brighton) said that he had employed Mr. Dickson Wright's methods in the treatment of ninety-eight cases of ulceration of the legs. Among these fifty-one had healed after an average of 6.3 attendances, eleven had been referred to their own doctor, three had relapsed, five had been lost sight of, and seventeen were still attending. He admitted four failures, in each of which exceptional factors were at work. As regards dermatitis, he had never seen a case which had not yielded to a second and tighter application of elastoplast; and, moreover, he used elastoplast a great deal in the treatment of chronic eczema. He had also used it with some success in Bazin's disease, but with none in "silk stocking" disease. When he had succeeded in getting the ulcer to heal he considered the necessity for permanent support of the leg by measuring the amount it swelled during one week without any bandaging at all. He had had some difficulty in getting the implanted grafts to remain *in situ*, but had now overcome this by anchoring them by means of a knot in a piece of catgut drawn through them. Dr. HALLAM (Sheffield) said that he would rather be Mr. Dickson Wright than have written Gray's *Elegy*. He condemned the common error of thinking that all, or almost all, ulcers of the leg were syphilitic. Dr. INGRAM (Leeds) congratulated Mr. Dickson Wright, and said that he had found that small ulcers were the most difficult to treat. Dr. SEMON said that he had found the interposition of silver foil between the ulcer and the bandage very useful in the promotion of healing in cases which hung fire. Dr. SUMMERHAYES (Brighton) remarked that the use of thin metal for this purpose had been practised in India from time immemorial. He also said that he was glad to tell the meeting that elastoplast bandages were now allowed to the panel practitioner. Dr. HALDIN-DAVIS said that, although Mr. Dickson Wright had revolutionized the treatment of varicose ulcer, in his experience the incidence of eczema was the chief objection to the use of the elastic adhesive bandages. Several other members asked Mr. Dickson Wright questions, to which he briefly replied.

Subsequently short papers were read by Dr. BEATTY (Cardiff), on some points in the treatment of psoriasis; by Dr. INGRAM (Leeds), on the treatment of ringworm of the scalp by thallium acetate; and by Dr. SEMON, on the toxicology of salvarsan compounds.

SECTION OF ORTHOPAEDICS

Thursday, July 23rd

TRANSPLANTATION OF BONE

With the President of the Section in the chair, Professor W. E. GALLIE (Toronto) opened the discussion by remarking that though bone transplantation had proved to be one of the most spectacular and important additions to surgery within the last thirty years, yet the development of a perfect technique had been slow, and failures and disasters were still frequent. Among the causes of failure infection was the most important, since it not only usually caused failure of the graft to unite to its bed, but also introduced the complication of septic necrosis. Great differences in operative technique were found in different centres. Dr. Gallie himself used the Lane technique in all its details. Albee, on the other hand, depended on rapid and skilful performance of the operation. Certainly the Lane technique, unless skilfully used, only complicated and prolonged the operation. Professor Gallie pointed out that a piece of bone, unlike transplanted skin and fascia, died and ultimately underwent complete absorption in its new bed. Lantern slides were shown to demonstrate the death and disappearance of cells from the lacunae, except those in open mouths of Haversian canals, which used such lymph as was available. These latter must not be injured—for example, by burning with a hot saw—and any technique must protect the endosteal surface and subperiosteal cells. New capillaries growing into open Haversian canals, osteoblasts making excavations in the dead graft, and later plastering the walls of the cavities with new bone, the absorption of the whole graft, and replacement by new cancellous bone, were illustrated by slides. Success depended on primary union, the firm healing of the graft to fragments, and finally of the fragments to one another. An analysis of failures showed that the commonest defect was not securing contact of the graft to the bed over a sufficient area; in the radius or ulna it should be embedded 1½ inches into each fragment; in the tibia 2½ inches each. Secondly, insufficiently close apposition of graft to fragments, even such a gap as 1/8 inch, would cause non-union, so that a fair degree of craftsmanship was essential. Insufficient immobilization was a third cause of failure, and not only should an external splint, like plaster, be used, but also internal fixation, such as by boiled-beef pins, or even metal plates and screws. Fourthly, the graft should not be laid into an avascular bed of sclerosed ivory bone. The fragments must be thoroughly opened up. Further, the technique must vary with the problem presented, and

the same plan must not be forced on all cases; but the mechanical details should be settled after the field of operation had been exposed. An adequate incision was essential, but the periosteum should not be stripped further than necessary from the bone ends. For slender bones like the clavicle, Professor Gallie advised the diamond-shaped graft, sprung into its bed, and further secured with thin beef-bone pins, the technique being demonstrated by lantern slides. The medullary peg was condemned, for it acted too often as a complete plug, preventing the outflow of osteogenetic tissue. The inlay graft was advised for big bones like the tibia; it had to be preceded by restoration of the alignment and proper apposition, which might need to be maintained by screws or plates. The graft must contain sufficient living elements, it must be strong enough to act as a temporary splint, and it must resist disintegration until sufficient new bone had been laid down to prevent its collapse. To attain these ends its endosteum and subperiosteal cells were essential, but its actual periosteum could be left behind and sutured over the gap. Experiments had shown that loose-textured bone, like ribs, resulted in most active proliferation of osteoblasts, but such a graft fractured readily if subjected to strain. A sliding graft, when available, was preferable. The mandible was a region where a rib graft gave an excellent result; the method was illustrated by lantern slides. Special instruments were demonstrated for drilling and tapping; it was advised that the hole in the inlay graft should be made loose, so as to get tension when the peg was screwed into the bed. The speaker strongly advised shortening a bone to get end-to-end union, rather than to attempt to bridge a wide gap, unless unavoidable. When this was essential he used the diamond graft, with multiple slivers and crushed cancellous bone. Finally, he urged that if all the above principles were strictly observed in bone-grafting, failures should be extremely rare.

A discussion followed in which Sir Robert Jones and the other speakers congratulated Professor Gallie on his convincing and vivid presentation of both the experimental and clinical sides of the subject. Mr. Elmslie agreed that it would take a bold man to criticize the principles laid down, and the demonstration had been most convincing. With regard to the death of the graft he quoted cases which suggested that its proximal end was revivified extremely rapidly. He had found it easy to bridge gaps in the tibia left by old osteomyelitis, but those from ununited fractures were most difficult. With this last remark Mr. Platt agreed. He inquired whether Professor Gallie resorted to the two-stage operation, so frequently used for war cases—preliminary excision of scar tissue. He did not agree that it was wise to shorten the lower limb much. Mr. A. S. Blundell Bankart commented on the fact that terminal grafts seemed to unite well, though bridge ones were said not to do so. Sir William Wheeler (Dublin) agreed with Mr. Bankart. He also quoted cases showing the amazing way some grafts would survive in the presence of sepsis. Mr. A. Mitchell (Aberdeen) asked what was the best type of graft to fuse the sacro-iliac joint, and Mr. Rowley Bristow asked a similar question in regard to the fusion of tuberculous hips. Professor Gallie replied that he preferred to use a massive graft from the posterior end of the ilium to fuse both lumbo-sacral and sacro-iliac joints at once in view of the difficulties of local diagnosis. In regard to tuberculous hips, he was loath to cut into tuberculous tissues for fear of meningitis supervening.

Adolescent Coxa Vara

Mr. G. Perkins contributed an interesting review of his own method of dealing with cases of what was practically spontaneous separation of the upper femoral epiphysis, as they followed very slight trauma or strain, and the separation occurred exactly at the epiphyseal line, not—as with the real traumatic type—partly through the diaphysis. Mr. Perkins classified the cases as: (1) slight, which were difficult to diagnose, even with *x* rays, and which gave satisfactory end-results apart from any particular treatment; (2) incomplete, repeated, which he said could not be reduced, but should be relieved of weight-bearing till *x* rays showed consolidation of the bone; (3) complete, rapid, which needed reduction, best done by a gradual method—skeletal traction up to 20 lb.; (4) cases resulting in coxa vara in their late stages—in these the arc of hip range was abnormal, at the expense of the internal rotation and abduction; this could be much improved by subtrochanteric osteotomy; (5) arthritic cases, some resulting from too forcible attempts at reduction; these were best treated by arthrodesis.

SECTION OF HYDROLOGY AND CLIMATOLOGY

Thursday, July 23rd

Seaside Treatment of Delicate Children

With the President, Dr. R. Fortescue Fox, in the chair, Dr. Carl Häberlin (Wyk auf Föhr) read a paper on the treatment of children at the seaside (excluding surgical tuberculosis). He pointed out the fact that it was an Englishman, Russel, who "invented" the sea, from a therapeutic point of view, in 1750, and that in England there was still more therapeutic scope than in most countries, owing to an island situation and the differences in climate to be found on the five coasts of Britain. He enumerated the essential qualities which all marine coasts had in common, and dealt at some length with the clinical indications for and against treatment at the seaside, both in hospitals and elsewhere. He stressed as the major indication "the catarrhal child," who reacted well to physical stimuli, and remarked that prolonged treatment was in most cases essential. He pointed out also that the major improvement noticed after successful treatment resolved itself physiologically, largely, into an improvement of the heat-regulating mechanism of the skin, and quoted many ingenious experiments and figures proving this statement. The enormous increase in the basal metabolism of these children was commented upon, and discussed in relation to the iodine content of the air, soil, and food. The dangers of treatment in unsuitable cases was emphasized in relation to the various pathological states for which such treatment was sometimes advised. In dealing with the technique of treatment, he said that the body must be acclimatized gradually, and the result of the various stimuli noted prior to increasing their intensity; otherwise nothing but harm would result.

Dr. Percy Lewis (Folkestone) said that certain principles stood out. (1) The fundamental effects of seaside cures were on the whole body, not on particular organs. (2) The best results of seaside air could only be got on the beach. (3) Skin reaction was important in the cure. (4) Catarrhs did better at the sea in winter than in summer. (5) Delicate children differed immensely, and so did seaside climates. The common features of all seaside climates were abundance of light, a pure, warm, moist, saline air, an equable temperature, and a dense atmosphere with frequent small barometric differences. All these phenomena stimulated metabolism, and were therefore bracing—some more so than others. The abuse of the seaside consisted in sudden change of habits, too brief visits, too long an exposure to sun, air, and sea, and over-excitement. These were all avoided by schools on the coast, which were probably, therefore, the best therapeutic institutions. With precautions, cures at the seaside could not be replaced by anything of equal worth.

Sir HENRY GAUVAIN stressed the need for a seaside hospital to be actually on the sea, and showed many interesting lantern slides illustrating the technique of seaside therapy. After having discussed at some length the types and conditions of patient suitable for this kind of treatment, he gave interesting data and figures in support of his views. He briefly reviewed the architecture of seaside hospitals, pointing out that it was the walls and roofs of the hospital which should be moved to meet differing climatic conditions, and not the patients themselves if bed-ridden. Dr. W. S. C. COPEMAN gave the results of a questionary sent out to medical men and institutions on all the coasts of Great Britain, summarizing their views and usage with regard to the choice of cases for their locality, and the differences noticed at various seasons. Their observations on malnutrition, catarrhal conditions, rheumatic and cardiac cases, and nervous instability (including chorea), and use of physical medicine on the coast by medical authorities, were all considered. Dr. HUGH RAVEN (Broadstairs) also read a detailed report on the same questions undertaken by him, with the help of twenty colleagues in the Isle of Thanet. Dr. COLLIS HALLOWES (Torquay) and Dr. STOTT (M.O.H., East Sussex) spoke on the same subject.

Dr. FORTESCUE FOX, President of the Section, after thanking the preceding speakers, and emphasizing the need for further detailed investigation on similar lines, moved a resolution to the effect that the Section considered the time ripe for the formation of an association of marine practitioners and others for the scientific development of these forms of treatment in the British Isles. This was seconded by Dr. PERCY LEWIS (Folkestone).

RURAL HYGIENE

CONFERENCE AT GENEVA

The Conference on Rural Hygiene, held at Geneva last month, under the presidency of Professor GUSTAVO PITTALUGA (Spain), was summoned by the council of the League of Nations on the proposal of the Spanish Government. Its object was an international technical study of rural hygiene, as one of the most important factors in the organization of European agricultural regions. Inquiries by experts into the present health organization of various European countries formed the basis of this study, and a special preparatory committee drew up an agenda (adopted by the conference), which included the following points for consideration: (*a*) guiding principles and appropriate methods for ensuring effectual medical care in rural communes; (*b*) the most effective methods of organizing health services in rural districts; (*c*) the "amelioration" of rural dictricts—most effective and most economical methods. Three committees were appointed to consider these three questions, and a fourth was instructed to decide which of the suggestions put forward by delegates could be studied by a future conference or by the League Health Organization.

The first committee decided that medical assistance should include both preventive and curative methods, and proposed means for making it efficacious, laying special emphasis on health insurance and on the need for close co-operation between administrative and technical services. It then discussed the question of the sanitary staff providing such assistance, as well as the administrative and technical conditions that must be fulfilled. The second committee considered the two main forms of health organization: the administration of local sanitary services by the State (the State's functions being purely supervisory), and sanitary administration under the responsibility of local authorities. Special attention was devoted to the question of rural health centres. The third committee dealt with questions of water supply, housing, the elimination of waste products, and with amelioration of rural districts. The reports of the three committees were unanimously adopted by the conference.

The programme drawn up by the fourth committee for study by health institutes included: (*a*) schools for health visitors; (*b*) training of sanitary officers; (*c*) cost of health and rural medical services; (*d*) rural improvement; (*e*) housing in rural districts; (*f*) rapid transport of sick in rural districts; (*g*) close co-operation between public assistance administrators, architects, agriculturists, hygienists, etc.

Directors of schools of health who met during the conference prepared the following list of problems for study by their schools: (1) milk in rural districts; (2) typhoid notification; (3) use of manure and anti-fly campaign; (4) cost of sanitary equipment; (5) methods of analysis and testing, and the methods of testing the water supply and of waste products used in various countries. Professor MIYAJIMA (Japan) stressed the importance of the results obtained for non-European States, and the desire of those countries to benefit by them as regards the development of their own national organizations.

In his closing speech the president, M. PITTALUGA, applauded the cordial spirit of international co-operation shown by the members of the conference, expressing the hope that the delegates, on their return home, would submit the recommendations of the conference to their Governments. "I am sure," he said, "that the conference marks a great step forward in the organization of medical assistance in rural districts. For the first time hygienists, engineers, agriculturists, and administrators have come together to discuss the question of the organization of rural life and the welfare of rural populations."

ROYAL MEDICAL BENEVOLENT FUND

Subscriptions and donations are urgently needed in order that the activities of the Fund may be continued. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, London, W.1. At the last meeting of the committee twenty-nine grants were voted, amounting to £689 10s. The following are particulars of a few of the cases helped.

Widow of M.B., Ch.B., who died last March at the age of 37, leaving her only a capital sum of £600 and an infant 3 years old. A medical man, in recommending this case, wrote: "The husband was the most distinguished medical graduate of his year. After graduating with honours he settled in what seemed fair to be a lucrative practice in one of the newest and rapidly expanding suburbs, but his scientific bent caused him to make the sacrifice of giving up his practice in order to devote himself to the study of scientific pathology. His early death has left his widow with inadequate means of support for herself and her young child. I can think of no case which more deserves the sympathetic consideration and support of the committee." Voted £30. Personal touch with the applicant will be maintained, and further help or advice will be given if possible.

M.R.C.S., L.R.C.P., aged 74, widower. The honorary local secretary of the Fund, in recommending the applicant, wrote: "For several years he has suffered from paralysis agitans, and is very feeble and helpless." The applicant himself writes: "I have been unable to attend to my patients, and many have fallen off. I am quite unable to do anything for myself, and have to employ a male attendant to dress and undress me and to attend to me during the night, and I also require assistance to move about the house." Assured private income £68; friends give some help. Voted £40.

M.B., B.Ch., aged 40, with wife aged 31 and a daughter aged 10. Applicant has had to give up practice, and is in hospital with sarcoma in the hip. Wife and child are living on proceeds of sale of the practice, thereby using up the only capital. Voted £40.

Widow, aged 73, of L.R.C.P., who died at the age of 75 in March last. Her only income is the old age pension of £26. Voted £26.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, Tavistock House (North), Tavistock Square, W.C.1.

FOREIGN MEDICAL PRACTITIONERS IN CHINA

The Minister of Health has received officially the following particulars with regard to the arrangements governing the granting of certificates to foreign medical practitioners wishing to practise in China.

1. Foreign doctors, when applying for certificates as medical practitioners, must first forward their examination diploma and any other documents attesting their qualifications to the nearest consul of their nationality for his inspection, with a request that he issue a certificate.

2. When the consular certificate has been obtained, it should be forwarded, together with a statement of the applicant's record, two 2-inch half-figure photographs, a registration fee of five dollars, and a stamp tax fee of two dollars, to the appropriate local government department (that is, the health bureau; or, if the district has no health bureau, then the public safety bureau or the district government), for transmission through the proper authorities to the Health Section of the Ministry of the Interior for consideration with a view to the issue of a certificate.

Ireland

Professor Thomas Sinclair

A fund is being inaugurated in order that the friends, colleagues, and pupils of Colonel Thomas Sinclair, M.D., F.R.C.S., Emeritus Professor of Surgery in Queen's University, Belfast, may have an opportunity to express their appreciation of his invaluable services to the Belfast Medical School. Professor Sinclair occupied the chair of surgery from 1886 to 1923; he served as a consulting surgeon with the Army Medical Services in France and Egypt during the great war, and has represented the Queen's University in the Imperial Parliament since 1923, in addition to being its registrar and pro-chancellor. He is also a member of senate in the Parliament of Northern Ireland. The testimonial will probably take the form of a portrait to be painted and presented to the university. Subscriptions, limited to £2 2s., may be sent to the honorary treasurer, the Right Hon. Samuel Cunningham, P.C., 3, Donegall Square East, Belfast.

The Rotunda Hospital

The annual report of the Rotunda Hospital for the twelve months ending October 31st, 1930, is, as usual, a compilation of information of great interest to gynaecologists and obstetricians. The amount of tabular information has been slightly reduced in this issue by abbreviating the statistics relating to uterine inertia, but, otherwise, the present volume follows the same lines as its predecessors. The outstanding event of the year under review was the opening of an extension of the gynaecological department. This has brought into being an additional operation suite. The new theatre is ventilated by warm air supplied from a chamber on the roof; vitiated air is removed by ducts near the floor. This method has proved successful in practice, and it obviates the necessity for radiators, which collect dust, and are difficult to keep clean. The number of admissions to the maternity side of the hospital was 2,789; of these, 2,258 patients were delivered. This represents a definite increase in admissions, and indicates the considerable number of cases available for illustrating pre-natal teaching. The hospital was also responsible for 1,724 deliveries in the patients' own homes. There were no deaths in the in-patient department, but this was to some extent due to external that cases requiring careful watching and nursing the fact were admitted at once to the hospital. Dr. Bethel Solomons, Master of the Rotunda, comments on the large number of women, apart from those suffering from eclampsia or eclampsism, who were found to have albuminuria on admission. In view of the regular persistence of this finding in successive years, he is inclined to suggest that albuminuria may sometimes have to be considered a normal occurrence in pregnancy. There were thirty-seven cases of eclampsia, and three patients died; none of the eclamptics had had pre-natal care. Nineteen cases of placenta praevia were dealt with, and there was no maternal mortality; the foetal mortality rate was less than previously. Only three Caesarean sections were performed, and Dr. Bethel Solomons maintains his belief that bipolar version is the best treatment to teach in this condition, since it is more generally applicable. The total number of Caesarean sections performed in the hospital during the year was forty-three, and there was also one Caesarean hysterectomy. In his pathological report—which is included as an appendix—Dr. F. S. Bourke mentions an attempt to investigate a possible source of haemolytic streptococci, a series of throat cultures being made from swabs taken from the nursing, post-graduate and student staffs, with special attention to those persons working in the theatre. A few primary cultures of haemolytic streptococci were obtained, but these on sub culture were found to be no longer haemolytic. Some of the swabs were taken from persons suffering from sore throat, and not on duty, but in no instance were any genuinely haemolytic streptococci recovered. Dr. Bourke also refers to the difficulty of obtaining suitable donors for blood transfusion. He adds that it is no longer the practice to depend on the results of typing with the group serums, since one or two alarming experiences have resulted. It is now customary to perform a cross-typing with cells and serum from the patient and the prospective donor. This takes up rather more time, but the after results have justified confidence in the method.

England and Wales

Medical Charity in Yorkshire

The hundred and third annual meeting of the Medical Charitable Society for the West Riding of the County of York was held at Bradford, on July 23rd, under the chairmanship of Dr. David Walker. The Lord Mayor of Bradford, by whose courtesy the meeting was held in the City Council Chambers, was present at the opening of the proceedings, and made some appreciative remarks on the work of the society, which continues to increase. During the year grants amounting to £2,006 were made in response to thirty-nine applications, the total amount given by the society in grants up to June 30th being £85,134. Losses to the society by deaths, resignation and other causes were more than made up by the election of thirty-five new members, and the year begins with a total membership of 1,099. The growth of the society is indicated by the fact that during the decennial period 1921–30 the number of members increased from 862 to 1,089. In regard to the financial position it is gratifying to find that though the grants have amounted to the large sum mentioned above, the investments standing in the name of the trustees, with a nominal value of £49,996, have been bought at a cost of £42,986. The work of the society is carried out by a treasurer, secretary, and stewards, and beyond the cost of printing, postage, the actuary's fee, and a small commission to the bankers as trustees, there are no expenses. This year a legacy of £500 has been received under the will of the late Mrs. M. A. Major in memory of her husband, Dr. Herbert Coddington Major, formerly of the West Riding Asylum. The objects of the society are to help: (*a*) any member who is disabled by illness or age, and who has not adequate means of support; (*b*) the widow or children of a member dying in indigent circumstances; (*c*) the mother of such

a member, being a widow (or the sister, being single or a widow), who has acted as his housekeeper for a period of not less than five years immediately preceding his incapacity or death, and (*d*) in the education of the children of disabled members. Any regular medical practitioner residing in the West Riding of the County of York, in good health, may be proposed as a member of the society, provided he is under 40 years of age, and has not been in practice in the West Riding for more than fifteen years without being a subscriber. A member who leaves the Riding or the country may continue his membership and enjoy all its privileges.

New Admission Villa at Hanwell Mental Hospital

The centenary of Hanwell Mental Hospital was celebrated on July 29th by the opening of an admission hospital villa. In the absence of the Minister of Health, the ceremony of opening was performed by Mr. L. G. Brock, chairman of the Board of Control. Mr. Ernest Sanger, chairman of the London County Council, presided. The admission villa is a detached self contained unit for the reception of all new cases, of both sexes, and embodies special facilities for close observation and careful treatment on distinctively hospital lines. To encourage the atmosphere of hopefulness and to approximate the institution to a hospital for physical sickness, women nurses mainly are to be employed. The accommodation provided is for fifty male and fifty female patients, and on each side there are examination rooms, sick dormitories, verandas, and a solarium, while in a central position there is an association room for the use of both sexes. Special rooms for *x* ray and light treatment and Plombieres baths have also been provided.

After Dr. Adeline Roberts, chairman of the Mental Hospitals Committee of the London County Council, had explained what it was hoped to do in the villa, Mr. Brock gave an address, in the course of which he reminded the gathering that Hanwell was the oldest public mental hospital in London, and about the fifth in priority in the country. It had great traditions. Its first superintendent, Dr. (afterwards Sir William) Ellis, brought with him the idea which took shape in the Queen Adelaide Fund, which was really the germ of the whole after care movement. That movement, said Mr. Brock, was going to develop in the near future, and, he believed, would prove a most potent ally of the modern mental hospital. The admission unit Mr. Brock regarded as the centre of the whole organization, and he said he could not over emphasize its importance. Many people did lip service to the idea of early treatment without acknowledging that obviously it included two things—namely, earliness and treatment. They were often content to provide places where the new admissions could be kept separate from the rest of the hospital, and to do no more. It was true that admission units were places where those newly admitted could be kept out of contact with chronic patients, but that was only to solve half the problem. The patient had not only to be placed in suitable surroundings, but everything possible had to be done to improve his condition. There was room for controversy as to the value of different therapeutic methods, but no shadow of doubt as to the importance of making the patient feel that everything possible was done for him. It was of no use calling institutions hospitals unless that psychological factor was appreciated. The recovery rate in mental cases, said Mr. Brock, had remained stationary during the last generation. It was not a bad rate, though not so good as it ought to be, and he was confident that before long the concentration of effort now being made and the multiplication of admission hospitals would result in a marked improvement in the figures. There was no justification for the pessimistic attitude which refused to try new things owing to the supposed hopelessness of mental conditions, that point of view was contradicted by the results forthcoming in the induced malarial treatment of general paralysis. The scheme of improvement at Hanwell includes a nurses' hostel, and Mr. Brock, in conclusion, paid a high tribute to mental hospital nurses. He had now visited, he said, nearly all the public mental hospitals in the country, and everywhere he was struck by nursing devotion. He had seen good hospitals, hospitals that were less good, and a few that were frankly bad, but they all had this feature in common, that the patience, forbearance, and kindliness of the nurses was beyond praise. No occupation was more exacting than theirs, and when he thought of the physical and moral strain of attendance in the wards hour after hour, he wondered that so many could be found to undertake it.

The visitors afterwards inspected some of the records and relics of the early days of Hanwell, including the apparatus once used for mechanical restraint. The hand cuffs, muffs, and leg locks were certainly barbarous, yet Hanwell in the hundred years of its history has been a pioneer in the humane treatment of the insane. John Conolly, who became its superintendent in 1839, inaugurated restraint free methods, in the face of considerable objection from his subordinates and others. William Ellis also, an earlier superintendent, saw so far ahead as to introduce occupation therapy. In 1889 the London County Council became responsible for the government of the hospital. During the forty two years which have elapsed since then, Hanwell has had only three medical superintendents.

The Waking Hour in Hospital

The Minister of Health has issued a memorandum to all county and county borough councils in England and Wales, drawing attention to the report on patients' waking hours in London voluntary hospitals, published by King Edward's Hospital Fund for London,[1] and suggesting that the councils will no doubt wish to consider the question of adopting the recommendations in the administration of their own hospitals. The principal recommendations in the report are that, unless there is some exceptional and adequate reason to the contrary, the most suitable hour for the waking of patients is 6 o'clock, and that, whatever the official hour may be, no patient should be washed before having either breakfast or early morning tea. At the annual meeting of the council of King Edward's Fund the Prince of Wales made the following reference to the report: "The subject has been talked about for years, and the difficulties are well known to all hospital people. A few hospitals have been making experiments. They have certainly brought the question to the front, as is shown by the fact that it was taken up last year, almost simultaneously and quite independently, by three different bodies, each in its own sphere—the British Hospitals Association, the London County Council, and the King's Fund—and the three reports all point more or less to the same conclusion."

Mental Patients in the Care of the L.C.C.

The total number of persons of unsound mind for whom the London County Council was responsible on January 1st last was 25,819, an increase of 208 on the year. Of this number, 21,053 were in the county mental hospitals. In addition, the Council was providing accommodation in one of the institutions transferred from the Metropolitan Asylums Board for 912 aged patients without formal reception orders. The number of persons accommodated in institutions provided for the mentally defective under the Mental Deficiency Acts was 3,372, and in addition, at a training colony, there were 782 feeble minded persons who were not the subjects of reception orders.

[1] *British Medical Journal*, 1931, i, 52.

Scotland

Royal Victoria Hospital and Sanatorium Colony

In the last annual report of the Royal Victoria Hospital Tuberculosis Trust reference is made to the erroneous view sometimes put forward that the incidence of tuberculosis is automatically decreasing. While the mortality rates from this cause in London, Edinburgh, and New York have fallen remarkably, the figures in other capital cities, such as Paris, Warsaw, and Vienna, continue very high. The conclusion is inevitable that good results only follow continued and well-directed effort. In view of the belief that this infection is generally contracted in childhood, and that treatment at that age has a most important bearing on later life, special efforts have been made by the Trust with the object of detecting and dealing with juvenile patients. The number of these admitted to the sanatorium colony at Southfield has grown steadily, and now a new pavilion to accommodate twenty or thirty children is being erected there; it consists of a one-storied block, the wards of which open directly on to a raised terrace, and a considerable part of the flat roof of the pavilion will be adapted for treatment. This addition will greatly increase the opportunities of developing further measures of anticipatory detuberculization. Work has proceeded on the prognostic value of the blood sedimentation test and the leucocyte reaction to tuberculosis from the point of view of prognosis, and laboratory observations have been continued in regard to the communicability of human infection to cattle. The committee appeals for a sufficient endowment to ensure an annual expenditure on research of £600 to £800 for the next five years. In a reference to the Lübeck tragedy caution is expressed as to the advisability of sanctioning the use of B.C.G. vaccine on the wide scale which has been adopted in some countries, because time alone can reveal the extent and duration of the protection, and define the degree of risk involved.

Animal Diseases

At the annual meeting of contributors to the Moredun Institute of the Animal Diseases Research Association, the president, Mr. Falconer L. Wallace, stated that its research staff had been augmented, and that a biochemical department had been established in a suite of laboratories provided by the Royal (Dick) Veterinary College. As work was being carried on in collaboration with the Rowett Institute and with the Macaulay Institute, the various research institutes in Scotland were co-operating as a team. In reviewing the results of last year Dr. J. Russell Greig said that definite progress had been made. The disease known as "louping-ill" had been a problem for the past century, and the Moredun Institute had now determined that the cause of this disease was an ultra-microscopic filterable virus, and, further, it had been able to show that a very efficient immunity could be set up by inoculating this virus into healthy sheep. It was now attempting to obtain a method of immunization which would be both safe and efficacious, and for this purpose field experiments on a large scale were being carried out. There was evidence that under natural conditions this disease was transmitted by a tick. Preventive vaccine had been prepared from the lamb dysentery bacillus in large quantities, and approximately 38,000 doses had been distributed to flock masters in the past year. From tuberculin tests obtained in combating this disease alone, all the money expended by the Animal Diseases Research Association since its inception had been returned to the farmers in whom infection had been eradicated. Dr. Greig remarked that grass sickness was still one of the most baffling problems of veterinary science, but this offered a promising subject for investigation to be carried out next season.

Queen's Institute of Nursing

At the quarterly meeting of the Scottish council of the Queen's Institute of District Nursing, H.R.H. the Duchess of York presented long-service badges to three Queen's nurses who had served twenty-one years in the Institute. The report showed an increase in revenue during the quarter as compared with that of the corresponding period in the previous year. In regard to the prevention of tuberculosis, reference was made to the work that had been done by the nurses of the Institute in collaboration with the National Association for the Prevention of Tuberculosis, the Royal Victoria Hospital Tuberculosis Trust, and the Scottish Branch of the British Red Cross Society. This work has been carried on for the past two years in Inverness-shire and Ross-shire, and will shortly be extended to the Orkney and Shetland Islands. During the quarter twenty-one nurses who had completed district and midwifery training were placed in first appointments. The report also mentions that 146 nurses were employed in 108 different districts, which were inspected from the Institute headquarters. In Edinburgh the nurses under training attended 1,164 patients, upon whom they paid a total of 44,943 visits.

India

Medical Aid for Women and Children

As in recent years a single volume has been published comprising the reports for 1930 of three separate organizations, then under the presidency of Lady Irwin—namely, the National Association for Supplying Medical Aid by Women to the Women of India (Countess of Dufferin's Fund, including the Women's Medical Service), the Victoria Memorial Scholarships Fund, and the Lady Chelmsford All-India League for Maternity and Child Welfare. It is announced, however, that the League has been dissolved as from December 31st, 1930, and that its property is being transferred to the Indian Red Cross Society after all the debts and liabilities have been met; that organization will thus include henceforth the National Baby Week Council, which was originally part of the Lady Chelmsford League. This marks a further step in co-ordinating the activities of the various bodies engaged in maternity and child welfare in India. It is fitting that the Red Cross Society should have a greater power of control, since it is the strongest organization concerned, spending considerably more of its income on child welfare work than do the others. As a corollary to this decision the governing body of the Countess of Dufferin's Fund has decided to transfer the control of the Victoria Memorial Scholarships Fund to the Indian Red Cross Society; this Scholarships Fund will continue to be administered in accordance with the objects defined at its inauguration in 1903 by the late Lady Curzon. It is mentioned in the joint report that the managing body of the Indian Red Cross Society has now set up a Child Welfare Bureau with effect from the beginning of 1931. Progress has been very slow also as regards the training of native midwives by health visitors, partly owing to the fact that the teachers have so far not developed any marked enthusiasm for this rather tedious branch of their work. The difficulty of supervising midwives after they have been trained has proved insuperable up to the present, again owing to the shortage of staff. Rural areas are still largely untouched, the trained midwife preferring to work in towns. Now that these difficulties have been

openly discussed at various conferences it is hoped that more energetic measures may be devised for instructing midwives, not only as regards the care of parturition, but also in ante-natal work. The main body of the joint report comprises detailed accounts of the work that is being carried on in various hospitals for women and children.

Bengal Hospitals and Dispensaries

In his triennial report on the working of hospitals and dispensaries under the Government of Bengal for the years 1926–28 inclusive, Major-General G. Tate, I.M.S., Surgeon-General to that Government, states that these three years have been particularly difficult for those in administrative charge of the larger medical institutions. In 1927 serious handicaps of staffing and managing hospitals in Bengal were brought to light, but the recommendations of the Lee Commission, which reduced the appointments reserved for I.M.S. officers, have resulted in the retirement and transference of several experienced officers, with consequent further damage to the Service. In an effort to comply with the recommendations of the General Medical Council changes have been made in the curriculum of the University of Calcutta; and additional equipment has been obtained. Great difficulties still continue to exist in obtaining qualified medical officers for rural areas where there are few social amenities, indifferent educational facilities for children, and a very doubtful prospect of making a living. The Calcutta School of Tropical Medicine and Hygiene is increasing each year its popularity and usefulness; post-graduate training has been intensified, and an out-patient department has now been opened. The chief researches conducted under the auspices of the Indian Research Fund Association include an inquiry into the mode of transmission of kala-azar, probably by the sandfly; the study of filariasis; and the investigation of the treatment of leprosy by the ethyl esters. Increased facilities have been provided in Calcutta for the treatment of venereal disease. The total number of operations performed in all classes of Calcutta hospitals during the period under review was 158,000, as compared with 129,000 in the preceding triennium.

School Medical Examinations in Agra and Oudh

In October, 1929, an important change was made in the system of medical inspection of schoolboys in the United Provinces of Agra and Oudh. With the concurrence of the public health and education departments it was arranged that the medical inspection of scholars in the Government and aided English schools should be conducted, whenever possible, by district and municipal medical officers of health who had been nominated by the Director of Public Health. Before this date the practice had been for such examinations to be made by members of the Provincial and Subordinate Medical Services. In the case of boys living in hostels attached to schools the school medical officer treats and prescribes for them as before, while the new school health officer is responsible for the general health of all the boys at the school, whether resident in the hostels or not, and arranges for periodical medical inspections. In his annual report for the year ending March 31st, 1930, Lieut.-Colonel W. A. Mearns, I.M.S., Officiating Director of Health for the United Provinces, states that the new scheme is now in operation in the English schools, and in the intermediate colleges for boys, in forty-four towns. Once a year the boys are examined in detail for various defects, and monthly parades are held, when the condition of their eyes and teeth, and their general cleanliness, are noted. Municipal officers of health examine the boys in the vernacular schools, but, in view of the very large number concerned, it has not been possible to adopt so complete a scheme of inspection; there is one detailed examination each year, but monthly examinations are not held. Colonel Mearns remarks that there is still room for improvement in the medical records thus obtained from some places, but he indicates one useful side of this scheme in mentioning the fact that such local authorities as the chairmen of district boards, the district inspectors of schools, and the local magistrates receive copies of the reports, and can therefore take action when any general cause of ill-health is brought to light. As elsewhere, difficulty has been experienced in persuading the parents of defective boys to take steps to secure treatment, even when ample facilities exist locally. In the rural areas the medical officers provide any necessary drugs at the time of their examinations. Figures are given of the meagre attendances at dispensaries and clinics of these defective children, even when all arrangements have been made for them, and it is concluded that a strong case exists for the establishment of school clinics, so that the boys can be dealt with in their own schools. Hygiene is now taught once a week in certain classes of the English schools in towns, and in nearly all the village schools. Proposals are being considered for ranking hygiene as a compulsory subject in the school curriculum, with periodical examinations as in the case of other compulsory subjects. Medical officers of health are now investigating the sanitation of school premises, hostels, water supply, the adequacy of lighting and ventilation, and also the suitability of the school furniture to individual needs. The school educational authorities are co-operating well.

Ophthalmic Work in Madras

In the annual report and statistics of the Government Ophthalmic Hospital, Madras, for 1930, the superintendent, Lieut.-Colonel R. E. Wright, I.M.S., states that increasing use has been made of the Barraquer procedure for cataract, which has proved satisfactory. Escape of the vitreous occurred much less often than in the previous year, but is still considerably more frequent than in the ordinary capsulotomy operation. When the Barraquer operation is successful, excellent results ensue as regards vision, and Colonel Wright believes that further experience of it will indicate lines for wider application. The bridge flap technique, adopted in most cases throughout the year, appears to be associated with a denser after-cataract, probably owing to the greater frequency of haemorrhage into the chamber at the time of operation. The occurrence of shallow chamber at the first dressing (on the third day) appears also to be more common after the bridge operation; this is associated with adhesions of capsular tags to the corneal endothelium, and consequent keratitis. In glaucoma, sclero-corneal trephining has been the operative treatment adopted. Most of the patients admitted with this condition are in an advanced stage, and many require a good deal of preliminary treatment before trephining. The adrenaline pack was often used, together with free administration of eserine. Anterior sclerotomy proved a helpful preliminary measure in cases where the tension remained high in spite of all efforts to reduce it. Superficial punctate keratitis was more common than last year, but it has appreciably altered in its characteristics; the conjunctival condition is more severe than when the disease appeared in epidemic form in 1928, but there is no doubt that the present malady is the same as that previously observed, though now in a more severe form. Gross iritis was never seen, and the severity of the signs was out of all proportion to the symptoms. In the treatment of keratomalacia the use of concentrated vitamin A alone did not appear to be so effective as cod-liver oil. Chaulmoogra oil was employed in a number of cases of trachoma, where it appeared to give considerable relief and to keep the condition stationary. The oil did not injure the cornea, even in ulcerated cases, but it had little, if any, influence on pannus.

Correspondence

THE FACTOR OF INFECTION IN THE RHEUMATIC STATE

SIR,—Permit me to add emphasis to the importance of the subject of your leading article of July 18th (p. 109). Dr. Coburn's monograph[1] demands a patient study, which all interested in rheumatism are in duty bound to give it. It is a complete vindication of the text of Dr. Glover's Milroy Lecture,[2] "restating the incidence of acute rheumatism (notwithstanding its low infectivity) as the incidence of a specific infectious disease conveyed by droplet infection." The "positive etiological environmental factor" which Dr. Savage's valuable interim report[3] has failed to reveal is a widespread streptococcal parasitism.[4] Although this factor is increased by overcrowding and damp, it may be entirely absent even under the worst environmental conditions. On the other hand, it can and does occur in the higher grades of society, provided the conditions conduce to a high carrier rate of certain streptococci. Dr. Reginald Miller is misinformed. Sporadic rheumatism may be rare in public schools, but epidemics of the disease occur in these schools, and have been reported by Glover,[2] Raven,[5] and Haig-Brown,[6] and at least three English public schools have experienced waves of acute rheumatism during the past year.

Following forty years' freedom from acute rheumatism, and a period of at least three years during which haemolytic streptococci were rarely found in occasional throat-swabbing experiments, a haemolytic streptococcus became prevalent in a group of ninety boys at the end of October, 1929. It produced an epidemic of streptococcal sore throat, giving a clinical picture of lacunar tonsillitis in boys with tonsils. Five cases of acute rheumatism followed after a "lag" period. A further group of 250 boys housed in the same building, but partly isolated from the original infection, remained relatively free from sore throat until the next term, when an extensive wave of streptococcal fever invaded it, and produced eleven cases of acute and subacute rheumatism and one case of chorea. In twelve of these seventeen cases repeated "sensitizing attacks" of sore throat were observed before the onset of rheumatism. Five of the patients acquired permanent heart lesions, but were outside the scope of the Bristol inquiry on account of age.—I am, etc.,

Stratton-on-the-Fosse near Bath, July 20th — W. H. BRADLEY.

THE SIGNIFICANCE OF A RAISED BLOOD PRESSURE

SIR,—Dr G. Arbour Stephens has been kind enough to criticize my contribution to the *British Medical Journal* on the significance of a raised blood pressure. To some extent I think his difficulties are due to the fact that he has either misread or misunderstood my remarks.

To begin with, he pillories me for failing to define either systolic or diastolic pressure. This is true; it seemed to me unnecessary, but from the sequel it is clear that I should have done so. I have always understood by systolic arterial pressure the pressure which occurs during ventricular systole, and by diastolic the pressure at the end of the diastole. With the clinical means at our disposal the findings are only approximately correct, but for all practical purposes they serve.

Dr. Stephens asks whether I consider that "diastolic pressure is the same in all the arteries, and if not, why not. Frankly, I do not know. I am unaware of any experimental work dealing with this aspect of the subject, and in any case I question whether such knowledge would be of any clinical value. He also carps at me for making use of the phrase, "high blood pressure may be latent," and suggests that this is misleading. It was used to cover a group of patients in whom a raised blood pressure failed to give rise to any discomfort or distress—patients apparently in good health, and often leading active and vigorous lives—the rise in pressure being discovered during the routine examination for some trifling ailment or for insurance purposes.

On reading Dr. Stephens's letter one cannot escape the conclusion that he would have your readers believe that I consider the technique of recording blood pressure unsatisfactory, and that the records obtained are unreliable. If I might venture to say so, this is a misrepresentation. He bases his opinion on the following quotation: "to take a blood pressure reading is simple enough, but my impression is that *in some instances* [italics mine] the technique is not satisfactory, and the records, especially of the diastolic pressure, are unreliable." I made it quite clear that those instances were the exception, and not the rule, as Dr Stephens infers. Unfamiliarity with, or ignorance of, the correct technique is sometimes met with, and it is *then* that the results are unreliable. I was making a plea for reasonable care in the method of recording blood pressure.

In his last paragraph there is a further example of failure to understand my meaning. Dr. Stephens fathers me with the opinion that the "tendency is to take too high a reading," suggesting that this is due to faulty technique. Again he has misread my statement. What I actually said was: "There has been a tendency to take as normal a reading far too high," a statement with which I am sure Dr. Stephens is in entire agreement.

Dr. N. Pines, writing as an ophthalmologist, emphasizes the importance of retinoscopy in all cases of raised blood pressure, a point of view with which I readily concur. The examination of the retinal vessels must, of course, be part of the routine in the investigation of such patients. But in condensing my address for publication this phase was inadvertently omitted. I wish, however, that I could also agree with Dr. Pines that "sudden vascular accident or death of a hyperpietic is usually the fruit of a deficient medical examination." Such patients, warned or otherwise of the seriousness of their condition, will, I am afraid, always be liable to such catastrophes.—I am, etc.,

Liverpool, July 28th. — JOHN HAY.

SIR,—In his letter in the *Journal* of July 25th, Dr. Arbour Stephens complains that the address by "Professor John Hay in the *Journal* of July 11th has a tendency, by its indefiniteness, to lead one astray." And now Dr. Stephens is doing his best to lead innocent readers astray by talking about *basic blood pressure*. Must we overburden the nomenclature of the disease called hyperpiesis, hyperpiesia, hypertonia, hypertension, high blood pressure, arterio-sclerosis, athero-sclerosis, diffuse hyperplastic sclerosis? Apparently Dr. Stephens means diastolic blood pressure when he uses the term "basic blood pressure." I beg of him, therefore, to desist, and to fall in with the whim of the majority, which still finds comfort in the word "diastolic."—I am, etc.,

London, July 29th. — H. C.

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[1] [illegible] F.: *The Factor of Infection in the Rheumatic* [illegible] London: Baillière, Tindall and Cox. 1931.
[2] [illegible] tuber[illegible]l 1930, i, 499
[3] [illegible] *Journal Supplement*, 1931, ii, 37.
[4] [illegible] ferred [illegible] *British Medical Journal*, 1929, ii, 981.
[5] [illegible] 1887, p 316
[6] [illegible] in whom [illegible] *Adolescents.* London: Baillière, rectal paraldehyde [illegible] perfect drug had yet

TREATMENT OF DYSMENORRHOEA

SIR,—Will you kindly allow me space to reply to the interesting discussion arising out of my paper on the treatment of dysmenorrhoea?

Surely the great divergence of opinion which arises concerning the treatment of this common complaint is due to the fact that it is insufficiently realized that dysmenorrhoea *is a symptom and not a disease. One might* as well offer a specific for headache as try to treat all cases of dysmenorrhoea by the same method. I therefore suggest to Dr. Curtis Webb that we are indeed much further on if we can correctly classify our cases.

The opinion that electrical treatment of some kind is a cure-all for dysmenorrhoea is by no means so unanimous as he would have us suppose, even among medical electricians. Cumberbatch, in *Diathermy* (p. 161), says:

"In a few cases complete and lasting relief is obtained. In others the relief was incomplete, and the continuation of the diathermy did not procure further benefit."

Dr. Sanderson Clow's letters must command our respect, not only because of her own large experience, but also because one feels that she is speaking for the Medical Women's Federation. In all humility I submit that it is a backward trend, both in the principle and the practice of medicine, to treat any symptom without thorough examination, and without due recognition of the cause. I am totally misrepresented as advocating the treatment of dysmenorrhoea by dilatation of the cervix. I do advocate that treatment in the small class of cases where the pain is due to faulty neuro-muscular mechanism combined with conical cervix and pinhole os. In these women the pain is often very severe, and to send them away with a system of exercises is like giving them a stone when they have asked for bread. The great majority of cases, of course, can be placed in my first group of "the psychological type," and these will benefit greatly from exercises and baths.

I wish to thank Dr. A. A. Gemmell for his kindly criticism, and to endeavour to answer the points he has raised. In saying that the uterus is abnormally small in many cases of dysmenorrhoea I was speaking of the uterus and not of its cavity. The point is that the wall of the uterus is more fibrous than usual—at the expense of the musculature. Though the cavity may be normal in length, the wall is thinner, causing the uterus to *feel* abnormally small. In those cases where the uterus is larger than normal I would suggest that, in the absence of pathological change, there is some endocrine disturbance, and that the benefit of dilatation is doubtful. I should have stated that the type of dilator I use is the type I was brought up on—namely, Hegar's.

Lastly, may I repeat that if practitioners will endeavour to classify their cases of dysmenorrhoea into psychological, endocrine, mechanical, and gross pathological, and treat them accordingly, they will not merely benefit their patients, but they will find a new interest in their treatment.—I am, etc.,

Torquay, July 27th. B. VENN DUNN.

CONVULSIONS DURING ETHER ANAESTHESIA

SIR,—As the subject has recently been discussed in your correspondence columns, the following case of ether convulsions may be of interest to anaesthetists.

A woman, aged 39, had had pain in the lower abdomen for ten days. A mass was felt by abdominal and pelvic examination. Temperature 103°, pulse rate 120 on admission. Diagnosis was salpingo-oöphoritis. She was kept under observation for six days, when temperature was 100.6°, pulse rate 112. After a preliminary pelvic examination under anaesthesia had been done, it was decided to open the abdomen forthwith.

Anaesthesia was induced with 10 c.cm. of ethyl chloride on an open mask, and continued with ether. Induction was uneventful. Soon after surgical anaesthesia was established it was noticed that she was slightly cyanosed, and a slow stream of oxygen was given continuously through a Hewitt's air-way. The colour immediately improved and was satisfactory till the fits began. Anaesthesia was deepened when the laparotomy was begun by Professor F. J. Browne. Colour was good, breathing quiet and regular; air-way satisfactory; pupils fully dilated, and just reacted to light. A broad ligament cyst and a pelvic abscess containing offensive pus were found. At this stage, forty minutes after the beginning of induction, fits began, apparently initiated by the addition of a further two or three drachms of ether to the mask. Respiratory rhythm was interrupted, and in a few moments clonic movements of the jaw, head, and neck began, which rapidly spread to the whole body and limbs. The spine was slightly arched, and the abdomen and chest partly lifted from the table, the legs were beating on the foot of the table, and the arms jerking spasmodically. The patient was not in the Trendelenburg position. Respiration had ceased, though a few jerky shallow breaths were taken at intervals. After a minute or two the blood from the site of operation was deeply cyanosed, though the colour of the face was only slightly so. The operation was suspended, the mask removed, and a full stream of oxygen given. Convulsions lasted for about four minutes, and then ceased for one minute. They recommenced, and continued for a further three minutes approximately. When they finally ceased the colour improved and 1/4 grain of morphine was given. The rest of the operation was completed as rapidly as possible without further anaesthetic. The fits did not recur.

The patient recovered consciousness in the ward in the normal time, and has suffered no further ill effects. The anaesthetic had been administered for forty minutes, from the time of beginning the induction to the time of onset of fits. Open ether was the method, 12 ounces being used in all. The ether (aether puriss. B.D.H.) on analysis contained no trace of peroxide or other impurity. The patient operated on before the case in question had had the same ether with no ill effects. The case under consideration, moreover, had been operated on nine months previously, open ether being used on that occasion without untoward effect. She had received on each occasion 1/75 grain of atropine before the operation.

This case illustrates Dr. Blomfield's point, stressed in his letter in the *Journal* of June 20th, that these fits occur during deep narcosis only. Clonus during induction with ether is relatively common and harmless. The points to be stressed in this case are: (1) the patient was deeply anaesthetized when fits began, with a wide pupil barely reacting to light; (2) the air-way was satisfactory and the breathing normal up to the moment of onset of convulsions, and the colour was good; (3) cyanosis did not appear until the fits had been in progress for a minute or two.

Sykes (*British Medical Journal*, June 21st, 1930) states: "True ether convulsions are *not ushered in by cyanosis*," and his own patient died before it was pronounced. The fits in my own case were clearly not asphyxial in origin, nor did they resemble the typical jactitations of asphyxia. It seems probable that some cases of convulsions during deep anaesthesia *have* been due to asphyxia, and have been confused with those where asphyxia was not present. This may account for the variation in mortality figures quoted, which vary from 25 to 100 per cent., since fits of purely asphyxial origin have by no means necessarily a fatal termination. My own case illustrates the fact that true "ether convulsions" are also not necessarily fatal.

The theories so far advanced as to their causation are so varied and contradictory that the real cause is evidently unknown. Sykes sums up most of these theories in his article referred to above: simple over-dosage; atropine poisoning; over-oxygenation; under-oxygenation; instability of the nervous system, notably in children under

10 ; toxaemia ; impurities in the ether ; superheating of the ether—all these, severally or in combination, with one or more other factors, have been blamed. In the case above recorded, however, toxaemia was present, and this is the factor which appears most universally to take part of the blame in the recorded cases.—I am, etc.,

W. M. Priest, M.R.C.S., L.R.C.P.

University College Hospital, July 25th.

APPENDICO-CAECAL INTUSSUSCEPTION

Sir,—Dr. E. N. MacDermott, in recording a case of appendico-caecal intussusception in the *British Medical Journal* of May 9th, states that it is not mentioned in the usual textbooks or in Clubbe's monograph, and suggests that it may not be so rare a condition as it is usually considered. It is mentioned in the second edition of my book, *The Diagnosis and Treatment of Intussusception*. As to its frequency, it may be interesting to note that during the last thirty years 1,055 children have been admitted for intussusception at the Royal Alexandra Hospital for Children, Sydney ; and of that number intussusception of the appendix was found twice.—I am, etc.,

Charles P. B. Clubbe.

Rose Bay, New South Wales,
June 23rd

INFARCTION OF THE HEART WITH PERICARDIAL EFFUSION IN A PHTHISICAL SUBJECT

Sir,—The interesting case described by Dr. Morland in your issue of May 30th differed from that reported by Dr. Yusuf and myself (May 9th, p. 794) in that the chief focus of disease in the former seemed to be in the neighbourhood of the pericardium, while in the latter there was extensive infiltration of the upper parts of both lungs, without evidence of mediastinal involvement. The hilar shadows were not dense, and there were no pressure symptoms The parts of the lungs adjacent to the pericardium were undoubtedly diseased, but we do not think that there could have been an irruption of tuberculous material into the pericardial sac. No increase in the cardiac dullness was detected until about three weeks after the initial attack of pain, although daily examinations were made. A pericardial friction rub was heard about ten days previously.

The result of paracentesis indicated tuberculous infection of the pericardium. In view of the severity of the original disease, we are inclined to think that this was of haematogenous origin.—I am, etc.,

T. A. Hughes.

Kashmir, India, July 6th

REFRESHER COURSES FOR SHIP SURGEONS

Sir,—The letters from Dr. Haslett Frazer and Dr. H. W. Webber indicate that the question of post-graduate instruction has exercised the mind of the ship surgeon. The conditions of service, as pointed out by Dr. Haslett Frazer, have steadily improved, and *pari passu* an increasing demand for special courses has made itself evident.

It was with a view to implementing that demand—with a view not only of maintaining but of raising the standard of professional efficiency on shipboard—that a committee was formed last year. This committee, convened by the British Medical Association, undertook to consider the question of post-graduate instruction for ship surgeons in all its aspects. As a result of their deliberations it was decided to institute *ad hoc* courses, as opposed to the too diffuse instruction afforded by ordinary post-graduate teaching in special or general subjects. These courses were divided into three separate parts, so that individual needs could be more easily satisfied. They comprise: (1) ship hygiene ; (2) tropical medicine and hygiene ; and (3) a refresher course in general clinical subjects. Each part is self-contained, and can be attended separately, so that the individual surgeon can take all three parts in succession, or select that part which is more particularly suited to himself and the conditions of his work.

The task of providing the necessary instruction has been undertaken by the Seamen's Hospital Society, generously assisted by the School of Tropical Medicine and Hygiene. The courses have been planned with a view to the elimination of the unnecessary and the presentation of the necessary in a practical form. Experience will show to what extent the scheme of work must be modified to adapt instruction to the requirements of the service. The long and close association of the Seamen's Hospital Society with the mercantile marine, and the determination of the professional staff, are sufficient guarantee that no effort will be spared to make this venture a success.—I am, etc.,

Percival P. Cole,
Dean, London School of Clinical Medicine.

London, W.1, July 23rd.

THE NEW ZEALAND EARTHQUAKE

Sir,—As an eyewitness, and as one of the medical men who worked throughout the period of the earthquake disaster in Napier, New Zealand, may I correct the impression conveyed by Dr. Biggs in the article which appeared in the *Journal* of May 16th—that an organized medical service was formed immediately the calamity occurred.

During the first forty-eight hours following the earthquake there was no organization of medical services, each practitioner working almost as a unit, expecting that someone would rise to the occasion and co-ordinate their individual efforts. At the end of this time the emergency surgical work had been completed, and Dr. Allan Berry, who had done the major part of this work at the temporary hospital on the racecourse, asked that the earthquake victims should be evacuated immediately. In his capacity as medical superintendent Dr. Biggs ignored this request and friction arose. On the following day the public health authorities from Wellington took control of the hospital, and the evacuation of these patients was expedited. It can be realized that by this time the whole country had sent its reserves of doctors and nurses into the stricken area, but many of them, after offering their services at one unit or another, finally applied at the racecourse hospital and were being sent home again, as all emergency work had been done.

It is incorrect to state that even as late as Thursday, the third day after the disaster, all medical practitioners were invited to co-operate in what work still remained to be done ; as the practitioners of Napier are listed as loyally responding to this call, it suggests that Dr. Allan Berry and Dr. Harold Berry failed in some way to do their duty in the emergency. Dr. Allan Berry did a great deal of surgical work at the racecourse hospital, and very good work throughout the entire period afterwards. It is out of place here to itemize his work or praise him above the other men, as each gave to the extent of his capacity.

The emergency medical services at Napier were evolved by individual effort, and have only been co-ordinated and organized in Dr. Biggs's article.—I am, etc.,

C. Skinner.

Enfield, July 31st.

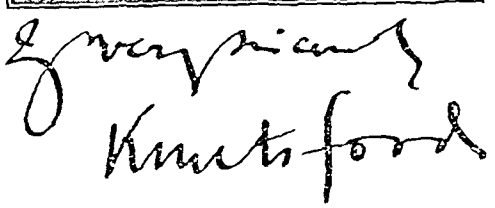
Obituary

VISCOUNT KNUTSFORD

Chairman of the London Hospital

In our last issue we briefly recorded the death of Sydney Holland, second Viscount Knutsford, after an abdominal operation, at the age of 76. His untimely death—untimely because he was apparently capable of many years of vigorous and useful work, and because his long-lived ancestry entitled us to hope for his survival for at least another decade—demands further notice, for though he was not allowed to follow his youthful inclination and become a member of our profession, his activities were for the last thirty-five years closely bound up with medical affairs.





He was born in 1855, the elder of the twin sons of Henry Holland, first Viscount, who was at one time Secretary of State for the Colonies in Lord Salisbury's administration. Through his mother, Elizabeth Hibbert, he was great-grandson of Sydney Smith, Canon of St. Paul's, well known for his wit and wisdom. He had a direct connexion with the medical profession through his paternal grandfather, Sir Henry Holland, physician to the unlucky Queen Caroline, and later physician in ordinary to Queen Victoria, probably the most fashionable, and to the lay public certainly the best-known, physician of his time

Sydney Holland was educated at Wellington, of which, and of its then head master Benson, he does not give a very favourable account in his autobiography. At Trinity Hall, Cambridge, he enjoyed himself, and gained distinction as a swimmer and as captain of the college boat club. He left Cambridge with the degree of LL.B., and was called to the Bar by the Inner Temple in 1879. First at the Common Law and then at the Parliamentary Bar, he had a fair measure of success, but a carriage accident in 1888 resulted in a probable fracture of the base of the skull, followed by increasing deafness, and at the same time loss of smell and taste from damage to the olfactory nerves. This disability led to his abandoning the Bar as a profession and turning his attention to business. His maternal grandfather, George Hibbert, had been the first chairman of the board of directors of the East and West India Dock Company, and he still possessed an interest in the company, of which he was destined to be the last chairman. In 1888 the affairs of the company were in a bad way until after Mr. Holland became a director, when the position improved so much that in 1908 the company was taken over by the Port of London authority on terms satisfactory to the shareholders. In these negotiations Sydney Holland came into contact with Mr. Lloyd George, who formed a favourable opinion of him as a man of business. As chairman of the Dock Company Holland had to fight a long and bitter dock strike. Holland was never the man to do anything by halves. Having assumed the responsibility of chairman of the Dock Company he felt responsible for the well-being of its employees, and when one of them became an in-patient of the Poplar Hospital for Accidents he promptly paid him a visit. The man complained bitterly of his treatment by the matron and other lay officials, and Holland found the complaints amply justified; and when, soon afterwards, he was asked to take the chair at the annual meeting in June, 1891, he did so. What happened then is best described in his own words:[1]

"I drifted into hospital work. . . . It was reported that a large number of working men—governors by virtue of their subscriptions—were going to attend the meeting with a view to turning out the committee as a protest against the treatment their fellows had received there. I took the chair, and thought the working men made out an extremely good case, and that the reply made by the committee was most unsatisfactory. I told the meeting what I thought, rather to the indignation of the committee, and then the leader of the working men who had acted as spokesman did a very nice thing. He said they had no wish to hurt the hospital, and, if I would adjourn the meeting for a fortnight and inquire into the matter, they were perfectly content to leave it where it was. This I did, and in the course of that fortnight I found that things were a great deal worse than even any of them had any idea of. The hospital was in a filthy state. . . The drains were wrong. The ventilation was bad. . . . The nurses were a very inferior class of women, and the matron, who had been very efficient when appointed, had become unfit to hold her position. The committee did not support me, and ended by saying that if I thought I could put things right I had better do so. Nothing else was open to me except to try, so I accepted the challenge."

Needless to say, he succeeded. The hospital at that time had thirty-six beds, and had £8,000 put away towards rebuilding, which was badly needed. Holland started to beg, and in a few years the hospital was rebuilt at a cost of £70,000, the reserve of £8,000 had grown to £54,000, and the hospital was made one of 103 beds with its isolation block, and has never once been in debt. This achievement was but a harbinger of others that were to come after he became chairman of the committee of the London Hospital in 1896. When he was offered this chair he stipulated that he should have charge and control of all appeals for funds, and for the rest of his life, as the Hon. Sydney Holland or Viscount Knutsford (his father died in 1914), he never ceased to collect money for his beloved "London," within the walls of which he breathed his last. Stories of his ready wit, and of the soft answer which turneth away wrath, are plentiful. The real man beneath the jester was a great, warm-hearted philanthropist, who dearly loved his fellows.

[1] *In Black and White.* By Sydney Holland, Viscount Knutsford. London: Edward Arnold. 1926. (P. 134.) (See review, *British Medical Journal*, 1926, ii, 845.)

In 1916 he was knocked down by a motor lorry, and lay unconscious for a week. The injury thus inflicted still further increased his deafness, but did not lessen his mental and physical activity. In 1921 Lord Knutsford's private secretary, Mr. Neville Langton, wrote an entertaining and sympathetic book about his chief, which he called *The Prince of Beggars*, a title which the *Times* adopted for its obituary notice. Sydney Holland was all that, but he was a great deal more. He not only raised huge sums by methods which largely depended for their success upon his personality, but he had the foresight to see the ideals for which those sums were wanted, and to plan and organize a great modern hospital, with its medical school, on a scale and with a thoroughness hitherto unthought of. He was a great organizer, whether he was planning an appeal for funds, the reform of nursing arrangements, or the installation of new and up-to-date operating theatres.

The services of Lord Knutsford to the cause of medical research were notable. He was always ready with pen or person to defend it against antivivisectionists, and his last contribution to our columns, on September 20th, 1930, was an appeal for subscriptions to the funds of the Research Defence Society, of which he had been chairman for many years. In his covering note to the Editor he said: "Can you find space for this? . . . We are fighting for your Profession and against very rich Societies and people."

[The photograph reproduced is by G. C. Beresford, London.]

BOUVERIE McDONALD, M.D.

Formerly M.P. for Wallasey

Dr. Bouverie Francis Primrose McDonald died last month after a long illness. He was born in Edinburgh on April 13th, 1861, and was educated at the Edinburgh Academy and University, where he graduated M.B., C.M. in 1884, and in 1886 took the degree of M.D., the subject of his thesis being "Virulent outbreak of rotheln in Brampton." Dr. McDonald began the practice of medicine in Penrith, and then moved to Cheshire, residing first at Liscard, and afterwards at New Brighton. There he rapidly established an extensive practice, and gained the esteem and devotion of a large clientele. He did not confine himself to his professional duties, but took part in many projects which were at that time engaging the attention of the residents, for he was keenly interested in all the various developments then taking place, as the increase, both in population and building, was phenomenal. He remained in Wallasey for forty-five years, and during that time held many appointments, including those of surgeon to the Seacombe Cottage Hospital and the Victoria Central Hospital, consulting physician to the Wallasey Dispensary, medical officer and public vaccinator to the Birkenhead Board of Guardians for North Wallasey, and member of the Cheshire County Council. During the war he was assistant county director, British Red Cross Society.

A colleague writes:

Dr. McDonald was a clever and fearless yet conscientious surgeon, and a man with tremendous confidence in himself and his own opinion. He had a most pleasing manner, and a charming, captivating smile, and was both trusted and beloved by his patients. Some idea may be gained of Dr. McDonald's strenuous work during the years he was in practice in Wallasey when it is mentioned that was attended at the birth of 2,200 infants and vaccinated British 0 babies. In an outbreak of small-pox in 1901 he uestion ted 4,000 persons in six weeks. He was a very ll its aspects during the war, and if he did not "do his bit" ecided to institu certainly did it at home. He presented e to the borough on the outbreak of e was a very pronounced and active Conservative. In 1917 he was asked to stand as candidate for the new Wallasey Division, and in the General Election of 1918 he was returned as its first Member of Parliament, with a majority of over 10,000 votes. He remained a member till 1922, and during these years he served on several committees. On his retirement he was presented with his picture in oils, and this portrait now hangs on the walls of the Town Hall. He was for many years a justice of the peace for Cheshire and Wallasey.

Another colleague writes:

Dr. Bouverie McDonald came to Wallasey in 1886, where he soon built up for himself a large and successful practice. At an early date he was appointed honorary surgeon to the Wallasey Dispensary, and also to the Seacombe Cottage Hospital, which in 1901 became the Liscard Central Hospital. In these two hospitals he performed many operations, as well as treating many medical cases. Later on, he threw himself into political work in the Conservative interest, became president of the local Primrose League, and then president of the Conservative Association. After his election to the House of Commons, parliamentary duties took him to London for a good part of the year, and as his time and interests were so fully occupied he resigned his post as surgeon to the Central Hospital before the expiry of his time limit. As that Parliament drew to an end, he announced that he did not intend to stand again, and thenceforward devoted himself to his practice. A few years ago he gave up work in Wallasey, and retired to Croydon, where he died. In his earlier years he was a distinguished athlete in Rugby football and in cricket, and was a good tennis and billiards player. He gloried in his Highland ancestry, and at some of his hospitable entertainments at his residence, Ivor Lodge, delighted in turning out in full Highland costume and tartan.

Miss HILDA MARGARET BYLES, M.B., B.S., of the Margaret Memorial Hospital, Hankow, died from pneumonia on July 25th. A member of the well-known Yorkshire family, she was born at Headingley, Leeds, on August 28th, 1879. While a student at the London School of Medicine for Women she was a church member of Whitefield's Central Mission, Tottenham Court Road. She left England in June, 1907, to take charge of the hospital at Hankow which had been founded as a memorial to Mrs. Margaret Griffith-John, widow of the missionary pioneer whose centenary is being celebrated this year. Dr. Byles was a little woman of amazing energy and capabilities. She was a close friend of the Chinese, and sympathized with them in their nationalist aspirations. She did a fine missionary work among them, both by the force of her own example and by her medical work, especially through the training in the women's hospital of Chinese nurses for obstetric work in the homes of the people.

The Services

Surgeon Rear-Admiral E. A. Penfold, D.S.O., has been awarded the Greenwich Hospital pension of £100 a year, from June 3rd, in the vacancy created by the death of Inspector-General H. C. Woods.

DEATHS IN THE SERVICES

Lieut.-Colonel William O'Byrne White, R.A.M.C. (ret.), died on March 21st at Tralee, aged 87. He was born at Carlow on September 27th, 1843, was educated in Dublin, and took the L.R.C.S.I. and L.R.C.P.Ed. in 1864. Entering the Army as assistant surgeon on March 31st, 1865, he became surgeon major after twelve years' service, and retired, with an honorary step of rank as brigade surgeon, on April 25th, 1885. After retirement he was employed at Tralee from April 25th to September 26th, 1908, and was also re-employed during the war of 1914–18. In the old regimental days he served in the 1st Foot, the Royal Scots.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Parliament adjourned for the Long Recess on July 31st Both Houses are due to reassemble on October 20th The report and third reading of the Town and Country Planning Bill are down for October 22nd and 23rd Provision is made that the Speaker, after consultation with the Government, may call the House together before October 20th if public interest requires.

On July 31st the Royal Assent was given to the Finance Act, Probation of Offenders (Scotland) Act, Marriage (Registration) Act, Adoption of Children (Scotland) Act, Housing (Rural Authorities) Act, Bethlem Hospital (Amendment) Act, and to other Acts

Dr. Salter and Mr. Somerville Hastings are leaving for Russia at the end of this week, and during their tour will investigate public health organization in that country

On July 28th, at the House of Commons, the work of medical men in Parliament was discussed at a dinner *party given by Dr Fremantle, and attended, among* others, by Mr Neville Chamberlain, Sir Walter Fletcher, Dr. Salter, Mr Somerville Hastings, Dr Alfred Cox, Dr A. F. Hurst, and Sir G. Lenthal Cheatle

The Education Estimates

Mr LEES-SMITH presented the Board of Education Estimates for England and Wales on July 16th. He said that, on going to the Board, he found a gap in the educational system between the years of 1 and 5 Most mothers ceased to attend the maternity centre at the end of the first twelve months of the child's life, with the consequence that, when the children came to the infant school at the age of 5, 20 per cent suffered from physical defects which, in hundreds of cases, impaired their vitality and poisoned the rest of their lives One method of dealing with this evil was the establishment of nursery schools, but the total number of places in such schools, built, in course of erection, or proposed for the next two years, was only 3,300 He awaited the report of the Consultative Committee of the Board of Education, which was going closely into the proposal for nursery schools and alternative proposals for nursery classes in infant schools Nursery schools were part of the medical work of the Board The backbone of that medical work was the medical inspection of the normal child thrice during the school career He took as the test of a local authority the provision made for following up this medical inspection by nurses, medical officers, clinics, specialists, hospital treatment, special schools, and orthopaedic schemes Steady and continuous progress had been made in all those *for some years, and had continued quite* rapidly even during the financial stringency of the last twelve months Dental treatment, however, was not one of the most successful parts of the work The new type of open air school building, with glass sides which opened, had a wonderful effect on the health of the children Last year £9,000,000—the largest sum ever spent in a year—had been approved by the Board of Education for new school buildings The number of classes with over fifty pupils in each had been reduced from 11,000 to 9,000 Mr Lees Smith referred to the success of the former elementary school pupils who had gone to universities with State scholarships Of the men, 52 per cent gained first class honours, of the women 28 per cent In conclusion, he said he was constrained by financial difficulties and the realization of many hopes might have to be postponed

Mr PERCY HARRIS said that much expenditure was made necessary because of neglect of the child before it came into the care of the educational service If the work of the Board of Education was co ordinated with that of the Ministry of Health, instead of being divorced as at present, much of the expenditure on the school medical service would be saved Only a quarter of the children who required it received dental treatment. In some areas there was no official organization for the purpose He commended the complete system for dental treatment of school children which had been instituted in New Zealand At least a third of the school buildings in the country should be altered to admit sunlight and air freely.

Mr BEAUMONT asked Mr Lees Smith to impress on local authorities the need for increasing the number of places in special schools and special institutions for mentally deficient children to take these out of the ordinary elementary schools.

Mrs MANNING said that the mentally deficient child had been completely neglected She recalled the answer Mr Lees-Smith gave recently showing the small number of schools built for such children since 1926 The Minister had said that *in 1930 the Board did not refuse* any local authority leave to construct a special school for mental defectives, but only one application was received that year The Estimates before the House showed an increase of £475 000 in the vote for special services, but £375,000 of that would be spent on school medical services and special schools and £100 000 on the provision of meals, *leaving nothing for the mentally* defective child Did members know that there were 340 000 mental defectives in the country, that from 1906 to 1929 mental deficiency doubled, and that the incidence per 1 000 school children was 20 7 in urban and 39 7 in rural areas? The Wood report asserted that 61 per cent of subcultural *mental defectives came from homes below the average in* wealth and 25 per cent from the poorest slum homes Mental deficiency was a social and not a pathological problem She had taught mentally defective children, and knew that by careful, patient methods they could be given a place in society Mr Lees Smith had said that legislation was required She warned him that if it was on the lines of the Wood report every teacher would oppose it

Lord EUSTACE PERCY recalled that in an annual report Sir George Newman had expressed the view that nursery schools were really a blind alley, and that there must be a wider policy combining the nursery school idea with the health centre idea.

Mr SOMERVILLE HASTINGS said that the school medical service dealt too much with treatment and too little with the prevention of diseases The school medical officer was like the grocer who sorted over the oranges and put the bad ones aside Six minutes, the average time spent by a school medical officer in inspecting each pupil, was very short Last year eight local educational authorities made no provision for the dental treatment of their scholars The report of the Board showed that less than one third of those in need of dental treatment received it In the years of medical inspection dental inspection was generally omitted The Board should see that the charge for the medical and dental treat*ment of scholars was not made a deterrent* He regretted that in some places a higher charge was made for stopping teeth than for their extraction When the school medical officers were appointed they were asked to provide an annual review of the hygienic conditions of the schools and of the way hygiene was taught, but in the report for 1929 of the Medical Officer of the Board of Education for the London County Council the only thing he could find about hygiene of the schools was plans and details of four new open air schools There should be more teaching of hygiene in schools What became of the medical records which were kept of the children attending some schools? Some local education authorities had applied to the Board of Education for permission to transfer the medical records of children when they left school at the age of 14, so they could be passed to the panel doctors when the children reached 16 The Board had refused That was short-sighted, and he asked for the decision to be reconsidered

Mr MORGAN JONES, replying for the Board, said that in two years actual, approved, and prospective nursery schools had been raised from twenty eight to one hundred He agreed that the provision for mentally deficient children was inadequate To provide special accommodation in rural areas was a difficult matter, yet there was more mental defect among the rural population A residential special school cost about £90 per place Parents were indisposed to let such children go to residential schools, and the law as it stood gave no power to compel them He admitted there were profound differences of opinion on the wisdom of accepting the general conclusions of the Wood Committee

A discussion followed on education in Scotland

National Insurance Medical Service

Mr GREENWOOD said in reply to Commander Kenworthy on July 30th that he was unaware of any regulations whereby insurance doctors were forbidden to give certain medical treatments to panel patients which would be given to private paying patients and which treatments were in general use in private medical practice. Insurance practitioners were required in all ordinary cases to give to their patients all proper and necessary medical services other than those involving the application of such special skill and experience as was not to be expected of general practitioners as a class, and to order or supply such drugs and prescribed appliances as were requisite for the treatment of any patient.

In reply to Mr Graham-White, on July 30th, Mr GREENWOOD said the approximate amount of national health benefit paid in any recent year in respect of sickness arising from rheumatic diseases could only be obtained after special investigation. It had, however, been estimated on good authority that one-seventh of the total invalidity among insured persons was due to rheumatic diseases. On this basis the cost involved for the year 1930 would be about £2,500,000.

Replying, on July 30th, to Mr T. Lewis, Mr GREENWOOD stated he had already addressed to all insurance medical practitioners a memorandum concerning the issue of medical certificates to insured persons. Provision had also been made by an amendment of the Medical Benefit Regulations for dealing with cases where medical practitioners were found, after due inquiry, to have failed to exercise reasonable care in the issue of certificates.

On July 30th Mr GREENWOOD stated that the total of the surplus funds of approved societies and branches as ascertained at the second valuation amounted to £42,413,319, from which amounts totalling £26,619,161 were certified for distribution in additional benefits in the ensuing quinquennium. The summarized results of the third valuations would be issued shortly after the recess.

Mr GREENWOOD told Commander Kenworthy, on July 30th, that no regulations under the National Health Insurance Act precluded an insurance doctor from administering injections of asthmalysin for the cure of asthma, nor was he aware of any case in which a surcharge had been made for giving such treatment. Asked whether a doctor who prescribed this drug could be called upon to justify its prescription and be surcharged if he were not able to make out his case, Mr Greenwood said the regulations against extravagant prescribing might operate in certain cases.

Diagnosis of Cancer

Mr GREENWOOD told Dr Morris Jones, on July 30th, that his attention had been drawn to the recent investigations of Dr Bendien into the possibility, by means of blood tests of making certain diagnosis of cancer in its early stages. In common with all other investigations into this disease, this would be considered by the Departmental Committee on Cancer on which the Medical Research Council was represented.

Asked by Sir N. GRATTAN DOYLE whether any special financial assistance was being given by his Department to further this line of research under hospital conditions in Great Britain, Mr GREENWOOD said that any recommendations of the Departmental Committee on Cancer about further investigation would receive his consideration.

Ventilation of House of Commons.—In reply to Mr Strauss, on July 29th, Mr LANSBURY stated that in view of the representations which had been made to him by members of all parties, and particularly by the medical members of the House, he proposed to call for a joint report from the Government chemist and the Department of Scientific and Industrial Research on the air and general ventilation conditions throughout the whole of the House of Commons.

Centres for Actinotherapy.—On July 28th Miss LAWRENCE told Mr Mills that, since April 1st, 1930, the approval of the Ministry of Health had not been necessary to the provision of centres for artificial sun ray treatment, except where the centre was to be used for the treatment of tuberculosis, and was to be provided in premises not previously approved for that purpose. Up to April 1st last 269 centres had been approved. In the last two financial years there had been seventeen applications from local authorities.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a congregation held on July 28th the following medical degrees were conferred:

M.D.—*R. W. B. Lillis, *J. E. D. Crozier, A. E. Nash, W. D. Newcomb, A. W. Spence, L. E. Llewellyn.

M.B., B.Chir.—*R. H. B. Snow.

B.Chir.—*J. H. W. Lyle, R. G. Orr, C. R. T. Lane, H. S. Bucklund, P. G. Scott, H. C. Stewart, J. W. Summerhays, W. A. Teel.

*By proxy.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

M.S.—*Branch I (Surgery)*: M. Coleman, R. S. Pilcher. *Branch IV (Laryngology, Otology, and Rhinology)*: A. G. Tresidder.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

The following candidates have been approved at the examination indicated:

ACADEMIC DIPLOMA IN BACTERIOLOGY.—Dora C. Cockrock, Catherine B. Hendry, C. O. Karumakaran, A. R. Martin, A. I. Oxford (awarded mark of distinction), J. W. Priestley, W. D. B. Read, G. Robinson, Pauline C. Witherow.

GUY'S HOSPITAL MEDICAL SCHOOL

The following awards of senior science scholarships have been made:

War Memorial Scholarship (£100): M. Spink. Open Senior Science Scholarship (£80): J. R. Dickinson.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary meeting of the Council was held on July 30th when Mr R. P. Rowlands, Vice President, was in the chair.

Diplomas

Diplomas of Membership were granted to the following candidates:

A. M. M. Ah, F. Anthony, Grace M. Archer, H. G. F. Arthure, Doris Ascough, P. J. Ashby, E. S. Asiedu-Ofei, E. J. Baldwin, A. A. Baliga, K. Baxter, R. A. Beaver, W. D. Bell, W. H. Bradbeer, R. J. B. Broad, G. O. Brooks, J. M. I. Burtenshaw, C. R. Caffry, Beatrice L. Campion, A. M. Cantor, P. Chandra, E. I. Claridge, Barbara G. C. Clarke, R. C. Cohen, C. P. Collins, J. G. Connell, H. A. Constable, A. B. Cook, I. J. Current, D. Davidson, A. S. H. Davies, J. R. Duffield, S. Durham, K. A. Earle, G. G. M. Edelsten, G. R. Ellis, F. St. J. C. Emerson, L. S. Everett, P. B. Fernando, G. A. Fleet, M. J. Garber, H. A. Garrus, V. Glass, S. Goode, C. E. D. H. Goodhart, G. H. Good, W. H. Greany, H. I. Green, A. Greenberg, H. J. Griffiths, Hilary S. M. Hadaway, Winifred S. Hall, H. A. R. Hamilton, D. C. Harris, A. E. I. Hart, E. S. Harverson, J. R. Heming, I. Hinden, L. C. Holland, J. H. Hughes, Bhagwagna Inmitch, A. M. James, J. L. Jenkyn Thomas, W. P. Jenson, D. Johnson, Annie L. Jones, Esther P. W. Jones, Alice M. Kaye, C. A. Keane, Mary J. R. Kennard, S. J. Knight, M. Kosloff, N. L. Lamb, J. S. Lane, P. R. K. Lane, A. M. P. Laurent, H. G. Letcher, I. M. A. Lewis, H. L. Light-stone, M. A. Lloyd, J. W. McLaren, J. W. Macmillan, G. A. M. Madel, J. W. Meanley, L. K. K. Menon, A. K. Monro, P. B. Moroney, W. J. Morris, I. Moshinsky, H. C. Muirhead, R. W. C. Murray, T. I. B. Noble, L. G. Norman, Catherine O'Connor, Angela M. S. Ofenheim, Lily M. O'Hanlon, G. I. Petty, A. J. Potter, Hamed M. Pulston Jones, I. Rabinovitch, G. I. Rees-Jones, D. A. Richardson, J. C. Roberts, H. D. Robertson, C. H. Rogerson, N. L. Rusby, P. C. Sanyal, M. N. Sardana, I. Schnire, I. Sharp, F. W. H. Shawcross, M. H. Sherwell, Rosalie Shoenberg, A. B. Simmons, H. Simmons, H. Singh, J. C. Smith, D. G. Snell, R. G. W. Southern, Gladys M. G. Spencer, Violet Spiller, A. A. Sreenivasan, T. Standring, C. Starkie, V. Swaminathan, R. A. Sykes, A. K. Talkhan, G. Tattersall, Winifred P. Thomas, W. I. Townsend-Coles, J. G. Vincent-Smith, A. B. Waters, J. H. Way, G. Wells, M. Westwood, S. O. Widmann, E. W. M. Williams, Dorothy Woodman, S. L. Wright, A. H. Zaar, J. Zeitlin.

Diplomas in Tropical Medicine and Hygiene were granted jointly with the Royal College of Physicians, to the following:

E. S. Adderley, B. P. Baliga, C. J. H. Brink, W. A. Burnett, R. Caldera, H. Chaudhuri, H. D. Cronyn, B. R. Das, C. H. Howat, A. J. Johnson, J. B. Khambatta, R. K. Khanna, P. B. Lee-Potter, H. W. H. McClelland, S. H. Moore, Ethel Morris, J. L. Rankin, J. A. Rosset, A. Sivalingham, M. M. Syddiq, J. Taylor, P. G. G. Unnithan, L. A. J. Wiles, A. W. Williams, W. J. S. Winn.

Diplomas in Ophthalmic Medicine and Surgery were granted jointly with the Royal College of Physicians, to the following:

M. Basheer, G. H. B. Black, M. G. J. Booysen, G. A. Brew, Eleanor M. P. Brock, C. Budden, A. Campbell, M. Franks, A. W. Green, Lieut.-Col. F. G. Kennedy, I.M.S., Edith G. Limrey, S. Macky, K. C. S. Menon, Catherine J. Orr-Ewing, B. W. Roffey, K. Saha, R. Sampson, M. N. Sardina, R. C. Tarapore, H. L. St. V. Welch.

Primary Fellowship Examination in Toronto

On the nomination of the Canadian Medical Association, Dr. J. C. B. Grant, Professor of Anatomy, and Dr. C. H. Best, Professor of Physiology, were appointed assessors for the Primary Examination for the Fellowship to be held in Toronto next October.

CONJOINT BOARD IN SCOTLAND

The following candidates have been approved at the examination indicated:

FINAL PROFESSIONAL EXAMINATION.—G. Ameratunga, S. Pativagoda, T. F. Kirkpatrick, H. J. Smith, H. T. Anthoniez, T. A. M. Ashforth, G. L. Whitton, C. F. W. de Saram, B. A. Armitage, M. W. Joseph, L. J. Goggins, R. J. F. L. Talbot, C. M. Douglas, G. W. Puvimanasinghem, S. R. Iyengar, S. Grasse, F. A. Ebert, A. M. C. Stephenson, I. M. Sclare, J. A. Walsh, W. Kelly, M. Smellie, S. V. Rajah, M. E. Rubin, A. G. Williams, G. D. Morgan, P. A. V. Pillai, H. F. Ezzat, S. Freeman.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—K. W. Bruce, G. B. Carter, M. Ditton, A. A. Grace, B. N. Halder, R. Schauder, C. F. Williamson.

MEDICINE.—H. W. Davies, G. R. Germany, A. R. Madden, O. L. Matthews, M. R. Tuteur-Samuel.

FORENSIC MEDICINE.—O. A. P. Clark, R. R. Clipstein, G. Handelsman, O. L. Matthews, C. Morgan, M. S. Mules, Grantley Smith.

MIDWIFERY.—G. B. Carter, Sidney Smith, V. M. White.

The Diploma of the Society has been granted to Messrs. G. R. Germany, A. R. Madden, O. L. Matthews, R. Schauder, M. R. Tuteur-Samuel, and C. F. Williamson.

Medical News

The Fellowship of Medicine has arranged two special courses for August—namely, a course in urology now in progress at the All Saints' Hospital until August 29th, and a course at the Queen's Hospital for Children from August 17th to 29th. Lunch and tea are kindly provided by the hospital authorities. Fee, £2 2s. A comprehensive course will be given at the Brompton Hospital from September 7th to 12th (fee £3 3s.); an afternoon course at the Infants Hospital from September 14th to 26th (fee £3 3s.); psychological medicine at the Bethlem Royal Hospital from September 8th to October 3rd; ophthalmology at the Central London Ophthalmic Hospital from September 15th to October 10th (fee £3 3s.). A revision course will be given at the Westminster Hospital from September 14th to 26th (fee £5 5s.), and a similar course at the Metropolitan Hospital from September 28th to October 10th (fee £3 3s.). Detailed copies of syllabus may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The autumn list of medical post-graduate courses in Berlin has now been issued. This booklet (printed in German) gives full details of the various special classes arranged for the next few months, and also an account of the permanent educational facilities which are available. Among the courses are internal medicine, from October 5th to 17th; children's diseases, during the same period; urology, from October 15th to 21st; and medical psychology and psychotherapy, from October 26th to 31st. Further information and copies of the booklet may be obtained from the Medical Information Bureau, Kaiserin Friedrich-Haus, Luisenplatz 2–4, Berlin, N.W.6.

Mr. Walter Bell, F.S.A., will conduct parties over the Tower of London on August 12th and 26th, at 2.30 p.m., in aid of King Edward's Hospital Fund for London. Mr. Bell will give short addresses on the Tower, its history and associations, before making a tour of the building. Application for tickets (price 7s. 6d.) should be made as soon as possible to the secretary of the Fund, 7, Walbrook, E.C.4.

At a meeting of the Paddington Medical Society to be held on Tuesday, August 11th, at the Great Western Royal Hotel, Paddington, at 9 p.m., Dr. A. Baldie will give an address entitled "The alcohol problem."

The first Congress of Medical Geography will be held at Geneva in October, when the subject for discussion will be hepatic cirrhosis.

The Board of Control, with the approval of the Minister of Health, has appointed the following as honorary consultants in connexion with diseases occurring among the mentally defective patients at Rampton State Institution, Retford, Notts: encephalitis lethargica, Professor A. J. Hall, M.D.; diseases of the ear, nose, and throat, Mr. Vincent Townrow; ophthalmic diseases, Dr. E. Gordon Mackie.

An international illumination congress will be held from September 1st to 19th in London, Glasgow, Edinburgh, Sheffield, Buxton, Birmingham, and Cambridge. It has been organized jointly by the National Illumination Committee of Great Britain and the Illuminating Engineering Society, London, and is under the auspices of the International Commission on Illumination.

The fourteenth Italian Congress of Paediatrics will be held at Florence from September 23rd to 26th, when the following subjects will be discussed: (1) empyema in infancy, introduced by Drs. Cocchi of Florence, Laurinsch of Naples, and Nasso and Castronuovo of Messina; (2) encephalitic syndromes in infancy, by Drs. Bergamini of Parma, De Toni of Bologna, and Taccone of Milan; and (3) directions for diet in children's communities, introduced by Drs. Brusa of Milan, Lucca of Turin, and Macciota of Cagliari. Further information can be obtained from the secretary, Professor Bruno Frambusti, R. Clinica Pediatrica, Via Maneli 15, Florence.

Dr. N. F. Seed of Hyde, Cheshire, was successful in his appeal to the Manchester Quarter Sessions on July 30th against a conviction at the Manchester Police Court, when he was fined £20 and had his licence suspended for three years on a charge of dangerous driving; the conviction was quashed.

A new medical periodical, *La Cure Marine*, has been founded, under the editorship of Dr. E. Delcroix, to deal with thalasso-therapeutics and kindred subjects. The editorial secretary is Dr. R. de Haene, 94, Boulevard van Iseghem, Ostend.

The Home Office of the Republic of Mexico has issued an order that no more foreign medical men can be allowed to practise on Mexican territory without authorization.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Autology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediseca Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*, telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*, telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Prepatellar Bursitis

"H. B. G" writes: Can any reader say whether it is safe to empty the fluid from an inflamed prepatellar bursa and inject the quinine and urethane solution used for treating varicose veins? If so, what technique should be followed? Does this bursa ever communicate with the knee-joint?

Lochnera Rosea

Mr J E R McDonagh (London, W) writes, in reply to Dr Dalziel's inquiry (August 1st, p 230) The eclectic school of medicine and herbalists have used vinca, lycopus, and viscum in diabetes for many years An extract of the leaves of one of the evergreen South African Compositae (*Brachylaena dentata*) is a vaunted remedy for the same condition I have injected extracts of these plants into animals, but I have not been able to satisfy myself that they have an action in lowering the percentage of the blood sugar An hydrator effect is exhibited occasionally, but not regularly, and therefore I have not employed them on a large scale in disease I have not found lycopus to be of use in exophthalmic goitre or viscum in hyperpiesia—two conditions allied to diabetes

Effect of Prolonged Injections of Insulin on Subcutaneous Tissue

With reference to Dr Jendwine's letter (June 27th, p 1145) and the inquiry by "M D" (July 4th, p 42), Dr I M Rabinowitch of the Montreal General Hospital sends us reprints of two articles by him on this subject, published in the *Canadian Medical Association Journal* (1928, xviii, 560, and 1929, xxi, 67) The condition (he writes) is uncommon, but not rare, and, at least from experiences so far, it appears to be compatible with good health The cause of it is unknown, but it seems to be a non specific reaction, and is probably the result of repeated trauma Incidentally, an excellent review of this subject will be found in the *British Medical Journal* (1929, i, 597)

Painful Heels

"P" writes, in reply to "Electrotherapist" (July 25th, p 173) I once heard Sir Archibald Garrod (then Regius Professor of Medicine at Oxford) recommend mercury and belladonna ointment for this condition, and I have used a mixture of equal parts of ung hydrarg and ung belladonnae with good results

Income Tax

Request for Balance Sheet

"C A H" took over a practice as from May 1st, 1930 He did not take over existing book debts and it is agreed that he is assessable on the basis of his "bookings" The first year's income and expenditure account has been put in by professional accountants, and the inspector of taxes asks also for a "balance sheet," setting out the assets and liabilities of the practice as at March 31st, 1931—or, alternatively, for a promise to supply balance sheets in future years

*** So far as our experience goes, it is not customary for balance sheets to be asked for or supplied in such circumstances and if the inspector's experience is, as he says, to the contrary we think it must be due to a purely local custom Further, we do not see that balance sheets serve any real purpose in a professional practice, apart from the stock of instruments and drugs and the car, the only assets normally would be the outstanding debts which are ascertained and the total notified to the inspector already The matter is within the jurisdiction of the local or "special" commissioners and we incline to the opinion that if "C A H" maintains his attitude it would be upheld on appeal to either of those bodies With regard to the inspector's request to examine the purchase agreement, the terms with regard to deferred payments are relevant to the settlement of the liability and on the whole we advise "C A H" to send him the original for perusal, or a signed copy for retention

Motor Car Transaction

"B L P" bought a car in 1919 for £650, and in July of this year sold it for £15 and bought a new car of a different make for £243 How should he deal with the matter for income tax purposes?

*** This is an unusually clear illustration of the fact that the taxpayer nearly always loses in the long run if he does not claim annual depreciation All "B L P" can do at present is to claim as a professional expense of the year 1931 the net cost of replacement—that is, £243 – £15 = £228 As tax is chargeable on the amount of the income of the previous year, this means that it will not affect his liability until the financial year 1932-33 As depreciation and cost of replacement cannot be allowed for the same year, he is unable to claim depreciation for 1932-33, but should do so for 1933-34—on (£228 – 15 per cent of £228 =) £194 at 15 per cent

LETTERS, NOTES, ETC.

Operation for Cataract

Personal Experience

"Medico" writes Having had a cataract removed from my left eye during the past nine months I am in entire agreement with Colonel Elliot's statement that the patients themselves are the best judges of the value of operative intervention My cataract was of short duration being first noticed in January, 1929 It was of the ripe soft swelling, soft, cortical type, and the operations were performed in October and November, 1930 During the period of maturation I was considerably handicapped in the early stages by a sensation of "steaminess" of vision on the left side, later replaced by diplopia, worse at night, and eventually the eye became almost completely blind During this last stage I was involved in two accidents, in one of which I had the misfortune to knock down a lady whom I had not seen until after the accident, in the other—a motoring accident—I was run into on my blind side by a slow moving vehicle which I did not observe The extraction of the cataract has naturally resulted in a largely restored left visual field, making walking and driving safe, because even slight movements, although they cannot be focused can certainly be noted with the aphakic eye, and for this reason alone, I consider the operation well worth while The visual acuity has been raised from the counting of fingers held up to light at a distance of 2 inches from the eye, to 6/5 Snellen's types under +11 D correction no cylinder being required, in other words, a really useful professional eye is available should disaster overtake its sound fellow After leaving the nursing home and for some weeks subsequently, diplopia was troublesome but I gradually learned to neglect this effect in much the same way, I think, that the trained non observing eye of the microscopist neglects objects on the bench below While it has to be admitted that one cannot use a corrected aphakic eye in conjunction with its sound fellow, there is much to be seen with an uncorrected aphakic eye and I find it possible, while driving, to close the sound eye and bring my car to a standstill with ease and comparative safety In conclusion, other things being equal, I would strongly advocate the removal of a unilateral cataract in any patient of mine The eye is useless as it is, while a successful operation brings increased comfort and safety of locomotion, and confidence is instilled in the patient should his second eye become affected at a later date

A Substitute for Hand Towels

D Lachlan Grant (Ballachulish, Argyll) writes I was interested in "D P H's" letter on this subject in the *Journal* of June 13th In March, 1929, I advised that the method of drying one's hands by means of hot air be used after washing, the paragraph published being as follows "In many of our public places, restaurants, etc, it would appear to me that another method of drying the hands might be tried instead of the frequently much contaminated roller towel—namely, by means of the hot air blower, such as is now used by hairdressers This method certainly takes a little longer than the usual towel one but a brief series of experiments showed that the time taken was not great, and depended on the temperature and force of the current and proximity of the blower This method of drying is akin to nature's way, and appeared to leave the skin soft and supple" It must be of interest to a number of colleagues to have their attention again drawn to this matter "D P H" quotes the address of the installed machine seen in Paris I have made further inquiries, and find it is in use in several establishments in Scotland—for example, the Public Health Department of Edinburgh University has it installed I understand that the public ones cost from 18 to 21 guineas I myself use at home the ordinary cheaper hair drying type, which gives currents of hot or cold air as desired Authorities, however, seem very slow to appreciate such an idea as hot-air drying, in spite of its obvious advantages

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 34, 35, 36 37, 40, and 41 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 38 and 39

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 127

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

97 Cardio-vascular Disease and the Teeth

W LINTZ (*Med Journ and Record*, May 20th, 1931, p 479) discusses the relationship of the teeth to cardio-vascular disease, as indicated by the experimental work of Rosenow and by clinical and post mortem experience Of 349 consecutive patients, the first 125 suffering from cardio vascular disease were studied, with 224 suffering from other diseases, 100 normal persons acted as controls The patients with cardio vascular disease were found to have lost 46 5 per cent of their teeth, as compared with 32 per cent in the case of those suffering from other diseases, and an average of 17 6 per cent in normal people Lintz is satisfied that there is a definite etiological relationship between infected teeth and cardio vascular disease, and that benefit follows removal of the infection and immunization with autogenous vaccines in certain cases The loss of teeth in both health and disease occurs in a definite sequence, the molars being the first and the canines the last to go, 22 per cent more of the upper teeth are lost than of the lower The author considers that the dentist performing the extraction should also conduct the *x* ray examination The loss of teeth was found to be great in essential hypertension and cerebral haemorrhage Good results often follow the eradication of dental infection in angina pectoris, myocarditis, and endocarditis, such infection is a factor also in hypotension.

98 Essential Hypertension

D ADAMAN and J H PRATT (*Arch Int Med*, May, 1931, p 675), from a study of the character and early symptoms associated with essential hypertension (headache, dizziness, weakness, fatigability, irritability, nervousness), consider that they are of psychoneurotic origin They should not be regarded as symptoms of the disease, hypertension being itself only a symptom, there is no evidence that it is the elevation in blood pressure that produces such early manifestations An analysis of 100 unselected out-patient records of hypersensitive cases, 53 of which were supplemented by a personal study, showed that in 82 per cent definite symptomatic relief was obtained by the use of simple suggestion in a group of 40 patients That such early symptoms were of a psychoneurotic nature is shown also by the fact that they are relieved by the removal of environmental difficulties or the achievement of adjustment thereto, by sedatives, or by suggestion Such early associated symptoms would appear to be due to the patient's emotional mal adaptation rather than to organic changes While the fundamental process concerned is not clear, it is probable that constitutional influences and endocrine disturbances contribute to lessen a hypersensitive patient's psychic and physical capacity for withstanding the stress and strain of life

99 Acute Benign Lymphocytic Meningitis

J FOURNAUD (*These de Paris*, 1931, No 122) records six illustrative cases in patients aged from 16 to 35, 4 were males and 2 females, and all suddenly developed symptoms of acute meningitis In each case the diagnosis of meningitis was confirmed by lumbar puncture, which showed considerable increase of albumin in all but one case, and more or less marked lymphocytosis The cerebro spinal sugar content was increased in two cases, normal in one, and not examined in the rest Hypertension of the cerebro spinal fluid was noted in several instances The resemblance to tuberculous meningitis was increased by the presence of photophobia, diplopia, hyperaesthesia of the skin, and hemiplegia In no case, however, was the tubercle bacillus found, although the cuti reaction was positive in two cases Syphilis could be excluded owing to the absence of a history of infection and of clinical or serological evidence of the disease An abortive attack of poliomyelitis was unlikely, since there was no epidemic of that disease, and none of the cases developed characteristic paralysis A mild form of cerebro-spinal fever was almost improbable Fournaud concludes that every clinical and laboratory test should be employed to determine the cause of a lymphocytic meningitis, the tuberculous nature of which has not yet been proved One should often avoid giving a definite prognosis in a case which at first sight appears to be one of tuberculous meningitis

100 G YOVANOVITCH (*Bull Office Internat d'Hyg Publ*, April, 1931, p 675) also records three cases of acute benign meningitis, with a lymphocytic reaction, which recently occurred at Belgrade The cerebro-spinal fluid in each case showed hypertension, and a moderate increase of albumin and sugar There was well marked lymphocytosis The Wassermann reaction was negative No tubercle bacilli or other micro organisms could be found in the fluid, and all the patients made uncomplicated recoveries

101 Congenital Haemorrhagic Telangiectasia

H M HICKS and ELIZABETH KNOX (*New York State Journ Med*, June 1st, 1931, p 687) report two cases of congenital haemorrhagic telangiectasia and review the literature relating to the previously recorded 50 families presenting the disease Telangiectases on the skin and mucous membranes, severe epistaxis, and a similar history in other members of the family constitute the main characteristics In the first case here recorded a man, aged 42, gave a history of epistaxis since early childhood, and complained of a severe attack lasting six days There was no history of alcoholism, syphilis, or other disease A brother and sister, his father, paternal uncle, and grandmother suffered from the complaint, but one sister and three other brothers were free The blood showed a secondary anaemia, the bleeding and clotting times being normal The nose was packed and the patient was transfused, but the haemorrhage recurred upon the removal of the packing Two tubes containing 25 mg of radium each were inserted in each nostril, and both were packed with iodoform gauze for twenty four hours, the epistaxis subsequently was much less frequent and severe The second patient, a man aged 55, was admitted suffering from secondary anaemia, cardiac dilatation, and myocardial insufficiency He gave a history of attacks of epistaxis since early childhood The nostrils were filled with dried blood The lips, tip of tongue, soft palate, and nail beds showed numerous small telangiectatic areas, while the laryngo cope revealed similar areas over the left arytenoid His mother and a brother had suffered from frequent epistaxis The blood smear was that of a secondary anaemia, and the Wassermann reaction was negative The authors remark that this disease is transmitted by both men and women The epistaxis is frequently present from childhood, but the telangiectases are not obvious until the age of 15 to 20 The condition usually becomes more marked in middle life

102 Meningeal Spirochaetosis without Jaundice

M LAIGNEL-LAVASTINE, Y BOQUIEN, and CH PLUMARTIN (*Bull et Mem Soc Med des Hop de Paris*, May 25th, 1931, p 802) report the case of a man, aged 33, admitted to hospital with severe headache and cerebral vomiting which had lasted for twelve days On examination there was found stiffness of the neck, Kernig's sign, intense injection of the conjunctiva with photophobia, pupils reacting normally to light and accommodation, herpes on the inner surface of the left upper eyelid, normal tendon reflexes, extensor reflex, normal liver and spleen, enlarged epitrochlear glands, a pulse rate of 60, some bronchitis, no pyrexia or jaundice, cutaneous hyperaesthesia, and well marked tache cérébrale The patient

was employed on construction work on the underground railway, in galleries infested with rats. The cerebro-spinal fluid was turbid, and contained 400 cells per c.mm., of which 59 per cent. were polynuclears and 41 per cent. lymphocytes. Albumin was present, and the Wassermann reaction was weakly positive. The blood-serum diagnosis of spirochaetosis was strongly positive. Inoculation of the cerebro-spinal fluid and the urine into a guinea-pig was negative, as was the direct examination of these fluids for the spirochaetes. The stiffness of the neck, Kernig's sign, and the headache disappeared after two days in hospital, but the patient had severe night sweats three weeks later, though his temperature continued normal. His subsequent convalescence was uneventful. The authors comment on the novelty of the source of infection in this case. The variety of the symptoms delayed recognition of the infecting agency.

103 Herpes Facialis following Antityphoid Vaccination

H. Gounelle (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, May 11th, 1931, p. 718) states that out of 320 soldiers inoculated with T.A.B. vaccine 70, or nearly 22 per cent., developed herpes facialis, which in one case was haemorrhagic. Herpes as a sequel of antityphoid vaccination is a well-known occurrence, and has received special attention from ophthalmologists owing to the serious results of involvement of the cornea. About a dozen examples of herpetic keratitis have been described by Morax, Gloagen, Rousseau, Bussy, Le Roux, and Aubineau, following the use of T.A.B. vaccine.

104 The Tuberculin Reaction in Typhus Fever

C. J. Wu and H. A. Reimann (*Nat. Med. Journ. China*, April, 1931, p. 210) performed the intracutaneous tuberculin test in twenty Chinese patients, aged from 20 to 30, who had been admitted to hospital with typhus fever. None of them had active clinical tuberculosis. It was found that only four gave a positive reaction during the febrile period. When, however, the test was repeated in convalescence, 12 showed a positive reaction, and the four patients who had reacted during the febrile period gave a slightly more intense reaction in convalescence. The behaviour of the intracutaneous tuberculin reaction, therefore, in typhus is similar to that seen during measles, influenza, and other acute infectious diseases.

Surgery

105 Subphrenic Abscess

H. P. Brown, jun. (*Annals of Surgery*, May, 1931, p. 1075) describes subphrenic abscess as one of the less frequently encountered complications of peritonitis; he reports 18 cases which occurred between 1910 and 1931. Of these, seven cases followed a perforation of an abdominal viscus, but the author points out that the condition may also result from an abscess of the spleen, kidney, pancreas, or spine, or from trauma, pyaemia, and distant foci of infection. It may also be a sequel of infection above the diaphragm, such as pneumonia, empyema, lung abscess, and osteomyelitis of the ribs. When the stomach, pancreas, or spleen is the primary focus, the abscess is usually left-sided; in most other cases it is found on the right side. Surgical diagnosis can be based on a history of preceding infection, leucocytosis, more or less localized tenderness with fullness and induration over the area involved, toxic condition of patient, a temperature range indicating the presence of pus, *x*-ray examination, and exploratory puncture. In most of the cases reported the subphrenic abscess followed a previous operation; five had had appendicectomies with drainage, two followed perforation of a peptic ulcer, two were subsequent to a cholecystostomy, one arose after a caecostomy, one as a sequel to puerperal fever with secondary abscess of the spleen, and one case followed an abdominal exploration. In only six instances had there been no previous operation. The average time for the subphrenic abscess to occur after the original operation is estimated at between two to three weeks, although frequently the condition is not recognized immediately. The surgical approach to the abscess depends upon its origin and location; when the source is retroperitoneal the best approach is from below the diaphragm; when the abscess occupies one of the anterior supra-hepatic spaces, presenting in the upper abdomen, the trans-abdominal route is the method of choice. In cases presenting on the upper right aspect of the liver, resection of the tenth or eleventh rib, with walling-off of the pleural cavity from the drainage tract, and direct drainage through the diaphragm, has given the best results. There were eight deaths in the series, a mortality of 44.4 per cent.

106 Post-traumatic Renal Calculus

I. Dubner (*Deut. med. Woch.*, May 15th, 1931, p. 851) refers to recently recorded cases of renal calculi formed around blood clots resulting from renal injury. He describes the case of a youth, aged 18, who was knocked down by a tramcar and dragged for some distance. The skin of the right loin was lacerated, and there were abrasions of the right thigh and knee. He remained in hospital for seven weeks. Three months later he had occasional pain in the right iliac fossa, which was aggravated by walking or climbing stairs; it was worse after meals, and appendicitis was diagnosed. There was slight pain on pressure over the right kidney and ureter; the left side was normal. Leucocytosis was present, and the urine contained albumin and erythrocytes. The results of examination of the right kidney, renal function test, cystoscopy, and pyelography were all negative. The temperature subsided, but an occasional pricking sensation in the right flank persisted. He was discharged after nearly six months' stay in hospital, but six months later definitely localized colicky pains occurred in the right renal region, and he was readmitted. A skiagram showed the shadow of a calculus in the right renal pelvis, and cystoscopy indicated a normal bladder. Pyelography confirmed the diagnosis of right renal calculus; pyelotomy was performed, and the stone was removed in two portions It was as large as a pea and contained old blood clot, evidently resulting from the renal injury eighteen months previously.

107 Bile-duct Drainage in Diabetes and Cholelithiasis

P. Harvier and J. Caroli (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, April 17th, 1931, p. 616) comment on the frequent association of diabetes and cholelithiasis. Recent observations suggest that diabetes may be secondary to cholelithiasis, and that their association is becoming more frequent. In all their cases pancreatic lesions were found. A woman, aged 45, had gall-stones; when first seen glycosuria was absent. Nine months later a large pancreatic cyst was discovered containing more than 5 pints of fluid. The gall-bladder was full of calculi, and a stone was lodged in the common duct. Glycosuria did not appear until a year after the first attack of colic, but severe progressive diabetes developed later. Another woman, aged 40, had chronic cholecystitis and slight pancreatitis. Signs of peritonitis necessitated an operation, and a necrotic pancreatic abscess and many biliary calculi were found. After recovery from the operation the patient had considerable glycosuria. The authors have had a case of gall-stones associated with diabetes and chronic hepatitis. Cholecystectomy, followed by prolonged drainage of the bile ducts, relieved the biliary symptoms, and the glycosuria and hepatitis disappeared. They believe that the theory that hepatitis is the origin of disturbance of carbohydrate metabolism is confirmed by the parallelism between the relief of biliary symptoms and the disappearance of the diabetes under surgical treatment, and also by the frequency with which transient glycosuria follows an attack of hepatic colic. The liver is always damaged in cholelithiasis, as has been shown by biopsies performed during operation. It has been suggested that, side by side with pancreatic deficiency, hepatic lesions occurring in the course of a calculous cholecystitis may play a part in the production of so-called "secondary" diabetes; this is confirmed by the second case in the authors' series.

108 Recklinghausen's and Paget's Diseases

Though many pathologists believe, on anatomical grounds, that there exists an intimate relation between the diseases named after Recklinghausen and Paget, J SNAPPER (*Ann de Med*, March, 1931, p 201) points out that in spite of the fact that both are characterized by a fibrous osteitis, there are marked differences between them In Paget's disease, which usually commences after the age of 45, the lesions are localized in the tibiae, pelvis, and cranium, the cortical layer of the bone is thickened, and the bones show clear striae Symptoms of hyperparathyroidism are absent the calcaemia and phosphataemia are normal, and the urinary and faecal calcium excretion varies within normal limits Parathyroid adenomas are never noted In Recklinghausen's disease—a disease of the young—the osseous cortical layer is progressively thinned by a marked resorption, and the remaining lamellae are traversed by fibrous tissue Multiple cysts develop throughout the skeleton, these contain giant cells, which are often mistaken for those of sarcoma, though they are benign proliferations of the normal medullary giant cells Symptoms of hyperparathyroidism are present—hypercalcaemia, hypophosphataemia, and an excessive urinary excretion of calcium Parathyroid adenomas are almost always found Snapper records three cases of Recklinghausen's disease in one, cure followed the removal of a parathyroid adenoma, in a second, this operation had to be supplemented by the administration of irradiated ergosterol while in the third, a slight case, considerable improvement was obtained with ergosterol, lime, and ultra violet rays No result followed the removal of both parathyroids in two cases of Paget's disease

109 Attenuated Forms of Acute Pancreatitis

R THOULUC (*These de Paris*, 1931, No 8), who records two illustrative cases, states that in addition to the haemorrhagic form of acute pancreatitis, in which the symptoms were well marked and characteristic, there are attenuated forms in which the initial symptoms rapidly improve and the clinical picture is extremely indefinite Accurate diagnosis is very difficult, and hitherto the condition has hardly ever been recognized before operation Although spontaneous recovery is possible operation appears to be the best treatment, followed by drainage of the pancreatic region Thouluc's patients were a woman aged 58 and a man aged 40, both made good recoveries after laparotomy and drainage

110 Recurrent Necrosis of Pancreas

A BALOG (*Zentralbl f Chir*, May 30th, 1931, p 1372), who records an illustrative case, states that recurrence of necrosis of the pancreas is a rare event, though examples have been recorded by Beer, Elving Coenen, and Hahn Balog's case was unique in that three recurrences occurred in the course of two months The patient was an obese woman aged 52, who had suffered from gall stones for several years The patient recovered from the first attack without an operation, this being contraindicated by the presence of pneumonia, but operations were performed in the three subsequent attacks, death ensuing two days after the last operation

111 Amicrobic Pyuria

P BAZY and P OLDARD (*Journ d Urol*, April, 1931, p 321) affirm that there are pyurias which are not tuberculous and in which microscopical and cultural examinations and animal inoculations are negative, the term amicrobic is preferred to aseptic They are divisible into two groups the intermittent, in which micro organisms are intermittently found in the urine, and the continuous, in which they are always absent Three cases illustrative of the first group and eleven of the second are recorded The intermittent disappearance of bacteria is stated to be due to an ill defined process of "auto sterilization" Pyuria may be of mechanical (urinary gravel or crystals), chemical, or infective origin In the last named the micro organism, passed rarely in the urine and found only after multiple examinations, is probably *B coli* or the staphylococcus and it also undergoes "auto sterilization Moreover, cases may be attributable to some unknown organism, undemonstrable by present means of examination Pyurias due to unilateral lesions also occur, as in tuberculosis or syphilis, and such conditions must be considered The authors emphasize the fact that in cases of amicrobic pyuria, especially in those with unilateral renal lesions, the results of animal inoculation should be awaited before resorting to operation, such as nephrectomy

112 Transvesical Prostatectomy

S RICHTER (*Upsala Lakarefor Forhand*, May 22nd, 1931 p 147) records observations on 425 cases of transvesical prostatectomy performed at the Linkoping Hospital during the period January 1st, 1916 to June 30th 1930 among 682 prostate cases The majority of the patients were between the ages of 71 and 75 years 105 were 81 years old or more In 372 cases the tumour removed was benign in 42 it was malignant, while in 5 no tumour was present Parasacral anaesthesia was employed and was effective in 98 per cent The mortality was 9 1 per cent In four instances death was due to intercurrent diseases, in three to epididymitis, in one to haemorrhage in one to pulmonary embolism, and in twenty six to the primary disease in conjunction with arterio sclerosis, myocarditis, or broncho pneumonia Vasectomy was performed 204 times to prevent epididymitis Owing to the frequency of carcinoma of the prostate, which occurred in 14 8 per cent of the present series, the difficulty of diagnosis, and the gravity of the prognosis in well-developed cancer of the prostate, Richter recommends that in all doubtful cases a radical operation should be performed

Therapeutics

113 Lipo-soluble Bismuth in the Treatment of Syphilis

A SCHWARTZ (*Presse Med*, June 3rd, 1931, p 809) ascribes to Fournier the chief credit for the evolution of bismuth therapy in syphilis Up to 1924 the results were variable and inconstant, because an emulsion and not a solution of a bismuth salt was used the rates of absorption and excretion were variable, and rendered the treatment less advantageous in comparison with intravenous arsenic Since 1924 lipo soluble salts have been used with excellent results, and in 1927 Fournier finally approved as the best the organic basic lipo-soluble salts, in 1930 he published details of a procedure indicating variations of dosage according to the general health of the subject For cases in the primary or secondary stages, a first series of twelve injections, each equivalent to 8 cg of metallic bismuth, are given intramuscularly, three in the first, and two in the following weeks one third of the cases should become sero negative after this series After a month's rest a further one third should be negative, and after a second series of injections the remainder, with rare exceptions should become so After one month's rest a third series is given, and after three months' rest, a fourth For several years two series are given in each twelve months spaced out with injections at five-day intervals During the treatment stomatitis must be watched for, and treated if it occurs, by local application of novarsenobenzol Schwartz reports, after three years experience, that accidents are extremely rare Stomatitis should not occur with proper oral hygiene and albuminuria never if the dosage is varied according to the general physical condition arterial embolism is a possible complication, but one of great rarity He has found the immediate results on primary and secondary lesions comparable to the best obtained with arsenical treatment and has not yet failed to make them disappear after the first series of injections All patients treated in the pre serological stage have remained negative and most have had only one or two series of injections 80 per cent of cases with positive Wassermann reactions have become negative after one series, and the rest after two series Most cases of serological relapse were insufficiently treated at the start or defaulted from observation for some months after one series Persistently sero-positive cases previously treated with arsenic sometimes become negative under bismuth treatment, such cases are said to be very rare

when bismuth is used from the start. Schwartz holds that bismuth is the drug of election for the treatment of syphilis, giving as good or better results than arsenic, with far less risk; he thinks that arsenic should now be reserved for the rare cases of bismuth-resistance.

114 Treatment of Hypertension

D. Riesman (*Journ. Amer. Med. Assoc.*, April 4th, 1931, p. 1105) regards hypertension as a disease of American life, rather than as an individual disorder, and insists that little improvement can result until more leisure is introduced into the average day's programme. In the treatment of hypertension the patient's fears must be quieted, since anxiety can raise both the normal, and the more sensitive abnormal, blood pressure. Attention should be paid to chronic constipation, infected teeth, and other sites of focal infection, but no measure is so successful and generally applicable as rest, either complete or partial. Physical exertion must be eliminated, and a week's rest in bed will always indicate the extent of the effect obtainable in this way. If the symptoms are fairly severe and denote commencing cardiac fatigue, the rest in bed must be considerably prolonged. It is rarely necessary to remove the patient completely from his business; such a step only tends to make him a confirmed hypochondriac, and may shorten his life; it is usually sufficient to cut down the hours of work. Riesman believes in reducing the salt intake to a minimum, and in restricting the use of tobacco in hypertensive patients who have had cardiac pain, though in others it is a useful sedative for "frayed nerves." Of the medicinal remedies, he has found glyceryl trinitrate and erythrol tetranitrate the most valuable. Sodium nitrate has not yielded, in his experience, equally good results, while amyl nitrite, though potent, is disagreeable, and should be reserved for special emergencies. Potassium thiocyanate in 1½ grain doses, three times a day, for five days, then twice daily for a week, and then once daily, has sometimes given satisfactory results. Bleeding is useful, and the iodides are undoubtedly effective in the case of syphilitic patients, though not in others.

115 Treatment of Peripheral Vascular Lesions

R. H. Smithwick (*New England Journ. Med.*, April 23rd, 1931, p. 845) discusses the value of foreign protein, and of alcohol injection of sensory nerves, in the treatment of peripheral vascular lesions. Typhoid vaccine was employed as the foreign protein, and doses of 50 to 250 million bacilli were given intravenously. By this means was produced an initial retardation of the circulation in the extremities; a rigor usually followed, accompanied by fever of about 103° F., and a very greatly increased peripheral circulation. Extremities previously cool and cyanosed became warmer, dry, and of better colour. During the initial phase of the reaction, thrombosis occurred on two occasions, but only in patients afflicted with a senile type of obliterative vascular disease. This treatment was therefore never given to patients over the age of 50, and when it was employed the extremities were previously heated to 100° F. by blankets and hot-water bottles. In patients experiencing the severe pain of gangrenous ulceration secondary to obliterative vascular disease, the method of desensitization by alcohol injections was employed. It was possible to anaesthetize the entire foot and ankle by injections into the posterior tibial, superficial peroneal, deep peroneal, saphenous, and sural nerves. Frequently the area involved could be blocked by injecting two or three of these nerves. By exposing and injecting the nerves six inches above the ankle and using a minimal quantity of alcohol, adequate healing was assured; it was found also that the circulation of the desensitized area was increased, presumably owing to inhibition of the vaso-constrictor supply. A further advantage of this method of treatment was that proper dressings might be applied when pain had been thus eliminated, so reducing the liability to infection and thrombosis of the capillary circulation. Patients who otherwise would have been subjected to a major amputation were frequently restored to useful activity after a few months of this treatment.

Neurology and Psychology

116 Arterial Angioma of the Brain

R. M. Stewart and W. Ross Ashby (*Journ. Neurol. and Psychopathol.*, April, 1931, p. 289) report a case of arterial angioma in a woman, aged 32, the condition being associated with complete absence of the corpus callosum. At the age of 19 she had had a blow on the head, which was followed later by the appearance of a bunch of enlarged veins on the forehead, severe headache, defective gait, and paralysis of the right upper limb. At 26 epileptic fits began, eventually assuming the grand mal type; they were associated with dementia, and the patient died convulsed at 53. A large angioma was found to occupy the mesial surface of the frontal convolutions of the left cerebral hemisphere; it was in the area of the anterior cerebral artery, and was composed of very large veins and arteries which showed proliferation of the intima, absence or splitting of the internal elastic membrane, imperfect development of the tunica media, and thickening of the adventitia. Abnormal and aberrant vessels were found in the mid-brain, the falx cerebri was much thickened, and the corpus callosum was entirely absent. Commenting on the case, the authors remark that the angioma would appear to have been in existence for thirty-four years. The two most important symptoms of this condition are increased extracranial vascularity and an audible intracranial bruit; auscultation of the skull is emphasized as being an essential part of a routine neurological examination. The hypertrophy of the vessels is explained by the increase in blood volume which, as Holman has demonstrated, is always associated with the establishment of an arterio-venous fistula. Exophthalmos is another important sign; it is generally unilateral, but in the present case was bilateral, presumably because of the mesial situation of the angioma.

117 The Nature and Treatment of Dementia Praecox

According to R. G. Hoskins (*Journ. Amer. Med. Assoc.*, April 11th, 1931, p. 1209) dementia praecox is a persistent dream state—a defensive reaction in a sensitive human being against a feeling of personal failure. It results from the recognition of inability to reach the personal standards that the patient has accepted for himself, and is characterized by a sense of isolation associated with panic, loss of hope, evasiveness with projection and grandiose delusions, or by simple acceptance of inferiority. There is a fundamental intolerable loss of self-respect. To cure such a patient he must be brought back to reality, and be sufficiently interested to stop his dreaming. His self-respect can be increased by correction of his personal standards, if erroneous, by encouraging personal neatness and cleanliness; by treating him respectfully, remembering that he is insane because he is sensitive; by stimulating him to do things which he himself will respect, helping him to be helpful to others; and by instilling into him the realization that he does not need the form of self-protection he has adopted. Hoskins states that dementia praecox is responsible for filling one-fifth of all the hospital beds in the United States, involving a daily expenditure of about one million dollars. He maintains that treatment on the lines suggested is far superior in its effects to the various other psychotherapeutic procedures that have been based on more profound theorizing. The essential point is the attraction of the patient from his self-inflicted isolation to an increasing interest in community life.

118 The Reactive Manic Episode

W. McC. Harrowes (*Journ. Mental Sci.*, January, 1931, p. 127) criticizes Bleuler's statement that reactive mania is unknown, and reports two cases in which excitement with manic features and toxic phenomena appeared; recovery ensued in both cases. The etiology of the nervous processes concerned is discussed, with special reference to prognosis. The author emphasizes the point that the individual makes adjustments of two kinds normally: long-term adjustments, with subservience of the present to the claim of the more distant future; and

short term adjustments, dealing with the more immediate present In one of his cases the first attack came as an incident in a typical long term situation in a young woman faced with a life of uncongenial work involving serious conflicts, a long drawn out psychosis followed with excitement of the manic type In his other case the disorientation, though complete, was relatively brief, at the end of ten weeks full recovery was reached, though the patient had a complete amnesia for the whole illness from the time of the sudden shock which had initiated the manic episode The author adds that careful evaluation of the total series of events in such morbid conditions will give valuable help in determining whether the case is of the long term or short term nature He adds that there is still more to be done in the way of investigating the relation of toxic factors to neurotic and psychotic conditions

Obstetrics and Gynaecology

119 Tuberculosis and Sterility

According to H HOPPNER (*Zentralbl f Gynak*, April 4th, 1931, p 1269) sterility in tuberculous subjects may be due to (1) tuberculous lesions of the Fallopian tubes, (2) tuberculous lesions of the ovaries, (3) a destruction of the ovarian—and therefore of the uterine—cycle, in the absence of a gross anatomical lesion of the ovaries, which show on histological examination that many of the primordial follicles have been destroyed before puberty, and (4) to the presence of miliary tubercles in the superficial layers of the endometrium only Clinical examples of the last group are cited in which repeated curettings from sterile patients showed endometrial tubercles in some cases conception followed curetting or *x* ray therapy It must be admitted, however, that in rare cases the lodgement of the fertilized ovum in a tuberculous endometrium is possible, proof of this is difficult, but such nidation in a tuberculous Fallopian tube has been demonstrated Such a pregnancy, leading to rupture, is here described and illustrated

120 Uterine Epithelioma and Sarcoma

The coexistence of two benign uterine tumours, or of one malignant and one benign growth, is not infrequent, but the simultaneous development of two malignant tumours of the uterus is rarely noted R LEROUX and M PERROT (*Bull de l'Assoc Franç pour l'Étude du Cancer*, April, 1931, p 283) record such a case The structure of sarcomatous tissue is very polymorphous, while that of epitheliomas, whether complicated with sarcoma or not, is of the glandular type, and a case of Malpighian involvement has not yet been reported Examination of the uterus after hysterectomy, in the present case revealed multiple benign fibromyomas, glandular and Malpighian epitheliomas, leiomyosarcoma, fibroblastic sarcoma and sarcoma with large round cells apparently derived from cytogenic chorion The histology of these is described, and various points in relation to them are discussed The rarity of such complex neoplastic formation in the one organ is emphasized, and the authors suggest as its cause a dysembryoplasia The presence of growths in the utero sacral ligament renders such a hypothesis very plausible

121 Permeability of the Foetal Fallopian Tubes

N MARKOFF (*Gynecol et Obstet*, April, 1931, p 323) points out that there are important and interesting exceptions to the general rule that the genital life of the female except in cases of uterine infantilism or defects of the spermatozoon, forms the basis of the sterility which is acquired after infections Aburel, in post mortem examinations of two newborn infants who had acute vulvo-vaginitis and died of peritonitis, found a purulent metro salpingitis, he believes that, if the infants had survived, the condition would have become chronic and impermeability of the tubes have developed Vulvo vaginitis, he adds, is not exceptional, and various authors have shown that the infection in such cases may be propagated along the upper genital passages, and cause peritonitis Having observed many cases of sterility without infantilism or history of previous infection, Markoff examined sixteen embryos of ages ranging from four to nine months He found that in many cases impermeability of one or both tubes was present, he concludes that there is a congenital tubal impermeability which can be the cause of sterility These findings agree with those of Boutowski in twelve cases Markoff considers that this congenital impermeability is due to defective embryonic development, and not to inflammatory infections during intrauterine life, and that the findings here recorded throw a new light on the pathogenesis of female sterility

122 Treatment of Delayed Post-partum Haemorrhage

PLACINTIANU (*La Ginecol* April, 1931, p 193) discusses the treatment of delayed haemorrhage after confinement Whether it is associated with retained placenta or not, post partum haemorrhage is a complication which exposes the patient to great risks that arise from the grave anaemia which reduces the patient's resistance, and also from the fact that haemorrhage may actually be a sign of infection If it is impossible to make a diagnosis of retention by other means, vaginal examination with the most stringent aseptic precautions may be employed In cases of haemorrhage with retention of placenta, when the placenta is free in the utero cervical canal, a careful, slow, and aseptic digital extraction may be employed In cases of definite adherent placenta, hysterectomy becomes necessary In all cases of secondary haemorrhage, medical, local, and general treatment must be adopted, and for many cases does actually suffice For the more serious forms abdominal hysterectomy with Mikulicz drainage is the only advisable procedure

123 The Zondek-Aschheim Test and Hydatidiform Mole and Chorion epithelioma

F VOZZA (*Ann di Ostet e Ginecol* March 31st 1931 p 267) emphasizes the importance of the Zondek Aschheim pregnancy reaction in the diagnosis, treatment and prognosis of hydatidiform mole and chorion epithelioma He accepts the view that the hormone responsible for the reaction is chiefly of placental origin and is usually secreted and excreted in greatly increased amounts in such cases In eighteen personal cases of vesicular mole Vozza obtained a positive Zondek Aschheim reaction, and as much as 100 000 mouse units in a litre of urine Fourteen patients still had a positive reaction ten days after expulsion of the mole but after a further three weeks it had become negative in those who could be followed up Performance of the test in patients who have expelled vesicular moles gives invaluable information concerning the possible supervention of chorion epithelioma Five cases are quoted from the literature in which curettings showed microscopical characters definitely pointing to chorion epithelioma, but in which the patients remained well in spite of radical treatment being withheld on account of a negative Zondek Aschheim reaction Curetting in chorion epithelioma is not without danger, and the pregnancy reaction in the urine probably forms a more reliable prognostic guide Vozza records in detail three cases of hydatidiform mole in which curettings revealed no trace of malignancy, but the persistence of a positive Zondek Aschheim reaction led to the performance of hysterectomy, examination of the uterus subsequently brought to light small intramural or other areas of chorion epithelioma Two of these patients have remained well, with negative urine reactions for some months since the radical operation the remaining patient, in whom the test remained positive died with metastases

124 Primary Epithelioma of the Fallopian Tube

G A CADET (*Thèse de Paris* 1931 No 124), who records a personal case maintains that the rarity of primary epithelioma of the Fallopian tubes is probably more apparent than real In the absence of a systematic histological examination a tubal neoplasm can easily be overlooked, and be mistaken for an ordinary inflammatory

lesion of the adnexa. The affection is almost confined to the period of the menopause, between the ages of 40 and 50. Unlike other forms of cancer, it is sometimes painful at the onset. The symptoms, which include pain of varying degree and situation, leucorrhoea, and menstrual disturbance, are not characteristic, but the presence of a sausage-shaped tumour, rapidly increasing in size, the absence of pyrexia, and the demonstration of an extra-uterine source of a haemorrhagic and purulent discharge, are suggestive of a Fallopian epithelioma. In view of the highly malignant character of the condition, early and extensive operation is indicated. Cadet's patient was a woman, aged 50, who was successfully treated by subtotal hysterectomy.

Pathology

125 Difficulties of Diagnosing Plague in Rats

W. Levinthal (*Zeit. f. Hyg. u. Infektionsk.*, May 22nd, 1931, p. 433) points out that, in the diagnosis of plague in rats, not only may the pseudo-tubercle bacillus give trouble, but also *B. coli*. He has recently examined a strain, identified as a plague bacillus, recovered from an epidemic among rats on a ship, in which apparently 68 out of a total of 182 rats died. In broth cultures this organism showed well-marked bipolar staining; it proved fatal to guinea-pigs in four days, though it was non-pathogenic grey rats. It was agglutinated almost to titre by an anti-plague serum. Closer examination, however, revealed that it was motile, that it produced gas in sugar media, and that it formed indol. The agglutinability of this *B. coli* strain by an anti-plague serum was found to be due to the fact that the serum had been prepared by injection of a horse, and that the agglutinins for the coliform bacillus were not specific agglutinins for *Past. pestis*, but natural agglutinins for *B. coli*. The strain was agglutinated by an antipneumococcal serum prepared from a horse, but not by one prepared from a rabbit, thus confirming the truth of this explanation. The author states that he has met with several recently isolated strains of *B. coli* which produced a plague-like disease in guinea-pigs—buboes embedded in haemorrhagic oedema—and which in the organs closely resembled the plague bacillus. Such organisms are not infective by the cutaneous route, and rapidly lose their virulence.

126 Effect of Dilution on Antiseptics

T. N. Seth and S. K. G. Dastidar (*Ind. Journ. of Med. Research*, April, 1931, p. 1211) have investigated the effects of gradual dilution on the properties of an antiseptic. They find that an increase in the dilution of an antiseptic which dissociates in solution causes a steady decline in its activity up to a certain point; beyond this there is a limited range in which further dilution definitely increases its relative effectiveness, while still further dilution again lowers its activity. Mercuric chloride, carbolic acid, and ethyl alcohol were used in varying dilutions, the relative powers of which in preventing the growth of *Staphylococcus aureus* were taken as the measure of their effectiveness. This was found to decline with progressive dilutions up to a point beyond which further dilution causes a marked recovery in the activity of the antiseptic. It would appear that the antiseptic action of substances which dissociate in solution depends upon two factors: (1) the influence of the undissociated molecules of the antiseptic on the organism, and (2) the influence of the ions of the antiseptic on the organism. At the higher concentrations the first of these predominates, and with increase in the dilution the number of undissociated molecules of the antiseptic diminishes. So long as the number of ions is insufficient to counterbalance the decline in (1) the effectiveness of the antiseptic as a whole steadily decreases. Beyond a certain point, however, the action of the antiseptic becomes again intensified, due to such an increase in (2) as more than counterbalances the decline in

127 The Presence of Foot-and-Mouth Virus in Vaccine Lymph

T. Van Heelsbergen (*Ann. de l'Inst. Past.*, May, 1931, p. 558) relates how, at the beginning of last year, some vaccine lymph coming from the State Vaccine Institute in Norway was used by Slagsvold to inoculate some cattle. Besides developing vaccinia, these animals showed signs of foot-and-mouth disease, and other animals in contact with them contracted this disease. Guinea-pigs inoculated into the paws with the vaccine lymph developed typical symptoms of foot-and-mouth disease, showing clearly that the vaccine itself must have been contaminated with the foot-and-mouth virus. The present author now describes experiments made by himself on this particular strain of vaccinia. Inoculation into a calf gave rise to a severe attack of foot-and-mouth disease, followed later by the appearance of vaccinia pustules. A second calf inoculated from the fluid in the vesicles developed foot-and-mouth lesions without any subsequent vaccinia lesions, indicating that the vesicular fluid did not contain the vaccine virus. In this way the foot-and-mouth virus was obtained in pure culture. A pure culture of vaccinia virus was obtained from the original contaminated vaccine by passage through cocks, the inoculations being made on to the comb. In two out of four birds a mild pustular eruption occurred, and material from these pustules inoculated on to the abdominal skin of a calf gave rise to typical vaccinia without any foot-and-mouth lesions. The purity of both strains was demonstrated by rabbit inoculations, and by cross-immunity experiments on calves.

128 Salt Excretion in Obesity

G. Kahlmeter (*Acta Med. Scand.*, April 28th, 1931, p. 107) states that purely endogenous or exogenous cases of obesity are probably not common, the condition arising from the association of both intrinsic and extrinsic causes. The endogenous factors are generally considered to be disturbances of several endocrine glands, or a faulty interaction between some, such interaction being probably regulated by the sympathetic nervous system. Organic and functional disturbances of the basal parts of the mid-brain (the seat of the sympathetic regulation) not infrequently cause obesity, and in this condition other sympathetic disturbances such as increased sugar tolerance and hyperhidrosis are noted. The author investigated the water and salt metabolism in fifteen cases of obesity and describes his tests. It was found in most instances after the salt tolerance test that there was a delayed excretion of the salt and water. Cardiac and renal disorders could be excluded as the cause of this retention, which, therefore, was presumably attributable to endocrine or sympathetic disturbance. Kahlmeter concludes that in certain cases of obesity the salt and water excretion is at fault, probably due to derangements of the sympathetic system or of certain endocrine glands, possibly the pituitary or liver, or both. He emphasizes the clinical value of recognizing this form of obesity, since restriction of salt in the diet is essential in treating such patients.

129 The Blood Picture in Infantile Tuberculosis

B. M. Hamil (*Amer. Journ. Dis. Child.*, May, 1931, p. 1023) records a study of the blood picture in this condition. The monocytes are increased above the normal figures in active tuberculosis; this is constant in severe tuberculosis, but not pathognomonic. The total lymphocyte count is decreased below the normal in all active types of tuberculosis, this decrease depending on the severity of the disease, the count increasing in the healing stage. The relation of the lymphocytes to the tuberculous process is more constant than that of the monocytes. Multiple lesions in different pathological stages, the tuberculin skin test, and ultra-violet irradiation, in cases of chronic and advanced healing tuberculosis, cause changes in the monocyte-lymphocyte ratio, which cannot then be depended on to indicate the state of the tuberculous process. No blood picture can in any case warrant a diagnosis of tuberculosis without the support of clinical evidence.

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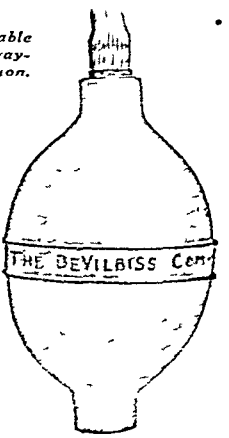


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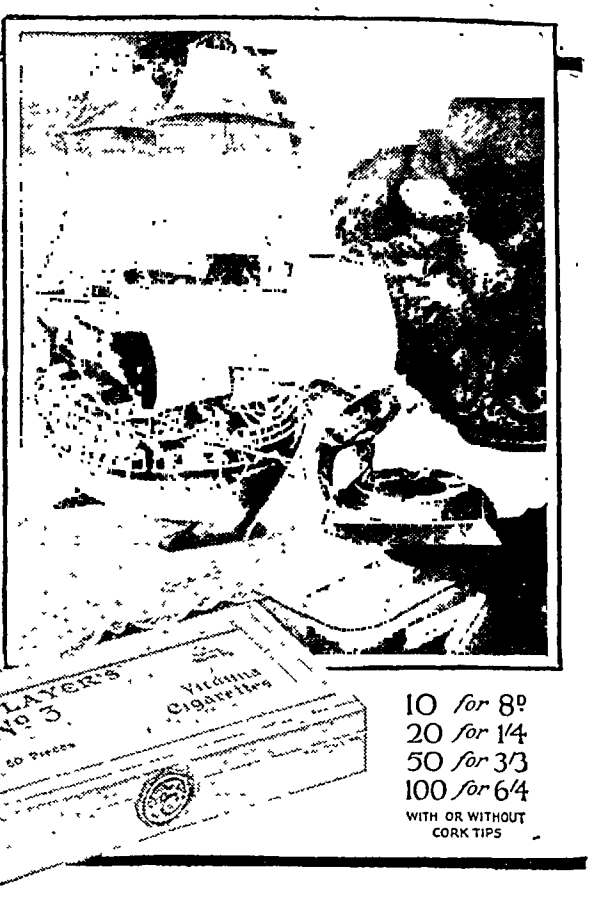
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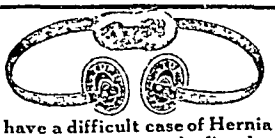
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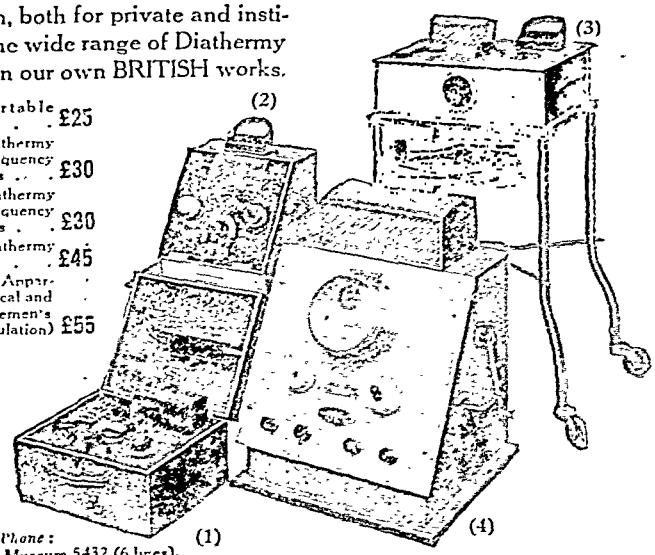
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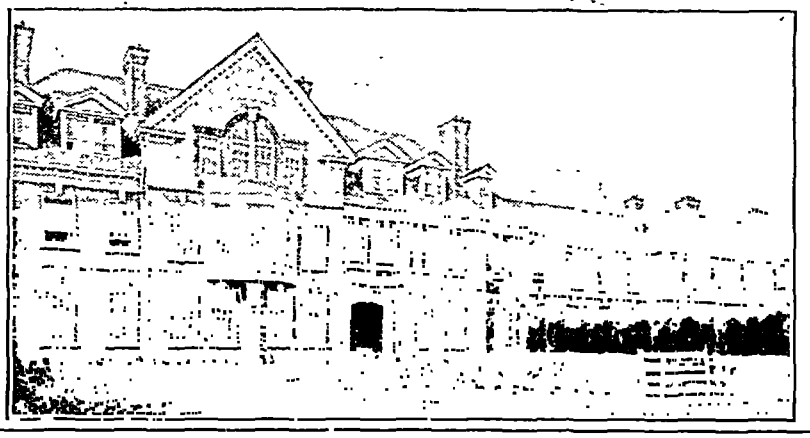
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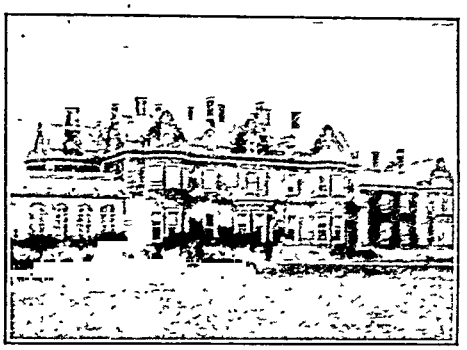
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Examinations will be held beginning Monday, November 16th 1931, and Tuesday, May 17th, 1932.

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	Final	161
M.R.C.P.(Lond.),	1914-30	192
D.P.H.	(Various) 1906-30 (Completed Exam.)	300
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CONTENTS.—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

Streatfeild Research Scholarship
IN MEDICINE AND SURGERY.

In accordance with the Trust founded by Mrs. Eliza Streatfeild for the promotion of Research in Medicine and Surgery, a Committee of the Royal College of Physicians of London and of the Royal College of Surgeons of England will proceed (in October) to appoint a Streatfeild Research Scholar.

The emolument will probably be £250 per annum, and the tenure of the Scholarship three years, at the discretion of the Committee.

A form stating the nature of the particulars which each candidate is required to give may be obtained from the Registrar, Royal College of Physicians, Pall Mall East, S.W.1.

Applications should reach the Registrar not later than Wednesday, September 23rd. The envelope should be marked "Streatfeild Scholarship."

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes. th DEMONSTRATIONS will commence shortly. RRESPONDENCE COURSE for Jan. and later Exams. should begin now.—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.
(University of London)

PRIMARY F.R.C.S. COURSE

A Course of Instruction for the December Examination will begin on Tuesday, September 1st, 19[illegible]:

ANA[illegible]
PHY[illegible] (with Practical Classes)

The classes are conducted by the Professors and Demonstrators in the respective subjects.

Fee for the Course £16 16s., or £9 9s. for either section separately. This fee includes membership of the Students' Club during the period covered by the Course.

For further particulars apply to the School Secretary.

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The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.
(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

The Tunbridge Wells & Counties
GENERAL HOSPITAL

Wanted, HOUSE SURGEON (male). Candidates must be unmarried and duly qualified in Medicine and Surgery. May be required to lecture to Nursing Staff. (Two residents) Vacant now.

In patients number over 1,400 yearly. Out-patients 6,000 with 50,000 attendances.

Salary £160 per annum, with board, residence, and laundry, in the Hospital.

This Hospital is approved by the University of London for the purposes of the M.D. and M.S. examinations.

Applications, stating qualifications, with certificate of registration and copies of testimonials, should be sent to the undersigned immediately.

TOM B. HARRISON, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

THE "WANDER" SCHOLARSHIP IN DISEASES OF CHILDREN.

Applications are invited for the office of "WANDER" SCHOLAR AND REGISTRAR TO THE CHILDREN'S DEPARTMENT. Salary £250 per annum. Duties to commence Sept. 1st. Candidates must be registered Medical Practitioners who have held a resident Hospital post or posts, one of them preferably in diseases of children. The office is a whole-time one and is tenable for one year. Applications, together with six copies of three recent testimonials, should be submitted to the undersigned, from whom further details regarding the duties of the office can be obtained, not later than Friday, August 14th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Metropolitan Borough of Poplar.

MALE ASSISTANT TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council of the Metropolitan Borough of Poplar invite applications for the above post from duly qualified and registered male Medical Practitioners, who are specially qualified in the diagnosis and treatment of Tuberculosis, and not over 40 years of age.

The person appointed will assist the Tuberculosis Officer, and, when necessary, carry out other duties in the Public Health Department under the direction of the Medical Officer of Health, and devote his whole time to the services of the Council.

Applicants should have:

(1) At least three years' experience in the practice of his profession.
(2) Spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as a Resident Officer in charge of beds occupied by general medical and surgical cases, and
(3) Received special training for a period of not less than six months in the diagnosis and treatment of Tuberculosis.

A Diploma in Public Health is desirable.

The commencing salary will be at the rate of £550 per annum, rising by annual increments of £25 to £700 per annum.

The successful candidate will be required to pass a medical examination, and to contribute to the Council's Superannuation Fund.

Forms of application may be obtained from my office, and must be returned, together with a letter of application, and copies of three recent testimonials, in envelope endorsed "Male Assistant Medical Officer of Health," not later than Saturday, August 22nd next.

Canvassing members or Officers of the Council in any form will disqualify.

Council Offices, Poplar, E.14. H. E. DENNIS, Town Clerk.
July 28th, 1931.

County Borough of Dewsbury.

DEPUTY SCHOOL MEDICAL OFFICER AND DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Practitioners for the post of Deputy School Medical Officer and Deputy Medical Officer of Health.

Applicants should have had at least three years' experience since qualification. Experience in Eye work and Refractions is essential. The possession of the D.P.H., and previous experience in School Medical Inspection and the work of a School Clinic, and in Tuberculosis and Child Welfare, will be considered important additional qualifications.

The inclusive salary will be at the rate of £600 per annum. Particulars of the duties and conditions of appointment, together with application forms, may be obtained from Dr. R. M. GALLOWAY, Medical Officer of Health, Market Place, Dewsbury, to whom all applications, accompanied by copies of not more than three recent testimonials, should be delivered not later than Saturday, August 22nd.

Town Hall, Dewsbury. HOLLAND BOOTH, Town Clerk.
July, 1931.

County Borough of Birkenhead

PUBLIC ASSISTANCE COMMITTEE

RESIDENT ASSISTANT MEDICAL SUPERINTENDENT.

The Birkenhead Corporation invite applications for the appointment of Resident Assistant Medical Superintendent at the Infirmary and Institution, Tranmere, Birkenhead. The Infirmary contains 596 beds and the Institution 677 beds.

Salary after the rate of £450 per annum, rising by annual increments of £25 to a maximum of £550 per annum, together with the usual residential, etc., allowances.

The appointment is subject to the provisions of either the Local Government and Other Officers Superannuation Act, 1922, or the Poor Law Officers Superannuation Act, 1896, whichever is applicable.

Candidates must be duly qualified and registered under the Medical Acts, and have had experience in operative surgery, and must be capable of performing any emergency operation in the absence of the Medical Superintendent.

The appointed candidate may be required, at the discretion of the Council, to undertake such other duties of a medical or surgical nature in the Public Health Services of the County Borough as may be assigned to him.

Further information may be obtained from the Medical Superintendent of the Infirmary.

Forms of application, to be obtained from the Secretary, Public Assistance Offices, 5, Conway Street, Birkenhead (on receipt of a stamped addressed foolscap envelope), must be returned to the undersigned not later than Monday, August 17th, endorsed "RAMS."

Canvassing the members, directly or indirectly, will disqualify the candidate.

Town Hall, Birkenhead. L. W. TAME, Town Clerk.

July 27th, 1931.

City of Bradford.

MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S

HOUSE PHYSICIANS and HOUSE SURGEONS required. Salary in each case £200 per annum, with board and lodgings.

These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned not later than August 22nd. N. L. FLEMING, Town Clerk.

Town Hall, Bradford.

City of Bradford.

ASSISTANT SCHOOL DENTAL SURGEON required (male). Salary £475 per annum.

The appointment will be subject to the provisions of the Local Government and Other Offices Superannuation Act, 1922, and the successful candidate will be required to pass the necessary medical examination.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be delivered to the undersigned not later than August 22nd.

N. L. FLEMING, Town Clerk.

Town Hall, Bradford.

Cumberland Infirmary, Carlisle.

(160 Beds.)

Resident Medical Staff—Four Qualified Officers.

The following posts are vacant on October 1st for six months' appointment, male. Previous experience desirable. Salary in each case at the rate of £155 per annum, board, residence, etc.:

(a) HOUSE PHYSICIAN;

(b) SECOND HOUSE SURGEON; and

(c) HOUSE SURGEON to Special Departments (Ears, Ear, Nose, and Throat).

Applications, stating age, etc., with copies of not more than four testimonials, must be received by first post on Wednesday, August 19th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

August 1st, 1931. E. G. HOWELL, Secretary.

West Kent General Hospital,

MAIDSTONE. (106 Beds.)

Applications are invited for the post of HOUSE SURGEON, who must be a male and of British nationality. Salary at the rate of £220 per annum, with board, apartments, and laundry.

Candidates must possess registered Medical and Surgical qualifications.

Write in the first instance to the undersigned for form of application, which must be returned completed by Tuesday, August 11th, 1931.

The successful candidate will be required to take up residence on September 1st next.

HOWARD J. GRIGG, House Governor and Secretary.

City of Salford.

HOPE HOSPITAL.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at Hope Hospital, Salford (to commence duty October 1st). Commencing salary £400 per annum, rising by annual increments of £12 to £520 per annum, plus board, lodging, attendance, and laundry. A deduction of 5 per cent will be made from salary, and estimated value of emoluments for superannuation purposes.

The Hospital contains 1,000 beds, and is equipped with Pathological Laboratory, X-ray and Electro-Cardiograph, and affords full facilities for clinical investigations. There is a Visiting Physician on the Staff.

The Resident Medical Officer is one of the three senior Residents and will be responsible for work in medical division. Candidates must have had previous Hospital experience, and preference will be given to those possessing the M.D. or M.R.C.P.

Further particulars may be obtained from Medical Superintendent, Hope Hospital, Salford.

Application forms may be obtained by forwarding stamped addressed foolscap envelope to Medical Officer of Health, 143, Regent Road, Salford, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than August 12th.

H. H. TOMSON, Town Clerk.

The Royal Portsmouth Hospital.

(FIVE RESIDENT MEDICAL OFFICERS.)

Applications are invited for the posts of SENIOR HOUSE SURGEON (male). Salary at the rate of £175 per annum, with board, etc. Candidates must have held an appointment as House Surgeon at a General Hospital, as the post is a very responsible one.

HOUSE PHYSICIAN (male). Salary at the rate of £130 per annum.

HOUSE SURGEONS (two, male). Salary at the rate of £130 per annum each.

CASUALTY OFFICER (male). Salary at the rate of £100 per annum.

All offices must be qualified, and will be required to commence on October 1st (six months' appointments, and eligible on completion of term for extension of other resident posts).

Applications, stating age, nationality, and full details with copies of three testimonials, to be sent to the undersigned not later than September 5th, from whom all particulars can be obtained.

E. WAGSTAFF, Secretary.

Walsall General Hospital.

The Committee invite applications from Women for the posts of HOUSE PHYSICIAN and HOUSE SURGEON.

Salaries at the rate of £150 per annum.

Candidates who must be registered under the Medical Acts, must produce three recent testimonials.

The appointments equal in status will be for six months each.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post, Tuesday, August 11th.

WALTER BRANCOMBE, Secretary.

St. Chad's Hospital,

BIRMINGHAM.

FOR PAYING PATIENTS. (100 Beds.)

RESIDENT MEDICAL OFFICER required (male or female). This post offers exceptional educational advantages. The Medical Staff consists of thirty consulting Specialists in all branches of Medicine. Salary £100 per annum, with furnished apartments, board (excepting stimulants), and laundry.

Candidates must be fully qualified and registered, and have previously held Resident post.

Applications (marked R.M.O.) with full particulars of experience, age, etc., to other with copies of recent testimonials, should be sent to the undersigned not later than August 17th, 1931.

DAVID J. RICHARDS, House Governor.

The Sheffield Royal Hospital.

The Election Committee will meet in September 2nd to elect an HONORARY PHYSICIAN who must be a Fellow or Member of the Royal College of Physicians. Applications must reach the undersigned ten days before the date of the election. The Senior Assistant Physician is a candidate.

W. H. FOOTH, Staff and Secretary.

August 4th, 1931.

British Medical Association.

APPOINTMENT OF SCOTTISH MEDICAL SECRETARY.

The Council of the British Medical Association is prepared to receive applications from registered medical practitioners for the appointment of Scottish Medical Secretary. He will be required to live in Edinburgh, and to give his whole time to the duties of his office. Duties to commence as arranged, but not earlier than January 1st, 1932, and the appointment to be subject to six months' notice on either side.

Salary £650, rising by £50 to £750 by annual increments of £50, subject to deductions for superannuation.

Applications stating experience and age, which not more than three recent testimonials should be received by the Medical Secretary, British Medical Association, Tavistock Square, W.C.1, not later than first post, October 1st, 1931.

Canvassing not allowed.

ALLEN FOX, Medical Secretary.

Kettering & District General Hospital, Kettering. (80 beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). Salary £200 per annum, with board, residence, and washing. Candidates must be fully qualified and registered.

The appointment is for six months, with eligibility for a further six months.

Applications stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

G. W. JACKSON, Secretary Superintendent.

Wolverhampton and Midland Counties Eye Infirmary.

HOUSE SURGEON wanted. Ophthalmic experience preferred. Duties to commence on 1st September. There are 50 beds for In-patients and large Out-patient Department. Salary £150 a year with furnished apartments, board, and laundry. Ladies and gentlemen applying should state age and experience and send copies of three recent testimonials, to reach the Secretary not later than August 14th.

EUSTACE HILLS, Secretary.

July 27th, 1931.

Elsie Inglis Memorial Maternity Hospital,

Spring Gardens, Edinburgh.

(66 beds.)

Applications are invited from qualified medical women for the post of JUNIOR HOUSE SURGEON at above Hospital for six months from October 1st, with board, residence, and laundry. Honorarium at the rate of £75 per annum.

Applications with three copies of Recent Testimonials to be received by the Convener of the Medical Committee of the above address on or before August 22nd, from whom further particulars may be obtained.

The Guest Hospital, Dudley.

(General Hospital, 107 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Salary £ per annum, with furnished apartments, board and laundry. Duties to commence August 2[illegible] and candidates must be fully qualified and registered.

Applications, stating age, qualifications, experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND BURST, The Guest Hospital, Dudley. House Governor and Secretary.

July 31st, 1931.

General Lying-in Hospital,

YORK ROAD, LAMBETH, S.E.1.

Applications are invited for the post of [illegible] DENTAL SURGEON, RESIDENT ANAESTHETIST. Salary at the rate of £100 per annum, board, residence, and laundry. Appointment for four months, commencing September, 1931, one month junior to the Senior Surgeon.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned not later than August 19th.

THOMAS HEALD, Secretary.

Private Mental Hospital, S.W. [illegible]

MEDICAL OFFICER required. Age [illegible] experience, and [illegible] to Messrs. [illegible] & Co., Solicitors, 6, Chancery Lane, W.C.2.

Manchester Royal Infirmary.

CLINICAL ASSISTANT IN AURAL OUT PATIENT DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which becomes vacant on September 1st.

Applicants (either sex) must be registered, and hold a Medical and Surgical qualification.

The duties are for Wednesdays and Fridays from 9 a.m to 1 p.m. Salary £35 per annum The appointment is subject to the Bye laws as to notice, etc.

Applications, stating age and testimonials, to be sent to the Chairman of the Medical Board not later than August 22nd.

By Order,
F. G HAZELL,
July 31st, 1931. Gen. Supt. & Secretary.

Royal Infirmary, Doncaster.

(185 Beds.)

HOUSE PHYSICIAN (male) required immediately. Appointment is for six months The House Physician will also act as House Surgeon to the Ophthalmic, Ear, Nose, and Throat Depts The position offers opportunity of gaining good Medical experience

The successful candidate is eligible for re appointment Salary £175, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by August 15th.

WALTER R. SMITH,
Secretary-Superintendent.

Nottingham Children's Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON (Woman) The salary will be at the rate of £150 per annum, with apartments, board, and laundry The appointment will be for six months, duties to commence on September 1st.

Applications, together with testimonials, and stating age, qualifications, and experience, to be sent to F PRAGNELL, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by August 18th. Selected candidates will be required to attend at the Hospital for a personal interview on August 25th, when the appointment will be made.

Huddersfield Royal Infirmary.

(210 Beds.)

Male HOUSE SURGEON required to commence duty as early as possible. Salary £150 per annum, with board, residence, and laundry Appointment for six months, subject to renewal for further three or six months

The Hospital is officially recognized for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately

H E G HALL, Secretary

Nottingham and Midland Eye Infirmary

RESIDENT HOUSE SURGEON required in September 54 beds Large Out patient Department Salary £200 per annum, with board and laundry Applicants (gentlemen) should state age, qualifications, experience, and send copies of three recent testimonials to the Secretary, The Ropewalk, Nottingham

Rotherham Hospital.

(130 Beds)

Wanted, CASUALTY HOUSE SURGEON (male), qualified Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials to be sent to the Secretary, G W ROBERTS, 8, Moorgate Street, Rotherham

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN, qualified Salary £180 p.a., with board, residence, and laundry, to have charge of Out patients, administer Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male), qualified. A knowledge of Eye work is desirable. Salary £200, with board, residence, and laundry. Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate

Royal Northern Hospital, HOLLOWAY, N 7.

Applications are invited for the post of OBSTETRIC HOUSE SURGEON vacant on September 15th

The appointment is for nine months (six months as Obstetric House Surgeon and three months as Casualty Officer). Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by August 14th to the undersigned, from whom forms of application and rules can be obtained

GILBERT G. PANTER,
Secretary.

Derbyshire Royal Infirmary, DERBY.

(General Hospital—346 Beds).

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON

Candidates must be qualified and registered under the Medical Acts

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three), to be sent to the undersigned

WALTER BANKS,
Superintendent and Secretary.
August 7th, 1931.

Seamen's Hospital Society, GREENWICH.

HOUSE SURGEON (male) required at TILBURY HOSPITAL, ESSEX, for six months from September 1st. Salary £150 per annum, with board, residence, and laundry. Good opportunities for minor surgery. Applications, with copies of three testimonials, to be sent in by August 18th to the undersigned.

Seaman's Hospital Society, Greenwich. R. E. V. BAX, Secretary.
July 30th, 1931.

Darlington General Hospital.

(120 Beds)

Wanted, JUNIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Maternity, Orthopaedic, Eye, Ear, Nose, Throat, X-ray, U.V R Departments.

Applications from British male candidates, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to the undersigned.

ARTHUR RIDDLE, Secretary.

Acton Hospital, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required Salary £100 per annum, with board, residence, and laundry Candidates must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with a copy of three recent testimonials, should reach the Secretary, Acton Hospital, Gunnersbury Lane, W.3, by Wednesday, August 12th

July 21st, 1931.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES.

(Three Residents—140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months Duties to commence earliest possible Salary £150, with board, residence, and laundry. Candidates must be duly qualified and unmarried Applications, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned

JOHN WILKINSON, Secretary.

The Cancer Hospital (Free)

(Incorporated under Royal Charter), Fulham Road, London, S.W 3

The Committee are prepared to receive applications for the post of PHYSIOLOGICAL CHEMIST. Salary £600 per annum.

The appointment is subject to Rules, a copy of which can be obtained from the Secretary

Applications, accompanied by copies of not more than three recent testimonials, to be sent to the undersigned on or before August 22nd.

J COURTNEY BUCHANAN, Secretary.

The Children's Hospital, SUNDERLAND. (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female) Candidates must possess double qualifications (registered). Salary £100 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor and Secretary.

East Suffolk and Ipswich HOSPITAL, IPSWICH.

(265 Beds—7 Residents)

FORTHCOMING VACANCIES

Applications are invited for FOUR HOUSE SURGEONS and a HOUSE PHYSICIAN, vacant in September, at salaries of £120 per annum, board, residence, and laundry.

Applications from British male candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

Elizabeth Garrett Anderson HOSPITAL, Euston Road

Wanted, fully qualified Medical Women as CLINICAL ASSISTANTS in the following Departments:

Ophthalmic Department Tuesday mornings; Thursday evenings

Surgical Department Wednesday afternoons

Medical Department. Saturday mornings

Children's Department. Monday and Thursday mornings.

These appointments to commence from September 1st next.

JEAN R. MURRAY, Secretary

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, vacant August 10th

The appointment is for six months, renewable (determinable by three months' notice on either side).

Salary at the rate of £150 per annum, with board, lodging, and laundry.

Candidates (male) should forward applications, stating age, nationality, etc, together with copies of testimonials, to the Secretary at once.

Manchester and Salford Hospital FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered The appointment is for six months Salary at the rate of £100 per annum, with board and residence

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, Aug 12th

JOHN NALL, Secretary.

Margate & District General HOSPITAL (98 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties on September 1st next Twelve months' engagement (renewable). Salary £125 per annum, with board and laundry

Applications, accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible

Burslem, Haywood, and Tunstall WAR MEMORIAL HOSPITAL

Wanted, JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £140, with board and residence. Must be fully qualified

Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me.

Public Offices, Price Street, Burslem. F. C POWELL, F.C.I.S., Secretary.

General Hospital, Nottingham.

(397 Beds)

A CASUALTY OFFICER (either sex) is required at the above Institution at once The appointment is for six months Salary at the rate of £200 a year, with board, residence, and laundry.

Candidates are desired to send particulars as to age, qualifications, and experience, together with copies of testimonials, to the undersigned

PETER M. MACCOLL,
House Governor & Secretary.

Free Eye Hospital, Southampton.

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry.

Applications, with three recent testimonials, to be sent to the Secretary.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management. Post now vacant.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH** *(contd.)*.
CONTRACT PRACTICE.	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	COUNTY BOROUGH OF BELFAST EDUCATION COMMITTEE. *(Full-time Male Assistant Inspection Medical Officer.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	GREENOCK CORPORATION. *(Assistant to Medical Officer of Health—Lady.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	STEWARTRY OF KIRKCUDBRIGHT. *(Assistant Medical Officer and Assistant School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 133, Macquarie St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

August 5th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST required, part-time only. Salary £200 per annum.

Applications, stating age, qualifications, experience, etc., with copies of three recent testimonials, to be forwarded to the undersigned on or before Wednesday, August 12th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Buchanan Hospital, ST. LEONARDS-ON-SEA, SUSSEX. (Beds 115.)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male or female) at a salary of £125 per annum, with board, residence, etc. Eligibility for Senior position after six months' service. Applications, with testimonials, to be sent to the Secretary, Buchanan Hospital, St. Leonards, as early as possible.

Liverpool Heart Hospital.

HONORARY ASSISTANT PHYSICIAN.

Applications are invited for the post of Honorary Assistant Physician. Candidates must not be engaged in general practice. Applications should be sent to Miss LEWIS, 14, Cook Street, Liverpool, not later than October 5th.

Woolwich and District War MEMORIAL HOSPITAL, Shooter's Hill, London, S.E.18. (General Hospital—112 Beds.)

The [illegible] invites applications from male candidates, for [illegible] SURGEON for a period [illegible] September 1st.

In addition to his Surgical duties, he will have the care of a Maternity Unit of 8 beds.

An honorarium of £100 per annum will be paid in respect of this appointment, plus board, residence, and laundry.

Applications, accompanied by not more than three recent testimonials, should be addressed to the Secretary (at the Hospital), to reach him not later than first post on Monday, Aug. 17th

Royal Sea Bathing Hospital for SURGICAL TUBERCULOSIS, MARGATE.

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months, but may be extended for a further period of six months.

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

The Sheffield Royal Hospital. (340 Beds.)

There are two vacancies for Residents:

OPHTHALMIC HOUSE SURGEON. £120 per annum;

ANAESTHETIST. £80 per annum, rising to £100 in six months.

Applications to— W. H. BOOTH,
Superintendent & Secretary.

Kent County Ophthalmic and AURAL HOSPITAL, MAIDSTONE. (110 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, which will be vacant early in September. Candidates must be duly qualified and registered Medical Practitioners, single, and *of British birth and nationality.* The Hospital is recognized by the Examining Board for the D.L.O. The appointment will be for six months, but may be renewed for a second six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

Great Yarmouth General HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried. Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS,
Secretary.

The Liverpool Eye and INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. [illegible] per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent immediately to— CHARLES W. [illegible],
9, Harrington Street, Liverpool.

(Appl[illegible]

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T.A.: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted.—Lady Assistant, outdoor. Salary £300 p.a. Self-contained house, furnished (*essentials*). Commission midwifery and operations. £42 p.a. upkeep of Assistant's own car. Garage provided. Situation Lancashire. Mixed Practice.—Address, with photo and references, to No. 4786, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Sept. 3rd, Assistant. Good mixed practice. Branch surgery. Work light. Salary £300 with extras. Rooms, light, coal, attendance, board. Early increase to keen man. *Usual bond. Prefer applicant* with own car. State age, experience, nationality, if abstainer, to DR. HARE, Tower, Durham.

Wanted, October 1st, Assistant, married preferred, for large mixed Practice in Midland town. *Must be young, energetic,* keen on midwifery. State age, *nationality,* experience, etc. Good salary to right man. Usual bond.—Address, No. 4705, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by Scotch L.R.C.P., L.R.C.S., L.R.F.P.S. Aged 33; abstainer; 3½ years' G.P. Hosp. experience. Keen surgery; midwifery. Excellent testimonials. Free Sept. 1st. Good district.—Add., No. 4808, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, end of September, indoor MALE ASSISTANT. Experienced. Good at Midwifery. Able to drive *Morris car.* Country practice in Lancashire, £300. Send photo.—Address, No. 4819, B.M.A. House, Tavistock Square, W.C.1.

Wanted, early in September or *before, MALE ASSISTANT,* Lancashire City Panel and private practice. £400 outdoor and rooms. State age, nationality. Essential particulars.—Address, No. 4811, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for mixed practice, Cornwall. Capable SURGEON. University man preferred. £500 a year, with small car allowance. Owner driver. Partnership later if desired.—Address, No. 4827, B.M.A. House, Tavistock Square, W.C.1.

mon... Wanted for Monmouthshire.—ROBER... Indoor ASSISTANT, male, young, recently ...o...lified preferred. Motorist or motor-cyclist. ...o, all found except laundry. Apply, stating Wante... etc., usual bond, to No. 4824, B.M.A. House, Salary ...stock Square, W.C.1.

laundry.

minister Wanted, end of August, Assist-Physician ANT. Glamorgan. Colliery Practice, Applica..., indoor. Single, male. Would suit newly monials, ...ified. Good oppor. for Anaesthetics, etc. at ROBERTS, ...ol. Motor-cycle provided.—Address, ...M.A. House, Tavistock Sq., W.C.1.

Rother... Wanted, SENIOR.—Outdoor Assistantship qualified. A knowle... C.S., L.R.C.P., 1918. *St. Barts.* Salary £200, with... aged 38. Ex H.P. 10 years' laundry. Applications ...ly disposed own practice (8 testimonials, to be sent to ...yn car. Free Sept.—Add., ROBERTS, 8, Moorgate Street, Tavistock Sq., W.C.1.

Wanted.—Assistant (married or single), with Hospital and general experience. Refractions a recommendation. Six ...ns' weekly (*indoor*) with prospects if suitable. Usual bond.—Address, with photo, No. 4807, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Early in October, ASSISTANT (Lady). Mixed *private and* panel Practice in Cathedral City. Some experience of Practice essential. Cyclist.—Address, with full particulars, No. 4803, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant in September, outdoor, in a Country Town Practice (with Hospital), North Wales. *Able to* drive car. Work light. — Address, No. 4736, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State *full* particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, September, Male Assistant. *Single. State age, nationality,* etc. £420, live out. Dispenser kept.—Address, No. 4810, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for mixed Practice in Yorks; British. Unfurnished house available. Prospects to suitable man; £450 and car allowance. State age, experience, references, etc. — Address, No. 4787, B.M.A. *House, Tavistock Square,* W.C.1.

Assistant required for Surgery (London, E.); indoor or outdoor; excellent prospects of Partnership on easy terms to *right man.* Address, with full particulars, to No. 4832, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (man or woman) indoor, wanted. Country town. Public health, private, panel. State age, height, religion, and full particulars. *Only letters* replied to where essential particulars are stated. No. 4712, B.M.A. House, Tavistock Sq., W.C.1.

North Wales.—Wanted, Welsh-*speaking outdoor* ASSISTANT, with or without view, for General Practice, private and panel. Salary £... Usual *bond.* References ... 4817, B.M.A. House, Tav...

Outdoor Assistantship, or morning, afternoon, or evening surgeries REQUIRED by woman M.B., B.Ch., experienced in private and panel practice; also dispensing. In or near London.—Address, No. 4818, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistant required in North Staffs, district industrial and agricultural. Salary £450, with fire, light, and attendance.—Address, No. 4813, B.M.A. House, Tavistock Square, W.C.1.

Pathological ar... ...[illegible] LABORATORY ...TION.—*Pathologists and* Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

LOCUMS.

FOR LOCUM TENENS APPLY TO
PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has *supplied* substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9011.
After Office Hours: Epsom 9142.

Wanted.—Lady Doctor to act as LOCUM; September 11th—25th or longer. Large Town, Midlands. No midwifery. Terms £5 5s. per week.—Address, No. 4829, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Short Locum by woman M.B., B.Ch. Free September 1st to 16th.—Address, No. 4825, B.M.A. House, Tavistock Square, W.C.1.

Indian, M.B., B.S., M.R.C.S., L.R.C.P., etc., desires LOCUM. Free September 1st. Good references, young, energetic. Experienced panel and private. Abstainer.—Address, No. 4837, *B.M.A. House, Tavistock* Square, W.C.1.

HOLIDAY LOCUMS

FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, Adelphi, W.C.2. *Tel.* { TEMPLE BAR 1054, RIVERSIDE 1254, (*Night Calls*).

Lady Locum wanted during Assistant's holiday, from August 15th to 29th.—Dr. WOOD, 684, Lordship Lane, Wood Green, N.22.

Locum Tenency required by well-qualified Medical Man. Experienced. Aged 38. Own car. Free now.—Address, No. 4836, B.M.A. House, Tavistock Square, W.C.1.

Medical Woman (not young) open to LOCUM from August 28th. No midwifery.—Address, No. 4905, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.D., Cantab, 25 years' experience of Hospital and Private Practice, PART-TIME WORK in Brighton or immediate neighbourhood.—Address, No. 4814, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors *at short notice, without fee.* Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, ...Nurse-Dispensers, and ... wire, or 'phone ...CE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse-Dispensers, *Secretary-*Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5859, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

India. — Evangelical Interde-NOMINATIONAL MISSIONARY SOCIETY, with Women's Hospitals in India, urgently requires three WOMEN DOCTORS. Post-graduate experience essential. Exceptional scope for incalculable service. Passage paid to and fro on 4 yrs.' agreement. Moderate salary.—Apply, SECRETARY, 33, Surrey Street, Strand, W.C.2.

Lady Dispenser (Hall), bookkeeper Secretary wants permanent POST. Live out. Thorough knowledge private and panel work. Help minor oper., dressings; ex. V.A.D. Typing; keen; economical; tactful; cheery. 11 yrs. exp. Ex. refs. Per. interview.—Address, No. 4820, B.M.A. House, Tavistock Sq., W.C.1.

Lady requires Post as Secretary, or SECRETARY RECEPTIONIST, in or near London. Several years' experience. Good shorthand-typist and book-keeper.—Address, No. 4828, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1 (*Telephone* Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to *prospective employers.*

Tuberculosis Sanatorium (private) MEDICAL OFFICER required Sept. with possibility full charge later.—Address, No. 4834, B.M.A. House, Tavistock Square, W.C.1.

...alified ... ...mediately. writing and *Duplicating* ...ard, residence taken by Expert. Testimonials, Applications, *Documents.* Numerous letters to be sent to the Scots Doctors.—BEATRICE RAMSAY, ... *Road,* N.W.3. 'Phone Hamp...

Manchester Ro... ...our).

JUNIOR HOUSE SURGE... B.S. (29), ex... ...annum, with resi... ...desires PART-TIME WORK in ...Surgeon," to hear ... outdoor, from August 28th.—Address, No. 56...8, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS

Partnership (preferably with mar Practitioner) wanted by woman, act 30 in country or country town Experience G P and all Hospital appointments Capital available West of England preferred—No 4805, B M A House, Tavistock Sq W C 1

Partnership in small high-class OPHTHALMIC PRACTICE offered to young Englishman of good social status with Ophthalmic qualifications and experience Must have private means and capital available—No 4815, B M A House Tavistock Sq W C 1

Seaside Resort — Eastern Counts PARTNER WANTED to replace one retiring Old-established general practice In favourite resort Income over £4 000 p a One-third share for sale at two years' purchase Fees from 5/ Panel 2 000 names Well equipped professional rooms House available Partner must be English or Scotch with some experience—Apply to MR PERCIVAL TURNER 4 Adam Street Adelphi, W C 2 sole Agent who has known practice many years and can guarantee bona fide

Yorks — Partnership in good Practice Receipts £1,600 yearly Panel 1 500 increasing rapidly House available Price one-third share (to *commence*) £1 000—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6 Brown Street

PRACTICES

Wanted —Good-class Practice or PARTNERSHIP, by experienced Camb M B (aged 47) minimum panel and midwifery Interests mainly medical Any good residential district in S of England About £1 500 House with ample accommodation and large garden to rent preferred—Address No 4816, B M A House, Tavistock Square, W C 1

Wanted, by experienced Cambridge man Country PRACTICE Southern half of England preferred Good house to rent £1 000—£1 500 Strict confidence — Address No 4480, B M A House, Tavistock Square W C 1

Wanted, by experienced Medical Man in the Autumn, a Country PRACTICE by the Sea Panel and private Income about £1 000 House to rent—Address No 4566 B M A House, Tavistock Square W C 1

Wanted, a mixed Practice in a large city Income up to £2 000, with good panel and scope House to rent or buy, ample capital — Address No 4809, B M A House Tavistock Square W C 1

Wanted, by experienced Practitioner London graduate, good class PRACTICE non-dispensing (or minimum) Panel £1 500—£2 000 South Coast or Spa Capital immediately available—Address No 4910 B M A House Tavistock Square, W C 1

Wanted.—Practice in Scotland Country town in South West or Midlands preferred Capital available—Address No 4822 B M A House Tavistock Square, W C 1

Wanted.—Practice of £1,200 up Large panel Terms £1,000 down Price 1½ years purchase South or South West House to rent — Address No 4804, B M A House Tavistock Square, W C 1

Wanted by Woman Doctor, PRACTICE or PARTNERSHIP in good residential district within easy reach of town—Address No 4806, B M A House, Tavistock Square W C 1

Wanted, Practice, Manchester, good panel and private, £1,600—£2 000 Cash available—Address No 4836, B M A House Tavistock Square, W C 1

Bournemouth or near, Practice, PARTNERSHIP or panel large or small required by young well-experienced practitioner Having disposed practice there with all health now left Burnmouth Absolutely confidential—Address No 4823, B M A House, Tavistock Sq, W C 1

Doctor in Country Practice, 30 miles from town anxious to EXCHANGE for seaside, Cornwall preferred August-Sept Good house, large garden tennis etc Charming country Hourly motor coach to town—No 4833, B M A House, Tavistock Sq W C 1

Doctor required to take charge of Practice at night—work negligible—in return for quarters and small remuneration Suit one reading not for big Hospitals—Address No 4830, B M A House, Tavistock Sq, W C 1

For Sale in Shepherds Bush.—Small PRACTICE panel 1 230 Vendor will Scope for increase—Address No 4831, B M A House Tavistock Square W C 1

Lanes Town —Old-established Good hour garage garden, rent £60 Excellent scope growing district Receipts £1 200 Panel 950 increasing Price 1 years purchase part deferred—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6 Brown Street

London, N (10 mins Clerkenwell) Well-established cash and panel PRACTICE Receipts average £650 p a including panel 585 Suitable premises available Premium 1½ years purchase—Apply Peacock and Hadley Ltd, 19 Craven Street, Strand, W C 2

London (N Highgate).—Well-established cash and panel PRACTICE Receipts last year £728, panel nearly 300 Nice corner house long lease rent £120 Premium £900 Densely populated district Apply Peacock and Hadley Ltd, 19, Craven St, Strand W C 2

London, N W. (10 mins Marble Arch) Well established PRACTICE Receipts £300 a year have been much more Panel 100 Nice waiting and consulting room excellently furnished Premium £450 including splendid furniture—Apply Peacock and Hadley Ltd, 19 Craven Street, Strand W C 2

North-East England.—For Sale —Good PRACTICE private work mid wifery, panel club Good house and garden on sea front Garage House to go with Practice Introduction to suit purchaser Owner taking up surgery—Particulars in confidence, from BROWN FERGUSON & Co Solicitors, 227, St Vincent Street, Glasgow, C 2

Old-established Practice in one of the prettiest Villages in Sussex, 4½ miles from the sea and near the Downs Average income about £1 100 Appointments and Panel (650) £500 Scope for increase Delightful house with walled garden, could be bought or rented—Apply WINTER & Co, 16, Bedford Row, London, W C 1

Shropshire, borders of.—Middle to good class Fees 5/ to 30/ Receipts £1 000 p a House £2 000 Selected panel 400 only Excellent garden, tennis court etc Very sociable district Fishing, shooting, tennis Suit retired service man No agents Any investigation invited Price £3 500—No 4909 B M A House, Tavistock Sq, W C 1

To Purchasers. — Do not buy without expert assistance With 50 yrs' experience Mr PERCIVAL TURNER can advise in all cases Terms free on application to 4, Adam St. Strand W C 2 Telephone Temple Bar 9011 Telegrams 'Epsomian London"

Unopposed Country Practice, Exe £1 000 p a Panel £483 Fixed appointments and small club £400 Charming *house standing back in garden* Oak-panelled lounge Gas (electricity if desired) main drainage co water Price practice and freehold £3 300 No offers—Address No 4821, B M A House Tavistock Square W C 1

HOUSES CONSULTING ROOMS

Wanted, from October, by M B, D P H (London) returning from Tropics HOUSE in location with scope Doctor has complete equipment for Ophthalmology X-ray, and Electro-therapeutics Liberal premium paid for good house or suggest where to start practice with good prospects Partnership or assistantship arranged with Nursing Home for use of equipment—No 4785, B M A House Tavistock Sq, W C 1

Accident.—Will the Doctor who was present at a COLLISION between a Motor-cycle and a Motor cycle-combination, and who gave medical assistance to the injured parties in the Edgware Road, near Cricklewood at about 10 30 on Thursday morning, July 23rd 1931 PLEASE COMMUNICATE with Mr EDWARD MCRAE Solicitor, Under-ground Colonnade, Edgware Middlesex

KNIGHTSBRIDGE

A Ground-floor self-contained FLAT with own street door comprising oak panelled consult room bedroom & large hall Constant hot water and every convenience Rental £275 incl 1st class service by staff used to medical Viewing any time Steward, 22 Hanover Gate, S W

Consulting Room to Let, with smaller adjacent room (suitable for dentist, mechanics room available) in West part of consulting area Well appointed house excellent service —Address No 4812, B M A House, Tavistock Square, W C 1

An opportunity for a new Practice for Medical Man in rapidly growing part where no Medical Man Near station shops P O Freehold CORNER HOUSE for sale, 3 reception rooms, sun lounge, 4 bedrooms, kitchen, 2 bathrooms electric and gas garage garden Possession £1 650 —Mrs WATT, The Sun Trap Swanmore Road (off Waltham Road) Poke down Hill, Bournemouth

Consulting Rooms to Let.—Harley Street and District Whole and part time Rents £80 to £300 Lists sent on application Rooms wanted in Harley Street district—ELGOOD & Co 10 Henrietta Street Cavendish Square, W 1 Langham 2601

Doctor's widow in North London having large house garden car, good staff would like some PAYING GUESTS Terms moderate — Address No 371, B M A House, Tavistock Square, W C 1

Harley Street.—Part-time CONSULTING ROOM TO LET two or more mornings a week Plate, telephone, etc—Address, No 4826 B M A House, Tavistock Sq, W C 1

Harley Street (near), Bachelor's charming SERVICE FLAT well furnished, very quiet £4 per week inclusive of light and service —Write Box 374, Scripps's, South Molton Street W 1

For Sale.—Doctor's Residence, fitted and sound for 21 years Large garden Country town Plymouth 5 miles Excellent opportunity Unique circumstances £2 250 No difficulty arranging mortgage.—Address, BM GLEW, London, W C 1

Ideal House for G P. or Resident Patients main road Attractive corner detached in about 1/2 acre mature garden etc 16 rooms (4 very large), 2 tiled baths 3 baths Conservatory, garages, etc Suitable cover all outgoings Thickly pop middle class district Leasehold price £1 500 View by appt—TEASDALE, Beechenhurst, Selhurst Rd, S Norwood

Queen Anne Street. — To Let, well furnished and fully equipped CONSULTING ROOM with use of Waiting Room, attendance and all facilities available when required Rent only £50 per annum—Address, No 4802, B M A House, Tavistock Sq, W C 1

Shop and Basement to Let in popular district for Dental and Specialist No premiums Long lease can be arranged—Apply Letter to Car, c/o Browne, 39, Tothill Street, S W 1

South Coast — Convalescent HOME Frail patients received Massage, Electrical and Medicinal Bath practice Excellent house suitable rheumatic clinic established connection Full particulars First Hove Estate Agent Eastbourne

MISCELLANEOUS SALES etc.

Medical Surgical Sundries Ltd. Supplies Instruments etc Elastical Bandages (Lastex) for Varicose Ulcers, etc Sample Bandage 2 in post free 2/ Showroom 97, Swinderby Road, Wembley.

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to MEMBERS of the
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THE IDEAL Suit for ALL Sporting Purposes
GOLD MEDAL RIDING BREECHES ... from £2 2s
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For Sale.—Citreon car, 1928, 12 H.P., Coupe de Luxe; good condition; licensed till end of year PRICE £65.—Address, No 4835, B M A. House, Tavistock Sq., W C 1.

25 H.P. Sunbeam Landaulette (1927); wide doors; movable arm-chair; lamp; ideal for non walking invalid; excellent condition, £250.—Apply, Executors, Buckhurst, Wokingham.

[illegible] Sq

ARed for [illegible]**NTS—Contd.**

Indoor ASSISTAN

R [illegible] onfied preferred Moto[illegible] equired, male 9, all found except lau[illegible] nationality, for Wantec[illegible] etc, usual bond, to No [illegible] stock Square, W C 1 Salary £150 per Salary [illegible] and qualifica- laundry, [illegible] married, and minister [illegible] commence Physician [illegible] ANT Glamorgan, Colliery recent Applica[illegible], indoor Single, male Would secretary monials[illegible]fied Good oppot. for Anaesthetics, ROBERTS, 8, Moor[illegible] Motor-cycle provided —A[illegible] M A. House, Tavistock Sq., W

Roth[illegible] [illegible]—Outdoor Assistantsh[illegible] Wanted, SENIOR [illegible] C S, L R C P, 1918 St Bart qualified A knowled[illegible] aged 38 Ex H P 10 years Salary £200, with [illegible] disposed own practice (8 laundry Applications, [illegible] an car Free Sept —Add testimonials, to be sent to [illegible] Tavistock Sq, W C 1. ROBERTS, 8, Moorgate Street,

City and County of Bristol.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time Assistant Medical Officer of Health Age not exceeding 40 years Salary £500 per annum, rising by annual increments of £25 to £700. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922

The duties will consist principally of examination of children in the Council's Secondary, Elementary, and Special Schools, treatment in School Clinics, etc, but the officer appointed will also be required to work in all departments of the Medical Officer of Health of the City and Port.

Applications, which must be on a form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Saturday, August 22nd. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.

Council House, Bristol. JOSIAH GREEN,
July 31st, 1931. Town Clerk

Bristol General Hospital.

The Committee invites applications for the appointment of HOUSE PHYSICIAN.

The appointment will be for six months at a salary at the rate of £80 per annum, with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have recent experience in the administration of anaesthetics

Forms of application, etc., to be obtained from the Secretary, must be returned complete with copies of testimonials addressed to the undersigned as soon as possible, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

Edinburgh Hospital for Women
AND CHILDREN
(Whitehouse
(56 Beds, inclu[illegible]

Applications are invited from qualified medical women for the posts of SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON at the above Hospital, both with charge of beds Honorarium at the rate of £50 and £25 respectively.

The appointments are for six months from October 1st, with board, residence, and laundry.

Applications, with three copies of testimonials, to be received by the Convener of the Medical Committee at the above address on or before August 22nd, from whom further particulars may be obtained

City and County of Newcastle-upon-Tyne

NEWCASTLE GENERAL HOSPITAL

THREE HOUSE SURGEONS (Male or Female)

Applications are invited for the above posts The salary in respect of each of the appointments, which are tenable for six months, is at the rate of £150 per annum, with board, lodging, etc

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, to be addressed to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne

August 4th, 1931.

South London Hospital for Women,
CLAPHAM COMMON, S W.4.
A General Hospital for Women and Children.
(120 Beds)

Applications are invited from fully qualified medical women for the post of—

HOUSE SURGEON. For a period of six months from September 1st. Salary at the rate of £100 per annum, with board, residence, and laundry Applications, and copies of testimonials, to reach the Secretary at the Hospital not later than August 19th

Royal Hampshire County
HOSPITAL, WINCHESTER
(158 Beds).

HOUSE SURGEON. Applications are invited from fully qualified men for the above post, to take up duties at an early date Six months' appointment. Salary £100 per annum, with board, residence, and laundry. Candidates, who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials

HERBERT MASLEN, Secretary.

Administrative County of LONDON.

HOSPITAL SERVICE

The LONDON [illegible]TY COUNCIL invites for appointment to the

The person appointed will be required to carry out such duties as may be assigned by the medical superintendent and, should occasion arise, to assist at any of the other establishments or medical departments under the control of the London County Council The successful candidate will be required to live in the hospital

HACKNEY HOSPITAL, 230, High Street, Homerton, E 9. ASSISTANT MEDICAL OFFICER. Salary £350 a year, rising by annual increments of £25 to £425 a year with board, lodging, and washing Candidates must be qualified medical practitioners of at least one year's standing, and have held a resident appointment in a general hospital for at least six months The duties are mainly medical

There is no accommodation for a married man.

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division 4a), The County Hall, Westminster Bridge, S.E.1, and must be returned by August 28th, 1931 Canvassing disqualifies Inquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendent of the Hospital

MONTAGU H COX,
Clerk of the London County Council

David Lewis Northern Hospital,
LIVERPOOL

(UNIVERSITY OF LIVERPOOL CLINICAL SCHOOL)

Applications are invited for the three undermentioned posts:

TWO SURGICAL TUTORS AND REGISTRARS
ONE MEDICAL TUTOR AND REGISTRAR

The appointments, which are whole-time and non-resident, will be for a period of twelve months from October 1st next

The salary attached to each post is £175 per annum.

Applications, together with copies of testimonials, to be forwarded to the undersigned on or before August 22nd.

THORNBURROW GIBSON, M A
Secretary Superintendent

August 4th, 1931.

Royal Surrey County Hospital,
GUILDFORD (182 Beds)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post from practitioners who have held post-graduate medical and surgical appointments for at least one year The candidate appointed will be required to act as House Physician, to supervise the work of three House Surgeons, to perform such operations as may be deputed to him, and to take up the duties as early as possible Salary £250 per annum, with board, residence, and laundry. Applications, accompanied by copies of testimonials, to be sent in not later than August 19th to the Secretary Superintendent, from whom further particulars may be obtained.

Preston and County of Lancaster
ROYAL INFIRMARY.

RESIDENT SURGICAL OFFICER

Applications are invited for the post of Surgical Officer, with resident charge of Medical [illegible] Maternity wards Twelve [illegible] from September 1st [illegible] qualification and [illegible] in Obstetrics will be a [illegible] board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with copies of recent testimonials, to be forwarded immediately to—

Mr JOHN GIBSON,
Superintendent and Secretary.

Swan[illegible]

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Applic
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West Bromwich and District
GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the posts of—
(1) HOUSE SURGEON;
(2) HOUSE PHYSICIAN;
(3) CASUALTY HOUSE SURGEON.

Candidates (male or female) must be doubly qualified and unmarried. Salary, in each case, at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on September 1st next.

Applications, stating age and qualifications, with copies of three *recent testimonials*, should be sent to the undersigned on or before August 12th.

By Order,
Edward Street; FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

The Royal Infirmary, Sheffield.
(530 Beds.)

The Weekly Board of Management invite applications for the two undermentioned posts:
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.

The salary attached to each appointment is £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO W. BARNES, F.C.I.S.,
Board Room Gen. Supt. & Secretary.
July 24th, 1931.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (155 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN. Salary £150 per annum, with board, residence, and laundry.

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, should be sent to the undersigned not later than August 19th.

F. J. SYMONS,
July 30th, 1931. Secretary.

The Lady Chichester Hospital,
HOVE (For early nervous breakdowns.)
(50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, and laundry, and honorarium at the rate of £50 per annum. The successful candidate will be required to enter on her duties as soon as possible.

Applications must be made in writing, and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton.

June 23rd, 1931.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from August 23rd, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, August 12th.

W. H. HEAD.
Secretary-Superintendent.

Bedford County Hospital.
(124 Beds.)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing August 10th. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

Devon County Infirmary,
BARNSTAPLE.

September 1st, duly qualified RESIDICAL OFFICER (Gentleman or ... £150 per annum, with board, ... and laundry. Appointment to be ... than six months ... ... stating age, qualifications, with ... recent testimonials, to be sent forth ... Hon. Secretary.

(Continued on column 3.)

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PERCIVAL TURNER, LTD.
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Terms post free on application.

Kent.—Near London.—£2,100. 1/3 share, merger to 1/2. Panel 1,660. Fees 4/- to 21/-. Good house and garden to rent.—No. 8892.

N. Wales.—Assy., with view to 1/3 share £3,470 p.a. Panel worth £1,300. Appts. £250. Fees 2/6 to 21/-.—No. 8891.

London N.E.—Average £1,117. Panel about 700. Fees 3/6 to 10/6. Splendid family house and large garden, garage.—No. 8890.

London, N. — About £1,200. Panel 1,100. Fees 2, 6, 3/6, etc. Lock-up premises in main road.—No. 8889.

W. Riding, near Town.—£1,450 p.a. Panel 893. Appts. £42. Fees 3/6 to 10/6. Cons. house on lease.—No. 8887.

Lancs Town.—£2,500. Panel 1,800, increasing. Appts. £120. Visits 2/6 up. 2 houses. Premium 14 years' pur. Suit two Partners.—No. 8645.

Eastern County. — Woman's PRACTICE. Over £500 p.a. Panel 385, increasing. Fees 3/6 to 7/6. House, 5 bed., to rent.—No. 8886.

Central Wales. — Share worth £600 or more. Small panel. Non dispensing. Good fees. Easy terms to good man.—No. 8885.

South Midlands. — £3,700 p.a. Panel £1,450 p.a. Appts. £300. Country district. Visits 2/6 to 10/6. Large house and garden to rent. 5/12ths share. £2,000 down bal. on terms.—No. 8884.

Staffs.—About £950 p.a. Panel 1,330. Good house, 5 bed., 2 reception, surgery, etc., to rent. Goodwill £1,200.—No. 8882.

Liverpool (Central). — Lock-up. £600 p.a. cash. Panel 200. Clubs £55. Fees 2/6 to 5/-. Good premises on lease. Premium £600, or near offer.—No. 8881.

Warwickshire. — Country Prac-TICE £350/£400. Ample scope. Fees 5/- to 10/-. Panel 345. Premium £400. Choice of houses.—No. 8880.

East Coast Resort.—Over £4,000 p.a. 1/3 share. Panel 2,000. Appts. £200. Visits 5/- up. Good house to rent.—No. 8877.

Death Vacancy, Yorks.—Coast Town.—Ear, Nose, and Throat PRACTICE. About £1,800 p.a. House, with 3 recep., 6 bedrooms, etc. House and Practice only £1,500.—No. 8871.

Manchester Suburb.—Over £700 p.a. Panel 150, but scope. Visits 5/- to 21/-. House, 5 bed., etc., to rent. Premium £700 or near. Very easy terms.—No. 8870.

Manchester. — £1,500. Panel 50. Great scope. Visits 5/- and 7/6. Detached corner house, 5 bedrooms, etc., rent £50. Premium only £1,250.—No. 8869.

Midlands.—Share worth £1,000, increasing to £2,000. Small panel. Fees 5/- to 15/-. Good house at £80. Partner about 35, well qualified.—No. 8868.

South Midlands. — Within 40 miles.—£900 p.a. Unopposed. Panel 897. Good appts. Visits 5/- to 10/6. Large house and garden to rent.—No. 8859.

Lancs.—Partly Surgical.—Over £2,000 p.a. Panel 1,365. Visits 3/6 to 10/6. *Major ops., 10 to 50 gns. Suitable* house.—No. 8858.

MR. HERBERT NEEDES,
Late 31, Bedford St., Strand, W.C.2

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Birmingham and Midland Eye
HOSPITAL, Church St., BIRMINGHAM.

HOUSE SURGEON required at the above Hospital. Salary £110 per annum and £10 laundry allowance.

Applications, together with copies of not more than three testimonials, should be received not later than first post on Tuesday, August 25th. Further particulars can be obtained from the undersigned.

C. A. MASON, Gen. Supt.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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Mrs MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

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London, 1277 Welbeck (Two Lines).
Manchester, 3152 Ardwick.
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NORTHANTS—Old-established rural PRACTICE situated in charming locality. Splendid house in own grounds to rent or purchase. Receipts £500. Panel 400. Prem. £550. Suitable to semi-retired Practitioner.

MIDDLESEX.—PARTNERSHIP in rapidly developing district, situated within 12 miles of London. Receipts about £1,600 p.a. Panel nearly 1,900. Suitable small house available. Cottage Hospital. Excellent scope. Premium for 2/5 share, with view to 1/2, 2 years' purchase.

LONDON, S.W.—Middle-class PRACTICE in residential locality within easy access of the West End. Medium-sized house, detached; large garden, garage, etc. Receipts £950. Panel 270. Premium for Practice £1,200.

LONDON, N.—M[illegible] PRACTICE. Medium-sized house to rent or [illegible]eipts approx. £575. Panel 385. Fees 2/6 up.

MIDDLESEX, WEST.—PARTNERSHIP in rapidly developing residential country district. Receipts approx. £1,500, increasing. Panel 1,282, increasing. Fees 2/6 up. Suitable accommodation available. Premium for 1/3 share 2 years' purchase. Suitable to young and experienced man, preferably one having held Hospital appointments.

OXON.—Middle-class Country PRACTICE, situated in charming surroundings. Modern house (6 beds). Good garden, etc. Panel over 1,300. Two appointments. Receipts nearly £1,600. Prem. £2,400.

DEVON, SOUTH.—Well-established middle-class PRACTICE. Small house to rent on lease. Panel 600. For quick sale we are instructed to ask 1½ years' purchase based mainly on panel receipts. Receipts other than panel yet to be ascertained.

BERKSHIRE.—Old-established Country PRACTICE situated in charming locality. Medium-sized house to rent. Large garden, garage, etc. Receipts nearly £1,100. Panel nearly 700. Several appointments. Sport of all kinds. Premium £1,650.

CORNWALL (Coast).—Well-established PRACTICE in charming locality. Receipts nearly £800. Panel 180. Suitable house to rent on lease. Premium for quick sale £800.

YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approximately £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

GLOS.—Mixed Town PRACTICE. Receipts over £1,800 p.a. Panel 2,146. Fees 2/6 up. Three Hospitals. Good schools. Scope for increase. Alternative accommodation available. Premium for Practice £3,640 or near offer. Partnership considered.

BEDFORDSHIRE.—PARTNERSHIP in old-established mixed Practice. Receipts between £1,800 and £2,000. Panel 1,500. Fees 2/6 up. Excellent scope for young man. Suitable accommodation available. Premium 2 years' purchase for 1/3 or 1/2 share. Short preliminary Assistantship desired.

MIDDLESEX.—Middle and working-class PRACTICE in growing residential locality. Medium-sized freehold house. Receipts over £700 p.a. (this year at the rate of £800 p.a.). Panel 300. Fees 3/6 up. Excellent scope. Premium £850 for quick sale.

LONDON, E.—NUCLEUS, working-class Practice, in thickly populated locality. Rooms to rent on agreement. Receipts over £300. Panel 260. Premium £400. Suitable for Lady Doctor. Very little visiting.

YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approximately £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

CHESHIRE.—Well-established PRACTICE, with excellent scope for panel if desired. Modern semi-detached house, containing 4 bedrooms, etc. Garage. Small panel. Receipts approx. £500 p.a. Fees 3/6 up. One appointment worth £150. Mids. 5 gns. Premium open to reasonable offer.

KENT.—Within easy reach London.—Well-established PRACTICE, situated in growing locality, with ample scope for development. Receipts nearly £900. Panel over 300. Suitable residence to let. Alternative accommodation available. Fees 2/6 up. Premium £1,300.—Excellent scope *for energetic man.*

S.W. COAST.—Well-established General PRACTICE. Excellent house, with all modern conveniences. Fruit and vegetable garden, garage. Receipts nearly £2,400. Panel over 1,400. Visits 7/6 up. Consultations 3/6 up. Scope for surgery if desired. Premium for Practice £4,000.

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10. BEDFORDSHIRE.—Country PRACTICE, [illegible] yr. £483. Gd. hse. to rent £68. Price £350.
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SOUTH YORKSHIRE.—Excellent Country PRACTICE. Cash receipts last year £1,421. Panel 880. Good freehold detached house to rent with nice garden, 4 bedrooms, 2 reception rooms. Premium—Practice—£2,175.—No. 271.

DEATH VACANCY.—MANCHESTER.—Old-established PRACTICE. Cash receipts 1930, £916, including panel income of £400. Good accommodation available.—No. 289.

CHESHIRE TOWN near MANCHESTER.—PRACTICE. Cash receipts last year £1,033. Panel 650. Good house, 3 bedrooms. Rent £45 p.a. Premium £1,330.—No. 263.

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NEAR LIVERPOOL.—Small PRACTICE with much scope. Cash receipts last year £348. Panel 512. Good house, 2 reception, 4 bedrooms. Garage and garden. Premium 1 year's purchase.—No. 284.

NORTH STAFFS.—INDUSTRIAL TOWN PRACTICE. Cash receipts last year £1,200. Panel nearly 2,000. Good house, 2 reception, 7 bedrooms. Rent approx. £55 p.a. on long lease. Prem. 1½ years' purchase.—No. 290.

SOUTH YORKSHIRE.—Old-established PRACTICE. Cash receipts 1931 £1,275. Panel 1,430. Excellent house, 3 reception, 4 bedrooms. Garage and good garden. Premium 1½ years' purchase.—No. 293.

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LIVERPOOL.—GOOD INDUSTRIAL PRACTICE.—Cash receipts £2,200 p.a. Panel 2,100. House 4 bedrooms, garage, etc. Rent £65 p.a. Premium £2,000 (to include book debts and drugs).—No. 288.

LARGE LANCS TOWN.—Old-established PRACTICE. Average cash receipts £1,545 p.a. Panel 1,052. Excellent detached house, 3 reception, 4 bedroom. Garage and garden. Rent £74 10s. p.a. Premium 1½ years' purchase. Vendor retiring.—No. 267.

EAST COAST.—PLEASANT TOWN.—PARTNERSHIP. Income last year £3,700. Large panel. 1/4 or 1/3 share will be offered to suitable man after preliminary assistantship at £350 p.a. all found.—No. 119.

MANCHESTER.—RESIDENTIAL SUBURB.—Middle-class PRACTICE suitable for two in partnership (one a good surgeon). Cash receipts 1931 £4,578. Panel 1,400. Two excellent houses with ample accommodation to rent. Premium 1½ years' purchase, part by arrangement.—No. 277.

LIVERPOOL.—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception, 7 bedrooms, garage and garden to rent.—No. 276.

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house, 3 recep., 5 bedrooms. Garage and garden. For sale or rent for a period. Premium £1,600, payable by arrangement.—No. 252.

EAST COAST.—PARTNERSHIP in large Town Practice. Income over £10,000 p.a. Panel over 5,000. Good house available, 2 reception, 4 bedrooms. Cards in. Premium—1/3 or 1/4 share—1½ years' purchase.—No. 258.

NEAR LIVERPOOL.—Cheshire Coast Town.—PRACTICE. Average cash receipts £1,187. Panel 783. Much scope. Good double-fronted house (freehold), 3 reception, 4 bedrooms, garage. Premium—Practice—£1,100.—No. 248.

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(FOUNDED 1880.)

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The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 S. DEVON.—Practice over £1,000 p.a. in large Village on Coast. Panel 800. House (5 bedrooms), with garage and garden 1/4 acre, for sale. Excellent fishing and yachting. Premium 1½ years' purchase.

2 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent. *Premium* £500.

3 PARTNERSHIP in Ear, Nose, and Throat Practice in first rate Town Share worth about £1,650 at 2 years' purchase.

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5 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non dispensing Practice of £1,800 p.a. (in beautifully situated Country Town. Panel about 650. House (5 bedrooms) to rent Good schools. Excellent sport. First-class Hospital. One-third to one-half share at 1½ years' purchase. Welsh not necessary.

6 S.W. OF ENGLAND.—Practice averaging £1,560 p.a. in Seaport Town. Panel over 2,000. House, with 5 or more bedrooms, for sale Premium £2,100.

7 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first rate town. Panel 1,344. Good house (6/7 bedrooms) to rent. Premium one-third share 2 years' purchase.

8 SURREY.—Partnership in old-established Practice of £3,000 p.a. in a first rate town. Panel 2,458. Corner house (4 bedrooms), with garage and garden Premium one-fifth share 2 years' purchase

9 FAR EAST.—Practice about £2,000 p.a. Premium £1,400.

10 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 170. House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase.

11 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one half share 1½ years' purchase.

12 LONDON, S.W.—Increasing Cash Practice close to West End. Receipts 1930, £1,350. Panel 1,100. No midwifery Excellently situated house for sale. Premium 1½ years' purchase.

13 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope. Prem 1 yr.'s pur.

14 HOME COUNTIES. — Partnership in Country Practice of £3,700 p.a. Panel 2,230. Choice of houses Premium for five twelfths share 2 years' purchase.

15 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000. Premium for one fifth share 2 years' purchase.

16 LONDON, W. — Partnership in an old-established mixed Practice of £3,600 p.a. Panel 3,912. *Good* house and garden on lease. Premium one half share £3,750

17 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb. Panel £100. Modern house (3 bedrooms) Premium £1,100.

18 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort. Panel 520. *Hospital.* Good house and garden. Premium 1½ years' purchase.

19 KENT. — Country Practice of about £850 p.a. Panel 550. *Good house and garden to rent.* Prem £1,100

20 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of London. Panel about 1,000. House (6 bedrooms) with *small garden for sale. Educational facilities and sport.* Prem. 1½ years' purchase

21 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., *in first-rate town.* Panel about 3,000 Suitable *house obtainable. Scope for increase.* Premium one third share 1½ years' purchase.

22 E. MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700 Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

23 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district Panel 2,525. Scope for increase. Premium one half share 2 years' purchase.

24 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district Panel 1,500 Detached house with garage and small garden, to rent. *Sport of all kinds.* Premium one third share 2 years' purchase *Prefer ex-Assistantship.*

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Practices and Partnerships for Disposal (continued).

25 LEEDS. — Very compact mixed Practice over £1 200 p a Panel 1 300 Large well situated detached house (4 bed and dressing rooms) with large garden, to rent on lease Premium 1½ years purchase

26 MIDDLESEX.—Increasing Practice about £700 p a in developing district Panel 250 Convenient semi detached house (4 bedrooms) with good garage and secluded garden, for sale Great scope Premium £860

27 CO. DURHAM.—Partnership in Country Practice easy distance of coast Income about £1 650 p a Panel 1,550 and Club appointments £700 p a Nice house (5 bedrooms), in quarter acre of garden, for sale Premium for one half share only £1,000

28 OPHTHALMIC Practice in flourishing Town within easy distance of London Receipts over £450 (one day's attendance per week) Fees mainly £1 1s Rent £60 Good Hospital Premium £800

29 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p a, in beautiful hunting centre Applicant should be aged about 30 (Varsity man preferred) Cottage Hospital Scope for Surgery One fourth share at 2 years purchase Preliminary Assistantship

30 SOMERSET. — Practice averaging £870 p a in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase Scope for increase Premium £1 300

31 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2 700 p a, in small town Panel about 2 400 One third share at 2 years' purchase, payable by arrangement if desired

32 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast Panel 660 Detached house (6 bedrooms), with garage and beautiful garden, to rent Hunting, shooting, fishing etc Premium 1½ years' purchase. Suitable for retired Service man

33 S DEVON — Practice over £1,800 p a. (£800 from panel) in beautiful country district near the borders of Dartmoor Suitable house available Hunting, shooting, fishing etc Premium 1½ years' purchase

34 LONDON, E.C.—City Practice. Receipts 1930 over £1,300 Consultations mainly £1 1s some £1 11s 6d and £3 3s Excellent consulting rooms Premium 1½ years' pur

35 EASTERN COUNTIES —Small Practice in town of 20,000 population near the coast Receipts average £300 p a (including £100 from panel) Large convenient house, with good Surgery and nice garden, to rent Premium 1 years pur.

36 LONDON, W.—Middle-class Practice averaging over £700 p a in outlying residential suburban district No panel House, with 4 bedrooms and fair sized garden, to rent. Good scope Premium £700 cash

37 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p a in beautifully situated county town Panel about 1 600 Hospital in town, and incoming Partner must be a good Surgeon One fifth share at first at 2 years purchase

38 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p a in country town Panel 785 Share up to one half 2 years' purchase Up to-date Cottage Hospital

39 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,300 p a. Suitable house to purchase Premium one fourth share £2,000 Preliminary Assistantship

40 LONDON, W.—Steadily increasing Practice doing about £750 p a, mostly from "Lock up" Surgery Panel about 500 Well situated corner residence (3 bedrooms) to rent Premium £900

41 S. OF ENGLAND.—Partnership in Practice about £2 800 p a, in favourite seaside resort Delightful house (5 bedrooms) garage and nice garden to rent Incoming Partner should be a Surgeon (preferably F R C S) Hospital and appointment on staff Premium one fourth share 2 years pur

42 MIDLANDS. — Partner required in sound lucrative Practice in residential town close to large city Small panel Very good Cottage Hospital Share of £1,000 p a. at 2 years' purchase Applicant should be well up in his work

43 LONDON, S W.—Practice about £500 p.a. in suburban district Panel 650 No midwifery Semi detached corner house (6 bedrooms) for sale Scope Premium 1½ years' purchase

44 WEST HAM. — Practice (carried on by Medical Woman) in populous area Receipts last year £580 p a. Small panel No midwifery Six roomed house to rent Prem £700

45 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p a in manufacturing town Panel over 1,300 Pleasantly situated double fronted house (4 bedrooms), with garden, for sale Premium 1½ years' purchase

46 LONDON, E —Cash Practice of £850 p a. in populous neighbourhood Panel over 1,000 House (3 bed rooms) in main road, to rent Premium 1½ years' purchase

47 EAST ANGLIA.—Partnership in Practice over £4,500 p a in beautiful country district, easy access of important town Panel 3,000 Nice detached house (7 bedrooms), garage, etc, garden and grounds of 10 acres, for sale Sport of most kinds Considerable scope Premium two-thirds or four ninths share 2 years' purchase

48 S. OF ENGLAND.—Partnership in steadily increasing Practice about £6 000 p a in small town Panel 3,300 Suitable house could be purchased One seventh share at 2 years' purchase Preliminary Assistantship London Graduate preferred

49 MIDDLESEX.—Steadily increasing PRACTICE about £800 p a in growing district Panel about 600 Very good house (5 bed and dressing rooms) garage and excellent garden, for sale Ample scope Premium £900

50 N. OF ENGLAND.—Partnership in lucrative Practice in large city Panel over 5,000 Small house (3 bed rooms and attics) for sale A share of £1,650 or £2,500 would be sold at 1½ years' purchase

51 DEVON.—Partnership in Practice averaging £3,000 p a in small town House to rent Hunting, shooting, fishing etc Premium one third share 2 years' purchase Hospital

52 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p a in developing industrial district. Panel 1,870 Small house available. Large Cottage Hospital Prem two-fifth share 2 years' purchase

53 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London Panel 300 Attractive house (7 bed and dressing rooms) in grounds of 2 acres with garage, to be sold or let Very suitable for Resident Patients Good scope Premium 1 years purchase

54 N. MIDLANDS.—Partnership in Practice over £1,400 p a in first rate city Panel 1,800 House, with 2 reception rooms and 4 bedrooms to rent Premium one half share £1,100 Preliminary Assistantship entertained

55 SURREY.— Ophthalmic Practice of about £300 p a in desirable town within 15 miles of London Fees mostly £3 3s Good detached house (4 bedrooms, etc) for sale. Plenty of scope to one devoting whole time Premium £300

56 HANTS. — Small easily worked Practice about £400 p.a. in beautiful country district about 50 miles from London Select panel 50 Detached house (5 bedrooms), with good garden, for sale Scope Premium £400

57 STAFFS. — Partnership in Practice over £2,000 p a in an industrial town Panel 3 000 Suitable house (5 bedrooms) to rent. Ample scope. Premium one half share 1½ years' purchase

58 LONDON, N W.—Practice worth between £1,500/£1 600 p a. Panel about 1,230 Private residence contains 4 bedrooms, etc, and is for sale Rent of Branch Surgery £50 p a. Premium 1½ years' purchase

59 N. WALES —Country Practice of £1,230 p a in Welsh speaking district Panel about 550 Convenient and well situated house with electric light etc, for sale All kinds of sport Premium for a quick sale 1 years purchase, or even slightly less

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2. INLAND SPA.—*Old established upper and middle class non dispensing and non panel PRACTICE, averaging for the past three years* £2,450 p.a. Visits 7/6 to 21/-. No midwifery. Very good well situated house available at the end of 12 months' equal partnership introduction. Rent on lease £120 p.a. Premium 2 years' purchase. Successor will be appointed on staff of Hospital of 300 beds.
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5. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 5/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well situated part of town. Price, freehold, £1,500.
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15. NORTH MIDLANDS.—PLEASANT MARKET TOWN.—PARTNERSHIP.—A one third share is offered in a very old established sound mixed-class Practice, rapidly increasing, and producing for the immediate past 12 months over £3 000. No appointments. Panel of nearly 1,400. Fees from 3/6 to 2 gns. Midwifery 2 to 10 gns. Suitable house available on rental, or, if single, purchaser could reside with Vendor on very advantageous terms. Ingoing Partner must be able to do Surgery, as there is very good scope for this work. Hospital with 60 beds. *Premium* 2 years' purchase, *half down, and balance by instalments.*
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17. SURREY.—PARTNERSHIP.—Residential town within easy reach of London.—A one fifth share (with increase later) is offered in a very well-established mainly middle class Practice. Practice will produce about £3,500 p.a. or over, including panel of nearly 2,500. Fees from 3/6 to 21/-. Lowest midwifery 5 gns. Suitable house, with 2 reception, 4 bedrooms, etc. Price for freehold £1,200, of which £1,000 could remain on mortgage. Premium 2 years' purchase.
18. BIRMINGHAM.—RESIDENTIAL SUBURB.—PARTNERSHIP.—A one eighth share, to commence with, is offered in a very old established mainly better class non dispensing Practice, averaging approximately £8,000 p.a. Small selected panel. Fees 2/6 to 10/6. Midwifery 3 to 15 gns. Suitable house, containing 2 sitting, 6 bedrooms, etc. Good garden. Rent on lease £80 p.a. Premium 2 years' purchase.
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20. SOUTH COAST TOWN.—PARTNERSHIP.—A one third share (with increase later) is offered in a mainly better class non panel Practice. Average gross cash receipts for the past three years £4,150. Fees from 10/6. Not much midwifery. Well situated house, with 3 reception, 8 bedrooms, etc. Can be rented on lease at £155 p.a. Premium 2 years' purchase.
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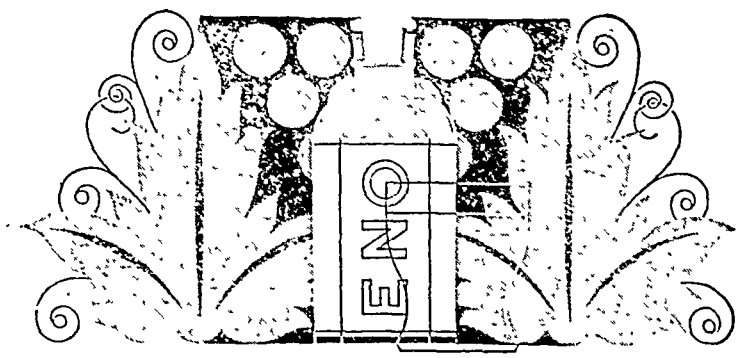
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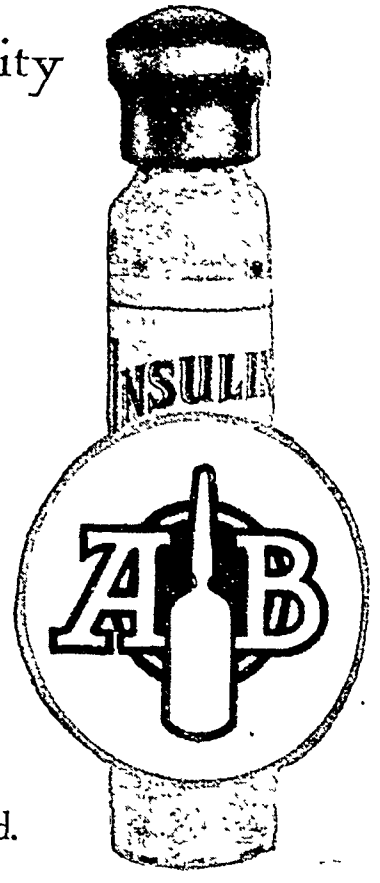
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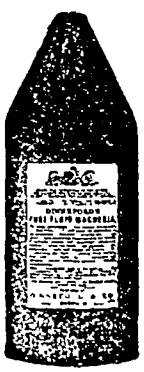
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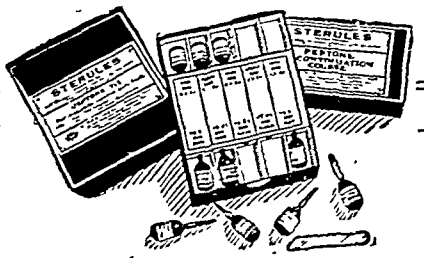
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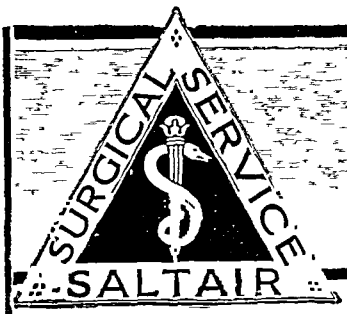
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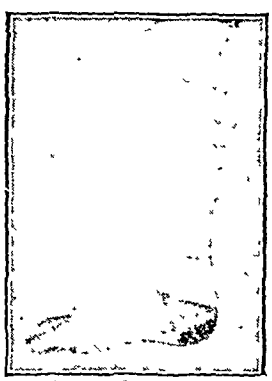
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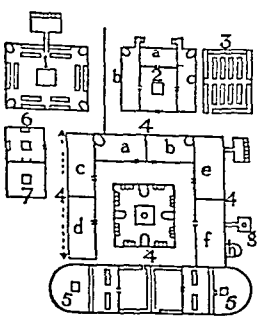
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PLAN OF AN ANCIENT HOSPITAL, ONE OF THE EARLIEST BUILT BY THE TEUTONS.—



The plan here reproduced is taken from the original ninth century plan still preserved in the library of the Monastery of St. Gall, near Lake Constance; the hospital formed part of the monastery buildings. In the accompanying figure, No. 1 is the "House for blood-letting and giving Physic." 2. "Physician's house," with *(a)* "Drug Store," *(b)* "Patients very ill," *(c)* "Physician's chamber." 3. "Physic garden" with beds containing the following herbs: peppermint, rosemary, white lily, sage, rue, cornflag, pennyroyal, rose, watercress or (?) radish, cumin, lovage, fennel, tansy, and kidney bean. 4. "Infirmary," with *(a)* "Master," *(b)* "For dangerous illness," *(c)* "Refectory," *(d)* "Chamber," *(e)* "Dormitory," *(f)* "Pisalis," *(g)* "Chimney," *(h)* "Fireplace." 5. Two altars in a double church. 6. "Bath." 7. "Kitchen." The monastery, a Benedictine foundation, patronised and protected by Charles Martel, Pepin and Charlemagne, became one of the chief European seats of learning.

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An Address
ON
SOME RECENT POLICIES REGARDING PARTICULAR DISEASES

BY
SIR GEORGE BUCHANAN, C B , M D , F R C P
PRESIDENT OF THE PUBLIC HEALTH SECTION

From its earliest beginnings, organized public health has run general and special measures in harness However much action to secure the better general health and physical fitness of a population, and all that this implies, may signify, there are always diseases the prevalence of which is little affected by the possession of a high standard of general, or even individual, healthiness For them, special communal measures have to be devised in each case according to the nature of the disease and our knowledge of it, and these measures, perhaps more than any others in public health work, require periodically to be reviewed and modified as new facts are learnt or as new conditions of administration have to be reckoned with A few topical examples will not come amiss

PSITTACOSIS

My first topic, psittacosis, may seem a triviality, but it has a certain claim for notice It very rarely happens that the policy of complete exclusion of the introduction of a particular infection into a country can be attempted with success, especially in these days of rapid transit and in the case of a nation with external communications like our own We have adopted this policy for rabies, and to some extent for anthrax, and last year it was imposed as an emergency measure for psittacosis The emergency arose from the discovery of cases of this disease in various parts of the country, all associated with parrot infection, mostly by birds of comparatively recent importation coming to a large extent, though not wholly, through one channel or another from the South American countries—"Amazon parrots," as they were more or less correctly called Beginning with a few cases which one regarded merely as pathological and clinical curiosities, the number of people in England affected by this serious illness in a few months had exceeded 100, and at least 25 of these persons died There were instances in which human case to-case infection occurred without the intermediacy of the bird, and there were some striking examples of laboratory infection among those working at the pathology of the human and bird disease and trying to identify its virus

Meanwhile, many countries on the Continent had a similar experience, and concluded, before we did in England, that the importation of all birds of the parrot tribe had better be stopped They did this, since the period of infectivity seemed to be so indefinite and prolonged that no mere measure of temporary detention of the birds at the ports would meet the case, even if the necessary quarantine measures were administratively practicable The additional risk thus arose that England would become the dumping ground or new and possibly infectious parrots which could not be landed abroad at any European port The Parrots (Prohibition of Importation) Regulations were the inevitable outcome of these circumstances, and, with one or two exceptions possibly but not clearly traced to a breach of the order, they have been effective, and there has been no psittacosis in England since So far good, but no one can contemplate without dismay the indefinite deprivation of our population from the luxury of parrots Apart from their aesthetic qualities, they appear to create an intense domestic satisfaction, and it is their classical mission to supply material for anecdote

* Delivered in opening the Section of Public Health at the Annual Meeting of the British Medical Association Eastbourne 1931

But the difficulty of choosing the safe moment to let them in again is considerable, mainly owing to the difficulty of obtaining facts regarding the prevalence of psittacosis infection, particularly in South American countries, both among the wild birds and at the entrepôts and aviaries at the ports from which they are dispatched to Europe

It would certainly be desirable to have more evidence than we at present possess that the parrot infection of 1929 was only a passing and temporary epizootic It does seem fairly certain, however, that the birds frequently transfer infection from one to another after their captivity in the aviaries in which they are kept before sale and in the cages in which they are shipped, and that the mortality in course of these shipments is sometimes extremely high and almost certainly preventable One may commend in this respect such rules for healthy transport of birds as those enjoined by the Zoological Society—reprinted in Dr Scott and Dr Sturdee's report on Psittacosis to the Ministry of Health in 1930—which, if observed, should go far to reduce the risk Importers who wish to see a speedy revival of the parrot trade—which is said to be considerable and profitable—might do much to enlist public and official sympathy with their aims by themselves undertaking that all cause for criticisms on this score would be removed if importation were again allowed Such action on their part would, I feel sure, be welcomed also in other countries which are dealing with the same question The administrative inconvenience of separate action at the different European ports was made plain in 1929 30, and attention is now being given to the practicability at the next stage of common and simultaneous action at them all

YELLOW FEVER

The risks of virus research to laboratory workers, just referred to, have nowhere been so tragically illustrated as in recent work on yellow fever by deaths which entailed such losses to science as those of Adrian Stokes, Noguchi, W A Young, and Paul Lewis They have had an odd recent repercussion on public health policy in India, the Dutch East Indies, and elsewhere in the Far East, which is worth mentioning here Several Eastern countries have forbidden, or are about to forbid, the importation of yellow fever virus or material capable of carrying it, for any experimental purposes, even to laboratories of the highest repute Reactionary as this decision may appear, it has been initiated by the public health authorities themselves, on the ground that research must be sacrificed in view of the possibility of infection extending outside the laboratory and reaching the populations of vast regions in which yellow fever is unknown, but where its insect carrier, the *Aëdes ægypti*, is common

A more formidable risk of introducing yellow fever, by man or mosquito, into these populations has now also to be taken into account It may soon be possible to make relatively short voyages by air to those countries across Africa from the West Coast, where yellow fever is known to be endemic, and the countries which consider themselves threatened are not inclined to take chances Special attention to this position has been given in the draft international agreement for the prevention of spread of infectious diseases by aircraft, prepared last May by the Permanent Committee of the Office International d'Hygiene Publique Its policy is based, *inter alia*, on prescribing a minimum of action in the yellow fever affected countries sufficient to secure that no person is embarked on an air journey to the other countries concerned if there is risk that he has been exposed to yellow fever infection within six days On the face of it, this is a drastic requirement, but one which in present knowledge appears necessary in the interests alike of public health and of air navigation

Malaria

It is, however, rarely possible for the main line of policy directed against a particular disease to be one of national or international action for its exclusion. Public health policies are as a rule much more complex than that. The particular disease is there, and the collective action which ought to be taken about it does not admit of a single or simple formula. It depends on the nature and traditions of the community and its normal resources on the one hand, and the natural history of the disease on the other. To give another illustration from so-called tropical medicine, I would refer to the strides which, notwithstanding economic depression, have lately been made in many countries in combating malaria, the disease which, taking the world at large, probably causes more total sickness and invalidity than any other. Public health does not now offer a single policy based primarily on intensive local attack on the anopheline breeding place—successful as that method has been in limited areas specially favourable to its conduct, and impossible as it has proved as a practical proposition in most malaria-ridden regions. The modern method is to make a choice from several quite different policies according to the circumstances of the region. They have been made possible by a wholesome refusal to work on dogma, and by the practical application of the new knowledge acquired about malaria. Much of it, one may note, has come from the Horton Laboratory in this country, where special opportunities to study all phases of human malaria is afforded in course of the treatment of general paralysis by inducing malaria attacks. The latest work at Horton may well add another anti-malaria policy. It has not only shown scientifically that quinine, so powerful in its action on the malaria parasite in its vegetative, fever-producing form, has no power of arresting the development of the sporozoite which the mosquito inoculates with its bite. This was more than suspected before, on the evidence of the failure of quinine for malaria prophylaxis during the war. But now we have evidence that in this respect there are drugs which can do what quinine cannot, and that the temporary sojourn of a susceptible visitor to malarious areas may by their instrumentality be robbed of its danger.

I have just referred to the instance of yellow fever, in which medical requirements may put some obstacles in the way of aviation in some tropical countries. But if medicine is now going to make it possible for aviators to land in the far more numerous malaria-infested regions and be bitten with impunity, it will have made a very handsome compensation to the interests of air traffic.

In leprosy, too, a recent change of public health policy has lately been conspicuous; isolation of lepers is now being everywhere regarded like the isolation of the tuberculous, and not as an inevitable and fundamental necessity to prevent the spread of infection.

Isolation, Carriers, and Immunization

Coming nearer home in regard to infectious diseases, one may note, if not the adoption of new policies in place of those which have served us so long and on the whole so well, at least some new outlooks which are producing a considerable change in modern practice. Consider in this connexion isolation, carriers, and active immunization. Some six years ago I took part in an elaborate inquiry at the Ministry of Health into the effect of isolation hospitals on the spread of scarlet fever.[1] Most of the 30,000 beds in our isolation hospitals up and down England were then in use for that disease, and it is doubtful whether many of these hospitals would have been provided at all without faith in their necessity for scarlet fever prevention. With all the resources at our disposal we could only say in favour of the hospital isolation of scarlet fever that it represented a social convenience that no local area which has once possessed it would willingly dispense with, and that it usually offered facilities for treatment of the individual case not otherwise available. We could not say on any evidence that would stand examination that it has checked the spread of scarlet fever or that it has been responsible for its diminution in severity and mortality. This finding, come to rather reluctantly, confirms from practical experience the conceptions of scarlet fever infectivity and susceptibility which the immunologists have for some time been pressing on us from their side. To scarlet fever, in this connexion, we may add diphtheria; there is in both abundant justification of the isolation hospital as a place of treatment and a place of study, but much less as providing a principal method of preventing the spread of these diseases in the community. I will not enlarge on this matter save to draw attention to the repercussion of these conclusions on the modern use of the isolation hospital. The accent is shifted from isolation to hospital, and these special institutions require more than ever to be places which prove their medical advantage by supplying the most effective possible treatment, by saving life in the individual case, and by doing everything possible during the hospital treatment and by applying a following-up system to prevent the invalidity due to kidney and middle ear troubles and the like, which now forms the most serious part of the mischief done by these diseases. They afford, moreover, a means of clinical research on a large scale which is invaluable and cannot be elsewhere obtained; the testing of serum reactions of susceptibility to scarlet fever is a noteworthy example.

The same considerations have made it easier in recent years to extend the use of isolation hospitals to a variety of different diseases. The Metropolitan Asylums Board, now merged in the London County Council, found no difficulty in using parts of its infectious diseases hospitals when it desired to have units for dealing with the mental after-effects of encephalitis lethargica, and for the radiological treatment of cancer of the cervix. In the case of cerebro-spinal meningitis—to give one of many examples—the justification of the hospital by the facilities it gives for special treatment is particularly noteworthy. I would like to use this opportunity to plead in this connexion for full co-operation in the scheme now being put out at the Ministry of Health for collecting facts from all hospitals in the country, which will permit of the much-needed assessment of the curative value of different anti-meningococcus serums and of the different ways of administering them. In conclusion on this topic, I would not be thought to imply that the close association of isolation hospitals with bacteriological and clinical research is a new policy, but it is undoubtedly one which is coming into greater prominence and it is still full of promise.

Healthy Carriers

I have referred to bacteriological research rather than to bacteriological routine. With regard to the latter, there is a distinct tendency in infectious disease work to be critical of, or discontinue, what one may call the automatic use of bacteriological tests for the ascertainment of healthy carriers. It has now for some time been realized that carrier hunting adopted as an indispensable ritual in connexion with notified clinical diphtheria cases—with the object of the special treatment or segregation of the healthy carrier—may easily produce more embarrassment to administration and general inconvenience than is warranted by any advantages which it offers—*unless, of course,* in special circumstances under the fullest and most up-to-date laboratory control. Even more *is this* the case with

[1] Ministry of Health Reports on Public Health and Medical Subjects, No. 35, 1927.

the abundance of meningococcus carriers who can be found in connexion with the occurrence of cerebro-spinal meningitis; no one has seriously considered adopting the practice for the pneumococcus.

In the case of intestinal infections, I may note two recent examples suggesting the lengths to which one might be led by adopting the principle of treating all healthy carriers as a danger to the community. The first is the discovery during the last two Mecca pilgrimages that each time pilgrims returning by the quarantine station at El Tor have, on sampling, showed a material proportion of cholera vibrio carriers, some agglutinating according to ordinary standards, and this notwithstanding the fact that no clinical cholera was occurring among them or had occurred in any part of Arabia during the whole time of pilgrimage. The second is a recent experience of a paratyphoid outbreak due to milk in a district near London, where all known and notified cases were removed promptly to hospitals outside the district, which were on other sewerage systems. For eight weeks after it could be said that there was no known paratyphoid case in the district, it was possible at any time to find the implicated paratyphoid bacillus in the effluent from the sewage disposal works of that district. One does not know from how many temporary healthy carriers these bacilli came, but they must have been numerous and apparently did not spread infection in any case. One should perhaps add that although a general administrative policy for the routine hunting out of healthy carriers is now for good reasons less considered than was the case some years ago, it remains true that thorough concentrated search for carriers in particular cases, such as a food outbreak, may be essential for preventive work, and may be equally essential for particular epidemiological studies.

Active Immunization

The orientation towards the production of artificial immunity, which has resulted from the epidemiological and bacteriological studies of recent years, also must have some, if only passing, mention here. In this country it is too soon to speak of active immunization having been made the basis of a new public health policy, either nationally or locally, but there are tendencies in that direction. For diphtheria, systematic immunization is already an accepted policy in the case of the staffs of infectious diseases hospitals and in a few residential schools and institutions. As a systematic means of preventing diphtheria in the child community of a district, however, it has only been adopted here and there—so far with encouraging results—but on a scale far less extensive than in American cities. New York, which hitherto has had a diphtheria rate notably higher than that of any English city, claims that its immunization system, at present applied to some 300,000 children yearly, has brought incidence and mortality to a level below that of London. If immunization can be secured simply, with a minimum of inoculations (three separate inoculations seem too many for popular acceptance), without any material reaction, and without any danger—all postulates which seem capable of fulfilment—there seems no reason why systematic immunization against diphtheria, recommended to, and voluntarily accepted by, the population, should not before long become the main agency of diphtheria prevention in many areas. The same may be said for scarlet fever, though with less confidence until it can be shown that an immunizing agent is available which will do more than prevent the occurrence of uncomplicated scarlet fever, the mildness of which in these days makes it necessary to reckon with the argument that immunization is not worth while. If the anti-scarlet fever immunizing agent could be relied on to prevent the kidney and ear complications of scarlet fever, or if, still better, it could also afford a measure of protection against other diseases associated with the haemolytic streptococcus, the reasons to be advanced for its systematic use in a given community would be much stronger—again always supposing the same postulates as for diphtheria.

VACCINATION AND SMALL-POX

In this country a good deal of attention has lately been directed to the position of vaccination against small-pox our oldest example of successful immunization. Among the chief reasons for this have been the prevalence of small-pox of an apparently fixed low degree of virulence (variola minor); the Rolleston Committee's inquiries and recommendations, and especially in regard to the occurrence of post-vaccinal encephalitis; and the administrative questions arising in consequence of the transference of the administration of the Vaccination Acts to the major public health authorities. As this subject has been recently and fully discussed in a review issued in the Ministry of Health's public health series, I only make passing reference to it now. So far as methods of vaccinating are concerned, the recommendations of the Departmental Committee were in the direction of obtaining community protection against any variety of small-pox by repeated vaccinations in small dosage—for example, a single insertion of lymph, beginning in infancy. Meanwhile, the relative unimportance of variola minor as a cause of mortality or disfigurement on the one hand, and on the other the experience of post-vaccinal encephalitis, as a new though very rare risk to be reckoned with in the case of vaccination performed for the first time at school age or adolescence, have imposed a certain check on the policy of automatically advocating communal vaccination on an extensive scale when small-pox appears in a district. In the case of variola minor advocacy of vaccination is tending to be restricted to particular individuals at special risk.

This notwithstanding, it is well to remember that the necessity of applying our well-tried methods of controlling small-pox, including the use of vaccination, remains undiminished in the event of the importation or appearance of small-pox of the epidemiological type which was familiar to us in this country before the war, and is still so extensively prevalent in many parts of the world. It is worth noting, indeed, how very extensively mass vaccination of communities has recently been practised in countries which are affected with this major variety of small-pox. Following a small-pox epidemic period in 1919-21 the vaccination system of Italy was overhauled in 1923, so as to secure systematic vaccination of the population in infancy and at eight years of age, with a further vaccination for military service and in other circumstances. This has now resulted in over one and a half million vaccinations being performed annually in Italy. Each year at the Office International d'Hygiène Publique in Paris one gets surprisingly large figures from representatives of Eastern and tropical countries to illustrate the progress of mass vaccination—for example, in the French African colonies, in the Dutch East Indies, and in India. The Russian figures also are striking, it being claimed that now for some years more than eight million vaccinations have been yearly performed in the Union of Socialist Soviet Republics. So far as the customary variola major is concerned, this country is probably deriving benefit from these extensive mass vaccinations in other countries where that disease is endemic, seeing that the risks of its importation here are thereby diminished. One may refer in this connexion to the attention now given to the vaccination of passengers and crews embarking at Indian ports. This practice is becoming systematized not because of any specific requirement made on their arrival in the United Kingdom,

but because there are such requirements on their arrival in other countries. Proof of vaccination within more than 12 days and less than 3 years, attested by a certificate, is now being so much expected at ports over-seas that the ordinary passenger to the United Kingdom will find vaccination to his practical advantage during the voyage. When ships arriving from the East carry passengers the great majority of whom have been effectively protected, the introduction of major small-pox through the wholesale infection of passengers, as occurred in the case of the *Tuscania* in 1929, is unlikely to be experienced.

Cholera prophylaxis

Before leaving this subject, the very considerable part now played by anti-cholera inoculation in the epidemic work of Eastern countries may be mentioned. There can seldom have been a more intensive use of mass anti-cholera vaccination than when it was applied systematically to pilgrims before they attended the great Magh Mela at Allahabad in January of last year. At this ceremony it was reckoned that more than two millions out of three and a half millions of pilgrims bathed in the Ganges on the same day, and the risks of cholera infection from their ablutions can be well imagined. The actual cases of cholera treated were no more than 168, and no extension of the disease followed the festival. This was in striking contrast to the widespread scattering of infection which previous experience of these colossal gatherings had given reason to apprehend. General community inoculation against cholera is now habitually being practised in many parts of the East on the appearance of an epidemic, a recent example being the inoculation of more than half a million persons at Shanghai last year on the first appearance of cholera.

COMMUNAL DETECTION AND CONTROL OF DISEASE

I have given, perhaps, too much time to recent policies in connexion with certain infectious diseases, and am not attempting to-day to touch on others of at least equal importance, notably the special systems of control over tuberculosis and venereal diseases which have been developed so fully in this country, and on each of which there would be many interesting recent developments or adjustments to chronicle. I may pass to a few special diseases which in recent years have been made the subject of communal action in which the question of preventing case-to-case infection hardly arises, and where the public health object has been to systematize and organize the resources of an area by detecting the disease at its earlier stages, and also by securing that, at whatever stage it is detected, the sufferer receives the most effective treatment, curative or palliative, which circumstances permit.

Rheumatic Fever Policies

Let us take in this connexion the prevention of acute rheumatism in children, or its treatment when it occurs to prevent the occurrence of heart disease, of which there are well-known examples in London, and of which the work of the Invalid Children's Aid Association and that of the Home of Recovery for Rheumatic Children in Birmingham are also conspicuous examples. Local schemes for dealing with acute rheumatic infection in children imply three factors—ascertainment, supervision, and treatment. Ascertainment depends in the main on the School Medical Service, but is freely supplemented by the hospitals in the area and by other organizations. Experience in Birmingham and London shows that these means of bringing cases to light are effective. The addition of compulsory notification is being experimentally tried in three Metropolitan boroughs. After ascertainment, which is represented by a local "rheumatic register" of children needing attention, come the supervisory centre and institutional treatment. The rheumatism supervisory centre is worked in liaison with the School Medical Service, City Committees, the Invalid Children's Aid Association, and with the hospitals. Its functions are first those of exact diagnosis, then to arrange for appropriate treatment or regulation of school or home life, for continuous supervision to detect relapse, and instruction to parents and for scientific investigation. There are now some fifteen rheumatism centres in London, eight of these being at hospitals, and parallel work is being done in other parts of the country. The success of the rheumatism clinic and supervisory centre is bound up with the provision of institutional treatment. The scheme has to envisage not only hospital beds for acute cases, but prolonged convalescent treatment, consisting mainly of rest under good hygienic conditions, largely in the open air, followed by the most carefully graduated resumption of activity. It seems too soon to form an estimate of the number of convalescent heart beds necessary for a large city; the New York standard is stated to be 1 such bed for 10,000 population, a fifth of the beds being reserved for adults. Such a standard proportion is hardly at present of great consequence. An essential point of present local schemes is the possession of elasticity. The general requirements just outlined can be met by many methods according to the conditions of the area, so long as they secure the general medical co-operation necessary and the best utilization of the different agencies available.

Cancer Policies

Another illustration is afforded by local policies in regard to cancer. In this country deaths attributed to cancer form over 10 per cent. of the total deaths at all ages and 14 per cent. at ages over 50, and cancer death rates tend to increase rather than decrease. The question of communal action—whether by State and municipal effort or by organized voluntary effort, or both—has of late years received considerable attention in many countries. The establishment in France of twelve large provincial anti-cancer centres, with others in Paris, all supported by State contributions and based on the Fondation Curie, is an example, as is also the setting up of large cancer hospitals associated with research centres in Italy, Spain, and the United States. The British local policies to which I would like to direct attention represent something that is complementary to the work of our different cancer hospitals, new and old, to the investigatory work of our Imperial Cancer Research Fund, and to the various investigations facilitated by the British Empire Cancer Campaign. I refer to the attention recently directed to the question whether some of the larger public health authorities—county boroughs, notably those in relation with universities and medical schools, and possibly also county councils—ought not to utilize their own resources and their own special opportunities to organize the combating of cancer. The local policy means that in some suitable manner cancer cases that go to hospitals for treatment are regularly classified and their histories ascertained. Something must be done systematically to ensure that the local population receives, and at the proper time, the different forms of medical examination and treatment which are necessary. There is an educational policy in regard to pre-cancerous conditions. And, finally, in the case of operative or radiological treatment, the results are methodically assessed by means of observations of the patient continued over a number of years.

This kind of work can hardly be made at present the subject of a general national scheme. It wants local effort and local enthusiasm, and requires some definite local nucleus whose work will receive the encouragement and support of all the different agencies which directly or in-

directly may be concerned with cancer cases. This nucleus in one locality may be most conveniently based on the Public Health Department, but in another may best be executed through some hospital or voluntary association with which the Public Health Department co-operates. In respect of some kinds of cancer, particularly uterine, its nature may depend upon the extent to which the region is served by special departments or special hospitals at which radium treatment is given, and it results from this that local effort against cancer is now likely to be particularly active in connexion with those institutions to which supplies of radium have been allotted by the Radium Commission from the purchases of the Radium Trust. The kind of local action to which I refer in this summary way was lately reviewed rather fully in one of the memorandums (Cancer VII) of the Departmental Committee on Cancer at the Ministry of Health, the issue of which followed the transfer to the larger public health authorities of the many cases of cancer which were previously the responsibility of the Poor Law Institutions.

It has also been largely with the object of facilitating organized local action that the Departmental Committee has, over a series of years, recommended official circulars, and produced monographs on the causes and treatment of cancer of accessible sites. We owe to that Committee and its workers the determination of the average natural duration of the different varieties of cancer in different parts of the body, and various assessments of the extent to which appropriate operative treatment is being made use of, and facilities for early diagnosis are available. And its work has been specially useful when it has provided a reasoned judgement, obtained from home and from foreign sources, of the suitability of particular operative and radiological treatments, as judged by survival rates at defined intervals after those treatments. A city or region, therefore, which desires to consolidate its cancer work and settle a local cancer policy can, with the aid of these reports, start its work with some useful measures of the degree of achievement which can be reached by medical, surgical, and radiological skill.

The matters to be considered and co-ordinated at the local nucleus, which in general may be taken to be the Public Health Department, include the sufficiency of the local methods of securing that early and curable cases of cancer come to light at the right time and are treated in the right way. One is apt to forget how many different conditions are included under the name "cancer." Many of them, like cancer of the skin and lip, are so essentially curable that they only contribute a small proportion to cancer mortality. It is within the sphere of practical effort to bring cancer of the breast and cancer of the uterus into the same category. The local question is whether in fact these opportunities for cure are provided and used, and, if not, how the defect can be remedied through combined action of the local agencies available. There is again the large question of the sufficiency of palliative and nursing treatment in advanced cases of cancer, and, finally, the recording and following up of cases to which I have just referred. We can only wish well to those cities in which pioneer work is being done in these directions, not necessarily in the same way but always with the same object.

Conclusion

It seems, indeed, even from the random examples I have given, that in dealing with public health policies in regard to particular diseases we can hardly have enough local experiment. No one locality can attempt, or can be expected to attempt, to try out everything new that looks promising. But it is all to the good to find one particular area identifying itself, for example, with a carefully contrived effort to secure immunization against diphtheria, another specially concerning itself with a policy to prevent heart disease, or a third with cancer. The same applies to many other forms of local effort, none the less valuable because it arises from circumstances that are fortuitous, like a local experiment for the communal treatment of chronic rheumatism and fibrositis, or the establishment of a foot clinic. Always the existence of such particular policies gives life and individuality to the local health work, and particularly when that work is not confined to the statutory public health authorities, but, as in the instances I have given, requires a combined action with which the whole medical profession of the place is identified. The position is much the same with the international work for health which is becoming so important. Uniformity is often desirable, and standardization is often essential to progress. One requires standards for statistics, terminology and for all kinds of purposes of comparison and research. They are essential also to facilitate a common understanding between nations in those instances where success must depend on united effort. But this is something quite different from the view that one should aim at conducting national health work on standardized international patterns or in pursuance of authoritative international doctrines. Room must be left for each community to develop its health policy on individualistic lines according to its own resources and the circumstances and genius of its own population. It is a healthy sign of progress in public health that this process can continue side by side with necessary consolidation and standardizing, and that communities, large and small, should still be ready to work out and apply new policies of their own or to reconsider and recast lines of effort so consecrated by tradition that they usually are not questioned. By so doing they help the world at large, certainly by success if it comes, but often hardly less usefully by learning the lessons of failure if they should be disappointed—which, after all, has been the essence of progress in true art and science from the beginning.

LATE RESULTS OF OPERATIVE TREATMENT IN TOXIC GOITRE

BY

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The beneficial results of thyroidectomy in cases of toxic goitre have led to a steadily increasing number of these patients being referred to a surgeon for this operation, while the present pre-operative treatment with iodine has reduced considerably the mortality rate. There are comparatively few follow-up studies, but in the papers published the percentage of good results claimed has varied so widely that the average reader is left with the impression that, assuming the writer to be unbiased, either the criteria for judging results differ or the results depend on the clinic at which the operations took place; the former is probably correct. It seems probable that the average case operated on in the United States is milder than in England; this fact is no doubt the main reason for the difference in the immediate operative mortality rate. The apparent higher incidence of the disease in America cannot be due to earlier recognition by means of the more frequent examination of the basal metabolism, as, in my experience of 1,200 basal metabolic rate estimations in the past three and a half years, this test when properly done prevents many neurotic patients from receiving *x*-ray treatment. The test has to be repeated several times in these cases.

Follow-up Results of Various Observers

Before proceeding to give the details of my own cases I wish to mention the follow-up results of operative

treatment of toxic goitres obtained by other observers, but in doing so I make no attempt to include all papers on this subject; a selection of statistics has been made for the sake of comparing them with my own results. Many of these follow-up studies are based on correspondence, others on personal observations; in some the basal metabolic rate has been estimated, but very often this test has not been done. In 1920 Judd[1] found that of 100 cases of Graves's disease, 55 per cent. were cured, while of 100 toxic adenomas, 83 per cent. were cured. After the introduction of iodine the results improved, and Elliott[2] found that of 72 cases in which the basal metabolic rate was done at the time of the follow-up, 63 were considered satisfactory; out of a total of 100 cases examined then, however, 46 showed signs of definite visceral injury due to the disease or to the operation. Dunhill[3] states that of 185 patients about whom he received information, 167 were able to lead their normal lives, 4 died some time after operation, including 1 from high blood pressure. Walton[4] claimed that 55 per cent. of his cases were cured and that a further 26 per cent. were improved. Morley[5] assessed the results in 151 cases, regarding them as "very good" in 98 cases, and "good" in a further 37 cases. Smith, Clute, and Strieder[6] consider that 92 of 100 cases examined were cured, while Clarke and Black[7] report that of 64 cases in which basal metabolic rates were done at the follow-up, only 4 had a reading of over plus 20 per cent. Many of their cases were mild, 30 out of 62 having basal metabolic rates not exceeding plus 30 per cent. before operation. Thompson, Morris, and Thompson[8] state that of 190 cases followed up, 19.5 per cent. were not cured, and in their opinion the toxic symptoms seen in this group had, in most cases, persisted since operation; in 2 patients the symptoms subsided after operation, but recurred later. Crile[9] gives the number of his recurrences in cases of hyperthyroidism as 4.4 per cent.

A Follow-up of Forty-two Cases

In this contribution the details of 42 patients who were operated on either by Mr. G. Jefferson or by Mr. Garnett Wright are given, but before presenting details I wish to mention the method of examination.

A list of patients who had had operations for toxic goitre was compiled up to March 31st, 1930. These were circularized and asked to come into hospital for one night. A large number refused or did not reply. In many cases the information was volunteered that the patient was feeling quite well; all of these persons were excluded, but the 42 who accepted were admitted to the ward in the evening, a clinical examination, a basal metabolic rate estimation, an estimation of blood pressure, and an electrocardiographic examination being carried out on the following morning. The electrocardiographic results will form the subject of another paper, but at this point I may observe that an inverted T in Lead III was present in many of the follow-up cases. In some, myocardial damage present before operation was discovered to have cleared up completely at the follow-up; in others I had reason to believe that this had progressed since operation, in spite of an apparent complete relief of toxic manifestations as a result of operation. The other points to which particular attention was paid were the presence or absence of nervousness, tremor, exophthalmos, and the rate and rhythm of the pulse. Of these 42 patients, 38 were suffering from Graves's disease and 4 from toxic adenoma. In some cases, the basal metabolic rate was a little high compared with the pulse rate, but it was found that any untoward incident caused a surprising increase in the pulse rate (for example, the electrocardiographic proceedings), while the patient admitted that he was still nervous. A few patients had never had a basal metabolic rate estimation done before; for this reason I made them breathe into the Douglas bag and accustom themselves to it on the night of their admission, the test being done next morning. The basal metabolic rates were done by the Douglas bag and Haldane gas analysis apparatus. The average interval between operation and the follow-up examination was a little over three years, the longest interval being eight years, the shortest one year. The majority of these patients were women, there being only five men.

Results of Examination

The details of the examination of these patients were as follows:

Exophthalmos.—When present, this is one of the most outstanding features of the disease, yet in some cases where I had not seen the patient previously I found difficulty in deciding the previous degree; in these cases I accepted the patient's statement on the amount of improvement. Before operation, exophthalmos was present in 29 of the 42 cases; in 18 of these it was well marked, in 11 it was slight, and in the remaining 13 there was not any unusual prominence of the eyes. In some cases it is possible that another observer might have disagreed with my classification, but it will suffice to give an impression of the result of operative procedures on this sign. At the time of the follow-up examination, of the 18 cases in which it had been well marked it was absent in 5, much improved in 11, and in 2 there was no change, but, in these, toxic symptoms were still present, the basal metabolic rate being plus 20 per cent. and plus 31 per cent. respectively. Of the 11 cases which had shown, prior to operation, exophthalmos in a milder degree, it had disappeared in 4, but still persisted in a milder degree in 7 cases. In one patient (Case 7) the exophthalmos, which was well marked before operation, increased during the year, following a subtotal thyroidectomy, and at the present time (three years later) the exophthalmos is approximately similar in degree to that before the operation. This patient's basal metabolism was normal three weeks after operation, but each of four basal metabolisms estimated since have been about plus 20 per cent. I have not seen a case in which exophthalmos which was absent before operation has made its appearance since. Zimmermann[10] reports eight cases in which exophthalmos became more marked after a thyroidectomy had relieved the actual hyperthyroidism.

Nervousness and Tremor.—These were present to a greater or lesser degree in every case before operation, and were greatly improved in 39 of the 42 cases, though they were still present in 17 of these 39 patients. Of these 17 persons, 10 had basal metabolisms of or below plus 13 per cent., but in 7 it was still increased above plus 13 per cent. The remark made by Moschcowitz[11] might be applied to those cases with normal metabolisms yet still somewhat nervous: "Thyroidectomy therefore removes only the hyperthyroidism and the increase of basal metabolism; the personality of the constitution remains, a potential, given enough stimulus, to flare up into the more intense forms of Graves's syndrome." In the 3 cases in which there was no improvement, the basal metabolisms were still plus 47 per cent., plus 42 per cent., and plus 59 per cent. respectively.

The Blood Pressure.—Unfortunately there are very few of the cases in which a record has been made of the blood pressure before operation. This is all the more regrettable, as Clarke and Black[7] found that among those cases in which blood pressure readings were taken before operation and at the time of the follow-up, although the average systolic pressure had only risen 2 mm. Hg and the diastolic 9 mm. Hg, in certain cases the blood pressure had definitely increased. They mention that at the time

of discharge after operation 7 patients had a blood pressure of over 150 mm Hg while at the follow up 15 cases had blood pressures of over 150 mm Hg Among the cases I investigated, the blood pressure was taken on 35 patients at the time of the follow up, the average systolic pressure was 147 mm Hg and the average diastolic 88·3 mm Hg (the normal[17] for the average age, 36, is systolic 126 mm Hg, diastolic 90 mm Hg) If the patients are divided into two groups—namely, those above and those below 41 years of age—then the average systolic pressure for the group over 41 years is 153 mm Hg and the diastolic 89 mm Hg The average age was 45, and on that basis it should be systolic 129 mm Hg, diastolic 91 mm Hg For the group below 41 years the average systolic is 142 mm Hg and the diastolic 88 mm Hg, the average age was 28, and the normal reading for the age is systolic 122 mm Hg, diastolic 87 mm Hg Among these 35 cases there are 14 patients with a systolic blood pressure of 150 mm Hg or over, and of these 7 are below 41 years It seems clear, therefore, that the frequency of the increased blood pressure cannot be attributed to the age of the patient It was evident, also, that the height of the blood pressure had no relation to the number of years which had elapsed since thyroidectomy was performed It did not seem to bear any constant relation to the persistence of the toxicity As there are so few records of pre operative blood pressures, no further deductions can be drawn

The Weight —The successful operative treatment of this disease usually results in an increase in weight, the amount depending somewhat on the loss of weight which occurred before operation An accurate record of the weight before operation is only available in 27 cases, 23 have gained since their discharge from hospital, the amount varying from 2 lb to 48 lb, with an average of 16 lb Four patients have lost weight varying from 2 to 5 lb, 2 of these had normal metabolisms, and 2 have increased metabolic rates of plus 24 per cent and plus 25 per cent respectively

The Basal Metabolic Rate —The main purpose of this investigation was the estimation of the basal metabolic rate I regard this as the most important single piece of evidence in assessing the condition of the patient, errors may occur, not through inaccuracy in technique but because these patients are emotional, and any marked variation in the result as compared with previous readings, or any discrepancy between the apparent clinical condition of the patient and this test, must be viewed with suspicion and checked by a further metabolic rate estimation

Of the 42 cases described, a basal metabolic test was done before operation in 23 patients, in 17 of whom the rate was above plus 40 per cent Rates below plus 30 per cent were found in 4 patients, of whom 2 were adenoma cases, 1 was a recurrence and 1 (Case 38) was a case in which the rate was lower than was expected from the symptoms and signs The remaining patients were operated on before I began to do the basal metabolic rates These pre operative basal metabolic rates are mentioned in order to emphasize the fact that most of the 42 cases were of the type with well marked toxic signs, which, I believe, is operated on by surgeons in this country after medical treatment and in some cases x ray treatment, have proved inadequate The immediate effect of the operation was to cause a fall in the rate in 21 of the 23 cases, while in 2 (Cases 3 and 38) there was a rise In those cases in which the rate fell it did not necessarily approximate to normal at once, being at times below and at other times above normal limits The actual details are not given as the subject was discussed in an earlier contribution[18] The failure of the basal metabolic rate to become normal at once in many cases supports the view, re stated by Pemberton[14] that the surgeon cannot judge how much gland it is necessary to remove in order to bring the rate to normal and that the operation breaks a link in the chain of etiological factors which permits readjustment to normal in the physiology of the gland Of 7 patients who had had thyroidectomy and had later died of another disease, in 6 Pemberton found regressive changes in the histological structure of the gland, and this he regards as supporting his contention

At the time of the follow up a basal metabolism was done in all 42 cases, the longest time since operation was eight years, the shortest one year, with an average of just over three years These figures are presented in the accompanying table, and it will be seen that in 13 cases the rate is still above plus 13 per cent, a high

The Basal Metabolic Rates at the Follow up compared in some Cases with those taken before Operation

Case	B M R at the Follow up	B M R before Operation	Operation
1	Plus 25 %	—	Right lobectomy
2	Plus 7 %	Plus 38 %	Subtotal thyroidectomy
3	Plus 24 %	Plus 23 %	Right lobectomy
4	Plus 5 %	Plus 61 %	Subtotal thyroidectomy
5	Minus 5 %	—	Right lobectomy
6	Plus 19 %	—	Ligation of arteries
7	Plus 20 %	Plus 50 %	Subtotal thyroidectomy
8	Plus 5 %	Plus 51 %	Ditto
9	0	—	Ligation of arteries
10	Plus 13 %	Plus 60 %	Subtotal thyroidectomy
11	Minus 27 %	Plus 60 %	Ditto
12	Plus 6 %	—	Ditto
13	0	Plus 46 %	Ditto
14	0	—	Ditto
15	Plus 4 %	Plus 41 %	Ditto
16	Plus 25 %	—	Ditto
17	Minus 22 %	Plus 52 %	Ditto
18	0	Plus 61 %	Ditto
19	Plus 22 %	—	Ditto
20	Minus 7 %	Plus 27 %	Ditto
21	Plus 9 %	—	Ditto
22	Plus 3 %	Plus 57 %	Ditto
23	Plus 47 %	—	Right lobectomy
24	Plus 31 %	Plus 24 %	Subtotal thyroidectomy
25	0	Plus 64 %	Ditto
26	Plus 12 %	—	Ditto
27	Plus 5 %	Plus 47 %	Ditto
28	Minus 12 %	—	Ditto
29	Plus 42 %	—	Right lobectomy
30	Plus 8 %	—	Subtotal thyroidectomy
31	Plus 6 %	Plus 67 %	Right obectomy
32	Plus 2 %	—	Subtotal thyroidectomy
33	Minus 2 %	Plus 59 %	Ditto
34	Plus 59 %	—	Ditto
35	Plus 17 %	Plus 31 %	Left lobectomy
36	Plus 19 %	—	Right obectomy
37	Plus 24 %	—	Left lobectomy
38	Plus 7 %	Plus 14 %	Subtotal thyroidectomy
39	0	Plus 35 %	Ditto
40	Minus 15 %	Plus 64 %	Ditto
41	Minus 9 %	Plus 45 %	Ditto
42	Minus 1 %	—	Right lobectomy

percentage, but in 7 of these the operation consisted of the removal of one lobe; in 1 only the arteries were tied, while in the other 5 cases the operation was a subtotal thyroidectomy, and the persistence of toxic symptoms is surprising. In 2 of the lobectomies (Cases 3 and 35) the operation consisted of the removal of an adenoma from one lobe, but the persistence of toxic symptoms suggests that smaller adenomas are still present in the remaining lobe. The patient in Case 6 (the ligation) had auricular fibrillation with marked oedema and ascites. As she did not show sufficient improvement after ligation to warrant a thyroidectomy she was sent home. She had signs of cardiac failure for twelve months, after which she gradually improved, and at the time of writing (five years after operation) she has no oedema, and is carrying on a fair share of her household duties. The patient in Case 34 stated that her operation effected a complete cure, but the excitement of escaping out of her burning house caused an immediate recurrence; there is no enlargement of the thyroid. The other 4 patients with toxic symptoms who had subtotal thyroidectomies were considerably improved by the operation; the present toxicity is a persistence of symptoms and not a recurrence. In the remaining 29 cases the basal metabolic rate is within normal limits in 25, while in 4 it is below minus 10 per cent. Clarke and Black[7] found that 7 of their 64 patients had basal metabolic rates between minus 10 per cent. and minus 30 per cent. Smith, Clute, and Strieder[6] mention that in 19 of their 100 cases there was a basal metabolic rate below minus 10 per cent., while in 15 of these there was definite evidence of myxoedema; they attribute this to the pre-operative use of iodine. Of my 4 patients with a basal metabolic rate below minus 10 per cent., 2 showed definite evidence of myxoedema—namely, Nos. 11 and 40. The patient in Case 40 had a rate of minus 16 per cent., this in spite of 6 grains of dry thyroid daily. Immediately after operation her rate was minus 18 per cent.

There were 4 patients who still had auricular fibrillation. In 2 of these the pulse rate was over 100; in the third it was 68, and in the fourth it was 72. One of them, patient No. 34, has developed fibrillation since her operation, which was a subtotal thyroidectomy, but as the basal metabolic rate is at present plus 59 per cent. it is to be expected.

Conclusions

The disappearance of exophthalmos does not of necessity follow the complete relief of hyperthyroidism, yet a diminution of toxicity is usually followed by an improvement in this sign, which may disappear completely in cases which we regard as cured. Exophthalmos is likely to persist in those cases in which the metabolism has not dropped to within normal limits. Nervousness is invariably improved by a successful operation, but the patient may continue to be nervous in spite of a normal metabolic rate.

The majority of patients gain weight after operation, yet there are occasional cases in which an otherwise successful result is not accompanied by any increase, and this is seen even in a patient in whom there was a considerable loss of weight before operation. *Failure to gain* weight is occasionally associated with glycosuria, which is sometimes seen in Graves's disease, and may become more severe after operation.

Relief of hyperthyroidism and a lowering of the metabolic rate to normal limits usually follow a subtotal thyroidectomy; there are cases in which the metabolic rate remains above normal limits in which no increase of thyroid tissue can be made out, and in which no focus of sepsis can be discovered in any part of the body; worry and too little leisure are probably the factors which prevent a good result in these cases. Crile[9] attributes these failures to the presence of septic foci in other parts of the body, or to worry and overwork.

The removal of one lobe is followed by improvement, and patients Nos. 31, 36, and 42 were types with exophthalmic goitre in whom relief of hyperthyroidism has followed this operation. A satisfactory result has also followed ligation in two cases, and it will be readily understood that the improvement which ultimately followed was the cause of the complete operation not being undertaken at a later date. Ligation alone is not regarded as a curative measure, and while it is of interest to note that a normal metabolic rate can follow this simple procedure, it is probable that the operation had little effect on the ultimate outcome.

If the clinical condition of the 42 patients, their ability to do work, and the rhythm and rate of the pulse are considered in conjunction with the basal metabolic rate findings, the result of operative treatment has been good in 28 cases, improvement in 9, while in 5 the operation has been of little value.

I am indebted to Mr. G. Jefferson and to Mr. Garnett Wright for allowing me to examine these patients, and to Dr. G. Murray for some very useful criticisms.

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TREATMENT OF CARCINOMA OF THE OESOPHAGUS*

BY

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In this day of scientific progress we are faced with a disease, insidious in onset, slow in its development, relentless and remorseless in its course, and finally fatal in its issue. Against this disease we must admit that progress has been slow and almost unperceivable, and yet a great deal of work has been done, and many hopes have been raised only to be quickly dashed to the ground. With this admission we will first review briefly the principal difficulties, then proceed to a critical survey of the existing methods of treatment, and finally suggest certain points on which discussion would seem to be particularly valuable and indicate certain directions in which further research is urgently called for.

The principal difficulty lies in the anatomical formation of the oesophagus. Suspended at the entrance, where it is attached to the back of the cricoid cartilage, and fixed at the lower end, where it traverses the diaphragm, it remains completely mobile in the centre. This can be demonstrated by passing a tube into the oesophagus and viewing it on the *x*-ray screen, when the end of the tube can be freely moved from side to side.

In the cervical region the gullet lies in intimate contact with the trachea, into which perforation readily takes place. In the central zone the left bronchus is easily

* Read in opening a discussion in the Section of Otology, Rhinology and Laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

invaded. In the lower mediastinum the pleura is wrapped round the tube in an all too close embrace, and damage or infiltration very readily takes place; while in the diaphragmatic region the vascular and lymphatic anastomosis is so free that the condition is hopeless from the outset. Except in the neck, the gullet lies deep among sensitive and vital structures, and external operations have not achieved success. The absence of a peritoneal coat is of vital importance. Such a coat, if present, would delay extension and give rise to adhesions which would be of invaluable assistance in treatment by diathermy.

Little is written in the textbooks of anatomy on the lymphatics of the oesophagus. Three years ago I had some injection experiments carried out for me. The submucosae of numerous gullets were injected with methylene blue and silver nitrate. Great difficulty was met with in inducing injection, and finally a specimen was produced which showed the finely developed reticulum of the oesophageal lymphatics.

Experiments were carried out by injection into the wall of the oesophagus of monkeys, to show the distribution of the normal lymphatics.[1] The animals were killed twelve days later, and the lymphatic areas draining from the oesophagus were found to be injected with methylene blue. The most widespread diffusion was found, including the glands at the base of the neck, and the mediastinal and intercostal glands. A remarkable extension took place on to the parietal surface of the pleura and the pleural surface of the diaphragm. The inference from these experiments is that lymphatic spread in the early stages is slow and takes place with difficulty, but when once this fine reticulum has been broken through the invasion is widespread and comparatively rapid.

TREATMENT BY DIATHERMY

Diathermy was ushered in with considerable promise, but has been largely abandoned. We have here an instrument capable of complete destruction of the localized growth, but it has to be used with great care, or fatal operative results take place. To eradicate an oesophageal growth with safety by diathermy it is necessary to raise up a protective connective tissue reaction, analogous to callus formation, outside the growth. There was hope that by repeated small applications of diathermy success would be attained in the human subject. The expectation has not been realized.

In 1926 I carried out some experiments on rabbits and monkeys with a view to stimulating connective tissue reaction around a localized area of the oesophagus. Various irritants, such as silica and iodine, were injected through the walls of the gullet in the living monkey—without effect. A large quantity of solid paraffin was introduced into the mediastinum through the oesophageal wall by a specially constructed syringe, and on the death of the monkey ten days later not a trace of paraffin or any resulting reaction was discovered. Lastly, the trans-mural passage of electric currents was tried, but no irritation of the surrounding tissue took place.

Treatment by diathermy is a painless operation, which has as its result dilatation of the lumen of the gullet and increased ease of feeding. It is not without danger, and several patients died within a day or two of the operation from fatal leakage into the pleural cavity. As a curative means it has proved a complete failure for the reasons given above. As an operation of palliation it is of distinct value.

RADIUM TREATMENT

Radium treatment has now almost entirely replaced diathermy in the treatment of carcinoma of the oesophagus.

External Application.—It is remarkable how few cases of carcinoma of the oesophagus within the region of the neck present themselves for examination and treatment. Of those limited number of cases a large proportion consist of that peculiarly difficult growth which takes place within the sphincter at the entrance to the oesophagus and behind the cricoid. In general it may be said that if the growth can be reached from the neck my experience is altogether in favour of excising it if in any way possible. The external application of radium has not proved of much value in my hands in this area. The external approach by a trans-pleural thoracotomy is a severe operation, and in the majority of patients their general condition and lowered vitality render them unsuitable for this procedure, and during the last year we have not had a single case. During the previous two years three patients were treated jointly with Mr. Seymour Barling; all three died within a month for various reasons. The great drawback of the external approach to the oesophagus with a view to implanting radium is that any such treatment would of necessity have to be repeated.

Interstitial Application of Radon.—This method the author introduced in 1928.[2] By this means radium emanation is carried into the substance of the growth. The technique is fairly simple. The growth is treated by adrenaline before operation; the position of the lumen is ascertained, and if necessary it is dilated. The radon seeds are inserted by a special trocar and cannula, fitted on to a handle and made by Messrs. Mayer and Phelps. The seeds are buried deeply into the upper part of the growth; their number and position are checked by *x*-ray examination on the following day, at the end of a week, and at the end of a month. The disadvantage is that only the upper part of the growth can be dealt with at the first operation, leaving the lower part to be dealt with at a subsequent insertion. Experience is that the effect of the radon is to cause shrinkage and devascularization of the growth, and in two cases the growth has apparently disappeared entirely.

Central Application of Radium.—In this method the growth is dealt with from the centre of the lumen, which is dilated and a more or less rigid tube inserted, to the outer surface of which radium needles are fixed. It has the advantage of definitely dilating the lumen. It has the disadvantage of dealing with the growth from the centre and most degenerated part, and one which is farthest from the active and growing edge. In addition, sepsis on the ulcerated surface is encouraged by the advent of radium. For treatment by this method I should like to introduce two new tubes. The first is a rigid metal tube with grooves in a direction parallel to its length, and the second of hard rubber of similar shape. The rubber tube is the one now in use, and it has two advantages over the rigid metal tube: (1) When the patient is moved back to bed or sits up there is no danger of rupture of the oesophageal wall; (2) there is no secondary radiation from the surface of a metal tube. After insertion the patient should be *x*-rayed to ascertain the position of the radium. The value of an *x*-ray examination is well shown by the following case:

Male, aged 56. The growth was 14in. from the teeth. A rubber tube containing six 5 milligram tubes of radium screened by 0.5 mm. platinum, was inserted, and the string was suitably fixed by plaster behind the ear. On the fourth day he gave a violent gulp and swallowed everything, including the strings and strapping. He was *x*-rayed and the tube was seen on the right-hand side of the abdomen about half-way down, and it remained in this position despite the use of purgatives. On the fifth day it was removed by laparotomy, and the radium was found in the duodenum and the strings were trapped in the stomach.

A review of the treatment of cancer of the oesophagus would not be complete without a mention of the operation of gastrostomy. From the endoscopical point of view I

regard the necessity for this operation as an expression of complete failure. Such a failure will from time to time occur in every surgeon's hands, but I have never known a patient who was grateful for having had the operation carried out, nor can I recall a case in which subsequent endo-oesophageal treatment by radium, etc., was rendered easier or more satisfactory.

The proper use of diathermy, notwithstanding that it fails to cure, will in the great majority of cases maintain the patency of the lumen sufficiently for the patient to maintain fluid nourishment. However carried out, the shock produced by gastrostomy absorbs a large amount of the patient's available strength and vitality, a deep cloud of depression settles on him, and he ceases to care enough to live.

Points for Discussion and Inquiry

I now propose to indicate some points which seem to call for discussion and to require further research. I will enumerate them as follows:

1. *Diathermy.*—Is it possible to increase the safety and efficiency of the use of diathermy in the oesophagus by stimulation of a protective peri-cancerous infiltration or by any other means?

2. *Radium.*—Should mural or central methods of implantation be adopted—or a combination of both? What variation in the technique can be adopted, such as (*a*) dosage in total milligram hours, either by reducing the radium content per needle or increasing the length of exposure, or the reverse process; (*b*) screenage—increase of thickness of platinum or other metal?

3. *Fluorescein.*—What is the influence of fluorescein, if any? Are there any substances of a similar nature more effective?

4. *Radio-sensitiveness.*—What types of tumour are more radio-sensitive, and why? Can radio-sensitivity be increased? There can be no question that some tumours of the oesophagus appear to be very radio-sensitive and others to be entirely unaffected. Why is this?

Consideration of the methods of treatment of carcinoma of the oesophagus available at the present time inspires *no great hope for the immediate future*, but despondency is to be deprecated. Consider the triumphs of radium over cancer of the mouth, and how little we know yet of the variations in the technique required for different areas. When we glance back along the long corridor of time and review the successive triumphs of surgery we can but feel that this, the most difficult of all growths to eradicate, will yet yield to patience, hard work, and clear thinking. May it be so.

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POST-MORTEMS: THEIR OBJECT AND PERFORMANCE*

BY

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In this matter there is a natural bias on the general practitioner's part to resent the snatching from him of another portion of what has been pessimistically described as "all that is left to him" in an age of specialization. As a G.P. for over 20 years I sympathize with this attitude, and I feel somewhat of a "Judas" should I appear to be on the other side; and yet, perhaps just because of this instinctive general-practitioner prejudice which only reluctantly yielded to knowledge and experience, I hope my remarks may be regarded as adverse rather than hostile. Judging from the correspondence which appeared in the *British Medical Journal* in August, 1930, by "Rusticus" and others in later numbers, and from my own experience, the wish to do post-mortem examinations is often more a theoretical protest than a practical desire. I have been begged by practitioners not to give them this work. Others do them as "a messy job," not so much for the fee but as a protest at being deprived of the work and its fee. A few are eager for the w[illegible] all three groups invariably preface their exa[illegible] Vesti[illegible] every pregnant remark, namely, "It's se[illegible]gists naturally fe[illegible] is their work, and, in fact did a p.m."

[illegible] of work usually involves not con[illegible]cts tice and the frequent examination living and dead, this seems a logical examination of the The fact that a pathologist is *ipso fa*[illegible]thologist's scope competitive practitioner must, financially, than compensate the general practitioner for others in practhan compensate the general practitioner fo[illegible]es in the fee he loses by the pathologist taking this wo[illegible]ion.

* Read in opening a discussion in the Section of Pathology and Biochemistry at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

[illegible]se cases. Crile Associa-

But two even more vital points are involved. One is the loss of experience in pathological conditions to the general practitioner if post-mortems become a pathologist's perquisite, and the other is the similar educational loss to the pathologist, after specially training himself and simultaneously limiting his financial field, if post-mortems are scattered among various individuals.

The "acid test" of interest in knowledge is the gaining of experience without fee. The individual loss to each practitioner is a small price to pay for the removal of a potential rival, and he can better retain and improve his pathological knowledge by watching a trained man deal with morbid organs than by handling them himself—and here "Rusticus" agrees with me. Some practitioners are eager lookers-on at their patients' post-mortems. Others have received suggestions to be present with an acidity which left no doubt as to the chemical reaction of the test, nor of the "psychological content" of their interest. Personally I realize that there is a monetary loss of time involved in merely attending a post-mortem, and I could wish a further fee were payable for such attendance, or possibly (though not probably) the pathologist might agree to apportion part of his fee to the attender who might really prove a valuable attendant.

Complexes—Lay and Medical

As to the "complexes" of this subject. They are varied and numerous. First—and, let it not be forgotten, our master in the long run—is "the man in the street." He is composed of several groups. The "home is my castle" group, who object most strongly to the whole business; think it "a lot of darned doctors' nonsense and a fee-making dodge"; "won't have any of mine cut up"; and, to do them justice, won't give in till a Coroner's Order, a police-sergeant, and three men actually remove the body from the house. Then there is a large group, and one has nothing but respect and sympathy for them, who are genuinely horrified, and if it must be done beg "Can't our own doctor do it, in the scullery?" regardless of the fact that ten or fifteen summers may have passed away since their own doctor did a post-mortem, and that the average scullery is hardly a desirable place—as Dr. Webber agrees,

though Dr Gibson expresses a preference for the farm kitchen table (*British Medical Journal*, September 20th, 1930) Another, and increasing, group like it "cleared out of the house and done by someone who can do it properly" and lastly, as a sign of the times perhaps, I have had a juryman ask, "You've done a lot of post mortem examinations I suppose, doctor?"

Secondly, there are medical complexes These, as usual, surpass all others in complexity They are composed of self interest, high ethical considerations, etiquette, illogicalness, stupidity even, combined with intelligence, decent feeling, and practical common sense, the whole producing in my legal brethren's minds the kaleidoscopic effect of being hit on the back of the head by a charabanc

There is the general practitioner who loathes post mortems, referred to by "Urbanus" in the *British Medical Journal*, September 27th, 1930 There is the one, like Dr Gibson in his letter of September 20th, 1930, who sees "no reason why any G P should face a post mortem examination with any more apprehension" than any other part of his daily work There is the one who, deciding beforehand the cause of death, confirms—with what he considers an open mind, but with the brain of the cadaver unopened—his diagnosis There is the 'de luxe" operator He needs marble fittings, hot and cold water laid on, an assistant, a clerk, and chromium plated instruments, failing any of these he is apt to leave the body in such a state that the undertaker complains to the coroner, and only with difficulty is a public scandal avoided As his opposite is the good fellow, who does the best he can, and a very good best it is—often done in a reeking stable by lantern light, a tub of frozen water to wash the parts in, the local constable or the village idiot his only assistant—and yet everything is left decently and in order, and, astonishing as it is, the cause of death is found Then there is the embarrassing man who has the enormous moral courage to state on oath, after a long and conscientious examination, that he can find no cause of death, thereby compelling a bemused coroner to fall back on the blessed words, "death from natural causes," as described by 'Rusticus' and Dr Binns in the *British Medical Journal* September 13th, 1930 Again, there are the "whole time service hoggers" with the plan of a whole time pathologist for a large area, and virulently opposed to them is the "every practitioner his own pathologist" school

Lastly, there is the coroner complex This official has been described by Dr Jones on September 27th as "a survival from early middle ages," "obsolete," "a hopeless official," "the butt of the satirical", and the medical coroner who has ventured to be called to the Bar is dismissed as "amphibious" which has an unpleasantly reptilian and prehistoric sound This however, is only a kindly way of expressing the apparent detestation, contempt, and hostility with which this *bête noire* is regarded by the medical profession Personally, I and many other coroners have come to see that this hostility is more apparent than real, but I do in all seriousness suggest that the medical profession for its part, should realize that coroners are more often than not their best friends, and that a post mortem report or an inquest often vindicates the doctor in public esteem The child like shyness of publicity, so inherent a part of the practitioner's make up, has often a wrong construction put on it by the public Since mixing more with laymen I have realized that doctors are often over touchy about trifles, and not quick enough to come out into the open to safeguard their vital interests In my opinion the best 'resolution' of this "complex" in general is for more doctors to apply and qualify for coronerships as I am convinced that its true cause is the deep professional resentment at a layman "butting in" on medical matters and for the most part the coroner's office is a medical affair and tending to be more and more so

STATISTICS

I do not know the number of post mortems performed (with the consent of relatives) in private practice, in hospitals, and in mental hospitals, but it must be large, as almost all mental hospitals invariably hold post mortems, and these deaths alone amount to 12,564 a year for England and Wales These examinations are not official ones, but purely of a private medical character, and they are done for the most part by skilled pathologists attached to institutions

It must be understood that the coroner can only direct a post mortem in suspected cases of sudden, violent, or unnatural death There must be reasonable ground to suspect, he cannot hold either post mortem or inquest merely at his will The total number of deaths reported to the coroners on these grounds in 1929 was 67,259, resulting in 32,612 inquests, for which 11,468 post mortems were held, and 34 647 inquiries resulting in 7,906 post-mortems giving a total of 19,374 post mortems a year So, roughly, a post mortem was held in less than every third inquest Of the inquiries, 12,564 were into the deaths of mental patients upon whom private post mortems had been performed, and there were 280 official post mortems This leaves some 22,083 inquiries, with 7,906 post mortems, again approximately one post mortem in less than every third inquiry These figures are from the *Criminal Statistics* for 1929, since then the accident fatality rate has increased so the figure chiefly relevant to this discussion is some 20,000 post mortems directed by coroners

THE CORONER'S DUTIES

In this connexion the question at once arises "Whom may the coroner direct?" The Act of 1926 leaves untouched his power under the Act of 1887 to *summon* "any legally qualified medical practitioner who attended the deceased at his death or during his last illness' or, if not so attended, 'any legally qualified medical practitioner who is at the time in actual practice in or near the place where the death happened' But the newer Act in Section 21 adds, "He may further *request* any other legally qualified medical practitioner to make a post mortem examination and report"—"other" here means one not in actual practice in or near the place Now the whole of this Section relates to sudden deaths where a post mortem may prove an inquest unnecessary The compellability depends on practice in the place, but to neither person can the coroner pay more than the statutory fee of two or three guineas (which is not by the way, one and a half guineas, as quoted by Dr Wilks in his letter published in the *British Medical Journal* of September 13th, 1930) Section 22 of the 1926 Act deals with cases after an inquest has been decided on Here again the directing can only apply to those practising in the place, but specially qualified persons (medical or otherwise) may be requested to make a "special examination' and these persons can be paid a special fee, but sanction to incur the same must be first authorized by the county council These sections affect a pathologist in the following way If deemed to be in actual practice in the place he is a compellable witness at the statutory fees If deemed not to be in actual practice he is not compellable but can only be paid the statutory fee in cases of post mortems to avoid inquests If however, he is asked to go elsewhere he can refuse or if he accepts he can be paid a special fee under Section 22 This Section therefore has a very direct bearing on the feasibility of employing a pathologist for every post mortem in a county His fee would have to be agreed

on every time—unless he accepted the statutory fees—and in any case he could always refuse to act.

The next query is, "When is a post-mortem to be held?" and the answer is, "When the coroner may direct." He is not bound to call in any medical opinion, and, indeed, often the direct evidence of facts is better than medical opinion, and the statistics plainly show that coroners thought post-mortems necessary in only approximately a third of all deaths reported to them. This should pacify those who, like Dr. Gibson in his letter of September 20th, complain of unneeded post-mortems. In the remaining two-thirds the evidence of medical witnesses, medical reports, and self-evident facts satisfied the coroner—that is, satisfied him in a legal sense as to how the deceased came by his death. But to be satisfied as to the actual medical cause of death, confirmed by post-mortem examination—and this alone can make certain of any diagnosis—would have necessitated 21,114 more examinations in inquest cases, at a cost of £66,504, and 14,177 more examinations in injury cases, at a cost of £29,771, thereby adding a further cost of £96,280 to the present total expense of £122,525. In my area alone the cost would have been £750, exactly doubling my present total annual expenses. This gives a complete answer to those enthusiasts who consider that the coroner's office should be a pathological "annexe" for the use of the profession instead of restricting itself as to the manner how the death occurred and whether or not it was criminal in character. It may also explain the hesitancy of some appointing bodies to make medical coroners—once appointed their discretion in disbursing lawful expenses is beyond control; the legal coroner may well appear safer to those who pay the bill!

With the public, for the most part, dreading post-mortems; with the accommodation often a disgrace to the vaunted humanity of the twentieth century; with the doctrine that every practitioner was the equal of his fellows, and all fully capable of doing post-mortems, thrust on me by some; and that no one except a trained pathologist was of the slightest use urged on me by others (not, by the way, by the pathologists themselves!); told by some that finding the precise cause of death was the scientific way, and by others that post-mortems were of little use and very costly, that I mustn't pander to the profession, and that, on the other hand, it was a mistake to alienate my professional brethren—is it surprising that I did a very foolish thing when first appointed coroner? I asked for advice from an authoritative medical body. My only justification for this is that I didn't accept it when it arrived!

It may possibly interest the meeting if, without appearing egotistical, I mention the attitude I adopted in regard to post-mortems in this area. I found a district of some 1,000 square miles full of strange doctors, and a legal deputy coroner who, quite properly, was accepting the legal fiction (so aptly expressed by "Rusticus" in the *British Medical Journal* of September 13th) that every practitioner was of equal skill in the eyes of the law. To some extent modifying this doctrine was an idea that post-mortem fees were the perquisite of the police surgeons, and occasionally a vague person known as a pathologist was engaged. With so many conflicting ideas it appeared to me that two essentials had escaped attention—the public interest and the efficiency of the work.

It is in the public interest that the distressing finale of a post-mortem should be performed quickly and under as decent circumstances as possible. The disgusting circumstances of the police hawking round a body, and then at length finding a resting place in an old barn or, in one instance, a public bakery, will only cease when public authorities, instead of shifting the blame from shoulder to shoulder, get together and do something to make England a land fit, at least, to die in. Meanwhile the risk of such scandals has been lessened by the public-spirited action of the mental hospitals' committees in allowing me to remove to their mortuaries bodies for post-mortem examination by their own pathologists. The public is thereby served and the efficiency of the work done gives the county value for money paid out. This system might well be adopted by local hospitals and union infirmaries, apart from their own dead. There is no need for the provision of costly mortuaries anywhere within 5 miles of such a hospital; all that is required is an improvement of existing facilities, which in part would be covered as regards cost by the sums payable by the coroner for such accommodation.

Beyond the reach of hospital centres, there remain villages, and though these lack anything that can be described as suitable mortuary accommodation, they do possess a police surgeon. Now though one can never concur in the idea that post-mortem fees are part of a police surgeon's emoluments, yet the employment of these officers for this work has points in its favour. He is the doctor most likely to see first those cases which will be reportable to the coroner—such as suicides, wounding cases, road fatalities, sudden deaths—and if he likes this work he does appear a suitable alternative to the pathologist. Virtually, this is the "modified specialization" advocated by Dr. Collier on September 27th. Further, by giving the rural police surgeon the four or five cases occurring in his area annually, his experience is kept up, and it is more in the public interest that one man should get four or five fees as the price of his efficiency, than that four or five practitioners should get one post-mortem every two or three years.

Then there are the scattered hamlets, with only a shed or cowhouse by way of shelter. These present considerable difficulties. The charge for removal of a body to a more suitable place is a heavy one and even the doctor's mileage fee is an item. Certain it is that his is the only skill available, and, as I have said, his results and work are a feather in our profession's cap; but here one finds after a while that by force of geographical circumstances he does all the post-mortems "round about here" and so he is virtually a specialist.

Lastly, there are the big towns. Here there are most things that the soul, or what corresponds to it, of a pathologist can desire—light, warmth, hot water, proper tables, instruments, and proper and decent means of conveyance to and from the mortuary. Here the only question is, "Who is the best man for the job?" In this connexion I have recently received from the British College of Nurses a resolution urging the employment of female attendants, preferably nurses, for the handling of the female dead. This principle is a sound one, and would, I am sure, do much to assuage the feelings of the relatives; some day I trust it may mature, but just now the need for mortuary accommodation appears the more pressing matter.

The Purpose of a Necropsy

For what purpose is a post-mortem examination held? The obvious reply would seem to be, to ascertain the cause of death. This is, however, only the medical point of view, and it is just because this function of a post-mortem bulks so large on the practitioner's horizon that his observations often fail to be of substantial use, and until he visualizes a post-mortem as a public service, rather than a satisfaction of medical curiosity, this will continue.

Of the 20,000 cases under consideration, I do not suppose the coroners were the least interested in the cause of death, except in so far as it threw light on the question

of "How the deceased came by his death." Until it is realized that the medical interest lies in the pathological cause of death, whereas the legal interest lies in the manner how death came about, there will be conflict and misunderstanding between doctors and coroners. The cause and the "manner how" are of course correlated, but they are not one and the same thing. The finding, for example, of an inflamed intestine as a possible cause does not eliminate other possible causes, and moreover, without further critical examination, no light is shed on the one and only question interesting the coroner, namely, was the condition due to disease, external injury, or suicidal poisoning? Similarly, disease of the heart may suggest a cause of death. But without examination of the brain or kidney how is a granular kidney or cerebral haemorrhage to be excluded as a cause? And if the latter were a cause, the manner of its origin, whether by disease, accident, or assault, would at once arise. Yet frequently the brain is never examined, if a possible prior cause is found.

Again, minor points, not in themselves a cause of death, may indicate much as to the "manner how"—for instance, atrophy of one eye may be of enormous consequence in a motor fatality inquest; a perforated ear-drum or an otitis may throw light on many a suicide case. Signs of muscular atrophy or arterio-sclerosis may convert an apparent suicide into an obviously accidental death and make a vast difference financially to the relatives. The presence of heart disease in one found dead, with injuries from falling, at the foot of a haystack will raise intricate questions as to whether he fell dead of heart disease, and so died from natural causes, or whether his injuries caused or accelerated his death, making it accidental. Simple points like the wearing of dentures having a missing toe, whether hair is dyed or not, may be the only evidence of identification or age. Then there are the questions of "live-birth" and "stillborn," the cause of death in newborn infants and the innumerable points in favour of wounds being homicidal, suicidal, or accidental. All or any of these cases may involve attendance at the higher courts where the cleverest brains will be pitted against the post-mortem operator. I mention a few of these cases within my own experience to stress the legal as well as the medical aspect of post-mortems and to encourage medical witnesses to suffer "the fool of a coroner," if not gladly at least with patience, bearing in mind that the seemingly foolish questions put to them are with a view to ascertaining not only the cause of death but the truth, the whole truth, and nothing but the truth.

WHO SHOULD MAKE THE EXAMINATION?

We are now, I trust, in a position to consider who is best fitted to undertake a post-mortem examination.

First, let it be understood that every county and borough has its peculiar difficulties and that the ideal cannot, in this working world, always be attained. My own scheme of pathologists where possible, police surgeons as an alternative, and odd practitioners in odd corners, has objections. In the first place the mileage fee of the pathologist, even if he consents to go out of his area, adds considerably to the expense, and in most cases he will demand the special fee under schedule in place of the statutory one. In the second place local practitioners are sometimes bitter and resentful of the local police surgeon doing post-mortems on their patients, though in parenthesis I may say that I consider, legally, it is not desirable for anyone to do a post-mortem on his own dead patient —not even a police surgeon—because an unbiased outside doctor's opinion will carry more weight with the coroner's jury and in any subsequent court proceedings. In the third place, the odd doctor doing his odd post-mortem is put to an infinity of inconvenience, trouble, and disagreeableness out of all proportion to his occasional fee.

Personally I hope in time to concentrate more and more at hospitals and mental hospitals, but I quite frankly admit that if opportunity arose to employ one pathologist for all cases I should welcome it. Unless post-mortems were increased on medical grounds only—that is, by some 200 a year—a whole-time "jurisconsult" could not be kept employed. This was one of the suggestions made by Dr. Mahomed in the *British Medical Journal* of September 13th, 1930. But the present total fees for these examinations would constitute a fair additional emolument, for about some two cases a week, for a part-time pathologist.

I submit to the meeting that this work is peculiarly that for a skilled and trained pathologist, on the following grounds:

(1) That the legal fiction of the equality of practitioners applies only to legal status and their *potential* abilities. Their particular superiority in any branch depends on opportunity and experience, and only implies a particular and not a general superiority. I maintain that a trained pathologist is superior to either a surgical or medical consultant or to a general practitioner for this particular work.

(2) That the legal aspect and the intricate points involving the Workmen's Compensation Act and general insurance are more fully grasped by constant practice, and, in the event of High Court actions, pathologists are more likely to be regarded as "experts" and their opinions acceptable as "evidence"; for, to elevate his *opinion* into *evidence*, the witness must show special skill and experience, as remarked by Dr. Jones in the *British Medical Journal* of September 27th, 1930, and as "experts" they will stand up better to cross-examination, as stressed by Dr. Mahomed on September 13th.

(3) That the extended powers under the Coroners Act of 1926 to hold post-mortem—without subsequent inquest—throw a great responsibility on the coroner; he relies entirely on the post-mortem report, which is not evidence on oath, and which it is essential therefore shall be accurate, informing and absolutely reliable in every detail. In this connexion I should like to refer to Coroner Ingleby Oddie's appreciation of the services of the late Dr. Weir, pathologist to the National Hospital for Diseases of the Heart, in the *British Medical Journal* of May 16th, 1931.

(4) That the handling and the correct interpretation of morbid changes and the actual performance of the post-mortem itself can only be acquired by training and retained by constant practice, and there are insufficient cases to give this opportunity to all.

(5) That the transference of this branch of medicine to pathologists encourages pathological research and is a just and equitable return for these specialists forgoing the financial rewards of the practice of surgery or medicine.

(6) That by this specialism the efficiency of the work done is increased and the public better served thereby.

If I have seemed to talk too much of the general problems of this subject it was only done that you might, if my experience could help you, see it from as many sides as possible and so come to a reasoned judgement. Some of you may heartily disagree with me, but I trust that none will doubt the sincerity of my convictions, which arise from a single desire—that the profession shall be an even more perfect instrument for the public good.

PUBLIC HEALTH PROBLEMS ATTENDANT ON AIR TRAVEL*

BY

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No exhaustive search of epidemiological history is necessary to find arresting evidence of the relationship between travel and the spread of disease The propagation of plague along the trade routes of the world in the Middle Ages, the importation of syphilis to Europe from Hispaniola in 1493, and the world-wide transmission of influenza in 1918, are but three of innumerable examples The paths of infection from country to country coincide faithfully with the routes of human travel and the rate of spread is determined by the speed of human transport. The advent of air travel is therefore of obvious significance.

The potentialities in respect of generalized aerial navigation to day find universal acceptance. They bring sweeping social changes, no less in importance than the annihilation of distance and the lowering of geographical barriers Moreover they accord to each centre of population the possibilities of a port The public health problems associated with these developments are receiving careful consideration by the Office International d'Hygiène Publique, in consultation with the International Air Navigation Commission, and it is likely that a convention for the sanitary control of aircraft will be available ere long to contracting nations Meanwhile little has been contributed to the medical literature on a subject which is of intriguing interest and of undoubted moment

Novel Contingencies

The contingencies introduced by aerial navigation and relevant to our theme are chiefly as follows

1 Journeys from distant infected countries are accomplished within the incubation periods of the major infectious diseases

2 Illicit landing or forced landing of aircraft may result in importation of infection at places other than authorized air ports equipped to deal with it

3 Rapidity of travel may be responsible for the arrival of infected live mosquitos (say from yellow fever zones) in countries ordinarily unfrequented by them

4 Aircraft, while over land, may let fall refuse matter capable of conveying infection Peculiar difficulties also obtain in the matter of sanitary provision on board

Air Travel and the Major Infections

Incubation Periods and Rapidity of Transport

In the light of propagation by air travel, the main diseases to be considered are plague, cholera, yellow fever, small pox, and typhus For this purpose, the incubation periods are taken to be respectively six, five, six, fourteen, and twelve days The accompanying table illustrates the significance (as far as concerns this country) of these figures in connexion with the first contingency mentioned above

It is clear that in the case of apparently healthy passengers arriving in this country by air from local areas infected by one or more of the diseases named, surveillance will be necessary until expiration of the incubation period or periods This surveillance will presumably devolve on the health department of the area constituting the ultimate destination Detention on arrival, pending expiry of incubation time, is clearly unwarrantable, for such a course might well nullify the very expedition which prompted air as against sea transport There are certain instances where even surveillance can be dispensed with, as for example, persons (arriving within the incubation time from a local area infected with small-pox) who possess immunity from the disease as a result of (*a*) a previous attack of small-pox or (*b*) evidence of successful vaccination performed not more than (say) four years and not less than (say) twelve days previously. In the event of actual occurrence of infectious disease during the air voyage, sanitary precautions on arrival will be similar to those imposed in the case of shipping

Major Infection	Incubation Period	Infected Countries Trafficking with Great Britain	Time of Journey to England by Sea	Corresponding Time by Air
Plague	6 days	India	21 days	6 days
		Malaya	26 ,,	8
		Iraq	20 ,,	5
		Egypt	10 ,,	3
		West Africa	12 ,,	3
		East Africa	20 ,,	6
		South America	17 ,,	4
Cholera	5 days	India	See above	See above
		Malaya	,, ,,	,,
Yellow Fever	6 days	West Africa	See above	See above
		South America	,, ,,	,,
Small pox	14 days	India Malaya Iraq W and E Africa South America South Africa	See above ,, ,, ,, 20 days	See above ,, 7 day
Typhus	12 days	India Iraq	See above	See above
		Russia, Poland etc	3 days	2 da

It is necessary of course that all air passengers should be free from manifest infection on embarkation and that aircraft, prior to departure from infected areas, should undergo cleansing, deratization (against plague contingencies), and disinsectization (against typhus and yellow fever)

Yellow Fever

According to British legislation affecting port sanitation, yellow fever is placed with plague and cholera in the category of important health hazards Although yellow fever assumes first importance, in connexion with inter travel between certain countries over seas, it is difficult, even with the advent of aerial navigation, to regard the importation and spread of the disease in this country as a serious danger The position however justifies full examination

Yellow fever infection cannot pass from man to man save through the intermediate agency of a specific type of mosquito, commonly regarded in the past as the *Stegomyia fasciata* or *Stegomyia calopus* but now named the *Aëdes aegypti* (the term adopted in America) or the *Aedes argenteus* (the term used by the British Museum) In order to enable spread of yellow fever in Britain, therefore, there must be a case or cases of the disease together with available mosquitos of the type above mentioned or the presence of *Aedes argenteus* containing the yellow fever virus ingested elsewhere In regard to the yellow fever hazard in this country, therefore, the relevant questions are (*a*) Can *Aedes argenteus* be imported here alive and continue to live thereafter in our climate? (*b*) Can the yellow fever virus exist in this country? The adventitious importation of the *Aedes* is readily conceivable—above all given rapid transportation by air It is further conceivable that infected mosquitos thus introduced, provided that hot weather prevailed here at the time, might live sufficiently long to infect persons with yellow fever It is clear, however, that the *Aedes* could not ordinarily exist here for any appreciable length of time and that therefore it could not give rise to any serious outbreak of yellow fever in our midst In this connexion, Professor J G Thomson of the London School of Hygiene and Tropical Medi-

* Read in opening a discussion in the Section of Public Health including Tuberculosis and Occupational Diseases) at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

cine, informs me that "*Aedes aegypti* (*Aedes argenteus*) cannot establish itself permanently and breed further north than latitude 40° (that is, about the south of Spain) This mosquito imported accidentally into England would perish with the onset of the first cold spell of weather" When the fact is added that the yellow fever virus itself cannot ordinarily tolerate our climate, it is evident that the epidemiological dangers in Britain in respect of yellow fever are not great Although local contingency is thus remote in this connexion, nevertheless it is not without precedent, as for example in 1865, when a ship (the *Hecla*) from Cuba arrived in Swansea with yellow fever aboard A considerable number of further cases of the disease then occurred after arrival among the crew and among men on shore who were engaged in unloading the ship, and several deaths ensued Doubtless this incident is explained by the unusual fact that the *Aedes* had arrived in large numbers on board ship and had propagated the infection during the short period of their subsequent existence Presumably the length of time of a sea voyage from infected areas ordinarily secures the death of mosquitos accidentally taken on board Rapid transport by air is not so likely to ensure this, and special precautions will need to be taken at air ports in yellow fever zones to make certain that departing aircraft are mosquito free

Other Major Infections

The dangers of propagation by air travel of plague, cholera, small pox, and typhus are so patent as not to warrant lengthy treatment here The health problems entailed are similar to those connected with sea transport, save for the special considerations already dealt with in previous sections of this paper The rat problem in plague and the vermin problem in typhus are clearly important Rat harbourage in aeroplanes is very limited, although instances are by no means unknown of rats being located in them The holds of airships present greater dangers in this connexion The occurrence of vermin on passengers by air or in their personal effects is very unlikely, for the cost of long distance air transport will, for many years to come, preclude participation by the transmigrant and immigrant classes

The Problem of Forced and Illicit Landings

Sea going vessels of necessity can enter only those ports equipped by nature or by engineering skill to receive them Aircraft are not thus limited by physical circumstances and may conceivably therefore land at unassigned places The danger of importation of infection in this way is not entirely theoretical The problem is common to Customs and sanitary authorities, and its recognition is evident from the fact that the law in this country prescribes authorized places of embarkation and disembarkation, and ordinarily requires their exclusive use In the case of forced landings of aircraft from foreign countries, doubtless it will be made incumbent on the pilot or "master" to notify the nearest Customs and sanitary air port Illicit landings will be suppressed by due application of the law, although this will be no easy matter if, and when, privately owned aircraft come into common use for international travel

Sanitary Problems on Board Aircraft

The voidance of refuse from aircraft presents a peculiar sanitary problem The sea constitutes a ready means of disposal in respect of waste and sewage from shipping Sewage matter from trains is voided in small amount on to the tracks, but the latter are used only by rail traffic The release of refuse from aircraft while crossing land may possibly produce outbreaks of infectious disease—for example, if excreta falls into water courses The danger is more than theoretical in the case of aircraft from a country such as India with the risk of typhoid or cholera infection on board It is clear that a stringent rule, of international application, will be necessary to prohibit the voidance of refuse from aircraft while over land

The ill fated R101 possessed eight sanitary conveniences fitted with water flushing systems The sewage matter was flushed into a retention tank below, the intention being to empty the tank only while passing over the sea It is clearly necessary aboard an airship to reduce weight to a prescribed minimum, thus it is difficult to carry an adequate supply of water solely for flushing purposes The possibility has been considered of collecting waste lavage water and utilizing it for closet flushing On the whole it would appear that even a limited water carriage system is impracticable on aircraft and that therefore a conservancy system of disposal is usually necessary on long distance machines

The sanitary accommodation on the R100 consists of pails in which earth or a disinfectant is used These can be voided while passing over the sea or at the end of a voyage The Graf Zeppelin is fitted with a type of valve closet Into the basin the user places a conical receptacle of stout paper, after use the valve is opened and paper cone and contents are dropped into a retention tank below It is evident that all these methods constitute a forced reversion to crude sanitation which is not free from health risks

The heating and ventilation of long distance passenger aeroplanes and of airships have peculiar difficulties Aeroplanes are usually heated from the engine exhaust, and a careful system of jacketing is necessary to prevent any possibility of escape into the aeroplane of injurious fumes In airships, heat can be derived either directly or indirectly from the hot water of the motor engine radiators Heating by electricity was tried in the R100, but it is likely that the former method will prove the more satisfactory The problems attendant upon ventilation of aircraft are occasioned by the various air currents and eddies encountered during flight These matters are receiving the attention of technical experts, and solutions are being evolved

Air Port Sanitary Services

In course of time many civil aerodromes will come to be established in various parts of the country and certain progressive municipalities have already taken steps in this direction For the most part, these aerodromes will be used only in connexion with intra national airways, a selected few will be recognized as Customs and sanitary airports for purposes of international aerial navigation To the latter medical and sanitary personnel will be attached for duties similar to those performed by the staffs of existing seaport sanitary organizations Although there is something to be said for an air port sanitary service controlled centrally, as the Customs waterguard, the duties entailed will devolve more naturally on the sanitary authorities of the areas in which the aerodromes are situated It is not difficult to envisage the time when sanitary air ports will compare in importance, from the public health viewpoint, with the seaports, but that time is not yet

Plans were shown outlining the systems of water supply and sanitary provision on board the airships R100 and the late R101 For access to these plans the writer is indebted to the Director of Airship Development, Royal Airship Works, Cardington

"PROMINENT HEEL"

BY

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A condition which appears to have escaped all mention in books is one in which pain is complained of over the back of the heel on the outer side.

A lady, aged 29, states that she has been slightly troubled with painful lumps on the back of her heels for years, and that lately they have got much worse and much larger, so that now it is almost impossible for her to wear any shoes without considerable pain.

On examination a localized swelling is observed on the outer side of the back of the os calcis, about half-way down, opposite the lowest limit of the insertion of the tendo Achillis. This is tender on pressure, is very hard, and gives the impression of being due to a bony outgrowth. One is strengthened in this belief by the fact that there does not appear to be much thickening of the skin, such as one finds in a callosity.

In a lateral *x*-ray photograph, however, no bony prominence is seen, and one is led to think that the lump must be due to a thickening of the fibrous tissue covering the back of the os calcis, perhaps, indeed, to a thickening of the periosteum. This is obviously due to irritation caused by the back of the shoe not fitting the heel properly, and the shoemaker receives the blame for this. Several cases which the writer has seen lately suggest that the shape of the os calcis may be the cause, and that the shoemaker is not alone at fault.

In *Cunningham's Anatomy* the posterior extremity of the os calcis is described as "of oval form and rounded surface," and several drawings are given which bear this out. On examining the three specimens in my possession I found that this description applied only to one of them; when the other two were placed in the position they occupy in the foot and looked at from above, they both projected markedly backwards on the outer side (Fig. 1), so that the description "oval or rounded" does not apply. I went then to the College of Surgeons Museum, and found that out of forty bones no fewer than fifteen projected backwards on the outer side in exactly the same manner. We therefore arrive at the fact that seventeen out of forty-three os calces examined, or 39 per cent., have this shape, and may conclude that it is common and of almost normal occurrence. From the nature of the projection it cannot be seen in the lateral radiogram, only from above or below. I believe that when we meet with the condition of painful lump on the back of the heel we are dealing with a case where this prominence exists to an extra degree. Shoes are made with symmetrical backs, and where this prominence is marked there is likely to be undue pressure and eventually a painful lump (Fig. 1). That it does not happen more often is remarkable, and must be attributed to the adaptability of the tissues.

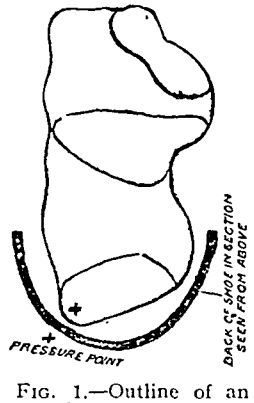


FIG. 1.—Outline of an os calcis (left) from above, showing projection backwards on outer side and its relationship to back of shoe.

DIAGNOSIS

If it be remembered that the painful lump is situated over the outer side of the back of the os calcis, about half-way down, there can be no difficulty. The more it feels and looks like a bony lump the more the diagnosis is confirmed.

Other conditions for which it might be mistaken are: (1) inflammation of the bursa beneath the tendo Achillis, or of the skin over the latter, both of which are in the middle line; and (2) apophysitis of the os calcis, a diffuse swelling involving the whole of the back of the heel and occurring only in adolescence.

TREATMENT

1. *Palliative.*—With the avoidance of all pressure for one or two months the lump will disappear. This necessitates the wearing of shoes with no backs, or with the backs cut out opposite the lump. I advise my patients to wear "mules," keeping them from slipping off, if necessary, with elastic bands. A moderately high heel is theoretically of advantage, as it reduces any strain there may be around the insertion of the tendo Achillis. Recently a mule with a loop to *encircle the tendon* has been put on the market, which is excellent; and Lilley and Skinner have produced a walking shoe on the same principle (Fig. 2). Resolution may be hastened by daily massage and by the application of a lanoline compress at night. Wearing boots instead of shoes, in the belief that it is the slipping of the shoe alone which causes the trouble, will not be effective. High heels are not the cause either; the worst case met with was in a girl, aged 15, who wore flat-heeled brogue shoes.

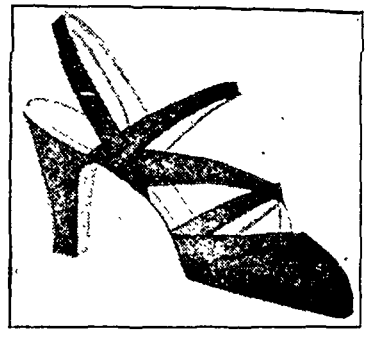


FIG. 2.—A walking shoe which does not press on the back of the os calcis.

2. *Preventive.*—If care is not taken the lump will return, for shoes are made on the assumption that the backs of people's heels are of "oval and rounded surface." After perfectly fitting shoes are obtained, preferably by being made to measure, the backs of them opposite the site of the lumps should be beaten out slightly by the shoemaker.

3. *Operative.*—Removal of the prominence by open operation is entirely uncalled for.

NOMENCLATURE

As there is already a condition known as "painful heel" (pain and tenderness in the centre of the heel underneath, involving the posterior attachment of the plantar fascia), it is suggested that the present trouble may be named "prominent heel."

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

ZOSTER, HICCUP, AND VARICELLA

Modern work on zoster and varicella has been extensive, and seems to have demonstrated on both clinical and experimental grounds the existence of a definite etiological relationship. Cases where rashes of zoster and varicella occur simultaneously in the same patient are not, however, very common. Bokay[1] recorded twenty-nine such cases, while Russell Brain[2] has recently commented on their concurrence. Paton,[3] these authors, and others have also adduced strong evidence in favour of a close relationship between encephalitis lethargica, zoster, and varicella. In

[1] Bokay, J.: *Jahrb. f. Kinderheilk.*, 1928, cxix, 127.
[2] Brain, W. Russell: *Lancet*, 1930, ii, 70; *British Medical Journal*, 1931, i, 81.
[3] Paton, L.: *Brit. Journ. Ophthal.*, 1926, June, 305.

view of this relationship, the incidence of a well-known symptom of encephalitis lethargica—hiccup—is of particular interest in a case in which zoster and varicella occurred simultaneously.

J. C., aged 70, was admitted to St. Mary's Hospital on January 17th, 1931, complaining of persistent hiccup and a rash on his left leg. He gave a history of indefinite malaise and anorexia beginning on December 24th, 1930, followed three days later by a severe attack of hiccup, which persisted for the next three weeks in spite of energetic treatment by his doctor, including administration of half-grain doses of morphine. On January 1st, a dull burning pain began in the left knee and radiated to the groin. Three days later a rash developed in that area, accompanied by an inguinal adenitis. From that day until January 17th, when he was admitted to St. Mary's, the rash and pain had increased, while the persistent hiccup had produced considerable distress.

He was, on admission to hospital, a heavily built, exhausted patient, who hiccuped approximately every four seconds. Scattered irregularly over his abdomen, chest, back, arms, and legs was a vesicular rash, in various stages of development and in every way typical of varicella, and which the patient had entirely failed to notice. In an area corresponding to the peripheral distribution of the left second and third lumbar roots was a most profuse zoster rash, and with it a similarly limited area of hyperaesthesia. The left knee-jerk was absent. Temperature, pulse, and respiration were normal, and remained so during his stay in hospital; no other abnormal signs or symptoms were detected.

Examination of the cerebro-spinal fluid showed: fluid clear and colourless; pressure normal; cells, 14 per c.mm., mainly lymphocytes; globulin increased; Lange curve 0012211000; glucose, 0.07 per cent.; chlorides, 730 mg. per 100 c.cm.; no bacteria seen; culture negative. Injections, intracerebrally, intrathecally, and intradermally, into a monkey and rabbit were kindly carried out by the Lister Institute, but gave negative results for an ultra-microscopic virus. The Wassermann reaction was negative. In view of the maturity of the zoster and varicella rashes, no attempt was made to look for an ultra-microscopic virus in the vesicles. White blood cells were 9,000 per c.mm., and the differential count was normal.

The patient was given 1 grain of nembutol, which checked the hiccup for eleven hours. The dose was then repeated and no further hiccuping occurred. The zoster and varicella eruptions faded, and after a fortnight had practically disappeared, leaving little scarring. The left knee-jerk returned, but remained diminished relative to the other side, while the hyperaesthesia became replaced in about a fortnight by a diminution of sensation to light touch and pinprick of patchy distribution in the area concerned. The burning sensation in this zoster area persisted, and on January 30th, a month after the onset of the disease, occurred the first of a series of typical and intense attacks of post-herpetic neuralgia. *X*-ray therapy was given by Dr. H. C. Gage, and consisted of a series of nine exposures of the skin area and lumbar roots involved. Dosage: at first, four-fifths B, later one-half B, Sabouraud pastille units, on each occasion with the intervention of a 3.5 mm. aluminium screen. Under this treatment the attacks of neuralgia diminished in frequency and intensity, and finally ceased on February 9th. The patient was discharged cured on February 28th, and has attended the out-patient department on two occasions since to report that he is still free from symptoms.

The case is important as illustrating the relationship between zoster, varicella, and encephalitis on the one hand, and hiccup and encephalitis on the other; for, while it is possible to account for the symptoms manifested by the assumption of a coincidence—that of simultaneous infections—it seems a simpler and more probable view that the whole chain of events was related by an infection due to one virus.

I am indebted to the Lister Institute for their interest and care in investigating the cerebro-spinal fluid, and particularly to Professor F. Langmead for his help and his permission to publish the case.

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Reviews

A SYSTEM OF BACTERIOLOGY

Of the two remaining volumes of this *System*,[1] which is being produced by the Medical Research Council, volume viii has now been published. In the main it is devoted to the pathogenic fungi, fungi imperfecti, and the spirochaetes. Chapter I deals with the fungi, the major portion having been written by J. Ramsbottom, with a section on the ringworms by Arthur Whitfield. This account suffers from condensation, carried so far as to render it almost useless to the medical reader. The author, Dr. Ramsbottom, is not altogether to blame, for he preludes his section with the remark that "the space allotted to mycology is so restricted that it is impossible to cover the field even in summary." Yet he has attempted to do so, with the result that it is almost unintelligible to those without a good grounding in mycology. We should have thought that, in view of the limited space, it would have been better to attempt to delineate some of the pathological pictures which fungi can produce in man, mentioning the more common pathogenic species, rather than aim at an exhaustive survey. The section of this chapter on ringworms is valuable. The clinical appearances and the pathology of these conditions are clearly described; in fact, the whole story is presented in a more orderly manner than is usual with this subject. The next chapter contains an account of the actinomyces, and opens with a clear account of the aerobic forms, by R. St. J. Brooks.

The anaerobic actinomyces, of most importance to bacteriologists in this country, are described by L. Colebrook, and he has given us an excellent account, which concludes with a most useful summary of the principal lines along which further research is required. The chapter ends with a short note on actinobacillosis by F. Griffith. Following this is a useful chapter on the pathogenic leptothricae by Ivy Mackenzie, and then we pass on to the spirochaetes, which take up the major portion of the volume. Chapter IV, by E. Hindle, is concerned with a general survey of spirochaetes. The author adopts Dobell's classification, no doubt with good reason, and one gathers on page 105 that leptospira is discarded as a division of the pathogenic spirochaetes. Yet he continues to use the term, and on page 296 refers to the subgenus leptospira; this is rather confusing. Chapter VI, on the blood spirochaetes, is particularly good, and contains much of interest, such as the changes in immunological type which occur in relapse and Nicolle's views on the origin of the different human strains of relapsing fever.

Some hundred pages are allocated to syphilis, and coming from an authority like Colonel L. W. Harrison the chapter on this disease is naturally a good one. From an article such as this one can get a good idea of the life-history of the disease—a difficulty which the student not infrequently experiences—and the questions of cultivation, natural and acquired resistance, and serological reactions, are dealt with in a clear and well-balanced manner. There is a short note on *S. cuniculi* by E. Hindle. Chapter VIII contains a short account of rat-bite fever by A. Robertson, and in the next chapter E. Hindle discusses the leptospiroses. There is obviously still a great deal to be done before the interrelationship of the various pathogenic leptospirae is cleared up. Even in Weil's disease the leptospirae exhibit a variety of serological types, a point of importance in relation to the serological diagnosis of this condition, and one which the

[1] *A System of Bacteriology in Relation to Medicine.* Medical Research Council. Vol. viii. London: H.M. Stationery Office. 1931. (Pp. 390; illustrated. Single volumes, £1 1s. net; set of nine volumes, £8 8s. net.)

author omits to mention. Chapter XI contains a useful account, by J. and R. Cruickshank, on the normal flora of man. One could not hope for an exhaustive survey in so small a compass, but the absence of any mention of the filter-passing anaerobic bacteria commonly present in the upper respiratory passages is a surprising omission. This chapter is, however, fairly comprehensive, and should prove of considerable service to workers in that field of bacteriology. The two remaining chapters, on yaws and swine erysipelas, by Lieut.-Colonel A. Dawson and J. T. Edwards respectively, are both clear and concise.

" PROBLEM CHILDREN "

The Pattern of Life[2] is the name given to the record of a series of cases of problem children examined by Dr. Alfred Adler at the New School of Social Research in New York in 1929. The plan followed is similar to that which he demonstrated during his recent visit to London (*British Medical Journal*, January 24th, 1931, p. 139). The case notes are prepared by the medical man or teacher who has charge of the case according to a scheme originally worked out for the child guidance clinics which he established in Vienna. The notes are read out, and Dr. Adler comments on each paragraph before he sees the child at all. In most instances he is able to construct a picture of the child's personality, and displays extraordinary insight into the child's mind and sympathy with all the actors in that particular human drama. A brief discussion of the whole situation follows. Then one or both parents are brought in and questioned and instructed. Finally, the child is brought in, and the situation discussed with him in simple, kindly language. Not infrequently the child benefits almost at once from this simple instruction, which is always accompanied by frank encouragement. But Adler does not rely on " sudden conversion." The case is followed up by the teacher or physician who presented the history.

This book, then, aims at being a key to the art of reading case histories. Those who have seen Adler at work will realize his extraordinary skill in this department. The titles of some of the case notes will give an idea of the problems discussed: " The road to crime," " The boy who wants to lead," " The hunger strike," " The fear of growing up." The editor, Dr. W. Béran Wolfe, prefaces the case records with a short but lucid exposition of the Adlerian system of psychology. As he points out, the concept of the unity of the human personality, which is its foundation, is neither new nor unique. It underlies the Greek drama. Adler's second great principle is that the organism is a dynamic whole, moving through a definite life pattern towards a definite goal. Every human organism strives for a measure of security and totality which shall make continued existence tolerable. But the fate of the individual is inextricably linked with the fate of his group. This is a fundamental principle of Adler's individual psychology. The social life of the human race is an outgrowth of its weakness. Communal existence was probably the quickest and most effective way our ancestors could find of protecting themselves. All the strengths of the human race fit into a pattern, beginning in individual weakness and moving towards a goal of comparative security in social solidarity. All its weaknesses are derived from the danger of isolation. The human baby is the only animal that experiences his own inadequacy, because his mind develops faster than his body. Hence the feeling of inferiority. Far from being a handicap this feeling has proved itself the most powerful stimulus in the development of the human race. Each human being is capable of elaborating his personal defects into a useful contribution to society, yet comparatively few have the courage to effect such compensations. Our neurotics far outnumber our geniuses. The first factor, which intensifies the inferiority feeling until it crystallizes into an inferiority complex, is that of physical defect. This may be an actual organ inferiority, but it may be merely an unimportant physical anomaly, medically unimportant, but socially embarrassing, such as abnormal fatness, albinism, moles, or bow legs. The second group of factors which intensify the inferiority feeling deals with the social, religious, and economic condition of the individual. A third set of factors may arise from the child's position in the family; but it is one of the most important teachings of individual psychology—the first science to point out the significance of the ordinal position of the child in the family constellation—that no position can *compel* a child to become neurotic. The mother is the first person with whom the child makes social contact. Mother love is the first social approval. The mother has the double function—first, of reconciling the child to his situation in the world, and, secondly, of encouraging him to develop his own power of growth and adjustment to other individuals. This delicate role is naturally seldom played to perfection; there are several typical mistakes, all of which produce easily recognizable types of " problem "

[illegible]

[2] *The Pattern of Life*. By Alfred Adler. Edited by W. Béran Wolfe, M.D. London: Kegan Paul, Trench, Trubner and Co., Ltd. [illegible] half wa 271. 8s. 6d. net.)

feels and look

maintaining the " status praesens " and suppressing variations which are incompatible with it. The human will, it is true, appears to be a factor making for further development; but if we exclude artificial cross-breeding, which Darwin himself regarded as of trifling importance in comparison with the forces of nature, it seems to act rather in promoting the conveniences of life than in effecting organic changes—in adapting mankind more effectively to the present stationary circumstances, rather than effecting his further development. Whether an advance in intellectual capacity has occurred within the historical period is doubtful; advance seems mainly to have consisted in an increased power of utilizing the capacity we possess, thanks to the organized pursuit of knowledge. An interesting example of this is Sir Richard Burton's fruitful observation that the Somalis believed the deadly tropical fevers to be caused by the bite of the mosquito; brought under the purview of organized knowledge the relation between malaria and the mosquito was, as is well known, fraught with immense consequences.

Professor Almquist's book is largely concerned with a discussion of the present state of the organic world, but he has done an additional service in calling attention to the unjustifiable use which many authors have made of discoveries in this field of science, by building upon them, in dogmatic fashion, theories devoid of scientific foundation. To correct this misuse of scientific work he recommends that the writings themselves of the original discoverers should be carefully studied and the extent and limitations of their discoveries clearly defined. He has adopted this precept himself, and has furnished concise statements of what was really discovered by those included in his series of twenty-two short biographies, and what conclusions may legitimately be drawn from them.

LATERAL CURVATURE

The monograph by the late R. W. LOVETT of Boston, on *Lateral Curvature of the Spine and Round Shoulders*,[1] passed through several editions in his lifetime. We reviewed the fourth edition in our issue of February 9th, 1924 (p. 241). A fifth now appears, revised and edited by DRS. FRANK R. OBER and A. H. BREWSTER of Harvard University. They have brought it thoroughly up to date, and it may be considered to be the best treatise on the subject in the English, or perhaps in any, language. R. W. Lovett's judicial attitude of mind prevented his making claims of successful treatment which could not be substantiated. The hopelessness of improvement in some cases is strikingly portrayed at the end of the chapter on treatment, where, in five radiographs taken between 1903 and 1910, the history of a case is graphically shown, and the last state is worse than the first. Although we are not so informed, we should surmise that this was one of those particularly resistant cases caused by congenital defect of the body of a vertebra. In other cases represented the results of persistent treatment with corrective jackets are most encouraging. The editors are cautious in their remarks on incisive operations for scoliosis. The Hibbs operation, which is that most in vogue, seems to offer the best prospect of arrest of deformity. It was discussed in our annotation of March 28th, 1931 (p. 550).

In this edition there has been added a description of the method of treating scoliosis by Galleazi of Milan, and a detailed description of the turnbuckle plaster jacket treatment, which, when properly carried out, gives encouraging results. There are many new illustrations, and the sections on exercises are to a large extent also new.

[1] *Lovett's Lateral Curvature of the Spine and Round Shoulders.* Fifth edition, revised and edited by Frank R. Ober, M.D., and A. H. Brewster, M.D. Philadelphia: P. Blakiston's Son and Co., Inc. 1931. (Pp. ix + 240; 201 figures. 3.50 dollars net.)

CORPORAL FUNK

The Cross Bearers[2] is a translation from " Die Pflasterkästen," by A. M. FREY. It is a war novel about the German Army Medical Corps. The hero—for among other things he appears anxious to prove his claim to be considered as such—is a medical orderly called Funk—an unfortunate name from the translator's point of view. He served for three years on the Western Front at a regimental (brigade) dressing station. His main occupation seems to have been keeping records, labelling the sick and wounded, and libelling his superior officers. In the end most of his " scribbling " was so much wasted effort, because the records he compiled were all lost. In spite of this he was awarded the Iron Cross and the Bavarian Cross of Merit, and was promoted to the rank of corporal. *The Cross Bearers* ensures that his views on German medical administration will not share the same sad fate as his admission and discharge books. The intention of the book is pacifist, and if it succeeds in its mission so much the better, but it is too prejudiced in its outlook to encourage that hope. It may have lost in translation. Several parts are inclined to drag. A certain interest attaches to the description of the methods adopted by the Germans in disposing of their sick and wounded, and the increasing difficulty of evacuation due to the gradual failure of transport. At the same time those who were familiar with the different sectors of the British Front will find entertainment in reading of places behind the German lines with which they were formerly familiar, at least on the map. Corporal Funk appears to have been unfortunate in his experiences. The officers, both regimental and medical, whom he served under, and the other ranks with whom he was associated were lazy, indifferent, and idle. All were filled with an overruling ambition to get away from the Front as soon as possible. It may be correct that the German Army Medical Corps was not as highly organized as were those of some of the allies. We are not prepared to admit that it was as inefficient as A. M. Frey would have us believe. We would prefer to believe that the German doctors, working under endless difficulties, with paper substitute bandages, with unreliable hypodermic syringes, and with such things as antitetanic serum cut down to vanishing point, continued to do their duty to the end. Throughout the book are interpolated the usual sordid love affairs, from which it appears impossible to escape in a certain class of war book.

NOTES ON BOOKS

A good little book with a title which is not wholly appropriate is *Fathers and Sons*,[4] by Mr. E. B. CASTLE, the head master of Leighton Park School, Reading. Some exception may be taken to the title because, though the volume is described as dealing with " the important aspects of adolescent training that belong to the province of the parent rather than to that of the teacher," and though it does here and there make some attempt to justify and to imply this distinction, in fact it is concerned generally with those matters which come within the province of both parent and teacher, and which many may think can be dealt with even better by the teacher than by the parent. The author is himself fortunately both father and teacher, and can therefore appreciate the position of both with reference to each of the two subjects mainly discussed in his book. These subjects are the attitude and methods which should be adopted in reference to the instruction and guidance of boys on sex matters and on matters of religion. In regard to both, there are many wise words and practical suggestions in the book, and the two subjects are kept in proper proportion and

[3] *The Cross Bearers.* By A. M. Frey. London and New York: Putnam. 1931. (Pp. 285. 7s. 6d. net.)

[4] *Fathers and Sons.* By E. B. Castle, M.A.Oxon. London: University of London Press, Ltd. 1931. (Pp. 160. 3s. 6d. net.)

duly related to one another. It is here emphasized, what is only too often forgotten, that in each case it is not only knowledge which has to be imparted, but conduct which has to be inculcated, and that the object is always to encourage a good life as well as an intelligent attitude. Some of the author's aphorisms may be quoted as examples of his quality: "There is a world of difference between a mother's love and a mother's apron strings." "Knowledge does not change appetite, though it may, indeed, be a handmaid to virtue." "The harm that was once done to the body by the exaggerated claims of religion is now done to the soul by an exaggerated respect for the body." Attention may be drawn, also, to the appositeness of the chapter headings, especially those taken from Wordsworth's *Prelude*, and so, through them, to the extreme beauty and psychological value of a great poem which is now not so often read through as it should be. Mr. Castle's book is the more timely and useful as a very relevant contribution to the debate started at the Annual Meeting of the British Medical Association at Eastbourne by Canon Pym, and reported in the *Journal* of August 1st last (pp. 186 and 215).

The tenth edition of *Black's Medical Dictionary*[7] has now appeared; the fact that this brings the total number of copies printed to 82,000 indicates the popularity that has been won. Dr. J. D. Comrie, who has edited this book since its first appearance in 1906, has taken advantage of the opportunity provided by the new edition to make a large number of minor alterations in order to bring it up to date as regards recent advances in treatment and changes in legislation affecting medical practice. The general purpose of the dictionary is to make available for nurses, teachers, health visitors, employers of labour, and other laymen such information and guidance with regard to medical matters as is likely to be of practical help to them in preventing disease, and in co-operating with medical practitioners in treatment. Simple drawings and diagrams are used to elucidate some of the descriptions, the print is clear, and the tabulation of the matter facilitates quick reference. The new edition will, without doubt, be as generally welcomed as its predecessors.

A short but detailed and attractive biography of Dr. Antonius Manasseh[8] has now been prepared by C. G. Naish, principal of the Brummana High School in the Lebanon, for the many friends in this country and in Syria of a medical pioneer who won high esteem as superintendent of the medical work of the Friends Foreign Mission Association, and in connexion with the Syrian and Palestine Relief Fund. He was once described in the *British Medical Journal* as "a bridge between individuals and peoples who misunderstood one another." Dr. Manasseh was largely concerned with the introduction of modern medicine into a country where the age of magic was still continuing. The biography indicates how he was able to achieve his great success; it will be welcomed by many who had no previous knowledge of a very humble and most energetic member of the British Medical Association, who was equally at home in the East and in the West.

The book entitled *Le Sang*[9] is a French translation of Professor L. J. Henderson's well-known work on the physico-chemical system of the blood, in which the author has expressed the interdependence of the circulation, respiration, and the various functions of the blood and other physiological mechanisms and reactions by nomographic diagrams and equations. It includes many tables setting out the details of analyses of blood under different conditions, arterial and venous, during rest and exercise, among normal people and in pathological states, showing the variation in amounts and in the distribution of gases, salts, and proteins in serum and cells. The subject is a difficult one, and of specialized interest, belonging to the physico-chemical district of physiological inquiry, and has at present but remote appeal to medicine or clinical practice. The translation reads easily and follows the arrangement of the English edition. From a cursory comparison the tables and diagrams seem to be carefully reproduced. The smaller size and diminished weight are definite advantages over the original volume.

We have received the first volume[10] of the Reports of the Hospital del Rey, Madrid, published under the editorship of the director, Dr. M. Tapia. In addition to the hospital statistics and a list of the publications of the hospital staff from its foundation in 1925 to October, 1930, the volume contains eighteen papers, ten of which deal with various aspects of pulmonary tuberculosis, and the rest with summer typhus, typhoid fever, stomatology, poliomyelitis, and pneumonia.

[7] *Black's Medical Dictionary*. By John D. Comrie, B.Sc., M.D., F.R.C.P.Ed. Tenth edition. London: A. and C. Black, Ltd. 1931. (Pp. viii + 998; 588 figures, 2 plates. 18s. net.)

[8] *Antonius Manasseh: The Beloved Doctor of the Lebanon*. By Christofer G. Naish. London: Friends Service Council. 1931. (Pp. 64, illustrated. 1s.)

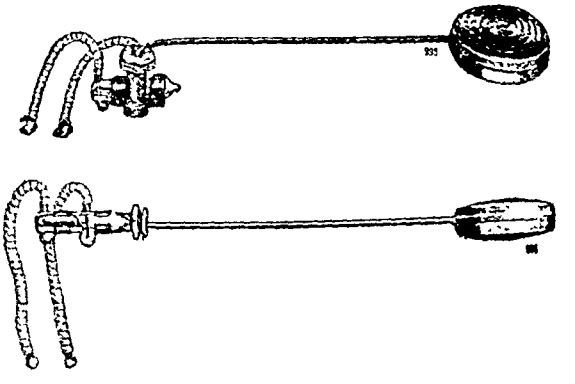
[9] *Le Sang. Système Physico-Chimique*. Par L. J. Henderson. Traduit de l'Anglais par C. van Caulaert et A. Roche. Préfaces de M. d'Ocagne et de Léon Blum. Paris: Les Presses Universitaires de France. 1931. (Pp. vii + 297; illustrated. 80 fr.)

[10] *Trabajos del Hospital del Rey*. Volumen i (1929-30). Madrid: Editorial Paracelso. 1930. (Pp. 739; illustrated. 16 pesetas.)

PREPARATIONS AND APPLIANCES

A Sterilizer Control

The Drayton Regulator and Instrument Company Ltd., of West Drayton, Middlesex, which specializes in the production of automatic regulators for the control of heat, humidity, and pressure, has brought out a simple and inexpensive device for preventing damage to electrically heated sterilizers due to boiling dry. The boiling dry of the sterilizer is a trouble not at all infrequent, and may occasion very serious inconvenience and expense. Various preventive devices have been tried, generally based on the thermostatic principle, relying for their operation on the rise in temperature of the bottom plate of the sterilizer when this becomes uncovered. These devices, however, have not always proved satisfactory; they give the



warning when the damage has perhaps already begun. In this new device the thermostatic principle has been entirely discarded in favour of a simple form of float-operated switch. It consists of a small circular copper float, with a lever, and a mercury make-and-break, which may be of 3, 6, or more amperes, operated by the float. A direct safeguard is afforded by the position of the float, so that the matter can be rectified before trouble actually arises.

We are informed that the device has been extensively tested by sterilizer manufacturers, who are agreed that it is satisfactory in its working and positive in its indications. The simple construction, which involves no great modification in sterilizer design, is apparent from the drawings of the float switch, in straight or in angle pattern, which we reproduce.

Sodium Morrhuate for Injection

Sodium Morrhuate B.D.H. is a preparation of this drug recommended for the treatment of varicose veins. The makers (British Drug Houses Ltd.) supply the drug in a 5 per cent. solution with 0.5 per cent. phenol added as a preservative. They also supply a 10 per cent. solution for veins that prove exceptionally refractory to treatment.

British Medical Journal

SATURDAY, AUGUST 15th, 1931

HUNGER PAINS IN PYLORIC AND DUODENAL ULCER

It is now thirty years since the symptom-complex which was previously considered characteristic of gastrosuccorrhoea—namely, periodic occurrence of epigastric pain and vomiting some time after a meal, together with hypersecretion of gastric juice, and often with retention of gastric contents—was described by Moynihan as indicative of duodenal ulcer. This group of symptoms was later established by Faber as characteristic of the juxtapyloric ulcers on both sides of the pylorus, differentiating them from ulcers of the body of the stomach. The "pyloric syndrome," as it is called, though most frequent in the presence of a juxtapyloric ulcer, may sometimes appear in cases in which resection of the stomach does not reveal an ulcer but a pyloric gastritis. Later authors claim that the symptom-complex may be a sign of pyloric gastritis, and the frequent occurrence of this group of symptoms in patients with verified juxtapyloric ulcer may be due to the coexistence of ulcer and pyloric gastritis. Among the various features of the symptom-complex chief importance has been attached to the late pains, or, in milder cases, the late discomfort—that is, the periodic pains or discomfort in the epigastrium do not set in immediately after the meal, but occur so long after it that the stomach may be assumed to be empty or nearly empty. These late pains (the "hunger pains" of Moynihan) are further characterized by being relieved by the ingestion of suitable food.

Up to the present two theories as to the cause of the hunger pains in juxtapyloric ulcer have held sway. According to one theory, the pain is primarily a result of increased acidity of the stomach contents, at the height of or at the end of gastric digestion. The acid may in general have an irritating effect on the pain-producing mechanism; or the hyperacidity is supposed to irritate the mucous lining of the stomach, which again, by reflex action, gives rise to spasm and in this way to pain. According to the other theory, the pains are chiefly due to abnormal motility (spasms or increased peristalsis), and it is probable—though still uncertain—that the abnormal motility is produced through hyperacidity of the stomach content, which thus indirectly takes part in producing the pain. In a recent series of experiments Dr. Oline Christensen[1] has investigated patients presenting the symptoms of hunger pains, with a view to determining whether the so-called hunger pains are principally connected with the motility or the secretion. The balloon method of Boldyreff was adopted. The patient swallowed a sausage-shaped balloon, about 6 inches long and 2 inches in diameter when inflated, attached to a rubber tube connected with a manometer, and continuous records were made of the movements of the stomach. By means of a signal the patient could indicate simultaneously on the record the occurrence of pain or discomfort. A preliminary series of observations on normal individuals demonstrated that the empty or nearly empty stomach has alternating periods of vigorous contractions and almost absolute rest, but no relation was found between hunger sensation and contractions of the empty stomach such as was described by Cannon and Washburn, and by Carlson. When the stomach contains food, however, the contraction curve is changed, and the alternation of strong contractions and absolute rest gives way to a condition of weaker contractions of constant slow rhythm. Meals rich in protein and fat give longest relative rest before the onset of vigorous contractions takes place.

In patients with duodenal ulcer—a series of eighteen unselected patients in Professor Knud Faber's clinic—Dr. Christensen has shown a distinct connexion between the hunger pains and the hunger contraction periods of the stomach. The pains were never present without the gastrographic curve showing a concurrent contraction period, and no registration of an attack of pain was made during a period of absolute rest in the stomach movements. The hunger pains would always begin sooner or later after a contraction period had started, and would cease when this period was replaced by absolute rest or a few minutes after. Once the pain had appeared, some of the patients would register continuous pain throughout the contraction period, whereas others would register intermittent pain. When the pains are relieved by intake of food, it is owing to the vigorous contractions being replaced by periods of gentle slow contractions or relative rest. As a result of these investigations it may be said that if a patient is examined during an attack of typical hunger pains, the gastrographic curve will show vigorous stomach contractions. The reverse, however, does not hold good, so that the hunger pains cannot be regarded as depending entirely upon motor conditions. On the other hand, there was no relation whatever between the spontaneous or induced variations in the acidity of the stomach contents and the appearance or the intensity of the pain. The apparent relief of the hunger pains by taking sodium bicarbonate is more likely to be due to the filling effect on the stomach of the carbon dioxide produced. Dr. Christensen found that patients treated for gastric ulcer often showed a higher acidity in a test meal after a cure and when all symptoms had disappeared than when treatment was started. This was also observed by Hurst and Venables in their cases of duodenal and gastric ulcer.

Since, therefore, there seems no connexion between the appearance and intensity of hunger pains and the variations in the acidity of the stomach contents, it is possible that, as several investigators have demonstrated, the hunger pains are a symptom of pyloric gastritis. It is reasonable to assume that the greater or lesser

[1] *Pathophysiology of Hunger Pains: Gastrographic and Titrimetric Investigations.* By Oline Christensen. *Acta Medica Scandinavica, Supplementum* xxxvi. Copenhagen: Arnold Busck. 1931. (Pp. 170; illustrated.)

degrees of tenderness in the inflamed wall, due to circulatory disturbances, may be related to variations in the occurrence of the pains, and that the seasonal occurrence of the pains may be associated with exacerbation and improvement of the gastritis.

INDUSTRIAL HEALTH

The eleventh annual report of the Industrial Health Research Board[1] summarizes the work of the Board for the last five years. It differs in character from previous summaries, for the earlier work of the Board related largely to the fatigue of the worker in heavy industries, and the means of mitigating it by reduction in the hours of work and the introduction of rest pauses. The present report, though it discusses at some length the heavy work of coal miners, especially in relation to absenteeism, deals more particularly with light industrial occupations involving repetition work. Such occupations do not induce much physical fatigue, but are a potent source of monotony and boredom to some of the workers, though many of them—particularly the women—prefer this type of work, as it allows unlimited day-dreaming and requires no concentrated mental effort. Persons temperamentally unsuited to monotonous work are generally of a higher type of intelligence than those who prefer it, and their uncongenial tasks offer no scope for them to exert their powers. It is therefore very desirable that they should be sorted out from their fellows by suitable vocational tests, and as far as possible assigned to work for which they are better suited. Some of the Board's investigators are engaged in devising vocational tests, but it is not easy to find reliable tests which can be applied easily and with certainty. A not inconsiderable proportion of the workers are of the nervous and emotionally unstable type, and are specially apt to be temperamental misfits in their employment. Tests have been devised for identifying these workers, but they have not yet reached a very practical form, though good progress has been made. Again, methods of reducing monotony are being studied, for all types of worker engaged on repetition tasks are bound to suffer from monotony to a greater or less extent. It is found that monotony can be considerably reduced, and output at the same time improved, by allowing the operatives to change their work periodically, by supplying them with material in small quantities at a time instead of in bulk, and by allowing them to work in compact social groups rather than as isolated units.

Owing to the change in the character of its duties the title of the Board was changed, about two years ago, from "Industrial Fatigue Research" to "Industrial Health Research," and a number of statistical investigations have been made with the specific object of studying the sickness rates of large groups of workers in certain industries. For instance, it has been shown that the artificial humidification of weaving sheds, against which an outcry is periodically raised, is not associated with any increase of sickness among the weavers. The investigation related to the sickness of 20,000 operatives, half of whom worked in dry sheds and half in sheds humidified by the introduction of steam or atomized water, so that the results of the comparison can be accepted with confidence. A second investigation related to the sickness of card-room workers, and it was found that workers of 30 and upwards showed three times as much sickness from respiratory causes as their fellow workers in other parts of the mill. Again, an investigation of sickness among printers showed that they suffered a considerably higher death rate from tuberculosis than other occupied males, though their death rate from other causes was lower than the average. Health depends to a large extent on the bodily adaptation of the worker to his task, and a statistical survey of the physique of women afforded information concerning the optimum weights which should be handled and carried. The liability of industrial workers to accidents is well known, and it is found that certain individuals are much more "accident-prone" than the average. Tests are therefore being devised for identifying such workers, with the ultimate aim of transferring them to occupations in which they have but little scope for exhibiting their unfortunate propensity. Accident frequency is also influenced in no small degree by the conditions of work, such as lighting, temperature, and ventilation, and the better these conditions the lower the accident rate.

The physical conditions of work are of very great importance to all classes of industrial workers, whether employed on heavy work or on light work, and a large part of the Board's activities relates to the elucidation of the best conditions of work, and the effects of departures from these conditions. Though a great deal of investigation has been made in the past upon the influence of atmospheric conditions, much remains to be done. Novel methods of heating buildings—such as panel-heating, under-floor heating, and high-temperature overhead radiator heating—are being introduced, and the application of these methods to industry needs close investigation. The favourable influence of good lighting has been quantitatively investigated in compositors and others, while the benefit of magnifying spectacles to normal-sighted persons has been demonstrated in a number of occupations involving fine work. For instance, the "linkers" of hosiery, the women mounting small electric lamp filaments, and those examining steel balls for defects, have to bring the eyes to within ten inches of the work, and this involves considerable eye strain. The use of spectacles with lenses of 1.5 to 4 dioptres and with prisms improved output by about 10 per cent. and greatly relieved the strain. A physical condition of environment which has received much attention in the public press of recent years is noise, and several of the Board's investigators have made preliminary attempts to gather information on the subject. It is very desirable to

[1] Medical Research Council Eleventh Annual Report of the Industrial Health Research Board Including an analysis of work published during the years 1926–30. London: H.M. Stationery Office 1931 (1s 6d. net)

obtain a reliable objective test for noise, but hitherto success has not been achieved. So far as can be ascertained, industrial workers—with few exceptions—do not object to the noise incidental to their occupation, but clerical workers are more sensitive.

BRIGHT'S DISEASE

A valuable account of a series of cases of Bright's disease has recently been published in *Medicine*, and reprinted as a separate Medicine Monograph.[1] It represents the labours of a team, headed by Drs. Stillman and van Slyke, who have worked for several years in the hospital of the Rockefeller Institute, New York. The chief merit of this monograph is the extreme care with which sixty-seven cases of differing types of nephritis have been investigated for years, and often followed to necropsy. The exactness of the observations reflects the ample facilities provided for such work in this special hospital for the investigation of disease. Questions of nomenclature are always a matter of interest in writings on Bright's disease, and in this monograph the terms used are a mixture of those of Volhard and Fahr (1914) and of Addis (1925). The differences between the two terminologies are, however, clearly explained. The term "degenerative Bright's disease," used by Addis, is preferred to "nephrosis." One of the most striking points to a British reader of this monograph is the emphasis placed on the term "haemorrhagic nephritis," which includes the whole group of cases in which the glomeruli are affected. Fifty-one out of the total sixty-seven cases are placed in this group—twenty-three being acute, two latent, thirteen active chronic, and thirteen terminal. Haematuria is the sign which distinguishes this group from all others (including the so-called nephrosis), and indicates that the glomeruli are involved in the disease. Gross haematuria in the early acute stage of Bright's disease is a commonplace finding, but in this monograph the authors, following Addis, lay great stress on the haematuria to be detected even in the most latent stages of the disease. A special method for the recognition of scanty haematuria, recommended by Addis, was used only in the later stages of the investigation. It consists in giving the patient a dry diet for twenty-four hours, and in centrifugalizing the concentrated urine obtained in the second twelve hours. The authors state that the degree of initial haematuria in glomerulo-nephritis has no bearing whatever on prognosis, and that in two cases only of their series did haematuria disappear during the latent stages of the disease. They point out, and with this we agree, that latent cases in which haematuria disappears for a time may, in the absence of a good history of the initial acute stage, be mistaken for pure cases of degenerative Bright's disease or nephrosis. It is these cases, we think, which constitute the rare examples of nephrosis which progress to renal insufficiency and end in uraemia, while at necropsy healed or partly healed old glomerular lesions are found. Another problem given much prominence is that of renal oedema. The authors support Epstein's views, and maintain strongly that loss of plasma protein is the main factor in renal oedema. They state that whenever the total protein content of the plasma (average 7 per cent.) falls below 5.8 per cent., or the albumin fraction (average 4.3 per cent.) falls below 2.3 to 2.7 per cent., then as a rule oedema results. The globulin fraction, as is now well known, undergoes little change. The authors are forced to admit that there are other factors which influence the onset of oedema—toxins in acute nephritis, salt intake and output, cardiac failure, and so on; but with these minor reservations they are whole-heartedly of the view that "the constant and dominating factor in producing non-cardiac oedema in Bright's disease is plasma-albumin deficit." No reference is made to opponents of this view; for example, Elwyn's book *Oedema and its Treatment* (1929) is neither mentioned in the text nor in the bibliography. It would be pleasant to think that the problem of renal oedema is more or less solved on the plasma-albumin deficit hypothesis, but in the opinion of many the matter is far from being so simple and far from being settled. A full and excellent discussion of urea retention is given, and the authors have made much use of the test of blood-urea clearance elaborated by van Slyke and his colleagues in 1930. This test has so far not been given a sufficient trial in this country, but it must be done. It is well worth reading this monograph with care; its clearness and brevity of style are admirable. The charts are too small and condensed for the average reader, but if they are neglected this does not in any way spoil the reading of the text. As in all monographs on Bright's disease there is ample room for disagreement with the authors on a number of points, but that is merely stimulating. The bibliography given at the end mentions only papers quoted or referred to in the text, and thus a number of names associated with important and fundamental old and recent work on renal disease are altogether omitted. To have included them, and to have referred even briefly to their work and their views in the text, would, in our opinion, have added much to the value of this monograph and given it a better balance.

[1] *Observations on the Courses of Different Types of Bright's Disease, and on the Resultant Changes in Renal Anatomy.* Medicine Monographs, vol. xviii. London: Baillière, Tindall and Cox. (13s. 6d. net.)

SHORTAGE OF R.A.M.C. OFFICERS

In the *Times* of August 7th there appeared a long and carefully reasoned letter calling public attention to the serious situation now existing in the Army owing to shortage of officers in the R.A.M.C. The signatories were Sir Alfred Keogh, late D.G.M.S., Sir Charles Burtchaell, late D.G. British Armies in France, Sir David Bruce, F.R.S., Sir T. J. Gallwey, and a number of other distinguished men who have held high positions in the Army Medical Services. After analysing the situation, and indicating its dangers in peace and in war, they remind their readers that there have been many instances in the past of a shortage of officers arising from similar causes. "The cause," they say, "is mainly the same as it always has been when newly qualified medical men are not attracted to the Service—that is to say, the pay and pensions offered by the State have fallen behind the times in actual value, and compare unfavourably with other public appointments and with the emoluments and amenities of life incidental to the private practice available to-day to young recently qualified medical men of the ability and type that are suitable to maintain the efficiency of the R.A.M.C. Such young men, whose medical education has cost

them five or six years of time, and an expenditure of £1,500 to £2,000, will only consider entering the R.A.M.C. provided the initial rate of pay is at least as good as that for other public appointments open to them, and if the larger emoluments of civil practice are compensated for by the certainty of a pension absolutely and relatively commensurate with what they renounce by embarking on an Army career." The only remedy, in their considered opinion, is an immediate increase in the pay and pension, and improvements in the status of all officer ranks of the Corps. "We urge that these three essential points must be dealt with in an adequate way on the lines specified in the report of the committee of the British Medical Association which investigated the conditions of service of the R.A.M.C. early this year." It is greatly to be hoped that this manifesto, written in plain language and influentially signed, will carry conviction in the quarter that matters most at this stage—namely, the committee of inquiry appointed by the Prime Minister to report on the dearth of medical officers in the three Services.

THE CAMPAIGN AGAINST VENEREAL DISEASE

The Union Internationale Contre le Peril Venerien, on which serve the representatives of forty-four countries, members of either Government venereal disease departments or of voluntary organizations recognized by Governments and devoted to the campaign against venereal disease, has, for the past year, been reviewing the general position with regard to treatment. As is well known the action taken officially in different countries varies considerably—from the complete scheme adopted in this country to more limited schemes, dealing with the treatment of syphilis only, in certain others. There has been much controversy on the Continent as to the extent to which State funds should be expended in the treatment of disease, some taking the view that the immediate disinfection of the patient was all that the State should be required to undertake, while others, such as the representatives of Great Britain and of the Scandinavian countries, urged that full and complete treatment of the patient, until cure, was the responsibility of the State in the interests of preventive medicine. After several conferences and very full discussion a resolution was unanimously adopted, to which we are asked to draw the attention of medical practitioners in this country. It runs as follows:

"The Union, having taken note of the reports presented by Professors Bayet, Jeanselme, and Jadassohn on the general principles of the antivenereal campaign, from the point of view of society as much as of the individual, invites all Governments, public authorities, and antivenereal associations to ask the medical profession to take its stand, in the duty which every doctor, specialist or

[illegible] owes to syphilitic patients, on the following four the trial rules: First, and above all, if the patient is con- ago, from [illegible] his period of contagiousness to a dustrial Health Researc[illegible]diate and intensive treatment. vent the reappearance of con- investigations have been [illegible]iently active and prolonged of studying the sickness rates [illegible] prevent all possibility of in certain industries. For instais to the offspring. The [illegible]pecially that the fight carried on (*a*) by a in the family as (*b*) by treat- congenital syphilitics, but by sufficiently regular and prolonged treatment of the parents before procreation, and of the mother during pregnancy. Fourthly, as far as at all possible, to protect the patient against the future personal consequences of his syphilis in such a manner as to secure the definite disappearance of the treponemae from the infected organism."

[1] Medical Research Council Eleventh Industrial Health Research Board. Including published during the years 1926–30. London Office 1931 (1s. 6d. net)

SUPPRESSION OF ASBESTOS DUST

Since knowledge of the ill effects of asbestos dust in inducing fibrosis of the lungs was made prominent, notably by Dr. W. E. Cooke in his discovery of the "curious bodies," the Home Office has set speedily to work, not only to gain more knowledge as to its prevalence, as in Dr. E. R. Merewether's report[1] (noted by us in our issue of April 26th, 1930, p. 789), but also now in the report before us on methods for suppressing dust in asbestos textile factories.[2] This last document is particularly interesting in that it deals with agreements come to by a committee consisting of engineering inspectors of factories and representatives of the trade. It is a pleasing instance of the readiness nowadays of leading manufacturers to combine with the Factory Department to do everything practically possible to suppress dust, and to pool for the benefit of their industry their experiences in regard to the problems to be solved. No comparatively harmless form of asbestos is known, so that no substitute is possible, as in the Sheffield grinding industry through the replacement of sandstone by artificial stones made of carborundum. Amelioration of the conditions is therefore to be sought in what is after all the sheet anchor for the protection of workers in dangerous trades—locally applied ventilation by fans so contrived as to operate on the dust as nearly as may be at its point of origin and to prevent it entering any room where persons work. On this matter fresh ground is broken, although it might be thought that little that is new could be said. With material which starts in the form of lumps of mineral ore and emerges as a spun, woven, fibrous material, every opportunity for the evolution of dust is given in the successive stages (to mention only the principal) of crushing, disintegrating, pulverizing, teasing, sieving, mixing, blending, screening, and carding. Big hopper hoods enveloping dusty heaps and machines have been commonly used in the past, but they are here discarded, and their place is taken by infinitely more effective closely fitting covers, to the sides of which the exhaust ducts are connected, where the draught will be at its maximum. How ingeniously this can be effected is well illustrated by numerous diagrams of the processes and ten photographic plates. The expense in fan power and galvanized iron piping must be enormous. These agreements are to be embodied in statutory Regulations to govern the industry. A note of hesitancy appears here and there in the report as to whether later exhaust may not have to be applied to such processes as spinning, winding, and doubling—so subtly may the dust lay down the new fibrous tissue in the lung like a spider's web. These spinning and doubling processes were those from which Dr. Merewether laid down his "dust datum,"

[1] Effects of Asbestos Dust on the Lungs and Dust Suppression in the Asbestos Industry. By E. R. A. Merewether, M.D., and C. W. Price. London: H. M. Stationery Office. 1930. (1s. 3d. net.)

[2] Report on Conference between Employers and Inspectors concerning Methods for Suppressing Dust in Asbestos Textile Factories. London: H. M. Stationery Office. 1931. (1s. net.)

below which application of exhaust ventilation might be regarded as unnecessary. In a further paper by him, however,[1] a list is given of fifty-one determinations of the dust content of the atmosphere of workrooms and other places from which this dust datum was obtained. The discrepancy shown between the figures for spinning and those for carding and other dusty processes is not very striking, and not one of the determinations dealt with winding and doubling. The ensuing Regulations will mark a great advance, and perhaps bring about almost total disappearance of the disease.

POST-VACCINAL ENCEPHALITIS

The difficulties surrounding the problem of the etiology of post-vaccinal encephalitis are made manifest by the lack of success which has attended all attempts to find its solution. Opinions on this problem are sharply divided. One school maintains that the condition is due to an unknown neurotropic virus which is lit into activity by the invading vaccinia virus—postulating a similar etiology for those cases of encephalo-myelitis complicating occasionally the exanthemata—while the other holds that vaccinia virus is alone responsible. In view of this impasse any possible new light on the problem is worthy of consideration, and should not be disregarded without a careful scrutiny. Dr. J. R. F. Rassers of the University of Leyden in a monograph entitled *Encephalitis Post Vaccinationem*,[2] puts forward his views on this problem and brings forward experimental evidence purporting to support his thesis, which is briefly as follows. He accepts the view that the infection of the central nervous system is the work of the vaccinia virus alone, but to account for the prevalence of post-vaccinal encephalitis in the last few years and its relative, if not complete, absence in earlier times, one must postulate an increased virulence of the virus. This increased virulence might of course be absolute or relative, and Rassers inclines to the opinion that the change is in the susceptibility of the individual to the vaccinia virus, and he considers this to be due to an excessive use of salt in our diets. On the Continent there is a school of dermatologists which attributes many skin conditions, such as skin tubercle and exfoliative dermatitis, for instance, to eating too much salt, and it claims to cure or considerably improve these dermatoses by merely putting the patient on a salt-free diet. Rassers shares these views, and in his monograph he brings forward evidence to show that dogs placed on a salt-free diet are practically insusceptible to vaccinia virus, whereas those with a high salt intake react intensely. But that is not all. Eight out of ten dogs on a salt diet developed encephalomyelitis after an interval of ten to twelve days after vaccination in the majority of cases. It is true that it was not proved that the encephalo-myelitis was due to the vaccinia virus, nor was this condition histologically similar to post-vaccinal encephalitis in man. Further, it would seem highly improbable that excessive salt-eating bears any relation to the incidence of post-vaccinal encephalitis. Nevertheless, should Rassers's facts be substantiated he will at least have drawn attention to an interesting phenomenon.

[1] *Journal of Industrial Hygiene*, June, 1930, vol. xii, No. 6.
[2] *Encephalitis Post Vaccinationem*. Von Dr. J. R. F. Rassers. Leyden: S. C. Van Doesburgh; Leipzig: J. A. Barth. 1931.

"NOBLESSE OBLIGE"

It was a new line of thought that was pursued by the Chairman of the Charities Committee in presenting its report to the Representative Body of the British Medical Association last month. The needs of the recipients, the appeal *ad misericordiam*, have hitherto been stressed, and these needs are ever more and more importunate. But there is another stimulus which may be applied to our generosity. The history of "these charities" when put together forms a sum of brave endeavour; it tells of fine and wide ideas arising in the hearts and minds of quite humble and ordinary members of the profession, in large measure carried out in spite of apathy and discouragement, maturing into a body of benevolent effort which deserves more hearty and widespread support than has up till now been accorded to it. If we reflect upon what must have been the position in the early years of the Benevolent Fund of the Association, when after four years of struggle it found the claims upon it such that it was deeply in debt, and yet it determined to "carry on," we marvel at the faith and vision of these devoted men. Yet from such feeble beginnings these early members of the Association held on and worked on for a third of a century; by which time they had made good and were fit to stand alone as a separate off-shoot from the parent organization under the name of the Royal Medical Benevolent Fund. Its "opposite number" in Ireland was the product of the vision of a solitary Irish country doctor, William Kingsley, who devoted his life to the creation of this society. Epsom College was even more daring in its conception. John Propert, a Welsh club doctor in London, had vision. His thought was for the establishment of a home, not only for the sons of doctors, but a foundation something like that of the Charterhouse, where in the evening of their days men might rest who had been worn out in the service of medicine. It was a noble conception and, although never fully realized, deserves our admiration. Another consideration is also forced upon us. We know that the actual maintenance of these charities is being carried on principally by personal contributions from medical men and women, thus keeping us in line with the great non-medical charities such as the Freemason's. A natural result of the position which all such charities have attained is that the care of their own people falls upon them, and the medical charities are now in like case. From this we must conclude that by us and by no others can the work be done. That it is a necessary work and one that should appeal to all members of the medical profession is evident to anyone who reads the records of the cases that are presented for help. Hastings and Kingsley and Propert were wise in their prevision; they are men of whom our profession is proud; and we may feel that it lies with us as a point of honour to maintain and extend the work which they began: *Noblesse Oblige*.

On July 18th the honorary degree of Doctor of Medicine was conferred on Dr. Harvey Cushing by the Budapest Royal Hungarian Peter Pázmány University.

We regret to announce that Lieut.-Colonel J. R. Lord, C.B.E., M.D., medical superintendent of the Horton Mental Hospital, Epsom, died on August 9th. We hope to publish an obituary notice next week.

THE SECTIONS

SUMMARY OF PROCEEDINGS

(*Continued from page 269*)

SECTION OF MEDICINE

Friday, July 24th

EXOPHTHALMIC GOITRE

Professor F. R. FRASER, in opening the discussion, said that there had been three main lines of advance in recent years. The first was the connexion between the morbid anatomy and the clinical condition. The histological picture was very varied, and in understanding it the previous history of the gland must be taken into account. Stimulation of the gland produced hyperplasia and hypertrophy; when stimulation ceased involution occurred, but this did not necessarily mean the return of the picture to normal—there might be hyper- or hypo-involution. He then discussed the bearing of these studies on the varied appearance presented by patients showing symptoms of thyroid intoxication. These could be largely explained by variations in the intensity of the stimulus, the varying response of the gland, and the capacity of the organs of the body to withstand the intoxication. The second was the therapeutic use of iodine. As yet there was no explanation of the action of iodine. It caused the disease to run at a lower level, and was of great value in the preoperative treatment of cases to be submitted to surgery; in this connexion, he persisted with it for much longer periods than the ten days so dogmatically advised in the literature. The third was the development of surgical treatment. Professor Fraser showed tables to demonstrate the results of medical and surgical treatment. In consideration of these it appeared clear that behind the exciting causal factor there must be some constitutional factor. As soon as diagnosis was made treatment must at once be instituted to diminish the amount of functioning thyroid tissue. Iodine should be given, and possibly some form of radiation; if improvement did not occur surgery must be employed, provided that skilled surgical assistance was available. As the result of his experience with hospital cases he was more and more impressed with the advantages obtained by surgical treatment.

Dr. J. EASON (Edinburgh), in discussing the etiology, said that in his series of cases emotional disturbance was a factor in 62 per cent. of them; frequently this had its origin in sexual matters, and reticence often made its appreciation difficult. In 23 per cent. there was an infective factor, but it was clear that some form of diathesis must be supposed. As in hysteria, there were different thresholds for different individuals. In his opinion the essence of the predisposition lay in an interdependent instability of the emotional, autonomic, and endocrine responses. Many cases were treated surgically because, for various reasons, adequate attention had not been given in the early days. At the onset the treatment was medical. He demonstrated the advantages of potassium iodide over Lugol's solution, and then passed to the results of radium therapy. This needed only one day every two months, so that patients could continue at work. In forty cases so treated seven were cured and seventeen showed marked improvement and were working with comfort. Of 133 cases of non-surgical treatment in ten years only nine were known to be dead, and only eighteen had not replied. In considering Professor Fraser's figures, he felt that he himself must be dealing with a much milder disease.

Dr. E. P. POULTON spoke of treatment by deep *x* rays. He described the improvement obtained, and quoted figures demonstrating successful results in about the same percentage as in Professor Fraser's operated cases, and about twice as good as several series of medically treated cases. He was therefore forced to ask "Why operate?" He drew attention to the extreme muscular weakness that was one of the features of the disease, and the effect of iodine in decreasing the pulse rate, illustrating these points by personal experience.

Dr. W. L. WATT gave further details of the cases shown in Dr. Poulton's table, with illustrative cases. He pointed out the advantage of combining deep *x*-ray therapy with surgical treatment, and said that relapses occurred in about 20 per cent. of cases treated surgically. By giving full sarcoma doses the time necessary for cure was greatly diminished. Mr. JOHN MORLEY (Manchester) pleaded for a carefully thought-out plan from the outset by the doctor in charge. Mild cases could often be cured by *x*-ray treatment, but this must be rapid in its effect; if after three months' trial the result was really promising it might be continued; if not, the aid of surgery should be called in. In toxic adenoma he thought *x* rays had little or no success. Operative risk could be greatly minimized by careful preparation—for example, by the administration of iodine and digitalis, by adequate rest before operation, and by a diet rich in carbohydrates. He preferred local anaesthesia as a general rule. Mr. W. H. C. ROMANIS described various types of disease, and declined to include cases which merely showed the presence of a soft goitre associated with palpitation or nervousness. He thought there must be, in addition, some abnormality of eyes or heart. Except in very early cases he looked on medical treatment as merely preparatory to surgery. He had seen little benefit from *x*-ray or radium therapy. The chief surgical mistake was to remove too little of the gland.

Mr. T. P. DUNHILL said that in the majority of cases, if at all severe, the damage that was already done was, to some degree, irreparable. Medical treatment did produce considerable improvement in most early cases, and some severe ones, but no case must be left too long, and all must be watched carefully, with the closest co-operation of physician and surgeon. Too frequently, although the symptoms were relieved in great part, full capacity for work was not regained because of the damage inflicted in the earlier stages. The indications for *x*-ray treatment were becoming more clearly recognized; it was unsuitable in very severe early cases and in cases in which complications had arisen. He described the favourable results obtained by operation in cases showing auricular fibrillation and glycosuria. It was wiser to leave children till development was complete, but it was not always possible.

Colonel MCCARRISON referred to the effect of nutrition on the thyroid gland, and spoke of his animal experiments, which showed that hyperplasia might be produced by dietetic conditions. By giving a diet with insufficient vitamin A, physiological deficiency could be induced, with the production of a condition of lymphadenomatous goitre. He suggested that the future might show exophthalmic goitre to be not primarily a disease of the thyroid gland. Dr. SUMMERHAYES, speaking from the point of view of the general practitioner, expressed the difficulty in getting patients to go up for operation in the early stages. He regarded the cases excluded by Mr. Romanis as being the early form of the disease, which required treatment. Professor RABINOWITZ (Brooklyn, N.Y.) reminded the meeting of the intimate connexion between the thyroid and adrenal glands, and suggested that in the future denervation of the adrenals might replace thyroidectomy. In the diagnosis of the disease he stressed the information to be given by an examination of the skin, which in these cases was always warm and moist. He also spoke of the supraclavicular nodules, which sometimes gave

origin to a faulty diagnosis of carcinoma. Dr. FLORENCE STONEY (Bournemouth) pointed out the need for discovering the exciting factor, and in this connexion emphasized the importance of not overlooking the presence of sepsis and of fibroids in the uterus.

SECTION OF SURGERY

Friday, July 24th

SURGICAL TREATMENT OF TRIGEMINAL NEURALGIA

At the meeting of the Section of Surgery, with Mr. H. UPCOTT in the chair, Mr. GEOFFREY JEFFERSON opened the discussion on trigeminal neuralgia. He said that the cause of trigeminal neuralgia was unknown, and that adequate treatment depended on the selection of the right cases. Neuralgia was a very uncommon disease, but was much commoner in the female; the pain was always confined to one side, and generally to one division at the outset, but might spread to the other divisions later. The neuralgia might appear on the opposite side years after treatment of one side. It was pointed out that the apparent differences in neuralgic pains were the result of the varying methods of description used by different patients; but, nevertheless, the pain was always essentially different from the pain of an inflammatory lesion. Tic douloureux was not a good term to use, since facial spasm was not a feature of all cases, and was rarely of a severely spastic or clonic type. Painful facial spasms might occur in cases not suffering from trigeminal neuralgia. Long remissions of symptoms were a characteristic feature of the complaint, and these periods of freedom from pain made the patient—and often his doctor—postpone any radical treatment. The distribution of the neuralgia was usually strictly anatomical, and, in the speaker's cases, commenced most often in the second division. Probably the second and third divisions were affected equally. It was not true that the pain usually affected the third division and then spread upwards to the second. Early affection of the first division occurred only very rarely, pain in the forehead was due to an overflow, or could be explained on anatomical grounds as originating in the second division or third division. The recognition that the ophthalmic division could be often spared profoundly modified the treatment of neuralgia. Neuralgia of the second division tended to be seated in the soft parts of the face. Third division pain was deeply seated in the bone and gum, and it was notable that pain in the tongue and lip was not as a rule marked.

Mr. Jefferson described in detail the features of the atypical neuralgias, and emphasized that the pain never remitted, and was never so suddenly severe as in the true paroxysmal neuralgias. The patients were usually younger, and both sides might be affected. Surgical treatment of this type was useless and should be avoided, since it usually made the condition worse. There was one case of glosso-pharyngeal neuralgia in the speaker's series. The pain was localized to the depths of the ear and fauces. It was more localized and deeply seated than in trigeminal neuralgia, and was brought on, not by movement of the jaws, but by swallowing.

In true paroxysmal trigeminal neuralgia there was never any alteration in the sensory perception of the skin other than hyperaesthesia. Pain due to tumours or focal leptomeningitides affecting the root of the nerve, tumours or aneurysms affecting the ganglion, or growths infiltrating the divisions was associated with anaesthesia and analgesia of the affected area. In rare instances, acoustic neuromata had been found in cases thought to be plain neuralgia, but he thought that this was not sufficient reason to adopt the routine approach to the sensory divisions through the posterior fossa.

Referring to treatment, the speaker said that removal of the lower two-thirds of the ganglion with preservation of the ophthalmic division, as perfected by Hutchinson, gave an extremely low mortality of 4 per cent. This was due to the fact that the danger of injury to the cavernous sinus was much lessened by partial removal of the ganglion. There was, however, usually a small opening made in the sinus when the cut second division was stripped back. Mr. Jefferson favoured Spiller's and Frazier's method of fractional division of the sensory root. In this operation there was no likelihood of damage to the cavernous sinus. In his own series of 86 cases, he had had two deaths, both of which were not due to technical error; he wished to point out that the risks of operation on the sensory root were extremely small. Division of the sensory root was a difficult operation, but, when performed correctly, the operative risks were negligible. The advantage of fractional route division was that the fibres in the route which supplied the eye were preserved, and, as in Hutchinson's partial ganglionectomy, the sensation of the eye was retained, and neuro-paralytic keratitis prevented. Frazier had shown that the arrangement of fibres in the route was such that partial division could be carried out with success. The anatomical arrangement was well shown by excellent illustrations. In the experience of the speaker, the safest way of preserving the motor route was to cut through the sensory route from without, inwards, until a hole was made through which the motor root could be seen. Cases in which alcohol injections had been made presented more difficulty, since there were adhesions, and separation of the fibres from one another did not occur so readily; also the motor route was often adherent to the sensory part. Mr. Jefferson said that he divided the lower and outer two-thirds of the root, the resulting anaesthesia affecting the lower two-thirds of the face and half the cornea. The partial retention of sensation in the cornea was sufficient to prevent neuro-keratitis. He had succeeded in dividing the middle portion of the sensory route in patients whose pain was chiefly referred to the second division. Anaesthesia following partial division was never dense, and since it stopped the neuralgic pains with partial preservation of sensation, it was a great boon to the patient. The motor route should always be conserved if possible, and Marshall's investigation of Mr. Jefferson's cases showed that there was no lessening in anaesthesia when the motor route was preserved. Peripheral alcohol injections had proved their usefulness, and the speaker considered that in the less severe cases limited to one division an injection of alcohol should precede the operation. This gave the patient a foretaste of the numbness permanently produced after root section. If fractional root division was to be performed, this was not so necessary, as some sensation was retained. He believed that injections into the ganglion itself should only be used in patients unsuited for operation. He arbitrarily fixed the age limit for operation at 70 years. In younger patients fractional root section was the best method of treatment: this operation enabled the surgeon to preserve at will such fibres as it was necessary to keep. Excellent diagrams were shown to illustrate the various points in his paper.

Mr. A. A. MCCONNELL (Dublin) said one should hesitate to make a diagnosis if the patient was young, or if the pain was in the region of the eye. He mentioned lesions of the eye and ear he had seen after repeated injections aimed at the second and third divisions at their exit from the skull. Too prolonged injections postponed operation till the patient was less able to stand it. He had seen only one post-operative death, which was due to neglect to place a plug of muscle in the opening leading to the posterior fossa, with the result that through it leakage of blood took place and set up symptoms of basal meningitis. He believed that there was no major

operation which old patients stood so well as section of the posterior root. The average age in his cases was 65, the oldest patient being 84.

Mr. H. S. Souttar said that division of the sensory root was a good method of treatment, but that too little had been said about alcohol injection. In his hands permanent relief of pain could be obtained. He said that success in this method of treatment depended upon the adherence to small details of technique. Mr. Souttar used Härtel's method with a slight modification. The foramen lay in a straight line, passing from a point one inch lateral to the angle of the mouth to the lambda. If the needle was directed at first towards a point slightly in front of the lambda it would finally strike the external pterygoid plate; the needle should now be slightly withdrawn, and then directed towards the finger situated at the lambda. If this technique was followed carefully very little difficulty would be experienced. A small amount of local anaesthetic should then be injected, and the position of the point of the needle confirmed by the resulting anaesthesia. On no account should an injection be given if cerebro-spinal fluid came from the needle. The speaker said that he injected 1 c.cm. of alcohol, and aimed at infiltrating the whole of the ganglion. The eye was stitched for five days to avoid keratitis. He regarded alcohol injection as the primary method of treatment.

Mr. Norman Dott (Edinburgh) said that the disease was a well-defined clinical entity, but that its pathology was obscure. As a rule there was no difficulty in diagnosis if the site, character, mode of precipitation, periodicity, and absence of anaesthesia, or evidence of involvement of other cranial nerves were carefully considered. Borderline cases, in his experience, were rare. The diagnosis could be confirmed by experimental nerve-block—preferably with percaine. Mr. Dott agreed with the previous speakers that the operative risks were very small, even in old patients. Fractional root section was the operation of choice when the first division of the nerve was not affected. If keratitis developed when all the sensory portion had to be sacrificed, he said that the eye should not be irrigated but protected from injury. Since there was no regeneration of the nerve proximal to the ganglion, cure was permanent. The speaker had given up alcohol injections, since he felt compelled to do so by the experience of his patients who had had injections before they came to operation. The fact that the operation was a permanent cure was an enormous relief to a patient who had been subjected to numerous alcohol injections. He himself had performed the operation sixty-five times, with no deaths, his oldest patient being 83 years of age. A case of bilateral trigeminal neuralgia successfully treated by operation was mentioned, and photographs of the present condition were shown. Preservation of the motor root was desirable in unilateral cases, and was essential in bilateral cases.

Mr. Donald Armour said that he would like to point out that division of the sensory root was performed by Sir Victor Horsley eight years before Spiller (who was credited with the operation) carried out the procedure. He did not agree that the diagnosis was so definite as Mr. Dott had mentioned. Trauma of the ganglion was possibly the cause of ulceration of the cornea, since he had successfully cured such an ulcer produced by previous alcohol injection, by removal of the ganglion. He mentioned a case of apparently typical glosso-pharyngeal neuralgia which was cured by injection of the Gasserian ganglion. If a patient refused operation it was improbable that he was suffering from neuralgia—this was a point in differential diagnosis. In conclusion, the speaker said that Horsley cut the motor root since he believed it contained some sensory fibres. Some of the recurrences after fractional root section might be explained if this fact were true. Mr. Upcott said that he had had a case with corneal ulcer after injection which was cured by removal of the ganglion. Patients who had been treated by operation were extremely grateful, but some had curious paraesthesiae in the anaesthetic area. The speaker had noted that there was loss of pain without total loss of anaesthesia after operation. In bilateral neuralgia operation was better and safer than alcohol injection. Mr. Jefferson, in reply, said that troublesome paraesthesiae as described by Mr. Upcott did occur, but were very uncommon. He did not believe that the motor root contained sensory fibres, and did not think that trauma of the ganglion had anything to do with keratitis. By the Härtel method the alcohol was placed in the roots of the nerve and not in the ganglion. Alcohol injection made subsequent operation much more difficult, owing to adhesions.

Burns and Scalds

The discussion on this subject was opened by Mr. Eric Lloyd with the paper which appeared in the *Journal* of August 1st (p. 177). In his introductory remarks Mr. Lloyd pointed out that the Registrar-General's figures in cases of deaths due to burns were to be relied upon, since all cases were subject to a coroner's inquest. These figures showed that though the mortality rate was diminishing, 1,700 deaths occurred yearly from this cause. Fraser's figures from Edinburgh in 1926 showed that the mortality rate in children under 10 years old was 38.7 per cent. He described in detail the general treatment of burns, emphasizing the importance of rest, warmth, fluids, and morphine. In local treatment, the use of tannic acid was a definite advance. It prevented the absorption of protein from the damaged area by coagulation; pain was strikingly lessened, and scarring was generally slight. The details of the technique of the tannic acid treatment were described. Temperature charts were shown illustrating the effect of blood transfusion and of tannic acid treatment, and compared with charts obtained before the use of such methods. Tannic acid as a rule prevented the toxaemic stage, and blood transfusion was now rarely necessary. Mr. Lloyd demonstrated pictures of deformities and disfigurements after burns, and described plastic methods for their cure.

Mr. J. Shirley Callcutt agreed with Mr. Lloyd about the liberal use of morphine in the early stages of burns—namely, in primary shock. He outlined the physiological state in secondary shock and its successful treatment, in desperate cases, with pituitrin. Referring to the question of sepsis he affirmed that it was very common, and should not be treated with moist dressings. He wished to draw attention to the prevalence of the onset of true scarlet fever within a few days of burns. Finally, he quoted a case of scalding with some dilute sulphuric acid agent, in which the scalds were extensive and primary shock profound, and which developed no signs of secondary shock. Mr. Dickson Wright said that there was often a good deal of pain and general upset when the scabs came off, leaving a septic field. He recommended spraying these painful septic areas with a solution of aspirin in water. He did not agree that pedicle grafts were desirable for burns, since the operations were moderately severe. He was of the opinion that Braun's method, tunnel grafts, or a method used by himself were much more satisfactory. Large, clean, granulating surfaces would often heal if they were strapped and left undisturbed for three weeks. He thought that the tannic acid treatment was an excellent method.

Mr. Eric Lloyd, in reply, said that scarlet fever was a fairly common occurrence after burns and also after operations on the mouth in children. He thought Mr. Dickson Wright's suggestions worthy of trial.

SECTION OF OBSTETRICS AND GYNAECOLOGY

Friday, July 24th

ENDOMETRIOMA

The final session of the Section was occupied by the reading of several short papers. Dr. DANIEL DOUGAL (Manchester) opened the proceedings with a communication upon endometriosis and endometriomata. He defined endometriosis as the pathological state brought about when endometrial fragments invaded the uterine wall or, passing through the Fallopian tubes in regurgitant menstrual blood, reached the pelvic cavity and the structures within it. Cullen's diverticular and Sampson's retrograde menstruation, and cellular spill theories, were therefore accepted as providing the most reasonable explanation of uterine and extra-uterine endometriosis respectively. Endometrioma was defined as one of the tumours which developed when misplaced endometrial fragments or implants proliferated sufficiently to form clinico-pathological entities, and was accepted as the most suitable term to apply to all such tumours, whether uterine or extra-uterine. Dr. Dougal described the clinico-pathological features of the endometrium, and laid special stress upon the multiple character of the lesions resulting from endometriosis. The physical signs depended upon the situation of the tumour—in uncomplicated uterine cases there was usually a moderate and uniform enlargement of the uterus, but with cornual tumours there might be definite irregularity. In either case the physical signs closely resembled those of a uterine fibroid, and differential diagnosis was impossible unless increasingly severe dysmenorrhoea led to a suspicion of the true state of affairs. In ovarian endometrioma there was enlargement and fixation of one or both ovaries. There were no pathognomonic symptoms of endometrioma, but increasing dysmenorrhoea, menorrhagia, and dyspareunia should lead one to suspect the condition. The physical signs were more characteristic, and fixation of the uterus and ovaries associated with a shotty nodular tumour behind the cervix afforded almost conclusive evidence. As regards treatment, a conservative policy was only justifiable if one ovary was involved, or if there were isolated nodules in the recto-vaginal space causing dyspareunia. In 83 per cent. of his cases the uterus and all ovarian tissues were removed, the operation in the remainder consisting of excision of one ovary or of nodules in the recto-vaginal space. Owing to dense adhesions the operations were as a rule extremely difficult, but the results, both immediate and remote, were extraordinarily good. He preferred total to subtotal hysterectomy; it was unnecessary to excise infiltrating growths in the rectum or other parts of the alimentary tract, as atrophy would follow if both ovaries were removed. He had had no experience of radium in the treatment of endometrioma, because he preferred local excision in early cases as less likely to interfere with ovarian function.

The President, Mr. EARDLEY L. HOLLAND, said that he had never heard the subject presented so comprehensively and clearly as Dr. Dougal had done. Dr. MANWARING-WHITE (Hartford) said that he had had experience of one case. He could bear out what Dr. Dougal had said about symptoms. His case displayed extreme dysmenorrhoea, dyspareunia, and pain on micturition. Pain was so extreme that the patient was a complete invalid. In this case the tumour was in the recto-vaginal space. Pain persisted after operation until cured by deep *x*-ray therapy. He wondered whether these cases could not be treated from the beginning by *x*-ray therapy. Dr. DONALDSON said that he had had one case which did extremely well with radium treatment. The PRESIDENT remarked that he had seen a case involving the recto-vaginal septum. It was treated by a full dose of intra-uterine radium, and the result was almost miraculous. He raised the point as regards conservatism in operation: Was it advisable to remove the whole ovary or only to excise the affected part? His experience of conservatism had not been very satisfactory. As soon as destruction of the ovary was obtained symptoms abated. Mr. COOK asked how involvement of the umbilicus came about, and said that he would like to know what happened to endometriomata after the menopause.

Dr. DOUGAL, in reply, said he had no experience of deep *x*-ray therapy in these cases. He felt that the tragedy was that treatment, surgical or by radium, had to be so radical. He felt that some means of preserving ovarian function should be aimed at. He did not think there was any advantage in leaving part of an ovary behind. He thought it was not unreasonable that an implant might rise up on the fundus of the bladder, and so involve the umbilicus. He had operated on one case after the menopause, and there was some calcification of an endometrial cyst of the ovary. Ordinarily, symptoms should disappear after the menopause.

THE SHAPE OF THE PELVIC BRIM AND CHILDBIRTH

Dr. KATHLEEN VAUGHAN read a paper on the shape of the pelvic brim as a determining factor in childbirth. Workers in India and China knew that field workers had their children without difficulty: the town dwellers experienced great difficulty. The negress in natural surroundings had her children with ease; in America, when living in cities, they seemed to have increasing obstetrical difficulty. The reason must be disparity between the size of the foetal head and the brim of the pelvis. The female pelvis was subject to extreme variations in shape. She showed a series of tracings to illustrate this, taken from specimens of different races in the College of Surgeons museum—the shape of the brim determined the capacity of the pelvis. It would appear that the more primitive the conditions of life the more circular in shape was the brim of the pelvis; this was not so much racial in origin as due to conditions of life. Any variation in shape from the circular led to difficulty in the passage of the foetal head. Pelvic development depended upon the sacro-iliac joints, and ankylosis of one joint would cause failure of development of that side of the pelvis. In the open-air races the sacro-iliac joints were well and fully developed. Immobility of the joint led to changes in the shape of the pelvis. The whole pelvis was expanded to its greatest capacity in the squatting position. Exercise of the sacro-iliac joints led to freedom from obstetric difficulties. Dr. JANET M. GRAY confirmed the great difference between those who lived in the open air and those who lived in confined spaces. In purdah women difficulty was practically always met with. Dr. DOUGAL called attention to the strength of the uterine contractions, which were naturally stronger in open-air workers. This was probably due to a good supply of pressor substances being present in the uterus. A sluggish uterus was due to a deficient supply of these substances; secondary inertia might be due to the supply being used up.

HAEMORRHAGE AND SHOCK

Dr. O'DONEL BROWNE (Dublin) read a paper on shock following blood extravasations, with special reference to the treatment of accidental haemorrhage. Shock was produced by reabsorption of blood extravasated, and blood pressure fell markedly. Rapid pulse and sweating made their appearance when the pressure fell to 100 mm. Hg, and the symptoms became more marked the lower the pressure fell. The routine pre-operative treatment was warmth and elevation of the bed, submammary or intravenous salines, morphine, pituitrin, and ephedrine.

By these means a restoration of blood pressure was often obtained. In the more severe cases there might be no improvement until the extravasated blood was removed and prevention of its reabsorption established. A pint of saline under each breast was sufficient at a time, and might be repeated in an hour or two. In accidental haemorrhage rupture of the membranes was of importance. Plugging of the vagina undoubtedly aggravated shock, and did not affect the primary cause of the loss. In practice Caesarean section on a flabby uterus was definitely not harmful. He emphasized that the first step in the production of shock was a fall in blood pressure, and in face of a persistent fall of pressure means must be sought to locate and remove the extravasated blood. If the pressure fell below 80 mm. Hg in accidental haemorrhage, classical Caesarean section should be performed. Dr. DONALDSON referred to the theory of shock put forward by Bayliss. He asked whether in any of the cases referred to the specific gravity of the blood had been taken, and whether any animal experiments had been carried out to establish the presence of histamines. He deprecated the use of adrenaline in shock; he quarrelled less with pituitary, but did not value highly any drugs. Dr. ETHEL TOWNEND (Hull) asked whether tension, either intra-uterine or abdominal, had any influence in shock.

Dr. BROWNE replied that he was not in a position to say whether histamine was liberated or not. He had not estimated the specific gravity of blood in these cases. Adrenaline had not been used. Drugs coupled with extra fluid were beneficial. Gum saline he had not given, as it was not their routine at the Rotunda, but he thought it had distinct advantages.

SECTION OF DISEASES OF CHILDREN

Friday, July 24th

BIRTH INJURIES

Professor G. B. FLEMING (Glasgow), in opening a discussion on the recognition and treatment of birth injuries in the newly born, pointed out that the infant in its passage through the genital canal probably experienced severer trauma than at any future stage of its existence, and in contrast with the reaction to sepsis in the early days of life infants showed wonderful powers of resistance to injury. Dealing first with injuries to the skin and subcutaneous tissue he said that even in normal labours some damage to the skin nearly always occurred. More serious injury might be caused by forceps, while pressure sometimes caused the condition of adipo-necrosis neonatorum, with dusky-red indurated areas of swelling, disappearing in five to six weeks. Injuries to muscles included the well-recognized deformity sometimes produced in the sterno-mastoid muscle, which the speaker was inclined to think was due to venous obstruction and ischaemic contracture. The most common bone injury was fracture of the skull, and Professor Fleming urged that surgical intervention should as a rule be avoided. Fractured clavicle sometimes occurred, and was easily treated by placing a pad between the shoulder-blades and strapping the affected arm to the side. Fracture of the humerus was best treated by wrapping a thin layer of gamgee round the arm and encircling the limb from shoulder to elbow in a fairly firmly applied band of adhesive plaster. Injuries of the viscera, fortunately rare, were not often diagnosed during life, while of all the birth injuries those to the nervous system were most likely to leave serious and lasting disability. Facial paralysis was usually caused by pressure on the seventh nerve in its course outside the skull, mostly due to the application of forceps, and always passing off in one to two weeks. Injuries to the brachial plexus caused two well-known types of paralysis, probably due to overstetching of the nerve trunks. Early recognition of brachial plexus paralysis was most important, and the principle of treatment was to place the affected muscles in a position of relaxation and keep them there for at least six months unless recovery took place before that period. Injury to the spinal cord was commonly produced during breech extraction, and was treated by educating the muscles and sphincters. Intracranial haemorrhage was extremely common and very difficult to diagnose. A definitely pigmented or uniformly blood-stained spinal fluid with crenated red cells was probably the most important sign, but did not afford absolute proof. The essentials of treatment were skilled and careful nursing, with lumbar puncture as long as there were signs of increased intracranial pressure. In conclusion Professor Fleming pointed out that the prevention of birth injuries lay with the obstetrician and their treatment with the paediatrician. He emphasized particularly the prevention of sepsis in even the slightest superficial abrasion.

Dr. N. CAPON (Liverpool), carrying on the discussion, expressed his satisfaction that the paediatrician had now begun to have a better chance of observing the newly born, and drew attention to the enormous mortality among these children, which amounted to over 20,000 annually, even if the deaths labelled prematurity, atelectasis, etc., were excluded. He thought that instead of intracranial haemorrhage it was better to speak of intracranial trauma, since the physiology of the intra-natal period as it affected the child was imperfectly understood, and since the petechial haemorrhages occurring in the brain in many infants might be on the borderline between physiological and pathological. He preferred to divide all cases of birth trauma to the central nervous system into those with obvious haemorrhage and those without. Even the latter group might contain fatal cases, and the diagnosis in life was very difficult. Dr. Capon relied for differentiation on various points—the type of labour, the degree of maturity, the colour of the baby, the state of the sucking reflex, the type of respiration, and the general appearance of the child. Birth injury to the nervous system, he said, had to be distinguished from inanition fever, pneumonia, maternal poisoning, and, rarely, from some congenital abnormality of the brain. With regard to treatment he agreed that skilled nursing came first after prevention, but he expressed himself as finding great difficulty in knowing when to do a lumbar puncture.

Dr. AGNES BENNETT (New Zealand) commented upon the frequency of septic conditions in the newborn child, and said that she thought the term trauma or injury might be an awkward one for doctors to employ. Since so many of the cases of birth injury had some degree of haemorrhage she had lately been giving subcutaneous injections of blood in all such cases. Dr. DONALD PATERSON spoke of the great difficulty of making a differential diagnosis in practice when called to see a baby with some trouble immediately after birth. Intracranial trauma had to be diagnosed from the bleeding of the newly born, from curious "heart attacks," and from sudden "blue attacks." Some cases seemed to get better when fluid was given. Dr. HELEN MACKAY said that she also had great difficulty in separating out all the conditions occurring in the newly born. She enumerated the points which helped under the headings of the character of the labour, the colour of the child at birth, the pulse rate, the occurrence of twitching, difficulty in sucking, and of the type of cry. She had recently started giving blood injections to all babies with any suspicion of head injury. Dr. C. F. HARRIS spoke of the treatment of a group of such cases where breathing was the most trouble some feature, and in which he had found much help in the administration of carbon dioxide with oxygen.

CONGENITAL PYLORIC STENOSIS

Mr MAX PAGE in opening the discussion on this subject, said that the fact that he was introducing it indicated how surgical treatment of congenital pyloric stenosis had been accepted in this country, but the pre and post-operative care was still a matter for skilled medical care He outlined the principal points in the diagnosis of the condition, and advised operation as soon as the diagnosis was established As an anaesthetic he preferred ether given with an open mask, he went on to discuss various details of operative technique In some sixty cases thus dealt with at the Victoria Hospital he had had a mortality of 6 6 per cent, and in ninety cases at St Thomas's Hospital this was 12 2 per cent

Dr N MORRIS (Glasgow) spoke of the biochemical changes occurring in babies with pyloric stenosis There was an increased carbon dioxide content of the blood, brought about apparently by the loss of the chlorine radicle, and the type of depressed respiration which resulted might be sufficient to lead to diagnosis when it was recognized The gain in weight as the case improved was associated with a fall in the carbon dioxide in the blood Careful studies, however, showed that the chloride metabolism was upset altogether apart from the loss by vomiting, and it was possible that the primary cause of pyloric stenosis was a disordered metabolism of the alimentary tract in the neighbourhood of the pylorus leading to the elaboration of some histamine like substance, which, on absorption, caused abnormal metabolism of both chlorine and nitrogen From a practical point of view his studies led him to advocate cautious administration of saline to these cases, and on no account to wash out the stomach with an alkaline lotion

Dr DONALD PATERSON presented mortality statistics from the Hospital for Sick Children, Great Ormond Street, and showed that the mortality for the past few years had remained stationary round about 25 per cent In private practice, on the other hand, deaths after the operative treatment of pyloric stenosis did not occur, he attributed this difference entirely to nursing, and especially to individual care The type of operation or the surgeon did not appear to be important factors He discussed the danger of alkalosis in these cases, and described in detail the post operative feeding methods Dr JEVS SMITH made some remarks on a series of cases of pyloric stenosis and on babies who vomited without having this condition, in the light of clinical, radiographic, and biochemical findings She thought that the chemical changes found gave great assistance in both diagnosis and prognosis

Dr DOYNE BELL said that his contribution to the discussion was in a sense complementary to that of Mr Max Page, in that his observations were based on a series of 110 cases of pyloric stenosis from the children's ward of St Thomas's Hospital, the majority of which had been operated on by Mr Page The pre operative treatment of these children consisted essentially of gastric lavage with normal saline, and the subcutaneous infusion of 5 per cent glucose in normal saline After operation the child was fed hourly on a solution of lactose in water (one drachm of lactose to four ounces of water) for the first seven hours after which gradually increasing quantities of breast milk diluted with boiled water were given The progress to whole breast milk, seventy two hours after operation, was much slower than that outlined by Dr Donald Paterson but to this was attributed the avoidance of post operative gastro intestinal complications There had been no death from gastro enteritis in this series since the year 1923 The preponderance of first born children among infants suffering from this condition had been mentioned by Mr Page Dr Doyne Bell stated that in the series he was considering 50 per cent of cases had occurred in first born, 23 per cent in second born, 14 per cent in third children, 5 per cent in fourth children, and so on He had, however, compared these figures with those given in the 1921 Census for families with 1, 2 3 4, or 5 children, and had found that they corresponded almost exactly He considered, therefore, that the preponderance of first born children was of no significance whatever With regard to post operative pyrexia, the mortality among infants running a temperature of over 102° F, which formed 38 per cent of this series, was no higher than among those who showed no such rise of temperature after operation The value of x ray examination in these cases was small, 13 4 per cent of cases subsequently proved to have hypertrophic stenosis gave negative results with the barium meal Mr R A RAMSAY spoke of the importance of close co operation between surgeons and physicians in the treatment of this condition He had used local anaesthesia with great success in a large series of cases, and he thought that recurrent vomiting was always due to insufficient dividing of the hypertrophied muscle The post operative fever he attributed to the sudden access of food to the intestine

Dr HELEN MACKAY said that she preferred to give relatively concentrated feeds and to give the extra fluid as saline after operation on pyloric cases In the case of breast fed infants it was important to see that, where the milk supply was abundant, the baby did not get overfed too soon after operation Professor G B FLEMING said that the difficulty of treating children in hospitals was more a question of infection than of inefficient nursing which was usually better in institutions than in private

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SECTION OF PATHOLOGY

Friday July 24th

FACTORS DETERMINING EPIDEMIC DIFFERENCES

Professor MAJOR GREENWOOD opened the discussion with the paper printed in full in the *Journal* of August 8th

Professor W W C TOPLEY said that he could not answer the question before him, but could say something about the factors determining the difference between epidemic behaviour of one disease and that of another It would differ from that of another if the quality of the immunity differed significantly He would hazard a guess that solid immunity was a laboratory myth, although they could approach it more closely in the virus disease ectromelia than they could in the bacterial diseases Antitoxic immunity behaved in a similar way to antivirus immunity they were both highly effective over a wide range of conditions of exposure to risk, while the efficiency of anti bacterial immunity was of a far more relative and limited kind The possible significance of a variety of factors such as the influence of diet, of actual hunger and starvation, of fatigue, of climatic or seasonal factors, or of variations in the virulence or epidemic potency of the infecting parasite, could not be discussed at length, because, although it was probable that they exerted an influence, the definite proof that they did so was lacking

Lieut Colonel C A GILL said that the openers suggested that little advance had been made in their knowledge of this subject but he thought that they themselves had done a great deal to put this knowledge on a sound basis His own interest had been largely concerned with plague relapsing fever malaria and other protozoal diseases It appeared to him that there was a unitary mechanism of epidemiology in all diseases irrespective of the nature of the *materies morbi* Dr J D ROLLESTON observed that second attacks of diphtheria and scarlet

fever were recorded in the literature. He had had experience of one patient with a second attack of small-pox. Her first attack was confluent, and resulted in scars; she then went to work as a nurse in a small-pox hospital, and had an undoubted second attack; this was in 1901–2. Second attacks of typhus and chicken-pox were rare, but certainly did occur. Dr. BRADLEY said that, as a school doctor, he would like to refer to an epidemic of sore throat from which they had isolated streptococci appearing to be all of the same type. It ran a long course, and then died out. He suggested that it was possible for a new infection to antagonize a previous epidemic.

SECTION OF PUBLIC HEALTH (INCLUDING TUBERCULOSIS AND OCCUPATIONAL DISEASES)

Friday, July 24th

PROBLEM OF THE CHILD IN THE TUBERCULOUS HOUSEHOLD

The third session of this Section opened with Sir GEORGE BUCHANAN in the chair.

Dr. R. C. WINGFIELD (Frimley), in the opening paper, referred to the financial burden and the legislative steps necessarily associated with any further efforts to diminish the incidence of tuberculosis. There were many conflicting opinions as to how these children should be dealt with, and the view-points of clinical and preventive medicine were often essentially different. The problem could be stated as four questions. (1) What was the relation, in time and in intensity, of the incidence of infection among contact children to that among the general child population? (2) Did the "contact child" run greater risks of immediate sickness and death from tuberculosis than the average child? (3) Was the contact child, similarly, exposed to a greater risk of future sickness or death from tuberculosis? (4) Did the contact child constitute an immediate danger to the community? Dr. Wingfield quoted figures to show that the incidence of infection was much higher among contact children, occurring earlier in them, and almost reaching its highest point during the first five years of life. The death rate from tuberculosis (and therefore presumably the incidence of clinically recognizable infection) was definitely higher among contact children. The risk was greatest with the youngest children, and the danger was probably that of repeated infections. As regards the risk of future sickness or death from tuberculosis the position of the contact child was more debatable. Infection in childhood certainly exerted a protective influence, but there was no evidence to show that the extremely early infection, which was the prominent feature of childhood exposure, exerted any influence on the incidence of adult disease. It might, however, be concerned in causing adolescent tuberculosis. The contact child who was not actually suffering from tuberculosis did not constitute a public danger, so far as was known at present; but the question could not be regarded as finally settled. Dr. Wingfield then offered some constructive suggestions. The general practitioner should pay more attention to the hygiene of the home. The danger to children was not so much exposure as continuous and intimate exposure. Tuberculin should be more extensively used as a diagnostic test. Particular care was necessary when adolescence was reached, and *x*-ray examinations should be made, for the adolescent with open and obvious tuberculosis was a rather hopeless problem. B.C.G. immunization was useful to tide over the dangerous period of infantile contact, in conjunction with methods of preventing continuous mass exposure; but the protection was admittedly short-lived. Desensitization by tuberculin injections might also be tried.

Sir GEORGE BUCHANAN remarked that Dr. Wingfield's paper had afforded another excellent example of what might be termed "stocktaking" in public health. present position and future possibilities had been cle outlined. Dr. Wingfield's method of formulating pre questions and summarizing the lines of reply was part larly commendable in this connexion.

Dr. F. R. G. HEAF thought that a clear distinc between the various types of lesions in childhood required before definite conclusions could be reacl Infection must be distinguished from active disease. distinction must also be recognized between cases which active infection was confined to the lympha and those which were definite instances of pulmon tuberculosis. In speaking of "survival infection," Dr. Wingfield mean merely an apparently healthy c with a positive Mantoux reaction, or a patient who had definite clinical symptoms of adenitis or pulmon tuberculosis? In the first two types a degree of munity was certainly conferred, but in cases of pulmon tuberculosis the work of Opie and McPhedran seemed indicate that, if a pulmonary lesion healed in childh —not so rare an occurrence as once thought—it wo probably break down eventually in early adult life. sudden increase in the number of deaths from pulmon tuberculosis after the age of 15, and the frequency w which healed infantile lesions were found in these ca indicated that any immunity acquired in childhood disappeared, and it might be that a negative ph had been established. It was also significant that cases of adult pulmonary tuberculosis there was rarely evidence or history of cervical adenitis, and vice ver it was usual to find cases of cervical adenitis with pulmonary lesion. Tuberculosis in its early stages essentially a disease of the lymphatics; so long as infection was limited to that system it might be trea successfully and relapse prevented. In contacts t first line of defence was only too frequently broken do by repeated fresh infections, which the resistance of body was unable to withstand. The incidence amo contact children was much higher than among n contact ones. At the age of 2, excluding those child who had received such a massive infection as to prod general infection, over 50 per cent. were in a state lymphatic infection which could be controlled arrested. Provided that these children could be protec from further infection they should enjoy as good hea as the non-contact child, and possess a certain deg of immunity. But the childhood infection must be c mild character confined to the lymphatics, if it was go to exert a protective influence against adult infection.

The problem therefore resolved itself into prevent the contact child becoming re-infected. The morta figures varied with the conditions of life. In Aus there was the appalling figure of 40 per cent., while Papworth Colony there had been no deaths recorded fr tuberculosis among the children of the colonists. Betw these extremes could be found all degrees. The obvi course was to remove the source of infection or to rem the child from the source of infection. The former volved strict adherence to all the rules of hygiene i suitable environment by the parents, a condition wh could only be carried out in a colony administered on lines of Papworth. The other meant taking the ch away from its parents to suitable conditions until was at least 6 or 7 years of age, when it should h as good chances as the non-contact case. Enough st had not been laid upon the deprivations present in tuberculous home, and the far-reaching effects these m have on the health of the child or children. Wingfield had given the impression that he was not in favour of harsh interference, but that he would inclined to leave it to Nature, who was slowly find her own solution; but it was surely right to assist

the struggle. Social conditions had resulted in the universality of the infection, and it was a duty to prevent the disastrous results due to neglect. No attempt should be made to lower the incidence of the infection; surely it was better for a child living in a city to have a moderate positive Mantoux reaction. The speaker said that he looked forward to the day when children would be either immunized by the living virus or desensitized with tuberculin injections. All contact children should be subjected to a periodic Mantoux test, and as soon as they became reactors they should be removed from further infection until 6 or 7 years of age, when they might be allowed to return home if the conditions had been made suitable, and the parents were capable of preventing re-infection. Under this system the children would have every chance of developing both physically and mentally, and would escape the privations and anxieties which were almost always present in a tuberculous home. It was important to differentiate between treatment and segregation; the former required skilled medical attention, while the latter only needed disciplined institutions or homes conducted by suitable persons and subject to medical inspection. The outskirts of the town in which the parents were living was probably the best situation; the children would grow up immunized to an urban atmosphere in which they would probably have to live all their lives. The difficulty of removing children from their parents would lessen and finally disappear by education and propaganda.

The present solution of the problem, therefore, could be found by (1) performing Mantoux tests on all children in tuberculous homes; (2) when positive, removing the children to properly conducted homes under medical supervision or to institutions for treatment; and (3) education of the public, particularly those suffering from tuberculosis. On these lines many thousands of lives could be saved. The initial expense might be considerable, but not more than that at present expended on trying to patch up the many cases of active tuberculosis in children whose resistance had been broken down by repeated infection, and the adolescent cases which could be traced to a pulmonary infection in childhood.

Dr. H. B. GIBBINS (Eastbourne) thought contacts were classifiable into three groups: (1) contacts living in home with open cases; (2) in contact with non-infective open cases; and (3) in contact with closed cases, as, for example, hip-joint disease. He was rather surprised to hear that infection was not to be avoided. Mass infection should be remembered as well as continuous exposure. Patients in sanatoriums should be taught more systematically as regards this. Dr. L. P. LOCKHART (Nottingham) feared there was a grave danger of condemning the contact child to the less hopeful environments from the economic point of view. A definite stigma was now attached to the child who had been to the open-air school, as regards subsequent employment. In many factories the conditions were quite good, and similarly in other indoor industries. He asked whether Dr. Wingfield approved making more use of industrial medical officers.

Dr. WINGFIELD, replying, said that Dr. Heaf's reference to pulmonary lymphatics was a very practical point as regards adolescent disease. Victimization of adolescents as regards employment was a serious matter. The classification of contacts had been tried at Brompton, and certain statistical conclusions had been reached. The speaker agreed as to the value of indoor work for tuberculous patients. Industrial medical officers could render valuable assistance.

ACUTE TONSILLITIS AND SOME OF ITS SEQUELS

A joint paper by Drs. J. ALISON GLOVER and F. GRIFFITH, describing epidemiological and bacteriological observations on acute tonsillitis and some of its sequels, was read by Dr. Glover. Epidemic tonsillitis had been found to be one of the most common causes of invalidity in boarding schools; it was due to members of the haemolytic *Streptococcus pyogenes* group. Throat infection with these organisms presented various clinical pictures. These included the symptomless infection, or *healthy carrier state*; *tonsillitis*; *febricula*, *feverish* catarrh, or pharyngitis, without noticeable soreness of the throat; and scarlet fever. Any of the three last conditions might be followed by otitis media or acute rheumatism. Many serologically different types of haemolytic streptococci might cause scarlet fever, but certain types predominated; in 30 per cent. of the cases strains forming a group of heterogeneous types were concerned. Epidemic tonsillitis without rash was generally attributable to such heterogeneous organisms; these caused scarlet fever when their toxigenic powers were sufficiently high to overcome the antitoxic immunity of the person attacked. There was some evidence that the two most common types in scarlet fever were not invariably of high toxigenicity. In any epidemic of scarlet fever there were concurrent cases of tonsillitis and mild pharyngitis, and numbers of healthy carriers would be found, all yielding the same type of streptococcus as the scarlatinal cases. These unexpected sources of infection constituted one of the most difficult problems in the control of scarlet fever. Epidemics of tonsillitis, or the occurrence of "dropping" cases of scarlet fever, and perhaps of otitis media in schools, were generally associated with a high carrier rate of haemolytic streptococci. Epidemics of measles and influenza, even in good hygienic conditions, increased the spread of haemolytic streptococci, which were the chief cause of serious complications in these diseases. Epidemics of tonsillitis and the prevalence of high carrier rates of haemolytic streptococci sometimes indicated the existence of bad environmental conditions, such as crowded or deficiently ventilated dormitories. Adequate spacing of beds and the prevention of crowding in classrooms were important factors in preventing the spread of infection. Dr. Glover showed slides to illustrate various statistical conclusions which had been reached in respect of the epidemiology of these streptococcal infections.

Dr. E. H. R. HARRIES (Birmingham) said that the same sort of cases were seen in fever hospitals, and the same conclusions were deducible. The percentage of positive Dick reactors in schools tested had always been very high. Nurses in scarlet fever wards developed simple tonsillitis. This condition was undoubtedly often the cause of outbreaks, in which the haemolytic streptococcus was certainly concerned. Dr. MONCKTON COPEMAN cited similar conclusions reached in the past when bacteriology was in a more primitive condition and the haemolytic characteristic of certain streptococci could not be demonstrated. Professor Klein had been the pioneer in this field, the value of whose work could not be overestimated. The speaker wondered whether these different streptococcal types might have a common origin, and the serological changes in them be due to alterations in environment. Dr. R. ASHLEIGH GLEGG (Lewes) concluded that the proper spacing of dormitory beds was a serious practical matter. He had obtained evidence showing that scarlatinal infection disseminated by milk, though the primary cases were sometimes mild, had led to such grave complications as erysipelas and nephritis. Cases of sore throat occurring in workers on dairy farms should be notifiable, and when there were similar occurrences in the general community the milk supply of the patients should be traced by the general practitioner.

Dr. R. H. WILSHAW (Worthing), speaking about the high percentage of tonsillectomies in which otitis media

was said to develop subsequently, thought that the incidence of disease had been diminished rather than increased by generalizing this procedure. Dormitories ought to be arranged with more cubic space for each inmate. Dr. W. H. BRADLEY (Bath) agreed that the tonsillectomy percentage was high, and that no decrease in naso-pharyngeal disease incidence had ensued. Droplet infection was the essential factor in this problem. Mouth-to-mouth infection rather than space considerations were concerned in some cases of epidemic streptococcal outbreaks. Dr. J. TERTIUS CLARKE (Harrow) asked whether rheumatic fever in schools was more common than had been thought. He also inquired about the conditions in Malaya, where scarlet fever did not occur, and, when introduced, did not spread.

Dr. GLOVER replied that haemolytic streptococci did not seem to occur near the Equator. Diphtheria was curiously rare in public schools. As regards standards of space in dormitories, that of the Board of Education —3 feet between the beds—was advisable and probably safe, even in cases of coughing. Prevention of disease in haemolytic streptococcal cases was very largely a matter of space.

Dr. W. E. PORTER (Eastbourne), proposing a vote of thanks to Sir George Buchanan for his continued presence on each of the three days, said that the Ministry of Health was very well provided now with facilities for acquiring information of the highest practical importance. Even in Eastbourne there were far too many facilities, however, for investigating haemolytic streptococci. Mental improvement was one of the most striking benefits conferred by tonsillectomy, and fully justified its practice. The increasingly common open bedroom window was a gratifying sign of the present progressive times, and had much improved the general health. As a member of the town council he reiterated the pleasure felt by Eastbourne at the visit to it of the largest congress hitherto.

Sir GEORGE BUCHANAN replied that he had been at first almost appalled at the number and variety of topics raised during the three days, but the results had been most happy. The papers had been excellent in themselves, and had all interlocked most usefully ; the Section had been of the greatest value, and must have been one of the best ever arranged. The excellent work of the secretaries, Drs. Gibbins and Massey, had been very largely responsible for this, and the size of the various audiences had been most gratifying.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

Friday, July 24th

THE PROGNOSIS IN GENERAL PARALYSIS

With the President of the Section, Sir JAMES PURVES-STEWART, in the chair, Dr. W. A. CALDWELL read a paper entitled, "A survey of probable prognostic factors in the treatment of general paralysis." He said that the data on which his paper was based had been obtained from observations made on seven or eight hundred patients who, while under certificate in the London County Council mental hospitals, had received treatment by methods such as malaria, relapsing fever, sulfosin and tryparsamide, or a combination of some of these, together with subsidiary treatment by novarsenobenzene and other arsenical substances. As regards sex, the incidence of neuro-syphilis in women was only one-third of that in men, although the nervous systems of both (as shown by the relative percentages of cerebro-spinal fluid abnormality) were invaded with equal frequency in the early stages of syphilis. The differences were greater in women who had one or more pregnancies ; the greater the number of pregnancies, the lower was the incidence of neuro-syphilis. In analysis of the figures showed that a previous pregnan the chances of a successful remission of the regards age, excluding juvenile paretics, it was the younger the patient was the better was th This was true in a restricted sense, since w with certifiable mental disease one was usually the patient reached a state of remission good justify his discharge from hospital, and suffi longed to allow him to remain out indefinitely return to the normal was not demanded. If c the first criterion, age was not of such param tance, for some patients as old as 56 remitted ment, while others over the age of 60 definitel Of discharged patients who could be r economically satisfactory 71 per cent. were un of 40. This age factor, however, was of lit assessing the chances of life in a treated pa the cases under consideration the highest rel rate was found in patients between the ages o Different types of general paralysis were als vary *in their response to treatment*. The grandiose paretic still appeared to be the m type, and at the same time gave the high *discharge rate ; this was very closely follo* manic type. At the other extremes came th and the juvenile cases. There was a definite t *early treatment—treatment* begun two to after the first manifestation of general paraly better results, since not only was the discharg in the earlier months, but the unimproved c to increase proportionately as time elapsed. still the most successful pyretic agent, for (excepting sulfosin and allied sulphur prepa introduction of which was too recent for a co ment of their value to be made) were uncertai their production of any reaction, or, hav effective, were uncontrollable in their course. cent. better result was obtained if the malaria up by a course of novarsenobenzene. The pa cussed by Dr. F. R. P. TAYLOR (Hellingl WORSTER-DROUGHT, and the PRESIDENT.

EXOPHTHALMOS OF CENTRAL ORIGIN

Dr. W. RUSSELL BRAIN said that by exop central origin he implied exophthalmos occurr ciation with signs clearly pointing to an orga the central nervous system. The following clin were important. Such exophthalmos might b with supranuclear ocular palsies, especially wi of conjugate vertical movements and c external ophthalmoplegias ; or internal *ophtha* sluggish pupillary reactions or even the Argyl pupil. The exophthalmos might be unilateral or unequal on the two sides. It might b with lid retraction or with ptosis, either unilateral, equal or unequal. It might occ without enlargement of the thyroid gland, a be associated with disturbance of the sugar The lesions associated with exophthalmos logically varied, and often obscure. Encephaliti usually with Parkinsonism, was responsible number. Several patients had a high bloo although in only one case of Dr. Brain's serie any evidence that the lesion was vascular. S only be distinguished as nuclear ophthalm unknown origin. The most important single that in which ophthalmoplegia was associated w enlargement ; some of these cases had been d myasthenia gravis associated with exophthal Dr. Brain also gave details of the cases he ha illustrating them by lantern slides. The pap cussed by the PRESIDENT and Dr. D. MCALPI

PSYCHIC PAIN IN THE PSYCHOSES

Dr. HENRY DEVINE, in a paper on psychic pain in the psychoses, said that, taking the psychoses as a whole, he considered that external stresses played a relatively small part in their development. Financial disaster, the loss of someone loved, persistent domestic stress, and impaired social esteem might reasonably be expected to affect the psychic equilibrium; but, generally speaking, they did not have this effect. They might, and often did, bring about enduring psychic pain and tended to diminish efficiency. When a psychosis developed under severe stress some pre-existing abnormal sensitivity, or some inadequacy in meeting the demands of everyday life, would probably be revealed in the history. A negative history of recent trauma generally excluded the possibility that external events might have taken part in the causation of a psychosis. In all cases it was necessary to make extensive inquiries into the past, with a view to discovering the extent to which the symptoms could be traced to subtle environmental influences which had affected the instinctive emotional life. One could scarcely fail, however, to be driven to the conclusion that there was some pre-disposition in the subjects to a psychosis which rendered them peculiarly liable to succumb to the inevitable stresses of life. It was Dr. Devine's purpose to consider in their general terms the nature of the defects in these patients which favoured the development of a mental illness. Psychic pain or discomfort—pure feeling without cognition—was an essential primordial, indispensable, and innate element in the process of life. Discomfort, and not pleasure, was the primary stimulus of vital capacity. Pleasure was essentially a negative stimulus. Even supposing that external agents played an important part in the causation of the psychoses, little could be done in preventing these illnesses. It was true that psychotherapy often resolved itself into the provision of an artificial environment where the patient could be relieved of the inevitable tension of daily life, but this could not be described as curative treatment. The ideal therapeutic aim was to disentangle the inner life of the patient and to enable him to meet the difficulties of life with confidence, courage, and good humour. Dr. Devine then proceeded to discuss the psychology of the schizophrenic, comparing the thought-activity of these patients with the normal dream-activity. What was seen in these patients was not the deterioration of the more recently acquired functions, but rather of the oldest and less essential functions—namely, those of instinct and feeling. It had to be recognized that intellect, as distinguished from feeling and emotion, was not an indispensable element of life. The paper was discussed by Dr. H. CRICHTON-MILLER.

ENCEPHALOGRAPHY AND VENTRICULOGRAPHY

Dr. H. COHEN (Liverpool) showed cinematograph films illustrating (1) the technique of the replacement of cerebro-spinal fluid in the subarachnoid system and ventricles by air introduced by the lumbar route (encephalography); (2) the technique of ventricular puncture, and the replacement of the cerebro-spinal fluid therein by air; and (3) an operation for the removal of a large parietal cerebral tumour, which proved to be a tuberculoma. He also showed a series of lantern slides demonstrating the results of radiographical examination of the head following the subarachnoid and intraventricular introduction of air (encephalography and ventriculography). During the course of his remarks Dr. Cohen said that in 74 per cent. of cases of cerebral tumours no *x*-ray evidence of their presence could be obtained, apart from ventriculography; hence this procedure was of great value, not only in the lateralization, but also in the localization of such tumours.

The President, Sir JAMES PURVES-STEWART, also showed an interesting series of slides illustrating the results of encephalography in frontal tumour, parietal subdural haematoma, temporal lobe tumour, growth in the lateral ventricle, mid-brain tumour, and tuberose sclerosis.

SECTION OF OTO-RHINO-LARYNGOLOGY

Thursday, July 23rd

VERTIGO

The opening paper at the second day's proceedings was read by Mr. F. W. WATKYN-THOMAS, on the subject of vertigo. Confining himself to vertigo associated with aural suppuration, he said that three principal groups of cases were to be distinguished. These were: (1) cases in which the labyrinth wall was intact; (2) cases in which the labyrinth wall had yielded to infection to a great or less degree—the labyrinthites; (3) cases in which infection had reached the posterior fossa—cerebellar abscess and retro-petrous abscess. The usual classification of the different forms of labyrinthitis was admittedly faulty, especially in the inaccuracy of the terms employed, but it usefully emphasized important clinical distinctions. The three principal varieties were: circumscribed labyrinthitis, serous labyrinthitis, and diffuse suppurative labyrinthitis, which might be either latent or manifest. In suppurative labyrinthitis the aim of surgery was not to alleviate the vertigo, but to insure against meningitis. It was now generally admitted that in the first enthusiasm for labyrinthine surgery far too many labyrinth operations had been done, but, on the other hand, he thought that the reaction had now gone too far, and the belief that no labyrinth operation should be done until meningeal signs appeared was responsible for dangerous delays.

Mr. EDWARD D. D. DAVIS read a paper founded on the study of seventy-two cases of vertigo seen by him, in which thorough investigations had been made. Of these cases three were due to traumatism, three to acute otitis media, six to acute aural suppuration or exacerbation of a chronic suppuration, twelve to chronic aural suppuration, fourteen to secondary sclerosis after healed suppuration, two to Eustachian obstruction, thirteen to otosclerosis, two to cerebellar abscess, one to tabes, three to disseminated sclerosis, three to general intestinal and circulatory disorders, and in ten cases the cause of the vertigo was unknown. Some of the cases of otosclerosis showed a distinctly low blood pressure, but with this exception the blood pressure was normal, and there were no cases of high blood pressure.

Sir JAMES DUNDAS-GRANT's experience was more with chronic than with acute cases. Ménière's disease was a favourite diagnosis with physicians, but the vertigo might often be due to other conditions, such as arterio-sclerosis, epilepsy, or cerebellar tumour. He was convinced of the value of small doses of quinine in the treatment of labyrinthine vertigo; so much so, that it was of value in diagnosing labyrinthine from other conditions. In his opinion the quinine lowered the sensibility of the sound side more nearly to that of the diseased side. Mr. MUSGRAVE WOODMAN (Birmingham) had performed the Portmann operation of opening the endolymphatic duct in seven cases; six patients had been entirely relieved of their symptoms, which in one of them, however, had recurred in three months. The operation should be limited to cases that were not relieved by simple treatment. It was quite a safe operation in skilled hands, and had a very short convalescence. Mr. HERBERT TILLEY said that, in contrast with Mr. Davis, he was a firm believer in the part which Eustachian obstruction played as a factor in some cases of vertigo, and instanced a very striking example which occurred in a medical colleague. The patient "staggered" into his consulting room, but a few moments afterwards, and as a result of inflation, he walked out without the slightest trouble, and drove

his own car home. He had often wondered if many of the fatalities which occurred during open-air bathing, and which coroners' verdicts ascribed to cramp, might not have been due to cold water entering the middle ear through a perforation, thus inducing a caloric reaction and giddiness. Vertigo coming on suddenly in deep water would obviously be a most paralysing accident; whereas cramp in one or both legs would not cause a bather to sink or render it impossible for him to use his arms and hands to keep on the surface for a few moments till help was available.

Dr. Dan McKenzie said that if there was such a Section of the British Medical Association as a General Practice Section, vertigo or giddiness would surely be one of the most frequently and urgently discussed subjects, for it was one of the most common ailments in general practice. He insisted on the term Ménière's "disease," and not "syndrome," or the other terms that were being used; for if the Ménière group of symptoms was not a disease he did not know what a disease was. Mr. J. F. O'Malley said that the textbook classification of vertigo was still unsatisfactory, symptoms having been mixed up with the real causes of the disease. Mr. Lowndes Yates raised the point of compensation in vertigo; when one labyrinth died the other took on its functions. Some cases could be cured by simple exercises to establish compensation: making patients turn one or the other direction every day, or making them walk blindfold, were simple examples. Mr. T. B. Jobson (Guildford) mentioned post-traumatic cases, and asked how the pathology was to be explained. Mr. Mollison, the President, mentioned cases in which there were sensitive spots on the external canal, without any fistula and in the presence of a dry mastoid cavity; such cases were relieved by painting the spots with a caustic. Like Mr. Tilley, he was concerned with the importance of Eustachian blockage in causing vertigo.

Mr. Watkyn-Thomas, in reply, said he had seen one case of leukaemia in which there was bilateral labyrinthine obstruction, and in this case there were practically no labyrinthine symptoms. He agreed that Eustachian obstruction was a factor, but he thought there was usually another factor as well, such as an impacted wisdom tooth or a sinus suppuration. Relief of Eustachian obstruction relieved the general waterlogging. The psychological element was also important. He thought this was helped by exercises such as Mr. Yates had mentioned.

Acute and Subacute Otitis Media

With Mr. J. B. Horgan, Vice-President, in the chair, Mr. H. V. Forster (Liverpool) read a paper on the diagnosis and treatment of acute otitis media. Mr. Forster said that of several microbic invaders of the middle ear a haemolytic streptococcus was the most common, being found in from 73 to 90 per cent. of cases examined. Among the causes of acute otitis media the common cold took an important place, as well as influenza and sinus disease awakened by the attack. Of the acute specific fevers, scarlet fever and measles predominated as invaders of the middle-ear cleft, and they stood supreme as sources of lasting and permanent damage. Pain was the symptom that called most frequently for an early incision of the membrana tympani, but one objection to early paracentesis tympani was the difficulty of the operation; the description of the proceeding sounded easy enough, but in actual practice, to carry it out accurately was not so easy. He considered that a curved incision across the lower quadrants was the best.

Mr. A. Lowndes Yates followed with a paper on subacute otitis media, which, he said, differed from the acute variety in that the Eustachian tube, obstructed in the former, was partially patent, and the pus drained down it; the acuity of the inflammation was generally in proportion to the degree of obstruction of the tube. In children, attention should be directed to the nasopharynx, and any adenoids removed, while sinuses suspected of infection should be washed out. An increasing deafness after paracentesis warranted the performance of a mastoid operation, particularly if the deafness were bilateral. In adults there were two varieties of case. In one the subacute condition was of recent origin, and similar in all respects to that of children; in the other the inflammation was maintained, and if undiagnosed—as frequently it was in its early stages—led to irremediable deafness.

Mr. J. F. O'Malley read a paper on the ear complications of influenza, referring to a series of cases he had encountered recently. In addition to surgical treatment, he had found injections of S.U.P. 36 to be most useful in these cases.

Mr. Herbert Tilley said that for many years he had advocated early paracentesis of an inflamed membrana tympani associated with symptoms of infection of the middle-ear cleft. If due care were taken to sterilize the external meatus as far as possible, only benefit would accrue from providing drainage from the tympanic cavity. Furthermore, he strongly advocated the application of the suction speculum immediately after the membrane had been incised, and until blood unmixed with pus issued from the artificial perforation. A lightly packed wick of gauze was then passed down to the drum-head; it was removed after a few hours for irrigation of the meatus, and again gentle suction with the speculum was carried out. Sphenoidal sinus suppuration was the only form of sinus infection which he had known to cause earache, and this was in the nature of a referred otalgia. Reference had been made to blebs of blood on the tympanic membrane or the deep meatal walls, and in his experience these were nearly always in cases of influenzal origin. The difficulty in diagnosis between meatal furuncle and mastoid infection should not often occur if they bore in mind that in the former the patient often heard well and passive movement of the pinna caused considerable pain, while, in mastoid inflammation, the patient was nearly always deaf on the same side, and the pinna could be handled freely without pain. Dr. Dan McKenzie insisted on the value of paracentesis in these cases, but said that in his opinion the incision must begin at the top of the drum and be carried straight down. Mr. Scott Stevenson said that he hoped Mr. Forster would not discourage practitioners from doing paracentesis more frequently by emphasizing the difficulties of that little operation. Many of the alleged difficulties would disappear if an electrically lit ear speculum were used, with a small magnifying glass attached, and if the operator employed a bayonet-shaped knife, and not one of the angled knives Mr. Forster had exhibited.

Mr. Watkyn-Thomas commended the clearness with which Mr. Lowndes Yates had defined the different types in the somewhat obscure condition of subacute otitis media.

SECTION OF HYDROLOGY AND CLIMATOLOGY

Friday, July 24th

Treatment of Arthritis

With Dr. Percy Lewis (Vice-President) in the chair, Dr. C. W. Buckley (Buxton) read a paper on the control and treatment of arthritis. He pointed out certain errors in living and developmental defects of environment which remained fairly constant in most cases of arthritis, and which indicated certain lines of treatment. He said that there were essential analogies between tuberculosis and chronic arthritis, and suggested that treatment in these diseases ought to be arranged on similar lines, with or without the addition of physical methods in the latter

case. The rheumatic group was of greater importance from the industrial point of view; there were certain broad lines on which the successful campaign against rheumatism should be carried out clinically. The speaker then classified the joint manifestations of rheumatism, and pointed out that there was a large group of cases in which heat, far from proving beneficial, was actually harmful. He stressed the importance of diet in rheumatism, casting ridicule on certain traditional beliefs, making some stimulating references to the endocrine system and its relation to the etiology and treatment of these diseases. He ended on a note of warning with regard to the indiscriminate use of vaccines in rheumatism, and of letting their dosage be fixed in the laboratory rather than at the bedside.

Dr. W. S. C. Copeman advocated the sanatorium treatment of the rheumatic diseases, and proposed a scheme for this, similar to one used in Russia, whereby the patient continued at his work in the day-time and had treatment at night and over the week-ends. The discipline, self education, and encouragement were, as in the case of tuberculous patients, of special value in such a plan. He also referred to idiosyncracies in diet shown by certain rheumatic patients. Dr. Delicati suggested that there was a nervous origin for some cases of rheumatoid arthritis, and referred to work in America which supported the view that the condition might be due to a lack of balance between the autonomic and endocrine systems. He briefly outlined two types of case in which he suggested that one or the other system predominated. Dr. Hallowes (Torquay) stressed the need for the early recognition of cases of arthritis, and mentioned the rarefaction of bone observed in a large number of cases. He referred to the unsuitability of some cases of these diseases being treated at sea-level, but maintained that each patient was a law to himself in this and dietetic matters. Mr. Harman Taylor (Liverpool) mentioned the important role of rest and exercise in the treatment of arthritis, and the need for a wide consideration of the whole subject. Drs. Wilshaw and Edgecombe (Harrogate) also spoke, and Dr. Buckley replied.

Hyperpiesia

Drs. Bain and Edgecombe (Harrogate) read papers on hyperpiesia from the etiological and pathological points of view, discussing the therapeutic aspect and prognosis, with especial reference to the place of physical medicine in the treatment of these cases. They gave an excellent summary of the whole subject, and quoted illustrative cases which had been followed for a considerable number of years. The connexion between the pathology of the bowel and the onset of hyperpiesia was strikingly demonstrated in several of these patients, and a good case for hydrotherapy was made by the blood-pressure readings before and after courses of treatment. This treatment, they said, was palliative only, but was in advance of any other methods used, the effects being, in many cases, well sustained for months or years. The necessity for very careful treatment in the case of patients with advanced disease was stressed, and the contraindications for further treatment clearly set out. Dr. Percy Lewis (Folkestone) advocated the judicious use of drugs such as iodine. Dr. Buckley quoted a case which showed the retarding effect of physical treatment on the progress of hyperpiesis. Dr Payne (Darlington) remarked on the beneficial effect of compulsory retirement of a business man with hyperpiesia. Dr. Fortescue Fox (President) gave his opinion that waves of high blood pressure occurred periodically at different periods of life, and that this explained remissions occurring naturally—especially in later life and in subthyroidic patients. He mentioned the value of venesection in early cases. Dr. Edgecombe, in reply, said that he agreed with Dr. Fox's theory of periodic waves in women, but doubted this occurrence in men. He mentioned the variable association of hyperpiesia with obesity.

Therapeutic Pools

Dr. R. G. Gordon (Bath) read a paper on the use of therapeutic pools, dealing first with the historical aspect and going on to the modern use of this method of physical treatment, which he considered to be not sufficiently used. He showed lantern slides illustrating his methods of dealing with the after-results of poliomyelitis in children in the Orthopaedic Hospital at Bath. He was of the opinion that more could be done by this method than by any other. The physiological effects of this treatment included an increase in body temperature, metabolism, elimination of toxins, diaphoresis, dilatation and increased vascularity of the capillaries in the diseased limb, and in the elimination of the inertia and force due to gravity, with consequent relief of spasm and gradual increase in voluntary movement and muscular power. He referred briefly to other indications for this type of treatment, notably arthritis of rheumatic and other origin and congenital hip disease in children. Dr. Fortescue Fox remarked on the growing use of the therapeutic pool in orthopaedic hospitals in the United States of America, and referred to its use also in mental hospitals.

THIRD INTERNATIONAL CONGRESS OF RADIOLOGY

The third International Congress of Radiology was held in Paris from July 26th to 31st, with Dr. Antoine Béclère as president. It will be remembered that these congresses owe their initiation to the late Dr. Robert Knox. More than 1,300 delegates were present from over thirty countries, for whom a festival luncheon was arranged by the City and University of Paris on the first day. On July 27th the President of the Republic was present at the official opening, when Dr. Béclère delivered an address.

The President expressed his regret that many German radiologists had been prevented from attending owing to the present economic crisis, but the German Roentgen Society was nevertheless represented by three official delegates. He then traced the steps in development of medical radiology, and commented on the part it might play in the campaign against cancer. Although more than one country was notable for its radiological discoverers and inventors, the whole science was international, being directed solely to the revealing of truth and the amelioration of human suffering. Medical science rose above the sphere of politics, and united all in its discoveries as well as in its quests. The International Congress would promote this deeper comradeship, and was, perhaps, a foreshadowing of a state which would prevail eventually among all nations in their mutual relations.

At the conclusion of his address, Dr. Béclère was presented by Professor Woodburn Morison with the diploma of honorary fellowship on behalf of the Royal Society of Medicine; he also received a diploma from the University of Zurich, a chairman's mallet from the Society of American radiologists, a mallet from the Swedish Society of Radiology, and a gold chain from the British Institute of Radiology.

The Campaign Against Cancer

After the president's speech Professor Forssell of Stockholm, who had presided over the last congress, delivered an address on the social campaign against cancer, and suggested lines on which better progress could be made. He pleaded for such a co-ordination in this respect as had been achieved in other branches of medical science. The study of its biology and pathological anatomy, as

well as its experimental side, should be a part of the work of the already existing general medical institutions ; the study of the diagnostic, clinical, and therapeutical aspects should be entrusted, on the contrary, to special clinics and laboratories. The establishment of great cancer institutes for research was only possible in the chief world centres of science, but the subject was one demanding co-operative international work. The practical application of the discoveries made was a national responsibility, economy and efficiency having to be borne in mind always when planning any special steps. The objective was to assure to all sufferers from cancer the best treatment possible, irrespective of their wealth or poverty. The cause of cancer being as yet unknown, very little was possible so far as regards preventing its incidence. An intimate association of surgery and radiotherapy was still necessary in treating this disease, and Professor Forssell gave statistical details to illustrate the way in which these two lines of treatment could be most efficacious. He concluded that about 90 per cent. of cancer cases needed some other treatment than pure surgery, and that radiotherapy had a very distinct place to take in this respect. Just as the surgical clinic had won recognition in the last century as a great therapeutical asset, so now must the radiotherapeutical clinic take a similar place. It would be a centre for organization ; around it would be grouped the necessary adjuncts for treatment, and for keeping it in close touch with the other related branches of medicine. Such an organization would naturally vary in detail in different countries, but as a general rule it was clear that, unlike surgery, radiotherapy could not be decentralized, but would necessarily be limited to a definite number of centres, placed in definitely delimited areas of each country. Each radiotherapy clinic should have fifty beds, 4 to 5 grams of radium, and the necessary *x*-ray equipment. Pathological and radiological laboratories would be attached to each of these clinics ; arrangements would be made for statistical investigations, and for following up the patients after treatment. In view of the continued progress in radiotherapy, it was obvious that such centres should be closely linked up, and facilities be available for the instruction of students. Public instruction on the importance of early diagnosis would have to be extended without arousing any undue alarm. This could best be done by means of general practitioners transmitting their knowledge, with special emphasis on the earliest signs of cancer, and the need for expert advice. We are informed that this speech will be published in the *Journal de Radiologie et d'Électrologie.*

OTHER ASPECTS OF RADIOTHERAPY

Dr. J. E. A. LYNHAM (London), discussing the pre-operative and post-operative treatment of cancer of the breast by irradiation, said that the whole question turned on recurrence, for comparatively few died of the primary disease. It was in the treatment of inoperable metastases that both radium and *x* rays had first proved their value, and prophylactic irradiation had thus come into being. Pre-operative irradiation was now under consideration, but no final conclusion as to its value had yet been reached definitely in Great Britain. The way in which irradiation worked in relation to malignant disease was not yet understood, nor the reason why metastases might only appear after so long an interval as fifteen to twenty years. Pre-operative radiation by *x* rays was regarded as the best form ; the dose should be full, but not excessive, lest there be interference with healing. The application of *x* rays to the open wound was not regarded as satisfactory. Post-operative radiation was generally undertaken by means of the superficial application of *x* rays or of radium. There was great need for a better co-ordination of techniques and comparison of results ; in this respect the British Institute of Radiology served a most useful purpose in Great Britain, offering an example which might perhaps be followed with advantage in other countries.

Dr. L. G. COLE of New York described the technique of exploring the gastro-intestinal mucosa, and explained how the findings might be assessed in terms of health and disease. He defined four basic findings—namely, (1) the contour of the lumen of the tract ; (2) the appearance of the folds, particularly valuable in the diagnosis of ulcers of the lesser curvature and pyloric valve ; (3) the pliability of the mucosa to peristalsis—a matter requiring serial radiograms, studied stereoscopically ; and (4) the mucosal pattern, which though particularly valuable in diagnosing some of the more obscure and unimportant lesions of the mucosa and submucosa, was of less practical significance than observation of the pliability of the mucosa. Correlation of the radiological and pathological findings had been undertaken ; this had proved of great value in diagnosis, as well as in investigations into the etiology of morbid processes, their life-history, and the indications for medical and surgical treatment respectively.

Professor MILANI of Pérouse dealt with radiotherapy in its application to inflammatory conditions. Generally speaking small doses rather than large ones were favoured ; the best results were obtained in general suppurative conditions of the skin, eyes, ears, nose, and teeth ; in inflammatory conditions of the genital organs ; in similar affections of the mouth and joints ; in broncho-pulmonary conditions ; and in diseases of the central nervous system. A particular interest attached to this branch of radiotherapy, for further research into the way in which it acted on inflammatory states might elucidate the larger problem of the effects it produced on the morbid conditions generally.

Professor HAENISCH of Hamburg described the methods of examining the functional capacity of the urinary system by the use of radio-opaque substances. His paper will be published in the *Fortschritte auf dem Gebiete der Röntgenstrahlen.*

Apart from these four chief topics on which discussion proceeded, numerous independent communications were presented, under a time limit. Lantern slides were shown, and useful exhibitions of radiograms, books, and apparatus were open throughout the congress, which was held in the Sorbonne.

The official delegates from Great Britain were Dr. G. W. C. Kaye, Dr. A. E. Barclay, Dr. J. E. Lynham, Major McGrigor, and Dr. C. E. S. Phillips. Other British representatives included Mr. Thurstan Holland, who presided over the first international congress ; Mr. Cecil Rowntree, representing the British Empire Cancer Campaign ; Professor S. Russ, Medical Research Council ; Mr. Comyns Berkeley, British Radium Commission ; and Professor F. L. Hopwood. Professor Owen of Bangor was honorary secretary of the Measurements Committee. Dr. Stanley Melville, honorary secretary of the Protection Committee, was absent from the congress on account of illness. Among the British contributors to the proceedings were Dr. J. H. D. Webster (operable and borderline cases of breast cancer), Dr. S. Gilbert Scott (radiographic diagnosis of arthritis), Drs. Piney and Riach (radiological treatment of myeloid leukaemia), Dr. C. A. Robinson (pelvic diathermy for arthritis), and Dr. J. V. Sparks (pulmonary asbestosis).

H.M. Stationery Office has published a list of medical practitioners in England and Wales, approved by the Board of Control, for the purpose of making recommendations under Section 1 (3) and 5 (3) of the Mental Treatment Act, 1930.

The Water Pollution Research Board of the Department of Scientific and Industrial Research has issued a technical paper (No. 2) on a survey of the River Tees (Part I—Hydrographical), referred to in the *British Medical Journal* of July 5th, 1930. This pioneer investigation, which also includes biological and chemical sections, was started in April, 1929, with the main object of determining the amount of polluted liquid that may safely be allowed to enter a river without unduly retarding the natural processes of purification. The text of the present report is supplemented by tables, graphs, and forty-six plates. Copies may be obtained from H.M. Stationery Office, price 5s. 6d. net.

Correspondence

RETIREMENT OF DR. T. H. C. STEVENSON

SIR,—We do not wish the retirement of Dr. T. H. C. Stevenson from his official work at the General Register Office to pass without an expression of our deep regret on the event, and of our appreciation of his public services.

Of Dr. Stevenson's contributions to the scientific journals we shall say nothing, except that these would have sufficed to secure a permanent place for him in the history of statistical science. The searching and illuminating discussions of the problems of vital statistics which he has contributed to the Census reports and to the annual and decennial reports of the Registrar-General have formed noteworthy landmarks in the study of our national records. Dr. Stevenson's remarkable analysis of the data of the census fertility taken in 1911 was a *tour de force*, while the essays contributed by him to the annual reports of the Registrar-General make a wider appeal and, in our judgement, place Stevenson second only to William Farr among those public servants who have secured for England her proud position in the realm of official vital statistics. His studies of the factors of infant mortality, of the local distribution and evolution in time of mortality from tuberculosis, and of the interpretation of the statistics of cancer mortality, especially in relation to its local incidence in the human body, are further examples of immensely important medical research. Dr. Stevenson first demonstrated, upon adequate data, the contrasting rates of mortality of single and married women from cancer of the breast and reproductive organs; this and his more recent studies of the variation of cancer mortality with social status constitute probably the most important statistical contributions yet made to our knowledge of malignant disease.

In these, as in many other instances, Dr. Stevenson proved himself a worthy successor to Farr, and there has been secured that continuity of research into medico-social problems of which the Registrar-General's records form an almost unlimited storehouse. We offer this imperfect tribute to the merits of a great public servant in the hope that our readers may reward him in the way he would most value, by studying these records of first-rate investigation for themselves and be stimulated to similar inquiries based on our scantily used records.—We are, etc.,

DAWSON OF PENN.
MOYNIHAN.
J. C. STAMP.
ARTHUR NEWSHOLME.
MAJOR GREENWOOD.
G. UDNY YULE.

August, 1931.

THE SIGNIFICANCE OF A RAISED BLOOD PRESSURE

SIR,—Knowing as I do the high standing of Dr. John Hay in the profession, as well as outside it, I would wish to be the last to take advantage of your generosity either to "pillory him" or "to carp at" any of his statements. My sole object is to try to find out as simple a method as possible by means of which the majority of practitioners may be able to take readings of the blood pressure which can be accepted as reliable.

Dr. Hay admits that it is desirable to have a definition of blood pressure, but the one he gives by referring it to the time at which it occurs is open to the criticism of being too vague. To say that lunch will be served at one o'clock does not give us much idea of what may be expected for that meal.

I am sorry that Dr. Hay questions whether a knowledge of the equality of the diastolic pressure in all the arteries is of any clinical value. Personally I am of the opinion that a local increase of the pressure is responsible for a correspondingly local atheroma, an opinion which I think is supported by the statements of Allbutt, Marchand, and Posselt, referred to in the valuable article by Drs. Hare and Ross (*Lancet*, 1929, ii, 806).

Dr. Hay himself tells us that "*in some instances* the technique is not satisfactory, and the records, especially of the diastolic pressure, are unreliable." I think if he had said "many" instead of "some," and had italicized the word "diastolic," he would have been even more accurate, especially after the recent remarks of Dr. Maurice Shaw on the same point in your correspondence columns. The majority of teachers know how difficult it is for students to estimate accurately the diastolic pressure by the auscultatory method, and it was with the idea of simplifying the estimation that I introduced my more objective method (*British Medical Journal*, 1930, i, 242).—I am, etc.,

Swansea, Aug. 9th. G. ARBOUR STEPHENS.

SIR,—I was away on the Continent for three weeks, and this is why I am so late with my answer to Dr. W. Duncan Lawrie's letter (August 1st, p. 224). It is exactly in the early stage of essential hyperpiesis that the ophthalmoscope is of much help, especially if the red-free light is used. But one must not look for gross changes. A slight change in one or two vessels, by no means in all retinal vessels, taken in connexion with other clinical findings (heart, urine, blood pressure), will decide the diagnosis. I advise strongly a detailed description of the fundi at every examination; in time one is surprised to see a new change arising quite suddenly and unobtrusively. The earliest change would be a loss of translucency, and the appearance of fine white lines on the cross-points of the vessels. In my experience the ophthalmoscopic examination has never been negative in a patient with a diastolic pressure of 100 or more. It is impossible to answer more in a few lines, and I may refer to my three papers published in the *British Ophthalmological Journal*, starting in 1927.—I am, etc.,

London, E.1, Aug. 8th. N. PINES.

INCIDENCE OF RHEUMATISM IN BATH AND SURROUNDING AREA

SIR,—The interim report of the British Medical Association subcommittee on the incidence of rheumatic heart disease in childhood (1927–30) in Gloucestershire, Somerset, and Wilts,[1] brings out the interesting point that the disease is six times as common amongst the children of Bristol as amongst those of Bath. While no explanation of this astounding difference in the neighbouring cities can at present be advanced, it may be of interest to point out that the incidence of rheumatic affections in the latter city has apparently declined considerably of late years. Though the numbers are but small, and include adults, the following figures, culled from the annual reports of the Royal United Hospital, of admissions for chorea, rheumatism, and heart disease (including endocarditis and pericarditis) during the periods 1901–9 and 1922–29, are noteworthy as showing the considerable drop in the number of admissions since the war, and the uniformity in the numbers of annual admissions in each period.

The figures for 1910–21 are not available, but this is of little consequence, as those for the two periods mentioned serve sufficiently to demonstrate the two points referred to. It will be seen that admissions for chorea have fallen to less than a half their former number, those for rheumatism to about a third, and those for morbus

[1] *British Medical Journal Supplement*, July 18th, 1931.

cordis to rather more than half. Since the heart disease group would evidently include a number of cases having no connexion with rheumatism, the percentage fall of rheumatic heart cases is without doubt greater than this. On the other hand, into the older "rheumatism" group may have crept some cases which at a later period would be labelled "fibrositis" etc. (though the number of cases of that description would in any event be small).

The probability is, therefore, that the relative fall in both the rheumatism and heart disease groups is very much the same as in the group perhaps least open to question, that of chorea—namely, to between a half and a third of the former number.

The Royal United is a general hospital to which are admitted cases of acute illness only, from the city of Bath and surrounding country within a radius of twenty miles (except to the west); in all, a population of about 200,000. There is a special ward for children, and no children's hospital in the area.

Admissions to the Royal United Hospital

Year	Total Medical Admissions	Chorea	Rheumatism	Morbus Cordis (including Endo- and Pericarditis)	Total
1901	611	13	48	42	103
1902	669	14	44	50	108
1903	628	15	29	46	90
1904	653	16	21	51	88
1905	524	20	36	49	105
1906	713	12	22	55	99
1907	608	16	38	45	99
1908	544	13	45	41	99
1909	617	16	34	49	99
Average ...	627	15	35.2	47.5	98.8

Percentage of total admissions of the three groups: 15.7 per cent.

1922	549	5	14	29	48
1923	538	8	6	24	38
1924	580	8	17	35	60
1925	659	6	23	18	47
1926	589	7	10	25	42
1927	639	6	12	24	42
1928	565	8	11	22	41
1929	524	4	11	15	30
Average ...	580	6.5	13	24	43.5

Percentage of total admissions of the three groups: 7.5 per cent.

There is no variation in local conditions known to us which would satisfactorily account for this drop, which appears to have been a more or less sudden one during the war. The only factor which might conceivably have affected the admissions is the increased development of cottage hospital accommodation since the war in small towns in the hospital area; but it is difficult to see why this should have affected rheumatic cases to a greater extent than other medical patients, and it appears probable, especially when taken in conjunction with the sub-committee's findings, that the fall in "rheumatic" complaints in this district is a real one.—I am, etc.,

RUPERT WATERHOUSE, M.D., F.R.C.P.
Bath, Aug. 1st. Physician to the Royal United Hospital.

TUBERCULIN

SIR,—Although "the statistical picture of the incidence of infection with tubercle bacilli in children under 15," drawn for us by Dr. Dorothy Dow and Dr. Ernest Lloyd, in the main confirms the conclusions worked out some years ago in Germany by Roepke, Redeker, and other pioneers in this field, I would fain hope that the unreasonable prejudice against tuberculin as the superlative diagnostic agent in the early stages of chronic tuberculosis may give way, and allow extensive investigations upon the value of tuberculin, not only in the diagnosis of tuberculosis in children and adults, but also in the treatment of this disease. I venture to say that in years to come, unless something new and unexpected is revealed by research, tuberculin must take its place as a most valuable—indeed, as *the* most valuable—therapeutic agent we possess for the treatment of all forms of uncomplicated chronic tuberculosis in any organ, especially if it is used wisely, courageously, and even boldly in the early stages of this disease.

If Dr. Dow and Dr. Lloyd would visit my tuberculin clinic they would see from charts what can be done for otherwise hopeless forms of tuberculosis of the eye by the use of tuberculin in diagnosis and treatment; and if this can be done, and indeed watched by the naked eye, why should we not expect similar effects when the lesions are out of sight? Moreover, they would learn that success is secured without any apparent risk by very large doses—rarely less than 1 c.cm. of the strongest preparations as a final dose. He who "sees" may read.—I am, etc.,

London, W., Aug. 3rd. W. CAMAC WILKINSON.

SEBORRHOEA AND ALKALIS

SIR,—Four years ago I came across a case of "eczema" of such severity that the patient, a man aged 42, a painter by trade, contemplated suicide. The condition, which was widespread, had prevailed for eighteen years, and had caused him to be invalided out of the Army. He then spent weeks in various hospitals with little result, and was advised to tolerate the disease with *fortitude*, to be careful not to wet the skin, and to hope for the best. I ordered a daily warm bath, containing at least two pounds of sodium bicarbonate to twenty gallons of water, and a change of linen after each one. In addition, I gave him one ounce of magnesium hydrate three times a day. The condition cleared up in three days, and has never returned. The patient occasionally takes sodium carbonate or common washing-soda baths, and small doses of alkalis internally.

The next case of a similar nature was that of a girl, aged 5, sadly pock-marked, the history going back two years; but in this instance the diagnosis was "seborrhoea." The parents were well-to-do and a special nurse was provided, who, under a consultant's orders, watched the child's diet, which was almost entirely fat- and sugar-free. The patient's weight was subnormal, and baths were rarely risked. Daily warm sodium bicarbonate baths, plus one teaspoonful of magnesium hydrate by the mouth three times a day, greatly improved the condition, which finally disappeared when large quantities of citrated milk were added to the diet. The child now eats rationally, bathes normally, and has been perfectly well for over two years.

A third case, with a six months' history of seborrhoea in a girl, aged 7, met with immediate success under similar treatment.

My fourth case was not so successful. The patient, a man aged 28, diagnosis "eczema," several years' history, is a chemist by profession. He had taken an intelligent part in the various treatments tried, and on the whole was resigned to the condition, with the exception of the fear of washing. To use his own words, "I daren't have a bath unless I stink!" Daily alkali baths were greatly appreciated, and cleared the skin with the exception of a patch the size of a shilling on the dorsum of the hand, which defied all my efforts until a small dose of *x* rays was tried (one minute 2 ma. 60 Kv.) and proved successful.

In conclusion, cases of this nature suggest an underlying acidosis or an "acidæmia" which will respond to direct alkaline treatment internally and externally, and attention should be paid to underlinen, as re-infection undoubtedly occurs from this source. Abstinence from "wetting" only serves to increase the accompanying pruritus and merely adds to the patient's distress. A strict diet designed to prevent acidosis is of less value than the administration of alkalis in liberal doses. Finally, in very obstinate cases x rays are worth a trial.—I am, etc.,

London, E.C., July 29th. S. A. LEADER.

BROKEN CATHETER IN URETHRA

SIR,—With reference to the letters on this subject appearing on July 18th (p. 104) and August 1st (p. 225) I should like to point out the extreme difficulty of grasping with forceps a foreign body which closely fits the urethra, and to draw attention to another method of its removal, which I published in the *Journal* of October 27th, 1928. In the case which was there described it was impossible to grasp the piece of catheter which was fixed by muscular spasm in the membranous portion of the urethra, and the following manœuvre was successful in extracting it. The patient was placed in the left lateral position, and the index finger of the left hand introduced into the rectum, palmar surface forwards. The posterior border of the prostate was identified, and firm pressure made in the direction of the urethra while the patient squeezed the penis towards the meatus. This method of removal was immediately successful, and I think it deserves to be noted in case of similar failure to grasp a foreign body being encountered.—I am, etc.,

H. W. WEBBER, M.S., M.D. Lond.

King's Tamerton, Plymouth, Aug. 1st.

A STATEMENT FROM THE CANCER HOSPITAL (FREE)

SIR,—In view of certain statements which have appeared in the press, the authorities of the Cancer Hospital (Free), Fulham Road, wish to state that no announcement of any kind referring to cancer-producing substances has been issued from the hospital since their official report to the British Empire Cancer Campaign, which was presented at the annual meeting on July 20th last. In this report (pp. 33 to 42) no claim is made that the cancer-producing substance present in tar has been identified.—I am, etc.,

J. COURTNEY BUCHANAN, Secretary.

The Cancer Hospital (Free), Fulham Road, London, S.W., Aug. 12th.

MOTOR DRIVERS' SPECTACLES

SIR,—It is encouraging to know from the daily press that, as a community, we are improving in our driving manners, but still the tale of accidents is woefully large. A small point may therefore be worth suggesting. In how many cases has the driver of either car been wearing horn-rimmed spectacles? Although with these spectacles the vision straight ahead may accord with regulations they otherwise act as 'blinkers,' as half the vision is occluded on both sides at eye-level, and altogether at the hinges. This is often just the spot where *quick sightedness* is needed to avoid an accident. In my opinion the safest form of glasses is the pince-nez, without rims. If spectacles are used they also should have no rims, and only wire sides. I personally have tried all forms.—I am, etc.,

[illegible] H. M. HENDERSON.

Obituary

DONALD MACPHAIL, M.D., C.M., F.R.F.P.S.

Consulting Surgeon Alexandra Hospital, Coatbridge

We regret to record the death on August 2nd, of Dr. D. Macphail, late of Coatbridge. Since his retirement from practice seven years ago his health had not been good, and he became critically ill some three weeks before.

Donald Macphail had a distinguished career as a medical student at the University of Glasgow, where he graduated M.B., C.M. with honours in 1877, and proceeded M.D. four years later. In 1919 he was elected to the Fellowship of the Royal Faculty of Physicians and Surgeons of Glasgow. After holding house appointments at the Western Infirmary, Glasgow, he was for a year resident physician at the Belvidere Hospital, he then began general practice in that city, and was appointed assistant to Sir George Macleod, at that time Regius Professor of Surgery. He subsequently became surgeon to two large ironworks at Carnbroe and Langloan, and spent the remainder of his active professional life at Coatbridge. On the opening of the Alexander Hospital in that town he was appointed one of the first surgeons, and his popularity was acknowledged on his retirement by the presentation to him of various testimonials and gifts. Among his other interests was a keen devotion to ambulance training, the advantage of which in the coal and iron industries was early appreciated by him. In association with Mr. Peter Macdonald, then at Langloan, he instituted a course of instruction, which was among the earliest, if not the first, to be undertaken in Scotland outside Glasgow. He worked for many years as a lecturer and examiner, was one of the members of the first active executive committee of St. Andrew's Association, and for twenty-eight years was secretary of the Coatbridge branch.

In his earlier years he was on the editorial staff of the *Glasgow Medical Journal*, and contributed frequently to its columns. He took an active share in the preliminary work which led to the establishment eventually of the clinical and pathological laboratory of the Western Infirmary. He was an exceptionally good pianist, and evidence of his artistic ability in another sphere persists in the form of delightful sketches illustrating some of his holiday rambles. One of his daughters, Dr. Katherine Macphail, is well known as the founder, and at present the director, of the British Hospital for Children in Belgrade.

DAVID GRANT, M.A., M.D., C.M.

Formerly Lecturer in Materia Medica, Melbourne University

On April 27th (writes our Melbourne correspondent) Dr. David Grant died at the age of 77, and on his passing there was lost a great figure in Australian medicine. But for the accident of early ill-health he might have achieved an equal distinction in a wider sphere in the land of his birth. David Grant was born in Fifeshire in 1854 and was educated at the High School, Stirling, where he was dux of the school, and at Edinburgh University, where he graduated M.A. in 1872, and was awarded the Masson Medal. In 1876 he graduated in medicine and won the Ettles Scholarship for the most distinguished student of his year. In 1876–77 he served as resident medical officer at the Royal Infirmary and had there as a fellow-resident the late Sir James Mackenzie. In 1877–78 he was resident at the Children's Hospital, Edinburgh, and in 1878–79 filled a similar post at the Royal Hospital for Consumption and Diseases of the Chest in the Isle of Wight. After doing post-graduate work in Vienna he joined the staff of the Barnes Convalescent Hospital at Chester as

resident, and also served as resident physician at the Manchester Royal Infirmary, where he had as his colleague on the surgical side Mr. Bilton Pollard, who afterwards became surgeon to University College Hospital, London, and professor of clinical surgery. About this time David Grant's health broke down and he went to Australia in search of sunlight, and there accepted a post as medical officer in the Lunacy Department of New South Wales. After a short visit to England he returned to Australia, and was appointed lecturer in materia medica at the University of Melbourne and honorary out-patient physician at the Melbourne Hospital. Here he made his mark, and was rapidly accepted as a sound physician, a good teacher, and a brilliant and reliable consultant. He brought with him a real culture and the inspiration of his own teachers, who included such great men as Laycock, Balfour, Fraser, Lister, and Syme of Edinburgh; and Ross, Roberts, and Thursfield of Manchester. Later, David Grant was appointed physician to St. Vincent's Hospital, Melbourne, and there, with the late Sir George Syme, he helped to lay the foundations of what has since become a great clinical teaching school. After some years of hospital work he was forced by indifferent health to retire from his honorary positions and from active teaching appointments, but he retained his unquestioned position in the first rank of Melbourne's consultants, and was respected and admired by his colleagues, junior and senior alike, so that, for a generation, David Grant's was a name to conjure with, although many of the younger men did not know him personally, so long did ill-health limit his activities and force him to abstain from public activities even within the profession. Upright, courageous, kindly, and tolerant—he was tolerant of everything but meanness and insincerity—a classical scholar, and a great lover of Scotland, whose fame he helped to spread by his own high character and good works, he is mourned by a wide circle of colleagues and patients, who trusted and admired him, and by a smaller group of intimate friends, who also loved him.

The unexpected death of Dr. WILLIAM BURNS, medical officer of the Glengall Street Dispensary and the Belfast Infirmary, caused much regret in Northern and Southern Ireland, where he was a well-known and highly esteemed member of the medical profession. Dr. Burns was a native of Belfast, where he was born sixty-one years ago. He took a very active part in medical politics, and was an outstanding figure in the recent negotiations with the Northern Government in connexion with the establishment of medical benefits. It was mainly as the result of his knowledge of the Poor Law Medical Service that a satisfactory arrangement was come to between the Northern Government and the Poor Law medical officers. He was appointed medical officer of the Belfast Poor Law Union in 1901, and dispensary medical officer for No. 6 District in 1909. During the war he was one of the medical staff of the Ulster Volunteer Force Hospital. At a meeting of the Belfast guardians many tributes were paid to his eminent qualities, and it was resolved that a vote of sympathy should be conveyed to his relatives. Among his professional colleagues Dr. Burns had many warm admirers. His candour and inoffensive bluntness when dealing with medico-political questions, of which he had an intimate knowledge, was always much appreciated.

The following well-known foreign medical men have recently died: Dr. ERNST OBERWARTH, a Berlin paediatrist, aged 59; Dr. MIGUEL GIL CESARES, professor of children's diseases at Santiago di Compostela; Dr. JEAN VICTOR AUGAGNEUR, formerly chief surgeon to the Lyons hospitals, Mayor of Lyons before 1900, Minister of Education (1914), Minister of Marine, and Governor of French Equatorial Africa, aged 76; Dr. FRANCIS X. DERCUM, a leading New York neurologist, aged 74; and Dr. HENRI GRAZIANI, president of the French Association of Mutilated Doctors.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Ministry of Health Estimates

The Estimates for the Ministry of Health, including grants in aid of benefits and expenses of national health insurance, were debated in the House of Commons on the report stage on July 29th.

NATIONAL INSURANCE: SICKNESS CLAIMS

Sir KINGSLEY WOOD said that the cost of ill-health, much of it preventable, was very heavy on the nation and on industry. In national health insurance, according to a statement authorized by the Minister of Health, there had been in recent years a rise in sickness and disablement experience so continuous and of such magnitude as to occasion grave concern. In the last year of which the House had full particulars medical benefit cost £8,700,000, of which the insurance doctors received £6,256,000, and nearly £2,000,000 was paid to insurance chemists for drugs and appliances. There was paid in sickness benefit £11,250,000, in disablement benefit £5,350,000, and in maternity benefit £1,440,000. For practically twenty years medical treatment and attendance had been available for insured persons, and £100,000,000 had been spent on it. During that time, partly as a consequence of health insurance, there had been general improvement in the public health, and medical science had progressed. Yet, notwithstanding all this and the efforts of social workers, the medical profession, nurses, and approved society administrators, there had been a marked increase in the claims of insured persons for sickness and disablement benefits, and in the consequent expenditure. This rise had been going on since 1925. In 1930 there was some improvement, but it was not considerable. Remembering the influenza epidemic of 1929 they could not draw encouragement from the figures for 1930. Societies had been affected seriously by the claim experience in respect of married women. Valuers had recently warned some societies that unless the conditions improved the whole of the present surplus would be exhausted within a few years in providing ordinary benefit. Some societies which specially catered for married women would have to cancel their additional benefit schemes altogether. The Government actuary, in his recent report to the House, concluded that the sickness claims of unmarried women had risen by 60 per cent. and the claims of married women by 106 per cent. For disablement benefit the increases were 100 per cent. in unmarried women's claims and 159 per cent. in those of married women. Among males the claims of the younger rather than of the older had increased. Figures published by one of the largest approved societies showed that the excess of claims was greater in the North than in the South of England. Sir Kingsley Wood reminded the House that Mr. Greenwood had said it could not be assumed that the great majority of the claims were due to epidemics or to unemployment. Memorandum 329, issued by the Ministry of Health, declared the increase might be due to economic or other causes not dependent on the state of health. The memorandum stated there was no collateral evidence indicating that the general health of the population was worse in 1929 than in 1921, and no apparent reason why increased ill-health should manifest itself chiefly among married women and young people. Sir Walter Kinnear, speaking a few weeks ago to the National Association of Trade Union Approved Societies at Scarborough, had said that analysis of cases submitted a year ago by a group of approved societies showed that 12 per cent. of members still in receipt of benefit were capable of work. The Secretary of the National Union of Distributive Workers Approved Society had said that national health insurance finance was being sorely tried by doubtful claims. Since the House of Commons last discussed the subject the Ministry of Health had endeavoured to strengthen the supervision of claims. He had urged approved societies to maintain effective sickness visitation, and to make early reference to the regional medical officer for examination of claims. A recent memorandum from the Minister stated that approved societies should not hesitate to refer to the regional medical officer claimants whose incapacity was certified as continuing beyond the expected period. The Minister took a new course in the same memorandum when he advised societies that

incapacity was certified as due to catarrh, chill, cold, debility, dyspepsia, or similar conditions, an immediate visit should be made by a sick visitor, and, unless that visitor's report justified delay, the case should be at once referred to the regional medical officer In a communication made by the Minister of Health to medical men, Mr Greenwood had said

"*The payment to each claimant in a year of a single week's* benefit beyond that to which he is properly entitled would have the result of speedily bringing a large proportion of all approved societies and branches into a state of insolvency"

That was a necessary reminder to the medical men The Minister of Health had made an amending regulation on change of doctors In place of the former fourteen days' notice, insured persons were now only permitted to transfer on one month's notice, at the end of March, June, September, or December Anyone associated with approved society administration during the last three years would agree that the change was necessary Sir Kingsley Wood asked if the Minister proposed further steps He was not confident that sufficient had been done to rescue the national health insurance system What was the state of the Central Fund, and how long could it sustain the claims made on it by the societies? What was the position of the third valuation of the societies?

Mr Rhys Davies said one or two small societies, according to the last valuation, had reached a stage when it would be almost impossible for them to pay the statutory benefits The Minister of Health was forcing them to join a larger society The standard of honour in relation to claims from the insured population, from the medical profession, from the dentists, and from the opticians must be improved, or else the national health insurance scheme would ultimately fail Since the war people had completely changed their attitude towards public funds There were approved societies composed of members who suffered little from bad conditions of employment low wages, or unemployment which still had an increase in the average rate of sickness claims In his own society in fifteen years there had been an increase of approximately one day per annum in the claims for benefit in respect of every male member Every attempt to reduce the average duration of sickness met with the opposite result In proportion as dental benefit was provided, there was an increase in the claims for sickness benefit The third valuation returns of trade union societies were not so bad as Sir Kingsley Wood suggested, but the segregated societies, such as those of the miners, could not carry on much longer on the present basis Approved societies which covered few but married women were obviously in financial difficulty There was something wrong in the relations between the medical profession, the Ministry of Health, and the approved societies Some members of the medical profession issued certificates which were unjustifiable The doctor had no concern with the amount of benefit paid away on his certificate

Dr Morris Jones intervened, and said the medical profession was subject to a penalty for excessive certification

Mr Rhys Davies reaffirmed his assertion, and said it was unfair that the approved societies had to pay medical inspectors to see that the 15,000 panel doctors did their work properly He made the same remark of the dental officers, and said the funds of approved societies had been unduly damaged by unjustified claims There was no way out of these difficulties till the doctors were employed by the State The International Labour Office had shown that in other countries—for instance, Austria, Brazil, and Germany—health insurance funds were affected by trade depression and by the high cost of medical and pharmaceutical benefit In Germany, as from July, 1930, every insured person had to pay 6d for his first medical certificate and 6d for his first bottle of medicine That had a steadying effect on the number of claims In Luxemburg last year there was a dispute between doctors and approved societies on the fixing and payment of medical fees British approved societies had not come to that On the whole, they and the doctors were on very friendly terms and if loose certification could be got over the funds of the societies could be again maintained He was anxious that there should be no suspicion of the approved societies checking unfairly the certificates of the medical profession but the societies were entitled to ask why 58 per cent of the persons whose cases had been referred to the regional medical officers were found capable of work

Dr Morris Jones also discussed the excess of claims for sickness benefit He could not agree that 1930 was better in this respect than the peak year of 1929, if allowance was made for the influenza epidemic in 1928 and 1929, the most serious since 1919 There was a tendency to day to try to get as much as possible for nothing and insured persons were no more guilty than any other class The next great factor was unemployment After many years of panel practice he considered that the economic depression was affecting the physical and mental health of the insured population There was no more difficult problem before the medical profession than sickness claims among insured persons, and members of the profession were as alive to their responsibilities as were the approved societies Supposing the question of debility arose That might mean anything from congenital laziness to serious ill health, but no other term would fit a real case of debility, and a medical man was bound, by conscience and honour, to certify that a person suffering from it was unfit for work Dr Morris-Jones said he knew no superstition or habit of which it was more difficult to cure the population of this country than the tradition that a bottle of medicine was a remedy for all ills He knew that the increase in sickness claims had been heavier among women Often, when a certificate had been given certifying that a woman was not fit for the insured occupation in which she was engaged, that woman was doing as arduous work in her household With regard to early notification to the regional medical officer, an inquisition would be intolerable if inspectors of approved societies were allowed to inspect certificates given by medical practitioners and to make inquiries, as it were, behind the backs of the medical men He suggested that, instead of inspectors of approved societies analysing certificates, the Ministry should state that no insurance certificate should be accepted for such a thing as a cold or a chill, but that more definite phraseology should be used He submitted that the medical men were doing their best in difficult circumstances

Mr Mellep congratulated Mr Greenwood on issuing to the approved societies and medical profession leaflets which dealt faithfully and frankly with the situation In effect, the Minister had said "Let us see whether there is something inherently wrong with the system itself or with the health of the people" He agreed with the memorandum in which Mr Greenwood had disclaimed any intention of suggesting that insurance practitioners as a whole had been responsible for the general increase in sickness claims But there was loose certification among some members of the profession Dr Morris-Jones had spoken of "debility" on a certificate That was a confession that at the moment the practitioner was unable to diagnose the disease In a few days he ought to determine the real cause of incapacity or cease giving certificates under the heading of "debility" Excellent service was given by the medical profession as a whole If it were performed by all panel practitioners the House would not complain of an excess of claims In 1922, in England and Wales, 113,000 cases were referred for examination That figure rose, till, in 1930, 531,000 cases were submitted Of the cases submitted in 1922, 40 per cent were found to be still incapable of work In 1930, out of 531,000 cases, only 34 per cent were found to be incapable of work This reflected upon the medical profession and upon the honesty of the people If married women were to be accepted for insurance three courses were open—to increase the contributions, to reduce benefits, or to enact that when a woman married she must pass out of insurance, and that if she subsequently re entered employment she must re qualify for benefit During re qualification a limited sickness and maternity benefit would be provided

Mr Thomas Lewis thought the medical profession would say that a good deal of the increase of sickness was due to the reduced stamina of the people Unless there was a marked change in economic conditions sickness experience would become worse It was curious that a layman, a sick visitor, should be asked to decide when a case should be referred to the regional medical officer He knew of patients so sent who had died the following week Sick visitors had cast upon them a responsibility that was too grave He believed the Ministry was not satisfied that the insurance medical service was what it should be The responsibility for the malingering should be put on the societies If the doctors were afraid to put people off the funds who ought to be

off, then they should be freed from the fear by a different form of service What had the doctors done for an average salary £500 in excess of what they were receiving from their ordinary practices before they took duties under the National Health Insurance Act? Sickness increased, lax certification increased, and payment to doctors increased There would be less malingering if only the doctors had the courage to do their work properly The Minister should consider that the time had come for a national medical service to include the dependants of insured persons

Mr PALMER said the medical profession could, under the terms of certification, do exactly what others were prepared to pay them to do

Miss RATHBONE suggested that one of the causes for increased sickness claims by married women was that in times of privation, as Mr Rowntree's study of poverty in York had shown, the married woman, in expending the family income, left herself to the last

Miss SUSAN LAWRENCE said she regarded with some liking the doctor who, as reported by Mr Meller, wrote "I D K" (I don't know) on a certificate It was very much the same as saying he required a second opinion Nor did she see any harm in the visitor asking for a second opinion There was nothing derogatory in that to the strictest medical etiquette All that happened was that the regional medical officer was brought in The last circular on the increase of sickness claims went out from the Ministry on May 31st, and the Ministry was conferring with the societies It was early to suggest further measures The financial position of the Central Fund was engaging the attention of the Minister, and whether it would be necessary to make a levy was being anxiously discussed The full report of the third valuation was expected in the autumn So far as it had gone, the figures were rather better than were anticipated

Sir THOMAS INSKIP said that broadly speaking the duration of sickness claims had not increased The growth in the number of sickness claims was out of proportion to the deepening of the industrial depression The Minister had called attention to the necessity of the doctors being a little more careful but the position called for something more definite and drastic He did not agree with Mr Rhys Davies's suggestion that doctors should be made to realize how much money depended on the grant of a certificate A doctor should address his mind to the condition of the patient, and not consider the consequence of granting a certificate He could not agree with the suggestion that the medical service should be nationalized, and he did not believe that any doctor sitting upon the Labour benches of the House would agree with it A great deal could be done if societies introduced a more comprehensive and organized system of sick visitation The operations of the regional medical staff should be speeded up Its usefulness to-day was diminished by tardiness If the second medical opinion could be called in earlier the right diagnosis might prevent an improper claim on a society Medical men were the kindest hearted people in the world and most members of the House if they were medical men would prefer to take the risk of passing people about whom they were not perfectly satisfied that they were ill Instead of attempting to distribute blame to the doctors or others the House should try to improve the system

Sir ERNEST GRAHAM LITTLE said that medical service under national health insurance should approximate to the conditions of private practice The latest regulations concerning the opportunities of insured persons to change their doctors was disliked by the medical profession and a unanimous resolution protesting against it had been passed at the Representative Meeting Under that regulation there was really a period of four months before the doctor could be changed, and during that period the poor man had to pay the fees of the man he had chosen which was unjust The Minister had not sufficiently considered the psychological effect of a free choice of doctor That free choice was one of the most important points in the relationship between patient and doctor and would be disastrously affected by the introduction of a State service The main objection to it came from the approved societies Sir Ernest asked the Minister to listen to the other side of the question He also drew Mr Greenwood's attention to the difference in the treatment of private and insured persons by limitation of panel prescriptions The chief cause of this limitation was the agreement made in 1927 by which the chemists on the panel had first call on the Drug Fund The arrangement had been characterized by the British Medical Association as dangerous, and he hoped Mr Greenwood would be prepared to revise it He urged the Minister not to be too severe on panel practitioners, who tried to give as good a service to panel patients as to private patients and were penalized for doing so The dissatisfaction felt by the public with the National Health Insurance Act was illustrated by the remarkable rise during the last twelve months in the attendances at voluntary hospitals Many of his own patients were dissatisfied with their treatment under panel doctors and at the hospital with which he was associated the patients included a large proportion of insured persons This experience was confirmed by figures from other hospitals His own hospital dealt with 50 000 out patients last year and a similar number was dealt with at Guy's Many of the reasons for dissatisfaction with the conditions imposed upon patients under the National Health Insurance Act could easily be removed

Dr FREMANTLE said that many of the things which had been suggested during the evening were impracticable to-day Proposals had to be limited to the capacity of the Treasury The whole House was determined to maintain the efficiency of the health services within the limits of the public purse Mrs Manning had given a good illustration of how to ensure expansion with efficiency and economy There was far too great a tendency to think that real expansion of health services must be in bricks and mortar That was an echo of various reports which the House had received It had been suggested in regard to maternal mortality, and in the case of mental hospitals and mental deficiency, a matter on which he desired an explanation from the Minister They had the same tendency in the development of local government hospitals where vast expense was to be incurred in providing greater accommodation They might have to go much more slowly in these matters Delay would not necessarily reduce efficiency Buildings were useless without the personal services to fill them, and personal services were useless unless individuals had information and understanding to use what was provided for them In this time of straitened finance the Minister would not necessarily reduce progress if he made the most use of services which existed—voluntary official or otherwise—and tried to develop maternity services nursing services home visitation of the sick, after care "pre care" and all the matters engaging the attention of associations concerned in promoting the health of the people It would be useful if the community had a short armistice from building and efforts were devoted to expanding the personal services Dr Fremantle said he could give instances where material development was being pressed at a risk to existing services What was being done to use the voluntary hospitals in the combined scheme under the Local Government Act, 1929? They must put away all prejudice and use existing hospitals He had heard of one big industrial town where there was an absolute rift between municipal and voluntary hospitals In London the voluntary hospitals were likely to be put on one side, and the municipal hospitals would suffer till they developed overlapping services In the interests of the sick poor, and in view of the exhausted purse he asked Mr Greenwood to see that officialdom was with voluntaryism, so that it would be unnecessary for him to carry out his threat to die in the last ditch before he would economize

The Minister's Reply

Mr Greenwood said Sir Thomas Inskip's suggestion on health insurance had been put into operation Sir Henry wanted more attention paid to sick visitation Half the complaints in that day's debate were that there was too much Similarly with Sir Thomas's suggestion that there should be greater use of regional medical officers Undoubtedly there were improper claims "Swinging the lead" had not been invented in the last year or two He would gladly sweep from benefit those who by making improper claims were robbing their fellows, but in tightening administration they had to be careful not to deny the just claims of sick persons Improved administration and greater co operation between all the agencies concerned were having a substantial effect In 1930 the total expenditure of all approved societies on sickness disablement benefit was £2,000,000 less than in 1929 Part of that saving was due to improved administration and

co operation between panel doctors regional medical officers, and approved societies The improvement of last year continued during the first half of 1931, and the sickness claims for the quarter which had just finished were the lowest for any quarter during several years past In the second quarter of 1931 cash values amounted to £5 250 000 against £5 500 000 last year and £5 750 000 the year before Captain Cazalet had asked about nursing homes These were administered by local authorities and the Ministry's direct contact with them was by the surveys made from time to time As regards radium practically all the funds at disposal would soon have been expended on radium and the substance allocated by the Commission In reply to another question by Captain Cazalet Mr Greenwood said the offer made to M Spahlinger by all his predecessors in the last nine years still stood They were willing to co operate with M Spahlinger or to test any vaccine or serum he might produce The difficulties were not all on one side Replying to Sir E Graham Little's remarks Mr Greenwood said the Ministry had not got rid of the free choice of doctor They had limited the rapidity with which an insured person could run from one doctor to another It might be true that the arrangement made in 1927 was not so advantageous as medical men thought it ought to be for the insured person In connexion with institutional services the Ministry had a scheme which did not satisfy everybody, but succeeded pretty well Turning to maternal mortality, Mr Greenwood said that out of 396 local authorities 216 had on July 21st replied to his memorandum which made definite suggestions for attacking the problem of maternal mortality Of these 128 had adopted proposals, and many were bringing them into operation Thirty one authorities were establishing or extending ante natal clinics 16 arranging with private practitioners for routine ante natal examination in suitable cases 17 improving arrangements for the supply of midwives 20 providing or extending hospital accommodation and 37 arranging auxiliary services He hoped members would persuade local authorities to develop this important service Times were hard but this kind of expenditure brought a substantial reward Dr Fremantle had faced the House with a conflict between voluntary hospitals and municipal hospitals Mr Greenwood thought that, taking the country as a whole that conflict was not so harsh and clear cut though in London the voluntary hospitals and their supporters were ranged on one side and the public hospitals and their supporters on the other Our existing hospital system, public and voluntary was not more than enough to satisfy our needs For a very long time the two types would go side by side Voluntary hospitals must realize that the big local authorities would desire to develop their own provision in hospitals while working in co operation with the others He hoped there would be *sufficient good will* on both sides to make the maximum use of existing hospital accommodation In conclusion Mr Greenwood said this year's Estimates showed no economy in the social services which had expanded Local authorities tramelled by hard times had steadfastly developed their essential services He was satisfied that when the money for this year had been expended the public service of this country would be more healthy and vigorous

The House then agreed to the Health Estimates as reported

Control of Opium.—Dr DRUMMOND SHIELS on July 28th informed Mr Wellock that the recommendations in the report of the Commission of Inquiry into the Control of Opium Consumption in the Far East had been considered by the Governments of the British Colonies and Dependencies concerned It was thought advisable to defer changes in the existing system of control until the Commission's recommendations had been discussed at the international conference to be held at Bangkok in November

Road Accidents in the Metropolis.—On July 28th Mr CLYNES told Mr Naylor that in the first six months of 1930 there were 648 fatal road accidents in the Metropolitan Police district In the similar period of this year since the abolition of the speed limit the number was 624

Safety in Mines.—Mr SHINWELL states that he has received from the Safety in Mines Research Board a full report on the recent series of pit trials of automatic gas detectors and is reviewing the position

A Death after Vaccination.—Mr GREENWOOD told Mr Freeman on July 30th that a medical officer of his Department had reported that the death of a child at Newport Monmouthshire after vaccination appeared to have been due to septicaemia following septic infection of a vaccinated arm Evidence of this infection appeared four days after vaccination There was no reason to consider that it had been introduced by the vaccine lymph employed The lymph used was not obtained from the Government lymph establishment, but was supplied by a well known maker The vaccination was performed in the ordinary course of practice by a medical practitioner who was not a public vaccinator

"Replanting Teeth".—Replying on July 30th, to Mr Buchanan Mr GREENWOOD said he had not considered it desirable to take advantage of an offer to give his Department the patent rights of a process of extracting disinfecting and replanting teeth The inventor's proper course was to follow the customary practice of making full scientific publication of his methods and results with a view to trial and criticism by his professional colleagues

Venereal Disease Centres.—Replying to Dr Fremantle, on July 30th Mr GREENWOOD said annual returns concerning work done on venereal diseases at the treatment centres were already furnished to his Department by the medical officers in charge of the centres He would consider whether in future, medical officers of health should be requested to deal specially with this subject in their annual reports

Telephones for Rural Nurses.—Replying on July 30th to Mr Riley Mr GREENWOOD said he had no funds at his disposal with which to give financial assistance in aid of the installation of telephones in the residences of qualified nurses and midwives in rural districts and villages but the county councils had power to make the necessary arrangements so far as midwives were concerned

A 'Remedy" for Tuberculosis.—On July 30th Mr GREENWOOD said the testimonials concerning the "umckaloabo" treatment for tuberculosis, sent to him by Mr Smithers, had been considered by his advisers and he found no reason to reconsider his view that there was not sufficient ground for instituting a clinical investigation into the value of this alleged remedy for tuberculosis

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Medico-Legal

THE EYESIGHT TEST FOR MOTOR CAR DRIVERS

In the Court of Appeal on July 30th before the Master of the Rolls Lord Justice Lawrence, and Lord Justice Slesser, arguments were heard on an application to direct the local justices to hear and determine an appeal against the refusal of the Cumberland County Council to renew a motor driving licence The licence had been refused to the applicant Mr Edwin James Hepworth of Maryport because he had admitted his inability to answer in the affirmative the question asked 'Are you able to read at a distance of twenty five yards in good daylight with glasses (if worn) a motor car number plate containing six letters and figures?'

It was stated on behalf of Mr Hepworth that he had been driving for eight years without accident or complaint On applying for the renewal of his licence he answered "No" to the question put because the characters at that distance seemed blurred to him but he declared that he could see persons or animals on the road 200 or 300 yards away and cars at a much greater distance and that he had made long touring journeys in Scotland and England The application for a licence was refused by the authority and on the case being taken to the magistrates they held that they had no jurisdiction to hear an appeal when the refusal was based on a disability specified in the application form

Mr Charles Doughty K C who appeared for Mr Hepworth said that in the case of disabilities such as the loss of an arm or a leg the licensing authority might test the applicant's ability to drive when the applicant suffered from a prescribed disease there might be a judicial inquiry for which purpose the justices were the proper tribunal and it might be found that although suffering from the disease, the applicant was fit to drive a car The eyesight test however,

was one of the matters which did not entitle a driver to a practical test of his ability to drive when a licence had been refused on that particular ground, and if the contention of the other side was upheld he had no right of appeal as an aggrieved person

The Master of the Rolls gave judgement, in which the other Lords Justices concurred, to the effect that there was no right of appeal. Lord Hanworth said that this decision must be a matter of regret to the court, as probably it was also to the local justices. Mr. Hepworth was obviously an experienced and careful driver, and he had made a frank statement. "One cannot avoid regretting," said his lordship, "that this question should be put in the form in which it is put, because it would seem that a driver of great experience, who has shown great care and consideration for others, may be unable to answer a test made for the purpose of driving, but which may be ill-framed for the purpose of securing competence and fitness to drive." In default of the fulfilment of the test the licensing authority had no alternative but to refuse a licence. It was stated in one section of the Road Traffic Act, 1930, that a person aggrieved by the refusal of the authority might appeal to a court of summary jurisdiction, which might make an order binding upon the authority, but the court must hold that it was impossible to regard this appellant as a person aggrieved by the refusal, when the licensing authority had no alternative but to refuse. If the case was remitted to the justices, as the appellant asked, it would be their plain duty to say that they had no power to deal with it. Lord Hanworth added that it might well be a matter for those prescribing these test questions to consider whether the question regarding eyesight was framed so as to embrace cases where defective eyesight ought to be a ground for refusing a licence, and whether it did not, as it stood, cause experienced drivers to be excluded from driving when if the question was in somewhat different terms they would be able to satisfy all requirements as to capacity.

Universities and Colleges

UNIVERSITY OF LONDON

The following have been recognized as teachers of the University in the subjects indicated:

Westminster Hospital Medical School: Dr. A. J. Shinnie (Hygiene).

Lister Institute of Preventive Medicine: Dr. J. M. Gulland (Biochemistry); Dr. H. L. Schultz (Bacteriology).

Dr. S. L. Baker has resigned his appointment as Reader in Morbid Anatomy and Histology at the Middlesex Hospital Medical School as from August 31st, 1931, in view of his appointment to the Chair of Pathology in the University of Manchester.

Dr. J. A. Braxton Hicks has resigned the post as Reader in Pathology at the Westminster Hospital Medical School, in view of his appointment as Pathologist in Charge of Group Laboratories under the London County Council.

The following grants have been made out of the Thomas Smythe Hughes Medical Research Fund and the Beaverbrook Fund for 1931–32: To Dr. Richard A. Brews (Obstetric and Gynæcological Department, London Hospital), £30 for expenses in connexion with a review and follow up of all cases of hydatidiform mole and chorion carcinoma in the records of the London Hospital for the last twenty-five to thirty years, for the purpose of establishing incidence of chorion-[illegible] of proma, nature of subsequent pregnancies, renal lesions, operative mortality, prognosis, etc.; to Dr. Evelyn E. [illegible] dished (Physiology Department, London School of Medicine for protesting a) £140 for the purchase of a large sliding micro[illegible] Meeting [illegible] with Professor Lucas Keene on the development of four months [illegible] of the basal ganglia systems in the human that period the Cyril L. Oakley (University College Hospital had chosen which £30 for the purchase of animals needed in [illegible]ently considered research on the relationship between con[illegible] of doctor. That freezing and bone marrow activity; to Miss [illegible] points in the relationship of Physiology, King's College), £20 would be disastrously affected on the destruction of histamine service. The main objection experiments [illegible] has been continued as a school [illegible]ercises. Sir Ernest asked th[illegible]rs from October 1st, 1931 [illegible]side of the question. He also [illegible]p, has been appointed the [illegible]tion to the difference in the treat[illegible]t the celebrations in con[illegible]persons by limitation of panel prese[illegible] of the Royal College of [illegible] of this limitation was the agreement

Applications for the University Readership in Pathology tenable at the Westminster Hospital Medical School must be received by the Academic Registrar, University of London, by September 18th, 1931. The Reader will be director of the John Burford Carlile Pathological Laboratories at the hospital.

Applications, on prescribed forms, for the Geoffrey E. Duveen travelling studentship in oto-rhino-laryngology must be sent to the Academic Registrar by December 31st, 1931, together with a statement of the nature of the research in which the student proposes to engage, and a scheme of study submitted for the approval of the Geoffrey E. Duveen Studentship Board. The tenure of the studentship (value £450) shall be in the first instance for one year, but may be extended for one or two years.

The William Julius Mickle Fellowship, of the value of at least £200, is awarded annually to the man or woman who, being resident in London and a graduate of the University, has, in the opinion of the Senate, done most to advance medical art or science within the preceding five years and has therein shown conspicuous merit. Applications must be sent in to the Principal of the University by October 1st, 1931. Further particulars can be obtained on application to the Academic Registrar.

The following candidates have been approved at the examination indicated:

M.D.—*Branch I (Medicine)*: I. Bakhsh, P. Berry, A. [illegible] Dorothy Collishaw, G. I. Davies, R. P. P. Davies, A. Edgar, M. L. Mistri, Mary F. Pease, G. C. Pether, D. Prasad, J. H. Simmons, G. F. F. Sutton, C. E. W. Wheaton, J. A. Wood, B. A. Young. *Branch II (Pathology)*: J. N. Cummins. *Branch III (Psychological Medicine)*: F. E. L. Schneider. *Branch IV (Diseases of Women)*: Harriet E. Acheson, D. A. Blair-Bridget S. P. Gurney, Morfydd R. Jones, Joyce Morgan Jones, J. Parkes, T. V. Pearce. *Branch VI (Tropical Medicine)*: K. V. Powles, Gulbai P. Patel.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

A meeting of the Royal College of Physicians of London was held on July 30th, when the President, Lord Dawson of Penn, was in the chair. The following officers were elected for the ensuing year.—*Censors*: James Collier, M.D., W. Langdon Brown, M.D., C. R. Box, M.D., Sir Charles Briscoe, Bt., M.D. *Treasurer*: Sidney P. Phillips, M.D. *Registrar*: Raymond Crawfurd, M.D. *Harveian Librarian*: Arnold Chaplin, M.D. *Assistant Registrar*: R. O. Moon, M.D.

The following Fellows were elected members of the Advisory Committee to the President: Dr. H. Morley Fletcher, Dr. Robert Hutchison, Dr. A. M. H. Gray, Dr. H. L. Eddy, Dr. H. H. Dale, Dr. J. A. Ryle, and Dr. F. Watts-Eden.

Appointments

Dr. James Collier and Dr. W. Langdon Brown were appointed to represent the College on the Mackenzie Mackinnon Trust Committee, and Sir Humphry Rolleston was re-elected representative on the executive committee of the Imperial Cancer Research Fund.

The President, Lord Dawson of Penn, will represent the College at the celebration of the 250th anniversary of the Royal College of Physicians of Edinburgh.

The President announced that he had appointed Sir George Newman to be Harveian Orator, and Dr. Dugald Baird to give the Bradshaw Lecture, both in 1932. (The forthcoming Harveian Oration in October next will be delivered by Dr. Robert Hutchison.)

In addition to the appointments to lectureships announced at the last meeting, Dr. Harriette Chick was appointed Oliver-Sharpey Lecturer, and Dr. L. P. Jacks the Lloyd Roberts Lecturer, for 1932.

Awards

The Baly Medal, awarded every alternate year to the [illegible] who shall be deemed to have most distinguished himself in the science of physiology during the two years immediately preceding the award, was awarded to Professor W. B. Cannon of Harvard University.

The President also announced the award in Edinburgh of the Murchison Scholarship jointly to W. M. Arnott and R. J. Kellar.

Membership

The following candidates, having satisfied the Censors' Board, were admitted Members:

Wilbert Hurst Brown, M.B.Oxf., Ernest Thomas Carey, M.B.Lond., Edward Philip Nigel Creagh, M.B.N.U.I., F.R.C. Crichton Miller, M.D.Ed., Ratansha Dinsha Dalal, I.M.S. Courtenay Nisbet Evans, M.B.Lond., Joseph Hayes Fay, M.D.Ed., Mohamed Gamil Farid, M.B.Cairo, Theophil Jay Friedrich Frank, M.D.Melb., Clifford Allchin Gill, L.R.C.P.II. Howard Gillison, M.B.Ed., John Howell Halliday, M.B.S. Henry Procter Hutchinson, M.B.Camb., Harold Gordon Mc[illegible] M.B.Lond., Robert Michael Maher, M.D.Lond., John O[illegible] Mercer, M.B.New Zealand, Herbert Leslie Milles, L.R.C.P.

George Oakley, M B Camb, Rupert Samuel Bruce Pearson, M B Oxf, Evelyn Nora Popper, M D Lond, Mostyn Levi Powell, M B Melb, Gangadrum Venkataswami Ram Mohan, M B Madras, Douglas Riding, M D Liverp, William Carey Smallwood, M B Birm, Tej Raj Swarup, M B Lucknow, Abd El Kader Talkhan, M B Cairo, Alfred Brian Taylor, M B Birm, Geoffrey Fawsitt Taylor, L R C P., Thomas Fennent, M D Glasg, Hugh Ferguson Watson, M D Glasg, Charles Edward Walton Wheaton, M D Lond, Bertram Alan Young, M D Lond

Licences and Diplomas

Licences to practise physic were granted to 140 successful candidates, and Diplomas in Tropical Medicine and Hygiene and in Ophthalmic Medicine and Surgery were conferred jointly with the Royal College of Surgeons (The lists of successful candidates were published in the report of the meeting of the Royal College of Surgeons printed in our issue of August 8th, p. 280.)

The following diplomas were also conferred jointly with the Royal College of Surgeons:

Diploma in Public Health—L. W. Cann, Irene E. Chandler, Anne A. Craig, J. Crawford, M. B. Dayer, T. W. Davies, D. M. de Silva, D. Diamond, C. E. Dolman, M. J. Evans, T. I. Evans, Sarah P. M. Griffiths, C. Hill, Kathleen M. Horton, J. E. Howard, Amy L. Jagger, V. B. Kettle, Catherine B. McArthur, Hilda K. McKernan, J. Portelly, J. F. Southward, I. W. Stallybrass, R. Stuart, R. J. Toleman, Olga F. Tregelles, E. W. Vaughan, Nora W. Wamsley.

Diploma in Psychological Medicine—G. I. Bell, L. J. Bendit, A. Cannon, C. R. Cooke-Taylor, J. A. F. Denyssen, S. B. Hall, J. G. Hamilton, S. D. Isaacs, J. M. Loftus, Joyce McConnell, G. W. Murray, C. J. Thomas, L. M. Webber.

Diploma in Laryngology and Otology—G. E. Archer, M. G. J. Booysen, E. C. L. Burnier, G. V. Joglekar, B. V. P. Reddy.

CONJOINT BOARD IN IRELAND

The following candidates have been approved at the examination indicated.

Final Professional—T. J. Conlon, M. P. Crowe, P. A. Fox, J. L. Hampson, Mary G. V. McAllister, J. O'Donnell, Y. Posner, J. V. Quinn, J. Rubinstein, G. V. Steen.

ROYAL COLLEGE OF SURGEONS IN IRELAND

The following candidates have been approved at the examinations indicated:

Primary Fellowship—W. W. Bassett, J. S. Baxter, M. E. M. King, C. J. Shortall.

Final Fellowship—M. A. Parthasarathy, H. T. Fleming, D. S. Poole-Wilson.

Medical News

The Royal College of Physicians of London will be closed from August 17th till September 19th, both days inclusive.

The Fellowship of Medicine has arranged two special courses for August—namely, a course in urology now in progress at All Saints' Hospital until August 29th, and a course at the Queen's Hospital for Children from August 17th to 29th. Lunch and tea are kindly provided by the hospital authorities. Fee, £2 2s. A comprehensive course will be given at the Brompton Hospital from September 7th to 12th (fee £3 3s.); an afternoon course at the Infants Hospital from September 14th to 26th (fee £3 3s.); psychological medicine at the Bethlem Royal Hospital from September 8th to October 3rd; ophthalmology at the Central London Ophthalmic Hospital from September 15th to October 10th (fee £3 3s.). A revision course will be given at the Westminster Hospital from September 14th to 26th (fee £5 5s.), and a similar course at the Metropolitan Hospital from September 28th to October 10th (fee £3 3s.). Detailed copies of syllabus may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The Royal Sanitary Institute announces that the autumn session of training courses for examinations for sanitary inspectors, meat and food inspectors, smoke inspectors, and in sanitary science, will commence on Monday, September 28th. Syllabuses of the lectures and of the examinations, containing full particulars, are obtainable from the secretary of the Institute, 90, Buckingham Palace Road, S.W.1.

Sir Herbert Samuel has accepted the presidency of the British Institute of Philosophy, in succession to the late Lord Balfour.

At the quarterly meeting of the council of the British College of Obstetricians and Gynaecologists, held in London on July 27th, with the president in the chair, Professor J. M. Munro Kerr (Glasgow) and Dr. J. S. Fairbairn (London) were re-elected vice-presidents for the current year. A "casual" vacancy on the council, occasioned by the elevation to the Fellowship of Professor E. Farquhar Murray, was filled by the election of Mr. J. St. George Wilson (Liverpool) for the rest of the current year. Dr. T. M. Healy (Dublin) and Dr. Margaret I. Balfour (India) were admitted to the Fellowship of the College *in absentia*. It was decided that the annual dinner of the College should be held at Grosvenor House, Park Lane, London, on October 23rd. The dinner will be preceded by a ceremony for the conferment of the honorary Fellowships on the Right. Hon. Lord Riddell, Professor Paul Bar (Paris), Professor Whitridge Williams (Baltimore, U.S.A.), and Professor Essen-Möller (Lund, Switzerland), all of whom have accepted the invitation of the council, and will be followed by the conferment of the ordinary Fellowships and Memberships on those qualified to receive them.

The Minister of Health has addressed a circular (No. 1207) to local authorities advising them that the period of operation of the Housing (Rural Workers) Act, 1926, has been extended for a further five years by the Amendment Act of 1931. The new Act extends for a similar period the operation of any existing scheme made by a local authority under the original Act. Appended to the circular is a copy of a report by Sir Arthur Lowry, chief general inspector of the Ministry, of the working of the Act of 1926 in the county of Devon and in the rural district of Atcham, Shropshire, from which it appears that its provisions for the assistance of owners of cottage property could be applied to a much greater extent than they are at present. Commenting on this report, the Minister draws attention to the necessity for co-operation between the county council (where that council is the local authority) and the district councils of the county; to the economy of improving existing houses where possible compared to the erection of new ones; and to the fact that the rents paid by occupants of improved houses have not materially increased. He also reminds local authorities of the arrangements made by the Council for the Preservation of Rural England, acting in co-operation with the Royal Institute of British Architects, for the giving of expert advice, free of charge, on the execution of repairs and reconditioning under the Act.

The annual report on the health of Gibraltar for 1929 has recently appeared after considerable delay, due to the fact that the then medical officer of health, Lieut.-Colonel W. C. Smales, R.A.M.C., has taken up an appointment elsewhere. It contains an interesting survey of the various ways in which public health is safeguarded in an uncommon type of locality. A foreword by Professor Bostock Hill rightly calls attention to the excellence of the sanitation in Gibraltar, and the consequent absence of any serious infectious diseases for some years. The report is well illustrated, and contains unusually detailed information.

At the meeting of the Central Midwives Board for England and Wales on July 23rd a letter was considered from the Metropolitan Boroughs Standing Joint Committee, stating that midwives were not taking full advantage of the facilities offered for the ante-natal care of their patients, and that, though a proposal had been made that legislation on the subject should be introduced, the joint committee was not of opinion that this would be a practicable remedy, and that in any event Parliament would not be disposed to legislate specially for London in the matter. The joint committee asked the Board to use its strongest endeavour to encourage midwives to secure the proper and sufficient ante-natal examination, by medical men, of their patients. The Board, in its reply, indicated that endeavours to the ends suggested in the letter were being made, and that it would be glad of any suggestions which might be of assistance in the matter. Approval as lecturer was granted to Dr. James Campbell Gordon, Salisbury General Infirmary.

kidney for the removal of a large stone; this patient similarly made a good recovery without further symptoms. In the third case a double left kidney was found, the upper half of which was converted into a pyonephrotic sac. This was drained for three months, and at a second operation the kidney was resected, the upper half being separated from the lower half at the level of a sulcus dividing them. The recovery of the patient was prompt and complete. The author suggests that resection of the kidney is neither extremely difficult nor risky, and in properly selected cases is a very advantageous operation.

135 Chronic Pancreatitis

J. Hertz (*Bull. et Mém. Soc. Nat. de Chir.*, May 23rd, 1931, p. 689) reports three cases of chronic pancreatitis which were treated surgically. In the first case symptoms of pain, vomiting, and nausea had been evident for eight years, and an exploratory laparotomy revealed a tumour the size of a mandarin orange at the head of the pancreas, which was united to the duodenum by adhesions. The second case was similar, pain and sickness having been present for five or six years; a pancreatic tumour as big as a thumb was found. In each of these cases the abdomen was closed without anything further being done, but the symptoms were immediately relieved. When seen several years after operation the patients were in good health, had gained in weight, and had had no recurrence of pain or sickness. In the third case the symptoms, which were acute, had been troublesome for five years. An *x*-ray examination revealed a hypertonic stomach, with some deformity in the first part of the duodenum. Laparotomy showed that the head of the pancreas was enlarged, whitened, hard, and stony. Since there were calculi in the appendix, appendicectomy was performed, followed by free incisions into the gland. A gauze drain was then placed in these incisions, and the wound was closed. A pancreatic fistula developed on the fifth day, but dried up quickly, and the patient made a good recovery. The interesting feature in these cases was the disappearance of pain and improvement in the condition of the patients following an exploratory laparotomy.

136 Treatment of Burns

Robertson and Boyd have claimed that the toxaemia of burns is due to a toxin, which circulates in the blood, is adsorbed by the erythrocytes, causes the symptoms seen in cases of severe superficial burns, and may bring about death. F. P. Underhill and R. Kapsinow (*Journ. Lab. and Clin. Med.*, May, 1931, p. 823), who report a series of investigations, are unable to corroborate this statement. They believe that the symptoms obtained experimentally by other workers are explained by the inclusion of significant quantities of alcohol in the extracts of the skin. Injections of normal blood produce practically the same symptoms and effects in guinea-pigs as those of the blood of burned animals. The present authors suggest that the symptoms and effects of a burn may be adequately explained by the establishment of a degree of blood concentration due to loss of fluid from the damaged area. There is no need, therefore, to postulate the existence of a "burn toxin." Treatment of burns resolves itself into the prevention or alleviation of shock, the maintenance of the blood concentration at a level compatible with life, and local treatment of the wound so as to avert infection and facilitate healing. With such safeguarding the authors are satisfied that a greater measure of success will attend the treatment of burns.

137 Sympathectomy and the Coronary Innervation

D. Danielopolu, L. Marcou, and G.-G. Proca (*C. R. Soc. de Biologie*, June 3rd, 1931, p. 419) agree that the coronary arteries have a sympathetic and parasympathetic innervation. They describe experiments which prove that the sympathetic fibres are vaso-dilators and cross the stellate ganglion, while the parasympathetic are vaso-constrictors and reach the vessels through the vagus. These findings confirm those of Anrep and other investigators. Section of the vagi increases the coronary output; excision of the stellate ganglion reduces it considerably. The parasympathetic fibres arise from the bulb, as do the inhibitory filaments of the heart; supply to the coronary arteries, with that to the myocardium, has its origin in the upper dorsal cord, which, by its sympathetic filaments, increases the work of the heart and also the coronary output. The bulb inhibits this organ and reduces its circulation. This circulation is maintained by the amphotropic coronary tonus, which may be modified by reflexes acting on these vessels. If the reflex predominates on the vaso-constrictors, the vaso-dilators are excited and vaso-constriction is moderated. If the vaso-dilator group is intercepted, the reflex travels only by the vaso-constrictors, and vaso-constriction becomes more intense. The authors discuss (ibid., p. 421) these facts in relation to the stellectomy of Leriche, and describe how they affect their own operation in the treatment of angina pectoris. The section of the coronary vaso-dilators in these operations can cause an intense spasm of the vessels, and lead to cardiac arrest. This partly explains the cases of sudden death after stellectomy.

Therapeutics

138 Indications for Digitalis

According to R. Wybauw (*Le Scalpel*, May 6th, 1931, p. 592) the chief indication for digitalis is failure of the myocardium; in cases of dilatation with pulmonary oedema and right-sided dilatation, strophanthus or ouabain occasionally gives better results. Although a compensated myocarditis does not always call for the exhibition of digitalis, it may be tried sometimes to prevent failure of compensation. As a rule hypertrophied hearts react better to digitalis than those with no enlargement. Sinus arrhythmia is not improved by digitalis, nor is paroxysmal tachycardia, which may be arrested by injections of ouabain. In bradycardia, digitalis is contraindicated; extrasystoles are not as a rule benefited. In complete heart-block, when there are signs of failing ventricle, digitalis may be tried. In auricular flutter, digitalis may convert the flutter into fibrillation, which is less painful, and is attended by the best results. In advanced cases it is advisable to prepare the way for digitalis by inducing diuresis, by free action of the bowels, and by ouabain injections. The pathological conditions in angina vary so much in different cases that no general law can be laid down; the state of the myocardium determines whether digitalis is likely to do any good. In pseudo-angina of neurotic origin it is inefficacious. Among the general contraindications to digitalis therapy the author mentions digestive disturbances, idiosyncrasy, and a tendency to embolism.

139 Inhalation Therapy in Angina Pectoris and Intermittent Claudication

Y. Henderson (*Amer. Heart Journ.*, April, 1931, p. 548) remarks upon the increasing use of carbon dioxide for therapeutic and prophylactic purposes. Not only has this gas the power of stimulating the respiratory centre, but it also exerts a marked effect upon the circulation. This fact is shown in animal experiments in which it is found that a sufficient amount of carbon dioxide must be present in blood for perfusion in order to preserve adequate diastolic relaxation of the heart. It seems likely that the Nauheim treatment, which consists in carbonated baths, owes its value more to the inhalation of carbon dioxide than to the effect of the gas upon the skin. Henderson has administered carbon dioxide to three patients suffering from angina pectoris. A stream of the gas was passed into a mask which was sufficiently open to allow free respiration. Mechanical precautions were taken to prevent accidental excessive administration, and after continuing for two or three minutes an almost maximal depth of respiration was developed. The stage of increased rate of breathing was never reached. The inhalations usually lasted for fifteen minutes. The treatment resulted in improvement of the colour and temperature of the skin

A fuller circulation became apparent, and after some weeks of daily treatment it was found that pain on effort occurred less readily. Two patients suffering from intermittent claudication were also treated by daily inhalations of carbon dioxide. In both there was a marked improvement in the circulation of the ischaemic limb, and in one of them a distinct cumulative beneficial effect was observed.

140 Treatment of Prostatitis

E. SPELKENS (*Bruxelles-Médical*, April 19th, 1931, p. 739) states that at the beginning of prostatitis local treatment must be suspended; rest in bed, attention to the bowels, warm enemata, urinary antiseptics, warm baths, rectal diathermy, and suppositories of ichthyol and belladonna with papaverine chloride are all useful in the early stages. When the acute stage is ended, massage of the prostate on alternate days and the instillation of protargol or argyrol into the posterior urethra are advisable; vaccine treatment often gives good results, especially if a combination of various vaccines is used. To combat the general weakness tonics may be given, such as arsenic, quinine, and glycero-phosphates. Milk injections are more useful in acute than in chronic prostatitis. Any tendency to constipation must be dealt with at once.

Disease in Childhood

141 Cholesterol, Oedema, and Nephritis in Children

. K. CALVIN and A. H. GOLDBERG (*Amer. Journ. Dis. Child.*, May, 1931, p. 1066) conclude from a review of the literature and their own experimental observations that he blood cholesterol level in the nephrotic syndrome is practically always considerably above normal. It has a endency to rise and fall with the increase and decrease of oedema; exceptions are not uncommon. The appearance and disappearance of the oedema precedes the changes n the cholesterol. The cholesterol may be synthesized rom the deposits of fat in the body; in the nephrotic syndrome it has difficulty in passing from the blood to he tissues, since the ascitic fluid has a very low cholesterol content. The blood cholesterol in the nephrotic syndrome an readily pass through the kidneys into the urine, though he hypercholesterinaemia antedates by a considerable period the lipoiduria (Murphy). The diet has no influence on hypercholesterinaemia, but the output of cholesterol in the bile is diminished in the nephrotic syndrome, so that there is apparently a real retention in the blood (Herrnstadt). A symptomless but definite hypoglycaemia exists in nephrotic children (Knauer). It seems probable, then, that hypercholesterinaemia results from the disturbance of fat metabolism accompanying the nephrotic syndrome, and is not the cause or consequence of the oedema.

142 Juvenile Tuberculosis in Massachusetts

D. ZACKS (*New England Journ. of Med.*, May 14th, 1931, p. 1037) reports the results of a special investigation into the health of school children between the ages of 5 and 15, which was begun in 1924. It is assumed, as a working hypothesis, that tuberculosis is contracted in childhood, and that those who survive the initial infection later develop the adult type of disease as the result of a sufficiently massive reinfection. The age group 5 to 15 shows the lowest mortality figures, and it was hoped that investigation of that group might yield some clue to the mode of development of the adult type of disease. More than half of the school children came under observation; 30 per cent. were found to react to tuberculin skin tests. The reactors were subjected to an *x*-ray examination, physical examination being reserved for those showing definitely pathological *x*-ray appearances. Both childhood and adult types of tuberculosis were reported to the board of health, and immediate sanatorium treatment was recommended in all cases of pulmonary disease. In the year 1929–1930, 49,000 children were examined in the clinic, and 5,000 in the yearly follow-up. Two white children in every hundred showed *x*-ray evidence of the childhood type of tuberculosis; in many cases the coexistence of cervical adenitis pointed to milk infection; these childhood lesions, formerly often considered unimportant, have frequently been observed during the follow-up period, to be succeeded by serious apical disease. The weight being persistently below the average, or failure to gain weight, is stated to be a more important symptom than actual loss; in both girls and boys the average age for the commencement of apical lesions is 13.5 years. Of every thousand school children examined, one was found with the adult type of disease, 2.8 girls being affected for each boy. More than half these cases were diagnosed by *x*-ray examinations and skin tests only, though physical signs developed later; more than half showed *x*-ray evidence of childhood lesions, often calcified. A family history of tuberculosis was obtained in two out of every three cases of apical lesions—a most significant point. Zacks adds that though this investigation has yielded no positively new information, it emphasizes the value of the systematic examination of school children, and especially of performing a preliminary *x*-ray examination of reactors to the tuberculin test.

143 Diagnosis of Tuberculosis in Children

V. POULSEN (*Amer. Journ. Dis. Child.*, April, 1931, p. 783), who reports five illustrative cases in patients aged from 5 months to 5 years, remarks that while the diagnosis of pulmonary tuberculosis is not very difficult when distinct infiltrative processes can be detected by the stethoscope or *x*-ray examination of the lungs of a child with a positive tuberculin reaction, in cases in which such examination is negative the diagnosis is impossible unless tubercle bacilli can be found in the expectoration. Since children as a rule swallow their expectoration, the search for tubercle bacilli is not likely to be successful unless they are looked for in the material obtained by gastric lavage by direct microscopy, cultivation on Petroff's medium, or inoculation of guinea-pigs. Pouisen's cases show that children may have pulmonary tuberculosis even with an open process in the lung without there being a focus discoverable by auscultation, or anything definite being found in the skiagram. In such cases the revelation of tubercle bacilli by gastric lavage establishes the diagnosis, and renders treatment possible at an early stage. Since gastric lavage, however, is both unpleasant and costly, it is unnecessary to use it in obvious cases of pulmonary tuberculosis or tuberculous meningitis, but it is applicable in all other cases, including tuberculosis of the joints, bones, or kidneys, which is most frequently secondary to disease of the lung. Gastric lavage is most valuable in children with positive tuberculin reactions and vague symptoms, in whom it is desirable to discover whether the tuberculous process is in the lungs or in the mediastinal lymphatic glands. Of 110 children aged from 1 to 8 years, 53 showed tubercle bacilli as the result of gastric lavage. The bacilli were more easily found in young children than in older ones, as is shown by the fact that of 62 children under 3 years old 41 were bacillus carriers, whereas of 48 over the age of 3 only 12 were carriers. It is important to realize that a single examination of the material obtained by gastric lavage is not sufficient. Of the 53 cases tubercle bacilli were found at the first examination in 38, at the second in 12, at the third in 2, and at the fourth in one. The examination, therefore, should be repeated at least twice, and in suspected cases three or four times.

144 N. R. CHRISTOFFERSEN and J. A. FREDERIKSEN (*Ugeskrift f. Laeger*, May 28th, 1931, p. 587) have checked Pirquet tests in children with bacteriological examinations of the contents of the stomach, washed out in the fasting state with 200 c.cm. of water. Among 36 Pirquet-negative children, 10 of whom were under 1 year old, 10 over the age of 5, there was not one in whose stomach tubercle bacilli could be found. But among the 12 Pirquet-positive children there were 4 in the contents of whose stomachs tubercle bacilli were found.

Obstetrics and Gynaecology

145 Endometrial Hyperplasia

According to C. F. Fluhmann (*Surg., Gynecol. and Obstet.*, June, 1931, p. 1051), hyperplasia is a characteristic pathological process affecting the endometrium, and should be considered as part of a definite clinical entity. In the gynaecological department of the Stanford University school of medicine it was present in 12.2 per cent. of 507 women with abnormal uterine haemorrhage. The majority of cases occur just before and during the menopause; approximately 75 per cent. of these patients were multiparae, and in about 30 per cent. a pelvic morbid condition was also present. The outstanding symptom is uterine haemorrhage, which may be either profuse at the menstrual intervals, or prolonged; continuous or intermittent. The endometrium shows marked hyperplasia of both glands and stroma. Epithelial proliferation is occasionally noted and may give rise to erroneous suspicion of carcinomatous changes; coexistence with carcinoma has been described, however, and must be borne in mind. The ovaries show cystic ripening and atretic follicles, lutein cysts, and an absence of mature corpora lutea. An excessive production of oestrin during the course of this disease has been demonstrated; evidence is advanced suggesting that hyperplasia endometrii is the direct result of an over-stimulation of the endometrium by oestrin, and the complete absence of progestin influence. The chief local factor causing the haemorrhage is tissue necrosis, due either to a sudden cessation of oestrin production or to a prolonged, excessive oestrin stimulation. The disease is evidently the result of an endocrine disorder rather than a local pelvic condition; the anterior part of the pituitary gland may possibly be involved. Repeated curetting in younger patients, and intrauterine radium applications in those of the menopausal age are said to be the most satisfactory methods of treatment.

146 D. J. Cannon (*Irish Journ. Med. Sci.*, June, 1931, p. 279) records a case of irregular uterine haemorrhage. Operation revealed a considerable increase in the stroma of this organ, without multiplication of the epithelial elements of the mucosa; a follicular haematoma of the ovary was also present. Cannon remarks that in such a condition curetting always indicates an endometrium of normal thickness, and scrapings are usually thrown away as of no significance; even their examination by a pathologist may result in a report that the endometrium is normal because no glandular changes are to be seen. The association of a follicular haematoma with metropathia haemorrhagica is of assistance in homologizing this condition with the nymphomania of the rabbit and ferret in the absence of copulation. In both the human condition and the nymphomania a fibro-cystic state of the ovaries is found, and also evidence of a prolonged follicular phase or pro-oestrual development. The author discusses briefly the mechanism of bleeding in cases of metropathia haemorrhagica, and suggests that the cause may be removal of the hormonic influence of the ovary. In his case there was cystic degeneration, with haemorrhage into the cyst wall, which affords additional support to this hypothesis.

147 Endocrinology of the Climacteric

J. S. Diasio (*Med. Journ. and Record*, May 6th, 1931, p. 444) quotes references from the literature in support of his contention that the climacteric is a glandular dysfunction involving the ovary and one or more of the ductless glands. After trying various combinations of desiccated endocrine extracts, the best results were obtained by the oral administration of a pluriglandular mixture containing thyroid, 1/10 grain; whole pituitary, 1/20 grain; suprarenal, 1/10 grain; and gonads, 3/4 grain. In the majority of cases relief followed in three days, but the treatment had to be continued for a considerable time to ensure permanent benefit. Such oral treatment gave, he found, very satisfactory results when carefully supervised, and in order to ensure this the author encourages the patient to come at least once a month for an intramuscular injection of the same formula. Though many of the climacteric symptoms are not necessarily ovarian, they point to a compensatory action of the functionally related endocrines, dysfunction of the ovary causing a similar manifestation in one or more of the other glands.

Pathology

148 Posture and the Circulating Blood Volume

Working on the discovery of Thompson and his associates (using the dye method) that posture affected the total plasma and cell volumes, R. L. Waterfield (*Journ. of Physiol.*, June 6th, 1931, p. 110) found that the blood volume, determined by the carbon monoxide method, is less in the erect than in the recumbent position. This loss, mainly in respect of plasma, averages 15 per cent. of the total plasma volume; an accompanying loss of 4 per cent. of the total cell volume also occurs. The increased plasma-protein concentration present in the erect posture is such as would be expected if the globulin fraction alone did not diffuse through the capillary walls. The findings of observers using the dye method differ somewhat from Waterfield's; the differences are enumerated, and are explained by a diffusion of the dye into the lymph spaces. The blood volume does not include the splenic blood. The spleen may contract and throw its red cells into the circulation in certain subjects. The increase in plasma volume following splenic contraction is probably derived secondarily from the tissue fluids. With reference to Thompson's suggestion that the loss of plasma is due to leakage into the tissues of the lower limbs, Waterfield found (ibid., p. 121) that the volume changes in the leg corresponding to changes in posture are such as would occur from the blood volume changes, and are apparently due to an actual oedema of the tissues. They are greatest in subjects that are tall, in poor training, and have fat, flabby legs.

149 Complement Fixation with Besredka's Antigen

A. Bessemans and J. Morelle (*C. R. Soc. de Biologie*, May 1st, 1931, p. 1298) state that it has been previously shown that the fixation of alexine by Besredka's antigen is of great value in the diagnosis of ocular tuberculosis. They report the results of this test in 557 other cases: 215 of proved or suspected tuberculosis; 129 non-tuberculous controls; 125 cutaneous cases of little-known origin, such as alopecia or psoriasis; and 88 allergic cases (bronchial asthma or prurigo). From the results the following facts are deduced. Since an advanced state of the lesions, the presence of complications, and the patient's poor general state decrease the percentage of positive reactions, the test is of some prognostic value. Allergic affections, notably asthma and prurigo, give a high percentage of positives. Psoriasis, alopecia, and erythematous lupus also yield a high percentage of positives; this may indicate a tuberculous etiology in these diseases. Cure or amelioration of Besredka-positive affections can cause a diminution or disappearance parallel to the positivity; therefore, repeated tests should be made to aid in prognosis. No parallelism exists between the tuberculin skin reaction and that of Besredka, but there is a certain inverse relation between the incidence and frequency of positives with the age. The diagnostic value of this test is very limited in non-pulmonary tuberculosis, but is much greater in commencing and suspected pulmonary cases, and in certain affections of doubtful origin.

150 Influenzal Bacteriaemia

E. L. Benjamin (*Arch. of Pediat.*, May, 1931, p. 3[illegible]) records the case of a male infant, aged 8 months, who was taken suddenly ill with cough, vomiting, fever, and signs of pneumonia in the left lung. *B. influenzae* was found on blood culture and in a serous fluid from the left chest. Symptoms of meningitis developed nine days after the onset, and death followed. *B. influenzae* was also found in the purulent cerebro-spinal fluid. There is no record of a necropsy.

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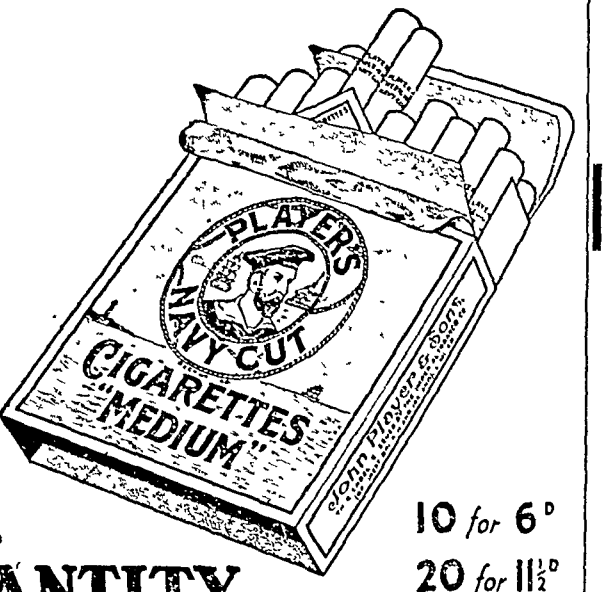
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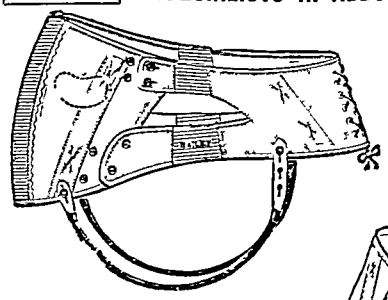
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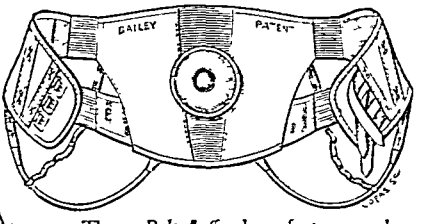
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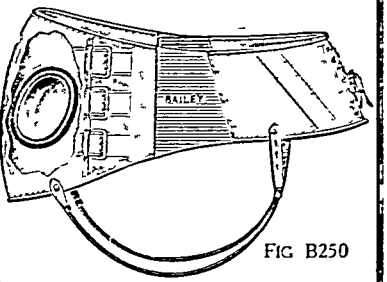


FIG B250
(Showing Interior of Cup)
SPECIAL BELT FOR AFTER COLOSTOMY.

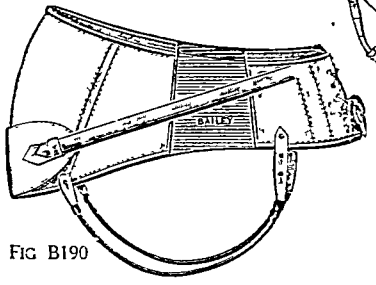
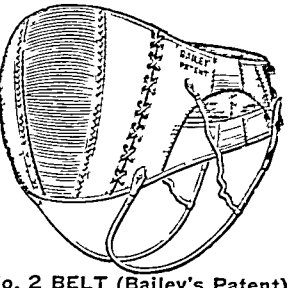


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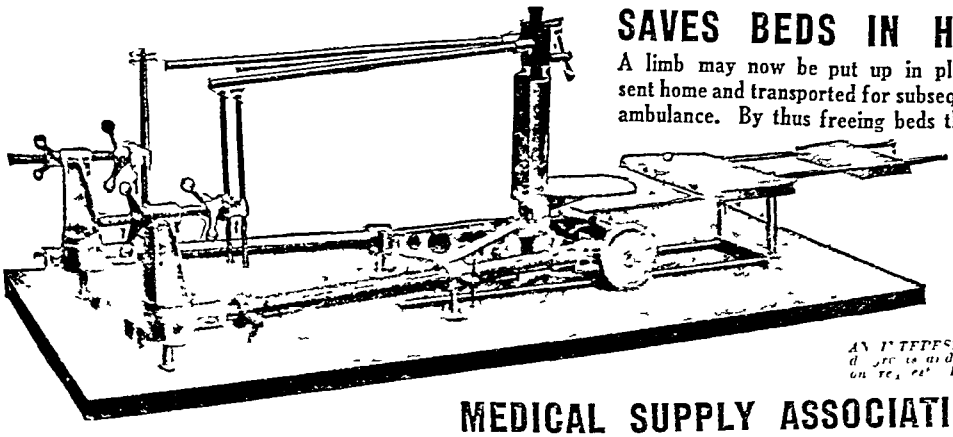
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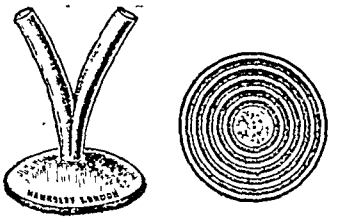
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CLAPTON, LONDON, E.5.

Telephone Clissold 1648

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders The hospital is situated in nine acres of pleasure grounds Both voluntary and patients under certificates received For further particulars apply Dr GERALD JOHNSTON and Dr ERNEST ROLLINS, Resident Physicians

THE MOAT HOUSE,

TAMWORTH, STAFFS.

Established 1816 For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS Voluntary patients received For terms apply to the Resident Medical Attendant Telephone Tamworth 108

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

Ladies and Gentlemen received for treatment under certificates, and without certification as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards

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DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

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Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930 Bracing Hill country See *Medical Directory*, p 2138 —Apply to Medical Superintendent Phone 10 P O, Church Stretton

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BASCHURCH, SALOP.

A first class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted

Large gardens, deer park, private golf links, fishing Grounds extend to over 200 acres. Voluntary Boarders accepted

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CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded garden

HOME FOR TWELVE MENTAL PATIENTS (LADIES). Well appointed private house. Home comforts and Trained Nursing Staff Eminent Mental Specialist Visiting Physician

Station Clapham Common Tube. *Telephone* Brixton 0494 App'ly, Miss THWAITES.

BETHLEM ROYAL HOSPITAL, for Nervous and Mental Disorders,

Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg. Tel. Address: Bethlem, Beckenham. *Telephone*: Springpark 1180—1181.

Station: Eden Park (Southern Railway).

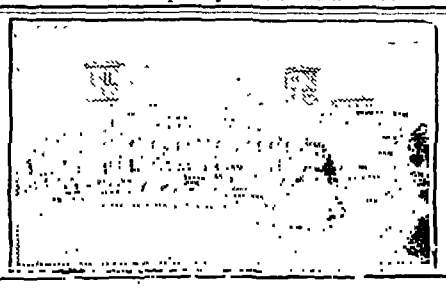
President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
Physician-Supt.: J. G. PORTER-PHILLIPS, M.D., F.R.C.P.

This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
With a view to early treatment voluntary or uncertified patients are admitted.
Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise. The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free of charge.
Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
Furthermore, provision is made for Electro-Therapy and Hydro-Therapy to be carried out in all their forms.
In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.
The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms.
For forms and further particulars apply to the Physician-Superintendent at the Hospital.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.



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Massage.
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Ultra-Violet Rays.
Special Dieting.
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Sailing.
Bathing, etc.

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THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury Telephone 51.

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Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

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Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
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A PRIVATE HOSPITAL for the care and treatment of persons with mental and nervous disorders.
Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).
For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Batheaston 8189.

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Voluntary Patients received for treatment.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

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Telephone: Nuneaton 241.

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All particulars may be obtained from the Resident Medical Superintendent,
Dr. MARY R. BARRAS, M.D., D.P.M.

FENSTANTON,
CHRISTCHURCH ROAD,
STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2254.) Apply J. H. FARES, M.D., Resident Physician. Telephone: Streatham 8430.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. V. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 2231 GATLEY.

Tel. & Telegrams: "Haynes, Brentwood, 45."

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NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMPACT, M.A., M.D.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance [illegible] and from its singularly healthy position and comfortable [illegible] every facility for the relief and cure of those mentally [illegible] and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent*

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'Phone: 11 Ashton-in-Makerfield.

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Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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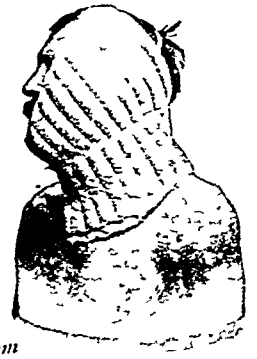
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Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admissions being primiparous cases). Over 2,400 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 18,000 attendances per annum.

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For rules, fees, etc., apply ARTHUR WATTS, Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatmen
of "—"Times."
"—"Lancet."
and perfectly
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STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9

of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes with DEMONSTRATIONS will commence shortly. CORRESPONDENCE COURSE for Jan. and later Exams. should begin now.—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

TAUNTON SCHOOL,
TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

MARLBOROUGH COLLEGE,
Near MACCLESFIELD, CHESHIRE,

Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN*.

UNIVERSITY EXAMINATION POSTAL INSTITUTION
17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.)

POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-30 (9 Gold Medallists during 1913-30)	336
M.S.(Lond.),	1901-30 (including 4 Gold Medallists)	22
M.B.,B.S.(Lond.),	*Final* 1906-30 (Completed Exam.)	269
F.R.C.S.(Eng.),	*Primary* 1906-30	162
	Final	161
M.R.C.P.(Lond.),	1914-30	192
D.P.H.	(Various) 1906-30 (Completed Exam.)	300
F.R.C.S.(Edin.),	1918-30	46
M.R.C.S.,L.R.C.P.	*Final* 1910-30 (Completed Exam.)	467
M.D.(Dur.)	(Practitioners) 1905-30	38
M.D.	Various. By Thesis. Numerous successes.	

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities; also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. At Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of *Tutors*, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

CITY OF LONDON MATERNITY HOSPITAL,
CITY ROAD, E.C.1.

..... MINING SCHOOL.
.. admitted to Hos
Midwifery, and
rical complications. Monthly or Portn
Courses.

PUPILS TRAINED as Midwives and M
Nurses in accordance with C.M.G. regula
PRIVATE WARDS for paying patients.
MATERNITY NURSES sent out for
cases.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIDDEN, the Secretary.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(University of London)

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.).

The COURSE OF STUDY is now Divided into TWO PARTS: Section A (Clinical and Laboratory Instruction) and Section B (Tropical Hygiene) each of which can be taken independently of the other, Section A being a three months' course and Section B a two months course.

This Revised Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF THE COURSES, 1931-32.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION)

1st COURSE 29th *September*—18th *December*, 1931 2nd COURSE 4th *January*—24th *March*, 1932
3rd COURSE 11th *April*—30th *June*, 1932

SECTION B (TROPICAL HYGIENE)

1st COURSE 18th *January*—18th *March*, 1932 2nd COURSE 18th *April*—17th *June*, 1932

FEES (inclusive) Sec A, £25 Sec B £15 *Research Studentships vacant*, value £250 p.a.

For Prospectus and Synopsis of Lectures, apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1.

WANDSWORTH SCHOLARSHIP

The LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE invites applications for the above Scholarship, which will be vacant in October next. The purpose of the Scholarship is Research in Tropical Medicine and applicants should furnish a short memorandum on the problem of research which they propose to undertake, and setting out their qualifications and previous experience.

The Scholarship is worth £370 per annum, and the Scholar will receive travelling expenses and a subsistence allowance of one pound a day when engaged on work overseas.

Applications which must be received before 30th September, 1931, should be addressed to the SECRETARY as above, from whom further particulars may be obtained.

BETHLEM ROYAL HOSPITAL,

Monks Orchard, Eden Park, Beckenham, Kent.

A COURSE OF LECTURES and PRACTICAL INSTRUCTION
FOR THE
DIPLOMA IN PSYCHOLOGICAL MEDICINE
(of the Universities of London, Cambridge, Durham, &c., and the Conjoint Board)
WILL BE GIVEN at the above Hospital, COMMENCING SEPTEMBER, 1931.

For Syllabus and further particulars apply to the PHYSICIAN-SUPERINTENDENT.

UNIVERSITY OF BIRMINGHAM

FACULTY OF MEDICINE

(Associated with the General, Queen's, and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 5th, 1931.

The University grants Degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health, also Degrees and a Diploma in Dental Surgery.

The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine.

SCHOOL OF DENTISTRY. (University of Birmingham and Birmingham Dental Hospital)

The School of Dentistry, in conjunction with the General and Queen's Hospitals affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46 1/- 0d is offered annually.

PRE-MEDICAL AND PRE-DENTAL EXAMINATIONS

The necessary Courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For Syllabus and further information apply to STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

FELLOWSHIP OF MEDICINE,

No. 1, WIMPOLE STREET, LONDON, W.1.

ECIAL COURSES: Medicine and Surgery at the Westminster Hospital and the Metropolitan ospital; Diseases of Chest at the Brompton Hospital; Infants' Diseases at the Infants Hospital; phthalmology at the Central London Ophthalmic Hospital; and Psychological Medicine at the thlem Royal Hospital.

Write, or Telephone LANGHAM 4266.

UNIVERSITY OF LONDON. KING'S COLLEGE.

FACULTY OF MEDICAL SCIENCE.

COMPLETE COURSES OF STUDY ARE PROVIDED FOR THE PRELIMINARY AND INTERMEDIATE EXAMINATIONS OF.

(1) The University of London
(2) The Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons, and also for
(3) The Degree in Dental Surgery (B D S)
(4) The Primary Fellowship Examination of the Royal College of Surgeons
(5) The First Professional Examination for the Licence in Dental Surgery of the Royal College of Surgeons

The College, with a full complement of University Faculties, offers to Medical Students the advantages of a broad university education before they proceed with the purely clinical subjects in the associated or other hospitals

Valuable Scholarships and Prizes are awarded on the results of examinations held annually

The hostel for men students (King's College Hall, Champion Hill S E 5) contains accommodation for 80 students The hostel for women students is at 58, Queensborough Terrace, Bayswater

For detailed prospectus of the Medical and Dental Courses and for further information apply to the Dean, Prof D M Blair, M B, Ch B, or to

S T Shovelton, M A, Secretary

Strand, W C 2

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Tuesday, September 1st

Fees (exclusive of Operative Surgery) 20 guineas Operative Surgery 5 guineas

A separate entry can be made for all Classes other than those of a strictly Clinical character (Men students only are eligible for admission)

Further particulars may be obtained from Professor William Wright M B, D Sc, F R C S Dean, London Hospital Medical College, Mile End E 1

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Tuesday, Sept 1st

The Fee for the Course is 15 guineas

Further particulars may be obtained from Professor William Wright M B, D Sc, F R C S Dean Mile End E 1

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

Final F.R.C.S. Class.

A Course of instruction, suitable to the requirements of candidates for the Final F R C S Examination in November, will begin on September 3rd 1931

For syllabus and full particulars apply to the Dean Medical College St Bartholomew's Hospital London E C 1

The Milroy Lectures on State MEDICINE AND PUBLIC HEALTH

The Council of the Royal College of Physicians are prepared to receive application for the office of Milroy Lecturer for 1933

Applications must be addressed to the Registrar Royal College of Physicians Pall Mall East, not later than September 21st and should contain a statement of the division of the subject selected by the candidate

The Course will consist of three Lectures

The Lectures are to be given on Tuesdays and Thursdays in February or March 1933

A copy of Dr Milroy's Directions on the subject of this Report and information as to the amount may be obtained from Ray Mond Crawfurd M D Registrar

August 1931

MIDDLESEX HOSPITAL MEDICAL SCHOOL, LONDON, W.1.

(University of London)

The WINTER SESSION begins on October 1st, and new students should apply for admission at an early date

The Medical School and Hospital occupy a central position within a few minutes walk of Oxford Circus They are fully equipped for teaching the entire Medical curriculum both for University Degrees and the Conjoint Course

The new West Wing of the Hospital is fully occupied, the rebuilding of the remainder is proceeding without the loss of a single bed, the remodelled Out patient Department continues to expand, the newly built Residents Block affords greatly improved facilities, the Nurses' Home is the finest in London These, with other new buildings including magnificent Laboratories, give to the Middlesex Hospital and its Medical School the most modern facilities obtainable in Great Britain

THIRTY ONE RESIDENT APPOINTMENTS are offered annually to students recently qualified In addition NINE REGISTRARS are also appointed annually

SCHOLARSHIPS AND PRIZES of a value exceeding £1 000 are awarded each year

Large Athletic Grounds at North Wembley

There is no accommodation for women students Well equipped Restaurant

For further particulars and Prospectus apply to the Dean, Ivor Bennett, M D, F R C P, or School Secretary, Middlesex Hospital, Mortimer Street London W 1

University College Hospital Medical School,

University Street, W C 1

WINTER SESSION commences Thursday October 1st, 1931

Scholarships and Prizes exceeding £1 000 awarded annually, and numerous vacancies for House Appointments also Senior Posts for Registrars, etc

Dental School Department.

(National Dental Hospital Great Portland Street, W 1)

Recently reorganized and equipped on the highest standard of modern requirements

Full particulars can be obtained on application to the Dean

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D T H must possess the D T M of this University)

For particulars apply to the Hon Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool

GUY'S HOSPITAL MEDICAL SCHOOL.

FINAL FELLOWSHIP COURSE September—November, 1931

A Course of instruction in preparation for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday September 2nd 1931

F B Johnston Dean

British Medical Association.

APPOINTMENT OF SCOTTISH MEDICAL SECRETARY

The Council of the British Medical Association is prepared to receive applications from registered medical practitioners for the appointment of Scottish Medical Secretary He will be required to live in Edinburgh and to give his whole time to the duties of his office Duties to commence as arranged but not earlier than January 1st 1932 and the appointment to be subject to six months' notice on either side

Salary £950 rising to £1,250 by annual increments of £50, *subject to deductions for superannuation*

Applications, stating experience and age with not more than three recent testimonials, should be received by the Medical Secretary, British Medical Association Tavistock Square W C 1, not later than by first post, October 1st, 1931

Canvassing not allowed

Alfred Cox, Medical Secretary.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

THE WINTER SESSION will open on THURSDAY, OCTOBER 1

The Hospital is the largest in Europe There are 839 beds in continuous use In patients 14,236, Out patients 80 034 (attendances, 529 543) Dental Patients 6 5 Major operations 7401

The Medical College and Dental School are essentially modern, with large libraries equipped with the latest and most approved appliances

Scholarships and Prizes to the value of £1,158 are awarded annually, including Open Entrance Scholarships to the value of £350 and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200

Research Funds of approximately £1 000 give unrivalled facilities for medical research

Appointments.—Over 100 appointments are made annually from Students of the College recently qualified

Special Courses are held for all the University Examinations for the Primary and Final Fellowship Examinations of the Royal College of Surgeons and for the Membership Examinations of the Royal College of Physicians

Hospital Practice.—Exceptional opportunities are offered to qualified practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital

Clubs Union Athletic Ground of 15 acres Students' Hostel, etc

For prospectus and particulars apply to the Dean (Professor William Wright M D, F R C S), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School Mile End E 1

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London)

The WINTER SESSION will begin on Thursday, October 1st 1931

The Medical School provides courses in Preliminary, Intermediate and Final Subjects and Students can join at any time after matriculation

Situation.—Between a large population providing clinical material, and one of the best residential districts thus enabling students to live in close proximity to their work

Clinical Units in Medicine and Surgery.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research

Nearly 1,000 beds available for teaching, additional clinical material being provided by affiliation to an Infirmary and other Institutions

Entrance and Research Scholarships of the value of £1,400 are awarded annually

Appointments, varying in value up to £200 per annum, open to students after qualification

For further particulars and illustrated prospectus apply to the School Secretary

C M Wilson (*M C*) M D F R C P *Dean*

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION

Applications are invited for the post of HALF TIME ASSISTANT TUBERCULOSIS OFFICERS (four in number) for the Cardiff Newport Bridgend and Rhondda areas respectively and commencing October 1st next The appointment will be to one year at a remuneration of £250 During their tenure successful candidates will be expected to take the Course for the Diploma in Tuberculosis Degree (Cambridge) at the Tuberculosis Department Welsh National School of Medicine and afterwards pass the examination

Applicants must have held a house appointment in Medicine or Surgery for not less than six months in a General Hospital and must also have held a post as resident for not less than twelve months in an Institution for the treatment of Tuberculosis (Medical or Surgical)

Application, stating age qualifications previous experience together with the names of three recent testimonials to be sent to the undersigned not later than August 29th

D V Lowth Principal Medical Officer

Memorial Office West Mills Street Newport Mon

Stockport Infirmary

Immediate applications are invited for the post of HOUSE PHYSICIAN (male) at the rate of £175 per annum with board residence laundry

Applicants must enclose copies of their testimonials and give particulars of their University and experience

Edwin J Pearce Secretary

County Borough of Bolton.

DEPUTY MEDICAL OFFICER OF HEALTH AND TUBERCULOSIS OFFICER

The Council of the County Borough of Bolton invite applications for the post of Deputy Medical Officer of Health and Tuberculosis Officer

The principal duties will consist of the diagnosis and treatment etc of Tuberculosis but the person appointed will also be required to assist with Maternity and Child Welfare work the Clinics connected with the Venereal Diseases Scheme and such other duties as the Medical Officer of Health may allocate to him

Candidates must be duly qualified Medical Practitioners, possessing a recognized Diploma of Public Health and must have had at least three years experience of post graduate Medical work They must have had special practical experience in the diagnosis and treatment of Tuberculosis and preference will be given to those having experience of the diagnosis and treatment of Venereal Diseases

The person appointed will be required to devote the whole of his time to the duties of the office and not engage in private practice

Applicants must be under the age of 35 years on January 1st 1932.

Salary £750 per annum (no bonus)

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 and the selected candidate will be required to pass a medical examination satisfactory to the Corporation

Particulars of the appointment and a form on which application should be made may be obtained from the undersigned

Applications endorsed Deputy Medical Officer of Health must be delivered to the undersigned not later than Monday Aug 24th

Canvassing either directly or indirectly, will be a disqualification

Town Hall SAMUEL PARKER
Bolton Town Clerk
August, 1931

County Borough of Bolton.

MEDICAL OFFICER OF HEALTH

The Council of the County Borough of Bolton invite applications for the above appointment

The post of Medical Officer of Health and Tuberculosis Officer Superintendent of the Hospitals of the Corporation and of the Home

Candidates must be duly qualified Medical Practitioners possessing a recognized Diploma of Public Health and the requisite qualifications required by Act of Parliament and Regulations of the Ministry of Health

The person appointed will be required to devote the whole of his time to the duties of the office and not engage in private practice

Applicants to be under the age of 45 years on January 1st 1932

Salary £1,200 per annum (no bonus)

The appointment will be subject to the provision of the Local Government and Other Officers Superannuation Act 1922 and the selected candidate will be required to pass a medical examination satisfactory to the Corporation

Particulars of the appointment and a form on which application should be made may be obtained from the undersigned

Applications endorsed Medical Officer of Health must be delivered to the undersigned not later than Monday August 24th

Canvassing either directly or indirectly, will be a disqualification

Town Hall SAMUEL PARKER
Bolton Town Clerk
August 1931

City and County of Bristol

ASSISTANT MEDICAL OFFICER OF HEALTH

The Council invite applications for a whole time Assistant Medical Officer of Health Age not exceeding 40 years Salary £500 per annum rising by annual increments of £25 to £700 The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922

The duties will consist principally of examination of children in the Council's Secondary, Elementary and Special Schools treatment in School Clinics etc but the officer appointed will also be required to work in all departments of the Medical Officer of Health of the City and Port

Applications which must be on a form provided for the purpose should be accompanied by not more than three recent testimonials and must be received by the undersigned not later than Saturday August 22nd Envelopes should be endorsed Assistant Medical Officer of Health

Canvassing will disqualify

Council House, Bristol JOSIAH CREEN
July 31st, 1931

Metropolitan Borough of Poplar.

MALE ASSISTANT TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH

The Council of the Metropolitan Borough of Poplar invite applications for the post from duly Medical Practitioners in the diagnosis and treatment of Tuberculosis, and not over 40 years of age

The person appointed will assist the Tuberculosis Officer, and when necessary carry out other duties in the Public Health Department under the direction of the Medical Officer of Health and devote his whole time to the services of the Council

Applicants should have

(1) At least three years' experience in the practice of his profession,
(2) Spent in general clinical work a period of not less than 18 months of which not less than six months have been spent in a hospital as a Resident Officer in charge of beds occupied by general medical and surgical cases and
(3) Received special training for a period of not less than six months in the diagnosis and treatment of Tuberculosis

A Diploma in Public Health is desirable

The commencing salary will be at the rate of £550 per annum rising by annual increments of £25 to £700 per annum

The successful candidate will be required to pass a medical examination and to contribute to the Council's Superannuation Fund

Forms of application may be obtained from my office, and must be returned together with a letter of application and copies of three recent testimonials in envelope endorsed Male Assistant Medical Officer of Health not later than Saturday, August 22nd next

Canvassing members or Officers of the Council in any form will disqualify

Council Offices H E DENNIS,
Poplar E 14 Town Clerk
July 28th 1931

Hampshire County Council

ASSISTANT COUNTY MEDICAL OFFICER

Applications are invited for the post of Assistant County Medical Officer Possession of a Diploma or Degree in Public Health is essential and previous experience in Tuberculosis work is desirable Experience in other department of Public Health work including Medical Inspection of School Children Maternity and Child Welfare, and Venereal Disease will be considered an advantage

Salary £600 a year rising by annual increments of £25 to £750 (subject to deductions under the Local Government and Other Officers Superannuation Act, 1922) in addition to travelling expenses and subsistence allowances

When the County Districts have been reorganized there may be an opportunity of securing a better appointment at increased remuneration

Applications with copies of not more than three recent testimonials upon a form which with the conditions of appointment may be obtained from the County Medical Officer The Castle Winchester should be sent to him as soon as possible and not later than September 12th Canvassing is prohibited

City and County of Newcastle-upon-Tyne Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER

Wanted full time Assistant School Medical Officer possessing special experience in Throat Nose and Ear work including the operative treatment of tonsils and adenoids

Salary £650 per annum rising by annual increments of £25 per annum to a maximum of £750 per annum The successful applicant will be required to begin duty on or about October 1st

Form of application and conditions of appointment may be obtained from the undersigned on receipt of a stamped addressed foolscap envelope

Applications will be received up to and including August 24th

TITUS WALLING Director of Education
Education Office Northumberland Road

C

PUBLIC ASSISTANCE DEPARTMENT

MEDICAL OFFICER—LOCUM TENENS

Wanted a Medical Officer for TAWE LODGE a Locum Tenens for four weeks commencing September 1st Salary (inclusive of subsistence and lodgings) £8 8s per week

Application stating qualifications and experience to be sent to the Public Assistance Officer Alexandra Road Swansea not later than August 21st

The Guildhall H L LANCOATH
Swansea Town Clerk

City of Manchester.

PUBLIC HEALTH DEPARTMENT

BOOTH HALL HOSPITAL FOR CHILDREN (750 Beds)

APPOINTMENT OF A TEMPORARY ASSISTANT MEDICAL OFFICER.

The Public Health Committee invites applications from qualified Medical Men for the position of Temporary Assistant Medical Officer at the Booth Hall Hospital, Charlestown Road, Blackley, Manchester

Every applicant must be a registered Medical Practitioner and unmarried

Preference will be given to candidates with previous Hospital experience

The Hospital is a recognized Training School for Nurses and is equipped with all modern hospital requirements

Salary £250 per annum with board residence, and laundry in addition No bonus The salary will be subject to the terms and conditions of the Manchester Corporation Grading Scheme

The appointment will be made in the first instance for a period of six months The successful candidate however will be eligible for reappointment for a further period of six months at the end of that period

Every application stating fully the training qualifications, and experience of the candidate, and his age with copies of three recent testimonials and endorsed on the envelope Assistant Medical Officer Booth Hall Hospital must be addressed to the Medical Officer of Health, Civic Buildings 1, Mount Street Manchester only, and not to members of the Committee or Council and must be received by him not later than Wednesday August 26th

The candidate appointed will be required to commence duty as soon as possible after appointment to devote the whole of his time to the duties of the position to pass a medical examination to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service

Canvassing in any form oral or written, direct or indirect is prohibited

Town Hall F E WAPPRECH HOWELL
Manchester Town Clerk
August 1st 1931

Wilts County Council.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH, AND ASSISTANT SCHOOL MEDICAL INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector Applicants must be fully qualified Medical Practitioners and must hold a Diploma in Public Health, or an equivalent qualification

The salary will be £600 per annum, rising by annual increments of £25 to a maximum of £750 per annum and will be subject to a deduction of 5 per cent for superannuation under the Local Government and Other Officers Superannuation Act 1922, and the candidate selected will be required to pass a medical examination Travelling allowance for own motor car in accordance with County scale

The officer appointed will be required to reside in any centre in Wiltshire as may be decided by the Committee to devote his whole time to the duties of the office and to act under the direction and control of the County Medical Officer of Health who is also School Medical Officer The duties of the post will be chiefly concerned with the School Medical Service but a proportion of the officer's time will be devoted to the Public Health work of the County and work under the Mental Deficiency Acts The appointment will be determinable by three months notice on either side

Applications on form to be obtained from the undersigned together with copies of not more than three recent testimonials and enclosed in envelope marked Assistant Medical Officer to be lodged with the undersigned not later than the first post on Monday August 31st

Canvassing either directly or indirectly is strictly prohibited and will be regarded as a disqualification

County Offices W L BOWN
Trowbridge Clerk of the County Council
August 1931

Wolverhampton and Midland Counties Eye Infirmary

HOUSE SURGEON wanted Ophthalmic experience preferred Duties to commence early in September There are 50 beds for In patients and large Out patient Department Salary £150 a year with furnished apartments board and laundry Ladies and gentlemen applying should state age and experience and send copies of three recent testimonials to reach the Secretary not later than August 20th

ELSTACE LEES
August 10th 1931 Secretary

Hendon Urban District Council.

Combined post of RESIDENT MEDICAL OFFICER at the ISOLATION HOSPITAL, and ASSISTANT MEDICAL OFFICER for General Purposes.

Applications are invited for the above post. The successful candidate will be required to reside at the Isolation Hospital, and to perform the duty of Resident Medical Officer, together with other duties in connection with the Council's Maternity and Child Welfare and School Medical Services, and, generally, to assist the Medical Officer of Health

Candidates must possess a Public Health qualification, and should have had Fever Hospital experience

The salary is £500, rising by £25 per annum to £600 per annum, with board, lodging, and laundry.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination

Applications, on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than Friday, August 28th

directly, will be

WORDEN,
to the Council.

August 4th, 1931.

City of Liverpool.

RESIDENT ASSISTANT MEDICAL OFFICERS

Applications are invited for the appointment of Resident Assistant Medical Officers at the Walton Hospital (1,650 beds), Rice Lane, Liverpool, for a period of one year at a salary after the rate of £200 per annum, together with the usual residential allowances

The appointments will be made in accordance with the Standing Orders of the City Council

Candidates must be single, fully qualified and registered

Specialised work is carried out at the Hospital, including Medical, Surgical, Gynaecological, Obstetrical, Pathological, X-Ray, Electro Therapeutic, Massage, and Sunlight Various Consultant Specialists are attached to the Staff, and the Hospital is a recognized training school for Nurses A large number of operations are performed

Applications, stating age, qualifications, etc, with copies of three recent testimonials, to be received by the undersigned not later than August 28th

Brougham Terrace WALTER MOON,
August 10th, 1931 Town Clerk

Whitehaven and West Cumberland Hospital, Whitehaven.

(90 Beds)

Wanted, JUNIOR HOUSE SURGEON (male or female) Salary £100 per annum, including board residence, and laundry Twelve months' appointment After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum

Applications, stating age, nationality, etc, together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," at once

R HIGGINS, Secretary.

The Guest Hospital, Dudley.

(General Hospital, 107 Beds)

Applications are invited for the post of ASSISTANT HOUSE SURGEON Salary £170 per annum, with furnished apartments, board, and laundry Duties to commence August 23rd Candidates must be fully qualified and registered

Applications, stating age, qualifications and experience, and accompanied by copies of testimonials, to be sent to the undersigned

H RAYMOND HURST,
House Governor and Secretary.

The Guest Hospital, Dudley.
August 10th 1931

Stockton & Thornaby Hospital,

STOCKTON ON TEES
(140 Beds—3 Residents)

Applications are invited for the posts of JUNIOR RESIDENT MEDICAL OFFICERS (two) for a period of at least six months One required immediately, and the second to commence duties on September 18th, 1931 Salary £175 with board, residence, and laundry. Candidates must be duly qualified and unmarried Applications, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned

JOHN WILKINSON, Secretary.

County Council of Durham.

ASSISTANT WELFARE MEDICAL OFFICER.

The County Health Committee invite applications for the appointment of an Assistant Welfare Medical Officer (woman) at a commencing salary of £500 per annum, rising by annual increments of £25 to £700 per annum. Travelling expenses will be paid by the County Council according to scale

The appointment will be held subject to three months' notice on either side, and to the following conditions:—

(1) The Officer appointed must be a registered medical practitioner between the ages of 25 and 45 years, must devote the whole of her time to the duties of the office, and must not engage in private practice
(2) She should either have held a previous appointment as Medical Officer of an Ante-Natal Clinic, with the approval of the Minister of Health, or have had at least three years' experience in the practice of her profession and special experience of practical midwifery and ante natal work. The holding of a Diploma in Public Health, and practical experience in bacteriological laboratory work, will be deemed additional qualifications for the post.
(3) She will be subject to the directions of the County Medical Officer.
(4) She will be required to reside in Durham City, or such other place as required by the Council
(5) She must be prepared, if called upon, to act as Locum Tenens to other members of the Medical Staff of the County Medical Officer.
(6) The appointment will terminate on marriage
(7) The candidate appointed will be required to pass the County Council's medical examination, and will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922

Applications, endorsed "Assistant Welfare Medical Officer," with copies of not more than three recent testimonials, must be received by the County Medical Officer, Shire Hall, Durham, not later than the 27th instant

HAROLD JEVONS,
Clerk of the County Council.

Shire Hall, Durham.
August 10th, 1931

Gloucestershire Joint Committee for Tuberculosis.

STANDISH HOUSE SANATORIUM,
Stonehouse, Glos

Applications are invited from registered Medical Men for the post of JUNIOR ASSISTANT MEDICAL OFFICER at the above Institution. No previous professional experience is necessary

There are at present 250 beds, including men, women, and children There is an orthopaedic block

The salary is £250 per annum, with board, furnished apartments, and laundry, in addition

The appointment is for six months (with the possibility of extension for a further period of six months) and will be terminable within that period by two months' notice on either side

Applications, stating qualifications and age, and accompanied by copies of three recent testimonials, should be received not later than August 31st

E T GARDOM,
Clerk of the Joint Committee.

Shire Hall, Gloucester.
August 8th, 1931.

Queen Charlotte's Maternity Hospital, Marylebone Road, N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (male) required to commence duty on October 1st. Applicants must be registered Appointment for three months On completion of this appointment, the selected candidate will be expected to proceed to the post of SENIOR RESIDENT MEDICAL OFFICER (for three months), on the recommendation of the Medical Staff. The salary of the Assistant Resident Medical Officer is at the rate of £80 per annum, and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly) Applications, with copies (not originals) of not more than three testimonials, should be sent to the Secretary by August 29th. Canvassing is prohibited

ARTHUR WAITS, Secretary.

Westminster Hospital, Broad Sanctuary, S.W.1

There will be a vacancy for a HOUSE SURGEON to the Ear, Nose, and Throat and Eye Departments on September 1st next The appointment is for six months (non resident) and the salary is at the rate of £102 per annum.

Applications should be submitted to the undersigned not later than Saturday, August 22nd

CHARLES M. POWER, Secretary.

The Lady Chichester Hospital, Hove

(For Early Nervous Breakdowns 50 Beds)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, and laundry Honorarium at the rate of £ per annum The successful candidate will be required to enter in her duties as early as possible

Applications must be made in writing and accompanied by testimonials and sent to the Secretary, Mr. A F GRAVES, 117, North Street, Brighton

August 1st, 1931

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty on or as soon after September 1st as possible One having held a Resident House appointment essential Appointment for six months Salary at the rate of £150 per annum, with board, residence, etc Applications, stating age, qualifications, experience, together with copies of three recent testimonials, to be forwarded to the undersigned on or before August 26th next

By order of the Board

HERBERT J DAFFORNE,
General Superintendent and Secretary

Golden Square Throat, Nose, & Ear Hospital, London, W.1

Applications are invited for the post of HONORARY ASSISTANT SURGEON Candidates should be Fellows of the Royal College of Surgeons of England, and they are requested to call upon the present members of the Honorary Staff. Applications, stating age, qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before August 31st

F P CARROLL,
Secretary Superintendent

August 7th, 1931

Golden Square Throat, Nose, & Ear Hospital, London, W.1

HOUSE SURGEON (male), required for October 1st Salary £100 per annum, with board and lodging

Applications, stating age, qualifications and experience, together with copies of three testimonials, should reach the undersigned on or before August 31st

F P CARROLL
Secretary Superintendent

August 7th, 1931

Swansea General and Eye Hospital (316 Beds)

HOUSE PHYSICIAN wanted, gentleman single. Salary £150 per annum, with board residence, and laundry. Duties to commence at once

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned

O. C HOWELLS,
Secretary Superintendent

London Temperance Hospital, Hampstead Road, N.W.1

Applications are invited for the post of HOUSE PHYSICIAN (male) The appointment will be for a period of six months, at a salary of £100 per annum, and will date as from September 9th Preference will be given to those who have held a resident post

Candidates must submit applications, stating qualifications, age, etc, with copies of not more than three testimonials, by Friday, September 4th, addressed to the Secretary

Margate & District General Hospital (98 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties on September 1st next at £125 per annum, with board and laundry

Applications, accompanied by copies of testimonials, should be addressed to the Secretary of the Hospital as early as possible

Acton Hospital, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required at once Salary £100 per annum, with board residence and laundry Candidates must be qualified and registered Applications, stating age, nationality, and qualifications, together with copy of three recent testimonials, should be sent to the Secretary, Acton Hospital, Gunnersbury Lane, W.3, by Wednesday, August 19th

Royal Victoria Infirmary,
NEWCASTLE-UPON-TYNE. (652 Beds.)

Applications are invited for the post of Whole-time JUNIOR SURGICAL REGISTRAR. (Open Appointment).

This appointment is designed for Graduates who desire to gain Surgical experience, and who have already held a post as House Surgeon. Certain duties in the allied departments of the College of Medicine will offer opportunities of Post-Graduate study.

The appointment will in no case extend beyond three years, and will be for one year in the first instance, renewable for two further periods.

The rate of remuneration is £150 per annum.

Applications, with copies of not more than three recent testimonials, must be lodged on or before Friday, August 28th, with the House Governor & Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

S. DUNSTAN,
August 8th, 1931. House Gov. & Sec.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the two undermentioned posts:

ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.

The salary attached to each appointment is £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
July 24th, 1931.

Kent County Ophthalmic and
AURAL HOSPITAL, MAIDSTONE.
(110 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, which will be vacant early in September. Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The Hospital is recognized by the Examining Board for the D.L.O. The appointment will be for six months, but may be renewed for a second six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

Elsie Inglis Memorial Maternity
HOSPITAL,
Spring Gardens, Edinburgh.
(60 Bed-)

Applications are in[illegible] women for the post of [illegible] at above Hospital fo[illegible] 1st, with board, residence, and laundry. Honorarium at the rate of £25 per annum.

Applications, with three copies of testimonials, to be received by the Convener of the Medical Committee at the above address on or before August 22nd, from whom further particulars may be obtained.

Harrogate General Hospital.

Applications are invited from British subjects (male) for the post of HOUSE PHYSICIAN (now vacant) for the period terminating February 1st, 1932. Salary at the rate of £150 per annum, with board and lodging.

Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible.

GEO. BALLANTYNE,
The Infirmary, Harrogate. Secretary.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON (now vacant) for the period terminating February 1st, 1932. Salary at the rate of £125 per annum, with board and lodging.

Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible.

GEO. BALLANTYNE,
The Infirmary, Harrogate. Secretary.

Assistant Resident Medical
OFFICER (male, unmarried) required for the ISLINGTON DISPENSARY, 308, Vicar Street, N.1. Applicants must be Registered Medical Practitioners. Salary £250 per annum, with furnished apartments. Applications before August 28th, on printed form to be obtained (by post-card) from the Hon. Secretary at the Dispensary.

The Royal Portsmouth Hospital.
(FIVE RESIDENT MEDICAL OFFICERS.)

Applications are invited for the posts of:
SENIOR HOUSE SURGEON (male). Salary at the rate of £175 per annum, with board, etc. Candidates must have held an appointment as House Surgeon at a General Hospital, as the post is a very responsible one.
HOUSE PHYSICIAN (male). Salary at the rate of £130 per annum.
HOUSE SURGEONS (two, male). Salary at the rate of £130 per annum each.
CASUALTY OFFICER (male). Salary at the rate of £100 per annum.

All officers must be qualified, and will be required to commence on October 1st (six months' appointments, and eligible on completion of term for extension or other resident posts.)

Applications, stating age, nationality, and full details with copies of three testimonials, to be sent to the undersigned not later than September 5th, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Woolwich and District War
MEMORIAL HOSPITAL,
Shooter's Hill, London, S.E.18.
(General Hospital—112 Beds.)

The [illegible] invites applications [illegible] male candidates, for [illegible] SURGEON for a period [illegible] on September 1st. In addition to his Surgical duties, he will have the care of a Maternity Unit of 8 beds.

An honorarium of £100 per annum will be paid in respect of this appointment, plus board, residence, and laundry.

Applications, accompanied by not more than three recent testimonials, should be addressed to the Secretary (at the Hospital), to reach him not later than first post on Monday, Aug. 17th.

Cumberland Infirmary, Carlisle.
(160 Beds.)
Resident Medical Staff—Four Qualified Officers.

The following posts are vacant on October 1st; six months' appointment, male. Previous experience desirable. Salary in each case at the rate of £155 per annum, board, residence, etc.:
(a) HOUSE PHYSICIAN;
(b) SECOND HOUSE SURGEON; and
(c) HOUSE SURGEON to Special Departments (Eyes, Ear, Nose, and Throat).

Applications, stating age, etc., with copies of not more than four testimonials, must be received by first post on Wednesday, August 19th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT, Secretary.
August 1st, 1931.

Queen's Hospital for Children,
Hackney Road, London, E.2.

CASUALTY OFFICER required September 22nd. Some Ophthalmic work additional. Six months' appointment. Salary at the rate of £100 per year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before August 31st.

CHARLES H. BESSELL,
August 1st, 1931. *Secretary.*

Radcliffe Infirmary & County
HOSPITAL, OXFORD.

Applications are invited for the following posts, which will become vacant on October 1st.
THREE HOUSE SURGEONS.
HOUSE PHYSICIAN.
OBSTETRIC HOUSE PHYSICIAN.

Appointments for six months, with salaries at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials, to be sent to the undersigned on or before September 5th.

A. G. E. SANCTUARY, Administrator.

Royal Edinburgh Hospital for
MENTAL AND NERVOUS DISORDERS.

ASSISTANT PHYSICIAN wanted. Salary £350 per annum, with board and lodging. Applications, with particulars of experience, etc., addressed to Professor ROBERTSON, Physician-Superintendent, Royal Hospital, Morningside, Edinburgh.

Rotherham Hospital.
(130 Beds.)

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. Parsons, 8, Moorgate Street, Rotherham.

Royal Sea Bathing Hospital for
SURGICAL TUBERCULOSIS,
MARGATE.

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months, but may be extended for a further period of six months.

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

Royal Surrey County Hospital,
GUILDFORD. (182 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post from practitioners who have held post-graduate medical and surgical appointments for at least one year. The candidate appointed will be required to act as House Physician, to supervise the work of three House Surgeons, to perform such operations as may be deputed to him, and to take up the duties as early as possible. Salary £250 per annum, with board, residence, and laundry. Applications, accompanied by copies of testimonials, to be sent in not later than August 19th to the Secretary Superintendent, from whom further particulars may be obtained.

Leicester Royal Infirmary.
(472 Beds.)

HOUSE SURGEONS AND CASUALTY HOUSE SURGEON.

Vacancies are expected to arise on October 1st, for House Surgeons and Casualty House Surgeon.

Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election September 9th.

Applications should be forwarded on or before August 30th to the House Governor and *Secretary*.

August 7th, 1931.

Leicester Royal Infirmary.
(472 Beds.)

HOUSE PHYSICIAN.

A vacancy is expected on October 1st, and applications are invited for the post.

Salary at the rate of £125 per annum. Applicants must have held a resident Hospital post, or had similar experience of Hospital work. Election September 9th.

Applications should be forwarded on or before August 30th to the House Governor and *Secretary*.

August 7th, 1931.

Edinburgh Hospital for Women
AND CHILDREN.
(Whitehouse Loan, Edinburgh).
(56 Beds, including Radium Ward).

Applications are invited from qualified medical women for the posts of SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON at the above Hospital, both with charge of beds. Honorarium at the rate of £50 and £25 respectively.

The appointments are for six months from October 1st, with board, residence, and laundry.

Applications, with three copies of testimonials, to be received by the Convener of the Medical Committee at the above address on or before August 22nd, from whom further particulars may be obtained.

Clayton Hospital, Wakefield.

A vacancy exists for a HOUSE SURGEON (male, British), for which post applications are invited. The appointment is for six month, in the first instance, and the salary at the rate of £200 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be sent to the undersigned as early as possible.

H. J. LANCASTER,
Gen. Superintendent & Secretary.

Longton Hospital, Staffordshire.

Lady HOUSE SURGEON required immediately.

Applications, with copies of three recent testimonials, and stating salary required (there is also free board, residence, and laundry, and certain fees), to be sent at once to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

Hull Royal Infirmary.
(370 Beds.)

Applications are invited for the following Resident posts (male):

PARENT INSTITUTION: THIRD HOUSE SURGEON, vacant August 31st. Salary £150 per annum, plus board, residence, and laundry.

SUTTON BRANCH HOSPITAL: HOUSE PHYSICIAN, *vacant now.* Salary £160 per annum, plus board, residence, and laundry.

Both appointments will be for six months in the first instance, and will be determinable by one month's notice on either side.

Applications, stating age, qualifications, and nationality, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS,
August 10th, 1931. House Governor.

City and County of Newcastle-upon-Tyne.

NEWCASTLE GENERAL HOSPITAL.

THREE HOUSE SURGEONS (Male or Female).

Applications are invited for the above posts. The salary in respect of each of the appointments, which are tenable for *six months, is at* the rate of £150 per annum, with board, lodging, etc

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, to be addressed to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

August 4th, 1931.

Huddersfield Royal Infirmary.
(210 Beds.)

Male HOUSE SURGEON required to commence duty as early as possible. Salary £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal for further three or six months.

The Hospital is officially recognized for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately.

H. E. G. HALL, Secretary.

Walsall General Hospital.

The Committee invite applications from Women for the post of HOUSE SURGEON.

Salary at the rate of £150 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post, Tuesday, August 18th.

WALTER FRANCOMBE, Secretary.

The Royal Liverpool Children's Hospital, Myrtle Street, LIVERPOOL.

The Committee invite applications from Graduates, with previous Hospital experience, for the appointment of RESIDENT CASUALTY OFFICER (male). *The appointment will be for* a period of one year; duties to be taken up at an early date. The holder of the post will be eligible for re-election.

Salary at the rate of £250 per annum.

Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, from whom further particulars may be obtained.

The Children's Hospital, SUNDERLAND. (70 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female). Candidates must possess double qualifications (registered). Salary £100 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor and Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (*male*). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

Nottingham Children's Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON (*Woman*). The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will be for six months, duties to commence on September 1st.

Applications, together with testimonials, and stating age, qualifications, and experience, to be *sent to* F. PRAGNELL, *the Honorary* Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by August 18th. Selected candidates will be required to attend at the Hospital for a personal interview on August 25th, when the appointment will be made.

Royal Infirmary, Doncaster.
(185 Beds.)

HOUSE PHYSICIAN (*male*) *required immediately.* Appointment is for six months. The House Physician will also act as House Surgeon to the Ophthalmic, Ear, Nose, and Throat Depts. The position offers opportunity of gaining good Medical experience.

The successful candidate is eligible for re-*appointment.* Salary £175, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Thursday, August 20th.

WALTER R. SMITH,
Secretary-Superintendent.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered. Number of beds, 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before Aug. 25th.

Town Hall, W. H. WARHURST,
Accrington. Hon. Secretary.

Weir Hospital,
Grove Road, Balham, S.W.12.

RESIDENT MEDICAL OFFICER (male, unmarried) required for *War Memorial Maternity Home attached to above Hospital. Candidates* must be fully qualified and duly registered. Salary £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, to be sent to the Secretary-Superintendent, from whom further information may be obtained.

The Sheffield Royal Hospital.
(340 Beds.)

There are two vacancies for Residents:

OPHTHALMIC HOUSE SURGEON. £120 per annum;

ANAESTHETIST. £80 per annum, rising to £100 in six months.

Applications to— W. H. BOOTH,
Superintendent & Secretary.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN. Salary £150 per annum, with board, *residence, and laundry.*

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, should be sent to the undersigned not later than August 19th.

F. J. SYMONS,
July 30th, 1931. Secretary.

Seamen's Hospital Society, GREENWICH.

HOUSE SURGEON (male) required at TILBURY HOSPITAL, ESSEX, for six months from September 1st. Salary £150 per annum, with board, residence, and laundry. Good opportunities for minor surgery. Applications, with copies of three *testimonials, to be sent in by* August 18th to the undersigned.

Seaman's Hospital Society, Greenwich. R. E. V. BAX, Secretary.
July 30th, 1931.

Weston-super-Mare General HOSPITAL. (80 Beds.)

HOUSE SURGEON

Applications are invited for the post of Resident House Surgeon at this Hospital. Salary at the rate of £150 per annum, with board, rooms, and laundry. *Duties* to commence October 1st next. Applications, stating age and qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND, Secretary.

Scunthorpe & District War MEMORIAL HOSPITAL.
(82 Beds—Two Residents.)

Wanted immediately, First HOUSE SURGEON. *Good* experience offered. Salary at the rate of £150 per annum, with board, residence, and laundry. Candidates, who must possess registered qualifications, should forward applications stating age, nationality, etc., together with copies of recent testimonials to—

ARTHUR E. MAW, Secretary.

The Glasgow Eye Infirmary.

The Directors invite applications from registered Medical Practitioners for the post of RESIDENT ASSISTANT HOUSE SURGEON. Salary £150 per annum, with apartments and board. The post is now vacant. Applications, *with* copy testimonials, should be lodged with the undersigned by 17th instant.

171, West Regent St., Glasgow, C.2. WM. M. MOORE, Secretary.
August 8th, 1931.

Corbett Hospital, Stourbridge.

RESIDENT HOUSE SURGEON required to commence duties immediately. Appointment *for not less than six months.* Salary at the rate of £200 per annum, with board, apartments, and laundry.

Applications, with copies of testimonials, to be sent to the undersigned.

Corbett Hospital, Amblecote, nr. Stourbridge. W. G. H. WESTON, Secretary

The Kidderminster and District GENERAL HOSPITAL.
(120 Beds.)

HOUSE SURGEON REQUIRED.

Salary £150 per annum, with residence, board, and laundry. Applications, with not more than three testimonials, to be sent to the Assistant Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster.

North Devon Infirmary, BARNSTAPLE.

Wanted, September 1st, duly qualified RESIDENT MEDICAL OFFICER (Gentleman or Lady). Salary £150 per annum, with board, apartments, and laundry. Appointment to be for not less than six months.

Applications, stating age, qualifications, with copies of recent testimonials, to be sent forth with to the Hon. Secretary.

The Dewsbury & District General INFIRMARY.

Applications are invited for the posts of SENIOR HOUSE SURGEON and SECOND HOUSE SURGEON. Salaries £200 and £150 respectively.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the undersigned before September 14th.

The appointments commence as from November 1st.

H. G. PRICE, Secretary-Supt.

Evelina Hospital for Children, Southwark, S.E.1.

Applications are invited for the post of HOUSE SURGEON (male) for six months (first two months in Casualty and Out-patient Department). Salary at the rate of £120 per annum, with board and residence.

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent at once to the undersigned, from whom rules and other particulars can be obtained.

By Order of the Committee of Management.

W. H. SIDNELL,
Secretary Supt.
August 7th, 1931.

Evelina Hospital for Children, Southwark, S.E.1.

Applications are invited from the Registered Medical Practitioners for the appointment of ANAESTHETIST to attend the Hospital once a week, or twice if necessary. Honorarium 25 guineas per annum. Candidates will be required to call upon Members of the Hon. Medical Staff, whose names, together with the Standing Orders relating to the appointment, can be obtained from the undersigned. Applications should reach me not later than September 5th.

By Order of the Committee of Management.

W. H. SIDNELL,
Secretary-Superintendent.
August 7th, 1931.

Cork Eye, Ear, and Throat HOSPITAL.

Applications for the post of HOUSE SURGEON to this Hospital will be received by the Hon. Secretary up to September 1st, 1931. Salary £75, *with board.*

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
CONTRACT PRACTICE.	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	COUNTY BOROUGH OF BELFAST EDUCATION COMMITTEE *(Full time Male Assistant Inspection Medical Officer.)*
EBBW VALE, MON. *(Workmen's Medical Society)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association)*	STEWARTRY OF KIRKCUDBRIGHT. *(Assistant Medical Officer and Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St, Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St, Brisbane	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec, Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

August 12th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Burslem, Haywood, and Tunstall
WAR MEMORIAL HOSPITAL

Wanted, JUNIOR RESIDENT MEDICAL OFFICER (male) Salary £140, with board and residence. Must be fully qualified.

Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me.

Public Offices, Price Street, Burslem. F. C. POWELL, F.C.I.S., Secretary.

Buchanan Hospital,
ST. LEONARDS ON SEA, SUSSEX.
(Beds 115)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male or female) at a salary of £125 per annum, with board, residence, etc. Eligibility for Senior position after six months' service. Applications, with testimonials to be sent to the Secretary, Buchanan Hospital, St. Leonards, as early as possible.

Bedford County Hospital.
(124 Beds)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing August 10th. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

Darlington General Hospital.
(120 Beds)

Wanted, JUNIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Maternity, Orthopædic, Eye, Ear, Nose, Throat, X-ray, L.C.C. Departments.

Applications from British male candidates, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to the undersigned

ARTHUR RIDDLE, Secretary.

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(265 Beds—7 Residents)

FORTHCOMING VACANCIES.

Applications are invited for FOUR HOUSE SURGEONS and a HOUSE PHYSICIAN, vacant in September, at salaries of £120 per annum, board, residence, and laundry.

Applications from British male candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

Great Yarmouth General
HOSPITAL. (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried. Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management. Post now vacant.

Private Mental Hospital,
S.W. LANCS

MEDICAL OFFICER required. Apply, stating age, experience, and qualifications, to Messrs. LAYTON & Co., Solicitors, 20, Chapel Street, Liverpool.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three), to be sent to the undersigned

WALTER BANKS, Superintendent and Secretary.

August 7th, 1931.

Birmingham and Midland Eye
HOSPITAL, Church St, BIRMINGHAM.

HOUSE SURGEON required at the above Hospital. Salary £110 per annum and £10 laundry allowance.

Applications, together with copies of not more than three testimonials, should be received not later than first post on Tuesday, August 25th. Further particulars can be obtained from the undersigned

C. A. MASON, Gen. Supt.

Free Eye Hospital, Southampton.

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry.

Applications, with three recent testimonials, to be sent to the Secretary.

Liverpool Heart Hospital.
HONORARY ASSISTANT PHYSICIAN

Applications are invited for the post of Honorary Assistant Physician. Candidates must be engaged in general practice. Applications should be sent to Miss Ince, 14, Cook Street, Liverpool, not later than October 5th.

(Appointments continued on p. 46.)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/1: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted, September 1st, Outdoor ASSISTANT (male), Roman Catholic, total abstainer, recently qualified. Scottish Conjoint qualification preferred. Must be young, energetic, and not afraid of hard work, in a general good working class practice, private and panel. Dispenser kept. Principal's car for visits Salary £300. State age, nationality, photo, and testimonials. Usual bond—No 5002, B M A. House, Tavistock Sq, W.C.1.

Wanted, September 1st, ASSISTANT with view. Very good mixed Practice, Lancs town Salary £350 £400 outdoor, according to experience. Must be Scotch. Keen on sport Suit recently qualified man State age, experience, etc—Address, No 5009, B M.A. House, Tavistock Square, W.C 1.

Wanted, Sept. 3rd, Assistant. Good mixed practice Branch surgery. Work light Salary £300 with extras Rooms, light, coal, attendance, board Early increase to keen man Usual bond. Prefer applicant with own car. State age, experience, nationality, if abstainer, to Dr. HARE, Tower, Durham.

Wanted. — Assistant, single, with a sex, in Glamorgan general practice Salary £300 per annum, with rooms, attendance, light, etc Usual bond State age, references, etc—Address, No 5047, B M A. House, Tavistock Square, W C 1.

Wanted, September, Indoor ASSISTANT, recently qualified preferred Mixed practice, South Wales Dispenser Car provided Local hospital £320 £350. Usual bond Send age, nationality, photo, etc—No 5046, B M A House, Tavistock Sq, W C 1.

Wanted.—Permanent Assistant in Worcestershire Experienced in minor surgery, panel work, and midwifery Salary £300 indoors and half midwifery fees—Address, No 5027, B M A. House, Tavistock Square, W C 1

Wanted, the middle of September, short ASSISTANTSHIP or LOCUM, with definite view, by Irish M B, B Ch, aged 29, abstainer, 5 years' experience of G P. Single Some capital — Address, No 5017, B M A. House, Tavistock Square, W C 1.

Wanted. — Sept.-Oct. next. — Indoor male ASSISTANT. English or Scot, under 35 Salary £350 Possibly with view Full recent testimonials and particulars. —Address No 5008, B M A House, Tavistock Square, W C 1.

Wanted. — Assistant, with or without view Six guineas weekly, with furnished apartments, board, and attendance State available capital Easy terms Suitable for married man Apply, with photo—Address, No 5024, B M A House, Tavistock Sq, W C 1.

Wanted.—Outdoor Assistantship by M R C S, L R C P, 1918 St Barts. English, married, aged 38 Ex H P 10 years' exper G P Recently disposed own practice (8 years), reason good Own car Free Sept—Add, No 5020, B M A House, Tavistock Sq, W C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view, also reliable men for LOCUM engagements Good salaries State full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester

Wanted. — Young Assistant, outdoor, for Cheshire. Single Early in September. Mixed Practice. Dispenser kept Salary £400—Address, with full particulars, No 5037, B M.A. House, Tavistock Sq, W C 1.

Wanted, early in September or before, MALE ASSISTANT, Lancashire City. Panel and private practice £400 outdoor and rooms State age, nationality. Essential particulars—Address, No 5018, B M A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, in September, indoor, young, single, male Mixed Practice. South West Lancashire. Salary £275 p a State full particulars. Usual bond—Add, No 5006, B M A. House, Tavistock Sq, W.C.1

Wanted, at once, well-qualified ASSISTANT with view. Very light work. Practice in the Lake district Photo, etc. —Address, No. 5012, B M A. House, Tavistock Square, W.C.1.

An experienced Indian Graduate, with Ophthalmic qualifications, is desirous of ASSISTANCY, with or without view, preferably near about London.—Please write No 5007, B M A. House, Tavistock Sq, W C.1.

Assistant (man or woman) indoor, wanted Country town Public health, private, panel. State age, height, religion, and full particulars Only letters replied to where essential particulars are stated. No 4712, B M A House, Tavistock Sq, W C 1.

Assistant required. — Indian preferred Middle class provincial Practice. State age, height, qualifications, and enclose photo Prospects to suitable man. — Address, No 4942, B M A House, Tavistock Square, W.C.1.

Assistantship wanted abroad.— Four years Tropics, M B H S., Post grad., Eye, E N T, Surgery, V.V. Injections, Anaesthetics, aged 29; abstainer. — Address, No. 5001, B M.A. House, Tavistock Square, W.C 1.

Assistant required for evening Surgery in London, E Suitable for one studying Live in if desired.—Address, No. 5040, B M.A. House, Tavistock Square, W.C 1.

Assistantship.—Light or Part-TIME WORK wanted. Drive own car. —M B, Notley, Prodsham, Cheshire

Indoor Assistant required, London, N W Knowledge of general practice and midwifery. Salary £300 to £350, according to experience State age, date of qualification, etc—Address, No 5030, B M.A. House, Tavistock Square, W C 1.

North Wales.—Wanted, Welsh-speaking outdoor ASSISTANT, with or without view, for General Practice, private and panel Salary £435, with car allowance. Usual bond References required—Address, No 5023, B M A House, Tavistock Square, W C 1

Outdoor or Indoor Assistantship required in Belfast early in October or before, by recently qualified Queensman. E H S, etc Experienced in private and panel work. State terms, etc—Address, 5033, B M A. House, Tavistock Square, W C 1

LOCUMS.

HOLIDAY LOCUMS

FOR A RELIABLE SUBSTITUTE CONSULT

THE MEDICAL AGENCY.

(WILLIAM GRANT.)

WATERGATE HOUSE, 15, YORK BUILDINGS, Adelphi, W C 2 — *Tel.* TEMPLE BAR 1054, RIVERSIDE 1254 (*Night Calls*)

Wanted.—Locums, by Medical Woman L R C P S L M, D P H Five years' experience, good midwifery, moderate terms for seaside, free in town September 5th —Address, No 5019, B M A House, Tavistock Square, W.C 1

Wanted, on September 1st, for about six weeks, fully qualified experienced doctor as LOCUM TENENS (lady preferred) for a Midland Spa Hydro, where bathing and electrical treatments are given.—Add, No. 5049, B M.A. House, Tavistock Sq, W.C 1.

FOR LOCUM TENENS APPLY TO PERCIVAL TURNER, Ltd
The oldest and only Agent who [illegible] years has supplied substitutes at [illegible] notice without fee to principal
4, ADAM ST., Strand, London, W C 2
Teleg: "Epsomian, Lond" Tel: Temple Bar [illegible]
After Office Hours, Epsom 9142

Wanted soon.—Holiday Locum TENENS Motor cyclist owning [illegible] for one month, 5 guineas weekly [illegible] country. Golf, fishing, comfortable [illegible] quarters—Dr. GANE, Llanrwst, North Wales

Locum (male) required immediately to help in partnership [illegible] Motorist preferred Assistantship (with view) to follow if suitable—Address No 5027 B M A House, Tavistock Square, W C 1

M. B., Ch.B., requires post as LOCUM. Ex H S and H P [illegible] experienced in private and panel practice [illegible] now.—Address, No 4943, B M A House, Tavistock Square, W.C 1.

Mid.-S. Cornwall. — In Return for MEDICAL SERVICES in exchange Nucleus, estab 1½ years, would lend House, bedrooms; gas cooker Safe beach 1 [illegible] Close station—Dr. BICE, Par, Cornwall

MEDICAL POSTS, DISPENSERS etc.

Wanted by M.D., Cantab, 25 years' experience of Hospital and Private Practice, PART-TIME WORK in Brighton or immediate neighbourhood—Address, No 4814 B M A House, Tavistock Square, W C 1

A Lady Dispenser-Bookkeeper supplied immediately on request qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN Preparation for Examinations — Write or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2

Dispenser, male, 42, seeks Post, BOOKKEEPING, panel Highest references, extending over 15 years Moderate salary for good permanent post, at least and free go any district—Address, No [illegible] B M A. House, Tavistock Square, W C 1

Dispenser (qualified) Lady requires POST with doctor, laboratory, institution Five years' experience private and panel practices. Knowledge of Bookkeeping London or Provinces — Address No [illegible] B M A. House, Tavistock Square, W C 1

Dispensers supplied to Doctors at short notice, without fee Qualified experienced in private and panel practice Permanency and part time Bookkeeper Dispensers Secretary Dispensers, Nurse Dispensers and Chauffeuse Dispensers—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E C 1

Doctor recommends daughter for post of DISPENSER Hall qualified Hospital experience Good references Hall required Available now. Locum or permanent —Address, No 5021, B M A House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5[illegible] to DISPENSERS' BUREAU, 15, Lindsey House, 171 Shaftesbury Avenue, London, W C 2

India. — Evangelical Interdenominational MISSIONARY SOCIETY with Women's Hospitals in India, urgently requires three WOMEN DOCTORS Preferably experience essential Exceptional opportunity calculable service. Passage paid to and from on 4 yrs' agreement Moderate salary—Write SECRETARY, 33, Surrey Street, Strand

Lady Dispenser (Hall), [illegible] keeper Secretary wants [illegible] Live out Thorough knowledge [illegible] work Help minor oper., dressings, etc Typing; keen; economical, [illegible] 11 yrs exp. Ex refs Per interview [illegible] No. 4820, B M A House, Tavistock Sq, W.C 1

Lady desires re-engagement as HOUSEKEEPER or LOCUM SECRETARY. Used to good class Practice Pleasant personality, tactful, [illegible] Highest references—Address, No 5029, B M A House, Tavistock Square, W C 1.

Lady Radiographer (as assistant) with knowledge of Radium work, required for Hospital in large Coast Town in South Africa The duties attaching to the post would be assisting the Radiologist in connection with X ray, Deep Therapy, and Radium work

Salary £145 per annum rising by annual increments of £12 10s to a maximum of £207 10s, plus board, lodging, washing, and uniform

Appointment would be in terms of S A Ordinance No 11 of 1920 (as amended)

Applications in writing (stating experience age, if able to speak Dutch or Africaans, and any other particulars) to—

H CHAPLIN & CO,
101, Leadenhall Street
London, E C 3

Lady Secretary. — Young lady requires post as SECRETARY, London or suburb Several years experience in secretarial work References from medical men Experienced typist—Address No 5038, B M A House, Tavistock Square, W C 1

Part-time Post wanted in London by M B, B Ch (1923) Ex H P, Ex H S and R S O Experienced mixed general practice Excellent references Studying higher degree —Address No 5032, B M A House, Tavistock Square, W C 1

Qualified Medical Woman wanted for Red Cross *HOP PICKING CAMPS* in Kent for three weeks from September 1st —Apply British Red Cross Society, 9, Chesham Street, S W 1

The Royal Army Medical Corps ASSOCIATION, 80 Fenchurch Square, E C 3 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc, without charge to prospective employers

Tuberculosis Sanatorium (private) MEDICAL OFFICER required Sept, with possibility full charge later—Address No 5045, B M A House, Tavistock Square, W C 1

Uganda. — Resident Medical OFFICER (married or unmarried) required for MISSION HOSPITAL and five Convents Salary £900 p a, and newly built furnished house Agreement for three years Passage paid Private Practice allowed—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, W 1

Well-educated young Lady to assist in Ear and Throat Surgery Thorough typing Several years Secretarial experience Excellent testimonials—Box 54, ALDRIDGE'S ADVERTISING SERVICE 54, Paternoster Row, E C 4

Well-qualified, experienced man (30) desires PART TIME WORK in London September October, while looking for practice—Address No 5034, B M A House, Tavistock Square W C 1

PARTNERSHIPS

Wanted by Public School and Cambridge man, married aged 29, experienced better class practice—PARTNERSHIP London or near Capital available—Address No 5036, B M A House, Tavistock Square W C 1

Manchester. — Partnership for sale in large old-established industrial practice Receipts over £4 000 yearly One third share available, one and a half years purchase share of book debts also for sale Senior principal retiring after 27 years Two remaining partners have had five years introduction—Address, No 5025, B M A House, Tavistock Square, W C 1

Ophthalmic Surgeon, with practical experience, seeks opening as PART NER or ASSISTANT — Address No 5016, B M A House Tavistock Square W C 1

Partnership in good-class Practice wanted by Graduate Seven years experience hospital and G P Interested in Medicine At present reading for higher examination—Address No 5048, B M A House, Tavistock Square, W C 1

Share of Practice, £600 net.—North Wales industrial Premium only £450 cash Motor used House to rent—Address No 5041, B M A House, Tavistock Square, W C 1

PRACTICES

Wanted, Eastern Counties, Market or coast town mixed PRACTICE Income £1 000 £1 500 Panel over 600 Good moderate sized house (with garden and garage) to rent Strict confidence—Address No 5026, B M A House, Tavistock Square W C 1

Wanted. — Practice (mixed). Any size (with or without panel) Finchley, Mill Hill, Southgate, or adjoining districts, or Partnership with succession—Address No 5035, B M A House, Tavistock Square, W C 1

Wanted, panel and private PRACTICE income £1 500—£2 000 or PARTNERSHIP with succession Strict confidence No agents—Address No 5014, P M A House Tavistock Square, W C 1

Wanted, in South-East, Country PRACTICE of £1 600—£2 000 Cash available—Essential details, in strictest confidence, to No 5004, B M A House, Tavistock Square, W C 1

Wanted. — Good-class Practice or PARTNERSHIP, in or near London, by experienced M B, L D S, D M R E not 27 Capital available—Address, No 5013, B M A House, Tavistock Square, W C 1

Death Vacancy in healthy Leeds suburb Established 25 years Average receipts for three years £410 The figures have declined considerably owing to illness Good house and garden which can be rented—Apply, 2622 REYNOLDS & BRANSON, Ltd, Medical Transfer Agents, 13 Briggate, Leeds

Doctor requires Practice or Partnership, income at least £1,000 p a, fox hunting neighbourhood, within 3 hours' London, good house and garden—Send particulars in confidence to WOODCOCK & SON, Ipswich Usual commission required

Doctor, with experience, desiring to move into or near Edinburgh for family reasons, wishes to hear of a mixed PRACTICE likely to be for sale at an early date Income £600 to £800 with prospects—Add, B M A, 7, Drumsheugh Gard, Edinburgh

E. Cowes, I.W.—Nucleus £260 p a, price £300, Fine house, grounds, and garage, rent £75, or sell freehold £1 500 Scope — Address, No 5022, B M A House, Tavistock Square W C 1

Fashionable Seaside Health Resort North Yorks—Small old-established general PRACTICE without panel, but with good scope for both with freehold house, in one of the best positions, for sale—Address, No 5043, B M A House, Tavistock Sq, W C 1

For Sale, in Midland City, Practice of about £2 000 p a Panel 2 400 Good modern house Practice is rapidly increasing owing to new housing scheme Price £3 000 cash — Address, No 5042, B M A House Tavistock Square, W C 1

For Sale, Lake District, Country Town PRACTICE. Good house and garden All sports Great scope for a good steady man Price £3,300 Half can remain on—Address, No 5011, B M A House, Tavistock Square, W C 1

For Sale.—Within few miles of Glasgow, an excellent worked and well established PRACTICE situated in an industrial area, producing £1,400 p a and increasing Modern house with garden and garage Good reason for disposal—Address No 5003, B M A House, Tavistock Square, W C 1

For Sale.—Practice in N.E. coast seaside resort Receipts about £900 p a Rapidly growing House for sale Premium 1½ years purchase—Address No 5028, B M A House, Tavistock Square W C 1

Lancs Town. — Old-established. Receipts £2 500 Excellent scope for Surgery Panel 1 850 Appointments £120 Nice house garden garage £80 Price 1½ years purchase part deferred—MANCHESTER MED & SCHOLASTIC ASSOCIATION, 6 Brown St

Manchester Suburb.—Old-established Nice house, garden and garage, £65 Receipts about £1,100, excellent scope Price £1,250, part deferred — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street

Medical Practice in South of Scotland Town for Sale Gross drawings average £1,800 Good introduction—Apply, CRAWFORD HUTTON, & CARLTON, Writers, 267, West George Street, Glasgow

Medical Practice for Sale in country district South of Scotland Unopposed Easy terms for quick disposal Health reasons for retiral—Address No 5010, B M A House, Tavistock Square, W C 1

North Wales. — Old-established PRACTICE for sale, Vendor retiring Market Town, Cottage Hospital Good house, garage, sale or rental Average receipts last 4 years about £850 — CHEMICALS," 40, Hamilton Street, Hoole, Chester

Shropshire, borders of.—Middle to good class Fees 5/ to 30/ Receipts £1 000 p a House £2 000 Selected panel 400 only Excellent garden, tennis court etc Very sociable district Fishing, shooting, tennis Suit retired Service man No agent Any investigation invited Price £3,500—No 5005, B M A House, Tavistock Sq, W C 1

South-West of Scotland. — For Sale Country PRACTICE in lovely district Private and panel Good opportunity for able and energetic man, or for a semi retired man, work easy and pleasant Owner retiring —Further particulars by applying to No 5044, B M A House, Tavistock Square, W C 1

South-West Yorkshire.—Healthy Joining nine miles from large town Average receipts £1 339 Panel 880 Premium £2000 Good freehold house which may be leased for three years then purchased—Apply, 2617, REYNOLDS & BRANSON, Ltd, Medical Transfer Agents, 13, Briggate, Leeds

To Purchasers. — Do not buy without expert assistance With 60 *yrs'* experience Mr PERCIVAL TURNER can advise in all cases Terms free on application to 4, Adam St, Strand W C 2 Telephone: Temple Bar 9011 Telegrams. "Epsomian, London"

Unopposed Country Practice, Essex £1,000 p a Panel £483 Fixed appointments and small club £400 Charming house standing back in garden Oak panelled lounge Gas (electricity if desired), main drainage, co water Price practice and freehold £3 300 No offers—Address No 4821, B M A House, Tavistock Square W C 1

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SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS

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Wanted, from October, by M.B., D P H (London) returning from Tropics, HOUSE in location with scope Doctor has complete equipment for Ophthalmology, X ray, and Electro-therapeutics Liberal premium paid for good house or suggest where to start practice with good prospects Partnership consid or arrangement with Nursing Home for use of equipment —No 4783, B M A House. Tavistock Sq, W C 1

Charming Modern Residence.—2 miles E Sussex Coast and glorious sands, close 3 golf courses, beautiful country Open situation on outskirts historic old town, standing on high ground with extensive views All modern conveniences, electricity, gas, main water and drainage, central heating 2 rec, 4 bed, bath, kitchen cloak room large garden £1 550 freehold Possession—WIDLAKE & Co, The Estate Offices, Rye, Sussex

Consulting Room to Let, with small or adjacent room (suitable for dentist, mechanic room available) in best part of consulting area Well appointed house, excellent service—Address No 4812, B M A House, Tavistock Square, W C 1

Consulting Rooms to Let.—Harley Street and District Whole and part time Rents £80 to £360 Lists sent on application Lichfield & Co, 10 Henrietta Street, Cavendish Square W 1 Langham 2601

Devonshire Street. — To Let. CONSULTING ROOMS Full or part time with or without plate Also complete equipment for Bergonie treatment (unused), must be sold as found unnecessary—Address, No 5031, B M A House, Tavistock Sq, W C 1

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(H. H. Holt, H. E. Allpress, H. C. Rowe),

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Estate Agents, Auctioneers, and Surveyors,

are the BEST LOCAL AGENTS for HOUSES and CONSULTING ROOMS in the Harley, Wimpole, Queen Anne, and other Streets in the Cavendish Square district. Valuations for all purposes
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ASSISTANT MEDICAL OFFICER (male) required, to take up duties early in September. Salary £275, rising to £300 per annum at the end of six months, with board, residence, and laundry
The appointment will be terminable by one month's notice
Preference will be given to candidates with experience in Tuberculosis
The last three Medical Officers have obtained good appointments in County Service
Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before August 25th.

County of Banff.

The County Council of Banff invite applications for the post of MEDICAL SUPERINTENDENT of LADYSBRIDGE MENTAL HOSPITAL. Commencing salary £500, with annual increments of £20 up to £640, with house, fire, light, farm and garden produce, and laundry.
Applicants must be registered Medical Practitioners, with special experience in Mental Diseases and Institutional Administration.
Forms of application, and conditions of appointment, may be had from the Subscriber, with whom applications, accompanied by twelve copies of testimonials, should be lodged not later than August 29th inst.
Banff. GEORGE A. CUMMING,
August 10th, 1931. County Clerk.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE (94 Beds.)

Applications are invited for a HOUSE PHYSICIAN (male or female) for a period of six months as from October 1st. Salary at the rate of £100 per annum, together with board, residence, and laundry Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (94 Beds.)

Applications are invited for a SENIOR HOUSE SURGEON (male or female) for a period of six months as from October 1st Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th

The Hospital for Sick Children, NEWCASTLE UPON-TYNE. (94 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female) non-resident, for a period of six months as from October 1st Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th.

Swansea and Merthyr Tydfil JOINT MENTAL HOSPITAL, SWANSEA

MEDICAL SUPERINTENDENT

The Swansea and Merthyr Tydfil Joint Hospital Committee invite applications from legally qualified and registered Medical Practitioners for the appointment of Medical Superintendent at their Mental Hospital, now in course of erection, at Sketty, in the County Borough of Swansea.
The Institution is designed to accommodate 700 beds, and includes, in addition to the main building, an Admission Hospital, Convalescent Homes, and other detached Villas.
Applicants must be under 45, and not more than 30 years of age
The salary will be £800 per annum, rising by annual increments of £50 a year to £1000 per annum, with house which, with other usual emoluments, are provisionally valued at £250 per annum.
Applications must be made upon a prescribed form which, together with the particulars and conditions of the appointment, may be obtained from the undersigned, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Saturday, September 5th
Canvassing members of the Committee, either directly or indirectly, is prohibited, and will disqualify.
The Guildhall, H. L. LANGCOMBE
Swansea. Clerk of the Joint Committee

County Borough of Southampton.

RESIDENT MEDICAL OFFICER

The Corporation invite applications for the position of Resident Medical Officer at the Borough Isolation Hospital
The gentleman appointed will have the privilege of the Council, will be required to reside at the Isolation Hospital, to devote his whole time to the duties of the Office, and to act under the direction of the Medical Officer of Health.
Salary £350 per annum, rising by annual increments of £25 to £450 per annum, with residence, board, and washing
The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary.
The selected candidate will be required to pass a satisfactory medical examination.
Forms of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.
Applications on the prescribed form, endorsed "Resident Medical Officer," and stating qualifications, experience, etc., together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office, Municipal Offices, Southampton, not later before August 18th
R. RONALD H. MEGGESON
July 28th, 1931. Town Clerk.

City of Birmingham.

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MATERNITY AND CHILD WELFARE DEPARTMENT.

A SECOND RESIDENT MEDICAL OFFICER is required for a period of six months, to commence on October 1st Applications are invited from ladies, with previous experience as House Physician, preferably in a Children's Hospital. Salary £200 per annum, with board and laundry.
Applications, giving all particulars of qualifications, age, and experience, should be sent to the Medical Officer of Health, The Council House, Birmingham, on or before August 22nd

Mildmay Mission Hospital, Austin Street, Bethnal Green, E.2

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), which becomes vacant on September 16th. Salary £100 per annum, with board, residence, and laundry. The appointment is for six months
Candidates must be registered under the Medical Acts, and the Mildmay Committee are anxious that they should be fully in sympathy with the religious work of the Hospital.
Applications, with copies of recent testimonials, should be sent to the Medical Superintendent before September 9th

Bradford Children's Hospital.

HOUSE PHYSICIAN (lady) wanted immediately. Fully qualified. Salary £120, board, residence, and laundry. Apply, stating age, with recent testimonials, not later than August 25th, to—
J. W. LONGLEY, Secretary Superintendent

Kettering & District General HOSPITAL, KETTERING. (80 Beds).

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[illegible] six months, with [illegible] months.

[illegible]ge, nationality, and [illegible]th copies of three [illegible] sent to the under-

signed as early as possible.

G. W. JACKSON,
Secretary-Superintendent

House Surgeon required, male or female, British nationality, for ASHFORD HOSPITAL, KENT. Salary £150 per annum. Please state experience and qualifications. Candidates must be unmarried, and under 35 years of age. Duties to commence immediately. Applications, with three recent testimonials, to be sent to the Hon. Secretary on or before August 21st.

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PRACTICE for disposal, town in Yorkshire. Receipts £1,825 per annum, number on panel 760. House on rental. Reason for disposal, specializing.

PARTNERSHIP for disposal, North Wales. Third share. Receipts of whole practice £2,000 per annum, number on panel 1,750.

PRACTICE for disposal, Stoke-on-Trent. Receipts £1,220 per annum, number on panel 1,940. House on rental.

PARTNERSHIP, Rugby. Third share increasing to half. Receipts of whole practice £4,360 per annum, number on panel 1,300.

PRACTICE for disposal, Birkenhead, Cheshire. Receipts £650 per annum, number on panel 900. House for disposal.

PRACTICE for disposal, town near Chester. Receipts £1,560 per annum, number on panel 1,725. House can be had on rental or purchased. Reason for disposal, retiring.

PRACTICE for disposal, town near Blackburn. Receipts £1,160 per annum, number on panel 1,504. House on rental or can be purchased. Reason for disposal, ill-health.

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SOUTH YORKSHIRE. — Old-established PRACTICE. Cash receipts 1931, £1,273. Panel 1,430. Excellent house, 3 reception, 4 bedrooms. Garage and good garden. Premium 1½ years' purchase. — No. 253.

NEAR LIVERPOOL.—Small PRACTICE, with much scope. Cash receipts last year £348. Panel 512. Good house, 2 reception, 4 bedrooms. Garage and garden. Premium 1 year's purchase.—No. 284.

LARGE LANCS TOWN.—Old-established PRACTICE. Average cash receipts £1,546 p.a. Panel 1,052. Excellent detached house, 3 reception, 4 bedrooms. Garage and garden. Rent £74 10s. p.a. Premium 1½ years' purchase. Vendor retiring.—No. 267.

BIRMINGHAM SUBURB.—Middle-class PRACTICE with great scope. Receipts last year £700. Small select panel. Excellent house, 2 reception, 6 bedrooms. Garage and large garden. Price £750. Premium—Practice—£750, or near offer.—No. 283.

CUMBERLAND.—Old-estab. Country PRACTICE. Cash receipts last year £1,320. Panel 500. Appointments £140 p.a. Attractive house, 2 reception, 4 bedrooms, garage, and garden. Rent £70 p.a. Charge of Cottage Hospital. Premium £1,250 for quick sale.—No. 281.

LIVERPOOL.—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception, 7 bedrooms, garage and garden, to rent.—No. 276.

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NEAR MANCHESTER.—PLEASANT TOWN, largely residential.—Old-established PRACTICE. Average cash receipts £995 p.a. Panel 902. Appointments not included £100 p.a. Great scope. Excellent detached house (freehold), 3 reception, 5 bedrooms. Garage and garden and tennis court. Premium—Practice—1½ years' purchase.—No. 234.

SOUTH YORKSHIRE.—Excellent Country PRACTICE. Cash receipts last year £1,421. Panel 880. Good freehold detached house to rent, with nice garden. 4 bedrooms, 2 reception rooms. Premium—Practice—£2,000.—No. 271.

NEAR LIVERPOOL.—Cheshire Coast Town PRACTICE. Average cash receipts £1,187. Panel 783. Much scope. Good double-fronted house (freehold), 3 reception, 4 bedrooms, garage. Premium—Practice—£1,100.—No. 248.

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SOUTH COAST.—SEASIDE RESORT. —PRACTICE. Cash receipts £683 p.a. Panel 660. Excellent house, 3 reception, 5 bedrooms, garage and garden, to rent. Premium 1½ years' purchase.—No. 197.

LANCS TOWN. — Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house, 3 reception, 5 bedrooms. Garage and garden. For sale or rent for a period. Premium £1,600, payable by arrangement.—No. 232.

CHESHIRE.—LARGE TOWN.—PARTNERSHIP in good Practice of £3,400 p.a. Panel 3,200. Good house available, to rent. Premium—1/4 share—2 years' purchase.—No. 282.

EAST COAST—PARTNERSHIP in large Town Practice. Income over £10,000 p.a. Panel over 5,000. Good house available, 2 reception, 4 bedrooms. Garden. Premium—1/6 or 1/4 share—1½ years' purchase.—No. 253.

SEASIDE TOWN.—MEDICAL WOMAN'S PRACTICE. Cash receipts last year £632. Panel 465. Excellent rooms at £36 p.a. Premium £250 or near offer.—No. 274.

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1 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE averaging £700 p.a., including £200 from appointment. The Surgery accommodation can be rented, if desired. Scope for experienced and energetic man.

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3 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

4 S. MIDLANDS. — Practice about £1,400 p.a. in Country Town. Panel nearly 900. Modern house, with garage and half an acre of garden for sale. Sport. Scope for increase. Premium £2,000.

5 S. of ENGLAND.—Partnership in increasing Practice of over £1,400 p.a., in flourishing Seaport Town. Panel 1,000. Plenty of scope for young and energetic man. Premium one half share 1½ years' purchase. Preliminary Assistantship entertained.

6 WITHIN 15 MILES OF LONDON. — PARTNERSHIP in Practice of nearly £3,000 p.a., in growing Town. Panel nearly 1,500. House (4 bedrooms), garage, and good garden to rent on lease. Premium one third share 2 years' purchase.

7 LONDON, N.—Practice in thickly populated area. Receipts, past year, over £630, including about £100 from appointment, and Panel of 570. Accommodation consisting of bedroom, surgery, and waiting room to rent on lease. Great scope for increase. Premium £825.

8 S. DEVON.—Practice over £1,000 p.a. in a small town on Coast. Panel 800. House (5 bedrooms), with garage and garden 1 4 acre, for sale. Excellent fishing and yachting. Premium 1½ years' purchase.

9 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent. Premium £500.

10 PARTNERSHIP in Ear, Nose, and Throat Practice in first rate Town. Share worth about £1,650 at 2 years' purchase.

11 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.), easy access of West End. Premium for one third share £1,500.

12 BORDERS OF ENGLAND AND WAL —PARTNERSHIP in of £1,800 p. beautifully situated out 650. Ho bedrooms) to rent. sport. Fir Hospital. One-third to one-half share a years' purchase not necessary.

13 SURREY.—Partnership in old-establi Practice of £3,000 p.a. in a first-rate town. Panel 2,458. house (4 bedrooms), with garage and garden. Premium o share 2 years' purchase.

14 FAR EAST.—Practice about £2,000 Premium £1,400.

15 W. MIDLANDS.—Practice £800 p.a. market town. Panel 170. House (5 bedrooms), garage garden, to be sold or let. Premium 1½ years' purchase.

16 GLAMORGAN.—Partnership in unoppo contract and panel Practice of £2,400 p.a. Panel 1,600. house (4 bedrooms) to rent. Premium for one half share 1½ purchase.

17 W. OF ENGLAND. — Country Pract over £600 p.a. in beautiful district. Small panel. House, lovely garden and paddock, for sale. Scope. Prem. 1 yr.'s

18 HOME COUNTIES. — Partnership Country Practice of £3,700 p.a. Panel 2,230. Choice of hou Premium for five-twelfths share 2 years' purchase.

19 YORKSHIRE (N.R.).—Partnership in old established Practice of £5,000 p.a. in an important town. Pan 4,000. Premium for one-fifth share 2 years' purchase.

20 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb. Panel £100. Modern hou (5 bedrooms). Premium £1,100.

21 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort. Panel 520. Hospital. Good house a garden. Premium 1½ years' purchase.

22 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden to rent. Prem. £1,100

23 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of Lond Panel about 1,000. House (6 bedrooms) with small gard sale. Educational facilities and sport. Prem. 1½ years' pur

24 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., in first-rate town. Panel about 3,000. Suita house obtainable. Scope for increase. Premium one third 1½ years' purchase.

25 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Late house in splendid condition, with central heating and light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

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Practices and Partnerships for Disposal (continued).

26 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district. Panel 2,525. Scope for increase. Premium one half share 2 years' purchase.

27 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500. Detached house with garage and small garden, to rent. Sport of all kinds. Premium one third share 2 years' purchase. Preliminary Assistantship.

[illegible]EEDS. — Very compact mixed Practice .200 p.a. Panel 1,300. Large well situated detached bed and dressing rooms), with large garden, to rent or Premium 1½ years' purchase.

IDDLESEX.—Increasing Practice about .a. in developing district. Panel 250. Convenient semi house (4 bedrooms) with good garage and secluded for sale. Great scope. Premium £860.

O. DURHAM.—Partnership in Country e easy distance of coast. Income about £1,650 p.a. 1,550 and Club appointments £700 p.a. Nice house rooms), in quarter acre of garden, for sale. Premium for lf share only £1,000.

OPHTHALMIC Practice in flourishing within easy distance of London. Receipts over £450 (one attendance per week). Fees mainly £1 1s. Rent £60. Good al. Premium £800.

MIDLANDS. — Partnership in first-rate [illegible]ty Town Practice of £4,200 p.a., in beautiful hunting centre. cant should be aged about 30 ('Varsity man preferred). [illegible]ge Hospital. Scope for Surgery. One fourth share at 2 years' [illegible]hase. Preliminary Assistantship.

SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 200. House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,300.

34 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town. Panel about 2,400. One third share at 2 years' purchase, payable by arrangement if desired.

35 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 660. Detached house (6 bedrooms), with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc. Premium 1½ years' purchase. Suitable for retired Service man.

36 S. DEVON. — Practice over £1,800 p.a. (£800 from panel) in beautiful country district near the borders of Dartmoor. Suitable house available. Hunting, shooting, fishing. Premium 1½ years' purchase.

37 LONDON, E.C.—City Practice. Receipts 1930, over £1,300. Consultations mainly £1 1s., some £[illegible]. 11s 6d. and £3 3s. Excellent consulting rooms. Premium 1½ [illegible]ears' pur.

38 EASTERN COUNTIES.—Small P[illegible]actice in town of 20,000 population near the coast. Receipts average £300 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's pur.

39 LONDON, W.—Middle-class [illegible]Practice aver- aging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

40 MIDLANDS.—Partnership [illegible]in easily worked [illegible],000 p.a., in beautifully good class non dispensing Practice over £4 situated county town. Panel about 1,600. Hospital in town, and incoming Partner must be a good Surgeon. One-fifth share at first at 2 years' purchase.

41 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in county town. Panel 785. Share up to one half 2 years' purchase. Up to date Cottage Hospital.

42 S. OF ENGLAND. — Partnership in good middle-class non panel Practice over £5,300 p.a. Suitable house to purchase. Premium one fourth share £2,000. Preliminary Assistantship.

43 LONDON, W.—[illegible]steadily increasing Prac- TICE, doing about £750 p.a. [illegible] month from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

44 S. OF ENGLAND.—Partnership in Practice, about £2,800 p.a., in favourite seaside resort. Delightful house (5 bedrooms), garage, and nice garden, to rent. Incoming Partner should be a Surgeon (preferably F.R.C.S.). Hospital and appointment on staff. Premium one fourth share 2 years' pur.

45 LONDON, S.W.—Practice about £500 p.a. in suburban district. Panel 650. No midwifery. Semi detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

46 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwfy. Six roomed house to rent. Prem. £700.

47 YORKSHIRE (W.R.). — Compact easily worked Practice of £1,540 p.a. in manufacturing town. Panel over 1,300. Pleasantly situated double fronted house (4 bedrooms), with garden, for sale. Premium 1½ years' purchase.

48 LONDON, E.—Cash Practice of £850 p.a. in populous neighbourhood. Panel over 1,000. House (3 bedrooms) in main road, to rent. Premium 1½ years' purchase.

49 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two thirds or four ninths share 2 years' purchase.

50 S. OF ENGLAND.—Partnership in steadily increasing Practice about £6,000 p.a. in small town. Panel 3,300. Suitable house could be purchased. One-seventh share at 2 years' purchase. Preliminary Assistantship. London Graduate preferred.

51 MIDDLESEX.—Steadily increasing Practice about £800 p.a. in growing district. Panel about 600. Very good house (5 bed and dressing rooms), garage and excellent garden, for sale. Ample scope. Premium £900.

52 N. OF ENGLAND.—Partnership in lucrative Practice in large city. Panel over 5,000. Small house (3 bedrooms and attics) for sale. A share of £1,650 or £2,500 would be sold at 1½ years' purchase.

53 DEVON.—Partnership in Practice averaging £3,000 p.a. in small town. House to rent. Hunting, shooting, fishing, etc. Premium one third share 2 years' purchase. Hospital.

54 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p.a. in developing indust district. Panel 1,870. Small house available. Large Cottage Hospital. Prem. two-fifth share 2 years' purchase.

55 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London. Panel 500. Attractive house (7 bed and dressing rooms) in grounds of [illegible]res, with garage, to be sold or let. Very suitable for Resident [illegible]. Good scope. Premium 1 year's purchase.

56 N. MIDLANDS.—Partnership in Practice over £1,400 p.a., reception rooms and first rate city. Panel 1,800. House, with 2 £1,100. Preliminary Assistantship [illegible]. Premium one half share [illegible]tained.

57 SURREY.—Ophthalmic [illegible]ractice of about £300 p.a. in desirable town within 15 [illegible] of London. Fees mostly £3 3s. Good detached house (4 bedr[illegible]ms, etc.) for sale. Plenty of scope to one devoting whole time. Prem[illegible]um £300.

58 HANTS. — Small easily worked Practice about £400 p.a. in beautiful country district about 5[illegible] miles from London. Select panel 50. Detached house (5 bedrooms), with good garden, for sale. Scope. Premium £400.

59 STAFFS. — Partnership in Practice over £2,000 p.a. in an industrial town. Panel 3,000. Suitable house (5 bedrooms) to rent. Ample scope. Premium one half share 1½ years' purchase.

60 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. *Premium 1½ years' purchase.*

61 N. WALES.—Country Practice of £1,230 p.a. in Welsh-speaking district. Panel about 550. Convenient and well situated house, with electric light, etc., for sale. All kinds of sport. Premium for a quick sale 1 year's purchase, or even slightly less.

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1. LONDON, WEST.—Old-established good middle-class PRACTICE, averaging for the past three years £870 p.a. Panel 800. Fees from 2/6. Very nice house, with 2 reception, 5 bedrooms, and 2 dressing rooms, etc. Rent on long lease £90 p.a. Premium £1,500.
2. LANCS.—LARGE TOWN.—Old-established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.
3. LONDON, NORTH.—Old-established middle and working-class PRACTICE, averaging about £2,500 p.a., including panel of over 3,000. very well-situated house, with ample accommodation. Garden. Garage. Can be rented on long lease. Premium 2 years' purchase.
4. INLAND SPA.—Old-established upper and middle-class non-dispensing and non-panel PRACTICE, averaging for the past three years £2,450 p.a. Visits 7/6 to 21/-. No midwifery. Very good well-situated house available at the end of 12 months' equal partnership introduction. Rent on lease £120 p.a. Premium 2 years' purchase. Successor will be appointed on staff of Hospital of 300 beds.
5. PARTNERSHIP.—WEST OF ENGLAND.—Rapidly developing district within two miles of very favourite town.—A one-half share is offered in a good mixed-class Practice, having exceptional scope for increase. Gross cash receipts for last 12 months approximately £2,000, of which about £600 is from panel. Fees from 3/6 to 21/-. Mid. 2 gns. upwards. Particularly nice house, with 2 reception, 6 bedrooms, etc. Garden; garage. Price for freehold £2,300. Excellent sport and schools. Premium £1,800.
6. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old-established middle and upper-class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,500.
7. LONDON, WEST CENTRAL.—Old-established good mixed PRACTICE, producing last year £874, including panel of 500. Fees 2/6 to 21/-. Midwifery 5 to 10 gns. Only few cases yearly. Well-situated surgery, with professional rooms, and living accommodation above. Can be rented on lease. Premium £1,500.
8. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000. A fifth share is for disposal, with increase to a third later. Suitable accommodation available. Premium 2 years' purchase.
9. LONDON, NORTH (King's Cross area).—Lock-up PRACTICE, established and held by the Vendor for five years. Gross cash receipts for past 12 months over £400, including panel of 360. Fees 2/6 to 10/6. Surgery, containing waiting room, consulting room, and dispensary can be rented on lease. Premium £550.
10. NORTH MIDLANDS.—WITHIN 5 MILES OF FAVOURITE TOWN.—Old-established good middle-class PRACTICE, offering large scope. Cash receipts for last 12 months £1,332, including panel of over 1,000. Fees from 3/6 Mid from 2 gns. Exceptionally nice house, [illegible] in about 4 acres of ground, with tennis lawn, fruit and vegetable for gardens, etc, containing 3 reception, 6 bedrooms, etc. [illegible] sale. Premium 1½ years' purchase.
11. BORDERS OF CHESHIRE AND STAFFS.—Well established middle and working-class PRACTICE, situated in pleasant district (pop. 10,000) and producing about £900 [illegible] Rent £75 on lease. Prem. £1,200. creasing. Visits 2/6 to 5/-.—Well-established middle and good working-bedrooms, etc.), garden, residential district (pop. 20,000 to 30,000),
12. NOTTINGHAM SUBURB.—£1,000, including panel of about 880. Visits class PRACTICE, in very little midwifery. Attractive house, standing in worth last year over £1,650. Premium £1,550, to include drugs, etc. Sport 3 6 to 7/6. Very good educational facilities. about 3 4 of an acre of garden, with ample accommodation. Price
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14. NORFOLK.—PART[illegible] its 2/6 to 30/-, with medicine extra. Very nice is for disposal in [illegible] den. Freehold for sale. Premium 2 years' purch. town near coast. Av[illegible] PLEASANT MARKET TOWN.—PARTNERSHIP. of nearly 3,000. Vi[illegible] offered in a very old-established sound mixed-house, with large ga[illegible] increasing, and producing for the immediate
15. NORTH MIDLANDS.— £3,000. No appointments. Panel of nearly —A one-third share is to 2 gns. Midwifery 2 to 10 gns. Suitable class Practice, rapidly [illegible], or, if single, purchaser could reside with past 12 months over [illegible] eous terms. Ingoing Partner must be able 1,400. Fees from 3/6 house available on rental Vendor on very advantag[illegible]
16. MANCHESTER.—Semi-residential Suburb.—Very old-established dispensing mainly middle-class PRACTICE, averaging £2,500 including small selected panel of 440, which latter is capable extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 5 gns. Well-situated house, with good accommodation, [illegible] (freehold) £1,600. Premium £3,750.
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19. LINCS. — PLEASANT MARKET TOWN.—PARTNERSHIP.—A [illegible] share, with possible succession in two years' time. Average [illegible] for past three years £1,900, including appointments and panel producing £500. Advice and medicine 3/- upwards; visits from 5/- Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200. Sport of all kinds, and excellent schools for boys and girls. Premium 2 years' purchase, payable £1,000 down, remainder by arrangement.
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22. ESSEX—Very old-established PRACTICE, situated in pleasant [illegible] district, in growing area about 30 miles from London, and few miles from the sea. Cash receipts average nearly £900 p.a., including panel of 600. House contains surgery and waiting room, 3 reception, 5 bedrooms, bathroom, etc. Garden. Garage. Gas, but electric light available. Moderate rental. Premium 1½ years' purchase.
23. PARTNERSHIP.— [illegible]TY.—A one-third [illegible] with succession t[illegible] bout one year's time, of in a rapi[illegible] producing for the [illegible] 12 ths approximately £2,500, including panel of 1,500 [illegible] apprth £150. A suitable house will be vacant shortly. Premium 200. Large scope for further development.
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25. CHESHIRE.—NORTH COAST.—Old-established good mixed class PRACTICE, averaging the past 3 years nearly £1,600, including panel of 1,280. Very good house in 3 acres of ground, with 2 reception, 4 bedrooms, etc. [illegible]en lease £85 p.a. Premium £2,300.
26. HOME COUNTIES, within 30 mins.' run of London.—Old-established mixed-class and increasing PRACTICE, situated in small town with pleasant surrounding. Cash receipts average £1,725 p.a., including appt. £70 and panel 1,000. House with good accommodation and small garden. Price freehold £2,500. Premium 1½ years' purchase. Educational facilities.
27. SURREY.—Increasing residential district, with good train service to town.—Well-established old general PRACTICE, off-ering [illegible] scope. Gross cash receipts for last 12 months nearly £3,2[illegible] panel of about 900 Visits 5/- to 21/-. Suitable house, with 3 reception, 7 bedrooms, etc. Can be bought or rented on lease. Premium 1½ years' purchase.
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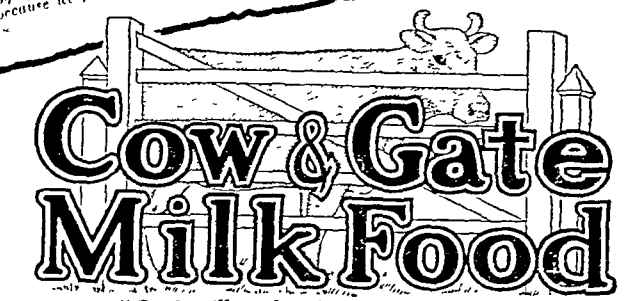
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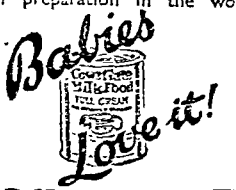
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27th August, 1928
Photo Taken:
10th May, 1931
Age:
2 years 8½ months
Weight:
33 lbs.
Height:
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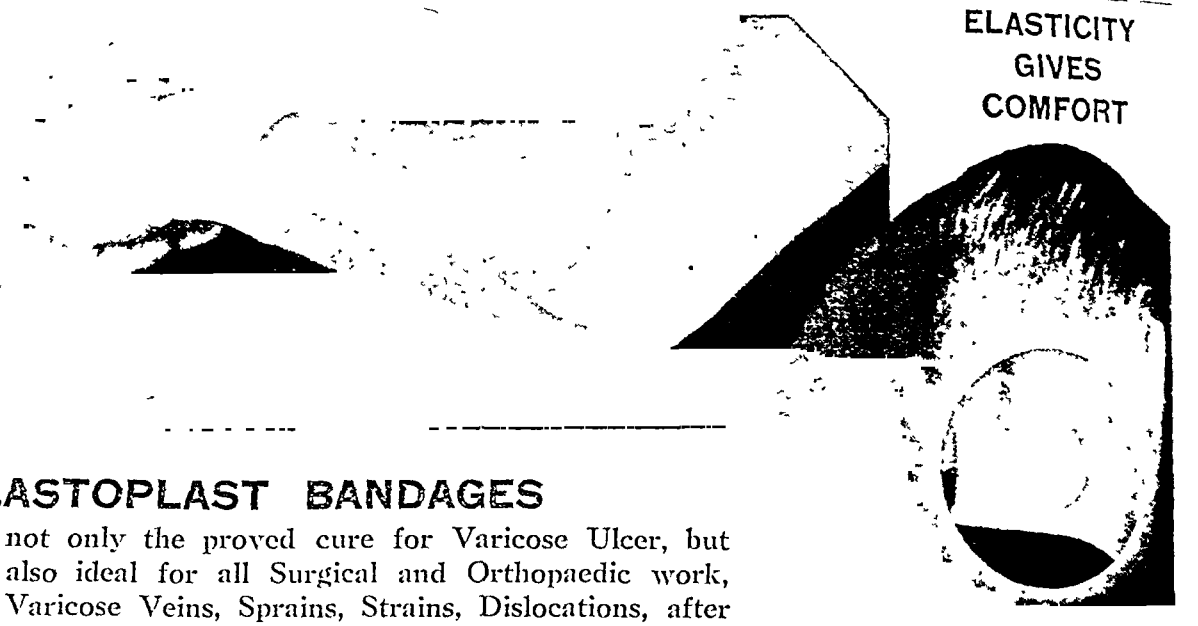
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Educational Number

*

*

September 5th

THIS Special Number of the British Medical Journal will contain full information, brought completely up to date, for the guidance of those about to enter the Medical Profession and of Graduates wishing to secure the higher qualifications. Particulars of the Public Health Service and of the medical work in the Forces are also given.

Statutory requirements and the necessary formalities associated with Medical Practice are reviewed, making this issue a reliable and useful work of reference which may be relied upon to provide an answer to those questions which most frequently arise in connexion with Medical Education and Registration.

A careful study of the advertisement pages of this Special Number will be amply repaid. Publishers have made a special effort in compiling lists of books bearing on every phase of medical training; also, numerous announcements set forth in detail the facilities offered at the various Colleges and Medical Schools, including matters of special interest to Post-Graduates. Many firms specializing in the professional and private needs of the doctor have arranged to insert interesting announcements on this occasion.

It should be noted that the Educational Number replaces our ordinary issue for September 5th, 1931, and will be forwarded to Members of the British Medical Association in the customary way. The cost to those not already enjoying the privileges of Membership will be 1s. 3d. per copy.

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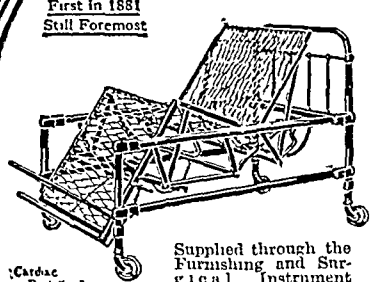
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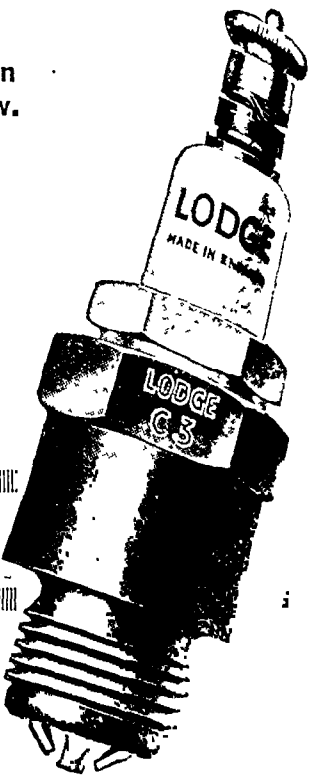
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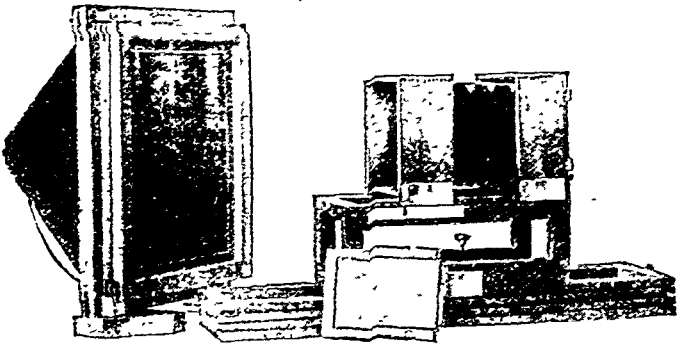
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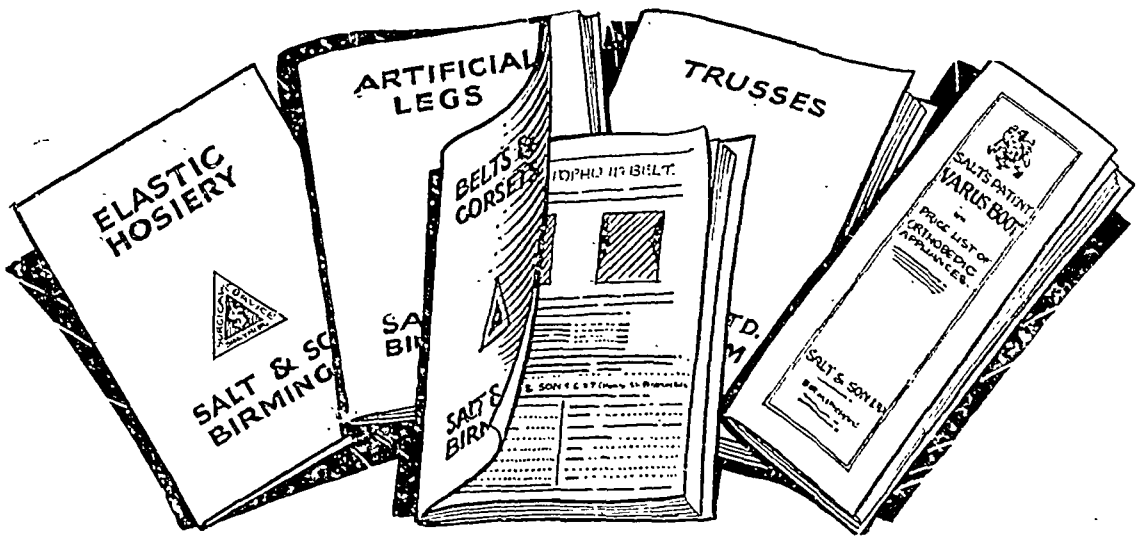
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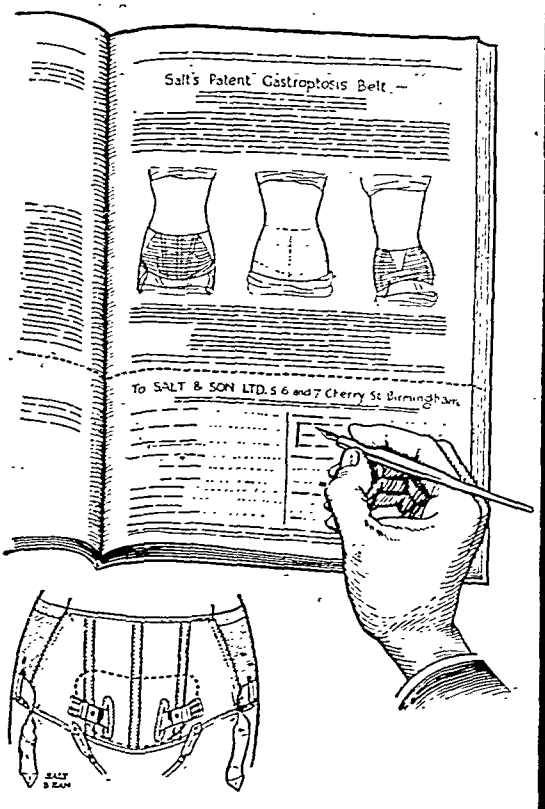
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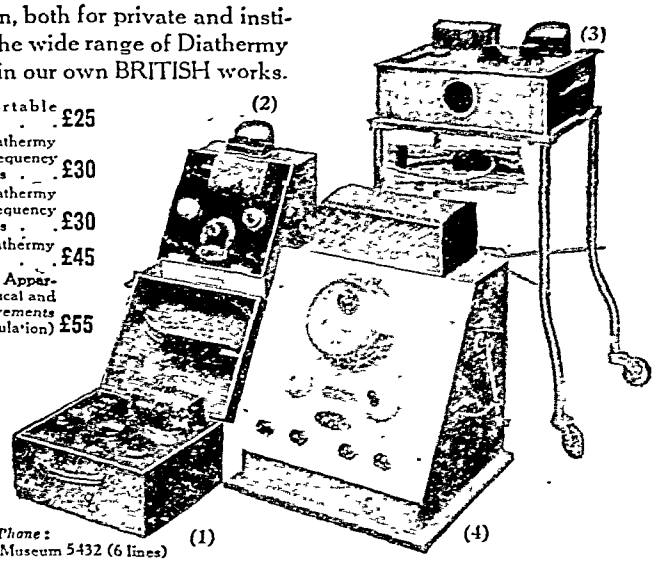
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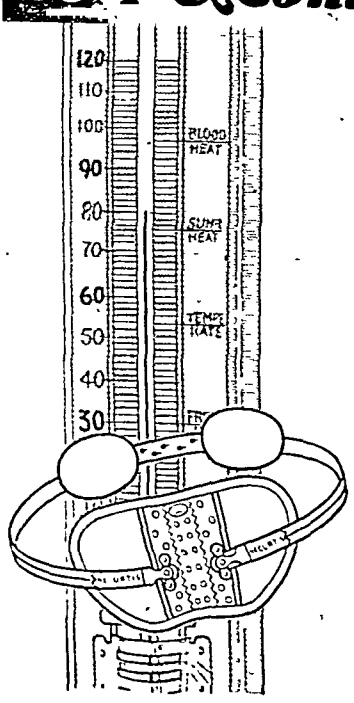


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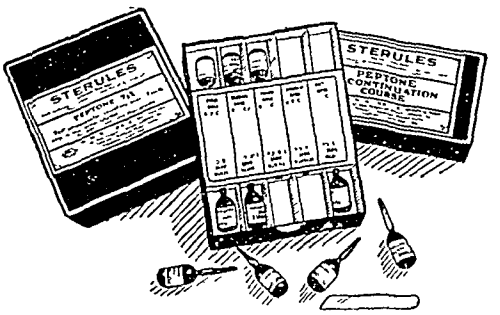
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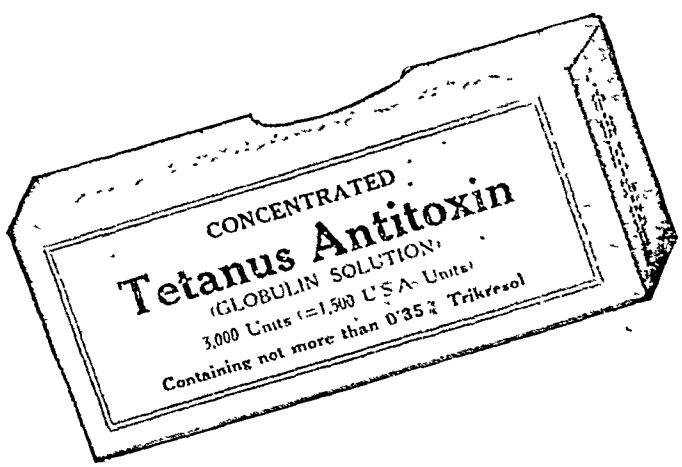
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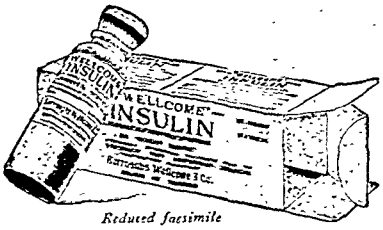
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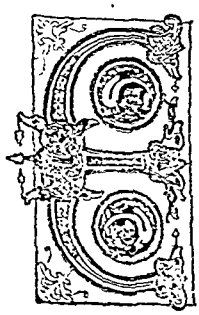
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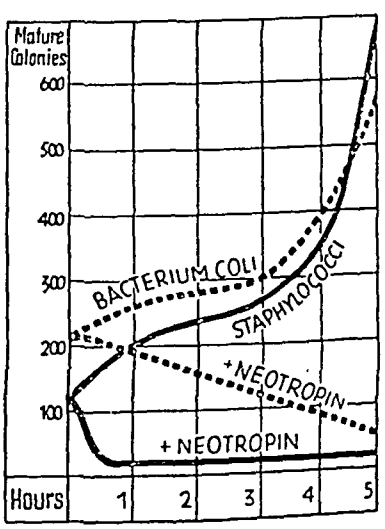
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Observations
ON
TREATMENT OF CHILDREN AT THE SEASIDE (EXCLUDING SURGICAL TUBERCULOSIS) *
BY
CARL HABERLIN, M.D.
WYK AUF FÖHR

It is to me a special favour to be allowed to speak about thallassotherapy in the country where physicians, far in advance of other nations, not only recommended but also first practised it to a great extent. It was Russel who, in 1750, invented "the sea," and Lettsom in 1791 founded the first sea hospital at Margate. In Germany, Lichtenberg (Gottingen) proposed with success in 1792 to introduce sea-bathing. Beneke (Marburg) made in 1850 the earliest scientific researches, basing himself partly on Margate, and established in 1881 the first of his sea hospitals in Germany. Beneke intended to have the first establishment at Norderney. On request of the Crown Princess (later Empress Frederic) he founded, in September, 1881, the very first hospital at Wyk, on the island of Föhr. The Crown Princess thought its climate singularly like that of the Isle of Wight when she stayed here on a visit with her children.

Marine climates in spite of many common qualities, are far from uniform and have great differences. In England these differences are well recognized, much more so than in France. Fox and others discussed them before the Royal Society of Medicine in 1928. As general characters, the bracing east, the sedative west, and a mixture in the south might express the main qualities in England, though individual and seasonal differences are important. The German Ocean coast resembles generally the English south east coast, my observations refer mostly to the German North Sea. It is important to recognize that the English climate is on the whole far more equable and less Continental than that of Germany.

RESPIRATORY CATARRHS

The greater number of sick children coming to the seaside suffer from respiratory catarrhs, chronic or continually relapsing, in the nose, throat, trachea, or bronchi. We have found in the island of Föhr that the treatment of these catarrhs is very satisfactory, as regards both immediate and permanent results. Moll (Vienna), with a large material, records 80 per cent. permanent cures at the sea as against 60 per cent. in mountain climates. Our statistics show 80 to 90 per cent. permanent cures at the seaside. Certainly it is on account of good results that crowds of such invalids have recourse everywhere to the seaside, coming often without medical advice, merely by reason of their knowledge of similar cases. To this category belong especially children who during the cold season fall from one cold into another, they are not only oversensitive to colds but also oversusceptible to infections. They constantly miss school, have often to be kept in bed, and suffer a long time from high temperatures after acute illness. Their parents become perplexed and nervous, and finally complete a vicious circle by unsuitable pampering. In most cases the fever soon ceases by the sea, but the secretion decreases only after a while, until it gradually disappears. The susceptibility to colds becomes less, and even should a cold in the head be caught it does not lead as a rule to a feverish bronchitis. It is somewhat longer, however, before the susceptibility to infections falls to a normal point.

Special attention must be given to the throat. Most of our small patients from large towns suffer from more or less chronic pharyngitis, no wonder, since the unwholesome and polluted air continually passes over the mucous membrane of the nose and pharyngeal cavity, where the dust and bacteria are mainly deposited. These conditions are favourably influenced by sea air, though it often takes a very long time. Smaller adenoid growths usually decrease so far as no longer to hinder the breathing. Corresole and Jaubert found a spray with sea water very beneficial. Larger growths ought to be removed before beginning the cure. Chronic relapsing inflammations of the tonsils, for which other forms of treatment have proved ineffectual, have in many cases so much improved that acute attacks become very infrequent (Engel, Fisch). Many operations, especially on children under 6 years, are thus avoided.

To the affections of the respiratory organs we may add asthma. Constitutional predisposition and, above all, neuropathic factors here take a part. Practical experience shows us very good results by the sea, in most cases the little invalids have no attacks at the seaside, if, however, their stay is too short, they often have relapses. A complete cure requires from half to one and even two years, winter by the sea being more important than summer. Summarising statistical data we find permanent cures in from 30 per cent. to 70 per cent. of these cases (Nicolas, Haberlin, Gmelin, Roeloffs). But such words must be used with caution, as even after a great number of years relapses are possible. The favourable results obtained are due to a variety of causes: (1) cessation of the harmful and excessive irritation of the mucosa (dust, germs, smells, and, in winter, the hot, dry air of houses),† (2) cessation at the seaside of irritation of the skin, which may be just as harmful (clothing, staying indoors, overheating), (3) restoration of full movement in the mechanism of breathing (*after life in enclosed living rooms, at school and at home*). An air more or less free from dust and germs and without breath hindering smells is inhaled instead, without overheating in winter and dryness *of the air in rooms*. *In the abundance of open air*, even the clothed body is surrounded and stirred by the almost continuous sea breeze. With lighter clothing air baths bring new stimulation to the skin (cool temperatures, wind, radiation), and even in winter gymnastics and games give plenty of exercise. By such measures the most important function of the skin, the regulation of warmth, is exercised with most satisfactory results.

In examining the reaction to an application of ice to the skin of children newly arrived from large towns we see a long latent stage and a faint appearance of reactive redness. After some weeks at the seaside the reaction is considerably quicker and stronger. Thus in a series of experiments with 70 children in 67 per cent. the latent time was shortened and the reactive redness became stronger. If the rectal and skin temperatures of newcomers are examined after a cold bath the following types will be found: 1. The rectal temperature sinks considerably, rises slowly again, yet not to its former height (50 per cent. of the examined). 2. The rectal temperature sinks only very little immediately after the bath, later a little more, rises slowly again, but not to its former height (20 per cent.). 3. The rectal temperature rises immediately after the cold bath, sinks again, and reaches finally the last point (20 per cent.). 4. The changes are very small (±0.3°) in 9 per cent. of the children. Of these four forms you must

* Vide in opening a discussion in the Section of Hydrology and Climatology at the Annual Meeting of the British Medical Association, Swansea, 1931.

† Leonard Hill: In schools where during the period of heating good ventilation through opening of windows was not carried out, the number of lessons missed on account of colds was on the average six times larger than in schools which had a good ventilation.

consider number 1 as bad, number 3 as good. The 50 per cent. bad ones are diminished at the seaside to 28 per cent., the 20 per cent. good ones are increased to 32 per cent. (N.B. At the last examination the temperature of the air and water was considerably less.) In a second series of investigations surprisingly similar numbers were found, the good reactions becoming much more frequent, from 21 to 46 per cent. The measuring of the temperature of the skin shows, of course, a sinking after the cold bath (from 1-5° on the back to 8-9° at the feet). At the end of the stay at the seaside, skin temperatures on the whole, but especially in cool weather, were less, the lowering after the cold bath considerably more, rising promptly again, but never as before to a point at or above the initial temperature. It may be noted that mechanical irritation of the skin by means of the capillar-reactometer (Nothaas) showed that the latent time for the appearance of red dermographism became in 65 per cent. of cases shorter.

Chest expansion increases from 2 to 3 cm., the frequency of breathing lessens, and the vital capacity increases from about 300 to 500 c.cm. (Häberlin). An increase of inspiration measurement was shown in more than 1,000 children; the expansion rising from 4.9 to 7.2 cm., which signifies not only better ventilation, but better circulation in the lungs (Hézer and Spehl: "Plus le poumon contient de l'air plus il contient de sang"), and therefore better conditions of nourishment for the whole organ. The skin is no longer flabby and pale, but tense, its circulation being much more active. Intracutaneous injection of tuberculin shows that the reaction begins, rises and falls again more quickly. We may infer from this an increase of immunity. Dr. Percy Lewis has made the same observation; he says, "at seaside schools the chief effect noticed is improved resistance to infectious diseases." The fact that the diffuse radio-shadows of the hilus gradually show a sharper outline (although only after six to twelve months) points to the same conclusion.

Diseases of the organs of respiration are subject to locally harmful influences which are exogenous and also in no small degree to endogenous influences. There are certain constitutional changes which are favourable to catarrhs and exudations. Such pre-disposed children incline especially to bronchial and tracheal catarrhs, often relapsing and of long duration. Climatic influences are of importance to counteract the endogenous as well as the exogenous factors of etiology. A "lymphatic" tendency plays a part in the lymphatic pharyngeal ring (chronic relapsing tonsillitis and adenoid growths), in relapsing rhinitis and pharyngitis. A marine climate is one of the best cures for this condition.

Nutrition

If we treated first the organs of respiration it was because far the greater part of our patients come on account of these to the seaside. The fundamental and most characteristic effect of a sea cure is not its influence on particular parts, but on the whole body. The "Umstimmung" (toning or tuning up of the whole body), a polyvalent allergization, an omnicellular strength increase, is not a method of treatment of sick organs through direct influence on the seat of the disease, but an alteration or modification of the whole body. The healthy tissues, enhanced in their capabilities, render to the diseased part the resources which threatened to fail. We often have little patients who do not thrive in their homes, but an evident reason for this standstill of development is not to be traced. They are simply at a stop in the development of weight, breadth, haemapoietic function, and strength; they remain without energy and appetite. In such cases we see almost without exception satisfactory and often astonishing results. King Brown remarks that in cities the cooling power of the body is very low; this keeps the "level of metabolism of the inhabitants below that of country dwellers, and this in its turn means a general lowering of vitality." It is not only the outer form which is favourably changed, but also the inner consistence. Especially the N-retention is improved (Löwy, Müller, Schadow); and assimilation of phosphorus, sulphur, calcium is favourably influenced (Robin and B. Binet; F. Müller and E. Müller).

Heat production amounted to 2,700 calories per diem on a North Sea island, while the same children in a large town only had 1,445 calories, and in a forest convalescent home near a large town only 1,500 calories (Häberlin and F. Müller, 116 children). The consumption of oxygen is also increased in a sea climate if the patient really stays by the sea—that is, on the beach, and not in his room or a restaurant. There are considerable differences in the amount of the increase. Delicate and weak children show a far higher increase than others.

Observations were made on the beach with and without clothing, and unclothed at the sunbath, and in warm and cold sea baths. As to the increase of oxygen in the sunbath it is important that under the same circumstances in Hamburg increase was absent, surely in consequence of the fact that under the almost continual motion of the air on the beach all overheating and with it the appearance of the reflex chemical increase of warmth was avoided. This action of the air and sunbath has been well characterized by Fox in the words "coincident application of heat and cold." The thyroid gland appears to be exceedingly susceptible to climatic conditions (Cf. highland and lowland thyroid glands). The greater content of iodine in the air and in foods from flooded districts of the sea coasts has doubtless an influence on this organ. Hallowes (Torquay) reports "children with deficient thyroid glands are much benefited." I have the same experience as other German physicians. But the iodine alone cannot be the only cause. Bergfeld found a deficiency of ultra-violet rays responsible for the origin of goitre, and the content of calcium in drinking water is of importance (Gigou). We may in general concede that the endocrine glands participate in influencing the body at the seaside; the time of the menses, for instance, is often delayed. Under various external influences (light, thermal, and mechanical stimulus) histamine-like products appear to be formed in the skin which may be very active (Harris, Lewis, Ellinger). Intra-organic oxidation may also be influenced by radiation, baths and injections of protein (Gerharts, E. Meyer and Reinhold, Freund and Gottlieb).

Metabolic changes have been observed particularly during rest, for instance at the sunbath. It is well understood that an increase of metabolic change which takes place without work is of special importance. There is no greater combustion in the muscles, since neither motion takes place nor is muscular tonus increased. We first think of an increase of combustion in the liver. Such an increase without simultaneous increase of work might lead to regeneration of cells, and that would signify modification and rejuvenation of the body (Kestner). Under these baths the muscular strength increases—the maximal power as well as the whole working power, as measured by Collin's dynamometer and Weiler's Arbeits Schreiber (Cazin, Haberlin, Berliner). It is a characteristic feature that this also takes place with patients who are kept in bed (*training in repose*, as the French have it).

Gastro-intestinal System

Very often we have children whose appetite is exceedingly small and whose digestion is very slow. The want of appetite disappears promptly in 95 per cent. of the cases. If the patients are not with their parents or nurses, but are taken to a well-managed children's nursing home,

it is all the better. However salutary the psychical influence may be, one cannot ascribe the whole effect to this. We saw above that the calories rose from 1,450 at home to 2,700 at the sea. Also the increased movement of the children cannot be the only cause, from the investigation already quoted on children in a convalescent home near a town. The sea climate, therefore, seems to play a special part. We might probably find the reason in the higher demand which the wind makes upon heat production. The continual stimulation and refreshing of the skin involves an increase of metabolism; a great deal of combustible matter is used, and the increased combustion prevents the heat regulation from failing. Surely the inverse balance between the distribution of blood in the splanchnic and in the peripheral areas (skin) plays a part (Dastre-Morat; E. F. Müller). By this mechanism the circulation of the intestinal organs is raised, and also their activity of secretion. Chronic constipation disappears generally after the first day, notwithstanding that in many cases it is severe, and may be atonic or spastic. We generally remark that the circumference of the abdomen gets smaller, from increased tonus of the intestines and abdominal muscles, and rectal prolapse disappears. Organic diseases of the digestive organs are not here considered; we have good results with functional, motor, secretory, and resorptive insufficiency. Nervous dyspepsia is mostly cured.

Children with neuropathic pains in the abdomen often come to us; these little vagotonic patients usually are cured; the removal from unsuitable surroundings has to be taken into account. In exudative cases we often meet with mucous colitis, which is favourably influenced. The connexion of the thyroid gland with the bowel has also to be considered.

CARDIO-VASCULAR SYSTEM

Cases of uncompensated morbus cordis are always refused; with compensated cases we see (but only in summer) some benefit. The proper domain of the sea climate is functional disease of nervous and overworked persons. In these we always see excellent improvement or permanent cure, as in the invigoration of the heart of convalescents. The cardiac muscle becomes stronger *without* tiring work. But the influence of the sea climate upon the peripheral circulation is more important. For this special indication the sea climate seems to me to stand first among all physical remedies. The changes effected in the skin have been already noted. The play of the vasomotors becomes more active, the peripheral circulation increased. It may be added here that the blood pressure falls after air baths for some time and rises after cold baths for a short time, with slower pulse. After a cure of six weeks the acceleration of the pulse remains the same immediately after exertion, but goes back sooner to normal. With hearts in any way affected, the acceleration after exercise becomes greater and the return to normal slower. The number of erythrocytes and also the percentage of haemoglobin rise considerably at the seaside. Some good observers report a favourable influence on pernicious anaemia, as also on leukaemia.

RHEUMATISM

Between rheumatism and the catarrhs there are some analogies; and formerly articular rheumatism was known as *catarrhus articulorum*. Endogenous and exogenous conditions co-operate. A type of constitution, sometimes described as asthenic, hypoplastic and exudative, seems to predispose to rheumatism. Infections proceed mostly from the throat and tonsils. Cold and chilling clearly play a very great part, either by mobilizing latent infections or preparing the ground for new ones. Rheumatism shows a seasonal curve similar to catarrhs. The pathological importance of insufficient circulation of the skin described by Fox and others should be especially considered. It is certain that such a deficiency can be essentially improved under the influence of a sea climate. We have already seen that diseases of the throat and tonsils are favourably influenced, and the increase of immunity conditioned, by climatic causes. If Garrod considers chronic articular rheumatism as an insufficient reaction to infection, we might state that stronger reactions to different irritations are regularly observed after treatment at the sea. The view that in all cases of rheumatism heat alone is beneficial can no longer be held. The best prophylaxis is a hardening treatment, and our experience in rheumatism is confirmatory, though not so distinctly as with catarrhs.

NERVOUS DISORDERS

It is very rare for a child to be sent to us merely on account of nervousness, but the number of those in whom nervous symptoms accompany constitutional weakness or definite physical disorders is legion. The children are restless, fidgety, easily frightened, changing in mood and appearance, quarrelsome, with uncontrolled affections; they have headaches and twitchings, wet their beds, lack concentration, and are easily tired—in short, the usual symptoms of neurasthenia of grown-up people. We are exceedingly satisfied with the results of treatment of these conditions. Where unfavourable results were observed it was generally after treatment not carried out carefully enough. A child with irritable nervous weakness can be over-excited by the abundance of new impressions at the seaside. Above all, the wind and the immediate neighbourhood of the sea, with its manifold stimuli (however pleasant) for the eye and ear may act unfavourably. Repeatedly we observe that such children get out of hand, or, as the mothers say, become very naughty. Removal from the actual beach, with more rest and lying down, almost always put things right at once. It is obvious that great individual differences are present which cannot be foreseen even in the most careful examination. Children with whom the sea does not agree are exceedingly rare. Psychological investigations have shown that, in general, motor excitability rises and mental attention slackens. Work at arithmetic is much quicker; work of precision better. The effect of residence in a stronger wind was shown to be great diminution of attention and increase of irritability.

With all the above-named troubles we find, as a rule, an extraordinary improvement; night terror disappears, the facial phenomenon diminishes (Falk). Naturally it is not possible to make a hereditary nervous constitution perfectly healthy, but a reduction in the degree of irritability is usually obtained, the work at school improves in quality, and over a long time. I wish to state expressly that we are far from ascribing these effects to the climate alone. The educational element and the removal from the usual surroundings are important. But, weighing our words most carefully, we are convinced that cures at the seaside cannot be replaced by anything else of equal worth.

CHILDREN FROM THE TROPICS

As to the applicability of the sea climate to children from the Tropics I have naturally a very small practical experience. The few cases coming to us show mostly a general state of weakness with special localization in the digestive and respiratory organs. They represent pretty much the state of convalescents after more or less exhausting illness. I was not able to note any difference from the favourable results which follow in similar cases from Europe. To hear something about this from the treasure of English experiences will surely enrich my knowledge of sea climate

Technique of Treatment

As regards the technique of the treatment, it may be stated that since the sea climate imposes a certain strain upon the body, it must be carefully applied. The individual reaction cannot be known beforehand. With delicate persons it is well to prescribe at first lying down; with nervous children the stay on the beach itself must be limited. With many other forms of sickness, on the contrary, a benefit is only to be obtained through remaining close to the sea, especially with susceptible respiratory organs and retarded development. Care of the skin forms an essential part of our whole treatment. The often astonishingly relaxed skin is rendered tonic and active by dry rubbing, simple washing with cold sea water, air and sun baths, warm sea baths followed by cold shower baths, or by cold sea baths. Here is the place to state expressly that the sea climate is not to be played with. We see each year the most incredible follies and extravagances in the treatment of children at the seaside, amounting almost to brutalities of parents towards their children. Such are the prolonged and repeated sea and sun baths, endless wading in the water or unlimited stay on the beach and in the wind. In all our remedial measures very brief, often repeated, stimulations are the most effective, while prolonged cold baths, for instance, have the contrary effect and defeat the hardening process, which is our objective. With school work also one must be careful at the seaside. It is not surprising to me that an English observer, Dr. Marvel, said "he doubted whether sea baths did not produce more harm than good." Russel cautioned, too, against dangerous exaggerations:

Marina aqua . . . . magna vi pollet; sed imperiti facile ipsa perperam uti possunt.

Even Homer knew this action of the sea to be very exacting:

ὀυ μεν εγωγε τι φημι κακωτερον ἀλλο θαλασσης ὑνδρα γε συγχευαι

Gymnastics are an important part of our cures. As in the colder season air baths are only possible with quicker motion, games are indispensable.

One has to be very careful about the diet of delicate children at the seaside. Suitable food powerfully assists in the process of healing, and in children prone to exudations dietetic measures are indispensable. In winter we use a quartz lamp, vitamin preparations, and sometimes arsenic and iodine, and often local treatment for adenoids. At marine hospitals with large numbers of children infections may play a large part, which has led a German paediatrician to use the same words as did Dr. Marvel on account of the danger of overdosing. Quarantine of all newcomers should be considered, and perhaps active immunization—for instance, against diphtheria. Both these measures are practised in France.

It is obvious that a short period of treatment will not suffice for chronic or constitutional diseases such as those which are mostly sent to us. We have to allow four weeks for acclimatization, which represents a certain allergical stage. Then only the benefit of our climate begins to develop fully. In general a period of less than three months' duration would not have the desired and lasting result. In more serious cases of catarrhs, asthma, debility, imperfect development, from half to one year, or even more, is necessary. To interrupt this period by a change of climate is generally inadvisable so long at least as we see a child deriving benefit. There are naturally some patients with whom one has an impression from the beginning that the sea climate does not agree. These will be sent as soon as possible to another climatic resort. It should be especially noted that for most respiratory catarrhs, and for asthma, treatment is more important in winter than in summer, and should correspond with the winter climax of these affections.*

The increase of weight in the children at Wyk auf Föhr is at its maximum in autumn. We have also noticed that the more serious retardation of development, which in summer shows little progress, is all at once improved in the autumn.

On the whole the sea represents such a powerful source of invigoration obtainable for a great part of mankind that we can fully agree with the saying of Russel almost 200 years ago:

rem de qua agimus nec levem esse, sed dignam principis cura tutelae utpote quae ad universam populi valetudinam pertinendam spectat.

PRURITUS ANI†

BY

W. P. MACARTHUR, M.D., F.R.C.P.I.

BREVET-COLONEL, R.A.M.C.; CONSULTING PHYSICIAN TO THE BRITISH ARMY

I have been asked to discuss the variety of pruritus ani of adults caused by *Enterobius vermicularis*, a nematode now removed from the genus *Oxyuris* for the reason that its characters do not conform to those of the genotype, *Oxyuris equi*. To some this contribution will seem uncalled for, but so long as one can encounter persons who for years have endured the nightly torments of enterobius without the true cause of the pruritus being discovered, or its nature even suspected, an apology for dealing with so commonplace a subject is unnecessary.

The ingested ova of *Enterobius* hatch in the duodenum. The larvae at first inhabit the small intestine, and later migrate to the caecum, where the majority of the worms exist. The appendix is a favoured habitat. About two weeks are required to complete the cycle from ovum to ovum. In 5 instances of infection in which I obtained strong evidence indicating the source, the symptoms in 4 commenced on the 15th day, and in 1, on the 14th, after the apparent exposure. The gravid females make their way to the rectum and anus to oviposit, and if not repelled by the cold they may be seen thus engaged just inside the anal canal. It is their wriggling movements which cause the irritation loosely called pruritus; it is not an itching, however, but a very quick, light, tickling sensation, most intolerable to the victim. Worms may be found outside the intestinal canal in the neighbourhood of the anus, on clothing, etc., but I do not know if this complete emergence is voluntary, or if the parasites have been displaced in scratching. They have considerable powers of resistance to expulsion by natural means, for an ordinary evacuation may leave an active pruritus quite unaffected. Possibly they escape this danger by retiring into the rectum, as they can be observed to do when exposed to cold.

As there is no multiplication of parasites within the body the number infecting the host is determined by the number of ova swallowed. Auto-infection by the mouth is the rule, and appears to be specially provided for by nature. An infestation which persists for more than about six weeks is almost certainly kept up in this way. Although the host reinfects himself with the utmost readiness, it is curious that members of his family in daily contact with him for years usually escape contamination.

* A seasonal physiological periodicity of certain respiratory functions is known. The alveolar CO_2 tension is in winter 42 %, summer 36 (Lindhard, Straub); the frequency of breathing is higher in winter and the depth of breathing less. That these could not be obtained in England (Haldane, Priestley and Lorrain) seems due to the island character of the British climate, which does not show the same meteorological contrasts as the climate of continental countries.

† Read in opening a discussion in the Section of Dermatology at the Annual Meeting of the British Medical Association, Edinburgh, 1931.

Enterobius sets up a catarrh of the intestine, and the accompanying increased secretion of mucus may be very obvious. The mucous membrane of the lower part of the rectum is congested and usually shows small haemorrhagic spots, a condition which probably extends throughout the intestine, as similar changes have been repeatedly found in the appendix. Some degree of eosinophilia is the rule, and this suggests that the general and nervous symptoms may not entirely be due to sleeplessness and mental distress.

Symptoms

Pruritus, so called, is the most constant symptom. It may commence very suddenly, and the subject of an infestation of long standing may remember the exact moment when it was first felt. If only a very few parasites are concerned their individual movements may be distinguished one from the other, but with large numbers the sensation is continuous. Even one worm may make itself felt. In two of my cases there was a distinct recurrence of pruritus after treatment had been completed; in each the capture of a single *Enterobius* gave immediate relief without other treatment.

The pruritus is mainly nocturnal, commencing shortly after the patient goes to bed, and quickly reaching its maximum intensity. Especially in cold weather the patient may get to sleep only to be wakened later. A hot water bottle in winter hastens the onset. In severe infestations he may be driven almost demented by the irritation, losing all control of himself, and tearing at the affected part until he draws blood. Some discover for themselves that vigorous movements of a finger inserted into the anal canal may give relief, due, as we know, to destruction of some of the worms. The itching ceases sometime before morning, and is never felt say, about 5 or 6 o'clock, nor before rising. I should consider an absence of this morning remission strong evidence against enterobiasis. Some itching may be felt more or less intermittently during the forenoon and afternoon, especially after exercise. In the evening, irritation is more likely to be troublesome, and is intensified by a warm atmosphere, and by the proximity of a fire, the patient often notices a sudden relief when he commences to undress in a cold room. But the daily irritation, if present, is always slight in comparison with that felt at night. One of my patients used to speak of going to bed as "descending into hell."

The discomfort and loss of sleep thus caused lead to mental irritability and despondency, which are aggravated by the fact that the sufferer often conceals his infirmity through some feeling of delicacy, and so his family do not make allowance for what they regard as mere bad temper. In the end he reaches a pitiable state of depression, and may become tearful when describing the miseries he endures.

Various reflex phenomena may develop, such as gastric hyperacidity, indigestion—probably due in part to intestinal catarrh—and frequency of micturition. The significance of these symptoms may not be appreciated. One patient complained to me of frequency of micturition of a few weeks' duration. Various examinations and tests were carried out before it was discovered that he had suffered from nocturnal pruritus—which proved to be due to threadworms—for over a year. Another case is still more instructive.

> The gentleman in question had been afflicted with pruritus for over ten years. Symptoms of gastric hyperacidity and indigestion had persisted more or less throughout this period. These were first attributed to duodenal ulcer and an appropriate course of treatment was prescribed but without lasting relief. Next chronic appendicitis was diagnosed and the supposed offender removed but with a similar absence of benefit. Presumably the appendix contained no threadworms. Later, owing to the quantity of mucus passed by entery was suggested, and emetine administered, followed by a course of stovarsol, but the symptoms were unaffected. Throughout this period many forms of local treatment, including *x* rays, had been given for the pruritus, which persisted notwithstanding. Ten years after the onset, enterobiasis was suggested for the first time, a diagnostic rectal wash out showed the presence of many threadworms, and a course of salt and water injections ended the irritation and the whole train of secondary troubles.

The excessive production of intestinal mucus, already mentioned, may result in the involuntary passage of the secretion, especially when the patient takes exercise or drives a car. It may be troublesome enough to necessitate the wearing of a pad of cotton wool.

Enterobiasis occasionally causes attacks of appendicular colic leading to removal of the appendix, which when examined is found to contain worms. This experience has suggested appendicectomy as a curative measure in persistent infestations, a wholly unjustifiable procedure, for persons who have previously undergone this operation for any reason are just as liable to infestation as others, and are no easier to cure. The activities of the parasites within the appendix and the resulting damage to the mucous membrane, may lead to the development of acute appendicitis.

Owing to *laceration and abrasions of the anal region*, an eczematous condition may be set up, which quickly disappears when the parasites are removed. On the other hand, there may be surprisingly little local injury after years of nightly scratching.

The old nursery symptom of nasal itching may be in evidence. Possibly this is a provision of nature for insuring that the infected hands are brought into the neighbourhood of the mouth. The wife of one patient who eventually proved to have enterobiasis told the medical attendant, months before the condition was diagnosed, that she thought her husband must be suffering from "worms" because he was "always scratching his nose"!

Diagnosis

In every case of nocturnal pruritus ani, enterobiasis should be considered as a possible cause, and the suspicion either confirmed or negatived by further examination. The most thorough diagnostic measure is a rectal wash out *which must be administered when pruritus is active*. If a satisfactory search cannot be carried out because of the presence of faecal matter, the rectum should be cleared by an ordinary soap and water enema given in the evening, before pruritus commences. The patient then goes to bed, and a wash out with normal saline is given later when pruritus becomes troublesome. Three or four ounces of saline is all that is required, and after a few minutes this is returned into a suitable receptacle, and examined for worms. This examination must be made carefully, and if living worms are not seen, suspicious-looking objects should be removed and examined under the low power of a microscope, or with a hand lens. It is surprising how easily shreds of mucus, vegetable matter, etc., may be mistaken for *Enterobius* if not removed and examined.

Microscopical examination of the faeces for ova is of little help. Occasionally ova may be found, but their absence signifies nothing. A positive result is much more likely if scrapings from the neighbourhood of the anus or some rectal mucus, are examined.

A very useful preliminary test is for the patient to give himself a wash out with strong salt and water (see under Treatment) when the pruritus is at its height. If this ceases instantly and does not return until the following night, the diagnosis of enterobiasis is practically certain.

It is surprising how seldom, in adults, worms are seen in the faeces. One patient of mine, a medical man, looked at every motion passed during a period of several weeks. Although nocturnal pruritus was constantly present, only a single worm was seen, and this in a motion resulting from a sharp purge given as part of his treatment.

Treatment

Prolonged infestation always results from auto-infection by the mouth, and until this source of supply has been cut off no treatment can be effective. The ova are deposited in enormous numbers in and around the anal region. They may reach the mouth either directly by the hands or they may be smeared over the body and clothing, and the hands reinfected later from these sources. Crushing of worms either in scratching or otherwise liberates eggs in large numbers. I have recovered several dozen eggs from a single finger-nail, and Professor D. B. Blacklock tells me that he has found ova in washings made from garments as low down as the knee. From this it is obvious that the washing of the hands before food and after defaecation, as often directed, is totally inadequate. The hands must be washed thoroughly every time that the surface of the body, or an undergarment, is touched, for there is no certainty that eggs have not been picked up. For example, on waking, the hands must be washed before the morning cigarette and cup of tea. Suppose the patient next rises and removes a vest, then another washing is necessary before he shaves, or cleans his teeth. In dressing, further contamination is likely, therefore the hands must be washed again before breakfast, and so on throughout the day. Laxness in this respect will be followed by vexatious reinfections. Even with scrupulous care, occasional disappointments will be experienced. Nature is unceasing in the attempt to complete the life-cycle of the parasites, and if auto-infection is prevented the infestation will die out of itself.

Treatment proper falls under two heads: first, the removal by lavage of the adult female worms which have migrated to the rectum, and second, attempts to destroy the developing stages in the caecum, appendix, and neighbouring parts of the intestine. For the first-mentioned purpose nothing is superior to salt and water in a strength of 2 tablespoonfuls to the pint. If this should cause griping, reduce the salt by half, and increase later if possible. Four ounces of the solution is sufficient for an injection, which can be given most readily by means of an infant's 2-oz. enema bulb, the patient remaining recumbent, with the hips raised, during the operation. Probably he will be unable to retain the solution for more than one or two minutes, and when it is ejected the itching is found to have ceased completely, and is not felt again during the night. It is essential that the patient should administer this treatment for himself, because it is useless if given at any time that pruritus is not felt. A preliminary simple enema, more elaborate apparatus, and larger quantities of fluid, are unnecessary complications. When a sufferer who has been wakened nightly for months or years finds that a simple procedure completed within a very few minutes will protect him from the tortures of pruritus, at once his whole outlook on life is altered.

The second part of treatment is the administration of anthelminthic drugs in the hope of destroying the parasites before they migrate to the lower portions of the large intestine. It is difficult to assess their respective values, for most of the preparations recommended are either given with some laxative or themselves act as purgatives, and a sharp action of bowels due to any cause may give a temporary relief from pruritus; for this reason sufferers from undiagnosed enterobiasis sometimes attribute their troubles to constipation. I do not know of any drug so efficacious as to do away with the necessity for rectal irrigations. Indeed, it is difficult to see how anthelminthics can reach worms lurking in the appendix and caecal pouches, and so long as even two or three are left they may suffice to drive the host into a state of frenzy. On the whole, my experience has been that when a patient finds that a rectal injection gives instant relief from his sufferings, he prefers not to be inconvenienced by purgative drugs, even though his course of treatment might be shortened thereby. Of the preparations usually recommended, I have found 2 grains of santonin combined with ½ a grain of calomel distinctly helpful. Stovarsol had no appreciable effect. Carbon tetrachloride is reported to be very efficacious, but its employment is hardly justifiable in simple enterobiasis which can be cured with certainty in other ways. Oil of chenopodium and butolan I have not tried.

Treatment, especially lavage, may affect the remarkable periodicity of *Enterobius*, the commonest change being an earlier descent of the egg-laying females, so that pruritus may be troublesome before bed-time. But whenever it may appear, a rectal irrigation with salt and water will stop it at once. Rectal irrigations, given as advocated, do away altogether with the necessity for application of mercurial ointments and the like.

I do not know to what extent pruritus ani is met with in general practice, nor can I say what proportion of these cases is due to enterobiasis. My submission is that enterobiasis should be considered as a possible cause in every case of pruritus ani in adults.

TREATMENT OF GENERAL PARALYSIS OF THE INSANE BY INDUCED MALARIA

NOTE ON FIFTY CASES

BY

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Since the introduction on a large scale of malarial treatment of general paralysis of the insane by Wagner von Jauregg in 1917, great interest has been aroused in the subject, and this therapeutic measure has been extensively practised by numerous workers. The literature is already considerable; it has been fully summarized by G. de M. Rudolf,[1] by Surgeon Rear-Admiral Meagher[2] and by J. Gerstmann.[3]

This communication is intended as a preliminary note on a series of fifty cases which have been treated in Edinburgh under the auspices of the Corporation venereal diseases clinic. The majority of the cases have been treated in the wards of Edinburgh Royal Infirmary, the remainder in Corporation hospitals. This series differs from most others reported in that, without exception, the cases were first seen in the out-patient department of a venereal diseases clinic or in consultation in the medical wards of a general hospital. None of the patients was certified as insane; many of them were at the earliest stage at which the disease may be recognized; only a few were at an advanced stage, at which they might have been certified insane. The series includes a relatively high proportion of cases of juvenile general paralysis of the insane (28 per cent.). In practically all the cases under review, treatment by therapeutic malaria has been followed by the administration over a prolonged period of antiluetic drugs.

In treating these patients our aim was to secure lasting remission of the mental symptoms and restoration of physical vigour; as a result of the combined treatment success has been achieved in a gratifying proportion of cases. Accordingly, we have extended the use of this method of treatment since we started our work in 1927.

THE SCOPE OF THE REVIEW

Fifty cases are reviewed, and are classified as follows

General paralysis of the insane (adult)	...	28 cases
General paralysis of the insane (juvenile)	...	14 "
Tabo-paresis		6 "
Paresis sine paresi		2 "

The age periods of the patients were:

Up to 30 years	14 cases
30 to 40 years	12 "
40 to 50 years	14 "
Over 50 years	10

Of the adult cases 29 were males and 7 were females Of the juvenile cases 9 were males and 5 were females

DIAGNOSIS

Every patient had definite symptoms and signs of general paralysis of the insane, and the diagnosis was always confirmed by an examination of the blood and of the cerebro spinal fluid The Wassermann test was strongly positive in both blood and cerebro spinal fluid in every case In the majority, the cerebro spinal fluid showed a pathological increase of cells and globulin, and Lange's gold solution test gave a paretic or strong luetic reaction

SELECTION OF CASES

The cases selected for malarial therapy included

1 Cases showing pronounced mental symptoms and in which the disease was advancing rapidly

2 Cases of general paralysis of the insane which had received prolonged treatment with anti syphilitic drugs but had not responded favourably

3 Cases already advanced when first seen

Several patients in whom the disease was advanced, or who were seriously ill from other maladies, were included, even though the gravity of the prognosis was recognized It was considered that malarial therapy offered the only reasonable hope of improvement The patient in Case 32, for example, had a large aortic aneurysm, Case 44 suffered from severe diabetes mellitus, Case 40 showed marked dementia, incontinence, and bed sores

PROCEDURE ADOPTED

In every case a full neurological examination was made, and the blood and cerebro spinal fluid were examined A detailed physical examination of the patient was conducted, particular attention being paid to the circulatory system Blood films from a known case of benign tertian malaria were examined to ascertain the activity of the infection If malaria parasites were present in fairly large numbers, 3 to 5 c.cm. of blood were withdrawn by vein puncture and inoculated into the patient with general paralysis of the insane The most favourable time to withdraw blood is prior to the onset of the rigor or during a rigor The blood may be inoculated immediately into the recipient either intravenously or subcutaneously in the interscapular region, on the other hand, the blood may be citrated, kept on ice, and inoculated into a patient at any time within twenty four hours Every patient was confined to bed after inoculation, and a four hourly record of the temperature and pulse was kept After the first rise of temperature above 100° F. the temperature was recorded every two hours, and hourly during rigors If the patient was debilitated, or if there was any evidence of cardio vascular disease, appropriate tonics and cardiac stimulants were administered from the time of inoculation Iron was given in all cases to counteract the anaemia Very careful nursing was required

INOCULATION

Benign tertian malaria was used in all cases except one (Case 31) in which quartan malaria was inoculated Several different strains of benign tertian malaria were employed These strains had been used for the treatment of general paralysis of the insane for a considerable period The patients were inoculated either subcutaneously or intravenously, according to whether a long or a short incubation period was desired By the subcutaneous route the average incubation period from inoculation to the first rigor was fourteen days, with extremes of five and twenty two days, by the intravenous route the average incubation period was eight days, with extremes of two and fifteen days

INCUBATION

The incubation period did not vary with the volume of blood injected, but a heavily infected inoculum appeared to give a shortened incubation period Malarial parasites may be found in small numbers in the peripheral blood for several days before the first rigor Within twenty four or thirty six hours of intravenous inoculation there was in many cases a rise of temperature to 100° or 101°, lasting for about twelve hours This initial pyrexia was not seen in patients inoculated subcutaneously It has been suggested that such initial rises are due to haemo lysis in incompatible blood groups, but this did not appear to be the case in our series Further study of blood grouping in relation to inoculation by malaria is being made Patients who have suffered from a natural malaria infection in the Tropics can be inoculated successfully, and the disease seems to run the usual course Four of our cases had suffered previously from malaria, and one had had an attack of blackwater fever Some degree of immunity seems to be acquired after induced malaria, four of our cases however, have been successfully re inoculated after an interval of a year

OBSERVATIONS DURING THE COURSE OF INDUCED MALARIA

Type of Fever.—In many cases the malaria did not run a true 'tertian' course, often it assumed the quotidian type, or became quite irregular Quotidian pyrexia is very exhausting to the patient The tertian type is said to be commoner when the bloods of donor and recipient are incompatible Jauregg considers that the quotidian type of fever in induced malaria is due to particularly favourable conditions for the growth of the malarial parasites afforded by cases of general paralysis of the insane

Hyperpyrexia.—When the temperature exceeded 105° tepid sponging usually prevented further rise, and stimulants assisted the patient Quinine in small doses has been recommended as a means of controlling the fever, we have found that even a single dose of 1½ grains of quinine bi hydrochloride arrests the malaria In five cases in which this amount was given to control pyrexia, or to secure a longer interval between rigors, no further rise of temperature occurred

Symptoms.—Mental symptoms were aggravated in some cases during the rigors, and tabetic pains and crises were increased in severity Not infrequently the excited and exalted patient became subdued and depressed

Complications.—Albuminuria and gastro intestinal disturbances were not a prominent feature in our cases Herpes labialis was common Cardiac failure is the greatest risk of this treatment Enfeebled patients are very susceptible to broncho pneumonia In most cases, at the end of the febrile period the patient was exhausted, and hypodermic injections of stimulants were required A slight icterus was noticed late in the course of the fever in most cases, and the liver and spleen were increased in size in every case In two cases severe jaundice developed, and the malaria had to be terminated It is significant that both these patients had suffered from natural malaria in the Tropics, and one had had black water fever One of these patients was successfully

reinoculated one year later, and did not develop jaundice. The patients recovered rapidly from the jaundice as soon as the malaria was stopped, and they have been treated subsequently by tryparsamide without intolerance. The malaria parasites live on and feed at the expense of the red blood corpuscles, and the degree of anaemia is proportional to the severity and duration of the malaria. All our patients showed a marked anaemia, but recovered rapidly after the fever was terminated. Retention of urine was occasionally troublesome.

Termination of Fever.—Most patients were allowed to have twelve rigors, unless there were signs of cardiac failure or of other severe complication. In several cases the fever was spontaneously arrested after six to ten rigors, but even in such cases quinine or plasmoquine compound was administered to prevent subsequent relapses. The largest number of rigors allowed in any case was sixteen, while the average was 10.6. Quinine bi-hydrochloride orally or plasmoquine compound tablets (Bayer) were effective in curing the malaria. No malaria relapses have come to our notice. Our observations suggest that better results were obtained in cases having at least eight rigors. The absence of relapses after treatment of inoculated malaria confirms the observations of other observers (James[4]). On the other hand, malarial therapy induced by the bites of mosquitos is followed by a relapse in 50 per cent. of the cases after treatment. This is a very striking difference, and has important bearings on the epidemiology of malaria.[4]

Convalescence from Malaria.—Convalescence was generally very rapid, and with iron tonics, sunshine, and fresh air the patient was able to go about in three weeks in almost every case.

Immediate Effects of Malaria.—Clinically most cases showed a marked amelioration of symptoms, and their physical state was greatly benefited; two patients developed acute maniacal symptoms on terminating the malaria, but both subsequently made an excellent mental recovery. The influence of malaria on the serological changes was indefinite. In several of our cases the blood and cerebro-spinal fluid were examined a few days after stopping the malaria, and in all cases both blood and fluid were examined within a month of terminating the fever. The Wassermann test of the blood showed little alteration; the cerebro-spinal fluid changes were very variable, and did not correspond to the clinical condition. The pleocytosis, globulin content, and gold sol test were more favourably affected than the Wassermann test. Serological improvement has been observed to appear at a much later date than the clinical improvement.

Antiluetic Treatment

It has been shown—and our cases substantiate this view—that malaria does not cure the syphilitic infection, and that most cases of general paralysis of the insane have a progressive systemic infection and a pathological cerebro-spinal fluid even after malaria. Accordingly, we have tried to stabilize the improvement due to malaria by starting antiluetic treatment as soon as the patient is convalescent from malaria. In many cases the serological findings have shown progressive improvement during this subsequent treatment, and concomitantly the mental and physical state has been maintained or has steadily improved. Tryparsamide has proved effective in the treatment of neuro-syphilis, but is less potent in systemic syphilis. In view of this we have adopted a combined treatment with tryparsamide and bismuth simultaneously. Iodides are also given, and occasionally mercury, although, in our experience, mercury is more toxic and less efficacious than bismuth. The "914" compounds have not given good results in this type of case. The average amount of treatment in a period of six months has been 50 grams of tryparsamide intravenously, and 6 or 8 grams of metallic bismuth intramuscularly. The patient attends once weekly as an out-patient, and at each visit receives 3 grams of tryparsamide intravenously and 0.2 to 0.4 grams of bismuth intramuscularly. A course consists of ten weekly injections, and an interval of four weeks elapses between each course. During the interval iodides are given orally, and tonics may be required. This routine may be continued with advantage over a very long period; persistence is, in our opinion, the essence of the treatment, and our earliest patients have received very large amounts of these drugs—for example:

Case 1: Tryparsamide 361 grams, bismuth 44.4 grams, in five years.

Case 4: Tryparsamide 305 grams, bismuth 38.1 grams, in four and a half years.

Case 41: Tryparsamide 211 grams, bismuth 31 grams, in three years.

Both drugs have been tolerated well, and we have had no cases of toxic amblyopia or of optic atrophy following tryparsamide injections in general paralysis of the insane. Tryparsamide in moderate doses has a marked tonic effect after malaria.

Results of Treatment

It has been necessary to adopt a standard by which to estimate results. The following classification has been used for our cases:

A. *Complete Recovery:* There are no mental symptoms present, and the patient is able to resume his usual occupation.

B. *Partial Recovery:* The patient is free from mental symptoms, but is not able, from physical causes, to resume his normal occupation—for example, is incapacitated by ataxia.

C. *Improved:* Slight mental symptoms or physical signs present; patient is unable to work, but does not require institutional care.

D. *No Improvement:* Mentally and physically impaired, and institutional care required.

Grades A and B are considered satisfactory results, C and D poor results. In the following table all patients now dead are included, irrespective of the cause of death.

Table I

	Satisfactory (A and B)	Poor (C and D)	Deaths
	Per cent.	Per cent.	Per cent.
Whole series ...	28.0	54.0	18.0
Adults only ...	30.6	59.0	12.4
Juveniles only ...	21.4	64.3	14.3

Consideration of Successful Cases

Of the series, 14 patients (28 per cent.) showed complete remission of their mental symptoms and have returned to work. Four patients were not able to resume fully their normal occupation, owing in three instances to tabetic symptoms such as ataxia. Of the 14 successful cases, 11 were males and 3 were females; 8 were adult and 3 were juvenile cases of general paralysis of the insane, while 3 suffered from tabo-paresis. Their ages, which ranged from 20 to 60 years, did not appear to influence the result. The average duration of the syphilitic infection in these cases was seventeen years. The average number of malaria rigors was eleven, and the average period of observation of the successful cases following malaria therapy was twenty-two months.

The changes in the cerebro-spinal fluid as an immediate result of malaria were estimated as: marked improvement 3, slight improvement 3, no change 7, worse 1. Accordingly the immediate changes in the cerebro-spinal fluid were not a reliable guide to prognosis. All these successful

ul cases have had subsequent anti-syphilitic treatment. The present results as regards serological tests are seen below.

TABLE II.—*Serological Results in Successful Cases*

	C.S.F.	Blood	Both Blood and C.S.F.
Negative	7	5	2
Positive...	7	9	5

In five cases the blood Wassermann test is now negative, but the cerebro-spinal fluid remains positive. In no case has the cerebro-spinal fluid become negative while the blood has remained positive.

CLINICAL RESULTS IN OTHER CASES

In the patients who made an incomplete recovery there was in every case considerable physical improvement and some mental improvement. The patients, for example, were less excitable, became continent and clean in their habits, and were often able to go about in hospital. Tabetic pains were often relieved.

JUVENILE GENERAL PARALYSIS OF THE INSANE

Fourteen cases of juvenile general paralysis of the insane have been treated. It was to be expected that this group would be rather a barren field, but, as the figures show, quite a fair measure of success has been achieved. Some observers consider juvenile general paralysis of the insane as a contraindication to malaria therapy (Johnson and Jefferson[5]). The clinical picture was usually very definite —a young person who had become dull, stupid, backward, dirty in habits, careless, and unduly "childish." The clinical recovery in 21.4 per cent. of these patients, with a mortality of 14.3 per cent., justified this method of treatment, as otherwise the prognosis in such cases is progressive dementia and early decease. All juvenile patients improved physically, almost all regained control of their organic reflexes; and returned to clean habits. Drug treatment alone has not produced such gratifying recovery.

TABLE III.—*Serological Results in Juvenile General Paralysis of the Insane*

	Strong Positive	Weak Positive	Negative
Blood	9	0	3
Cerebro-spinal fluid	8	1	3

TABLE IV.—*Serological Results in Whole Series*

	Strong Positive	Weak Positive	Negative
Blood	32	2	10
Cerebro-spinal fluid	29	11	4

MORTALITY

In our series nine patients (18 per cent.) are now dead. Of these deaths three were not directly attributable to malaria. In Case 7 the patient died nineteen months after malaria from dementia and cerebral seizures; in Case 35 the patient committed suicide; in Case 19 the patient improved sufficiently to attend as an out-patient, then went on holiday, and three months later was found dead, the cause being unknown. Malaria, or intercurrent disease occurring during or very soon after the pyrexia, was the cause of death in five cases (10 per cent.). One patient died in hyperpyrexia; this was a very enfeebled case of juvenile general paralysis of the insane that had been inoculated with quartan malaria. Three cases showed an advanced degree of mental enfeeblement and physical debility, so that malaria was considered a grave risk; these patients developed cardiac failure and bronchopneumonia, and died shortly after terminating the rigors. One patient, aged 55, suffered from severe diabetes, and though he was carried though eight malarial rigors, he died three months later from diabetic coma.

As this series includes several advanced cases of general paralysis of the insane, and several cases of other serious disease, and as all deaths to date are included irrespective of cause, the mortality is not unduly high. When it is recalled that the death rate from untreated general paralysis of the insane is considerable, the treatment by induced malaria is not, in our opinon, an unduly dangerous procedure. This view is supported by results obtained by others, particularly in the clinic of von Jauregg in Vienna. Our observations have so far been in favour of this therapeutic measure, and we hope that by earlier diagnosis of general paralysis of the insane, and by applying this method to cases before marked mental changes are observed, even better results will be obtained. Further observation over a long period is essential before a final estimate of results is possible.

SUMMARY

1. Fifty cases treated (36 adults and 14 juveniles).

2. Successful result in 28 per cent. of cases (30.6 per cent. adults alone, 21.4 per cent. juveniles alone).

3. Mortality due to malaria is small (10 per cent.).

4. Induced benign tertian malaria is easily cured. No malaria relapses in this series.

5. Serological improvement in blood and cerebro-spinal fluid frequently observed.

6. Value of anti-syphilitic treatment following malaria. Both clinical and serological results often show progressive improvement.

7. Necessity for prolonged observation of all cases.

I am greatly indebted for permission to observe and report these cases to Mr. David Lees, and to the honorary physicians of Edinburgh Royal Infirmary, under whose care the patients have been. Colonel E. D. W. Greig, lecturer on tropical diseases, Edinburgh University, has observed nearly all the cases throughout the course of the malaria, and has given great assistance in the treatment, and very valuable help in the preparation of this report. Colonel S. P. James of the Ministry of Health has supplied us on several occasions with strains of malaria for use in this series.

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THE FUNCTION OF THE ISOLATION HOSPITAL IN MODERN PRACTICE*

BY

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Isolation hospitals are designed to isolate, until no longer potential sources of danger, those suffering from certain of the acute specific infectious diseases, with a view to the control of those diseases in the community. Since most of those so isolated are also physically ill, treatment of the illness occasioned by the infection is a necessary corollary.

The primary functions, then, of the infectious diseases hospital are the isolation and treatment of the infectious sick. The fact that in this country most of those sick from

* Read in opening a discussion in the Section of Public Health (including Tuberculosis and Occupational Diseases) at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

at least some of the acute specific infections are isolated and treated in special institutions should impose two other functions upon, at any rate, the larger of those institutions—namely, teaching and research. To what extent and with what success does the isolation hospital carry out its primary functions of isolation and treatment, and what may be termed, perhaps, its secondary functions of teaching and research?

The Isolation Hospital

To relate the story of the development of the present-day isolation hospital from the old pest house would be to relate a large part of the history of public health in the nineteenth century. Indeed, the Public Health Service arose out of the necessity of dealing in an organized manner with the then formidable endemic and epidemic acute infectious diseases which took such a considerable toll of lives.

At least from the days of Murchison, the 'sixties of last century, isolation hospitals have been considered an essential part of the equipment of sanitary authorities. Murchison's classical treatise on the continued fevers of Great Britain contains in its last chapter a discussion "on the relative merits of isolating fever patients and of distributing them in the wards of a general hospital." Murchison advocated the isolation of cases of fever in the separate wards of a fever hospital. Except for the modifications made possible by the various types of barrier-nursing, this is in general the practice to-day. With few exceptions, local authorities make provision for the reception of cases of smallpox in a separate institution and for such cases of the other acute specific infections as it is considered desirable by the medical officer of health to isolate in a fever hospital.

The degree of success attained by isolation as a means of control varies with the particular disease and with the particular local circumstances. There is general agreement about two things: the great value of isolating the first cases of an *epidemic* disease and the very small value of the same measure as a means of controlling *endemic* infectious disease. The recent advances in the knowledge of immunity and of epidemiology based in part upon those advances have shown why the hopes which were at one time held in regard to endemic infections were inevitably doomed to disappointment.

Stallybrass, in his admirable work on "The Principles of Epidemiology," recently published, writes as follows:

> "The great success of isolation against smallpox, typhus and, to a lesser extent, typhoid led the epidemiologists of the nineteenth century to a hope that they would be able to 'stamp out' scarlet fever and diphtheria in a like manner; in this they were deceived. The finding of numerous 'missed cases' of smallpox and typhus encouraged them to hope that by the search for such cases in scarlet fever and diphtheria they would still be successful in the 'stamping out' policy . . The numbers of temporary and chronic carriers (in these two diseases) render it improbable that complete success will ever attend a policy based entirely upon isolation and disinfection . . . In typhus, typhoid and smallpox the success of isolation was associated with other means of attack upon the means of transmission in the two former and by immunization in the last. It was at first hoped that isolation would prevent measles and whooping cough Owing to the high infectiousness of these two diseases during the prodromal or catarrhal stage they give rise to numerous secondary cases before the nature of the primary case is brought to light."

Need for Immunization

As is the case with smallpox, which in its present form threatens endemicity through the neglect of vaccination, there is only one rational method of controlling these endemic diseases—the active immunization upon a sufficient scale of the susceptibles; in this country, a degree of perfection. A measure of achievement and disease is slowly being attained in the case of diphtheria, a disease which the public fears. In the case of scarlet fever means exist, but the necessity for their employment on any large scale can hardly be said to exist while the disease retains its present mild characteristics. As for measles no method of active immunization is so far available, and upon any sufficient scale, proved as this is, neither temporary passive immunization nor attenuation of the attack by the use of human serum is practicable. The supply of human serum is always likely to fall hopelessly short of the demand. Whooping cough, probably at present the most damaging of all the acute specific infections of childhood, not excepting measles, at least merits trial upon an adequate scale of prophylactic vaccines used with such success by Madsen in Denmark.

Although the failure of isolation of the endemic infections as a communal measure has to be admitted, there is hardly in question that in special circumstances and in individual instances the removal and isolation of a focus or source of infection is a necessary procedure. Nobody would propose that a case of enteric fever, scarlet fever or diphtheria occurring above a milk shop should remain to be nursed at home. A case of scarlet fever or diphtheria occurring in a residential children's institution must almost inevitably be removed to hospital. Needless to add, this step should be followed by the appropriate measures available for the discovery of other potential sources of infection and for the detection and protection of the remaining susceptible inmates. There are many environmental circumstances which make institutional isolation necessary. Added to them are the social and economic difficulties so often created by the occurrence of a case of infectious disease in the home.

Isolation of the Suspected Case

Its limitations admitted, the isolation hospital, from the point of view of preventive medicine alone, justifies its existence as part of the equipment of the sanitary authority and is likely to do so indefinitely. But this is not to agree that the available accommodation of the isolation hospital is always used to the best possible advantage. *Numbers of patients are admitted* without sufficient justification from the standpoint of either preventive or curative medicine.

The isolation hospital is unique among hospitals for the reception of acute diseases in that it admits to its wards a large proportion of cases sent directly by the general practitioner. There is no intervening casualty or out-patient department. A receiving room there may be, but this is in the nature of a distributing centre for the wards. Cases examined in the receiving room, even if the provisional diagnosis be patently incorrect, are always admitted to one or other of the isolation wards for observation.

Unless it were possible for each notified case to be seen at home in consultation with the practitioner it is difficult to see how the present method is to be avoided. The general practitioner acts for the best in difficult circumstances and in good faith is not for a moment questioned. Nevertheless, there does result the needless isolation of large numbers of adults and children, and, at times, undue pressure upon the available accommodation. This has been the case in diphtheria. In 1929, there were admitted to the Birmingham City Hospitals, 2,099 cases with a diagnosis of diphtheria; 706 (33 per cent.) presented evidence of clinical diphtheria upon admission to hospital. In 1930, 2,162 cases were similarly admitted, of which 739 (34.4 per cent.) showed no evidence of clinical diphtheria. Fully 50 per cent. of these revised cases had been

in purely as a result of a report upon a swabbing A considerable proportion of them proved to be Schick negative or immune to diphtheria on admission In the great majority the swabbing when repeated was negative or the organisms present were shown to be avirulent Investigation of these cases—with the Schick test and with virulence tests—occupies on the average ten days, at the end of which period the patients are discharged Meanwhile valuable beds are occupied, and the patients, especially the adults, suffer considerable social and economic inconvenience The value of the swab in the diagnosis of diphtheria is over estimated to the same extent as the value of a timely dose of antitoxin *on suspicion* is underestimated

It is also peculiar to isolation hospitals that, unless a separate convalescent hospital is available, these institutions have to retain their convalescents, not only on the grounds of physical unfitness, but because of the presumed danger of infection in convalescence That this danger has been greatly overrated in the past is shown by the fact that although the period of detention of cases of scarlet fever is being steadily reduced there is no rise in the return case rate, but rather the contrary, and that those hospitals which discharge their diphtheria cases without the ritual of swabbing similarly cannot be charged with increasing the proportion of return cases

TREATMENT

Some infections, however good the environment and the means of isolation it is hardly possible to treat with the maximum chances of success elsewhere than in an institution In the case of other infections like rubella and chickenpox, poorness of circumstances and even lack of treatment altogether cannot be said to make much difference to the ultimate result Morbidity in these conditions is trifling and mortality nil It is hardly in dispute that any case of clinical diphtheria, as distinct from a transient carrier state unless of the very mildest is better treated in hospital if there is not ample provision of skilled nursing in the home Scarlet fever provides matter for controversy In spite of a very high isolation rate the disease is as prevalent as ever Is it necessary to remove to hospital for the purpose of treatment the high proportion of notified cases which at present, in some places at least, is so removed? Could not many of these cases be as well treated at home, especially now that the disease is so mild and that a specific antitoxic therapy is available which is capable of simplifying the management of the case considerably? Could not many of the beds now occupied by cases of scarlet fever be better utilized for the reception of other infections of more serious import?

Strictly from the point of view of the possibility of treatment, many would agree that this is so, but there are two other factors which have to be taken into consideration First, the public, in many towns at least, expects a case of scarlet fever to be removed to hospital, it always has been so removed Secondly, the necessity of attendance upon cases of scarlet fever must frequently prove an embarrassment to the practitioner who has a large midwifery practice Hence, however feasible theoretical reasons may be, practical factors may combine to make attainment a matter of great difficulty It is largely a question of re-educating a public which at one time was forcibly impressed with the necessity of the hospitalization of scarlet fever, then a severe disease In contrary sense the same holds good for measles and whooping cough Here, the public needs to be impressed with the gravity of these diseases, and with the fact that for the adequate treatment of many cases removal to hospital is essential.

Modern Methods

In the old days treatment of the fevers was wholly expectant The introduction of diphtheria antitoxin in 1894 was the first nail in the coffin of the expectant treatment of the acute specific infections Treatment, in addition to becoming more rational, has in many cases become more complex, and necessitates a specially trained medical and nursing staff and a hospital adequately equipped for its task Team work is as essential in a fever hospital as in any other To take one example Recent work has shown that the treatment of severe toxic diphtheria, if the best results are to be obtained necessitates not only an adequate dose of antitoxin, absolute rest, and skilled nursing, but repeated estimations of the blood sugar The administration of dextrose and insulin is based upon these estimations, and, in order accurately to gauge the condition of the muscular and conductive tissues of the heart serial electrocardiograms are necessary For this work the co-operation of three medical officers is required By these measures the case mortality of the worst examples of toxic diphtheria, when compared with an adequate series of controls, has shown in the Birmingham City Hospital a reduction of nearly 13 per cent

The modern treatment of some at least of the acute specific infections necessitates an equipment and a technique as complete as that required in the treatment of diseases other than the fevers The hospital entrusted with the care of the infectious sick should attain, and in many cases does attain, to a standard no whit inferior in any respect to that of a good general hospital Where this standard is unattainable by reason of smallness of size or meagreness of staffing, the solution lies, of course, either in the abolition of very small hospitals and the erection of large centralized hospitals served by motor transport, or in the provision for the reception of infectious cases in a block of the local general hospital Both these measures are in fact in process of adoption

TEACHING

The admission as a general procedure of cases of infectious disease to blocks attached to general and children's hospitals, although a common arrangement on the Continent and in America, is unusual in this country In large cities at least, the high hospitalization rate of cases of infectious disease would make such an arrangement, except as a partial measure, impracticable

As a result of the advice originally tendered by Murchison, practically all general and children's hospitals possess isolation blocks, but these are in the nature of emergency accommodation Most of these institutions continue to admit the enteric group of infections and the acute infectious diseases of the nervous system These diseases are commonly treated in the ordinary medical wards It is on the whole correct to say that the vast majority of cases of the common fevers, if treated in hospital at all, are treated in isolation hospitals The consequence is that these institutions have a virtual monopoly of the material necessary for the clinical teaching of fevers Unless adequate use is made of this material it is bad for medicine, preventive and curative With one exception, the historic London Fever Hospital, which remains as it began, a voluntary institution with an honorary as well as a resident staff, the fever hospitals in this country are controlled by public health authorities and staffed by medical officers in the service of those authorities The large institutions have a medical superintendent and several assistant medical officers the smaller have resident medical officers who may also have other public health duties, the smallest may be in charge of the local medical officer of health and may have no resident medical officer at all.

During the last few years several of the large fever hospitals have appointed stipendiary specialist visiting staffs—for example, otologists. Some also have appointed consulting general surgeons and physicians for occasional operative or consultative work. Generally speaking, the whole of the clinical material is under the care of resident medical officers. After a longer or shorter stay most of these medical officers pass on either to some other branch of the public health service or to general practice. Their numbers are, relative to the whole profession, infinitesimal. Except for this small number of practitioners with special post-graduate hospital experience of fevers, such clinical knowledge of the common fevers, which form such an important part of preventive and curative medicine, as the recently qualified practitioner obtains, he obtains almost wholly as the result of a breathless series of visits, quite inadequate in number, to the wards of a fever hospital. These visits are sandwiched in with some difficulty between half a dozen special subjects in the final year.

Inadequacy of Instruction

Even upon the score of making the most economical use of the available beds by a reduction in the percentage of cases unnecessarily admitted, it is essential that the young practitioner should receive more adequate instruction in the diagnosis of fevers than is at present possible. By some means, the wealth of clinical material in the large fever hospitals should be made available for thorough undergraduate and post-graduate study. The isolation hospital should not be separated from the general stream of medicine. It is bad for medicine and for its practitioners, whether within or without the walls of the institution. In provincial university cities, the medical superintendent of the fever hospital also holds, as a rule, a clinical lectureship on fevers in the university, and it is he who gives such clinical instruction in the wards as present circumstances permit. Why should not the medical student clerk in the wards of the fever hospital, if only for a brief period? Why also should not the young general physician attached to a children's or general hospital be also attached for a term to the staff of a fever hospital and take part in its work and teaching? Administrative difficulties there might be, but difficulties exist to be overcome. There is little doubt that with sufficient breadth of view on both sides smooth working could be secured. Of the advantages to medicine, if these suggestions became accomplished facts, there is no doubt whatever. The end justifies the means.

Research

The fact that the isolation hospital has a virtual monopoly of clinical material imposes upon it not only the duty of dissemination in the most effective manner of the knowledge already gained of fevers, but also the duty of advancing knowledge. The study of the fevers of temperate climates is passing, as did the study of tropical fevers under the stimulus of Manson, from the stage of clinical description and empirical treatment to that of the scientific investigation of cause and mechanism, with the resultant provision of rational preventive and therapeutic measures. The war provided a powerful lever no doubt, but the work of Schick, published, as a matter of fact, in the year preceding the outbreak of war, was the first series of notable advances in immuology.

Paucity of Research in England

What have been the contributions of the fever hospitals of this country to all the recent advances which have been made? To original research, the contributions have been small indeed. The contributions of the fever hospitals to the advancement of knowledge of the diseases with which they are particularly concerned have been [illegible] the nature of repetitive work. The repetition, however necessary and however meticulously and laboriously carried out, of work originated by others with means provided by others is not research; it is merely a checking of the research of others. Here and there an exceptionally able and industrious medical officer has under great difficulties achieved a piece of original investigation. But for the rest, the work, again, it is true, carried out under great difficulties and sandwiched between routine duties, has been repetitive. Save that provided by the occasional thesis, usually stillborn, there is no stimulus to research in the fever hospital, no official recognition of such a possibility being possible, and, with few exceptions, no suitable equipment available. A perusal of the Continental and American literature of the acute infections is from every point of view depressing. The output of original investigation, scientific and clinical, of foreign institutions to which infectious diseases are admitted is continuous, and maintained it of the highest standard. Owing to the high hospitalisation rate of fevers in this country, the clinical material is relatively more abundant here than elsewhere.

Possible Lines of Research

The contributions which the fever hospital might make to the advance of knowledge are not only direct but also lateral. Children form the majority of its patients—children, too, who except for the acute infection from which they are for the time being suffering are essentially healthy. The reaction of the hitherto healthy organism to infection can be studied in the child unaffected by other pathological factors which so frequently exist in the adult.

There is little doubt about the importance of the contribution which the fever hospital might make, for example, to the study of the earliest phases of rheumatism. Among the cases sent in with a diagnosis of diphtheria, many are suffering, not from an infection with diphtheria bacilli, but from tonsillitis due to other organisms. This initial tonsillitis is followed, not infrequently, by rheumatic manifestations—possibly the first manifestations in a young child. The fever hospital is practically the only institution in which cases of tonsillitis come under observation as in-patients.

Need of Organized Research

If the views put forward above are accepted, definite provision of personnel and equipment must be made for organized research, preferably in close association with the university and medical school in order that there may not be unnecessary overlapping. Among the existing young medical officers in the fever hospitals' service are to be found those who possess the necessary temperamental make-up for research. They only need encouragement and opportunity to produce good work. They could give of their best if they are swamped with routine duties. Such medical officers, duly approved by some independent board or committee, should be set free to do a definite piece of original investigation in the hospital to which they are attached. To their number might with advantage be added, from time to time, investigators from outside, young men and women who might be attached for a definite term to carry out a definite piece of work. Alternatively, those who apply for existing research facilities might consider the field, so far practically untilled, of the hospitals for infectious diseases present.

These institutions cannot be said so far to play the part they should and could play in advancing preventive and curative medicine. The personnel and the material are there; ways and means have largely to be created.

BATHING AND AURAL DISEASE

BY

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In an article contributed to the *British Medical Journal* of August 17th, 1929, by Drs W I Daggett and R Cove Smith, attention was called to the risk of acute aural disease caused by bathing A letter dealing with the same subject appeared in the *Lancet* of July 27th, 1929, and this provoked some correspondence on the prevention of pollution of public swimming baths In both of these contributions the authors expressed the opinion that the entrance of infected water into the Eustachian tube and the middle ear cleft was largely responsible for the incidence of this type of ear disease, the water borne infection in these cases being derived from contamination of public swimming baths and "town" rivers Further, they emphasized the fact that individuals who bathed whilst suffering from perforated drumheads or septic nasal conditions were a possible source of danger to themselves and to other bathers

These observations led me to examine the record sheets of all cases of acute aural lesions attributed to bathing, and seen by me during 1930 Seventeen cases were examined, and although the number is small it is possible to draw some conclusions from the series Of the seventeen patients twelve had bathed in public swimming baths and five in the sea

In a large industrial city such as Liverpool the proportion of bathers who use public swimming baths is far in excess of those who bathe in the sea, certainly a much greater ratio than 12 to 5 Furthermore, the sea bathers had all availed themselves of the advantages of the South Lancashire and North Cheshire coasts, and had bathed in the open sea, far away from sewage or other pollution of the water

In sixteen of the cases either there was present some aural abnormality or else there was some existing adjacent focus of infection in the upper respiratory tract These adjacent foci of infection were all gross lesions that were noted at the time of examination They all called for surgical treatment, which was advised, and which in several cases was carried out subsequently They were not sought after for the sake of obtaining statistics, and their constant presence only became apparent when the case records were reviewed

The existing adjacent lesions which occurred either singly or together were as follows

Lesions	No of patients
Previous aural lesions	7 (2 sea, 5 bath)
Pathological tonsils and/or adenoid	10 (4 sea 6 bath)
Marked septal deviations	5 (2 sea 3 bath)
Chronic suppurative ethmoiditis	1 (bath)
Hypertrophic rhinitis	1 (bath)
Acute coryza	2 (bath)

The accompanying table shows the results more graphically All the cases were in males, except No 15

Case 1 is the only "healthy" bather in whom there was no evidence of previous aural disease or of an existing adjacent focus of infection Case 5 is interesting, as the patient's elder brother had undergone a simple mastoid operation two years previously, owing to an acute mastoid itis which developed after bathing Three patients underwent paracentesis

The table shows also that the interval between the time of bathing and the onset of symptoms was some hours less in those patients who had suffered from previous aural disease than it was in those who showed only an adjacent infective focus

No	Age	Aural Lesion	Previous Aural Lesion	Existing Adjacent Lesion	Date of Onset	Sea or Bath
1	23	L acute S O M	—	—	1 day	B
2	14	R acute S O M	P C S O M	—	Few hours	P
3	21	R acute O M L acute S O M	—	Tonsils plus Septum deviated	1 day	S.
4	21	L acute S O M	L S O M (dry 15 years)	—	Few hours	S
5	23	L acute S O M	—	Adenoid plus	1 day	S
6	18	L acute O M	—	Chronic suppurative ethmoiditis	1 day	B
7	27	L acute O M	—	Septum deviated Tonsils plus	1 day	S
8	29	R acute O M L acute S O M	—	Septum deviated Tonsils plus	?	P
9	19	R acute S O M L acute S O M	R recurrent S O M L recurrent S O M (2 yrs)	Tonsils plus	Few hours	S
10	20	R. acute S O M	—	Tonsils plus Adenoid plus Hypertrophic rhinitis	1 day	P
11	12	R acute otitis externa	Cerumen	—	1 day	B
12	41	R acute S O M	Similar attack two years previously after swimming	Tonsils plus Adenoid plus	1 day	B
13	25	R acute S O M	—	Septum deviated Tonsils plus Adenoid plus	1 day	B
14	11	R acute O M	R recurrent O M L recurrent O M	Acute coryza	Few hours	B.
15	41	P acute O M	R chronic O M L chronic O M	Septum deviated	?	P.
16	21	P acute S O M	—	Tonsils plus	?	B
17	21	P acute O M	—	Tonsils plus Acute coryza	1 day	B

O M. = catarrhal otitis media S O M = suppurative otitis media
C S O M = chronic suppurative otitis media

Conclusions

1 A series of seventeen patients who suffered from acute ear disease attributed to bathing is reported Of this series sixteen patients had suffered from a previous aural lesion and/or some existing abnormality of the neighbouring upper respiratory tract

2 The proportion of bathers in this series who contracted ear disease is relatively greater amongst the "clean" sea bathers than it is amongst the 'polluted' bath bathers

3 In view of conclusions 1 and 2, it may be assumed that acute aural disease following bathing is usually an autogenous infection, and occasionally only is it caused by infection derived from the water of public swimming baths

4 In addition to the measures of personal and public hygiene advocated by Daggett and Cove Smith, it is advisable, though maybe impracticable, that any individual who contemplates bathing should be examined at least once by a doctor *re* the condition of his ears nose, etc This latter measure certainly could be carried out during the routine examination of school children

5 Any individual found to be suffering from aural, nasal, or pharyngeal abnormality should be warned of the danger attached to bathing in either the sea or in swimming baths

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

A CASE OF POISONING BY SODIUM NITROPRUSSIDE

Although it is well known that sodium nitroprusside is a powerful poison, we have been unable to find record of any cases of human poisoning by this substance. Glaister[1] in his textbook make no reference to the subject; Sollmann[2] gives a brief quotation from L. Hermann, in which it is stated that "nitroprussides liberate CN readily and agree with cyanides except that they are less convulsive." Wynter Blyth[3] gives an account of some work by Reid Hunt in which the toxic dose of many cyanides, including sodium nitroprusside, was determined when injected subcutaneously into mice.

The absence of cases of human poisoning by sodium nitroprusside is not difficult to understand. It is a material which is unknown to the general public. Its principal use is as a reagent in certain important chemical tests. Hence those who have access to it have generally sufficient knowledge of toxic substances to prefer some other poison, if suicidally inclined.

The case about to be described was that of a student of chemistry. At about 2.10 a.m. he called out from the garden of his lodgings to a fellow boarder within the house that he was poisoned. The person spoken to at once went out to his assistance, and found him unconscious. A doctor was immediately sent for. He found the patient still unconscious, slightly cyanosed, with froth at the mouth and slight dilatation of the pupil. There was no characteristic smell in the breath nor burns about the mouth. The patient was immediately sent to the Leeds General Infirmary. On admission the condition of the patient was similar to that already described. Respirations were slow, irregular, and heavy, with short inspiration and prolonged expiration. The pupils were moderately dilated and reacted sluggishly. The temperature was 97.6° F., and the pulse 60. Death occurred at 4.40 a.m. No convulsions were seen at any time.

A post-mortem examination was made at 10 a.m. by Dr. Ella M. Hickman. On opening the body the smell of HCN was definitely detected, and all the evidence was consistent with cyanide poisoning. The stomach contents were removed in a stoppered bottle for separate examination. On removing the stopper after a short interval the smell of HCN was also readily detected here, and the presence of HCN in the air immediately above the fluid in the bottle was demonstrated by chemical tests.

In attempting to decide on the exact nature of the poison which had been taken, we soon excluded free hydrocyanic acid. The very definite smell of HCN on opening the body, and again frequently detected while handling the organs, and also evolved from the stomach contents, indicated that a very considerable dose of a cyanide had been taken, and if this had been in the form of free HCN death would have occurred much more rapidly than was actually the case. Death also appeared to have been unnecessarily delayed even if the material taken had been a simple cyanide. While considering this point it was found that a bottle containing a liquid solid salt (57 grains per ounce). When the stomach contents were examined for the presence of nitroprusside strongly positive reactions were obtained. Poisoning by sodium nitroprusside appeared to us, therefore, to be definitely established.

The interest of this case lies in the fact that the symptoms before death, and the appearances after death, were those of hydrocyanic acid poisoning, but the time which elapsed after taking the poison before death occurred—namely, at least two and a half hours—was considerably longer than is the case when very large doses of the simple cyanides are taken. The effects are, of course, actually due to free hydrocyanic acid, which is produced as a result of the decomposition of the nitroprusside, and the time required for this decomposition to occur within the body accounts for the delay in the occurrence of death. But although this delay does occur, the rate at which HCN is produced from nitroprusside within the body is greater than one would expect from a knowledge of the behaviour of this substance *in vitro*. It is well known, for example, that aqueous solutions can be kept for long periods without the appearance of free HCN. H. E. Williams,[4] in an account of the chemistry of nitroprussides (nitroferricyanides) states that solutions of the sodium salt can be evaporated without decomposition, and our own experience verifies this statement. Of reactions which produce free HCN he mentions reduction in neutral solution with a copper-zinc couple, and reduction in sulphuric acid solution with sodium amalgam. Both these methods of reduction are fairly powerful ones, but the results of ingestion of sodium nitroprusside, as exemplified in the present case, certainly indicate that in the stomach, and possibly elsewhere in the body, reduction of this substance, with the production of free HCN, must be a fairly easy and rapid process.

The experience of this case also suggests that in cases of cyanide poisoning, where death appears to be unduly delayed, unless definite evidence of the use of a simple cyanide is forthcoming, the possibility of a complex cyanide having been taken should be explored.

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RUPTURE OF POSTERIOR CEREBRAL ARTERY

The recent reports in the *Journal* of cases of "congenital intracranial aneurysm" prompt me to submit the following case.

On November 14th, 1930, an unmarried woman, aged [illegible] years, seamstress, always of a delicate constitution and a victim of indigestion and obstinate constitution, when stooping to fasten her shoe felt a sharp pain in the back of her head, with accompanying disturbances of vision, which passed off in a few days. A similar experience under identical conditions occurred on November 27th. She went to work as usual on November 28th, but had to return home because of disturbed vision. I saw her on this date, when there was complete oculomotor paralysis of the right eye, with ptosis and a fixed dilated and immobile pupil—the eye could be slightly rotated inwards. There was also pain in the back of the head, increased by forward bending of the head, but no rigidity of the neck, and Kernig's sign was absent. Confined to bed, she remained in this condition until December 16th, when she was very sick, and having a severe headache, she awoke [illegible] about 4 a.m. I saw her at about 5 a.m., when she

already unconscious. Coma supervened, and death took place at 10 a.m. Between 5 and 6 a.m., by lumbar puncture, I removed some cerebro-spinal fluid, which was deeply stained with blood.

Post-mortem examination of the brain revealed an extensive basal haemorrhage, which extended also down the spinal canal. This was the result of a rupture of the right posterior cerebral artery close to the bifurcation of the basilar artery into the posterior cerebral arteries. The third nerve at this point was severed, all but the merest strand.

Ramsbottom, Lancs. H. LAWRIE.

Reviews

MEDICO-CHIRURGICAL PRACTICE

Edited by a distinguished triad of the Faculty of Medicine of Paris, the third edition of *La Pratique Médico-Chirurgicale*[1] is heralded by the issue of the first four volumes. The complete eight volumes will provide a compendious encyclopaedia embracing medicine, surgery, obstetrics, and the ancillary specialties, written by 220 collaborators, each of whom is an exponent of the first rank in his particular subject. Avoiding hypotheses and theoretical discussions, the work provides a straightforward practical guide for the practitioner in etiology, symptomatology, diagnosis, prognosis, and treatment, with praiseworthy conciseness, but with sufficiency of detail. Extreme delicacy of judgement is required in such a work to maintain suitable balance as regards the subject-matter. On the whole, this has been attained in the volumes before us, except in the treatment of the majority of pharmacological subjects, which is too brief to be of value. Avertin, for instance, is dismissed in six lines. The photographic and *x*-ray plates are excellent, but the pathological line drawings are not in keeping with the general standard of the work. The figures dealing with dental anaesthesia (p. 455 et seq.) are most obscure.

The authors give essentially the modern French outlook, and the British reader will be impressed with the space afforded to psychiatric subjects. From the numerous subjects dealt with in volumes i and ii we would specially commend those on the surgical treatment of bronchiectasis (Dr. Oberlin), Caesarean section (Drs. Portes and Couvelaire), and the surgery of angina pectoris (Drs. Leriche and Fontaine). The section on the biliary system affords delightful reading, but most British surgeons will find fault with the unqualified statement that in acute appendicitis the pain "is most commonly located in the right iliac fossa, but sometimes in the umbilical region." The vexed question of antisepsis *versus* asepsis is summed up under the aphorism that, "while opposed in theory, they are ultimately combined in practice, and their union authorizes the bold technique of actual surgery." The sections on actinotherapy, on the arsenobenzols, and on artificial limbs are well written, and that on massage and remedial exercises is admirable.

In volumes iii and iv goitre is dealt with in a comprehensive manner, but the purely medical treatment of exophthalmic goitre is too theoretical for inclusion in an encyclopaedia such as this. Hydrotherapy, thermal treatment, ergotamine, sodium salicylate, haematoethyroidin, etc., ought to be omitted and replaced by some practical details about the administration of iodine and quinidine. The field of hygiene and public health has received ample attention. No fewer than eighteen pages are devoted to consideration of drinking-water (*eau potable*). The articles on dermatological subjects are well written, affording clear clinical descriptions and classifications, suitably illustrated by intelligible photographs. Eczema is differentiated from "eczematoid" conditions, the clinical entities of these groups being well substantiated.

The aim of the work tends to preclude much novelty and originality, but while treating the majority of subjects along conventional and, usually, orthodox lines, the collaborators have shown much originality in presentation of the facts, especially in the domain of surgery. Gastric and cerebral surgery are noteworthy examples. In view of the fact that modern surgeons are not likely to consult a general encyclopaedia to any extent, one wonders whether such works should not confine themselves solely to the sphere of the general practitioner, who, to take one example, is not likely to be ordinarily interested in the merits and technique of the operative methods used for diaphragmatic hernia. On the other hand, the present work very properly expounds such dentistry as commonly falls to the lot of the busy medical practitioner, and the clear methodical account of teeth extraction is worthy of emulation by most British authors of surgical manuals.

[1] *Pratique Médico-Chirurgicale*. Publiée sous la direction de A. Couvelaire, A. Lemierre, Ch. Lenormant. Troisième édition, entièrement nouvelle. Tomes *i*, *ii*, *iii*, et *iv*. Paris: Masson et Cie. 1931. (1,480 fr. the set of eight volumes; 165 fr. each volume separately.)

MEDICAL MYCOLOGY

It is a difficult thing for the medical man to obtain a comparatively brief yet adequate account of the moulds, yeasts, and related fungi which are of interest to him as causes of disease, or contaminations of his cultures, or are concerned in the spoilage of foodstuffs. There are, it is true, extensive monographs dealing with particular groups, but, apart from the detail they contain, their understanding implies a wide knowledge of mycology. Textbooks of bacteriology are too inadequate in their treatment of the subject to be of much use. Accordingly the time is ripe for a handbook[2] such as Professor HENRICI has now written. It has grown out of a lecture course which he has been giving for some years past to advanced students of bacteriology at the University of Minnesota, and, while making no claim to an exhaustive treatment of mycology, it clearly places before the medical and other bacteriologists all that they need know about the subject.

Beginning with a description of the structure and classification of the fungi, their methods of study, and biological activities, the author goes on to consider the more important groups of moulds, yeasts, and actinomycetes. When we recall that these groups include the causal organisms of the ringworms, thrush, actinomycosis, as well as a considerable number of tropical diseases, it is plain that a knowledge of the subject, however slight, is essential to every medical man. It is daily becoming more obvious that at least a number of bacteria belong to the fungi, and there is a well-defined movement to trace in the bacteria life-cycles and sexual relations similar to those found in the fungi; and so the bacteriologist also must be acquainted with the essentials of mycology—quite apart from a natural curiosity about the contaminating moulds which so frequently crop up in his cultures. Professor Henrici has supplied this need. The book is easily understandable by the beginner, and it is fully illustrated both by photograph and by line drawings. For those who wish to follow up any particular aspect of the subject there is a comprehensive bibliography. We have no hesitation in drawing attention to the usefulness of this volume to the bacteriologist and the physician. It is an excellent production, and most opportune.

[2] *Molds, Yeasts, and Actinomycetes*. By Arthur T. Henrici, M.D. New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1930. (Pp. x + 286; 109 figures. 17s. 6d. net.)

PATHOLOGY OF CHEST DISEASES

Dr. N. P. TENDELOO's work, entitled Studies on the Mode of Origin and the Course of Diseases of the Lungs,[3] is an attempt to relate the localization and development of pulmonary diseases to the varying physiological conditions prevailing in different parts of the lung. In the normal lung he finds that the movements of the alveoli during respiration are least in the paravertebral cranial portion and greatest in the lateral caudal portion; that in any part of the lung the changes in alveolar volume are always greater in the peripheral than in the central portion; that the movement of the blood, and probably of the lymph too, is least in the suprathoracic and greatest in the caudal portion of the lung, and that it is proportional to the respiratory excursions. These processes are subject to variation with age, the shape of the thorax, occupational position, intrathoracic tumours, and numerous other factors. A discussion of their importance in determining the origin and location of such diseases as emphysema, pneumonoconiosis, and tuberculous and non-tuberculous inflammatory conditions of the lung occupies the greater part of the book. Many of the views expressed are of considerable interest, and will not fail to excite the attention of those whose chief study is the pathology of chest diseases.

DIET IN DISEASE

Harrop's *Diet in Disease*[1] forms an addition to the long list of books, for the most part of American authorship, which deal with diet. It is written from the standpoint of the practising physician, and for that reason must command respect. Part I, comprising the first four chapters, deals with the nutritional requirements of the body. Part II deals with the chemical composition, modes of preservation, and cooking of some of the staple foodstuffs. The third, and by far the longest, part is devoted to the dietary treatment of disease.

Opinion about the various dietetic measures which should be used in the treatment of various pathological conditions is in such a state of flux that no book of this kind can hope to escape criticism. Everyone is agreed about the great importance of dietetic measures, no two persons about the exact form which they should take. On the whole, it is clear that Dr. HARROP takes a broad-minded and conservative point of view, and clearly he bases his opinions upon the fundamental facts of biochemistry and, without doubt, upon personal observation. Fault may be found, perhaps, with his treatment of the subject of diabetes. On page 260, for instance, he says that it is highly doubtful "whether the fundamental diabetic process is often really altered or improved as a result of dietary treatment or the use of insulin," and from what has gone before it is clear that he is thinking not only of human diabetes, but also of experimental diabetes in animals. Now since ligature of the pancreatic duct with degeneration of the secreting gland tissue (and survival of the islets) does not cause diabetes, while pancreatectomy does cause the disease, and since all the signs and symptoms of such experimentally produced diabetes can be abolished by insulin, it seems wrong to speak of a "fundamental diabetic process" which is untouched by insulin; or, if such a phrase is used, then the burden of proof of its meaning rests on the speaker. It may be that in clinical diabetes there is something more than current views take count of; if so, it is a matter for investigation. The assumption of existence lays the author open to the charge of loose thinking.

In his further discussion Dr. Harrop gives the impression of not having grasped the distinction between acidosis and ketosis; he frequently uses the terms as if they were synonymous. Recent work, however, has certainly failed to establish a definite relationship between diminution of blood alkali reserve and the onset or depth of diabetic coma, or, for that matter, to prove conclusively that coma is due entirely to the presence of ketone bodies in the blood. We cannot help feeling that this part of the subject might have been approached with more caution. On page 341 appears the statement "feces are usually only passed once a week in the an animal fed only on meat." The writer of this has addressed an inquiry about this point to the curator of mammals at the Zoological Gardens, who was good enough to reply in the following terms: "Our experience with the animals fed entirely upon meat here is that they pass faeces very regularly once a *day*, and usually at the same time each day." Apparently Dr. Harrop has been misinformed on this point.

Although open to certain criticisms, the book is ably written, and will certainly prove of great value to the general physician.

A NEW PHILOSOPHY

Everyone, consciously or unconsciously, makes his own philosophy, but an intelligent and considered statement of the philosophy evolved by another may at times be of the most material help in filling out one's own, or in making it more satisfying, or even, on occasion, in settling or altering the essential basis on which it is constructed. A quite original and well-thought-out statement of this kind will be found in a volume, entitled *A Philosophy of Reality*,[5] by Miss E. L. YOUNG, recently published by the Manchester University Press. It seems likely to prove a very important book, and is one which should certainly be read and considered by all who desire to make their foundations sure and to think correctly in this sphere. It is impossible to epitomize a philosophy of such a kind in a column, or to indicate its fundamental idea adequately in a sentence; but, as is indeed suggested by the appropriate title of her book, the basis of Miss Young's belief may in a very general way be stated to be that things are actually what they seem, however much more they may also be; and that this must be so because every unit of matter or energy—the electron, the atom, the molecule, the cell—in its own primitive way and in its own limited degree, and within its own range, feels and experiences in a manner comparable to that in which the larger units formed of such units (plant, animal, or human) experience and feel. The philosophy of reality can therefore be contrasted with the two main currents of what may be called the philosophy of exclusively abstract thought, and the philosophy of doubt. It may be said to place emphasis upon the known, rather than to indicate that certain things—whether a "thing-in-itself," or something else—are unknowable.

But "I do not wish to suggest that we are able at present to know and to understand everything that the universe presents. If the objective world is an open book [for us], a face of truth, hiding nothing from us, I do not read every page of the book has been read or can be read at the moment. I do mean that the common man has already read much that is true, and the philosopher is in the way when he tells him to discard it and look for cryptograms and occult meanings."

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[3] *Studien über die Entstehung und den Verlauf der Lungenerkrankungen*. Von Dr. N. Ph. Tendeloo. Zweite umgearbeitete und vermehrte Auflage. München: J. F. Bergmann. 1931. (Pp. viii + 219, 6 figures. R.M.26.)

[1] *Diet in Disease*. By George A. Harrop, jun., M.D. Philadelphia: P. Blakiston's Son and Co., Inc. 1930. (Pp. ix + 404. 4 figures.)

[5] *A Philosophy of Reality*. By E. L. Young. Manchester University Press. 1930. (Pp. vi + 266. 8s. 6d. net.)

In opposing any kind of illusionist philosophy the author well says:

"The highest type of mind is that in which the intensive thought can be given the most extensive application. The highest spirituality is shown by its power of filling the commonplace with more of meaning and value, and of turning without any sense of loss from the inner to the outer, and back again at will. A theory which tends to put reality into the sensations of matter, if it is tenable at all, will hold its own in the struggle for life of ideas themselves, against any theory which empties the concrete of a part of its interest."

Any attempt to show thus crudely what the author's theory is, and to what it is in essence opposed, is really to do the author an injustice. The main thoughts of the book are, as has already been said, original, and have been worked out and applied with extraordinary skill. After a general statement of the foundation of her philosophy, Miss Young applies it in successive chapters to "The Market of Matter," "The Human Unit," "Spiritual Life," "The Five Senses," "Time," "Space and Number," "Good and Evil." It is scarcely to be expected that any one reader will find all these applications equally or completely satisfying, even if the basis be accepted. Here and there, there may be some criticism as to her statement of the facts of physical science; and the philosophy which each reader may have already made for himself may be impervious to this or that deduction which Miss Young draws from her fundamental idea. To the present reviewer, for example, the chapters on time and space appear the least satisfactory, while that on good and evil is one of the most satisfactory. To others the appeal will be different. But the work that has been done and the book that has been written are worth while. The style is so smooth and the use of metaphor so frequent and so apt, if the limitations of its logical use are constantly borne in mind, that it is easy to be carried along interestingly from paragraph to paragraph and yet to miss at times the flow of the argument as a whole. If opportunity occurs, as it should, the author might be well advised to break up her chapters into sections, with headings indicating the successive steps of the discussion; and it is possible that a synopsis of each chapter inserted at some appropriate place, in the table of contents or elsewhere, would be helpful.

NOTES ON BOOKS

In *A Textbook of Laboratory Diagnosis*[4] Drs. E. E. OSGOOD and H. D. HASKINS present an outline of laboratory diagnosis on the lines taught in the medical school of the University of Oregon. An excellent feature of this book is the fact that care has been taken to associate the investigation of clinical symptoms with the employment of laboratory procedures. An index of diseases at the end enables quick reference to be made to any specific test in relation to a particular diagnosis, and, from the student's point of view, this should also be particularly valuable in the work of revision before an examination.

The little work on the Therapeutics of the Deadly Sins,[5] by Dr. J. LAUMONIER, which is based on lectures delivered by him in his capacity of honorary professor at the Paris École de Psychologie, has recently appeared in a revised and enlarged second edition. It consists of four chapters, devoted respectively to introductory remarks, and the three "deadly sins" of love of the table, idleness, and sensuality, with their appropriate treatment. Special emphasis is laid on the importance of the autonomic nervous system and the endocrine system, and the part which should be played by the medical practitioner in simultaneous application of psychotherapy and somatic treatment.

[4] *A Textbook of Laboratory Diagnosis.* By Edwin E. Osgood, M.D., and Howard D. Haskins, M.D. London: J. and A. Churchill 1931. (Pp. xix + 475; 18 figures, 5 plates. 21s.)

[5] *La Thérapeutique des péchés capitaux: Gourmandise, Paresse, Luxure.* Par Docteur J. Laumonier. Deuxième édition. Paris: Le Français. 1931. (Pp. 196. 15 fr.)

In his memoir on Malaria in Russia in relation to Soil and Climate,[6] which forms an epidemiological commentary on Dobreitzer's report on malaria in Soviet Russia, Dr. FRIEDRICH WOLTER adopts the following principles agreed upon by the malaria conferences held at Geneva in 1928. (1) In the present state of science the aim of measures for combating malaria should merely be to check it as far as possible as an epidemic disease. Any measures which claim to do more, such as its complete extirpation, can only be justified under special circumstances. (2) It is not always necessary to control malaria by a method resting on the knowledge of its transmission by mosquitos. (3) In every country the measures taken for controlling the disease must be preceded by investigations for determining which method is most suitable for the local conditions. (4) At the present time no one method is to be preferred to all the others in the prophylaxis of malaria. Wolter, who is an adherent of the Sydenham-Pettenkofer conception of epidemiology, is in favour of considering the extraordinary increase of malaria in Russia in 1923 as due to telluric and climatic conditions, and he regards a change in agrarian policy and sanitation of the soil as essential, because in the absence of such a course all other measures are doomed to failure.

Messrs. H. K. Lewis (136, Gower Street, W.C.1) have issued a supplement (1928–30) to the catalogue of their medical and scientific circulating library, of which a notice appeared in our issue of August 24th, 1929. This supplement is planned on the lines of its predecessors, and forms a useful summary of recent medical literature. The price is 2s. net, or 1s. to subscribers.

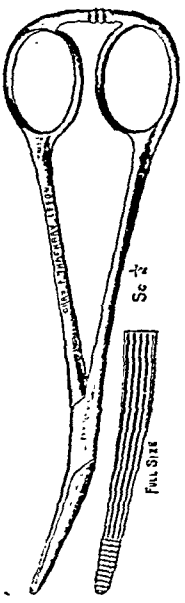
Reprints of a large number of contributions to medical science have been collected, within paper covers, as *Researches Published from the Wards and Laboratories of the London Hospital during 1930*, and are published by Messrs. H. K. Lewis and Co., Ltd., at 7s. 6d. the volume.

[6] *Die Malaria in Russland in ihrer Abhängigkeit von Boden und Klima.* Von Dr. Med. Friedrich Wolter. München: J. F. Lehmann. 1930. (Pp. 56; 1 plate. M.6.)

PREPARATIONS AND APPLIANCES

AN IMPROVED ARTERY FORCEPS

Mr. HAROLD DODD (London, W.) writes: The average artery forceps frequently has the following disadvantages. (1) It is usually straight, and so will not clip "round a corner." (2) The jaws are transversely serrated, and when a little worn will not surely grip a ligature (as when tying a "no touch" knot); also when applied to a width of appendicular mesentery, omentum, broad ligament, or hernial sac, they frequently allow the tissue held by the middle of the jaws to slip out, and time is consumed in correcting the error. (3) The handles lend themselves readily to entangling loops of suture material and other artery forceps then in use, either round the neck of the rings or between the rings. The Glendenning ratchet only partially overcomes this.



I have attempted, in the forceps here illustrated, to overcome these objections. They are of robust, but not heavy, construction; box-jointed, well balanced, with large, thin, easily accessible handle rings, and a stout end-placed ratchet; this latter adds power to the jaws and elasticity or "whip" to the handles, permitting easy release by the left hand. The jaws are medium-pointed and angled. The serrations are transverse at the tips and deeply longitudinal in the remainder of their length; this successfully holds ligatures, omentum, etc. The streamlined handles and Glendenning ratchets are effective in preventing loops of suture and other instruments from becoming entangled. I have used them for two and a half years.

I am much indebted to Messrs. Chas. Thackray of Leeds, who have ably made (in several sizes) the progressive patterns leading up to the model here illustrated.

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CHILDREN AT THE SEASIDE

It may well be the instinct of the islander, penned in cities, that impels him to take advantage of the new facilities of transport to the seaside. In any case, a centrifugal movement of population to the coast during the summer months is an outstanding fact in these days, an exodus which on a single Bank Holiday, by railway alone, is reckoned in millions. The same tale is told by the recent multiplication and growth of seaside resorts. Figures supplied from many of these places show that the extent of popular bathing, especially by children, is unprecedented. The question is a pertinent one: how are these children from the cities affected by the sea climate and by daily immersion in the sea?

In countries with a considerable seaboard medical men are taking an increasing interest in marine health resorts: witness the formation in 1914 of the International Congress of Thalassotherapy and its recent well-attended meetings in Italy, Rumania, and France. In Germany there are associations of medical practitioners on the Baltic and the North Sea, and in Belgium a new international journal, *La Cure Marine*, has appeared in the present year. All these organizations have for their object the precise study of the effect of marine climates and bathing on health at all periods of life. Like some branches of physical medicine, it needs to be reclaimed from irrational empiricism. Dr. Ceresole in Italy, among others, has pointed the way to a much-needed physio-pathological study of thalassotherapy.

It is often difficult, at home, to draw a clear line between normal and defective health, but a holiday at the seaside, with its abrupt change of climate and exposure to cold in bathing, often furnishes the test by which abnormal conditions of health may be detected. It is, to some extent, a therapeutic classification for delicate children. Normal school children and jaded but healthy adults can always, and immediately, find at the sea the complete change of scene, with the tonic influences of light, air, and water, which are all that they need for a summer health holiday. But this is not at all the case with perhaps the equal number of persons in subnormal health who are to be found at the seaside; such are the catarrhal, nervous, and chilly children, who perhaps are never ill and never well, but in whom a low and sensitive condition is a standing menace, and invites a variety of infections. For them the strong prescription of the sea must obviously be applied with care. The use of sea climates and bathing for delicate children presupposes in the first place a selection and differentiation of cases referred to the coast, whether it be to the marine hospital, the convalescent home, or the holiday centre. It also presupposes observation after arrival, and especially the regulation of exercise, rest, degree of exposure to sun, air, or sea, according to the reactions produced; and lastly, proper measurements and records. Children tolerate so much that it may not be recognized that they react in the most varied ways to physical influences. The marine climate, and especially bathing in the open sea, with its low temperature and risk of shock enormously increase the cooling of the body and make a heavy demand upon heat production, metabolism, and nervous energy, and where these powers are defective may evoke unfavourable reactions, which time, patience, and a course of re-education could easily have averted.

It is on account of the frequent and gratuitous ill-effects—chills, catarrhs, gastro-intestinal disturbances, rheumatism, heart symptoms, nervous disturbances, febrile "sur-saturation"—that some seaside practitioners in different countries have expressed grave doubts whether, on the whole, sea-bathing for children is not more injurious than beneficial. They have been painfully impressed by its too prevalent abuses: the unwilling with the willing prematurely hurried into the water, without acclimatization, and perhaps immediately after a meal; the bathing in all weathers, too frequently repeated, and much too prolonged; the endless wading on the shore; and the spectacle of children blue with cold and shivering in the wind from excessive and uncompensated exposure. These questions have been under discussion by the new Section of Hydrology and Climatology at the British Medical Association's Annual Meeting at Eastbourne. It is evident from reports from the British coasts that medical officers of health and practitioners, as well as local authorities, are not unaware of the dangers to which delicate children are exposed. At the more progressive seaside resorts efforts have been recently made to guard against them. Some, like Hastings, have published rules and hints for bathers. Others, like Margate, have set up excellent shelters on the beach and provide hot drinks and hot foot-baths after the bathe, which are a great assistance to favourable reaction. In many places hot sea-baths, as at Eastbourne, have been installed for the use of those for whom cold open-air bathing is injurious; and these, as well as the marine climate, have been reported upon as beneficial for convalescents and others, including rheumatic subjects, who are, temporarily perhaps, in a low and exhausted condition of health. Another provision of special value for delicate children is the sheltered, comparatively shallow, swimming pool of fresh sea water, as at Lowestoft, Hunstanton, and Southport. In sunny weather the warmth and shelter of these pools make the water possible and pleasant for chilly subjects, and an effective means for the gradual re-education to cold.

Tuberculous children are now treated in many countries with striking success on the coast, and the needs of non-tuberculous children are too little considered. In addition to the catarrhal, the nervous, and the rheumatic, very many children are subnormal in nutrition and development, in peripheral circulation, in resistance to cold. These common conditions,

with non-pulmonary tuberculosis, are amenable to physical treatment at the seaside. Dr. Carl Häberlin, whose opening paper we publish this week, gives a summary of his work for non-tuberculous children at Wyk, on the further side of the North Sea, where he directs a hospital of 300 beds, with various convalescent homes. He describes the methods and technique which belong to the marine hospital, especially the tests by which the reactions of children under treatment can be measured, and the results of treatment graphically recorded. In another place he has set forth the organization by which children from Berlin and Hamburg are selected by medical officers of friendly societies, schools, and hospitals, and the Ministry of Health, and distributed to appropriate town clinics, marine hospitals, or homes and holiday colonies, and has also described the system of subsequent after-care.

We are glad to hear that there is some prospect of an effective organization of medical men interested in the problems of thalassotherapy in this country. The 6,000 miles of seashore of the British Islands, with their temperate and invigorating climates, have a great variety of air and shelter, at different seasons, on the North Sea, on the Atlantic, and on the long range of the South Coast. Such a provision of nature is unrivalled in Europe, and suggests large possibilities for the health of a crowded industrial population. It is possible that, especially for the children from towns and cities, something like a national preventive and curative regime might be made available at the seaside, under medical men of special experience and training.

YELLOW FEVER

The incidence of yellow fever during the past four years is the subject of a report by the Health Section of the League of Nations.[1] Study of this document shows that during the period under review there has been a gradual disappearance of the disease in West Africa, or at least of its manifestations among Europeans, while in contrast there has been a marked increase in its prevalence in South America. The reappearance of cases in that part of the world is very disquieting, for as a result of intensive campaigns, directed mainly against the yellow fever mosquito, and generously supported by the Rockefeller Foundation, there were some grounds for believing that the disease had been eradicated from the New World, as two years had elapsed without a single case having been recorded. Unfortunately the disease again broke out in Brazil during 1926, and in 1928 and 1929 there was a serious epidemic in Rio de Janeiro, where no cases had been recorded during the preceding twenty years. The toll of this epidemic in 1929 in the city of Rio was 613 cases with 362 deaths, and doubtless many unrecognized cases were present. During the same year it also reappeared in Colombia. In 1930 the disease abated in Brazil, but during the first quarter of the present year 34 cases have been recorded from thirteen different and widely scattered localities. The lack of connexion between these cases strongly suggests that yellow fever may persist in a country without being revealed by epidemic outbreaks, and this view is supported by the results of immunity tests of the blood of natives in Nigeria, referred to in our leading article of December 20th, 1930. Similar "protection" tests, made by injecting monkeys with serum from the individual to be examined, and then with a lethal dose of yellow fever virus, have been applied in Bahia. Out of 144 persons tested in this manner no fewer than 44 gave complete protection, which suggests that rather more than 30 per cent. of the population must have been previously infected. Such figures, though giving only a rough approximation to the truth, are so enormously in excess of the number of recorded cases that in both West Africa and South America it is evident that the disease must persist in the native population under a more or less latent form, and in such localities the disease can reappear in epidemic form when the proportion of non-immune individuals, or the index of the transmitting mosquito, is sufficiently high.

The recent development of commercial air services has created a new sanitary problem, for *Aedes aegypti* (=*Stegomyia fasciata*) is very widely distributed, and the importation of yellow fever into the East, in many parts of which this mosquito abounds, might have disastrous consequences. It is open to question, however, whether the consequences would be quite so catastrophic as those suggested by recent statements, which have been the subject of exaggerated comments in the lay press, for it is by no means certain that this disease could become established in the East. There is some evidence to show that an attack of dengue confers immunity against yellow fever, for Dinger, Schüffner, Snijders, and Swellengrebel[2] found that when monkeys which had recovered from experimental infection with dengue were inoculated later with a virulent strain of yellow fever no fewer than eight out of eleven were resistant, though the mortality of this strain in normal monkeys exceeded 90 per cent. These results—combined with the fact that, though having the same transmitting host, the two diseases never occur together in the same locality—suggest that there may be other explanations besides climate barriers for the restricted distribution of yellow fever. Nevertheless, no one will question the importance of taking every possible precaution to prevent the introduction of the disease to such localities as East Africa and the Orient. In this connexion the Advisory Council of the League of Nations Eastern Bureau at Singapore in 1930 has emphatically urged stringent measures, more particularly (1) legal decrees forbidding anyone to import or keep yellow fever virus for any purpose whatever in Eastern countries open to contamination; and (2) the interdiction of air traffic between contaminated or suspected

[1] League of Nations Monthly Epidemiological Report. No. 4. Geneva, April 15th, 1931. Yellow Fever from 1927 to the beginning of 1931. Current Reports on the Prevalence of Notifiable Diseases. London, G. Allen and Unwin. (1s. 6d. per number.)

[2] *Ned. Tijdschr. v. Geneesk.*, June 6th, 1931.

areas and the Eastern countries until all the measures recommended by the Office International d'Hygiene Publique have been effectively applied. We may note that the Governments of British India, Malaya, Australia, and the Philippines have already forbidden the introduction of the virus even for experimental purposes. It is justly pointed out that there is sufficient opportunity for the study of yellow fever in the scientific institutes of countries free from *Aedes*, without jeopardizing the population of countries where this mosquito is present.

THE "LANCET" COMMISSION ON NURSING

The impression that the present state of the nursing profession in Great Britain is unsatisfactory is substantially borne out by the second interim report of the *Lancet* commission on nursing,[1] which was published on August 15th. The report is essentially a statement of ascertainable facts relating to the professional standards, training, life, amenities, and remuneration of those engaged in caring for the sick. Later in the year the commission intends to present its final report, in which it will suggest remedies to meet the various problems that have been brought to light as a result of the replies from 686 hospitals to its recent questionary. Any expression of opinion on what these remedies should be is better withheld until the final verdict of the commission is known. In the meanwhile, all those interested in this important question will do well to study in detail this statistical analysis, bearing in mind—may we suggest—that nursing is a profession whose difficulties have increased to such an extent with the advancement of medical science, and which demands such a combination of qualities in those engaged in its practice, that its professional status must be determined and its constitution reorganized if existing disabilities are to be remedied. Is there a shortage of hospital nurses? The figures, taken by themselves, do not indicate any serious deficiency. The 686 hospitals have a nursing staff of nearly 44,000, and the deficiency of staff as compared with full establishment works out at 125 sisters, 403 nurses, and 802 probationers. The hospitals have been divided into four types—namely, those approved as schools for complete training, for partial training, for special training, and those not approved. In the London voluntary hospitals approved as complete training schools the deficiency of staff nurses is 2½ per cent.; it is 5 per cent. in the provincial voluntary hospitals similarly approved, and 13 per cent. in the approved London and provincial municipal hospitals. The probationers are within 1 per cent. of establishment in the London voluntary hospitals, and only in the fever hospitals are they as much as 10 per cent. below. The question was put: "Do your advertisements for sisters, staff nurses, and probationers usually bring sufficient replies from suitable candidates?" The deduction drawn in the report is that, taking the hospitals as a whole, "roughly one-fifth of them fail to secure suitable candidates as sisters, and one-half of them fail to secure the staff nurses and probationers of the standard that they require." Another striking fact is the annual wastage of probationers. In 363 hospitals giving information on the point, half the probationer staff is replaced every year, whereas with a three or four years' course of training the normal replacement would be one-third or one-fourth. This may be because some hospitals recruit women who are never likely to prove efficient nurses: one institution even states that it engages all who apply, and weeds them out afterwards. The statistics collected by the commission do not reveal much with regard to the conditions of service which was not in a general way already known. The age of entrance is seldom below 18; very few London voluntary hospitals take probationers younger than 19. For service in most of the voluntary hospitals education at a secondary school is necessary; the municipal hospitals are more often content with a different [illegible]enth standard of the elementary school. In other [illegible]n voluntary hospitals there are fewer than [illegible] occupied beds to each member of the nursing staff, and the same is true of 96 per cent. of the provincial hospitals. The municipal hospitals work on a definitely higher ratio of beds to staff, and the rates of pay are higher than in the voluntary hospitals. In few of the latter is the pay more than £20 in the first year, with board and lodging, uniform, and laundry provided. Three-fourths of the municipal hospitals pay £30 per annum or more. Staff nurses are paid from £50 to £65, and sisters from £70 to £85 a year, here again with some tendency for municipal hospitals to pay at a rather higher rate. The day's duty in most hospitals is from 12½ to 13¼ hours, and the night duty 11½ to 12¼ hours. Annual leave for the probationer is usually three weeks, the London voluntary hospitals being specially generous in this respect. Half the hospitals allow a weekly half-day holiday, and nearly half allow a whole day, while most hospitals allow at least two hours' off-time daily. But a complaint frequently made is that the nurse does not know her free hours beforehand. Altogether the nurse may be said to have a sixty-hour week, as compared with the forty-hour week of women in other employment. How far this factor—together with the restrictions of institutional life—deters the freedom-loving young woman from taking up a nursing career cannot be estimated. Some argue that the living-in system prejudices recruiting; others that a living-out system would be fatal to the profession. Some complain of long hours and low pay; others say that these would not be objections if prospects after qualification were improved. In the experience of certain hospitals the shortage has disappeared when hours were lowered and pay increased; others found that these changes resulted in no improvement, or only attracted the wrong type of girl. Evidently there is room for some alteration in the training system. It is suggested that preliminary training schools should be instituted where, by a system of co-operation between the hospitals and the education authorities, the girls could receive theoretical instruction for some months before entering the ward, as it is thought that the combination of ward work and theoretical work at the beginning may impose too great a strain. The final report of the Earl of Crawford and Balcarres and his colleagues of the commission, embodying their opinions and recommendations, is expected before the end of the year.

[1] The *Lancet* Commission on Nursing. Second Interim Report. With Statistical Analysis of the Questionnaire issued to Hospitals by the Commission. By A. Bradford Hill, Ph.D., D.Sc. Supplement to the *Lancet*, August 15th, 1931. (6d.)

THE RESULTS OF B.C.G. VACCINATION IN FRANCE

The Institut Pasteur of Paris has published the results of a second inquiry into the effect of prophylactic vaccination with B.C.G. in France.[1] The figures that are now presented refer to 8,075 infants born or brought up in a tuberculous environment and vaccinated with B.C.G. some time between July, 1924, and December 31st, 1929. These infants were kept under observation by dispensaries, which furnished the figures relating to them. The inquiry was made on June 1st, 1931, when every vaccinated child that survived must have been at least 1 year old, and when some children must have been over 6 years old. Of the 8,075 infants, controlled by 114 dispensaries, 89 died before the age of 1 month. Of 2,685 infants aged between 1 month and 1 year, 371 died; of 4,811 children aged from 1 to 4 years, 121 died; and of 579 children vaccinated more than four years previously, none died. These figures, which refer to deaths from all causes, show that the mortality in vaccinated infants aged 1 month to 1 year was 4.6 per cent., and from 1 to 4 years 1.5 per cent. The first figure is compared with the general mortality in non-vaccinated infants (whether brought up in a tuberculous household or not), which is stated to be 6.10 per cent., and with the general mortality in non-vaccinated infants brought up in a tuberculous environment, which is stated to be 16 to 25 per cent. On the basis of these figures it is concluded that the general mortality in vaccinated is less than that in unvaccinated infants. Admitting these figures to be exact, one is faced with their interpretation. It has already been shown by a very careful inquiry in Lancashire by Dr. Lissant Cox[2] that the general mortality in infants aged 0 to 1 year brought up in tuberculous households may be less than that for all infants in the county. The mere demonstration, therefore, of a lower general mortality among the vaccinated than among the unvaccinated group of French infants does not necessarily mean that the vaccine played any part in the determination of this difference. So far as the figure of 16 to 25 per cent. mortality among unvaccinated children brought up in a tuberculous environment is concerned, this is an estimate which, as Professor Greenwood[3] has already pointed out, entirely fails to agree with the carefully collected data of other workers. It is difficult to understand why Professor Calmette now lays so much stress on the lowering of the general, as opposed to the tuberculosis, mortality in vaccinated infants. If his observations are correct there seem to be three possible explanations: (1) the groups of vaccinated and unvaccinated infants are not strictly comparable, the former being favoured in some way so as to run less risk of dying; (2) the vaccine is entirely non-specific, in which case it would surely be wiser to use some form of protein to which less exception could be taken; and (3) a considerable number of diseases which prove fatal to infants during their first year of life are in fact due to tuberculous infection—a possibility which at the moment is unsupported by any real evidence. Unless Professor Calmette can prove the truth of this last explanation, it seems that either the first or the second must be correct, in which case prophylactic vaccination with B.C.G. will cease to be of further interest to scientific medicine. Professor Calmette expresses the hope, which he fears to be a vain one, that he may succeed in convincing his prejudiced antagonists. Not only will he fail in this, but if he can bring forward no stronger evidence than is now presented he will fail to convince even those who are perfectly ready to be convinced, and who are waiting only for facts in place of unsupported or obscure assertions.

[1] *Documents pour servir à l'étude de la vaccination préventive de la tuberculose par le B.C.G. en France.* Deuxième enquête, January to March, 1931. Inst. Pasteur, Paris: Masson et Cie. 1931.
[2] G. Lissant Cox: The Fate of Young Children in Tuberculous Households. Report, Lancashire County Council. 1929.
[3] M. Greenwood: *British Medical Journal*, 1928, i, 793.

IRRADIATED ERGOSTEROL AND PARATHYROIDS

The general result of biochemical research during recent years has been to emphasize the complexity of the conditions regulating calcium metabolism. This has been shown to be influenced chiefly by the calcium-phosphate intake, by the vitamin D supply, and by the parathyroid secretion. The interrelation of these various factors has, however, remained extremely obscure. Extensive researches recently published[1] by Taylor and others of the University of Toronto have thrown considerable light on this elusive problem. In the first place, these workers have shown that the toxic effects produced by excess of irradiated ergosterol are identical with those produced by excess of parathormone. This parallel holds good both for the symptoms and for the pathological changes produced by intoxication with these two products, and also for the details of the changes observed in the blood chemistry. Furthermore, they find a remarkable parallel of the specific variation in susceptibility to these two substances. For example, the curative dose per unit of bodyweight of vitamin D is approximately the same in rats and dogs, but the lethal dose per unit of bodyweight of irradiated ergosterol is about five hundred times greater in the rat than in the dog. Moreover, the dog can easily be killed by excess of parathormone, whereas the resistance of the rat to this hormone is too high to permit determination of the toxic dose. In general, those species which show a high resistance to the toxic action of irradiated ergosterol are tolerant in a corresponding degree to the action of parathormone. The authors conclude that there is probably a direct relation between the action of the two substances, and that the sterol acts by stimulating the parathyroid tissue. They show that there are two possible sources of error in the evidence derived from parathyroidectomy. In the first place, it is very difficult to be certain what proportion of the total parathyroid tissue in the body has been removed by operation, and, in the second place, the remarkable specific differences in susceptibility to irradiated ergosterol and parathormone make it very difficult to correlate the effects observed when they are tested on different species of animals. The authors state that therapeutic doses of these substances tend to favour the passage of calcium from the blood into the bones, and may thus cause a fall in serum calcium, though the increased absorption brings about a positive calcium balance. Toxic doses of these products cause a passage of calcium from the bones into the blood, a rise in blood calcium, and a great increase in the calcium excreted by the kidneys. This difference between the therapeutic and toxic actions of parathormone and irradiated ergosterol has been a

[1] Taylor, Weld, Bramon, and Kay: *Canadian Med. Assoc. Journ.*, 1931, xxiv, 763; xxv, 20.

fruitful source of confusion in the past. The general result of these researches is to give a much clearer and simpler picture of the relation between the factors determining calcium metabolism. From the point of view of practical therapeutics, the most important point in the paper is the demonstration of the remarkable variations shown by different species of animals in their resistance to excess of irradiated ergosterol. The fact that excess of this drug could produce toxic effects naturally caused alarm when it was first discovered, but this alarm was relieved when it was shown that the toxic dose was many thousand times greater than the curative dose. This last result was, however, obtained on rats, and Taylor and his co-workers have shown that it is not true in the case of dogs. They found that death of adult dogs followed the administration of irradiated ergosterol when the amount given had a greater potency than twenty times that of the maximum therapeutic dose. Moreover, puppies showed a greater susceptibility to overdosage than did full-grown animals. The authors point out that since the dog and the human are, as contrasted with other species, highly susceptible to parathormone, it is quite likely that the human subject may share with the dog a high susceptibility to irradiated ergosterol. They cite clinical observations as direct evidence for this view. It is scarcely necessary to point out that this conclusion is of grave importance, and it is to be hoped that further investigations will be made on this subject.

PATERSON OF HEBRON

Dr. Ewing's sympathetic biography of his remarkable friend, *Paterson of Hebron*,[1] is one of the best accounts of pioneer medical missionary service that has appeared in recent years. The main facts of Paterson's life are fairly well known. He was born in Madras with a true sense of the East in his blood, and his strong emotional nature carried him naturally into the tradition of his father's work. Educated at Edinburgh, he showed his quality first in Bethnal Green, then in Aden, having rapidly assimilated at Cairo some learning of Eastern life and languages. In 1893 he accepted the post of medical missionary at Hebron, the isolated and dangerous hill city of Abraham's sepulchre, one of the four sacred towns of Islam. There Paterson established a dispensary, and for thirty years laboured with unremitting zeal for the welfare of a large and widely scattered population. Circumstances at first could hardly have been more unfavourable ; but the success with which he raised his hospital for the sick won the confidence and admiration of Jew and Bedouin alike. During the war Paterson served with Scottish units and in the Egyptian Expeditionary Force, but on the liberation of Palestine he returned immediately to Hebron, where he was appointed principal medical officer of the district. With incessant energy, but with failing funds, he worked at the restoration of his hospital, which in his absence had been rifled by the Turks. It seemed a unique opportunity for the Church of Scotland, but its advisory committee declined to continue its support. We cannot comment here on the judgement of the visiting commission, sent out in 1920, that the work at Hebron had not sufficient missionary value, but it is a curious fact that none of its members appear to have had any medical qualification for investigating the conditions of a medical mission. In spite of his Church's criticism, however, Paterson's record will endure, not only as a historical document, but as a testimony to the living faith of a chivalrous physician.

[1] *Paterson of Hebron : "The Hakim"* By W Ewing, M C., D D. With foreword by the Very Rev Adam Philip, D D. London: J. Clarke and Co , Ltd. (8s 6d net)

HOW TO PREPARE A PEDIGREE

We commend to the attention of our readers a little booklet published by the Eugenics Society on how to prepare a family pedigree. A brief survey of the literature on any inherited condition will reveal the fact that in the preparation of pedigrees unorthodox and obscure symbolism is often employed, that errors are probably present, and that, above all, vital information is omitted. It is usually the case that any attempt to define the mode of inheritance of a condition must depend upon the simultaneous analysis of a large number of records accumulated by a number of different investigators. Faulty and incomplete records make this task a difficult one, and conclusions may be dubious instead of being clear-cut, or they may even be erroneous. Those who prepare pedigrees should particularly notice that their work will certainly be utilized in this way by others, and that often their results will be used many years after they have been published. The necessity for very full information, therefore, may not be particularly obvious at the time of publication of a paper, but such information may become of great value at a later date in the light of subsequent discoveries. Pedigrees published a century ago may be as useful, if they are complete, as those published during the present year. It is unfortunately the case that in the matter of faulty pedigrees medical writers are much to blame. The Eugenics Society has performed a good service in producing this pamphlet. Detailed directions are given in a simple and compact form for preparing a chart, with the use of a symbolism that for the most part is universally accepted. The booklet contains, in addition, a sheet of squared paper on which the pedigree is recorded and a number of blank sheets for supplementary notes. It is intended that the medical man or geneticist should hand the booklets to intelligent patients, who would be well able to prepare the pedigrees themselves after reading the instructions. We think it possible that many English students of the subject would prefer to use the conventional male and female signs instead of squares and circles, but the point is more a matter of taste than anything else, and the benefits of uniformity are so great that this small sacrifice might well be made. It is also a little doubtful whether it is necessary to include special symbols for carriers of a condition. In contradistinction to the rest of the information symbolized, this is a matter of inference and not a simple record of observed fact. These are small points, however, and it is to be hoped that the efforts of the Eugenics Society will be crowned with success, and that the result will be a general improvement in the standard of published pedigrees.

We regret to announce the death of Group Captain Martin Flack on August 16th. We hope to publish an obituary notice in next week's *Journal*.

ENDOCRINE PHYSIOLOGY

SIR E SHARPEY SCHAFER'S PURSER LECTURE

The following is an abstract of the John Miller Purser Lecture, delivered in Trinity College, Dublin on June 26th, by Sir Edward Sharpey Schafer, Sc D, F R S, professor of physiology in the University of Edinburgh

After briefly alluding to the career of the eminent physiologist in whose honour the lecture was instituted, the lecturer proceeded to state that physiology must be looked upon as having begun with Harvey's discovery of the circulation of the blood The recognition of the regulation of bodily functions by the nervous system constituted the next advance, and occurred about a hundred years ago A new physiology, which did not supersede the old, but which assimilated and was incorporated with it had sprung up within the last fifty years The old physiology had been based on nervous regulation, while the new physiology was based on chemical regulation We had learned to recognize that the functions of the organs were not governed solely by nerves, but were influenced by chemical substances in the blood, the nerves and nerve centres being themselves subject to chemical influences On the other hand, chemical regulation might itself be influenced by the nervous system, so that the reaction was mutual The action of these chemical substances was often spoken of as "humoral," because they were conveyed in the blood or lymph Some of them, however, were actually produced *in situ* in the tissues upon which they acted, and in such cases their action, though chemical, would be incorrectly described as humoral

The first indication that the regulation of function might be effected by chemical rather than by nervous agencies was pointed out by Berthold in 1849 He found that the implantation of testicular grafts into castrated cocks would restore the appearance of the birds to that of normal cocks, and concluded that the testicles must pass some substance into the blood which reacted on the organism in general Later, in 1883 the Swiss surgeons J L and A Reverdin and Thomas Kocher had described a cachexia, which Kocher termed "cachexia strumipriva," following extirpation of the thyroid gland They compared it with the conditions which accompany atrophy of the gland in children or its degeneration in the adult—namely, cretinism and myxoedema That myxoedema was due to the absence of an internal secretion of the thyroid was shown by the fact that the symptoms were removed by the administration of thyroid extract, or of thyroxine, the chief ingredient, now synthetically prepared

In 1855, before these facts relating to the thyroid had been discovered, Thomas Addison had described the disease which bears his name, and had associated the symptoms with destruction of the suprarenal capsules Following the publication of Addison's memoir Brown Sequard and others had carried out experiments showing that complete removal of both suprarenals in animals was invariably fatal, although the pigmentation characteristic of Addison's disease in man was never observed in animals Nearly forty years more elapsed before it was discovered that a physiologically active material was produced in the medulla of the suprarenal capsules and they were recognized as organs of internal secretion Adrenaline was the first of the active principles of the internal secretions to be isolated and synthetized

Thyroxine and adrenaline might be taken as yielding examples of different actions produced by internal secretions Adrenaline produced immediate effects on heart, blood vessels, liver, salivary glands, intestine, pupil, and spleen but the effects soon passed off owing to the destruction of the secretion either in the tissues or the blood, thyroxine, on the other hand, acted slowly and gradually, influencing nutrition, stimulating cell multiplication and producing characteristic effects on the general metabolism The two substances also differed in their mode of secretion Adrenaline was passed from the cells of the suprarenal medulla directly into the blood The blood in the medulla was not contained, as in most organs, in capillary vessels from which the plasma or lymph escaped to bathe the tissues, but flowed in sinus like channels between the cells, so that it was in direct contact with the cells without the intervention of lymph In the thyroid the blood was conducted in ordinary capillaries, and the secretion passed from the vesicles into the lymph of the interstitial spaces, and thence into the efferent lymphatics and eventually into the blood by the great lymphatic trunks

On consideration of the organs and parts of organs credited with the production of an internal secretion, it was found that those containing sinusoids, into the blood of which the secretion was directly passed, were the suprarenal medulla, the liver, the islets of Langerhans of the pancreas, the pars anterior of the pituitary body, perhaps also the pars tuberalis, the parathyroids, the corpora lutea, and the placenta Those which possessed ordinary capillaries and passed their secretions into the lymph were the thyroid, the suprarenal cortex, the pars intermedia, and the pars nervosa of the pituitary, and the gonads The distinction was that in one case the secretion was passed directly into the blood and produced its effects immediately, and in the other its passage into the blood was slower and its effects were produced more gradually The inference might be drawn that in the case of secretion directly into the blood the supply was varying momentarily, according to the immediate calls of the organism, and that when the secretion reached the blood through the lymph its purpose was concerned with gradual changes affecting growth and nutrition

The internal secretions of some endocrine organs were independent of the nervous system, and influenced directly by constituents of the blood With others, secretion was governed by the nervous system It could be shown that the secretion of adrenaline by the suprarenal medulla was dependent on the integrity of the nerves passing to the organ Tournade had shown that the raising or lowering of the blood pressure in the aorta and the carotid sinus affected not only the vasomotor centre, but also the adrenaline secreting centre in the medulla, and this, by increasing or diminishing the amount of adrenaline poured into the blood, assisted the regulating action of the vasomotor centre When first the presence of so powerful a stimulant of vascular musculature was shown to be yielded by the suprarenal medulla it was conjectured that the purpose of the secretion must be to aid the nervous system in maintaining the blood pressure and the tone of the arteries. But attempts to demonstrate that there was a normal or physiological secretion of adrenaline into the blood had been unsuccessful until the experiments of Tournade, working for the most part with Chabrol, had set it beyond dispute

In these experiments two dogs were anaesthetized with chloralose from one (A) both suprarenals were removed, and from the other (B) one suprarenal usually, the right The whole of the blood coming from the remaining suprarenal of (B) was allowed to pass into (A) by anastomosing the suprarenal lumbar vein of (B) with the external jugular vein of (A), so that (A) received all the adrenaline secreted by (B) Anything affecting the adrenaline secretion of (B) would therefore show itself in the increase or diminution of blood pressure in (A) The following results had been obtained by the use of this method

1 If the venous connexion between the two dogs was interrupted by pinching no change occurred in (B) but the blood

pressure in (A) fell. On releasing the vessel, adrenaline effects were again immediately apparent in (A).

2. If the left splanchnic nerve of (B) was cut, the blood pressure fell in both dogs, in (B) owing to paralysis of the vasomotor nerves to the abdominal viscera, in (A) in consequence of the failure of the suprarenal of (B) to secrete adrenaline. On stimulation of the cut end of the splanchnic the blood pressure in (B) rose owing to contraction of the abdominal vessels; and after a short delay, due to the time taken by the adrenaline secreted in (B) to reach the circulation of (A), the blood pressure also rose in that animal.

3. If the vasomotor centre in the bulb of (B) was directly stimulated, there was an immediate rise in the blood pressure of (B), due to general vascular contraction, and delayed rise in the blood pressure of (A), due to increase of adrenaline. If the fourth ventricle of (B) was painted with cocaine, the activity of the adrenaline centre became depressed, less adrenaline was secreted by (B), and the blood pressure of (A) fell.

4. If the blood pressure of (B) was lowered—by the intravenous injection of duodenal extract or by some other method—the adrenaline centre became reflexly stimulated, and more adrenaline was passed into (A), so that the blood pressure of (A) rose. Conversely, any agency raising the blood pressure in (B), such as stimulation of a sensory nerve, was followed by a diminution in the secretion of adrenaline and a fall in the blood pressure of (A).

The experiments of Tournade on this subject were numerous, and proved conclusively that the secretion of adrenaline was as intimately dependent upon the nervous system as was the secretion of saliva.

Following the discoveries relating to the thyroid and suprarenal medulla had come the observation by Bayliss and Starling in 1907 that an extract of duodenal mucosa contains a substance which, when injected into the blood, stimulates the secretion of pancreatic juice. To this substance they gave the name of "secretin," and spoke of it as a "chemical messenger"; later, assuming that all such chemical messengers possess a stimulating function, Starling suggested for them the general term "hormone." More recent writers had extended this term to apply not only to substances which excite, but to substances which depress activity. But the resemblance between the action of internal secretions and that of drugs was very close, and should be incorporated in the nomenclature. The term "hormone" was derived from ὁρμάω, I excite; Sir Edward said that in 1913 he had suggested that substances having an inhibitory effect might be distinguished as "chalones" from χαλάω, I restrain. It was not unlikely that for every hormone there was an antagonistic chalone.

It was further desirable to have a designation which would include both hormones and chalones, and the most obvious quality which they had in common was their resemblance to drugs. A short expression for "drug-like" would be "acoid," from ἄκος, a drug, and to this might be added the prefix αὐτός, indicating that these substances were produced by the body itself. He therefore had suggested the term "autacoid" to denote all specific principles of internal secretions, whether hormones or chalones. Although in most cases an autacoid was either exclusively hormonic or chalonic, there were certain exceptions, of which adrenaline was one. Adrenaline was hormonic in its action on the circulatory system, but chalonic in its action on the muscular coat of the alimentary canal.

Externally secreting glands might be classed under three heads: first, those which are exclusively under the influence of nerves, such as the salivary glands; secondly, those which are entirely under the influence of chemical substances in the blood, such as the mammary glands and kidneys; and thirdly, those which are influenced both by chemical substances and by nerves, such as the pancreas and gastric glands. The same distinctions appeared to obtain with the endocrine glands. Many organs were known to possess the double function of producing external secretions and of secreting autacoids internally. The gonads and the pancreas furnished examples of this double function, and further examples had been recognized in the formation of secretin in the duodenum, the production in the liver of an autacoid which stimulated the haematopoietic organs, and similar duality of function in the stomach and kidneys.

The internally secreting organs frequently influenced one another. Removal of the thyroid, for example, caused enlargement of the whole pituitary; destruction of the pituitary in the young animal arrested the development of the thyroid. The thyroid by its secretion stimulated the suprarenal medulla, and the resulting increased secretion of adrenaline provoked the hepatic and other cells to discharge their glycogen into the blood as glucose. The hyperglycaemia produced stimulated the islet tissue of the pancreas to an increased secretion of insulin. Another striking example of the interaction of these glands was furnished by the influence of the pars anterior of the pituitary on the sex organs. For this purpose the pars anterior produced two hormones. One stimulated the ovaries and caused maturation of the Graafian follicles; these in their turn produced an autacoid, oestrin, or folliculin, which initiated changes in the uterus for reception of the ovum if fertilized. The second hormone produced by the anterior pituitary stimulated the production, in the corpora lutea, of another autacoid (lutein), which promoted further uterine changes for the fixation of the ovum. In addition, the corpora lutea yielded a chalone which prevented the action of folliculin and the further discharge of ova. These autacoids of the pituitary and the ovary could be detected in the blood, and were secreted in the urine. A few drops of the urine of a pregnant woman injected under the skin of an immature mouse caused the premature appearance of oestrus, and constituted the basis of the Aschheim-Zondek test for pregnancy. In addition to the use of thyroxine in myxoedema, of insulin in diabetes, and of liver or stomach extract in pernicious anaemia, this test furnished another striking example of the application of the new physiology to clinical medicine.

Another class of autacoids were not formed in organs of internal secretion and passed into the blood, but were produced in the tissue which they were designed to influence. These might be termed "tissue-autacoids" to distinguish them from circulating autacoids. Little was known of their nature or mode of activity, apart from information derived from experiments on the heart. In 1921 Loewi found that Ringer's solution which had been used for perfusing a frog's heart inhibited by the vagus would produce an inhibitory effect if used to perfuse the heart of a second frog. Evidently impulses descending the vagus had caused the formation of a "vagomimetic" autacoid. Similarly, when the sympathetic fibres to the heart were stimulated a sympatho-mimetic autacoid was produced, which seemed to be identical with adrenaline; being a stimulating autacoid it was a hormone, and antagonistic to the vagal chalone. It was possibly owing to the local production of these autacoids in the heart that the pressor and depressor effects of the sympathetic and vagal nerves were actually due, and their formation probably explained the continuance of vagal and sympathetic action which was always observed for an appreciable time after stimulation of the nerves was discontinued.

These observations on the heart recalled the work, in 1913, of Demoor, who found that, in the dog, extracts made from a submaxillary gland which had been caused to secrete actively by stimulation of the chorda tympani would, if injected into a second dog, produce active secretion from the submaxillary gland. The active substance

in this case might be saliva itself, for Guimaris, in 1930, had found that if saliva, or an alcohol extract of saliva, were injected into the artery supplying the sub maxillary gland of the dog, free secretion was provoked, even if the chorda tympani had been cut and allowed to degenerate Other observers had found that a substance resembling adrenaline in action was formed in plain muscular tissue as a result of stimulation of the sympathetic, and that extracts of kidney produced diuresis if injected into the blood Metabolic autacoids or metabolites might have a local action affecting either the tissues or their blood vessels

Another class of autacoids, not produced by excitation of nerves, but inherent in the tissue or appearing spontaneously in it, had been studied chiefly in the heart The tendency to automatic rhythm of a heart removed from the body had long been thought to be due to nerves and ganglia within its substance But it had been shown that spontaneous contractions of separated portions of the heart, whether derived from auricles or ventricles, depended on the presence of nodal tissue ; that was to say, the muscular tissue forming the nodes, the auriculo ventricular bundle, and the network of Purkinje Demoor and Rijlant found that if the left auricle, which was devoid of nodal tissue, was completely severed from the right, it soon ceased to beat spontaneously , it could be made to resume its spontaneous contractions, however, by the addition of an extract of nodal tissue from the heart of another animal Again, Rijlant had observed that excision of the sinus node caused the right auricle to beat with a slower rhythm , but if the node was reimplanted the original rate of contraction was restored, although the continuity of the nodal fibres with the rest of the heart remained severed, Demoor considered that the nodal tissue produced a substance which diffused into the cardiac tissue and provoked contraction, while Rijlant suggested that the reimplanted node set up electrical changes which started the contractions of the neighbouring muscle at the same rate as those of the node

Little was known about the elimination or deactivation of autacoids In some cases the autacoid might form an inactive compound with some product of metabolism, and this probably occurred with adrenaline , others, including those secreted by the anterior pituitary, the ovary, and the placenta, were eliminated by the urine , the action of others might be arrested by the secretion of an antagonistic autacoid

Recapitulation might serve to emphasize the part played by autacoids in the animal economy The pituitary produced in its anterior lobe a hormone stimulating growth and a chalone restraining growth , other autacoids secreted here acted on the thyroid, the ovary, and the testis, and influenced metabolism Autacoids from the posterior lobe stimulated the heart, blood vessels, uterus, alimentary tract, the secretion of urine and milk, the action of insulin, and expansion of melanophores Possibly the pars tuberalis produced a special autacoid, the purpose of which was to regulate hydration The thyroid produced thyroxine, and also an autacoid which inhibited the musculature of the blood vessels Another thyroid autacoid excited contraction of intestinal muscle, while others influenced the gonads, the pituitary, and the suprarenals The parathyroids secreted the parathymone of Collip, which regulated the calcium content of the blood The islet tissue of the pancreas produced insulin, and the pancreas also elaborated a chalone which caused dilatation of blood vessels The ovaries secreted folliculin and lutein, and the gonads in both sexes formed autacoids which were responsible for the secondary sex characters, and inhibited those of the opposite sex The placenta yielded at least three autacoids similar to some formed in the anterior pituitary and the ovary Autacoids produced in the liver, kidney, and stomach stimulated the haematopoietic organs, and others formed in the mucosa of the stomach and duodenum influenced the secretion of the pancreas, liver, and gastric glands The suprarenal medulla was responsible for the production of adrenaline, while the cortex formed one autacoid acting on the respiratory system and another which appeared to counteract the otherwise fatal results of complete decapsulation. Lastly, there were the tissue autacoids, of which the cardiac autacoids were examples , three of these were known, one being inherent in cardiac muscle and responsible for its automaticity, the other two being formed under the influence of the vagus and the sympathetic respectively

In conclusion, Sir Edward Sharpey Schafer emphasized that the doctrine of internal secretion formed a new departure, since it necessitated the explanation of physiological phenomena in terms of chemical as well as of nervous regulation

REHOUSING IN LONDON

Within a radius of fifteen miles of Charing Cross there have been erected since the war 294,255 new houses and flats, sufficient accommodation to rehouse the entire population of Glasgow, as well as of the whole of Dundee Two thirds of these new London dwellings have been put up as a result of private enterprise , the remainder have been provided by local authorities, and, to a small extent, by housing trusts and public utility societies. The London County Council has contributed 41,000 to the number, half of which are comprised in its great estate at Becontree, and 46,000 have been provided by the City Corporation, the metropolitan borough councils, and the outer London local authorities Last year the total number of houses and flats built was 50,183, easily the largest number in any year since the war, or, indeed, so far as records go, in any year before the war Four out of five of these, however, were provided by private enterprise , the number provided by the local authorities, which has been falling for some years, was the lowest since 1925 These figures relate to Greater London, which, according to the recent Census, has a population of 8,202,818 In the County of London, with a population of 4,396,821, the housing activity has naturally been much less marked Of approximately 300,000 houses built during the last eleven years only some 50,000 are situated within the confines of the county—an indication of the way in which Londoners have spread their dormitories beyond the 117 square miles governed from the County Hall To what extent has a decade of energetic housing activity relieved the evil of overcrowding? The preliminary Census report shows that the population of the County of London has decreased since 1921 by 87,702 but as the 1921 Census was taken in June, when many Londoners are absent on holiday, and that of 1931 was taken in April, it is estimated that the real decrease is larger, being as much as 127 000 The net increase in the number of houses during the same period has been about 41,000, which would provide accommodation, at the perhaps too liberal estimate of 4½ persons to a house, for 185,000 persons The housing accommodation in the county shows an improvement of 7 per cent compared with that which existed in 1921 In Greater London the Census reveals an increase of population of 722,617 though it is believed that the real increase is only 672,000 if allowance is again made for the season at which the two censuses were taken On the estimate of a net increase of 280,000 houses, accommodation has been

provided for about 1,260,000 persons, so that here the improvement in the relationship between population and housing, as compared with 1921, is about 8 per cent. While the amelioration which these figures represent is a great achievement, there are two qualifying factors of importance. The first is that although there has been a large increase in population in Greater London, there has been a much larger ratio of increase in the number of separate families. Families are smaller than formerly, but there are more of them, and this explains why it is that many cases of serious overcrowding, where tenants are unable to obtain decent accommodation, are still being brought to the attention of local authorities. The second factor is that the totals of new houses quoted above, impressive as they are—extending to about 350 compact miles of new streets—relate to all classes of houses, not to working-class houses only. Considerably less than half the total of new houses are occupied by artisans. Of course, the provision of other types of dwellings such as those purchasable leasehold for about £1,000, of which there is a large number in the suburbs, must ultimately ease the pressure on working-class accommodation. But the fact remains that two out of three houses have been provided by private enterprise, and almost invariably for sale, not rental, catering consequently only for about one-quarter of the population. This explains why it is that in spite of rows of new houses spreading like scarlet-runners along the highways and byways of Middlesex, Essex, Kent, and Surrey, the pressure on working-class accommodation in London continues.

MEDICAL CONGRESSES, 1931

The following congresses and conferences on medical and allied subjects have been announced for the remainder of the year. Particulars are given below in the following order: date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

August 31–September 6. — International Congress of Neurology. Berne.

September 2–19.—International Illumination Congress. Great Britain. Colonel C. H. Silvester Evans, c.o. The Illuminating Engineering Society, 32, Victoria Street, S.W.1.

September 12–17.—International Congress of Tropical Medicine. Amsterdam.

September 13–19.—International Congress of Balneology. Carlsbad. Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

September 14–16.—German Orthopaedic Society. Berlin. Professor Wollenberg, Prager Platz 5, Berlin-Wilmersdorf.

September 14–17.—American Public Health Association. Montreal. Secretary of Association, 450, Seventh Avenue, New York.

September 14–19.—Medical Association of South Africa (British Medical Association). Johannesburg. Dr. B. G. Melle, Medical School, Hospital Street, Johannesburg.

September 21.—Royal Institution (Faraday Centenary). London. Secretary of Royal Institution, 21, Albemarle Street, W.1.

September 21–23.—German Pharmaceutical Society. Vienna.

September 21–23.—German Association for Occupational Hygiene. Nuremburg. Secretary of Association, Platz der Republik, 49, Frankfort.

September 23–25.—Society for the Study of Metabolism and Diseases of Digestion. Vienna. Professor von den Velden, Bambergerstrasse 49, Berlin, W.30.

September 23–30.—British Association's Centenary Meeting. London. Secretary of Association, Burlington House, Piccadilly, W.1.

September.—Pan-Russian Congress of Gynaecologists and Obstetricians. Moscow.

October 1–3.—German Society for Urology. Vienna.

October 14–18.—International Congress of Comparative Pathology. Paris. Dr. Grollet, 7, Rue Gustave Nadaud, Paris, XXVIe.

England and Wales

The Royal Veterinary College

In view of the fact that the Popular Lecture at the Annual Meeting at Eastbourne was delivered by Professor F. T. G. Hobday, principal and dean of the Royal Veterinary College, the annual report for 1930 of this institution, which was published in the *Journal of the Royal Agricultural Society of England* (vol. xci) has special interest. The satisfactory position in England last year as regards foot-and-mouth disease is illustrated by a comparative table showing its monthly incidence in France, Germany, Holland, and Belgium. A total of eight outbreaks in England in 1930 contrasts sharply with over 36,000 in Germany and 7,000 in France. Professor Hobday calls attention to the gratifying result of the British method of stamping out this disease by using the special immunizing serum to protect contact animals. Progress in carrying out the provisions of the Tuberculosis Order of 1925 is considered by Professor Hobday to be less satisfactory, since on many occasions the notified tuberculous animals have been in contact with healthy animals long enough to have spread the disease. Much more remains to be done, apparently, in connexion with the separation of suspected cases, and in compensating farmers and dairymen for the extra expense and trouble incurred. Professor Hobday adds that the present is not a propitious time to increase the burdens of agriculturists and stock owners. Experimental work with two different kinds of preventive serums is being conducted in Norfolk and Cambridge. Outbreaks of sheep scab diminished markedly as compared with the five previous years, and for this improvement the action taken by the Veterinary Committee of the Royal Agricultural Society in 1929 can legitimately claim credit, especially for its press propaganda. A few isolated cases of anthrax in man were reported during the year, but in cattle the incidence was slightly less than in 1929. The chief work of the Research Institute of the College at present is the investigation of Jöhne's disease and of mastitis.

After-care for Voluntary or Temporary Patients

The Mental After-Care Association, which has co-operated with the London County Council by receiving in its twenty-three cottage homes patients under reception orders who are absent on trial from mental hospitals, and by providing convalescent treatment following discharge, has informed the Council that it is prepared to extend these facilities for those who have been voluntary or temporary patients. The London County Council believes that this is very desirable, and has agreed to pay in respect of such patients 30s. a head a week, with a capitation fee of 5s. This weekly charge covers inspection by a local medical practitioner on the arrival and departure of the patient, but anything in the nature of medical treatment while the patient is in the home is subject to an additional charge.

Mental Observation Wards in London County Hospitals

At nineteen of the general hospitals and institutions now under the control of the London County Council there are mental observation wards. The total bed accommodation is 270 for males and 285 for females, and the number of patients passing through the wards in the most recent year totalled 7,224. The Central *Public Health* Committee now states that small wards, such as some of those which were instituted by the boards of guardians, are not satisfactory, and that the segregation of mental patients into larger groups offers better opportunities for treatment, as well as facilitates nursing and general administration.

As opportunity offers, therefore, patients are to be withdrawn from these unsatisfactory units and transferred to more suitable accommodation Proposals have also been formulated for the establishment of a regular consultative service by members of the medical staff of mental hospitals who are fitted to act as consultants in this respect It is proposed that such a service shall cover the observation wards at ten of the general hospitals and public assistance institutions The consultants chosen will act in this capacity without detriment to their duties in the mental hospitals service, but will receive further remuneration —at the rate of two guineas a session for one session weekly—for their consultative services

Ireland

Medical Benefits in Belfast Workhouse

As the result of a conference between representatives of the Ministry of Labour, the guardians, and medical officers, in regard to the recognition of two visiting medical officers as panel doctors for the treatment of the resident insured staff and the issue of certificates on behalf of insured patients, the guardians decided to recommend to the board that they should take no responsibility for certification, and suggested that the Joint Finance and Medical Charities Committees, which were dealing with the question under the medical benefits scheme, should be requested to consider the question of the working arrangements, so as to facilitate treatment of the officers concerned In moving the adoption of the report of the conference, Mr John Wilson, J P , said it would be unfortunate if they had to bring in outside medical officers The Government had agreed that two medical men should be appointed, and in October last year the Ministry wrote approving the agreement The question of certification had arisen, and it had been ascertained that the medical staff had been paid for their services, although no provision had been made under the Medical Benefits Act, with the result that the doctors applied to the board for an increase in salary The guardians then ascertained for the first time that the resident medical officers were being paid substantial sums for certification by the Ministry The representatives of the Ministry, Mr Wilson pointed out, had simply said that under the Act which in England gave power from the first to embody medical benefits no provision was made for persons receiving treatment in such institutions as the Belfast workhouse, but that some special arrangement had been made in Northern Ireland by which the certification was paid for The guardians had no money to pay for certification, and the Ministry said that unless the guardians gave certification for nothing they would receive nothing The chairman said that the appointment of the guardians' own medical officers was the only satisfactory and logical way of dealing with the matter Apparently that had been approved by the Government in 1930 and now, almost nine months later, the Government had done nothing

Public Health in County Galway

In his annual report for 1930 Dr B O Beirne, county medical officer of health and chief school medical officer for County Galway, states that the county comprises an area of 1 596 505 acres, and that the population at the Census of 1926 was 169,366 Under the county scheme the institutions provided are a county hospital at Galway, a county home at Loughrea, and a mothers and children's home at Tuam In addition, there are four private homes in the town of Galway The county hospital at Galway is divided into three departments a medical and surgical hospital (220 beds), a fever hospital (60 beds), and a maternity hospital (18 beds), all of which have modern equipment The Woodlands Sanatorium, standing in its own grounds of seventeen acres, is at Renmore, about a mile from the town, and affords accommodation for forty nine patients Since May, when the new system was inaugurated, there have been 200 notifications by local medical officers of infectious diseases, in which typhus, typhoid, and diphtheria form a serious part According to the report, public opinion in the county is now alive to the importance of a pure water supply in the rural as well as in the urban areas The Board of Health has done much in this direction, and if the work progresses as it has during the past nine months a wholesome water supply should soon be available The Board of Health has also given much assistance in improving existing sewerage works and in providing new systems throughout the county In Galway City houses are being built on all sides and a scheme for the erection of houses in the Claddagh area for the working classes is in progress

Down County Mental Hospital

In the sixty first annual report of the Down County Mental Hospital, Downpatrick, Dr M J Nolan, resident medical superintendent, states that during 1930 65 males and 70 females were admitted, 25 males and 33 females were discharged, and 32 males and 23 females died, with the result that on December 31st there were 408 men and 388 women in the institution At no time in the history of the hospital had the recreation of the patients received so much attention Indoor and outdoor amusements such as concerts, dances, hockey and football matches garden parties, and cinemas, averaged almost three weekly Particular attention was given also to individual tastes and hobbies so that, apart from the associated entertainments, patients were encouraged to divert themselves in the ways they desired Some chose music and had their own instruments, others handicrafts, such as fretwork and painting while others took up games The radio was much appreciated, especially by those patients who were engaged in farming during the day, and then listened in to their own set in the evening

Correspondence

LORD KNUTSFORD REMEMBRANCE FUND

SIR,—I hope that the committee of the London Hospital will not be accused of making Lord Knutsford's death the pretext of an appeal for funds

A letter has been received at the hospital enclosing a donation of £1,000, and urging that a fund in remembrance should be started This is but one instance of a very general desire Very many other gifts for the same purpose have already been received, as have a number of letters asking for an opportunity to contribute We know too that collections by groups of workers are being made spontaneously The committee has therefore decided to open a ' Lord Knutsford Remembrance Fund

There were, at the moment of his death certain very necessary additions and improvements on which he had set his heart and to which he had contributed generously but which he did not live to see completed It is proposed to devote gifts sent in remembrance to the completion of these objectives, which include a new massage and electrical department new stores additional maternity beds and maintenance and a hostel for students

Will all who wish to honour the name and work of a very great man please send their contributions to the Treasurer, London Hospital, E 1?—I am, etc ,

EDWARD J MANN,

London Hospital Aug 17th Dean

The Public Medical Journal

SOME RECENT POLICIES REGARDING PARTICULAR DISEASES

Sir,—Had the term "psittacosis" not been applied to the more or less peculiar type of influenza which occurred in the winter 1929–30 there would have been no necessity to impose prohibition of importation. As in my opinion, which is stated below, the absence of psittacosis is in no way due to this measure, the difficulty of choosing the safe moment to let parrots in again, referred to by Sir George Buchanan, does not arise. The wave of influenza which occurred in the winter 1929–30 was due to the activity of the *B. faecalis alkaligenes*, and it was peculiar in so far as it happened to be the last of a cycle of some years. Whether its being the last was due to the ultra-microscopic phase of this bacillus causing the demise of the parent micro-organism (lysogenic action) or to its being the end-stage of a life-cycle requiring a period of quiescence to develop into the bacillary form is uncertain. Anyhow, the *B. faecalis alkaligenes* suddenly vanished from the excreta of man and animals in June, 1930, and it has been an absentee since. Its place was taken by the non-motile and motile forms of the bacillus of epidemic jaundice; and the three waves of influenza occurring since, in the summer 1930, the winter 1930–31, and the summer 1931, have been caused by the activity of these micro-organisms, aided by that of *B. acidi lactici*, *B. lactis aerogenes*, and *B. friedlander*.

Cases of influenza occurring before and since the winter 1929–30 have been encountered to which the term psittacosis could legitimately be applied. When the various micro-organisms responsible for influenza acquire pathogenic activity they do so in animals as well as in man. Climate seems to be the chief stimulus, and it is aided by faulty feeding in man and captivity in animals. Infection is not conveyed from animals to man or vice versa in the way universally considered. Epidemics and epizootics arise through the dissemination of activity, and they can be prevented and checked by the employment of the same activity. No groups of man and no particular animal are to blame, hence it is useless and needless to segregate the infected, to prohibit importation, or to slaughter the victims. If the interpretation of my results is correct there will be no psittacosis for many years. The wave of influenza occurring in the winter 1931–32 will be mild but a little more severe than that of the previous winter, and epidemics will occur in it which will be labelled "paratyphoid." But they will not be caused either by contaminated milk or water; they will arise as a natural sequence of events.—I am, etc.,

J. E. R. McDonagh.

London, W.1, Aug. 14th.

CONVULSIONS DURING ETHER ANAESTHESIA

Sir,—I have read the interesting communication of Dr. W. M. Priest in the *Journal* of August 8th, on the subject of ether convulsions.

In the last five years I have had the good or ill fortune to encounter the condition five times. On two occasions the complete picture of generalized clonus was presented; the remaining three were incomplete in that, recognizing their significance, I was able to curtail them by lightening the anaesthesia. All my cases occurred in deep anaesthesia, and I agree with Dr. Bloomfield's contention that true ether convulsions occur only in deep narcosis. In only one case was there definite sepsis, and in no case was there initial cyanosis. Four patients were young women; the fifth, a female child. I observe that Dr. Priest's patient was also a woman, and I am tempted to suggest a definite sex susceptibility to the condition.

The orderly sequence of events, from clonus of the muscles of the face and neck to that of the upper limbs, trunk, and, finally, lower limbs, suggests a fit of cortical origin, and our problem is to discover its cause. Before advancing a theory I should like to recall a fact familiar to all anaesthetists. After prolonged and deep ether anaesthesia it is not unusual for the surgeon to complain of renewed bleeding from tissues in which he has accomplished primary haemostasis. This bleeding is sufficiently marked to suggest an active capillary dilatation. It is known that histamine, on injection, is capable of producing such a condition by paralysing the capillary wall; but what is more significant is the following, quoted from Samson Wright's *Applied Physiology*: "In unanaesthetized animals ten times the dose of histamine is necessary." Again, Lewis has shown that injuries to the skin cause the liberation of substances of histamine-like action. In a surgical operation we have all the factors for a histamine effect, the trauma producing the histamine bodies and the anaesthetic augmenting their action.

I would advance the theory that increased vascularity of the cortex cerebri, more particularly of the Rolandic area, produced by such a histamine effect, is the underlying cause of ether convulsions. That these convulsions occur with ether rather than with chloroform may be due to the fact that the latter drug tends, of itself, to produce cerebral anaemia, and we hear that some workers have employed chloroform with success in the control of ether convulsions.

I realize that to test the theory one should attempt to produce a convulsion by injecting histamine into a deeply etherized patient. I confess that it would require a bolder man than I, and I am certain that no surgeon would welcome such activities on the part of his anaesthetist.—I am, etc.,

L. T. Clarke.

The Queen's Hospital, Birmingham, Aug. 17th.

TREATMENT OF DYSMENORRHOEA

Sir,—I see that Mr. Venn Dunn suggests, in his letter in the *Journal* of August 8th, that I was "speaking for the Medical Women's Federation." I do not know how he got that impression, and I hasten to correct it. The views expressed in my letters were not intended to voice the opinion of that or of any other medical association to which I belong, but were the results of my own individual experience. It happens that many members of the Medical Women's Federation do not endorse my views on the treatment of dysmenorrhoea. I must therefore ask Mr. Venn Dunn to note that I made no reference to the Federation in my letters.—I am, etc.,

Alice E. Sanderson Clow.

Cheltenham, Aug. 12th.

REFRESHER COURSES FOR SHIP SURGEONS

Sir,—In view of the fact that special courses for ship surgeons are about to commence, it may be desirable for the members of the staffs of the medical schools concerned to consider the experiences of individual ship surgeons who have found their ordinary medical training insufficient for all the emergencies at sea. The ordinary medical course, for example, has little to say about seasickness, and so the barber's shop may be found in competition with the surgeon where the treatment of mal-de-mer is concerned.

One task occasionally falls to the lot of a ship surgeon, in which he has had no instruction, and often no previous experience—the embalming of a dead body. In these days of luxurious ocean travel many persons undertake voyages when not in good health, and deaths at sea are not rare. In such cases sea burial is an easy means of disposal, but quite often it is the wish of the relatives that the body should be embalmed and brought home, especially in the case of American citizens.

The ship surgeon must therefore be prepared to undertake some form of preserving process, and, although he cannot compete with the professional embalmer, he should make sure that he has an efficient preservative solution and the means of injecting it Failure to prevent post-mortem changes, in addition to bringing discredit to the shipping company, reflects on the efficiency of the sea going members of the medical profession Although embalming is not usually considered to be a doctor's work, the ship's doctor should remember that he may have to do it, and would therefore be well advised to know something of its technique A demonstration of embalming methods might well be included in the proposed refresher courses —I am, etc ,

Liverpool Aug 9th C Allan Birch, M D , M R C P

DOCTORS AND ROAD ACCIDENTS

Sir,—Towards the end of a long discussion at the Annual Representative Meeting (*Supplement*, July 25th, p 64) Dr Bone said that he believed that every police man in Brighton carried in his pocket a voucher, which he handed to the doctor who was summoned to an accident, whether the doctor was called by the policeman or somebody else, and the Brighton Corporation paid a fee to the doctor He believed Willesden and Gateshead had similar schemes

So far, so good , but can anybody tell me how it comes about that public money can be used for such a purpose ? Do the police collect the fees so paid by the corporation from the people who are involved in these accidents? If not, why should the taxpayer have to be penalized? Is it legal?—I am etc ,

Pelton Aug 16th Robert A Welsh

Medico-Legal

USE OF THE TITLE " DENTAL SURGEON "

In the Chancery Division, before Mr Justice Farwell on July 21st and 22nd, the case was heard of the Attorney General (suing on the relation of the British Dental Association) *v* Weeks in which a declaration was sought that the use of the title or description " dental surgeon " by Mr Wilfred Henry Weeks, Dentist 1921," practising at Norwich was reasonably calculated to suggest that he had a professional status or qualification which he did not in fact possess and an injunction was asked for restraining him from using that title The defendant contended that he had a right to use the title because to the man in the street there was no distinction between the words " dentist " and " dental surgeon ' and that as he was entitled to practise dental surgery he must be entitled so to describe himself

Mr Gavin Simonds K C , for the plaintiff said that previous to the Act of 1921 no one could legally call himself a dental surgeon unless he was registered under the Act of 1878 either as having a degree diploma or licence, or as having been in practice in 1878 The Act of 1931, while it expressly permitted the terms ' dentist " and dental practitioner, did not permit the term " dental surgeon ' More over ' dental surgery " in the case of all examining bodies was that in respect of which a degree or licence was given It was believed that with the exception of the defendant no one of the 6 858 ' Dentists 1921 ' on the *Register* so described himself No case was found in the London *Telephone Directory* of a Dentist 1921 " who called himself dental surgeon ", but with few exceptions dentists who had the qualification of a degree did so describe themselves

Sir Francis Dyke Acland chairman of the Dental Board who gave evidence on subpoena saying that he did not wish to take sides as between the two sections of which the *Dentists Register* was composed said that the title imported a person who was a licentiate with a slight exception in the case of the men who came on the *Register* in 1878 of whom there were still 428 In their case the announcement did not imply possession of a degree Sir Norman Bennett president of the British Dental Association said that the term " dental surgeon " grew up contemporaneously with the growth of dental hospitals The earlier term was " surgeon dentist," still used in connexion with the royal appointment but the other term replaced it as being more in line with other specialties such as " ophthalmic surgeon " The term suggested to him qualification by possession of a licence Colonel Norman King registrar of the Dental Board, said that the term conveyed to him the idea of a person who was on the *Register* otherwise than under the Act of 1921 Mr B J Wood, chairman of council of the British Dental Association, gave similar evidence as did six other dental surgeons and one " Dentist 1921 " from various parts of the country

Sir Humphry Rolleston agreed that the title implied possession of a degree or diploma Asked whether in his own profession the possession of a degree was not very commonly announced by the letters, Sir Humphry said that much depended upon the temperament of the man , he thought it rather the exception for a man to put " M D " or " M B " on his plate Sir Holburt Waring testified similarly saying that apart from Mr Weeks, he had not come across any case of a " Dentist 1921 " who so described himself

Mr A Grant K C , for the defence first called Mr Fred Butterfield, secretary of the Incorporated Dental Society, Ltd and a member of the Dental Board Mr Butterfield said that he had inspected the signs of a number of members of the British Dental Association registered by virtue of having been in practice in 1878, and having no degree or licence, on which the name " dental surgeon " appeared He also said that he could give half a dozen names of " Dentists 1921 " who used the title The judge told Mr Butterfield he must produce these names and on the following day he produced one name from Scotland, eight from Ireland (men registered on the British *Dentists Register*, but transferred to the Irish *Register* on the formation of the Irish Free State), and one from England—namely, the present defendant Mr Peyton Phelps of Upper Norwood registered as an " 1878 man," gave evidence saying that he described himself as a dental surgeon, and did not think the words connoted licentiateship Mr P W Raffan a former member of Parliament said that in Lancashire it was customary for a person who possessed degrees to announce them and when " dental surgeon ' was stated it meant generally that the man possessed no degree Evidence was also given by a journalist the secretary of a friendly society, a justice of the peace a retired civil servant, an employee of Lloyds and a compositor all of whom stated that to their minds " dental surgeon " did not imply a degree

Mr Grant claimed that it was the man in the street who was the judge If other people by virtue of their special knowledge, read something more into the term weight should not be attached to their evidence The Act of 1921 was to be read with the Act of 1878 in which latter the words "dentistry ' and "dental surgery " were synonymous Unless there was something in the 1921 Act which in terms prohibited a person from calling himself a dental surgeon it was absurd to suggest that it was misleading or improper for him to do so

Judgement for Plaintiff

Mr Justice Farwell gave judgement for the plaintiff, and granted the declaration and injunction asked for He said that the case was of importance both to dentists and to the public The Act of 1878 was not aimed at preventing persons practising as dentists (save to the extent that it made it impossible for them to sue for their fees) but at preventing persons who did not comply with its requirements from describing themselves as dentists For the first time it required persons who desired to call themselves dentists or dental practitioners or by any like title to be registered As a result the persons registered included both those qualifying by degree and those who without a degree were in practice in 1878 The latter class was diminishing numbering now some 400 on a *Register* of 14 000 These persons were often described as dental surgeons or surgeon dentists The 1921 Act was a complete departure from the earlier Act because it prohibited the practice of dentistry by the unregistered Witnesses had been called on the one side to the effect that the title connoted a degree or diploma , on the other side, that it did not The evidence showed that it was not unusual,

though not universal for persons possessing a degree to announce it by the appropriate letters, also that, with one or two exceptions, the men who registered under the 1921 Act did not call themselves dental surgeons That Act, when it provided for the description to which a registered person was entitled did not use the title in question in this case He therefore started with this, that up to 1921 there was a class of persons who could properly be described as dental surgeons and no other class of persons to whom that description could be applied When the Act of that year permitted another class of persons altogether to be entered on the *Dentists Register*, and did not provide that they should be entitled to describe themselves as dental surgeons, it must follow that for a "Dentist 1921" to call himself a dental surgeon was calculated to suggest that he possessed a professional status or qualification which in fact he did not possess If the legislature had intended that it should be open to anyone who registered under the Act of 1921 to call himself a dental surgeon, he could not help thinking that it would have said so in terms The judge added that he did not form his judgement on the evidence called for the plaintiff or for the defendant He could not disregard that evidence on one side or the other, and he thought the inference to be drawn was that while to a great many people the words "dental surgeon" meant nothing in particular, to a considerable number they had a special significance In face of the evidence called for the plaintiff it was impossible to say that this was a description not reasonably calculated to suggest a certain status, but he based his judgement on the strict interpretation of Section 4 of the Act of 1921, relating to titles and descriptions

Leave to appeal within twenty-one days was granted

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Home Office Estimates

On a vote for expenses of the Home Office, on July 29th, Mr. G LOCKER LAMPSON called attention to the treatment of mental defectives who were brought before the courts He said the Home Secretary could do a great deal by communicating with the magistrates There was a practice in some courts of sending persons of doubtful mentality to prison to undergo observation Some magistrates took advantage of their powers under the Mental Deficiency Act, and others did not, but sent mental defectives to prison as convicted prisoners It was undesirable that mental defectives should be branded as convicted felons and that prisoners of normal mentality should be in the same prison with mental defectives Short sentences could not possibly do mental defectives the slightest good, they ought at once to be sent to a special institution Often delay took place in getting the person into an institution, and that was one of the causes why those people were sent to prison, where they languished perhaps for months, until accommodation in an institution could be found In many cases the sentences expired before accommodation was found, and these mental defectives were once more thrown on the world, after doing their spell in prison to commit further wrongs against the community

Lord E PERCY said that although there had been an increase in the number of factory inspectors it was not sufficient to render Home Office inspection of factories what it ought to be In many industries they might get more rapid advance and more easy adaptation to the new discoveries of science if they delegated more responsibility from the Home Office to industry and made it answerable for the maintenance of a high standard of safety, health, prevention of industrial diseases and so on

Mr CLYNES, dealing with the treatment of mental defectives, said that as soon as a prisoner was found certifiable, the case was notified to the Board of Control, which communicated with the local authority and arranged as soon as possible for the *transfer of that prisoner to an institution for mental defectives* Considerable numbers of prisoners, although not certifiable were recognized by the medical officers as of sub normal intelligence or as having a defective sense of responsibility The treatment of those persons in prison was a matter to which most careful consideration had been given Those who were serving sentences of any length were transferred to certain selected prisons for special arrangements to be made about their treatment and occupation In all cases special care was taken not to subject them to undue discipline He welcomed Lord E Percy's argument with regard to factory inspection The Home Office had for some time been following precisely those broad lines of adapting factory inspection to the changed industrial conditions, which had been enormously altered by big amalgamations, and because many factories and workshops had taken the place of smaller ones Adequate precautions conditions of safety, the setting up of elaborate welfare organizations within the works all tended to alter the service of the factory inspector and to make unnecessary for him to do the things he had to do fifty or sixty years ago There was still much good work for the inspector to do and the Home Office was not only endeavouring to follow on the lines of what Lord E Percy had said but to make a substantial increase in the number of inspectors in the lifetime of this Government In 1929 there were 200 inspectors, to-day that number was 282

Mr KELLY, referring to the chemical industry, said that in the case of aniline dyes many persons were affected by a serious disease He asked if consideration was given to the issuing of regulations under which such persons would be compensated in the event of their being disabled from following their employment There ought to be a closer investigation on the part of the inspectorate into the heavy as well as the light chemical industry

Mr SHORT said he would have inquiries made with regard to dyes to see if any further step could be taken in the direction Mr Kelly had indicated He had stated a few weeks ago that the names of medical referees under the Workmen's Compensation Act should be made more widely available If general access to them was required, he would see that that was done

The House agreed to the Vote

Housing

Mr GREENWOOD told Dr Fremantle on July 30th that his suggestion that an annual return should be published on the subject of housing detailing the number of houses in occupation the number of houses erected *during the year* the number of houses reconditioned and the number of houses included and dealt with during the year in clearance and improvement areas, would offer certain advantages if it could be issued very shortly after the close of the period to which it related This would, however be impracticable He would consider some way of amalgamating the different statements and returns that were compiled

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel Harry Herbert Brown R A M C (ret) died on May 2nd He was born at Knaresboro, Yorks on February 25th, 1862, and was educated at Aberdeen where he graduated as M B and C M in 1883 Entering the Army as surgeon on January 30th, 1886, he became lieutenant-colonel after twenty years service and retired on December 26th 1917 He served in the Burmese campaigns of 1887 to 1889, and received the Indian frontier medal with two clasps

Brevet Colonel Edward Nodin Sheldrake, late of R A M C and Grenadier Guards, died in London on June 10th aged 72 He was born at Ipswich on June 2nd, 1858 was educated at University College Hospital, took the M R C S and L R C P Lond in 1884, and after filling the post of resident house surgeon at University College Hospital, entered the Army as surgeon on May 30th, 1885 Four months later on October 7th, 1885, he was appointed medical officer of the Grenadier Guards, and put in his whole service in that regiment He served with his battalion throughout the South African war, 1899-1902, taking part in the advance on Kimberley, including the actions at Belmont Enslin Modder River, and Magersfontein, operations in the Orange Free State, including the actions at Poplar Grove, Driefontein Vet River, and Zand River, and in the Transvaal, including actions at Pretoria, Johannesburg, Diamond Hill, and Belfast He was mentioned in dispatches in the *London Gazette* of September 10th, 1901 and received the Queen's medal with six clasps, and the King's medal with two clasps He rejoined for service in the great war of 1914-18, and was promoted to brevet colonel on June 3rd, 1918

Obituary

WALTER ERNEST DIXON, M.D., LL.D., F.R.S.

Reader in Pharmacology, University of Cambridge.

Walter Ernest Dixon, who died suddenly and unexpectedly from cardiac failure on August 16th, at his house, The Grove, Whittlesford, near Cambridge, was one of the few pharmacologists in this country, and the loss to the University of Cambridge, where he had taught generations of students throughout this century, is calamitous. He was born on June 2nd, 1871, the younger son of the late Robert Bland Dixon of Darlington, his brother being Engineer Vice-Admiral Sir Robert Bland Dixon, K.C.B. Educated at Dulwich and St. Thomas's Hospital, where he was house-physician, he qualified in 1895 as M.R.C.S., L.R C.P., and took the degrees of B.Sc. (1891), M.B., B.S. (1896), and M.D. (1898). In 1899 he became assistant to the Downing Professor of Medicine (J. B. Bradbury), in 1902 received the honorary degree of M.A., in 1909 was appointed University lecturer in pharmacology, and ten years later Reader in that subject, resigning the professorship of materia medica and pharmacology at King's College, London, which he had held for a number of years On the death of Professor Bradbury in his ninetieth year in June, 1930, Dixon, who had for years carried on the teaching and directed research in the subject, was the natural successor to a chair he had long waited for, and therefore had probably refused to stand for similar positions elsewhere. The Downing chair, however, was suppressed, all professors elected after October 1st, 1924, automatically becoming emeritus professors at the end of the academic year in which they attain the age of 65 ; in these circumstances it is not surprising that the offer of a special chair in pharmacology did not appeal to one who was extremely active and could retain his Readership till the age of 70.



WALTER ERNEST DIXON

During the war, from 1915 to 1919, Dixon played a highly important and responsible part in the service of his country, which the rank of temporary Surgeon Lieutenant, Royal Navy, most efficiently camouflaged ; for this he was created O.B.E. Among his numerous activities was the discharge of public and sometimes laborious duties, especially on the League of Nations' Committee on Morphine and the Standardization of Biological Products, and as a member of Government committees, such as those on the preservation of foods, lead ethyl, and drug addiction, subjects on which he was a recognized authority. He had lately been a moving spirit in establishing at the Society of Apothecaries the Register of Bio-physical Assistants. He took a prominent part in compiling the first edition in 1907, and in revising subsequent editions of the *British Pharmaceutical Codex* ; and the establishment of the pharmacological laboratories of the Pharmaceutical Society was very largely due to his advice and guidance. His literary and editorial energies were remarkable: his *Manual of Pharmacology* went through seven editions between 1905 and 1929, his *Practical Pharmacology* (1920) was in process of revision, and his contributions to other combined works, including Allbutt's *System of Medicine*, Heffter's *Pharmacology*, Hale-White's *Textbook of Pharmacology and Therapeutics*, were noteworthy. His published papers on physiology, of which there were twenty-eight in the twenty-five years ending 1924 and a number since, cover a wide field of research ; many of them were in collaboration with his colleagues and pupils, and among these the contributions with the late T. G. Brodie on the nature of asthma will always stand out as epoch-making. Since 1926 he had been joint editor of the *Journal of Pharmacology and Experimental Therapeutics* ; he was also on the editorial committee of the *Quarterly Journal of Pharmacy and Pharmacology*, and of the *British Journal of Physical Medicine*. As an examiner he was much in request at the universities of England, Scotland, and Ireland.

As a remarkably attractive lecturer, and especially as an inspiration to those undertaking original investigation, he built up a School of Pharmacology at Cambridge and set an example of high ideals in this science which, with A. R. Cushny of Edinburgh, he had done so much to initiate in this country. He has now followed his friend behind the veil, but the start they made should enable their pupils to attain further success. While taking a broad view of the scope of pharmacology, especially in its application to clinical practice, Dixon held strong opinions about its independence as a science, and did not regard it as merely a branch of physiology. His personal characteristics were well suited for the head of a progressive department, for he was a kind-hearted man, with the valuable property of being able to express a decided opinion without raising resentful opposition. A warm and unselfish friend, an interesting companion who had travelled and seen much, he was charitable in the best sense, never made enemies, nor played for his own hand.

Dixon was elected a Fellow of the Royal Society in 1911, in 1930 a Fellow of the Royal College of Physicians of London under the special by-law providing for the election of men not members of the College but holding a medical qualification and distinguished in any branch of the science or practice of medicine, Academico Onorario, Reale Accademia Medica di Roma, and in 1911 an honorary member of the Pharmaceutical Society He was president of the Physiological Section of the British Association in 1929 when it met at Capetown and Johannesburg, and of the Section of Therapeutics of the Royal Society of Medicine ; last year he received the honorary degree of LL D from the University of Manitoba on the occasion of the meeting of the British Medical Association at Winnipeg, when he delivered a clinical address on drug addiction. He had recently been appointed Croonian Lecturer at the Royal College of Physicians of London. In 1907 he married Hope, daughter of Francis Glen-Allan of Dulwich.

H. D. R.

Professor Frederick Gowland Hopkins, President of the Royal Society, in an appreciation of Professor W. E. Dixon's work, writes:

Dixon's scientific interests were of the widest, and his activities as an investigator correspondingly diverse. He heartily believed that pharmacology deserved an independent status in any formal classification of the sciences; but, recognizing its intimate contacts with organic chemistry, physiology, biochemistry, and pathology, as well as with practical therapeutics, he held that in it, more than in most subjects, specialization should be avoided, alike by the teacher and the investigator. His own researches were far from specialized, a circumstance that makes it the less easy to deal with them briefly.

His earliest serious research, carried out while holding a Salter's Research Fellowship at St. Thomas's Hospital, dealt with the physiological action of preparations from the mescal plant. This was published in 1898. He himself experienced the well-known visual hallucinations produced, and, in later years, would frequently describe them vividly. Shortly afterwards he worked with cannabis indica, and at that time believed it to be a drug of which more use might be made. He moved to Cambridge in 1900, when he was working with Brodie on vascular changes in the lung, a subject which long continued to interest him. Dixon himself later studied the vascular mechanisms of the testis, showing that there was definite vasomotor control in the organ, though the vascular changes involved were of small magnitude. This work led him to study the action of orchitic extracts and of Poehl's spermine. The results obtained with the former we now know to be somewhat less specific than he then thought; the latter he found closely to resemble choline in its action. Shortly after this he published a valuable paper on the innervation of the frog's stomach studied on pharmacological lines. The early work with Brodie already referred to led, in 1904, to the conjoint publication of an important paper on the innervation of the pulmonary blood vessels. It described the use of a highly original technique, and discussed the influence of many factors. The authors came to the definite conclusion that the arterioles of the lung possessed no vasomotor nerve supply. About this time, and a little later, Dixon was engaged in urging the desirability of the biological standardization of drugs, and did a good deal of work to illustrate its importance. His later work can be now dealt with under various special headings rather than chronologically.

First may be mentioned the classical experiments carried out with Halliburton on the cerebro-spinal fluid. The factors concerned with secretion of the fluid were first studied, and, among other significant facts, it was shown that extracts from the choroid plexuses contained a specific cerebral lymphagogue. The cerebro-spinal pressure was next thoroughly studied, and the great importance of secretory activity in determining this was demonstrated. The effects of increase in the pressure were later followed in detail, and, finally, a specially interesting paper described experiments upon the circulation of the fluid. The extreme rapidity with which substances introduced into it appeared in the blood, while diffusion in the opposite direction scarcely occurred, were points emphasized; and the conclusion was drawn that it was by the blood, and not by the lymph, that the fluid which was constantly being excreted found its main exit from the cranio-vertebral cavity.

As already mentioned, Dixon was always interested in pulmonary phenomena. The finding of Brodie and himself that the vessels of the lung were not innervated led "to the publication of some fifty to sixty papers dealing with the subject directly or indirectly, of which about half supported the findings of Brodie and Dixon." I quote Dixon himself. He was unconvinced by the evidence contained in the other half of these papers, and three or four years ago he reinvestigated the subject with a pupil and colleague, J. C. Hoyle. Having eliminated cardiac effects, which he held to explain the opposed results of others, he became convinced that these later crucial experiments demonstrated that there was no effective pulmonary vasomotor supply. Any slight effects observed were of a "vestigial" character.

In 1903 he had published, again with Brodie, the results of three years' researches upon the bronchial muscles, which led, *inter alia*, to the firm belief that spasm of these muscles was the fundamental cause of acute attacks of asthma. This view is more general now than it was then. Nine years later he published, with F. Ransom, a careful study of the innervation of the muscles, and more recently gave occasional attention to other aspects of the subject. In quite recently delivered lectures and addresses he showed that, as the result of his own studies, he attached little importance to the allergic aspects of asthma.

In his early days he had been a student of Brown-Séquard's publications, and became interested in organotherapy before it was fashionable. He always followed with care the literature of endocrinology, and in his routine work became exceedingly familiar with properties of all the glandular preparations on the market. In 1910 he attempted, with Halliburton, to throw light on the functions of the pineal body, though without success. In 1923 he published a paper on the pituitary gland, showing that it secreted into the cerebro-spinal fluid, and was specifically excited to secretion by ovarian extracts. In the following year, with F. H. A. Marshall, he showed that this effect of the ovary was only to be observed when corpora lutea were absent; when they were present the authors found that its action on the pituitary was completely negative. They found also that the ovarian secretion did not act directly on the uterus, while that of the pituitary specifically acted on the uterine muscle.

Dixon published a number of papers on the action of individual drugs—cocaine and colchicine, for instance, and the various artificial derivatives of quinine. His researches on more than one occasion dealt with the effects of alcohol on the body. He was alert to the advances in chemotherapy, and kept in close touch with the subject. He investigated several cases bearing on the relation between chemical structure and physiological action, though inclined to be sceptical as to the closeness of this relation. One case studied by him showing the influence of a form of isomerism, which is itself unusual, was of special interest. Of two di-methyl telluronium dichlorides with apparently identical structure, one was relatively inactive, while the other powerfully and specifically stimulated the suprarenals.

He was always attracted to the more physical explanations for action of drugs, and took much interest in Straub's view concerning the action of muscarine on the heart—namely, that it is caused by the physical process of the passage of the drug through the limiting layer of the cell; once it has passed this it has no further action. Dixon sought for further instances to support such a view, and thought he had done so—for example, in the case of volatile substances, which exert a common action, though of different chemical nature.

No reference has been made to papers published by others describing work done under Dixon's inspiration. His influence was exceedingly stimulating to his pupils, and he was abundantly generous not only with advice, but with practical personal assistance. His mind was always

ull of fresh and original ideas, and if it may be said hat they were, not infrequently, too good to be true, hey led to many investigations, and their discussion kept ilive a spirit of optimism in his department which was nvaluable.

Dr. ALFRED COX, Medical Secretary of the British Medical Association, writes:

As I write this I know nothing of the circumstances of Professor Dixon's death, except that it was sudden. Certainly none of us here had any idea that there was anything wrong with his health, and the news came as a terrible shock. Dixon was always so full of life and the joy of life that it seems almost impossible to think of him as gone. It is a trite thing to say that a man will be missed, but it is certain that there are few men who will be more missed from the ranks of the Association than Dixon, for he filled a particular niche and filled it so completely that it is difficult to think of anybody else being in his place. On all scientific affairs he was a tower of strength as an adviser. The Association is accustomed to see busy men put everything aside for its work, but I can truly say that I have never known anybody more willing than he was, or who did his favours to the Association with such unaffected pleasure and graciousness. For many years, along with Sir Humphry Rolleston, he has been our chief adviser in regard to scholarships and scientific grants; but the other ways in which he made himself useful to the Association are innumerable. He was a very influential man in many directions, and he never failed to use that influence on behalf of the Association. He was emphatically "a good B.M.A. man," but in addition he radiated an atmosphere of good humour and cheerfulness that made him acceptable at all times. He was like a breath of fresh air in a committee, and he managed to combine scientific outlook with humour, good fellowship, and helpfulness in a way which is, in my experience, almost unique. Dixon loved the Association and was proud to know that his affection was returned by those among whom he worked, and now that he is gone I am glad to think that the last honour bestowed upon him was the LL.D. of Manitoba University, which he received with ten others at our Winnipeg Meeting. He thoroughly appreciated the honour, and its conferment gave a kind of personal pleasure to every member of the Association who knew Dixon at all well. I have unfortunately in my time had to write a good many notes of this kind, to mark the loss of a dear colleague or of a valued worker for the Association. Very rarely have I felt such a sense of personal loss, and I know this feeling will be shared in quite unusual degree by very many members of the medical profession.

[The photograph reproduced is by J. Palmer Clarke, Cambridge.]



JOHN ROBERT LORD

JOHN ROBERT LORD, C.B.E., M.D.,

F.R.C.P.Ed.

By the death, on August 9th last, of Dr. J. R. Lord, medical superintendent of Horton Mental Hospital, psychiatry, and especially organized British psychiatry, has lost one of its most prominent figures and devoted workers. Both in his own hospital and in manifold outside activities, he gave himself unstintingly in the cause of the prevention and better treatment of mental ill-health.

Dr. Lord was born in 1874 at Blackburn, and was educated at the Blackburn Grammar School, and later at Owens College, Manchester. He took his medical course at Edinburgh University, where he had a brilliant career; after qualifying M.B., C.M. in 1896 he was appointed demonstrator of pathology. Psychological medicine, however, claimed him—as it did his contemporary Sir Hubert Bond and many others who had come under the influence of Clouston's teachings—and in 1897 he was appointed assistant to Dr. Goodall at Carmarthen Asylum. For his research work at this institution he was awarded the bronze medal of the Medico-Psychological Association. The following year he joined the service of the London County Council at Hanwell. He was soon transferred to Bexley, then the newest of the London county mental hospitals, and took a full share in the pioneer work being carried out there in the provision of admission and convalescent units, and of other modern improvements. His promotion was rapid, and in 1907 he was appointed medical superintendent of the Horton Mental Hospital at Epsom.

From 1907 to 1914 Dr. Lord devoted himself chiefly to the modernization of his institution. It was his aim that it should be "run on general hospital lines," and he brought it to a high pitch of efficiency. Laboratory work was developed, and facilities for the treatment of recent cases were extended. The new admission hospital, opened in 1912, was largely of his own planning, and it has been taken as a model by a number of other mental hospital authorities. In 1915 Horton became the County of London War Hospital (later known as the Horton War Hospital), and Dr. Lord became its commanding officer, with the rank of lieutenant-colonel. In his *Story of Horton War Hospital* he has given a detailed and illuminating account of how a mental hospital was in a short time successfully converted to military use, and of its subsequent administration. For his war services he was awarded the C.B.E. in 1919.

After the war Dr. Lord threw himself whole-heartedly into every reconstructive scheme that had as its object the raising of psychiatric practice to a higher level. At Horton occupation therapy was introduced, and a greater

degree of freedom was allowed to patients. Malarial treatment of general paralysis was begun at an early date. Under the Ministry of Health a research station was established at Horton which supplied mosquitos to other treatment centres throughout the country, and from which much valuable work has emanated, not only on general paralysis, but also on the transmission and treatment of malaria itself.

Dr. Lord was a strong advocate of team work in dealing with recent mental cases; by specialization on the part of the medical staff, and by the employment of consultants, he sought to bring every branch of medicine to bear on each individual case. Between the physiogenic and psychogenic schools of thought he endeavoured to keep a due balance, and foreign visitors to his hospital recently had occasion to comment on the "polypragmatic" spirit of the institution.

He sought to enlighten the community in the problems of mental disease. He was among the first to appoint a social worker to link the hospital with the outside world. He welcomed visitors to the hospital, and on his appointment in 1928 as lecturer in clinical psychiatry to the London School of Medicine for Women he organized at Horton an unusually thorough course of instruction. The mental hygiene movement found in him a warm supporter; he was secretary of the National Council of Mental Hygiene, and spoke and wrote extensively on its behalf. Last year he attended the first international congress of mental hygiene at Washington, presiding at a number of the sessions, and was elected a member of the governing body.

Dr. Lord's connexion with the *Journal of Mental Science*, the organ of the Medico-Psychological Association, began in 1901 with his appointment as assistant editor; he became joint editor in 1911, and from 1915 onwards, as senior editor, he carried on not only the general direction of the journal, but nearly all the detailed and routine work. His own contributions were numerous, and many of his reviews were essays of value on psychological and psychiatric subjects.

To the Medico-Psychological Association itself he was a tower of strength. He took a large part in its educational and medico-political work, and had its interests constantly at heart. It was largely owing to his efforts that the association obtained a charter of incorporation and the designation "Royal." He was president in 1926–27, and his presidential address on "The clinical study of mental disorders" was a wide survey of contemporary tendencies in psychiatry as well as a detailed programme of hospital team work. Mainly at his instigation a research and clinical committee was formed, over which he presided, taking the liveliest interest in the work of the various sections. On the political side he rendered great service in preparing evidence for the Royal Commission on Lunacy, and, later, in connexion with the Mental Treatment Bill. His study of the history of the reception order did much to elucidate the purpose of judicial intervention in mental cases, and facilitated the abolition of such intervention in non-volitional cases. Mental nursing was another subject to which he gave much attention, and in 1929 he was appointed a member of the General Nursing Council.

His work brought him in touch with many foreign psychiatrists, and he was an associate member of several medico-psychological societies abroad. His opinion was often sought in such matters as the organization and staffing of psychiatric services overseas. In 1927 he was vice-president of the Section of Mental Diseases of the British Medical Association.

Although his last few years were burdened by a constant struggle with recurring illness, his energy remained undiminished; his disabilities seemed to spur him on, and his labours continued unremittingly almost to the day of his death.

Dr. Lord was a man of vigorous personality. Perhaps the most striking of his traits was his eagerness for, and obvious enjoyment of, his many activities. He had a high conception of the psychiatrist's calling. To his patients and staff he was the kindest of men; he was one of the staunchest and most generous of friends. In March of this year he married Dr. Ruby Carr, who was a member of the medical staff of Horton. Deep sympathy is felt for her in the very sad circumstances of her bereavement.

Dr. George M. Robertson writes:

I desire the favour of a few lines in which to express the admiration I had, shared with many other members of the Royal Medico-Psychological Association, for the late Lieut.-Colonel Lord. I do not have sufficient knowledge of his routine work nor of his numerous other activities to speak of these with authority, but I can speak of him as a friend and colleague in the Medico-Psychological Association, and in the Council of Mental Hygiene. An outstanding feature of his character that could not be overlooked was his unbounded interest and enthusiasm in the work and welfare of the association, which has been the means of placing our nurses and mental hospitals in the van of the civilized world. No time or trouble spent on its behalf was grudged by him. A phrase of this kind is often used in complimentary addresses and appreciations, but in Colonel Lord's case it has a special meaning. He held an important post under the London County Council, and this involved a full day's work. Every evening, however, after his official duties for the day were over, he began a second day's work for the association, working on till all the hours of the morning of the next day. The amount of work, mainly of a literary and organizing kind, that he did during these undisturbed hours in the evening and the night-time was colossal.

His official post in the association for many years was that of editor of the *Journal of Mental Science*, itself affording enough scope for the surplus energies of any ordinary man. He discharged the duties of this post, both from the business and scientific points of view, most efficiently, and enhanced the reputation of this journal. Some six years ago he was elected president of the association, and since then he has played an important, if not a leading, part in organizing its schemes and enterprises. Nothing that was done by the association was outside his interest and activities. The preparation of evidence for the Royal Commission, the presentation of the views of the association on the new Mental Treatment Act, the elaboration of a new constitution and laws for the association, now designated "Royal," these and similar operations were all influenced by his guidance. The training of mental nurses, their examinations, and their registration by the association was one of his chief occupations. A permanent memorial to his energy was the creation of the research committee of the association, whereby most excellent scientific work has been encouraged with success in our mental hospitals. He was secretary and an active member of the Council of Mental Hygiene, and at the International Congress at Washington last year he did further useful work for Great Britain.

Colonel Lord did the work of two men, and that under very unfavourable physical conditions. His state of health during all these years was critical. Being anxious on one occasion on account of his exhausted condition, I asked his niece, who then looked after his welfare, to order him to stop work. She answered sadly: "There is no living person who can get him to stop work." If ever a man died in harness, he did. Possibly he found distraction from the anxieties of his physical condition in hard work.

At all events, for years he was the most notable example known to me of a brave man struggling against adversity, refusing all compassion, and refusing to acknowledge defeat His work over, he now rests

[The photograph reproduced is by Vandyk, London]

Dr James Grierson Brown, who died at his residence, Stanley Road, Bootle, on August 5th, aged 80, was the senior practitioner in Bootle, where for forty years he was engaged in an extensive and widespread practice up to within a few weeks of his death Dr Brown was educated at the old Royal Infirmary School of Medicine, Liverpool, qualifying L S A in 1880, and later taking the M B degree of London Starting practice in Liverpool, he afterwards became associated with Dr Hill of Bootle, to whose practice he succeeded Dr Brown was of a reserved and retiring disposition, and took no active interest in public affairs but he was a devoted adviser and friend to his patients, who will find his place in their regard difficult to fill The interment on August 8th took place at Anfield Cemetery

By the death of Dr Charles Edward Hobbes on August 4th the Vale of Evesham loses one who had made himself beloved and respected by several generations of his patients Born at Belbroughton on April 5th, 1845, he was the fourth child and second son of Jonathan Lord Hobbes by his wife, Mary Anne Fosbroke His father died of typhoid fever while still a young man, and Hobbes was educated privately at Warwick, until seventy years ago he came to Bidford on Avon to assist his uncle, George Haynes Fosbroke, with whom he was afterwards in partnership He received his medical education at the Queen's Hospital, Birmingham, graduating L R C P and L M at Edinburgh in 1874, and obtaining the M R C S Eng and the L S A in the same year He then returned to Bidford, where he spent the rest of his life in a family practice which changed completely in the course of time Remote from railways and covering a wide area, it was carried out partly on horseback, partly in a high wheeled dogcart and gig, later by bicycle when the roads improved, and finally by motor car Through out his life he was a keen sportsman who rode regularly to hounds, was a successful competitor in horse jumping competitions, a first rate shot, and an excellent fisherman He was at one time keenly interested in craft masonry, served as Master of the Apollo Lodge No 310, and held office in the Provincial Grand Lodge Two or three years ago he retired to Broom, a neighbouring hamlet, where he employed himself in tending his flower garden, and a few months since went to Barford, near Warwick, to live with Mrs Oldham, his married daughter He married Mrs Scott of Weston, Stratford on Avon, who survives him with a stepdaughter and a daughter He was buried in the cemetery adjoining the church at Barford with a wealth of flowers, many of which were sent by the villagers of Bidford The Rev Thomas Parker, M A, paid a striking tribute to his worth on the Sunday after his funeral, directing attention to his modesty, his unaffected piety, and his readiness at all times to sacrifice himself for the good of his patients

It is with deep regret that we announce the death of Dr Katharine Maguire which took place on August 2nd at Fayrefield, Tyrrellspass, co Westmeath, to which she had retired in November last Dr Maguire was the youngest daughter of the Rev John M Maguire, rector of Boyle co Roscommon Her career as a student was very brilliant She was the first and only woman to win the Hudson Scholarship at the Adelaide Hospital, and she obtained first place at the M B, B Ch, and B A O examinations of the Royal University of Ireland in 1892, taking her M D three years later After qualifying she spent some time in Vienna, and then set up in private practice in Upper Mount Street, moving some years later to Merrion Square, where she remained till she ceased work Her kindness and sympathy for her patients, especially the poor, were unbounded Early in her career she opened a free dispensary for women and children in Harolds Cross, and, being much interested in housing, bought four tenement houses in Tyrone Street, managing them herself, and letting the rooms at a minimum rent All her tenants loved her, and at Christmas many of them had blankets, food, and clothes at her expense As lecturer on hygiene in Alexandra College for a long period she became well known as an exceptionally gifted teacher She was a member of the Academy of Medicine, and attended its meetings regularly, but her self effacing disposition did not often permit her to speak or to show cases In spite of her extraordinary devotion to her professional work, Dr Maguire found time to cultivate many other interests She had an ardent enthusiasm for women s political rights, and before the war was a keen but non-militant suffragette There are hundreds of people in Dublin to-day who feel they have lost a friend and adviser who can never be replaced

We regret to announce that Dr Arthur Seal Blackwell honorary secretary and treasurer of the Jersey Division of the British Medical Association, died on July 31st, at the General Hospital, Jersey, after a serious operation Dr Blackwell received his education at St Bartholomew s Hospital, taking the M B, B S Lond in 1892, and the M D Lond in the following year, in 1894 he became a Fellow of the Royal College of Surgeons, England At the end of the war, in which he held the rank of captain in the Royal Army Medical Corps, he resided in Jersey, where his skill as an anaesthetist was soon recognized Up to the time of his death he was visiting anaesthetist to the General Hospital Dr Blackwell had many outstanding qualities He was a gifted pianist, and his charming nature endeared him to his professional colleagues His death is mourned by a large number of friends and acquaintances, by whom he will be sadly missed

Dr Shepherd McCopwick Boyd died on August 8th at his residence, Springfield Avenue, Harrogate, where he was a past president of the local medical society After obtaining the Fellowship of the Royal College of Surgeons, Ireland, in 1883, he worked for some years in Manchester, and later at Bexhill, going to Harrogate about twenty-seven years ago Before the war he was surgeon captain in the Volunteers, and in 1914, although well over age, joined up and remained on active service until the armistice Early in life Dr Boyd established a great reputation by his athletic prowess He carried off trophies and prizes as a sculler in all parts of the United Kingdom, and on two occasions was a finalist in the Diamond Sculls at Henley To many of his friends, however, his outstanding quality was an extraordinary kindness of heart He took a special interest in the welfare of his junior colleagues, many of whom owe much to his friendly counsel at the beginning of their career He will also be remembered for his vigorous and attractive personality and for his consistently cheerful disposition, which remained unperturbed through the illness and deafness of his later years

We regret to announce the death in a nursing home at Ealing, of Mr Charles Richard Hewitt, at the age of 61 Mr Hewitt was well known as a librarian He entered the service of the Royal College of Surgeons of England in 1885 and was appointed assistant in the library in 1892 Mr James Blake Bailey being the librarian He served at Lincoln s Inn Fields until 1907, when he was appointed, jointly with Mr Archibald L Clarke, sub-librarian at the Royal Society of Medicine when Sir John Macalister was resident librarian As a sub librarian it was his duty to organize and rearrange the collections of books belonging to the various institutions which had amalgamated with the Royal Medical and Chirurgical Society to form a new corporate society In 1919 he resigned the post of sub-librarian, and accepted the invitation of the League of Red Cross Societies associated with the League of Nations in order to organize a Public Health Library at Geneva It was also proposed

to form an international institution of public health, and Hewitt was appointed registrar. The scheme came to nothing, but during the two years he was in Geneva he purchased and classified more than 5,000 volumes. Upon his return to England he became a member of the medical staff of Messrs. William Heinemann Ltd., and undertook the compilation of the *Medical Year Book*, of which two issues appeared. The object of the work was to classify members of the medical profession, a task which required personal knowledge of the medical profession as well as of its individual members. In 1925 he accepted the invitation of Dr. Henry S. Wellcome to become chief librarian of the Wellcome Historical Medical Museum Library, a position he held until his death on August 15th. In addition to his regular occupation Mr. Hewitt reorganized and recatalogued the library of the Medical School of University College, and was for a time librarian of Guy's Hospital Medical School. For five years he supplied the Royal Commission on Tuberculosis with periodical literature on the subject, and for this purpose sent more than 15,000 references. In 1900 he was asked to undertake the compilation of a "British Medical Index" to comprise all medical periodicals published in this country and the Dominions, a gigantic enterprise which was never completed. In 1906 he published a general index to the journal and reports of the Royal Institution of Cornwall, 1818–1906, and in 1911 he made an index of subjects and names in the New Sydenham Society's works. In addition to contributions to various learned and scientific periodicals he contributed to *Men and Women of the Time*, and in 1903 he wrote, in collaboration with Mr. B. Fletcher Robinson, a series of well-illustrated medical and scientific biographies dealing more especially with the *Vanity Fair* portraits by "Ape" and "Spy." He was a Fellow of the Library Association and of the Royal Historical Society.

Medical News

Sir John Simon will deliver the inaugural address of the session and present the prizes at the London (Royal Free Hospital) School of Medicine for Women on October 1st, at 3 p.m.

St. Bartholomew's Hospital old students' dinner will be held in the Great Hall of the hospital on Thursday, October 1st, at 7 for 7.30 p.m. Sir Percival Horton-Smith Hartley, C.V.O., will be in the chair.

The annual dinner of past and present students of St. Mary's Hospital Medical School will be held at the Trocadero Restaurant on Friday, October 2nd, with Sir William Willcox in the chair.

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society will be held at the First Avenue Hotel, High Holborn, W.C., on Wednesday, October 7th, at 4.30 p.m.

The new session of the Medical Society of London will commence on Monday, October 12th. The annual general meeting will be held at 8 p.m., and at 8.30 p.m. Mr. Herbert Tilley will deliver his presidential address on "The laryngoscope in medicine." On October 26th, at 8.30 p.m., a discussion on blood transfusion will be introduced by Professor Alexander Fleming and Mr. Geoffrey L. Keynes. A clinical evening will be held on November 9th, at 8 p.m., and on November 23rd Sir Humphry Rolleston and Professor E. C. Dodds will open a discussion on the methods of determining liver function and their value. At the meeting on December 14th, at 8.30 p.m., a discussion on *x* rays in the diagnosis of thoracic disease will be introduced by Dr. P. J. Kerley, Dr. F. G. Chandler, and Mr. J. E. H. Roberts. The Lettsomian Lectures, on the reactions of the eye to general disease, will be delivered by Mr. F. A. Williamson-Noble on February 29th and March 7th and 16th, 1932. Sir James Berry will give the annual oration on May 9th, 1932, on "Fallen idols."

A tour of the Tower of London, organized by King Edward's Hospital Fund for London, will take place on August 26th, under the guidance of Mr. Walter Bell, F.S.A., who will give a short address on its history and associations and conduct parties round the building. The Bell Tower and Queen Elizabeth's Walk will be accessible to the party. Tickets, 7s. 6d. each, can be obtained from the secretary, King Edward's Hospital Fund for London, 7, Walbrook Street, E.C.4.

The Fellowship of Medicine and Post-Graduate Medical Association has arranged for the following special courses to take place in September: diseases of the chest, at the Brompton Hospital, from September 7th to 12th (fee £3 3s.); psychological medicine, at the Bethlem Royal Hospital, Tuesday and Saturday mornings at 11 a.m., from September 8th to October 3rd (fee £1 1s.); diseases of infants, at the Infants Hospital, from September 14th to 26th (fee £3 3s.); ophthalmology, at the Central London Ophthalmic Hospital, from September 8th to October 3rd (fee £3 3s.); medicine, surgery, and the special departments, at the Westminster Hospital (for men post-graduates only), from September 14th to 26th (fee £5 5s. for the course, or £3 3s. for either week). Syllabuses of the above courses may be obtained from the Fellowship of Medicine. A series of free lectures on "Prognosis" will begin early in October, and also the usual series of free demonstrations in medicine and surgery (one a week in each subject at different hospitals).

A course of post-graduate study in infants' diseases, with special reference to nutritional disorders and dietetics, will be given at the Infants Hospital, Vincent Square, S.W.1, from September 14th to 25th. It is designed for medical officers of welfare centres and others; the fee is £3 3s. The names of practitioners wishing to attend the course should be sent to the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1, to whom cheques should be made payable.

The first conference of the International Association of Preventive Paediatrics will be held at The Hague on September 7th and 8th, when the following subjects will be discussed: "The mortality within the first ten days of life, and the means of decreasing it," introduced by P. Lereboullet, Couvelaire, and Lacomme of Paris and A. Schlossmann of Düsseldorf; "Return cases of scarlet fever, and the means of preventing them," introduced by Fr. Von Gröer of Lemberg and A. Lichtenstein of Stockholm. Dr. H. Chodak Gregory has been invited to speak on the first subject, and Drs. J. D. Rolleston and B. Schlesinger on the second. Further information can be obtained from the secretary, Dr. R. P. Van Kasteele, Van Dorpstraat 20, Scheveningen.

The next International Congress of Medical Women will be held from September 15th to 22nd. The subscription is 30 francs. Further information can be obtained from the Association Internationale des Femmes Médecins, Elysée Building, Rue du Faubourg Saint-Honoré 56, Paris.

A course on diseases of the heart and blood vessels will be held at the Hôpital Broussais, Paris, under the direction of Dr. Laubry, from October 5th to 17th. The fee is 150 francs. Further information can be obtained from Dr. Matton, Hôpital Broussais, Rue Didot 96, Paris, 14e.

At the second International Congress of Light, held at Copenhagen, under the presidency of Dr. A. Rollier from August 15th to 18th, Sir Henry Gauvain introduced the discussion on the effect of light baths in tuberculosis.

A memorandum has been issued by the Central Bureau of Hospital Information on the conditions under which hospitals can obtain payment from insurance companies for the expenses of treatment of persons injured in motor accidents, under Section 36 (2) of the Road Traffic Act, 1930. Copies can be obtained on application to the director of the Bureau, 12, Grosvenor Crescent, London, S.W.1; single copies, 3d. post free.

King Edward's Hospital Fund for London has received a further donation of £500 from Lieut.-Colonel George Waters, I.M.S. (ret.), Bombay, who gave £1,000 to the Fund in 1928.

In connexion with the paper read by Dr. L. G. Irvine of Johannesburg in the Public Health Section at the Annual Meeting at Eastbourne on the control of silicosis in South Africa, it may be mentioned that a report of a symposium on the histo-pathology, pathological anatomy, and radiology of this disease, contributed to by Dr. F. W. Simson and others at a meeting in Johannesburg last October, has now been reprinted from the *Proceedings* of the Transvaal Mine Medical Officers' Association, and can be consulted in the Library of the British Medical Association. The various papers relate to the histo-pathology of silicosis, its pathological anatomy, and the correlation of its pathology, radiology, and symptomatology. An article by Drs. F. W. Simson and A. Sutherland Strachan in the *Journal of Pathology and Bacteriology* (vol. xxxiv, 1931), on asbestosis bodies in the sputum, has been reprinted in pamphlet form. A bacteriological and epidemiological study of pneumonia in the native mine worker of the Witwatersrand goldfields, by Dr. David Ordman, was published in the *Journal of the Medical Association of South Africa* on February 28th, 1931, and has now been reprinted in pamphlet form.

A medallion of Dr. Louis Bard, who was professor of clinical medicine at Geneva for twenty years, has been recently unveiled in the auditorium of the Cantonal Hospital at Geneva.

Professor Calmette has presented to the Forlanini Institute of Milan the sum awarded him as the decennial Roberto Rovichi prize for his method of antituberculosis inoculation.

Professor D'Arsonval of Paris has been nominated an honorary member of the Society of Medicine of Vienna.

A number of outbreaks of paratyphoid fever have recently been reported in various parts of Germany, the source of the infection being milk, cream, and especially ices.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
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MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62350 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

The secretary of the Royal Medical Benevolent Fund Guild writes that a beneficiary of the Royal Medical Benevolent Fund and Guild is in need of a bath chair, which the Guild is unable to supply. If any reader of the *Journal* could give assistance in this matter the committee of the Guild would be very grateful.

Treatment of Brittle Nails

"J. W." writes: Can any reader suggest a remedy for brittle finger-nails, which split when used for almost any purpose? The sufferer is a lady, over 60, who is now almost precluded from using her hands owing to this condition.

(?) Congenital Circumcision

"GLASGOW" writes: May I enlist your assistance regarding the frequency with which babies are born "circumcized." I have just seen a child of Jewish parents born fully circumcized, and I am told that such an occurrence, though of rarity, is occasionally seen in Jewish children. Is it commoner among them than among the children of non-Jews? The answer might throw a certain amount of light on the question of the inheritance of acquired characteristics.

Medical Treatment of Duodenal Ulcer

Dr. HAROLD AVERY writes: "Duodenum" (Scotland), in the *Journal* of June 27th, asked four questions with regard to treatment. (1) More rapid and more permanent results follow a carbohydrate regime. The products of meat digestion produce a copious secretion of gastric juice of high acid value. (2) Olive oil is far superior to any other vegetable or animal oil; the mineral oils, such as liquid paraffin, are of little use. (3) The alkaline powder is best taken from half to one hour after food. If "Duodenum" will have a fractional test meal examination he will be able to judge the best time to take the powder—about a quarter of an hour before the curve reaches its high level. (4) I have not found that prolonged alkaline treatment radically lessens the hyperacidity.

Lochnera Rosea

"PIPER METHYSTICUM" writes: With reference to Dr. John M. Dalziel's inquiry, I can give the following information. Nye and Fitzgerald (*Med. Journ. Austral.*, November 17th, 1928, p. 626) prepared a tincture of vinca leaves and tried it clinically. It had no appreciable effect on the fasting blood sugar, and did not diminish the rise of the curve after administration of glucose. They suggested that the beneficial effect claimed by some patients was due to the digitalis-like action of the preparation. An infusion is said to be the preparation used in Queensland and South Africa.

Painful Heels

Dr. REGINALD J. HANBURY (Foxbury, Woldingham) writes: The following personal experience may be of interest. At the end of last year, after suffering from a painful right heel for rather more than two weeks, I decided to try colonic irrigation by means of the "Suda" bath. A course of weekly baths was started in January, and after the second bath the pain, which had caused some lameness, was much relieved, and after the fourth bath had entirely ceased. The course was continued for a time with baths at lengthening intervals as a precaution against recurrence, and there has been no return of the pain. In my opinion the therapeutic effect of the colonic irrigation was supplemented by the marked diuresis which subsequently occurs, as well as by the mild diaphoretic action on the skin caused by the hot bath, which lasts about forty minutes. Previously ordinary dietetic measures and local applications had proved ineffective.

The Cigarette Habit

Dr. L. R. P. MARSHALL writes: In reference to the query by "Bungalow," in the *Journal* of August 1st (p. 230), for help to overcome excessive cigarette smoking, I found a soda-mint tablet kept in the mouth a great help to many young soldiers during the war, and also for private patients when cutting off smoking. They say it stops the desire, even when their companions are smoking.

"B. M. R." writes: In reply to "Bungalow," my advice is—reduce smoking gradually. First say, I must not smoke before breakfast; when this step is accomplished one begins to feel one has improved. The next step is no smoking before dinner or lunch. Now real improvement is achieved, but the will power must be exerted for the next step, which may be more difficult—no smoking before tea. One or two cigarettes after tea may be allowed, and the enjoyment of that smoke is marvellous.

Harvest Mites

"SUFFERER" writes: Living in the country for the past ten years, I and members of my family have been subjected to severe bites from some insect, commencing regularly during the first week in July and continuing until we go away on holiday in August. No sign of flea or other insect has been discovered in bedding. The bites appear to occur out of doors, and are confined to the after parts of the skin—bathing-drawers area, axillae, thighs, etc. The bites are intensely irritating, lasting for a week or so, and cause sleepless nights and restless days. I myself counted forty separate bites on my body recently. There are no animals about, but there are chickens some little distance from the house. At no other time of the year are we bothered with

bites. Any suggestion as to prevention would be very welcome, as the condition is such as to destroy comfort.

*** It would seem probable that the source of our correspondent's trouble is the "harvest-mite" or "jigger" (not to be confused with the tropical "jigger," which is a species of flea). These "mites" are the larval stages of free-living mites, generally belonging to the genus *Trombidium*, which are parasitic for a time in the skin of various animals, including man. Infection is from grass, etc., and only occurs out of doors. The mites tend to attack places where the garments fit tightly—under suspenders, belts, etc.—and are accordingly found most often on the lower limbs, although no part of the body is free from their attentions. The bite is intensely irritating, and causes a reddish swelling with a darker centre, which is the larval mite itself. An effective means of prevention is flowers of sulphur in the socks, etc. The best cure is a sulphur ointment locally. How to rid gardens of the pest is another matter, however, about which very little is known.

Income Tax

Interest on Bank Deposit

"W." writes: H.M. inspector of taxes wants to know how much interest I get from some hundreds *left* in bank as capital, the bank paying interest half-yearly, but not usually drawn on; I did not know that capital can be taxed.

*** It is true that it is income and not capital that is taxable, but the interest credited half-yearly by the bank is the income accruing from the capital deposited, and that interest is taxable whether it is actually drawn out or not. If the interest has not been assessed in the past the authorities have the right of assessing it for the previous six years.

Proportion of Residential Expenses

"D. M. M." owns a house the net annual value of which is £72, and sees practically all his patients in the professional portion, which consists of waiting room, consulting room, and secretary's room. The private portion of the house comprises basement, first and second floors, and attics. The inspector of taxes declines to allow a higher proportion than one-third of the total value as applicable to the professional portion.

*** We believe that where the "site" element of value is material it is a common view that the ground floor and basement represent two-thirds of the total letting value, and that is borne out to some extent by the old maximum income tax allowance of two-thirds. The usual basis adopted for medical practitioners in circumstances similar to those of our correspondent is one-half, and we think he should not be satisfied with less. On the other hand, that basis would leave a rental of £36 only as applicable to private accommodation (actually insufficient apparently, but adequate, perhaps, for a very small household), which hardly seems enough. In any case, "D. M. M." might give notice of appeal to the general or special commissioners with reasonable prospect of success, and could drop the appeal if, when the hearing was arranged, he found it too inconvenient to attend and argue his case.

Sickness and Accident Insurance

"P. P." is practising in partnership, and each partner is insured against sickness and accidents. Can they claim any deduction in respect of the payment of premiums?

*** No. Such insurances do not fall within the scope of the *life* assurance relief, and the premiums do not fall within the category of "money wholly and exclusively . . . expended for the purposes of the profession." If the premiums were paid out of the partnership bank account they would nevertheless be inadmissible, but equally any payments received by way of benefit would not be taxable receipts, even though they were paid into that account.

Earned Income Relief

"Y's" income from his practice is £900 per annum, out of which he pays £150 per annum as interest on loan. To what earned income relief is he entitled?

*** One-sixth of £750—that is, £150. It is true that he is assessed in respect of £900, but £150 of that amount is really the income of someone else, and the tax thereon is not ultimately borne by "Y" because it is deductible from the gross amount of interest payable.

LETTERS, NOTES, ETC.

Professional Classes Aid Council

The Professional Classes Aid Council, upon which the British Medical Association is represented by its Treasurer, Mr. Bishop Harman, records in its tenth annual report of 1930–31 that the amount spent in relief exceeded that of any previous year. The total number of applications received was 1,095, compared with 1,077 in 1929-30, direct financial assistance and help in kind being given to 285 families. The excellent policy of the council—namely, to help applicants to help themselves—aims not only to provide immediate pecuniary aid where necessary, but seeks to meet individual needs by referring inquirers to the society or fund most likely to furnish the requisite assistance. This advisory service forms an important part of the council's work, and was taken advantage of in no fewer than 387 cases. During the year forty-five training grants were paid to students and over seventy educational grants to boys and girls. The council also tries to assist those applicants who through age, illness, or other disability are no longer able to maintain themselves. While it is satisfactory to note that all this beneficent work has received financial support, notably a handsome donation of £7,500, the prospect for the present year is by no means as bright as it ought to be. It may not be generally known that the council acts as almoner for sums entrusted to it by donors who are interested in any particular case. All donations should be sent to the honorary treasurer, the Hon. George Colville, 251, Brompton Road, S.W.3.

Effect of Sunlight on Acne Vulgaris

Dr. H. G. CALWELL (East African Medical Service) writes from Tanganyika Territory: A few days ago I saw a severe case of acne vulgaris in a European in Dar es Salaam. He had suffered from the disease for several years, and had spent much of his substance on physicians without benefit. His back was widely scarred and showed much suppuration, but his face and chest were remarkably free. He told me that his chest had been as bad as his back, but that when he was up country he had gone about with his shirt open in front, and that the exposure to the sunshine had gradually caused the acne to disappear from his chest, while it went on as badly as ever on his back. Tropical sunshine is not to be had in England, but this experience suggests that perhaps artificial sunlight might be of use in the treatment of acne vulgaris.

Visits of Scientists to Russia

Dr. W. F. COOPER (Kingston Hill) writes from Russia: It is only fair to warn any scientific man—especially a medical man—who proposes to go on a scientific tour organized by the S.C.R. (Society for Cultural Relations), to make sure in London, before leaving, that he will see that class of subject which interests him, because he will be on a "conducted tour," during which many names are called out and he is hurried from place to place. This, though interesting, does not deal with any particular subject. So far I have seen nothing (according to programme) of medical interest. Though a medical man, starting with an assurance that I should see subjects of medical interest especially, I am allowed to see only plants and laboratories, and to meet men with long and unpronounceable names, who have no connexion with medicine. Possibly things may be better later, though we have no programme, so I cannot be sure. There was a programme, but it was not adhered to. If there are any, so-called, "eminent" men in the party, even though in the minority, their subjects are attended to. The wishes of the majority count for nothing, and it is an extremely arduous and rough tour. Beyond that, the tourist, if interested in seeing what the country is doing, will have a very interesting time indeed. So far as culture goes, he can get far more in London. The S.C.R. looks after the tourists extraordinarily well, and with extreme patience. "Intourists" give no assistance whatever, except to the "big men," and I can get no information from them about routes, costs, or anything.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 31, 32, 33, 34, 35, 38, 39, and 40 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 36 and 37.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 148.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

151 Corneal Clouding in Cranial Dysostosis

H. F. Helmholz and Ethel R. Harrington (*Amer. Journ. Dis. Child.*, April, 1931, p. 793) suggest that a seventh be added to the number of previously described syndromes with cranial dysostosis as the outstanding feature: these are: (1) oxycephaly (Virchow), (2) acrocephalosyndactylia (Apert), (3) congenital cleidocranial dysostosis (Marie and Sainton), (4) congenital craniofacial dysostosis (Crouzon), (5) dystrophia periostalis hyperplastica familiaris (Dzierzynsky), and (6) ocular hypertelorism (Grieg). The four cases recorded by the present authors occurred in a boy, aged 4½ years, and three girls, aged 17 months, 13 months, and 2½ years respectively. They presented the following features: uniform cloudiness of the cornea involving the deeper layers; no perceptible blood vessels; restricted movements of the joints of the extremities; short, thick, clawlike hands and feet, with limited extension; lumbar kyphosis; scaphocephaly; and mental retardation. The Wassermann reaction was negative in all four cases and the Pirquet reaction in three; it is not mentioned in the fourth. There was evidence of rickets in all, while in the third case an *x*-ray examination showed hydrocephalus with marked enlargement of the pituitary fossa and achondroplasia of the shoulders. The authors include in this group two cases described by Hurler, one by Putnam and Pelkan, and one by Jewesbury and Spence. They have no explanation to offer for the etiology of the cloudiness of the cornea.

152 Mental Complications of Insulin Treatment

E. Joltrain (*Bruxelles-Médical*, May 22nd, 1931, p. 868) has observed mental complications in several cases of diabetes or other diseases during treatment by insulin. He reports two typical cases of old-standing diabetes; one patient also suffered from pulmonary tuberculosis, the other having a weakly positive Wassermann reaction. In the first case insulin caused a return to a normal sugar metabolism, and the lung condition cleared up, but the patient lost his memory, became very confused, alternately wept and laughed, was constantly on the move, and could not sleep. On stopping the insulin the patient's mind returned to normal. This sequence of events was repeated when insulin was given again, until it was found possible to place the patient on an insulin-free diet, when he returned to normal. Similar, but not quite so marked, complications arose in a second case, which is also described in detail. There seemed to be some alternation between the physical and mental nervous signs, and the author asks whether the existence of some mental equivalent of hypoglycaemia can be presumed.

153 Perihilar Pulmonary Tuberculosis

Pulmonary skiagraphy has modified the classical opinion that the primary focus of tuberculosis is usually apical, and K. Faber (*Acta Med. Scand.*, June 12th, 1931, p. 403) confirms the observations of several writers that perihilar infection is more general among young adults than has been hitherto believed. Some believe that the majority of cases commence as a perihilar lymphadenitis, with secondary pulmonary invasion. Faber describes eight cases; seven patients were women, and all but two of these were under the age of 25. The eighth patient was a man, aged 23. In seven cases the expectoration was very scanty, usually only a singie clot, but tubercle bacilli were found in all specimens; one patient had no expectoration. Authors agree that prognosis is relatively good. In the majority, under suitable treatment, the tuberculous process becomes inactive and the patients are free from symptoms. Faber confirms the experience of others that this lesion is more common in young persons, and erroneous conclusions may be caused by vagueness of symptoms, the scantiness of the expectoration, and negative auscultation findings. Diagnosis depends on skiagraphy, and is usually simple, though the appearance sometimes suggests a neoplasm. In the majority of cases shadows radiating from the hilus are characteristic. Auscultation is uncertain, since the physical signs are indefinite or absent owing to the depth of the lesion. More often, dullness, rales, and respiratory changes are found in the axillary and infrascapular regions. Apical rales may be heard, though skiagrams of these regions are negative. The usual treatment is artificial pneumothorax, and the results are usually good since pleural adhesions are rare. One objection to this procedure is that hilar lesions are often bilateral. Faber treats all patients with sanocrysin, and only later performs pneumothorax, even when the lesion is unilateral. All the patients reported received sanocrysin treatment only, and in six instances the results were good. Faber thinks that immediate pneumothorax might have saved the patient who died, since she had a large unilateral perihilar cavity.

154 Haemolytic Jaundice

J. Neuburger (*Deut. med. Woch.*, June 5th, 1931, p. 969) records the results of treatment in two cases of haemolytic jaundice. In one of these, paraesthesiae, achylia gastrica, and megalocytosis were also present, but the presence of a still more marked microcytosis, great increase of bilirubin in the blood, and increased fragility indicated that acholuric jaundice was the correct diagnosis. In both patients the exhibition of liver, liver extract, and powdered stomach was entirely without effect on either the anaemia or the haemolysis, although the megalocytosis was improved in the atypical case. Iron, on the other hand, influenced the anaemia favourably, though having no effect on the haemolysis. Neuburger concludes that the symptoms of acholuric jaundice are very resistant to medical treatment, and that the mechanism of the haemolysis is different from that in pernicious anaemia.

Surgery

155 Pneumatic Rupture of the Intestinal Canal

C. A. V. Burt (*Arch. of Surg.*, June, 1931, p. 875) describes pneumatic rupture of the intestinal canal as an uncommon condition due to the introduction of air under pressure into the oral cavity or the rectum. Forty cases have been already reported and a further two are described in detail. The cause in nearly every case has been due to a practical joke on the part of a fellow worker who has directed the nozzle of a compressed air machine towards the injured patient. Occasionally the bowel has been accidentally ruptured by a physician when using a pneumatic sigmoidoscope. The sigmoid is the viscus most frequently ruptured, while the rectum supports the greatest pressure; a higher pressure is required to rupture portions of the alimentary canal in children than in adults. It was found experimentally that the average pressure required to perforate the various parts of the intestinal tract was 4.07 lb. per square inch. The two outer coats of the colon generally rupture along the longitudinal bands; this is followed by herniation and perforation of the mucosa on the anti-mesenteric surface. In 50 per cent. of cases of rupture of the small intestine, all the layers perforated simultaneously on the anti-mesenteric surface with slight laceration of the outer two coats. In the remaining 50 per cent. of specimens, mesenteric ruptures occurred. The symptoms usually include very severe colicky pain in the lower part of the abdomen, difficulty in breathing, enormous distension of the abdomen, and obliteration of abdominal dullness with marked hyperresonance. The patient generally shows a marked degree of shock with cold, clammy skin; cyanosis, nausea, and

vomiting are usually present. Treatment for the abdominal condition is immediate operation with preliminary paracentesis abdominis in cases of marked distension, to release any air and relieve the pressure on the diaphragm. In cases where only small damage has been done to the serous and muscular coats, this may easily be repaired, but when the injury is more serious, resection of the damaged portions and the establishment of a colostomy are indicated. The prognosis is grave, the general mortality being 56.81 per cent., the operative mortality 44.82 per cent., and the non-operative mortality 80 per cent. If an operation is performed within six hours after the injury, the chances of recovery are greater than if a longer time elapses.

156 Riedel's Disease

M. PRATI (*Arch. Ital. di Chir.*, May, 1931, p. 93), who records two illustrative cases in women aged 51 and 56, states that the characteristic features of Riedel's disease are: (1) the development of a process in the thyroid gland; (2) a secondary but early spread of the process from the confines of the glands, and invasion of the neighbouring tissues and organs of the neck; and (3) the histological and clinical appearance of a chronic inflammation with a well-marked tendency to connective tissue sclerosis which gives the affected tissues their peculiar hardness. Very little is known as to the etiology of the disease. In some cases a syphilitic or tuberculous origin has seemed likely. The symptoms are mainly due to the pressure exercised by the cervical mass on the organs and vasculo-nervous structures in the neck. The course of the disease is usually fairly rapid. Without any premonitory symptoms there arises in the antero-lateral region of the neck an extremely hard swelling, the thyroid origin of which is at first easily demonstrable. It is at first readily movable on the skin and deeper structures, but rapidly becomes adherent to the trachea, oesophagus, vasculo-nervous tissues, and muscles. The neck becomes rigid and the larynx immovable. Severe functional disturbances, especially affecting the respiratory system, develop very early, and sometimes end in attacks of asphyxia. Pressure on the recurrent laryngeal nerve interferes with speech. Occasionally the pain radiates to the neck, shoulder, and ear. Removal of a small part of the growth or a simple incision may often be sufficient to cause a gradual or rapid disappearance of the lesion. In some cases resolution may be spontaneous or result from the application of *x* rays or the institution of antisyphilitic treatment. Both Prati's patients recovered rapidly after removal of small pieces of the growth.

157 Primary Carcinoma of Ureter

L. CAPORALE (*Urol. and Cut. Rev.*, June, 1931, p. 341), who records an illustrative case, states that primary carcinoma of the ureter is a rare condition of which only fifty-one cases have hitherto been recorded, the first having been published by Rayer in 1841. The condition occurs with equal frequency in both sexes. The age ranges from 35 to 89, 60 per cent. of the cases occurring after the fiftieth year. The most frequent symptoms are pain in the affected flank, radiating along the course of the ureter; frequent haematuria, which may be either continuous or intermittent; urinary symptoms such as dysuria, pollakiuria, or polyuria; and general symptoms, such as anaemia, vomiting, and emaciation. In most cases the growth produces hydronephrosis. The diagnosis is not always easy, and in only sixteen of the reported cases was it made before operation or necropsy. Urological examination in the form of cystoscopy, ureteral catheterization, and retrograde as well as intravenous pyelography is of aid in reaching a correct diagnosis. The prognosis is extremely grave; 60 per cent. of the reported patients died without subjection to treatment by nephro-ureterectomy. Caporale's patient was a woman, aged 75, whose symptoms were intermittent haematuria, vesical tenesmus, and pollakiuria; a diagnosis of papilloma of the ureter was made after bilateral ureteral catheterization and intravenous pyelography. At operation a growth was found at the lower end of the left ureter, and the kidney showed a condition of atrophic hydronephrosis. Nephro-ureterectomy was performed and the patient made a rapid recovery. Examination of the growth showed it to be a carcinoma of compound pavement epithelium, in part papillomatous. A later recurrence in the bladder was destroyed completely by electro-coagulation.

Therapeutics

158 Intracardiac Adrenaline in Neonatal Asphyxia

H. HOFMANN (*Zentralbl. f. Gynäk.*, June 20th, 1931, p. 1977) states that intracardiac injections of adrenaline for the resuscitation of the newborn with white asphyxia was first recommended in 1919 by Vogt. In 1925 von Wachenfeld recorded 25 cases with two successes; one was a case of spontaneous birth in which the delivery of the shoulders lasted five minutes, while the other was a case of prolapse of the umbilical cord in which version was performed. Laviano, in 1927, reported 6 cases with four successes. Hofmann now reports 26 cases from the German University Women's Clinic at Prague, in two of which the results were favourable, though only one patient actually recovered. The first case was one in which high forceps had been applied owing to prolapse of the umbilical cord. No pulsation could be felt in the cord, but feeble heart beats could be detected. An intracardiac injection of 1 mg. of adrenaline was given and the heart began to beat vigorously. After about one hour's efforts at resuscitation the child began to cry, and the mother and child were discharged in good condition twelve days after delivery. In the other case, which was one of spontaneous birth, 0.06 mg. of adrenaline was injected, and the heart began to beat vigorously, but another attack of asphyxia occurred within an hour and death ensued. At the necropsy laceration of the tentorium was found to be the cause of death.

159 Potassium Thiocyanate in Essential Hypertension

D. AYMAN (*Journ. Amer. Med. Assoc.*, May 30th, 1931, p. 1852) insists that there is no clear evidence in medical literature that the exhibition of the thiocyanates has any real clinical value in essential hypertension. They cause unpleasant reactions in large doses, and are ineffective in small ones. Ayman gives details of a series of patients so treated, and concludes that potassium thiocyanate is valueless in the majority of hypertensive patients who have narrowed retinal arterioles, cardiac enlargement, or slight renal involvement, while its admittedly hypotensive effect is almost always associated with distressing reactions. The hypotensive and toxic sequels of treatment always occur simultaneously, and are produced whether large doses are given for short periods or small doses are spread over a long time. The patients usually complain first of drowsiness, general weakness, and retarding of physical and mental activities. In some cases there were gastro-intestinal symptoms such as anorexia, nausea, cramps, and diarrhoea. While the gastro-intestinal manifestations ceased within a week after stopping the drug, the others persisted for two to six weeks. Ayman concludes that in view of the well-established results, in these cases, of exhibiting less toxic sedatives, such as the bromides, further clinical study and employment of the thiocyanates should be limited to the purely functional and early stages of the disease. Clinically demonstrable arteriolar sclerosis is a contraindication to their use.

160 Tetrachlorethylene as an Anthelmintic

Confirming the results obtained in animal experiments and human subjects by various investigators, C. GARIN, J. ROUSSET, and B. GONTHIER (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 15th, 1931, p. 1003) have found tetrachlorethylene an excellent anthelmintic against ankylostoma, ascarides, tricocephala, and certain taeniæ, and summarize their results in 358 cases. Cure ensued in 247 out of 270 patients (91.5 per cent.) whose faeces were microscopically controlled; in 209 (77.4 per cent.) only

ne treatment was necessary. Tetrachlorethylene is a iquid of 1.6595 density, boiling at 121° C. It has been ised chiefly as a fat solvent. The drug is administered n 1 gram capsules for three consecutive days in doses of ;, 4, and 5 grams on each day respectively. In debiiitated ases the authors advise that only 3 grams should be given ach day. The capsules are taken in the morning, one by ne at intervals of an hour. On the third day, about hree hours after taking the last capsule, a saline purge 40 grams of sodium sulphate) should be administered. During the treatment the patients should be kept at bsolute rest ; they must avoid alcoholic drinks, and take arge quantities of milk. No ill effects have been noted luring treatment ; some patients have felt a transitory ensation of unsteadiness and vertigo immediately after aking the capsules. Though the drug is eliminated by he kidney, albuminuria has never been noted. The rine, which gives an orange-red colour with nitric acid, should be tested daily during treatment, three or four ours after ingestion of the capsules.

Dermatology

161 Sugar Intolerance in Certain Skin Diseases

. G. CAMPBELL (*Brit. Journ. Derm. and Syph.*, June, 31, p. 297) has previously suggested, from a review of cases, that sugar intolerance might be an etiological ctor in some dermatoses. An analysis of 132 further ises of various skin diseases in which sugar tolerance eterminations were made is now presented. Positive sults were obtained in 77 per cent. of the patients. ching, more annoying and intense than usual, was the ost constant symptom, and a tendency to chapping of ands in cold weather was found to be very suggestive f sugar intolerance. It has long been known that the pro-nged contact of sugar with the skin can cause a dermat-is. Usher and Rabinovitch have shown that the sweat i persons exhibiting sugar intolerance contains an ab-ormal amount of sugar ; this may account for conditions uch as seborrhoeic eczema, in which the disease appears n the parts of the body frequently bathed in sweat, and he high blood sugar may be the direct cause of the con-ition. While not advocating the abandonment of ordinary herapeutic methods, Campbell claims that, in cases of ugar intolerance, a diet which keeps the blood sugar within the normal limits is of great aid in successful reatment, and may indeed be necessary.

162 Infantile Eczema

M. and MME H. MONTLAUR (*Ann. de Derm. et de Syph.*, May, 1931, p. 513) report a study of eczema of nurslings, based on 54 cases. In 53 the affection commenced on the buttocks between the ninth and fortieth (usually the fifteenth) day of life ; in the remaining case it originated in the retro-auricular fold at the age of 2 months. Thirty of these babies were solely breast-fed ; eleven received mixed feedings, and thirteen at first were on artificial diets. The disease, which commenced as a slight erythema on the buttocks, spread more or less rapidly to the adjoining parts, until almost the whole of the postero-inferior portion of the body was involved. As the condition progressed, an eczematous eruption (the eczematide of Darier), associated with intertrigo, appeared on the upper part of the trunk. A more or less intense pruritus was evidently also present. The dermatosis was therefore of mixed type: intertrigo and eczema of the newborn (infantile dermatitis) of the lower part of the body, and parakeratosis of the upper portion. The inflammatory phenomena gradually subsided, leaving a condition of seborrhoeic eczema. Notes are given on the bacteriology and chemistry of the disease. Enterococci were isolated both from the epidermal scales and faeces, and it is suggested that the malady is an enterococcal epidermitis. An anti-enterococcal vaccine has given unexpectedly good results, and has therefore been employed, without local measures, as the sole method of treatment.

163 Disseminated Parapsoriasis

PILLON (*Bull. Soc. Franç. de Derm. et de Syph.*, May, 1931, p. 711) records a case of a peculiar generalized pigmented dermatitis, which, according to the patient, originated four years previously in an attack of furunculosis. The actual present disease commenced as a red mark, as large as a 2-franc piece, on the right forearm. This remained isolated for eighteen months ; other similar lesions then appeared slowly over the whole of the body, and the patient developed a peculiar spotted appearance. The eruption was not so marked on the face. During the evolution of the disease, three marked exacerbations occurred after a year, eighteen months, and twenty months. The lesions, at first red, rapidly became brown, and were of various dimensions. Pruritus, disturbances of sensation, adenopathies, and splenic hypertrophy were absent. The disease appeared to be absolutely stable, and the pigmented areas remained unchanged. On the back of the hands there were some lesions resembling lichen planus ; on the elbows and knees some patches simulating psoriasis were present. In consultation with Nicolas, a diagnosis of parapsoriasis was made by a process of elimination ; this was confirmed by a subsequent biopsy. Since bismuth produces good effects in tuberculides, and particularly in lupus erythematosus, Pillon tried this treatment in the present case. Cure was obtained by six intramuscular injections of bismuth hydroxide. A recurrence which occurred some months later yielded to two similar injections.

164 The Pyrogallic Acid Treatment of Lupus Vulgaris

F. DIETEL (*Derm. Woch.*, May 30th, 1931, p. 891) prefers 10 to 20 per cent. pyrogallic ointment to other caustics in the treatment of lupus vulgaris and considers the Gerson-Sauerbruch-Herrmannsdorfer diet a valuable adjuvant. In applying the ointment the surrounding skin is protected with a layer of zinc paste or Lassar's paste, and the pyrogallic ointment is covered with some waterproof substance to enhance the effect, except in areas such as the back of the hand, where there is risk of damage to important structures if the caustic penetrates much below the surface. Owing to the risk of toxic symptoms from absorption the maximum area treated at one time is the size of the palm of the hand. The treatment is repeated daily for four to six days ; if it is followed by an application of 5 per cent. panthesin balsam (a novocain derivative) for a few days, and after this an indifferent ointment is applied, the severe pain associated with the use of caustics is to a large extent avoided. Three or four such courses of pyrogallic ointment are generally required, and, finally, in order to accelerate the growth of epithelium and facilitate satisfactory scarring, a dose of x rays is advocated.

Obstetrics and Gynaecology

165 Treatment of Puerperal Sepsis

E. FAUVET (*Zentralbl. f. Gynäk.*, May 9th, 1931, p. 1574), discussing the treatment of puerperal sepsis, remarks that injections of metallic or tinctorial bactericidal substances are of little or no use, and may possibly be harmful; while non-specific protein therapy may do harm by overstimulating the defence mechanisms. Of antitoxin and serum treatments the injection of serum from a convalescent patient is the most useful. During the past two years at the Leipzig Universitäts-Frauenklinik, the most important treatment after early appearance of signs of severe puerperal sepsis has consisted in the continuous injection into an antecubital vein of 4 per cent dextrose dissolved in normal saline solution, 1½ litres are given in twenty-four hours, and the injection is sometimes repeated several times. This treatment, which was recommended by Küstner and Kirstein, has the effects of replacing water loss and of supplying a readily assimilated and katabolized foodstuff which also stimulates the heart and circulation. Adrenaline, pituitary extract, a cardiac tonic, or insulin

may be added to the infusion, in some cases considerable amounts of alcohol are given by the mouth Fauvet is satisfied that a great improvement in the mortality rate in severe puerperal sepsis has followed the introduction of continuous dextrose saline infusion.

166 Toxaemia in Early Pregnancy

P Mauriac (*Journ de Med de Bordeaux*, June 20th, 1931, p 539) recalls the distinction emphasized by G Fieux between toxaemia in early and late pregnancy, indicating a difference of origin In the case of this condition during the first four months of pregnancy the toxaemia can be related to the changes in the uterus following the implantation of the ovum, and it has been stated that the blood contains a specific antibody which disappears entirely in later pregnancy Mauriac believes that toxaemia in early pregnancy is closely concerned with the commencing development of the placenta, and with the operation of the placental hormone more particularly He emphasizes the importance of investigating more closely and systematically the physiology and pathology of the placenta in its earlier stages Recently, light has been thrown on the physiological changes at this time by the researches of Aschheim and Zondek, and this line of research should be followed further.

167 Ovarian Cysts and Pregnancy

Delannoy and L Gerniz (*Bull Soc d'Obstét et de Gynecol de Paris*, May, 1931, p 355) record a case of an enormous ovarian cyst occurring during pregnancy, for the following reasons the rarity of such a large ovarian cyst, the unusual coexistence of similar cysts with a normal pregnancy and puerperium, and the influence of gestation on ovarian cysts In this case, the pregnancy, if it had not caused the cystic formation, had evidently increased its volume This is contrary to the opinion of some authorities that pregnancy does not influence the development of ovarian cysts The cyst, which was apparently unilocular, and contained 18 litres of fluid, was excised with excellent results about six months after delivery The following procedures are recommended in pregnancies complicated by these cysts If the presence of the cyst is recognized during the first half of pregnancy, it should be excised as soon as possible, morphine administration diminishing the risk of abortion, if diagnosed during the second half expectant measures should be adopted, provided that the patient can be closely watched Delivery generally occurs spontaneously It is wise to wait for six weeks to two months after the labour before operating, since the risks of ovariotomy are much greater during the puerperium Should serious complications arise, such as compression, or torsion, or rupture of the cyst, operative intervention should be immediate, whatever the stage of pregnancy

Pathology

168 Sodium Thiosulphate Excretion in Pregnancy

A Boiliger and M S S Earlam (*Med Journ of Australia*, April 11th, 1931, p 427) estimated the excretion of sodium thiosulphate intravenously injected in a series of non pregnant and pregnant women, in order to ascertain whether more rapid or lowered excretion observed in pregnant animals was present in the human subject and, if so, its extent and significance The patients remained in hospital from about two months before and for one month following confinement, and were suffering from venereal disease, but the depressions noted in pregnancy, and not to regarded as primarily due to pregnancy, were non-pregnant patients the associated infection of papilloma. The thiosulphate excretion were the excretion fell within the normal limits except in a small group of complicated cases In nearly all instances the percentage of thiosulphate excreted in a catheterized specimen was found to be less than the normal during the first part of pregnancy, and in many cases during the puerperium.

According to the extent of the lowering patients were classified in two main groups (1) those in which it was not extensive and was of short duration, and (2) those in which it was marked and prolonged, continuing in some instances as long as a year after confinement In none of the patients was there any clinical evidence of either renal insufficiency or of toxaemia

169 Cell Growth in Relation to Cancer

G W Crile (*Amer Journ Surg*, May, 1931, p 217) reports research into the formation of "autosynthetic" cells, with special reference to fertilization, the production and growth of cancer cells, and the etiology of fatty degeneration The lipoids and proteins of the brain of freshly killed normal animals were extracted and reduced to ash By mixing together the brain lipoids proteins and a solution of the brain ash, or of the electrolytes contained in the brain, the process of fertilization in nature by the union of the spermatozoon and ovum was roughly imitated Observation of this mixture revealed cell like forms, which multiplied sometimes by budding and sometimes by direct division Crile states that these autosynthetic cells were nucleated, absorbed intravital stains, consumed oxygen, gave off carbon dioxide and produced urea Control experiments indicated that the brain lipoid was unique in being able to collaborate with the electrolytes in organizing the proteins of any organ The autosynthetic cells were not formed, however, when the brains of dogs which had died from distemper were employed, nor in the case of those from rabbits which had died from exhaustion due to insomnia The significance of these findings is discussed with special reference to cancer formation in the presence of changes in the hydrogen-ion concentration It is concluded that continued alteration in the *p*H may be a strong factor in reducing the highly differentiated molecules of the normal cell to a lower level—that of growth only—or in other words, to the cancer level The conception that cancer cells have a higher dynamic potency than ordinary tissue cells is contested by Crile, who suggests that their success in invading the body is due to unpreparedness for growth competition on the part of the tissues and organs rather than to the severity of the attack The comparison between the autosynthetic cell and the cancer cell is held by the author to throw very considerable light on the whole question of malignant transformation.

170 Vibrionic Diarrhoea in Cattle

F S Jones and R B Little (*Journ Exper Med* June 1st, 1931, p 835) have studied a disease of cattle which occurs in epidemic form during the autumn and winter months in certain parts of the United States It is characterized by the passage of dark brown or blackish brown liquid faeces, often containing mucus and blood, and is sometimes known as winter dysentery and sometimes as black scours The mortality appears to be low, but the milk yield is seriously affected both during and after the attack Experimental feeding of calves with faeces from spontaneous cases gave rise to a similar but milder disease Cultures made from the inflamed jejunum yielded vibrios which, on being fed in pure culture to fresh calves sometimes produced an enteritis similar to that occurring in the natural disease In another paper (ibid, p 849) the authors describe a similar infection of calves Animals two weeks or more old are affected, they are unhealthy in appearance, and often have a chronic diarrhoea accompanied by the passage of faeces varying from clay to dark brown in colour, with sometimes blood and mucus The disease is apparently most common in the autumn Vibrios were recovered from the mucosa of the upper jejunum and occasionally from the liver One strain which had been recently isolated produced severe enteritis when fed to a calf, and the organisms were recovered from the jejunum In a third paper (ibid, p 859) F S Jones, M Orcutt, and R B Little describe the characters of the vibrios with particular reference to *Vibrio fetus* to which they are closely related They propose the name of *Vibrio jejuni* for the new organism.

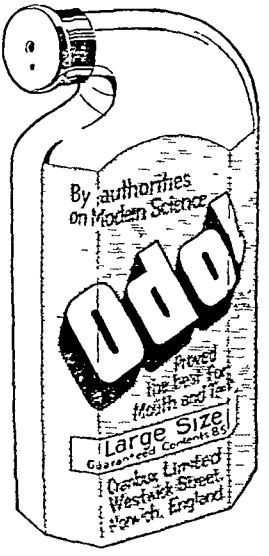
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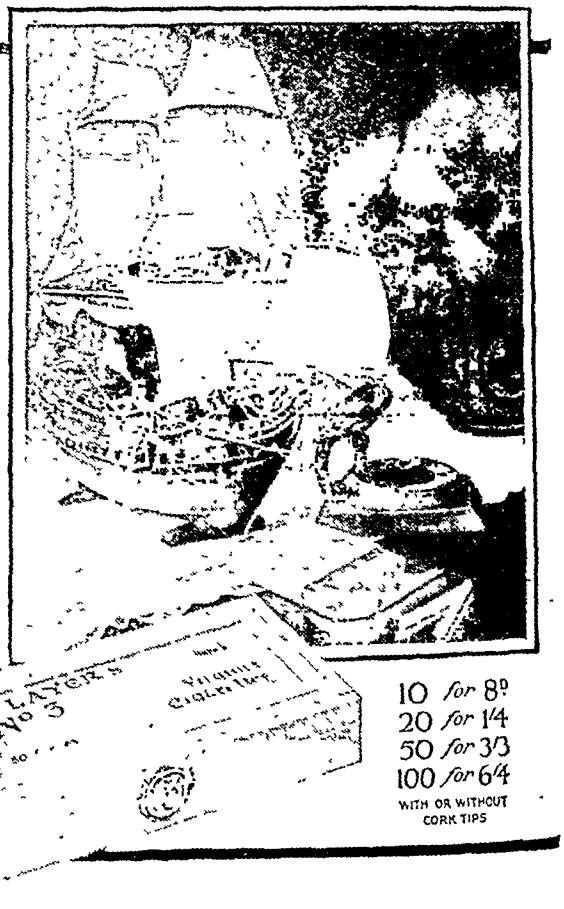
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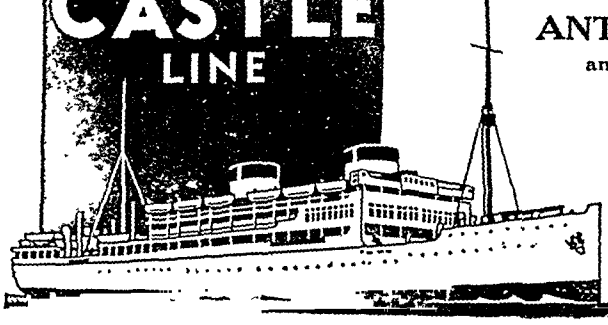
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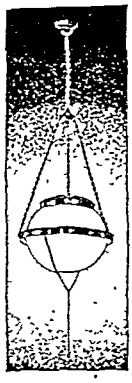
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The seaside house of St Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

HAYDOCK LODGE,

NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out-door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT

COURT HALL, KENTON, EXETER,

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: Teignmouth 289.

TYKEFORD ABBEY, NEWPORT PAGNELL,

BUCKS.

FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-Therapeutic Treatment is used extensively in suitable cases Radiant Heat, X-Ray, and Ultra-violet Light. Diathermy and Foam Baths. Billiards, tennis, etc. Fees from five gns. per week.
Apply, Dr D. E. M. DOUGLAS-MORRIS. *Telephone*: Newport, Pagnell 121.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent*

The MAUDSLEY HOSPITAL

DENMARK HILL, S.E.5.

Telephone: RODNEY 4841–2

A CLINIC instituted by the London County Council for Treatment of VARIOUS forms of CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
IN-PATIENTS: (*a*) 189 beds (both sexes) in wards or separate rooms (*b*) 13 private rooms (for ladies) with special sitting room, garden, and dietary.

TERMS

(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**
(*b*) **£6 6s. a week.**

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the Hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent

BARNWOOD HOUSE,

GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood

CHEADLE ROYAL,

CHEADLE, CHESHIRE.

This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan y Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment
Telephone: 2231 GATLEY

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory* p. 2234.) Apply J. H. EVANS, M.D., Resident Physician. Telephone: Streatham 8430

THE LAWN, LINCOLN.

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All particulars may be obtained from the Resident Medical Superintendent,
Dr MARY R. BARKAS, M.D., D.P.M.

FUNCTIONAL NERVOUS DISORDERS.

CALDECOTE HALL, NUNEATON

RESIDENTIAL TREATMENT of the [illegible] modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful *Country Mansion*. Fees are moderate. *Full particulars from the Resident.*

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Tel. & Telegrams: "Haynes, Brentwood."

Littleton Hall, Brentwood, Essex.

HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield, 1½ mile. Liverp'l St. 26 *min.*—Apply, Dr. HAYNES

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The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

WOODSIDE NERVE HOSPITAL

WOODSIDE AVENUE, MUSWELL HILL, LONDON, N.10

Chairman: THE RIGHT HON. LORD BLANESBURGH, G.B.E. Opened November 8th, 1930.

Fully equipped with every modern appliance for the diagnosis and treatment of

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Private Rooms, Broad Verandahs, Electrotherapy and Hydrotherapy, X-ray and Dental departments, Laboratories for investigation and research. For terms and particulars apply to the Physician in charge at the Hospital. Telephone: Tudor 4211.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

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Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
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(20 miles from London)

Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts Counties Mental Hospital, Hill End. Convalescent and mild cases can be treated in a delightful country mansion, with extensive grounds, known as

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Particulars from the MEDICAL SUPT.

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For Mental Defectives of all ages.

Under private management.

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Driest part of the Coast. Bracing climate. Matron and staff of trained Nurses and Sisters. Medical Officer attends daily. H. and C. Salt-water Baths. Liberal Dietary. Modernized conditions. 1,400 patients received during the season 1930 from all parts of England. Subscribers and inquiries invited—Apply, SECRETARY.

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RENDLESHAM HALL

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Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

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Telegrams and Telephone: Wickham Market 16. *(Toll Call from London.)*



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Telephone: BECKENHAM 1648. *Telegrams:* NOROTORIUM, BECKENHAM

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Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1885 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—

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DRUG ADDICTION & NEURASTHENIA

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At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. CARVER, M.D., D.P.M. Fees moderate. Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1. In cases of urgency 'phone NUNEATON 241.

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

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Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to the Resident Medical Attendant. Telephone: Tamworth 108.

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Owing to extensions there are at present a few Vacancies at the

DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Medical Superintendent,

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. 'Phone: 10 P.O., Church Stretton.

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As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of the Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders.

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'Phone: Chislehurst 451. *Telegrams*: "Masters," Chislehurst.

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A first class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres. Voluntary Boarders accepted.

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HOME FOR TWELVE MENTAL PATIENTS (LADIES). Well appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

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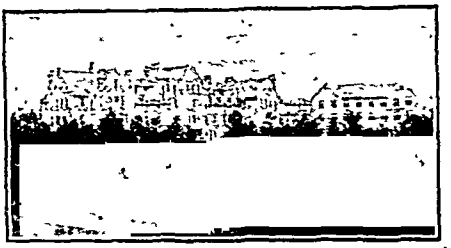
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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

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This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff Nurse on duty all night. Electric lighting throughout, radiators and wireless (headphones) in all rooms.

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For all information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone: NAYLAND 1.

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FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
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Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

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For full particulars apply to *The Secretary*, Nordrach upon Mendip, Blagdon, Bristol *Telegrams*: Nordrach, Blagdon *Telephone*: Blagdon 23.

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As a holiday-resort Scarborough offers a never-ending variety of attractions—excellent Golf, Tennis, and Bathing; good music and attractive entertainments and amusements.

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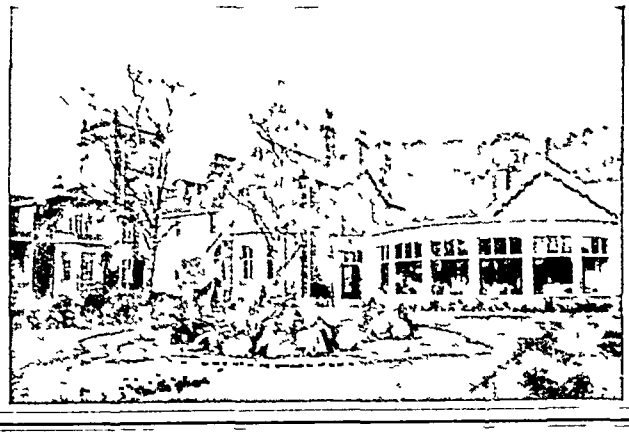
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The richest Sulphur-Iron waters known containing Iron as Ferrous-Sulphate maximum dose only one ounce Wonderfully efficacious for Rheumatoid Arthritis, Rheumatism Sciatica Neuritis Anaemia, and Kindred Ailments

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PAYING PATIENTS RECEIVED.

BOTH MEDICAL and SURGICAL CASES.

4 to 8 guineas per week at the Hospital. 3 to 4 guineas per week at the Sanatorium.

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With Vita-glas Sun lounge and Marine Parade on the South Coast

Every kind of Bath Plombiere Lake
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Perfect climate Sports Bathing English private country house resorted people wintering abroad English and British doctors Language—Miss Nevill c/o Barclays Bank 4 the Broadway and Gunnersbury Lane W.3

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First-Class Residential Medical Establishment.

In elevated, sheltered and sunny situation above the Lake Leman; with the latest installations for the treatment of all Digestive and Nervous Troubles, Diabetes, Obesity, Undernourishment, Asthma, Rheumatism, Convalescences.

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SOME SUCCESSES:

M.D.(Lond.), 1901-30 (9 Gold Medallists during 1915-30)	336
M.S.(Lond.), 1901-30 (including 4 Gold Medallists)	22
M.B.,B.S.(Lond.), *Final* 1906-30 (*Completed Exam.*)	269
F.R.C.S.(Eng.), *Primary* 1906-30)	162
Final	161
M.R.C.P.(Lond.), 1914-30	192
D.P.H. (Various) 1906-30 (Completed Exam.)	300
F.R.C.S.(Edin.), 1918-30	46
M.R.C.S.,L.R.C.P. *Final* 1910-30 (Completed Exam.)	467
M.D.(Dur.) (Practitioners) 1906-30	38
M.D. Various. By Thesis. Numerous successes.	

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities; also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral [illegible] for Medical higher Surthe Special urse. Open- theses. with list of tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes with DEMONSTRATIONS will commence shortly. CORRESPONDENCE COURSE for Jan. and later Exams. should begin now.—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

Grove House, All Stretton, Church Stretton, Shropshire.

A Private Home for the care of and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

Elderly Lady, slight mental trouble, requires HOME and CARE in house of Doctor accustomed to such cases. South Coast preferred. State full particulars.—Address, No 5130, B.M.A. House, Tavistock Square, W.C.1.

South Coast Convalescent Home.—Daily patients received; massage, electrical and mechanical bath practice. Excellent house, suitable rheumatic clinic; well-established connection.—Full particulars from EDGAR HORN, Eastbourne.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Tuesday, September 1st.
Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.
A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)
Further particulars may be obtained from Professor WILLIAM WRIGHT M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Tuesday, Sept. 1st.
The Fee for the Course is 15 guineas.
Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE.

Final F.R.C.S. Class.

A Course of instruction, suitable to the requirements of candidates for the Final F.R.C.S. Examination in November, will begin on September 3rd, 1931.
For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

ST. BARTHOLOMEW'S MEDICAL COLLEGE.

M.R.C.P. CLASS.

A course of Instruction, suitable to the requirements of candidates for the M.R.C.P. Examination in January, will begin on November 2nd, 1931.
For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

SOCIETY OF APOTHECARIES OF LONDON.

MASTERY OF MIDWIFERY.

Examinations will be held beginning Monday, November 16th, 1931, and Tuesday, May 17th, 1932.
For regulations, apply to the Registrar, Water Lane, E.C.4.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatmen of [illegible]" —*Times*."
"—*Lancet*"
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STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

MEDICAL CORRESPONDENCE COLLEGE

19, WELBECK ST., LONDON, W.1. Tel: Welbeck 8901.

PROVIDES HIGHLY SUCCESSFUL ORAL AND POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS.

Special Preparations for all Surgical Qualifications.

F.R.C.S.ENGLAND. (Primary & Final.) M.C.CANTAB. M.S.LONDON

F.R.C.S.EDINBURGH.

And all other Surgical Degrees and Diplomas.

¶ The remarkable success of Students of the Medical Correspondence College at the higher Surgical Examinations is specially noteworthy.
¶ Both at the Primary and Final F.R.C.S. England the majority of our Students are successful at the first attempt, and Candidates who have failed at these Examinations on several previous occasions get through without difficulty after going through our courses.
¶ The Surgical Tutors of the College all hold either the M.S.Lond. or F.R.C.S.England, or both, and are highly experienced teachers.
¶ The Postal Courses are thoroughly clear, concise, and up to date, and the test questions are carefully selected from those set at previous Examinations, so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time, and much unnecessary reading is saved.

VALUABLE BOOK

"How to Pass the F.R.C.S.," free on application to the Secretary.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.
MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.
PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.G. regulations.
PRIVATE WARDS for paying patients.
MATERNITY NURSES sent out for private cases.

GUY'S HOSPITAL MEDICAL SCHOOL.

FINAL FELLOWSHIP COURSE.
September—November, 1931.

A Course of instruction in preparation for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday, September 2nd, 1931.
T. B. JOHNSTON, Dean.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE.

Specialises in CAREERS FOR GIRLS. General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN*.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Westminster Medical Hospital School (University of London)

NEXT TERM COMMENCES OCTOBER 1st.

Valuable Entrance Scholarships are awarded annually. Hospital Centrally Situated (opposite Westminster Abbey). Extensive Sports Ground. Fees £40 per annum. Entrance Fee 10 guineas.

The Dean or Sub-Dean will be pleased to arrange for intending students and parents to inspect the Hospital and Medical School at any time. Only male students are admitted.

A Prospectus and full particulars may be obtained on application to the Dean: A S WOODWARK, CMG, CBE, MD, FRCP, Westminster Hospital Medical School, Caxton Street, S W.1. Telephone Victoria 0760

UNIVERSITY OF BIRMINGHAM

FACULTY OF MEDICINE

(Associated with the General, Queen's, and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 5th, 1931.

The University grants Degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health, also Degrees and a Diploma in Dental Surgery

The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine.

SCHOOL OF DENTISTRY. (University of Birmingham and Birmingham Dental Hospital)

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies A Dental Scholarship of the value of £40 17s 6d is offered annually

PRE-MEDICAL AND PRE-DENTAL EXAMINATIONS

The necessary Courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For Syllabus and further information apply to STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL.

THE WINTER SESSION will Open on Thursday, October 1st.

The Hospital is the largest in England There are 839 beds in constant use Last year number of in patients, 14,256, out patients 85,554 attendances 529,543, dental patients 6,063 major operations, 7,401

The MEDICAL COLLEGE and DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and the most approved appliances The STAFF is so large as to permit of individual attention being paid to all Students

MEDICAL UNIT —A Clinical Unit in Medicine, under the charge of a whole time Director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co ordination of medical research.

RESEARCH FUNDS of approximately £115,000 give unrivalled facilities for Medical Research

SCHOLARSHIPS and PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £350 and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200

APPOINTMENTS —Over 160 Appointments are made annually from Students of the College recently qualified

SPECIAL COURSES are held for all the University Examinations, for the Primary and Final Fellowship Examination of the Royal College of Surgeons, and for the Membership Examination of the Royal College of Physicians

HOSPITAL PRACTICE —Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital

A Clubs Union, an *Athletic Ground* of over 13 acres, and a *Students' Hostel* promote the recreation, health, and comfort of the Students

For Prospectus and Particulars apply to the Dean (Professor WILLIAM WRIGHT, MB, DSc, FRCS), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School

Mile End, E.1

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First MB Examinations, University Scholarships in Chemistry, Biology, etc

Special facilities are offered for the teaching of Chemistry, Physics Botany, and Zoology

New Science Buildings containing seven laboratories, two lecture rooms, science library, store rooms, etc, opened in September, 1925 Prospectus from Head Master

SCHOOLS for BOYS and GIRLS

TUTORS FOR ALL EXAMS

Messrs J & J PATON, having an up to date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent will be pleased to ADVISE PARENTS in their choice by personal interview (free of charge) prospectuses and sending (free of charge) prospectuses and INFORMATION and ADVICE THEREWITH. The age of the pupil district preferred, and rough idea of fees should be given J & J PATON, Educational Agents, 143, Cannon St, London, EC4 4dl : Mansion House 5033

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting six months) for the Diploma in Tropical Medicine (three months) for the Diploma in Tropical Hygiene commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D T H. must possess the D T M of the University)

For particulars apply to the Hon Secretary, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

MIDDLESEX HOSPITAL MEDICAL SCHOOL,

LONDON, W.1.

(University of London)

The WINTER SESSION begins on October 1st and new students should apply for admission at an early date.

The Medical School and Hospital occupy a central position within a few minutes walk of Oxford Circus. They are fully equipped for teaching the entire Medical curriculum both for University Degrees and the Conjoint Course.

The new West Wing of the Hospital is fully occupied. The rebuilding of the remainder is proceeding without the loss of a single bed. The remodelled Out-patient Department continues to expand, the newly built Residents' Block affords greatly improved facilities, the Nurses' Home is the finest in London. These with other new buildings including magnificent Laboratories give to the Middlesex Hospital and its Medical School the most modern facilities obtainable in Great Britain.

THIRTY-ONE RESIDENT APPOINTMENTS are offered annually to students recently qualified. In addition NINE REGISTRARS are also appointed annually.

SCHOLARSHIPS AND PRIZES of a value exceeding £1,000 are awarded each year.

Large Athletic Grounds at North Wembley.

There is no accommodation for women students. Well-equipped Restaurant.

For further particulars and Prospectus apply to the Dean, T. LIOD BENNETT, M.D., F.R.C.P., or School Secretary, Middlesex Hospital, Mortimer Street, London, W.1.

Royal College of Physicians of EDINBURGH

KIRK DUNCANSON FELLOWSHIP FOR MEDICAL RESEARCH

In accordance with the bequest by Mrs. ISABELLA KIRK DUNCANSON to commemorate the late Dr. J. J. KIRK DUNCANSON, the Council of the Royal College of Physicians of Edinburgh will award the Kirk Duncanson Research Fellowship in October, 1931. The Fellowship will be awarded annually for a period of one year. It may be renewed to the same beneficiary for two additional periods of one year each. The emolument will be upwards of £150 for the first year, about £250 for the second year, and about £350 for the third year. In recognition of Dr. Kirk Duncanson's interest in the Diseases of the Ear, Nose, and Throat, in making this first award special consideration will be given to the claims of candidates who propose to devote themselves to that branch of Medicine. Applications and recommendations with particulars of the special line of research contemplated, and of the place where the investigations are to be conducted, should be in the hands of the Secretary of the College by October 15th.

Medical Sickness Annuity & LIFE ASSURANCE SOCIETY, LTD.,

300, High Holborn, LONDON, W.C.1.

Notice is hereby given that the ANNUAL GENERAL MEETING of the Members of the above Society will be held at the First Avenue Hotel, High Holborn, London, W.C., on Wednesday, October 7th, 1931, at 4.30 p.m.

By Order of the Board,
BERTRAM SUTTON,
August 21st, 1931. Manager & Secretary.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams. Matric. and Prelims.
Chemistry, Physics and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327 Oxford Road, Manchester.

M.D. THESIS.

Advice and legitimate assistance by an expert in Preparation of Theses.—Address No. 1001, B.M.A. House, Tavistock Square, W.C.1.

Bristol Eye Hospital

Applications are invited for the post of RESIDENT HOUSE SURGEON, single man. Salary £150 per annum. Twelve months' appointment vacant November 1st. Applications to be received by the Secretary, on or before Wednesday, September 9th.

Bristol Eye Hospital

Applications are invited for the post of ANÆSTHETIST. Vacant immediately. Applications to be received by the Secretary on or before Saturday, September 5th.

County Council of Durham.

ASSISTANT WELFARE MEDICAL OFFICER

The County Health Committee invite applications for the appointment of an Assistant Welfare Medical Officer (woman) at a commencing salary of £500 per annum, rising by annual increments of £25 to £700 per annum. Travelling expenses will be paid by the County Council according to scale

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I must be a registered
between the ages of
25 and 45 years must devote the whole of her time to the duties of the office, and must not engage in private practice.

(2) She should either have held a previous appointment as Medical Officer of an Ante-Natal Clinic with the approval of the Minister of Health or have had at least three years' experience in the practice of her profession and special experience of practical midwifery and ante-natal work. The holding of a Diploma in Public Health and practical experience in bacteriological laboratory work will be deemed additional qualifications for the post.

(3) She will be subject to the directions of the County Medical Officer.

(4) She will be required to reside in Durham City or such other place as required by the Council.

(5) She must be prepared, if called upon to act as Locum Tenens to other members of the Medical Staff of the County Medical Officer.

(6) The appointment will terminate on marriage.

(7) The candidate appointed will be required to pass the County Council's medical examination and will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applications endorsed "Assistant Welfare Medical Officer," with copies of not more than three recent testimonials must be received by the County Medical Officer, Shire Hall, Durham, not later than the 27th instant.

HAROLD JEVONS,
Clerk of the County Council.

Shire Hall, Durham.
August 10th, 1931.

Hendon Urban District Council.

Combined post of RESIDENT MEDICAL OFFICER at the ISOLATION HOSPITAL and ASSISTANT MEDICAL OFFICER for General Purposes

Applications are invited for the above post. The successful candidate will be required to reside at the Isolation Hospital, and to perform the duties of Resident Medical Officer, together with other duties in connection with the Council's Maternity and Child Welfare and School Medical Services and, generally, to assist the Medical Officer of Health.

Candidates must possess a Public Health qualification, and should have had Fever Hospital experience.

The salary is £500, rising by £25 per annum to £600 per annum, with board, lodging and laundry.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination.

Applications on forms to be obtained from the undersigned, together with copies of not more than three recent testimonials to be sent to the undersigned not later than Friday, August 28th

[illegible] directly, will be

[illegible] WORDEN
[illegible] Clerk to the Council.

August 4th, 1931.

British Medical Association

APPOINTMENT OF SCOTTISH MEDICAL SECRETARY

The Council of the British Medical Association is prepared to receive applications from registered medical practitioners for the appointment of Scottish Medical Secretary. He will be required to live in Edinburgh and to give his whole time to the duties of his office. Duties to commence as arranged but not earlier than January 1st, 1932, and the appointment to be subject to six months' notice on either side.

Salary £950 rising to £1,250 by annual instalments of £50, subject to deductions for superannuation.

Applications stating experience and age with not more than three recent testimonials should be received by the Medical Secretary, British Medical Association, Tavistock Square, W.C.1, not later than by first post October 1st, 1931.

Canvassing not allowed.

ALFRED COX,
Medical Secretary.

Wilts County Council.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector. Applicants must be fully qualified Medical Practitioners and must hold a Diploma in Public Health, or an equivalent qualification.

The salary will be £600 per annum rising by annual increments of £25 to a maximum of £750 per annum, and will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination. Travelling allowance for own motor car in accordance with County scale.

The officer appointed will be required to reside in any centre in Wiltshire as may be decided by the Committee, to devote his whole time to the duties of the office and to act under the direction and control of the County Medical Officer of Health, who is also School Medical Officer. The duties of the post will be chiefly concerned with the School Medical Service but a proportion of the officer's time will be devoted to the Public Health work of the County and work under the Mental Deficiency Acts. The appointment will be determinable by three months' notice on either side.

Applications on form to be obtained from the undersigned, together with copies of not more than three recent testimonials and enclosed in envelope marked "Assistant Medical Officer," to be lodged with the undersigned not later than the first post on Monday, August 31st.

Canvassing, either directly or indirectly, is strictly prohibited, and will be regarded as a disqualification.

County Offices,
Trowbridge.
August 1931.

W. L. BOWN,
Clerk of the County Council.

Hampshire County Council.

ASSISTANT COUNTY MEDICAL OFFICER

Applications are invited for the post of Assistant County Medical Officer. Possession of a Diploma or Degree in Public Health is essential and previous experience in Tuberculosis work is desirable. Experience in other departments of Public Health work, including Medical Inspection of School Children, Maternity and Child Welfare, and Venereal Diseases, will be considered an advantage.

Salary £600 a year, rising by annual increments of £25 to £750 (subject to deductions under the Local Government and Other Officers Superannuation Act, 1922) in addition to travelling expenses and subsistence allowances.

When the County Districts have been reorganized, there may be an opportunity of securing a better appointment at increased remuneration.

Applications, with copies of not more than three recent testimonials upon a form which, with the conditions of appointment, may be obtained from the County Medical Officer, The Castle, Winchester, should be sent to him as soon as possible and not later than September 12th. Canvassing is prohibited.

East Lancashire Tuberculosis

COLONY, Barrowmore Hall,
Great Barrow, CHESTER.
(Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.)

ASSISTANT MEDICAL OFFICER (male) required, to take up duties early in September. Salary £275 rising to £300 per annum at the end of six months, with board, residence, and laundry.

The appointment will be terminable by one months notice.

Preference will be given to candidates with experience in Tuberculosis.

The last three Medical Officers have obtained good appointments in County Service.

Applications marked "Assistant Medical Officer" with copies of three recent testimonials to be sent to the Medical Superintendent at the above address before August 25th.

City of Birmingham.

CANWELL HALL BABIES' HOSPITAL. (80 Beds.)

MATERNITY AND CHILD WELFARE DEPARTMENT

A SECOND RESIDENT MEDICAL OFFICER is required for a period of six months' duties to commence on October 1st. Applications are invited from ladies with previous experience as House Physician or Surgeon in a Children's Hospital. Salary £200 per annum with board and laundry.

Applications giving particulars of qualifications, age and experience should be sent to the Medical Officer of Health, the Council House, Birmingham, on or before August 29th.

The Lady Chichester Hospital,
HOVE
(For Early Nervous Breakdowns 50 Beds)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board lodging, and laundry Honorarium at the rate of £50 per annum The successful candidate will be required to enter in her duties as soon as possible

Applications must be made in writing, and be accompanied by testimonials, and sent to the Secretary, Mr A F. GRAVES, 117, North Street, Brighton

August 1st, 1931

Nottingham General Dispensary.
BROAD STREET, NOTTINGHAM.

Wanted, RESIDENT SURGEON (male), unmarried Must have Medical and Surgical qualifications Salary £250, with £25 increase per year up to £300 Apartments (not board), attendance, lights, and fuel This Institution is a non-provident one No beds No midwifery

Applications, stating age and accompanied by recent testimonials, to be sent by September 9th to—

5, Thurland Street, Nottingham. R J. WILLATT, Secretary.

The Children's Hospital,
SUNDERLAND. (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female) Candidates must possess double qualifications (registered) Salary £100 per annum, with board, residence, and laundry. The appointment is for six months Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned

S C TRYERS,
House Governor and Secretary.

Queen Charlotte's Maternity
HOSPITAL, Marylebone Road, N W 1

DISTRICT RESIDENT MEDICAL OFFICER (male or female) required to commence duty on October 1st Applicants must be registered The appointment is for six months The salary is at the rate of £60 per annum, with board, residence, and washing allowance (4 weekly)

Applications, with copies (not originals) of not more than three testimonials, should be sent to the Secretary by September 3rd Canvassing is prohibited.

ARTHUR WATTS, Secretary

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, vacant now

The appointment is for six months renewable (determinable by three months notice on either side)

Salary at the rate of £150 per annum, with board, lodging, and laundry

Candidates (male) should forward applications, stating age, nationality, etc, together with copies of testimonials, to the Secretary at once

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered Number of beds, 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before Aug 25th

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Bedford County Hospital.
(124 Beds)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once Salary £130, with board, lodging, and laundry

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon Secretary, Hon Medical Staff Committee as soon as possible.

Stockport Infirmary.

Immediate applications are invited for the post of HOUSE PHYSICIAN (male) Salary £175 per annum, with board, residence, and laundry

Applicants must enclose copies of three recent testimonials, and give particulars of age, University, and experience

EDWIN J. PEARCE, Secretary Supt

Derbyshire Royal Infirmary,
DERBY
(General Hospital—346 Beds)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON

Candidates must be qualified and registered under the Medical Acts

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three), to be sent to the undersigned.

WALTER BANKS,
Superintendent and Secretary.

August 21st, 1931

Altrincham General Hospital,
CHESHIRE (100 Beds)

Applications are invited for the position of JUNIOR HOUSE SURGEON. Salary at the rate of £120 per annum, with board, residence, and laundry The appointment is for six months in the first instance, to commence on September 1st next.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

Queen's Hospital, Birmingham.

Applications are invited for the post of THIRD PHYSICIAN for Out patients Candidates must be Graduates of a University in Great Britain or Ireland, also Fellows or Members of the Royal College of Physicians of London, Edinburgh, or Ireland

Honorarium £50 per annum.

Further particulars may be obtained from the undersigned, to whom applications must be sent *not later than September 19th*, stating date of birth, and accompanied by testimonials

Birmingham. July 28th, 1931. G HURFORD, House Gov. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH (240 Beds)

Applications are invited for the post of RESIDENT ANÆSTHETIST and HOUSE SURGEON to the Special Departments (female)

Salary £100 per annum, with board, residence, and laundry Appointment is tenable for six months, and is subject to renewal Duties to commence September 6th Candidates [illegible] der the Medical Acts age and qualifications, of recent testimonials, to reach the undersigned by August 28th

ARTHUR R CASH,
August 17th, 1931. Gen Supt & Secretary.

Seamen's Hospital Society,
Greenwich

The Committee invite candidates for the appointment of HOUSE PHYSICIAN at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W.C Candidates must be male, doubly qualified and registered. The elected candidate will be required to take up duty on October 1st Salary at the rate of £150 per annum, with board, residence, and washing The appointment will be for six months.

Applications, stating age, together with copies of not more than three recent testimonials, to be sent in on or before September 8th to the undersigned, from whom further particulars can be obtained.

Greenwich. August 14th, 1931. R. E. V. BAX, Secretary.

Seamen's Hospital Society,
Greenwich

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from October 1st, Salary £110 per annum, and a proportion of fees, with board, residence, and washing Candidates must be male. Applications, with copies of three testimonials, to be sent in by September 8th to the undersigned.

Greenwich August 14th, 1931. R E V BAX, Secretary.

Seamen's Hospital Society,
Greenwich

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E 16, for six months from October 1st Salary £110 per annum and a proportion of fees, with board, residence, and washing Candidates must be male Applications, with copies of three testimonials, to be sent in by September 8th to the undersigned.

Greenwich. August 14th, 1931. R. E. V BAX, Secretary.

Stockton & Thornaby Hospital,
STOCKTON ON TEES
(140 Beds—3 Residents)

Applications are invited for the posts of JUNIOR RESIDENT MEDICAL OFFICERS (two) for a period of at least six months each required immediately, and the second to commence duties on September 18th, 1931 Salary £175, with board, residence, and laundry Candidates must be duly qualified and unmarried Applications, stating age, nationality and experience, together with copies of three recent testimonials, to be sent to the undersigned.

JOHN WILKINSON, Secretary

The Guest Hospital, Dudley.
(General Hospital, 107 Beds)

Applications are invited for the post of ASSISTANT HOUSE SURGEON Salary £170 per annum, with furnished apartments, food and laundry Duties to commence immediately Candidates must be fully qualified and registered.

Applications, stating age, qualifications and experience, and accompanied by copies of testimonials, to be sent to the undersigned

H RAYMOND HURST,
House Governor and Secretary
The Guest Hospital, Dudley.
August 17th, 1931

The Stamford, Rutland and
GENERAL INFIRMARY, STAMFORD

HOUSE SURGEON (English) wanted for Saturday, September 5th, for a period of six months Salary at the rate of £4 4s per week with board, residence, and laundry in the Infirmary Candidates to forward three recent testimonials, with particulars as to age, qualifications, and experience, to us on or before August 29th.

STAPLETON & SON,
Stamford Solicitors

The Hospital for Sick Children,
NEWCASTLE UPON TYNE.
(94 Beds)

Applications are invited for a HOUSE PHYSICIAN (male or female) for a period of six months as from October 1st Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th

The Hospital for Sick Children,
NEWCASTLE UPON TYNE
(94 Beds)

Applications are invited for a SENIOR HOUSE SURGEON (male or female) for a period of six months as from October 1st Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th.

The Hospital for Sick Children,
NEWCASTLE UPON TYNE
(94 Beds)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female) non resident for a period of six months as from October 1st Salary at the rate of £100 per annum, together with board, residence, and laundry Applications, stating age and qualifications with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th

Margate & District General
HOSPITAL (98 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties on September 1st next Salary £150 per annum, with board and laundry

Applications, accompanied by copies of testimonials, should be addressed to the Secretary, the Hospital as early as possible

Royal Edinburgh Hospital for
MENTAL AND NERVOUS DISORDERS

ASSISTANT PHYSICIAN wanted Salary £350 per annum, with board and [illegible] Applications, with particulars of experience, etc, addressed to Professor ROBERTSON, Medical Superintendent, Royal Hospital, Morningside, Edinburgh

West London Hospital,
Hammersmith Road, W.6.
(234 Beds)

Applications are invited for the post of RESIDENT ASSISTANT SURGEON The present holder of the post is not re-applying, and the appointment is an open one Salary at the rate of £200 per annum (plus £25 for services in connection with the Venereal Diseases Department), with board, residence, and laundry allowance. (Four weeks' holiday a year) The appointment is for one year, terminable by one month's notice on either side, and subject to annual re-election, may be extended to not more than three years

Candidates must be duly qualified Medical Practitioners, and it is desirable that they should hold the F.R.C.S (England) Diploma As Senior Resident Officer, the Resident Assistant Surgeon will also be responsible for certain administrative duties

Applications, with copies of testimonials, must reach me not later than first post on Thursday, September 17th. Candidates must attend a Meeting of the Medical Council on Friday, September 18th, at 4.30 p.m., and, prior to that date, call upon and send copies of application and testimonials to each member thereof They must not canvass Members of the Board, but, if so notified, must attend a Meeting of the Board at 5 p.m. on Tuesday, September 22nd, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (234 Beds)

Required, one HOUSE PHYSICIAN, one HOUSE SURGEON (General and Gynaecology), one HOUSE SURGEON (General and some Deep X Ray Therapy), and one RESIDENT ANAESTHETIST (males), for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be on printed forms obtained from me) must reach me not later than first post on Thursday, September 17th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, September 25th at 4 p.m., and the House Committee meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Leicester Royal Infirmary.
(472 Beds)

HOUSE SURGEONS AND CASUALTY HOUSE SURGEON.

Vacancies are expected to arise on October 1st, for House Surgeons and Casualty House Surgeon.

Salaries at the rate of £125 per annum Applicants must have held a resident Hospital post or had similar experience of Hospital work Election September 9th

Applications should be forwarded on or before August 30th to the House Governor and Secretary.

August 7th, 1931.

Leicester Royal Infirmary.
(472 Beds)

HOUSE PHYSICIAN.

A vacancy is expected on October 1st, and applications are invited for the post.

Salary at the rate of £125 per annum Applicants must have held a resident Hospital post, or had similar experience of Hospital work. Election September 9th.

Applications should be forwarded on or before August 30th to the House Governor and Secretary.

August 7th, 1931.

Weir Hospital,
Grove Road, Balham, S.W.12.

RESIDENT MEDICAL OFFICER (male, unmarried) required for War Memorial Maternity Home attached to above Hospital Candidates must be fully qualified and duly registered Salary £150 per annum, with board, residence, and laundry Applications, with copies of testimonials, to be sent to the Secretary Superintendent, from whom further information may be obtained

Rotherham Hospital.
(130 Beds)

Wanted, CASUALTY HOUSE SURGEON (male), qualified Salary £150, with board, residence, and laundry.

Applications, with copies of recent testimonials to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Swansea and Merthyr Tydfil
JOINT MENTAL HOSPITAL, SWANSEA.

MEDICAL SUPERINTENDENT.

The Swansea and Merthyr Tydfil Joint Mental Hospital Committee invite applications from legally qualified and registered Medical Practitioners for the appointment of Medical Superintendent at their Mental Hospital, now in course of erection, at Skelly, in the County Borough of Swansea.

The Institution is designed to accommodate 700 beds, and includes, in addition to the main building, an Admission Hospital, Convalescent Homes, and other detached Villas.

Applicants must be under 46, but not less than 30 years of age.

The salary will be £800 per annum, rising to increments of £50 a year to £1,000, plus a house which, with other usual residential emoluments, are provisionally valued at £250 a year.

Applications must be made upon a prescribed form which, together with the particulars and conditions of the appointment, may be obtained from the undersigned, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Saturday, September 5th.

Canvassing members of the Committee, either directly or indirectly, is prohibited, and will disqualify

The Guildhall, H. L. LANGCOATH,
Swansea. Clerk of the Joint Committee.

Birmingham and Midland Skin
HOSPITAL,

JOHN BRIGHT STREET, BIRMINGHAM.

Applications are invited from registered Medical Practitioners to act as CLINICAL ASSISTANTS in the Out patient Consulting Room each afternoon, except Saturday and Sunday.

Honorarium at the rate of 26 guineas per annum for one afternoon per week.

Applications (one copy), stating age, qualifications, experience, present engagements, and afternoons at liberty, should be addressed to the Secretary of the Medical Committee not later than September 4th

The work of the Hospital can be seen each afternoon by doctors and bona fide students.

HUBERT SUMNER, Secretary.

East Ham Memorial Hospital,
Shrewsbury Road, London, E.7.
(100 Beds)

Applications are invited for the post of HOUSE SURGEON to Special Departments, and CASUALTY OFFICER, for six months, commencing October 1st Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of testimonials, should reach the undersigned by first post on September 14th

REGINALD PERRY, Secretary.

East Ham Memorial Hospital,
Shrewsbury Road, London, E.7.
(100 Beds)

Applications are invited for the post of HOUSE PHYSICIAN for six months commencing October 1st. Salary at the rate of £150 per annum, with board, residence, and laundry. Applications, stating age, experience, and full particulars, together with copies of testimonials, should reach the undersigned by first post on September 14th

REGINALD PERRY, Secretary.

Birmingham and Midland Eye
HOSPITAL, Church St., BIRMINGHAM.

HOUSE SURGEON required at the above Hospital. Salary £110 per annum and £10 laundry allowance.

Applications, together with copies of not more than three testimonials, should be received not later than first post on Tuesday, August 25th. Further particulars can be obtained from the undersigned.

C. A. MASON, Gen. Supt

Swansea General and Eye
HOSPITAL (316 Beds)

HOUSE PHYSICIAN wanted, gentleman, single Salary £150 per annum, with board, residence, and laundry Duties to commence at once

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned

O. C. HOWELLS,
Secretary Superintendent.

The Royal Portsmouth Hospital.
(FIVE RESIDENT MEDICAL OFFICERS)

Applications are invited for the posts of:
SENIOR HOUSE SURGEON (male). Salary at the rate of £175 per annum, with board, etc. Candidates must have held an appointment as House Surgeon at a General Hospital, as the post is a very responsible one
HOUSE PHYSICIAN (male). Salary at the rate of £130 per annum.
HOUSE SURGEONS (two, male) Salary at the rate of £130 per annum each
CASUALTY OFFICER (male). Salary at the rate of £100 per annum.

All officers must be qualified, and will be required to commence on October 1st (six months' appointments, and eligible on completion of term for extension or other resident posts.)

Applications, stating age, nationality, and full details with copies of three testimonials, to be sent to the undersigned not later than September 5th, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Tynemouth Victoria Jubilee
INFIRMARY.

One HOUSE SURGEON (male) required about October 1st Applicants must be doubly qualified and registered. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and other essential particulars, and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained.

The Hospital has two resident House Surgeons, and contains 80 beds and cots, an X-Ray Department, and an Out patient Department where accident cases are received

CHARLES ROWELL, Assistant Secretary.
1, Northumberland Place, North Shields.

Kent County Ophthalmic and
AURAL HOSPITAL, MAIDSTONE.
(110 Beds)

Applications are invited for the post of HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, which will be vacant early in September Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The Hospital is recognized by the Examining Board for the D.L.O The appointment will be for six months, but may be renewed for a second six months. Salary at the rate of £200 per annum, with board, residence, and washing

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

Preston and County of Lancaster
ROYAL INFIRMARY. (350 Beds.)

The Board of Management invite applications for the post of RESIDENT SURGICAL OFFICER. A Fellowship Degree, and experience in Obstetrical work will be a recommendation. The post affords facilities for Surgical experience.

Salary £300 per annum, with board, residence, and washing

Applications, stating age, qualifications, and experience, accompanied by copies of testimonials, to be forwarded immediately to—

JOHN GIBSON,
August 11th, 1931. Supt. and Secretary.

North Devon Infirmary,
BARNSTAPLE.

Wanted, September 1st, duly qualified RESIDENT MEDICAL OFFICER (Gentleman or Lady) Salary £150 per annum, with board, apartments, and laundry. Appointment to be for not less than six months

Applications, stating age, qualifications, with copies of recent testimonials, to be sent forthwith to the Hon Secretary.

Lowestoft and North Suffolk
HOSPITAL.

JUNIOR HOUSE SURGEON (man or woman) required September 10th. Salary £120 per annum, with board, residence, and laundry

Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent

Longton Hospital, Staffordshire.

Lady HOUSE SURGEON required immediately.

Applications, with copies of three recent testimonials, and stating salary required (there is also free board, residence, and laundry, and certain fees), to be sent at once to the Chairman of Directors, Longton Hospital, Stoke-on-Trent

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited for the posts of HALF-TIME ASSISTANT TUBERCULOSIS OFFICERS (four in number) to be attached to the Cardiff, Newport, Bridgend, and Pontypridd areas respectively, and commencing duty on October 1st next. The appointments are limited to one year, at a remuneration for the year of £250. During their tenure, successful candidates will be expected to take the Course of the Diploma in Tuberculosis Diseases (Wales) at the Tuberculosis Department, Welsh National School of Medicine, and afterwards sit the examination.

Applicants must have held a house appointment in Medicine or Surgery for at least six months in a General Hospital, and must also have held a post as resident for a period of twelve months in an institution for the treatment of Tuberculosis (Medical or Surgical).

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, to be sent to the undersigned not later than August 29th.

D. A. POWELL,
Principal Medical Officer.

Memorial Offices, Westgate Street, Cardiff.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners (female) for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the CEFN MABLY TUBERCULOSIS HOSPITAL, Michaelstone-y-Vedw, near Newport, Monmouthshire (110 beds for male and female pulmonary cases).

Salary £250 per annum, plus maintenance, the appointment being limited to one year.

Applications, stating age, qualifications, and previous experience, etc., together with copies of three recent testimonials, should reach the undersigned not later than August 29th.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

County Borough of Halifax.
ST. LUKE'S HOSPITAL

The Health Committee of the Halifax Corporation invite applications for the post of HOUSE SURGEON at the above Hospital for a period of six months, at a salary at the rate of £250 per annum, with the usual residential allowances.

Applications, stating age and qualifications, together with copies of three recent testimonials, must be forwarded to the undersigned not later than Monday, the 31st instant.

Canvassing, either directly or indirectly, will disqualify.

By Order,
PERCY SAUNDERS,
Town Clerk.

Town Clerk's Office, Carlton Street Branch, Halifax.
August 12th, 1931.

Staffordshire General Infirmary,
STAFFORD

HOUSE SURGEON (male or female) required middle September. Salary £200 per annum, with board, residence, and laundry. Candidates must be duly qualified and registered under the Medical Acts. The Hospital has 100 beds, and the House Surgeon is the senior of two Residents. The appointment must be held for at least six months. Applications, stating age, accompanied by copies of three recent testimonials, should be forwarded to the undersigned on or before Thursday, 27th instant.

Stafford, August 21st, 1931. A. E. COLLINS, Secretary.

The Bristol Royal Hospital for
SICK CHILDREN AND WOMEN,
St. Michael's Hill, BRISTOL

Applications are invited for the positions of HOUSE SURGEON and HOUSE PHYSICIAN. Salary £125 per annum, with board, rooms, attendance, and laundry. Applicants should state age, qualifications, experience, and send testimonials to the undersigned not later than August 27th.

REGINALD C. THOMAS, Secretary.

Liverpool Open-Air Hospital for
CHILDREN (260 Beds)
Surgical Tuberculosis and Orthopædics

Vacant on October 1st, the post of JUNIOR RESIDENT MEDICAL OFFICER.

Salary £200 per annum, with board, residence and laundry.

Applications to be sent not later than September 19th, to the Senior Medical Officer.

Caernarvonshire County Council.

Applications are invited for the post of DEPUTY MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER for the County of Caernarvon.

Candidates must hold a Diploma in Public Health, and a knowledge of the Welsh language is desirable.

Salary £700 per annum, rising by annual increments of £25 to a maximum of £800 per annum.

The successful candidate must devote the whole of his time to the duties of the office, and will not be allowed to engage in private practice.

Applications, on forms to be obtained from the undersigned and endorsed "Deputy Medical Officer," must be delivered at this office on or before September 12th.

DAVID G. JONES,
Clerk to the County Council.

County Offices, Caernarvon.
August 12th, 1931.

Joint Counties Mental Hospital,
CARMARTHEN.

JUNIOR ASSISTANT MEDICAL OFFICER.

The Committee of Visitors of the above Institution (652 patients) invite applications from duly qualified male unmarried candidates, not over 35 years of age, for the post of Resident Junior Assistant Medical Officer at a commencing salary of £350, rising by annual increments of £25 to £450 per annum, together with emoluments, full board, residence, laundry, and attendance, valued at £156 15s. per annum for the purposes of the Asylums Officers Superannuation Act, 1909, subject to the provisions of which and the previously existing terms of service the appointment will be made, terminable by three months' notice on either side, but the Committee expressly reserve the right to terminate the appointment on marriage.

The possession of the D.P.M. Diploma and practical experience of Pathological methods, together with a knowledge of the Welsh language, will be deemed desirable further qualifications, and applications, accompanied by copies of three recent testimonials, must be delivered in sealed envelopes marked "Junior Assistant Medical Officer," to the undersigned, on or before Monday, August 31st.

34, Quay Street, Carmarthen. W. J. WALLIS-JONES, Clerk to the Visitors.
August 17th, 1931.

Walsall General Hospital.

The Committee invite applications from Women for the post of HOUSE SURGEON.

Salary at the rate of £150 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds, and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post, Friday, August 28th.

WALTER FRANCOMBE, Secretary.

Cumberland Infirmary, Carlisle.
(160 Beds.)
Resident Medical Staff—Four Qualified Officers.

The following posts are vacant on October 1st; six months' appointment, male. Previous experience desirable. Salary in each case at the rate of £155 per annum, board, residence, etc.:

(a) HOUSE PHYSICIAN,
(b) SECOND HOUSE SURGEON; and
(c) HOUSE SURGEON to Special Departments (Eyes, Ear, Nose, and Throat).

Applications, stating age, nationality, qualifications, etc., with copies of not more than four testimonials, to be sent to the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT, Secretary.

August 17th, 1931.

The Liverpool Eye and Ear
INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in immediately to— CHARLES W. WRIGHT, Esq., 9, Harrington Street, Liverpool.

Hulme Dispensary,
Dale Street, Stretford Road,
MANCHESTER.

Wanted, an HONORARY MEDICAL OFFICER. Applications at once to the Honorary Medical Secretary.

City of Liverpool.
PATHOLOGIST.

Applications are invited for the appointment of full-time Visiting Pathologist at the WALTON HOSPITAL, RICE LANE, LIVERPOOL, at an inclusive salary of £700 per annum. Any fees received in connection with the appointment to be handed over to the City Council.

Candidates, who must be fully qualified and registered, must have specialised in Pathology and have had considerable experience in a recognised Pathological Department.

The gentleman appointed will be responsible for supervising the work of the laboratory, and will be required to co-operate generally with the Medical Staff of the Hospital so far as the particular branch of medical science is concerned.

Further particulars of the duties, etc., may be obtained from the Medical Officer, Dr. H. H. MACWILLIAM.

The appointment will be made subject to the Local Government and Other Officers Superannuation Act, 1922 (Substituted Section) and the Standing Orders of the City Council, and will be determinable by three calendar months' notice on either side.

Applications, stating age, qualifications and experience, appointments held, etc., to be forwarded to the undersigned not later than Friday, August 28th.

Canvassing the members of the Council will be regarded as a disqualification.

Town Clerk's Office, Liverpool. WALTER MOON, Town Clerk.
August 8th, 1931.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Thursday, September 3rd.

FRANK INCE,
House Governor.

August 21st, 1931.

The Queen's Hospital for
CHILDREN, Hackney Road, E.2

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses. The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by September 15th.

CHARLES H. BENNETT,
Secretary.

August 10th, 1931.

Radcliffe Infirmary & County
HOSPITAL, OXFORD

Applications are invited for the following posts, which will become vacant on October 1st:

THREE HOUSE SURGEONS.
OBSTETRIC HOUSE PHYSICIAN.

Appointments for six months, with salary at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials, to be sent to the undersigned not later before September 5th.

A. G. E. SANCTUARY, Administrator.

Montagu Hospital, Mexborough,
YORKS

Applications are invited for the post of JUNIOR HOUSE SURGEON at the above Hospital (lady). Salary to commence £160 per annum, with the usual residential allowances. One month's holiday yearly. There are 24 Surgical beds at the Hospital, 10 Maternity beds, and a further 10 Maternity beds are to be brought into commission very shortly.

Applications should be posted so as to be received not later than Tuesday, September 1st, and addressed to the undersigned.

DONALD WILSON, Secretary.

Taunton and Somerset Hospital,
TAUNTON. (104 Beds.)

SENIOR HOUSE SURGEON required about the end of September. Applicants must have held a Hospital Resident appointment for not less than six months. Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
CONTRACT PRACTICE.	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	COUNTY BOROUGH OF BELFAST EDUCATION COMMITTEE. *(Full-time Male Assistant Inspection Medical Officer.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	STEWARTRY OF KIRKCUDBRIGHT. *(Assistant Medical Officer and Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

August 19th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Scunthorpe & District War MEMORIAL HOSPITAL.
(82 Beds—Two Residents.)

Wanted immediately, First HOUSE SURGEON. Good experience offered. Salary at the rate of £150 per annum, with board, residence, and laundry. [illegible] must possess registration. Applications, stating age and qualifications, should be forwarded applications etc., together with to—
[illegible] MAW, Secretary.

Corbett Hospital, Stourbridge.

RESIDENT HOUSE SURGEON required to commence duties immediately. Appointment for not less than six months. Salary at the rate of £200 per annum, with board, apartments, and laundry.

Applications, with copies of testimonials, to be sent to the undersigned.

Corbett Hospital, Amblecote, nr. Stourbridge. W. G. H. WESTON, Secretary.

Buchanan Hospital, ST. LEONARDS-ON-SEA, SUSSEX.
(Beds 115.)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male or female) at a salary of £125 per annum, with board, residence, etc. Eligibility for Senior position after six months' service. Applications, with testimonials, to be sent to the Secretary, Buchanan Hospital, St. Leonards, as early as possible.

Weston-super-Mare General HOSPITAL. (80 Beds.)

HOUSE SURGEON

Applications are invited for the post of Resident House Surgeon at this Hospital. Salary at the rate of £150 per annum, with board, rooms, and laundry. Duties to commence October 1st next. Applications, stating age and qualifications, and enclosing copies of testimonials, should be addressed to the undersigned.

LESLIE J. FURSLAND, Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials, to be sent to the Secretary.

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OPHTHALMIC HOUSE SURGEON. £120 per annum;
ANAESTHETIST. £80 per annum, rising to £100 in six months.
Applications to— W. H. BOOTH, Superintendent & Secretary.

Hull Royal Infirmary.
(370 Beds.)

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SUTTON BRANCH HOSPITAL: HOUSE PHYSICIAN, vacant now. Salary £160 per annum, plus board, residence, and laundry.

Both appointments will be for six months in the first instance, and will be determinable by one month's notice on either side.

Applications, stating age, qualifications, and nationality, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS.
August 10th, 1931. House Governor.

Queen's Hospital for Children, Hackney Road, London, E.2.

CASUALTY OFFICER required September 22nd. Some Ophthalmic work additional. Six months' appointment. Salary at the rate of £100 per year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before August 31st.

CHARLES H. BESSELL, Secretary.
August 1st, 1931.

(Appointments continued on p. 38.)

British Medical Journal,

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APPOINTMENTS—Contd

The Coventry and Warwickshire HOSPITAL (307 Bed.)

TWO RESIDENT HOUSE SURGEONS required. Salary £125 per annum, board, laundry, and attendance provided Candidates must be duly qualified and registered

Applications, stating age, and copies of testimonials, to be sent to the undersigned immediately.

(Miss) R. HOOPER, Secretary.

Manchester Royal Eye Hospital JUNIOR HOUSE SURGEON required, salary £120 per annum, with residence, board, [illegible] Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management Post now vacant

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Bradford Children's Hospital HOUSE PHYSICIAN (lady) wanted immediately. Fully qualified Salary £120 per annum, board residence, and laundry. Applications, stating age, with recent testimonials, to be sent to the undersigned not later than August 25th, to—

J. W. LONGLEY, Secretary Superintendent

National Hospital for Diseases of the HEART,
Westmoreland Street, Marylebone, W.1.

Applications are invited for the post of OUT-PATIENT MEDICAL OFFICER (non resident, male).

The appointment is for a period of six months from October 1st, but may be renewed for a further period not exceeding six months.

Salary at the rate of £125 per annum.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Friday, September 4th.

The Out patient Medical Officer will be required to assist the Honorary Medical Staff on five afternoons weekly or four afternoons and one morning, as may be arranged

ROBERT G. E WHITNEY, Secretary.

National Hospital for Diseases of the HEART,
Westmoreland Street, Marylebone, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (male). The appointment is for a period of six months from October 1st, but may be renewed for a further period not exceeding six months.

Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Friday, September 4th

ROBERT G E WHITNEY, Secretary.

Royal Salop Infirmary,
SHREWSBURY. (156 Beds.)

APPOINTMENT OF CASUALTY OFFICER and RESIDENT ANAESTHETIST.

Applications are invited from fully qualified men for the appointment of Casualty Officer and Resident Anaesthetist, vacant from September 1st next.

The appointment is for a period of six months, subject to re appointment for a further period of six months, at a salary of £160 per annum, with board, residence, etc Resident Staff comprises Resident Surgical Officer, House Physician, and Casualty Officer.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned.

Board Room. J. W NOBLE,
August 14th, 1931. Secretary Supt.

Royal East Sussex Hospital,
HASTINGS.

PATHOLOGICAL DEPARTMENT.

JUNIOR ASSISTANT wanted in the Pathological Department. Some previous Pathological experience necessary. Appointment for three years Commencing salary £350. Lunch provided. Further particulars can be obtained from the Secretary.

Applications, accompanied by copies of three recent testimonials, to be received by the Secretary by August 31st

WILFRED G. REMSLEY, Secretary.

Royal Manchester Children's HOSPITAL (190 Beds)
PENDLEBURY, near MANCHESTER.

Wanted, a RESIDENT MEDICAL OFFICER, salary £125 per annum, who will be appointed for six months Duties to commence Oct. 1st.

Candidates must be unmarried and duly registered Previous Hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th

Canvassing, directly or indirectly, may disqualify

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

Bristol Royal Infirmary.

Applications are invited for the post of HOUSE PHYSICIAN for the six months commencing September 1st The appointed candidate will be required to act as House Physician to the Cancer Research Department Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned

ELLIS C SMITH, F.C.I.S.,
Secretary & House Governor.

Royal Manchester Children's HOSPITAL,
Out Patients' Department. Gartside Street, MANCHESTER

Wanted, for the Out-patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be on the *Medical Register*. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number 97,000 per annum. Duties to commence October 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

Bootle General Hospital,
BOOTLE, Near LIVERPOOL. (100 Beds.)

Applications are invited for the posts of CASUALTY OFFICER and HOUSE SURGEON (2) for the six months ending March 31st, 1932 Salaries at the rate of £150 per annum, with board, laundry, etc. Duties to commence October 1st.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned on or before September 4th.

J. A. BEARDSALL,
Secretary Superintendent.

City Mental Hospital,
FULFORD, YORK.

ASSISTANT MEDICAL OFFICER (Deputy Medical Superintendent) required. Previous Mental experience essential Salary £500, together with the emoluments of furnished house, washing, attendance, and garden produce, valued at £85 per annum. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909. Applications, stating age, qualifications, experience, and nationality, accompanied by copies of not more than three recent testimonials, to be sent immediately to the Medical Superintendent.

Ordered by A. W. STANNARD, as above

Kettering & District General HOSPITAL, KETTERING. (80 Beds).

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) Salary £200 per annum, with board, residence, and washing Candidates must be fully qualified, and registered. Knowledge of Anaesthetics desirable.

The appointment is for six months, with eligibility for a further six months

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

G. W. JACKSON,
Secretary-Superintendent

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of RESIDENT MEDICAL EMERGENCY OFFICER will be for three of £130 per annum id laundry.

Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned as soon as possible.

W. H. HEAD,
Secretary Superintendent.

The Infants Hospital,
Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN (female) The appointment is for six months Salary at the rate of £75 per annum, with board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned by September 7th

ALFRED J SMALL, Secretary

The Infants Hospital,
Vincent Square, Westminster

Applications are invited from qualified Medical Practitioners for the post of CLINICAL ASSISTANT in the Out-patient Department to attend once on two afternoons each week for a period of six months Applications, stating previous experience, should be addressed to the Secretary.

Gloucestershire Joint Committee FOR TUBERCULOSIS.

STANDISH HOUSE SANATORIUM,
Stonehouse, Glos.

Applications are invited from registered Medical Men for the post of JUNIOR ASSISTANT MEDICAL OFFICER at the above Institution. No previous professional experience is necessary.

There are at present 250 beds, including men, women, and children. There is an orthopaedic block.

The salary is £250 per annum, with board, furnished apartments, and laundry, in addition.

The appointment is for six months (with the possibility of extension for a further period of six months) and will be terminable within that period by two months' notice on either side.

Applications, stating qualifications and age, and accompanied by copies of three recent testimonials, should be received not later than August 31st.

E. T. GARDOM,
Clerk of the Joint Committee.

Shire Hall, Gloucester.
August 8th. 1931.

Evelina Hospital for Children,
Southwark, S.E.1.

Applications are invited for the post of HOUSE SURGEON (male) for six months (first two months in Casualty and Out patient Department). Salary at the rate of £120 per annum, with board and residence.

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent at once to the undersigned, from whom rules and other particulars can be obtained.

By Order of the Committee of Management.

W. H. SIDNELL,
August 14th, 1931. Secretary-Supt.

Royal Hospital, Richmond,
SURREY.

JUNIOR HOUSE SURGEON (male) required to take up duties on October 1st. Salary at the rate of £100 per annum, with board, furnished apartments, and washing. Candidates must be fully qualified, registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the senior post. Applications, stating age, experience, together with copies of three recent testimonials, must be forwarded to me not later than September 17th

RICHARD ALLEN, Secretary.

Norfolk and Norwich Hospital.

Applications are invited for the post of HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Thursday, September 3rd

FRANK INCH,
August 21st, 1931. House Gov. & Sec.

Acton Hospital, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required immediately. Salary £150 per annum, with board, residence, and laundry Candidates must be fully qualified and registered Applications, stating age, nationality, and qualifications, together with a copy of three recent testimonials, should reach the Secretary, Acton Hospital, Gunnersbury Lane, W.2, by Wednesday, August 26th.

Ashford Hospital, Kent.

RESIDENT MEDICAL OFFICER required, male preferred, of British nationality, unmarried Salary £150 per annum. Duties to commence immediately Applications, stating experience and qualifications, with three recent testimonials to be sent to the Hon. Secretary on or before September 5th

The Royal Infirmary of EDINBURGH. (1,011 Beds)

There are vacancies for the appointment of CLINICAL ASSISTANTS (unpaid) in the Ear, Nose, and Throat Department Valuable experience is to be gained from these posts, which are tenable for six months, with the option of renewal for a further period if desired. Application should be made on the prescribed form, which may be obtained from the undersigned.

HENRY MAW,
August 10th, 1931. Sec. & Treasurer.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the two undermentioned posts:
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.

The salary attached to each appointment is £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
July 24th, 1931.

Royal Sea Bathing Hospital for
SURGICAL TUBERCULOSIS,
MARGATE.

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months, but may be extended for a further period of six months.

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

Whitehaven and West Cumberland Hospital,
(90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male or female) Salary £100 per annum, including board, residence, and laundry Twelve months' appointment After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," at once.

R. HIGGINS, Secretary.

Golden Square Throat, Nose, & Ear Hospital, London, W.1.

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Candidates should be Fellows of the Royal College of Surgeons of England, and they are requested to call upon the present members of the Honorary Staff Applications, stating age, qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before August 31st

F. P. CARROLL,
Secretary-Superintendent
August 7th, 1931

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment will be for a period of six months, at a salary of £100 per annum, and will date as from September 9th Preference will be given to those who have held a resident post.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, September 4th, addressed to the Secretary

Great Yarmouth General
HOSPITAL (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS,
Secretary.

Royal Hampshire County
HOSPITAL, WINCHESTER.
(158 Beds.)

HOUSE SURGEON Applications are invited from fully qualified men for the above post, to take up duties at an early date Six months' appointment Salary £100 per annum, with board, residence, and laundry Candidates, who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials

HERBERT MASLEN, Secretary.

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3. LANCASHIRE TOWN. — Well-established middle and upper-class PRACTICE Receipts £1,354. Panel 960. Good house, 5 beds. to rent or for sale. Garage and garden.
4. YORKSHIRE.—Well-estab mainly working-class PRACTICE. Receipts almost £1,300 p.a. Panel 1,430. Nice house, on lease or for sale, 3 reception, 4 beds., etc. Garden and garage.
5. MIDLANDS.—Panel and Private PRACTICE. Receipts over £700; panel over 600, both rapidly incr. Appts. worth about £70. House to rent Garage, etc
6. MIDLANDS, COUNTY BOROUGH. — Well-estab better middle-class PRACTICE Receipts av. over £2,700 p.a. Panel recently started and rapidly increasing. Good fees, house, etc.
7. BERKS (Country Town).—PARTNERSHIP. 2/5 share, with short prelim. Assistantship and ultimate Succession. Receipts about £1,146 p.a. Panel 550, and good scope Appts. worth about £250. Good fees and house.

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Lancs Town. — Over £600 p.a. Panel 270. Fees 3/6 up Good house to buy or rent. Premium £650.—No 8893

London, S.W.—Central.—Partnership. 2/5 share at first Over £1,000 Fees 7/6 to 21/-. No panel or dispensing.—No. 8895.

Herts Town.—£1,200 p.a., scope. Panel nearly 900, incg. Appts £70 Fees 3/6 to 7/6 Large house, 7 bed., Garden. For sale.—No 8896

Liverpool area.—About £600 p.a. Panel 900 Fees 3/6 to 5/6 Good house. Ample scope.—No 8894

Kent.—Near London.—£2,100. 1/3 share, incg. to 1/2 Panel 1,6 Fees 4/- to 21/-. Good house and garden to rent.—No 8892

N. Wales.—Assy., with view to 1/3 share £3,470 p.a. Panel worth £1,300. Appts. £250 Fees 2/6 to 21/- No 8891.

London N.E.—Average £1,117. Panel abt 700 Fees 3/6 to 10/6 Splendid family house and large garden, garage.—No 8890

W. Riding, near Town.—£1,450 p.a. Panel 898 Appts £42. Fees 3/6 to 10/6. Conv. house on lease.—No 8887

Lancs Town.—£2,500. Panel 1,800, increasing. Appts £120 Fees 2/6 up. 2 houses. Premium 1½ years' net Suit two Partners.—No. 8645

Eastern County. — Woman's PRACTICE Over £500 p.a. Panel 325 increasing. Fees 3/6 to 7/6 House, 5 beds. to rent.—No 8886

Central Wales. — Share worth £600 or more. Small panel Non-dispensing. Good fees. Easy terms to good man.—No. 8885.

Staffs.—About £950 p.a. Panel 1,500. Good house, 5 bed., 2 recept., surgery, etc., to rent Goodwill £1,200.—No 8882.

Liverpool (Central). — Lock-up £600 p.a. cash Panel 200. Clubs £50 Fees 2/6 to 5/-. Good premises on lease Premium £600, or near offer.—No 8881

Warwickshire. — Country Practice. £350/£400 Ample scope Fees 5/- to 10/-. Panel 345 Premium £2 Choice of houses.—No 8880

East Coast Resort.—Over £4,000 p.a. 1/3 share. Panel 2,000 Net £200. Visits 5/- up. Good house to rent.—No. 8877.

Manchester. — £1,500. Panel 50. Great scope. Visits 5/- and 7/- Detached corner house, 5 bedrooms, etc., rent £50 Premium only £1,250.—No 8869

Lancs.—Partly Surgical.—Over £2,000 p.a. Panel 1,365 Visits 3/6 to 10/6. Major ops., 10 to 50 gns Surgery house.—No. 8858.

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NORTHANTS.—Old-established Rural PRACTICE, situated in charming locality. Splendid house in own grounds to rent or purchase. Receipts £500. Panel 400. Premium £550. Suitable to semi-retired Practitioner.

YORKS.—PARTNERSHIP in busy rapidly increasing Town Practice. Receipts £2,300. Panel 1,500. Suitable house available. One-third share, with view to succession, 2 years' purchase.

SURREY.—PARTNERSHIP in rapidly developing residential locality with splendid scope. Receipts approx. £1,000 p.a. Panel nearly 300. Fees 2/6 up. Premium for 2/5 share, 2 years' purchase. Excellent opportunity for young and energetic man.

NORTH-WEST COAST.—PARTNERSHIP in old-established good class non-panel and non-dispensing Practice. Suitable house available. Receipts approx. £3 600 Fees 10/6 up. 1/3 share, with view to half and possible succession. 1½ years' purchase. Excellent scope for Physician.

KENT (Seaport).—NUCLEUS G.P., situated in growing locality. Good opening for young and energetic man. Receipts over £300 p.a. Panel 220, growing. One appointment worth £50/£60 p.a. Small house to rent. Premium £250 or near offer.

LONDON, N.E. (Suburbs).—Middle and working-class general PRACTICE situated in well-populated locality. Receipts approx. £1,000 p.a. Panel 1,130. Specially built house (small) available. Fees 2/6 up. Excellent scope for young and energetic man. Premium £1,500 or near offer.

MIDDLESEX.—Middle-class G.P. in growing residential locality. Medium-sized house, with large garden, to rent on lease. Receipts approx. £1,500. Panel 1,282. Premium to include lease, etc., £3,000.

LONDON, N. (Suburbs).—DEATH VACANCY.—Middle-class G.P. situated in growing locality. Medium-sized house to rent. Receipts approx. £750. Panel 600. Premium £800.

MANCHESTER.—G.P., situated in working-class locality. Medium-sized house to rent on lease. Receipts approx. £1,017. Panel recently started, 60. Premium for quick sale £1,250.

MIDDLESEX.—PARTNERSHIP in rapidly developing district, situated within 12 miles of London. Receipts about £1,600 p.a. Panel nearly 1,900. Suitable small house available. Cottage Hospital. Excellent scope. Premium for 2/5 share, with view to 1/2, 2 years' purchase.

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MIDDLESEX, WEST.—PARTNERSHIP in rapidly developing residential country district. Receipts approx. £1,500, increasing. Panel 1,282, increasing. Fees 2/6 up. Suitable accommodation available. Premium for 1/3 share 2 years' purchase. Suitable to young and experienced man, preferably one having held Hospital appointments.

OXON.—Middle-class Country PRACTICE, situated in charming surroundings. Modern house (6 beds). Good garden, etc. Panel over 1,300. Two appointments. Receipts nearly £1,600. Prem. £2,400.

BERKSHIRE.—Old-established Country PRACTICE situated in charming locality. Medium-sized house to rent. Large garden, garage, etc. Receipts nearly £1,100. Panel nearly 700. Several appointments. Sport of all kinds. Premium £1,650.

CORNWALL (Coast).—Well-established PRACTICE in charming locality. Receipts nearly £800. Panel 180. Suitable house to rent on lease. Premium for quick sale £300.

GLOS.—Mixed Town PRACTICE. Receipts over £1,800 p.a. Panel 2,146. Fees 2/6 up. Three Hospitals. Good schools. Scope for increase. Alternative accommodation available. Premium for Practice £3,640 or near offer. Partnership considered.

MIDDLESEX.—Middle and working-class PRACTICE in growing residential locality. Medium-sized freehold house. Receipts over £700 p.a. (this year at the rate of £800 p.a.). Panel 300. Fees 3/6 up. Excellent scope. Premium £850 for quick sale.

YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approximately £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

WELSH BORDERS.—Excellent middle-class Town PRACTICE, situated in delightful locality. Good social amenities. Receipts approx. £1,800. Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained. Knowledge of Welsh not essential. Hospital.

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5. PARTNERSHIP.—Western City.—Half share for sale at 2 years' purchase. Option of total succes. in 2 years. Receipts £1,700 p.a. Panel 2,120. Sunt. hse. Great scope.
6. SANATORIUM.—Western County.—45 beds. Receipts £10,055 p.a. Price for quick sale, less than cost of property. Assist. M.O. req.
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22 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope. Prem. 1 yr.'s p.

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Practices and Partnerships for Disposal (continued).

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28 EAST ANGLIA.—Partnership in Practice about £3 000 p.a., in first-rate town. Panel about 3,000. Suitable house obtainable. Scope for increase. Premium one-third share 1½ years' purchase.

29 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1 350.

30 LONDON, N.W.—Partnership in Practice of £2 290 p.a. in suburban district. Panel 2 525. Scope for increase. Premium one-half share 2 years' purchase.

31 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500. Detached house with garage and small garden to rent. Sport of all kind. Premium one-third share 2 years purchase. Preliminary Assistantship.

32 LEEDS. — Very compact mixed Practice over £1 200 p.a. Panel 1,300. Large well-situated detached house (4 bed and dressing rooms), with large garden, to rent on lease. Premium 1½ years purchase.

33 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 250. Convenient semi-detached house (4 bedrooms) with good garage and secluded garden, for sale. Great scope. Premium £850.

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37 SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 200. House, with 6 bedrooms, garage and small garden, to rent or purchase. Scope for increase. Premium £1 300.

38 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town. Panel about 2,400. One-third share at 2 years' purchase, payable by arrangement if desired.

39 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 660. Detached house (6 bedrooms) with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc. Premium 1½ years purchase. Suitable for retired Service man.

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41 EASTERN COUNTIES.—Small Practice in town of 20 000 population near the coast. Receipts average £300 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's purchase.

42 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair-sized garden, to rent. Good scope. Premium £700 cash.

43 MIDLANDS.—Partnership in easily worked good class non-dispensing Practice over £4,000 p.a., in beautifully situated country town. Panel about 1 600. Hospital in town, and incoming Partner must be a good Surgeon. One-fifth share at first at 2 years' purchase.

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51 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3 000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

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55 WITHIN 12 MILES OF LONDON.—PARTNERSHIP in rapidly increasing Cash Practice about £1,600 p.a. in developing industrial district. Panel 1,870. Small house available. Large Cottage Hospital. Prem. two-fifth share 2 years' purchase.

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57 N. MIDLANDS.—Partnership in Practice over £1,400 p.a. in first-rate city. Panel 1,800. House, with 2 reception rooms and 4 bedrooms, to rent. Premium one-half share £1,100. Preliminary Assistantship entertained.

58 SURREY.—Ophthalmic Practice of about £300 p.a. in desirable town within 15 miles of London. Fees mostly £3 3s. Good detached house (4 bedrooms, etc.) for sale. Plenty of scope to one devoting whole time. Premium £300.

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LONDON, WEST.—Old established good middle class PRACTICE averaging for the past three years £870 p.a. Panel 800. Fees from 2/6. Very nice house with 2 reception, 5 bedrooms and 2 dressing rooms, etc. Rent on long lease £90 p.a. Premium £1 500.

LANCS.—LARGE TOWN.—Old established better and middle class PRACTICE, producing last year over £1 400 including panel of 900. Visits 2/6 to 10/6 with medicine extra. Suitable house with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2 000.

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SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper class PRACTICE. Cash receipts average nearly £1 750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House including consulting room, waiting room and dispensary in well situated part of town. Price, freehold £1 500.

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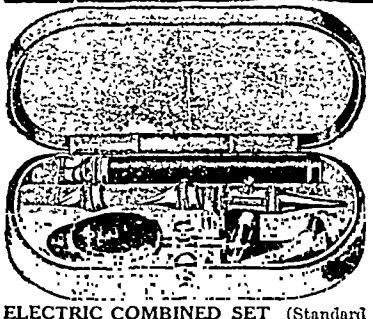
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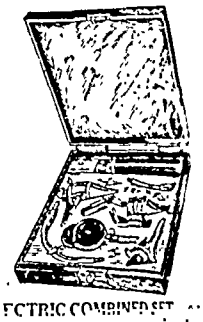
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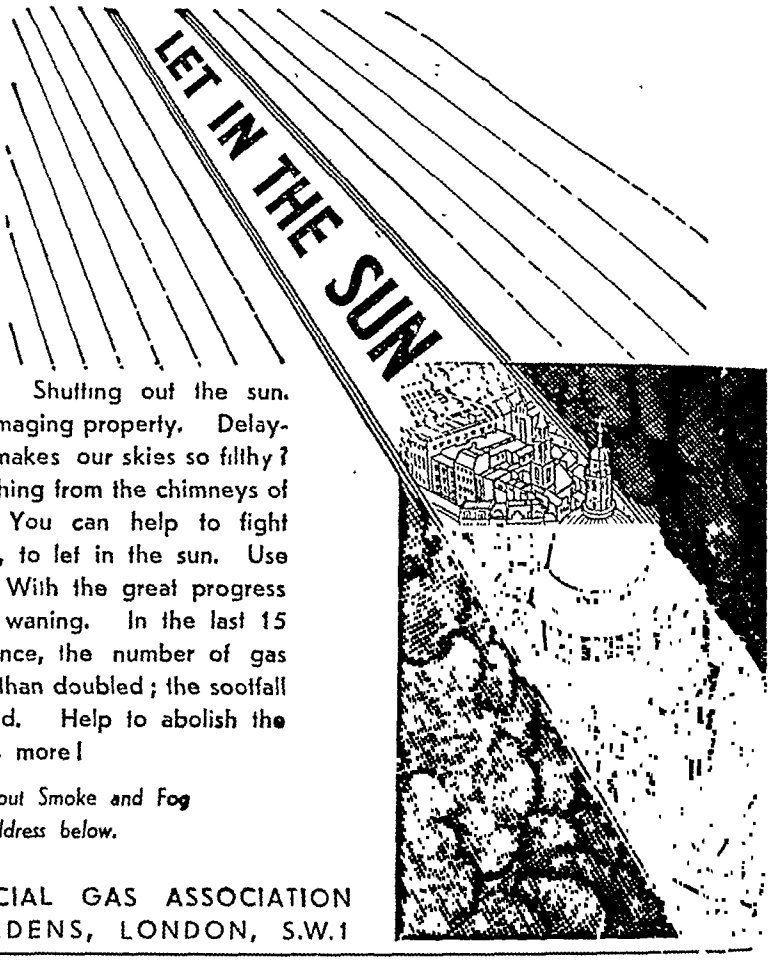
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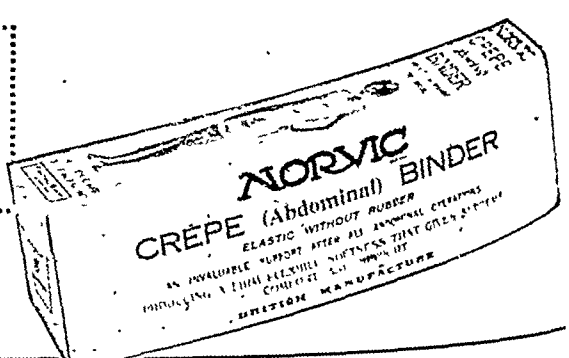
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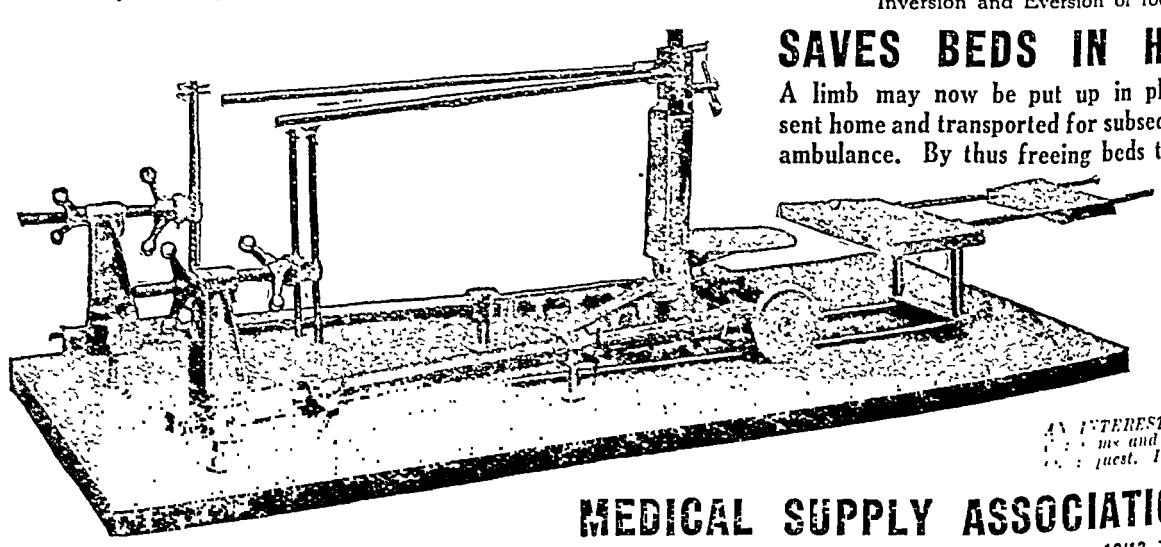
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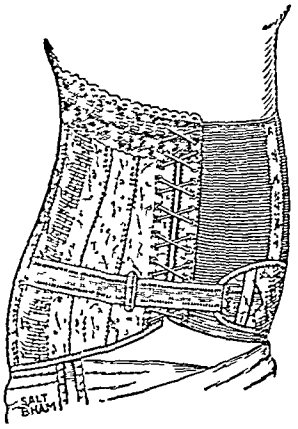
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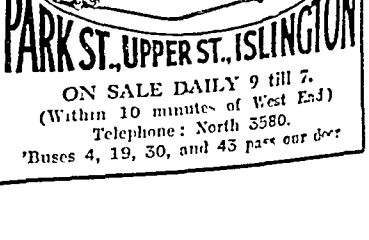
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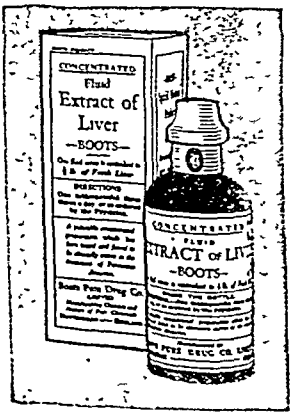
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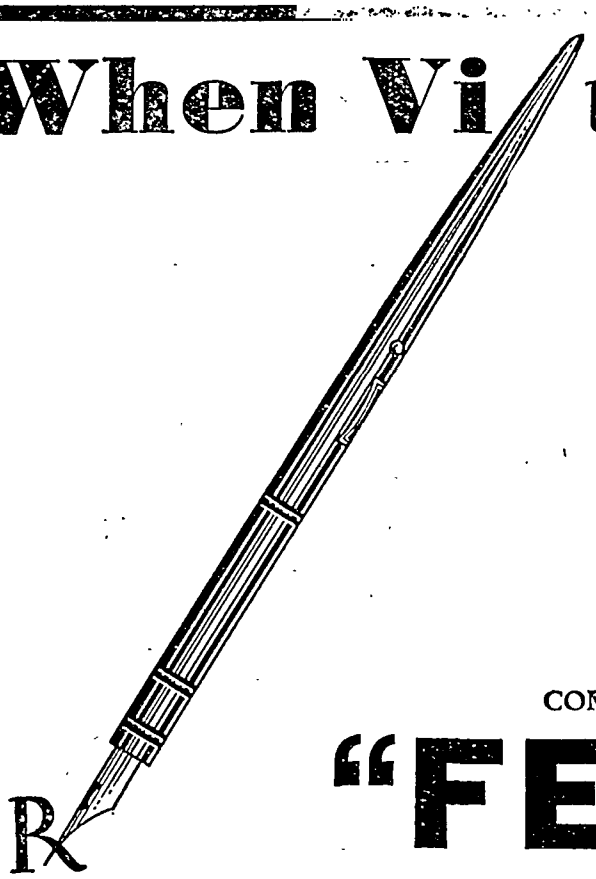
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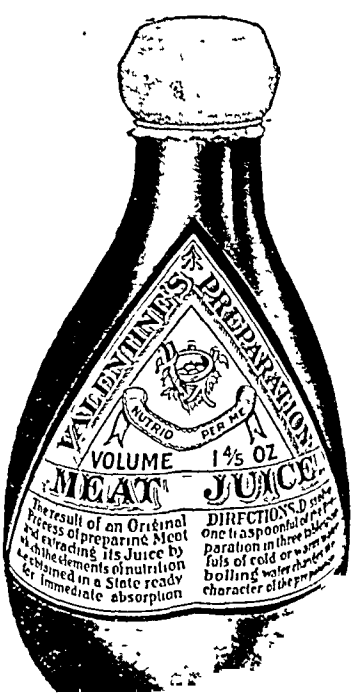
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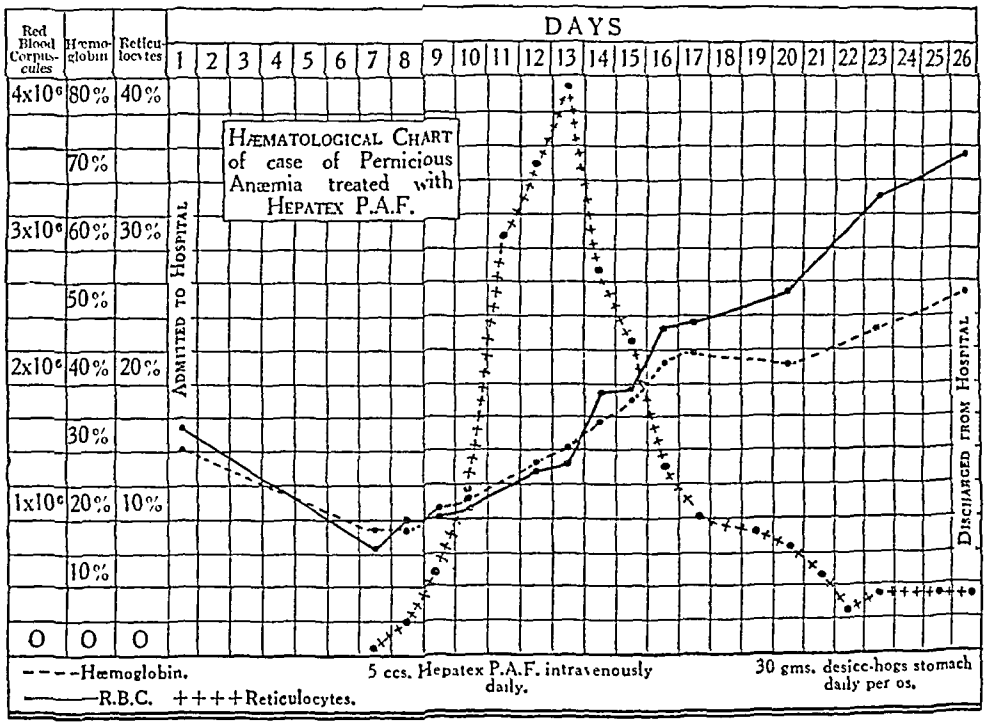
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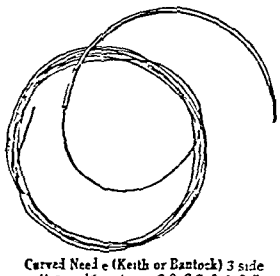
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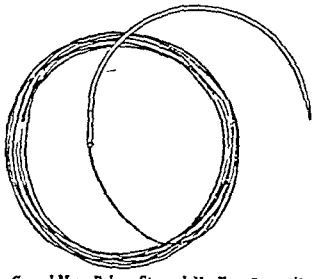
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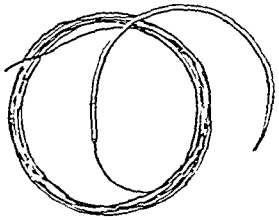
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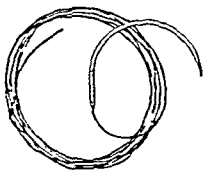
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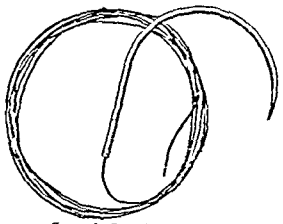
Curved Mayo Robson Stomach Needle. Sizes 4/0 3/0 2/0 0 1 2, 3 In boxes of 3 tubes 4/6



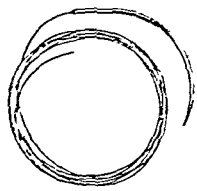
Moynihan's Model. In 3 tube box 4'6



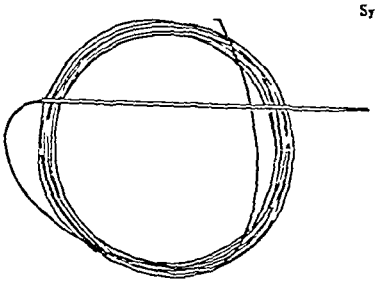
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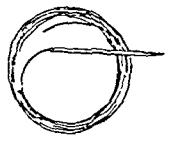
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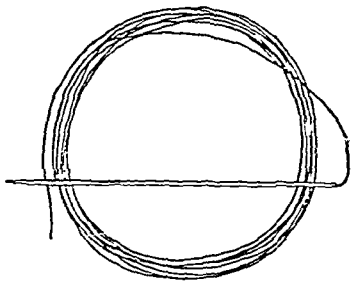
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Remarks
ON
BREECH PRESENTATION: FOETAL MORTALITY AND INJURIES *

BY
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ASSISTANT OBSTETRIC SURGEON, GUY'S HOSPITAL

Before discussing the various causes of foetal death and the types of foetal injury that may result from breech labour, we must be quite clear as to the frequency with which these catastrophies occur.

I have drawn up a table illustrating the results to the foetus of breech labour in English maternity hospitals † These figures are obtained from the latest available annual reports of the hospitals in England which publish the necessary figures It has not been possible to work out mortality rates for primiparae and for multiparae separately, since in some of these reports this information is not given.

TABLE I
FOETAL AND NEO-NATAL DEATH RATES IN BREECH DELIVERY IN ENGLISH MATERNITY HOSPITALS

	Total Number of Cases	Foetal Deaths Per cent	Neo natal Deaths Per cent
'Uncomplicated Breech	209	26	6
'Complicated' Breech	218	43	9

These figures are surely enough to dispel the old text-book inaccuracy that the foetal mortality associated with breech delivery is about 3 per cent in multiparae, and about 10 per cent in primiparae, especially when it is remembered that some of the hospitals quoted in the above table include all primiparae under the heading "complicated"

The official way of presenting breech mortality figures has the effect of hiding to a great extent the seriousness of this type of labour. We are asked to regard any breech labour in a primipara as *ipso facto* a "complicated" breech If such a classification had not received the blessing of the Obstetric Section of the Royal Society of Medicine it would probably never have been adopted. As it is, it has done more than anything else to hide the unpleasant truth about breech mortality This principle of suppressing the bad results by widening the meaning of the term "complicated" has been carried even further by some hospitals, where every case of extension of the limbs is placed in this accommodating class Since nothing can be more natural than for a woman to be a primipara when she is having her first child, none of us can seriously regard primiparity as a complication Since extension of the limbs is the rule in primiparae, and not at all uncommon in multiparae, few of us can seriously look upon this condition as a complication of breech delivery That it may be a very serious concomitant everyone will admit, but it is so much part and parcel of the presentation that it is unreasonable to dub it a complication for statistical purposes

For these reasons we have at Guy's Hospital always included primigravidae and cases of extension of the limbs in the uncomplicated group, reserving the complicated group for cases in which some additional abnormality, such as placenta praevia or prolapsed cord, is present

The following detailed analysis of 338 consecutive breech deliveries at Guy's Hospital is based on this method of classification. Breech delivery occurring in twin labour has been kept separate because, although this can reasonably be looked upon as a complication, it is a complication that seems to be beneficial, and its significance would be lost unless these cases were classified apart.

TABLE II
GROSS FOETAL AND NEO-NATAL DEATH RATES IN BREECH DELIVERY AT GUY'S HOSPITAL

	Total Number of Cases		Still births Per cent.		Neo natal Deaths Per cent	
	Primip	Multip	Primip	Multip	Primip	Multip
'Uncomplicated Breech	48	161	23	20	2	2
'Complicated' Breech	7	43	57	56	14	2
Twins	3	76	33	9	Nil	3

N B —Primiparity and extension of the limbs are not considered complications in this table

It is of course true that in the case of a macerated foetus, and in some of the complicated cases, the breech delivery may have had nothing to do with the foetal death, and it is also true that some of the neo-natal deaths may have been due to prematurity and not to any injury sustained during labour, so that in order to get an estimate of the *minimum* foetal risk associated with the labour itself we shall at least not be exaggerating if we consider only still-born, fresh foetuses in the uncomplicated group

TABLE III
PERCENTAGE OF STILL BIRTHS (FOETUS FRESH) IN BREECH DELIVERY.

	Uncomplicated Per cent	Complicated Per cent	Twin. Per cent.
Primiparae	8	57	33
Multiparae	15	40	9

This table, then, gives us a true picture of the seriousness of breech labour so far as the life and death of the foetus is concerned There is no doubt that every death in the uncomplicated group can be attributed to the essential mechanical difficulty involved in breech labour It is interesting to note that by far the best results are obtained when labour is complicated by twins The mechanical advantage of a small foetus, and of breech delivery after previous dilatation of the birth canal in cases where the breech happens to be the second foetus, more than compensate for the increased risk associated with twins generally

I have chosen these figures from Guy's Hospital to illustrate the very high mortality associated with breech delivery, because the details of all cases have been available for analysis, and from a study of these it is clear that breech labour itself—setting aside all associated complications—is responsible for a foetal mortality of not less than 28 per cent. in primiparae, and 15 per cent. in multiparae.

Apart from the associated accidents, such as prolapsed cord, the intra natal deaths are due largely to two causes.

By far the most important cause is intra-cranial haemorrhage. Since Mr Eardley Holland has described and drawn attention to the frequency of this injury, all observers have confirmed the truth and importance of his findings In his original communication on this subject in 1922 Mr Holland suggested that 75 per cent of foetal deaths were due to this cause In my own experience of post-mortem findings at Guy's Hospital I have found practically the same proportion

The second, and to my mind the only other important, cause of foetal death is asphyxia following cord compression after the birth of the buttocks This accounts for almost all the remainder of the intra natal deaths

A third cause of death is often described—namely, death from drowning due to premature inspiration I cannot help thinking that this will, in time, become recognized in its true light as a "bogey," and that the concomitant "hot towel" will become a thing of the past I do not believe that the respiratory efforts made by a foetus with

* Made in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, 1931

† Queen Charlotte's Hospital 1924 City of London Maternity Hospital 1928 University College Hospital, London, 1929 Guy's Hospital 1930 Jessop Hospital for Women Sheffield, 1928 Liverpool Maternity Hospital, 1929 Leeds Maternity Hospital, 1930 St Mary's Hospitals, Manchester, 1927.

its face tightly applied to the lower part of the birth canal can result in the inspiration of an important amount of liquor amnii, and even if it was able to do so, the part played by the traditional cold air in stimulating deep respiration is so negligible as compared with the effect of an accumulation of carbon dioxide in the blood, that the value of a hot towel to cover the exposed parts of the foetus must be negligible also. So far from feeling anxious when we see a partially born foetus making respiratory efforts, it would perhaps be wiser to welcome them as at least a sign of life. A hot towel in an easy breech labour is unnecessary, in a difficult case it is an impediment, and probably in no case does it prevent inspiration in a foetus sufficiently asphyxiated. Quite apart from these considerations it is doubtful if these premature inspiratory efforts are really harmful.

Apart from the danger of death, the foetus in breech cases runs an increased risk of serious injury. In the cases I have analysed serious injury occurred in 5 per cent. of living children. These injuries can best be discussed under three headings.

Injuries to Viscera

Although our accurate knowledge of intra-cranial injuries is based mainly on post-mortem findings, there is no doubt that minor degrees of intra-cranial haemorrhage and of tentorial tears are not necessarily incompatible with life. At the present time it is very difficult to form an opinion as to the late effects of these injuries. Before 1922 it was vaguely assumed that Little's disease (spastic diplegia) was due to a bilateral bruising of the brain, mainly in the region of the Rolandic areas. This assumption was based upon careful observations in cases of developed diplegia, coupled with complete ignorance of what actually happened at birth when an intra-cranial injury occurred. Since Mr. Holland has described the mechanism of these injuries it is now clear that the very last parts of the brain to be affected by the stresses and strains of labour are the Rolandic areas. An intra-cranial haemorrhage that is so extensive as to involve the upper surfaces of both cerebral hemispheres is almost certain to prove fatal. Conversely, the child with the intra-cranial injury who lives is the one in whom the anatomical lesion as we know it will not suffice to explain the signs and symptoms presented by a typical Little's disease in later life.

The difficulty in studying these cases is that apart from post-mortem evidence there is no way of being certain of the diagnosis of intra-cranial injury in the new-born. If the condition is diagnosed and the child subsequently grows up normally there is always the possibility that there never was any injury of anatomical importance. In this connexion the use of lumbar puncture in new-born infants would seem to be of little assistance, since, according to American observers who have used it extensively, quite a large proportion of infants born after normal labour have blood in the cerebro-spinal fluid. Furthermore, in the interests of the child, this procedure seems to me to be unjustifiable.

At the present time we have no accurate clinical data on which to form an opinion as to the late results of minor degrees of intra-cranial injury. I know of a child delivered by Caesarean section who has developed a typical spastic diplegia. I have seen a child born after a difficult breech labour who presented a typical picture of intra-cranial injury, subsequently grow up into an apparently normal child. Now that we have knowledge of what this injury actually is, and now that our clinical methods of diagnosing it immediately after birth are improving, we may hope in the near future to follow up such cases, and obtain some useful correlation between non-fatal intra-cranial injuries and disability in later life. At present the correlation is not obvious.

Injuries to abdominal viscera during manipulations involved in breech delivery have been very widely recognized, and although rupture of the liver and similar gross injuries may occur, their importance has probably been stressed too much. During the post-mortem examination of still-born foetuses over a period of six years at Guy's Hospital the only intra-abdominal injury met with was a case of retro-peritoneal haematoma in the region of the kidney and suprarenal. Provided reasonable care in handling the foetus is exercised, such injuries should not occur even in the most difficult breech extractions.

Injuries to the Upper Limb

These are by far the commonest injury in difficult breech cases, and are nearly always the result of manipulations to extended arms. The injury may pass unnoticed for several days, and as early diagnosis is very important, a careful examination should always be made as a routine in all breech infants. When it is discovered that the infant has limitation in the movements of its arm the cause is nearly always either an Erb's paralysis or a fracture of the upper end of the shaft of the humerus. A physical examination will reveal which of these causes is to blame. An Erb's paralysis should be treated by putting up the arm in the "Israelite position," and allowing active movements daily when the splint is removed for bathing purposes. If this treatment is started at once the prognosis is very good indeed.

A fracture of the shaft of the humerus is best treated with a small straight Thomas arm splint, using a thin elastic band as extension. Although less elaborate methods of splinting will suffice, this method has the advantage that it allows for dressing and undressing the infant without disturbing the fragments. Union is firm within a week to ten days, after which the splint may be discarded. It may take months for the excess of callus which usually forms to be absorbed, but the ultimate results are excellent.

A fractured clavicle is often not noticed until attention is called to it by a mass of callus at the site of fracture. It calls for no special treatment beyond careful handling of the infant until union has occurred.

Injuries to the Lower Limb

These are very much less common, fracture through the upper part of the shaft of the femur occurring only very rarely as the result of unjustifiable force being used for groin traction with extended legs. The upper fragment is flexed, externally rotated, and abducted, and as it is impossible to alter its position by any method of splinting, the best method of treatment is to bring the lower fragment into line with it. This can be done best by merely bandaging the thigh to the trunk so that the thigh is flexed, abducted, and externally rotated. A miniature "gallows" extension or any other forms of leg splint fail completely to get the two fragments into line, and although they may simplify the nursing of the infant, they should never be used. Firm union occurs within ten days, and after the excess of callus has been absorbed the ultimate results are excellent, both anatomically and functionally.

Summary

In view of the fact that the foetal mortality rate in breech labour is usually under-estimated it seems a pity that a classification which tends to hide the dangers has been so widely adopted. It would seem better to regard a "complicated" breech as one in which some additional obstetric abnormality is present, and under the term "uncomplicated" to include primipara, and cases where extension of the arms occurs.

On this basis of classification the gross mortality rate for uncomplicated cases is about 30 per cent. for primiparae and about 20 per cent. for multiparae, and after making all possible allowances foetal death rates of 28 per cent. and 15 per cent. respectively can be taken as the minimum estimate of the dangers associated with the breech labour itself.

Of non-fatal accidents to the foetus, injuries to the limbs occur in about 5 per cent. of cases. Early diagnosis of the injury is all-important, since early treatment is usually rewarded by excellent recovery.

The late results of non-fatal intra-cranial injuries are at present uncertain, and sufficient reliable observations are not yet to hand to justify us in forming definite views.

ANTE-NATAL TREATMENT OF BREECH PRESENTATIONS *

BY

GERTRUDE DEARNLEY, M.D., B.S.LOND.

Breech presentations are found very frequently in the ante-natal period up to the 34th week. After this time they are much less common, as spontaneous version to a vertex presentation occurs in a large proportion of cases at about the 34th to the 35th week of gestation. In 100,000 cases of labour Pinard observed 3,301 breech presentations —about 3.30 per cent. These statistics include premature as well as full-time labours. If full-time labours are considered only we find 1 in 62 cases. The foetal mortality in breech cases is nearly 10 per cent. ; the figures given at Queen Charlotte's Hospital being 11 per cent. in primigravidae and 8 per cent. in multigravidae.

There are two main reasons for preventing breech labour as often as possible, and these are (1) the higher foetal mortality in breech labour; (2) the disadvantages to the mother: (a) the greater risk of exhaustion following a long labour, and (b) the greater liability for lacerations and damage to the pelvic floor, and therefore a greater risk of sepsis.

In every case of labour it is important to secure for the patient as easy a labour as can reasonably be achieved for her. The length of time required for convalescence after a long and trying confinement is much greater than is necessary after a relatively normal labour. This is particularly true of the return to normal as regards the patient's nervous system. It is also quite unjustifiable to run any risk of having a still-born child. For these reasons it is now the common practice to do external version in the ante-natal period for all primigravidae, except under exceptional circumstances. It is my custom to do version also for multigravidae, partly to diminish the foetal risk, and because I have learnt from patients who have experienced labour, both with a vertex and a breech presentation, that in the majority of cases the suffering in a breech is far greater than in a vertex. There is also another reason for performing version in the ante-natal period, and this is of importance. In any case the most reliable guide for ascertaining the relative size of the head and pelvis is by pushing the child's head into the pelvis. For this test it is essential that the presentation should be a vertex.

As spontaneous version so often occurs, it is unnecessary to interfere in any way until after the 34th week. The ideal time for doing version in a primigravida is about the 35th week. At this time, as a rule, the presenting part has not descended into the pelvis. It is often possible to do version easily without anaesthesia, and this is a great advantage, as it prevents the obstetrician from using undue force. If the patient is very nervous or the abdominal muscles are very strong an anaesthestic may be necessary. A thorough dusting of the abdomen with talc powder is helpful, and the manœuvres should be done gently and with firmness. In some cases in which the presenting part has already engaged it is very helpful to raise the foot of the couch on two chairs for a few minutes before starting version. In other cases the presenting part can be pushed out of the pelvis *per vaginam* before starting. Where an anaesthetic is needed it is wise to delay version until the 37th week, in case manipulations should start labour.

I have never seen any serious complications follow version. In one case only there was a slight ante-partum haemorrhage. This cleared up quickly and the patient went to term and had a normal delivery. It was a case of breech with extended legs in a primigravida. An anaesthetic was given and a good deal of force was used to turn the child. Cases of fairly severe ante-partum haemorrhage after version under anaesthesia have been reported.

METHOD OF PERFORMING VERSION

The first essential is that, before an attempt to turn the child is made, the presenting part shall be fully pushed out of the pelvis; most failures to turn are due to the neglect of this preliminary movement. The head of the child is then seized with one hand and the breech with the other hand. The head is next pulled down towards the pelvis and the breech pushed up away from the pelvis. The direction of choice is to pull the head down towards the pelvis away from the back of the child. By this means the flexion of the child will not be disturbed. If version fails in this direction, the other direction may be tried and often succeeds without harm.

Immediately after version the head will often sink low into the pelvis; but if this does not occur an abdominal binder is applied and the patient is examined again in a week's time. The use of a binder is particularly to be recommended after version in a multigravida, where the abdominal wall is often weak, and the mal-presentation therefore liable to recur.

In a multigravida version is usually done at a later date than in a primigravida, but there is no harm in doing it at the same period of gestation. Some women complain of discomfort from the hard head in the fundus, and by doing version the patient is made much more comfortable. It is not uncommon for women to bear increasingly large children. This seems to be specially true of women whose first child was small. For this reason it is unsafe to assume that because a woman has had one child normally that all subsequent pregnancies will be normal, as is frequently done. In my opinion this is an additional reason for turning a breech presentation in a multigravida, so as to be in the position of being able to test the relative size of the head and the pelvis.

Where version has failed it is usual to wait for a few days, when the patient is seen again. In a number of cases of this kind it will be found that spontaneous version has occurred in the interval. The attempted version seems to start spontaneous version, particularly if the presenting part has been pushed out of the pelvis.

After failure to do version in a primigravida it is very instructive to have an *x*-ray photograph taken so as to see exactly the position of the child. It is very easy to miss a breech with extended legs by abdominal palpation alone. In order to avoid this mistake the following points are of use:

The presenting part is relatively small and more conical than one would expect.

The head in the fundus is often difficult to distinguish and its mobility is impaired, but small parts can usually be felt near it.

* Read in opening a discussion in the Section of Obstetrics and Gynæcology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

The whole uterus is narrower from side to side than usual. On vaginal examination the presenting part is small and soft.

It is not uncommon to mistake a deeply engaged breech with extended legs for a vertex, and if any doubt is felt it is best to have an *x*-ray done.

In an occasional case of breech with extended legs spontaneous version occurs. This happened in a case at Queen Charlotte's recently, in which the *x* rays showed a breech with extended legs. The patient was delivered of a vertex normally. It is a very rare occurrence.

Occasionally an unsuspected twin pregnancy is found by *x*-ray examination in cases where version has failed. In cases of breech presentation where hydramnios is present it is very unusual to be able to maintain a vertex presentation. In mild cases version is easy, but the presentation is apt to recur.

Version in Breech with Extended Legs.

It is revealed by *x*-ray examination whether the legs are fully extended—that is, whether the child's feet are lying close to the head or not. If the legs are extended but not close to the head, and therefore where there is often fairly good flexion of the child's body, it is possible to turn the child with anaesthesia without risk.

If the legs are extended fully and there is also extension of the child's body it is wiser not to do version, as where this is performed with force under anaesthesia damage may be done, and also there is a risk of bringing a hand or arm down by the side of the head, which will cause difficulty in labour. In such cases it is best not to attempt version.

THE MANAGEMENT OF BREECH LABOUR*

BY

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The risks of breech delivery to the child and, to a lesser extent, to the mother, are great enough to call for considerable skill in its management, and, in view of certain new observations which have recently been made, it may be of interest to devote a little time to its consideration. Expressed in figures, the results at Queen Charlotte's Hospital show a foetal mortality of 11 per cent. for primiparae and 8 per cent. for multipara. These percentages may be a little higher than those of some private practices, because a large number of breech deliveries at the hospital are sent there as emergencies in obstructed labour due to extended legs.

Before describing any details of management let us first consider the particular dangers to which the child is exposed. An appreciation of the nature of the risks will assist in understanding the reasons for the rules of management.

Causes of Foetal Death

The causes of foetal death as shown by post-mortem examinations are intracranial injuries, injuries of the abdominal viscera, and asphyxia. Up to recent years it was thought that the predominant danger was asphyxia, but an investigation by the President, Mr. Eardley Holland, and his fellow workers, has shown that the majority (14 out of 16 cases examined) of stillbirths are due to tears of the intracranial septa leading to intracranial haemorrhage. It is not necessary to go into the exact nature of these injuries to-day, but the mere fact of their occurrence shows that sudden severe compression of the head is the most formidable risk which the foetus has to face. Herbert Spencer showed in 1891 that abdominal injuries of suprarenal capsules, kidneys, liver, spleen, and other organs, as well as intracranial lesions, all involving haemorrhage, were to be found in nearly all still-born children, and that a high proportion of abdominal injuries occurred in breech-delivered babies. He showed that intracranial haemorrhage occurred oftener in still-born breech babies than in spontaneously delivered vertex cases. Spencer considered that these injuries were caused by too great pressure on the baby's body, as often follows premature rupture of the membranes, too rapid delivery, and also improper handling of the child's trunk as it is in the act of being delivered. Some of these risks are unnecessarily incurred in an attempt to deliver quickly to save the child from asphyxia, the result of age-long teaching that this is the greatest danger. On the other hand, too great deliberation in extracting the head will certainly cause asphyxia. In the management of breech labour we are therefore sailing between two rocks, and it is incumbent upon us to steer so carefully as to avoid collision with either.

Considering the lesser danger first—asphyxia—we have little control over the death of the child during the first stage of labour by prolonged pressure after a rupture of the membranes. Whether it is due to true asphyxia, caused by pressure of the uterus on the cord and placenta against the child's body, or by depression of the medullary centres, we are often powerless to expedite the dilatation of the os without risk of serious injury to the mother. The child is more likely to suffer from the almost constant pressure of an irritable uterus than from the effects of strong but separate rhythmic contractions with good relaxation between the pains. If, therefore, the uterus does not relax sufficiently, and the foetal heart is quickening or failing during the first stage, it is well to give the mother morphine and hyoscine hypodermically, and chloral by the mouth. A slow dilatation, especially after half completed, can often be expedited by pulling one foot down into the vagina. When the os is fully, or nearly fully, dilated, it is well to examine vaginally to find out whether the feet are within reach through the os, or out of reach—that is, displaced upwards by extended legs. I advise that this should be done in order that if the legs are extended they should be brought down at the beginning of the second stage of labour, except the child be so small that no obstruction need be anticipated. Much discussion has taken place on the question of whether extended legs should be brought down unless, or until, actual delay due to obstruction has occurred. My own views on this point are quite definite, and are founded on painful experience gained during the early days while a resident medical officer. I believe that it is wise to bring down at least one leg, and often two, depending on the size of the baby, in all cases as early as the os will conveniently and safely admit the hand.

Difficulty due to Extended Legs

Before we go further, I would like to spend a moment in explaining how I think extended legs cause difficulty in labour. The text-books state that the delay is due to the inability of the child's spine to flex laterally and follow the curve of Carus of the birth canal, by reason of the splinting of the legs as they lie alongside the child's abdomen and chest. I could imagine that the spine might be splinted if the two rigid bars were bound to the spine after the manner of actual splints, but it is absurd to suppose that the spine can be prevented from making a relatively small curvature laterally by two non-rigid limbs which are not in any place bound to the dorso-lumbar spine. Mere apposition of the legs to the child's abdomen

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

cannot have any possible effect in preventing the spine flexing in any direction. The first attempt to bring down the leg in a case of impacted breech delivery makes quite clear the reason for delay or obstruction. As the hand is passed up alongside the child's impacted trunk it is readily conscious of the tightness of the fit, and how fully the available pelvic capacity is filled by the body of the child. If a cross section through the abdomen and thighs, with the legs in the extended position, be examined, it can easily be realized what a great deal of extra pelvic accommodation is required to pass the child without difficulty. The mechanics of the difficulty are merely one of relative sizes of the cross sections of the body and the pelvic cavity. When the child is quite small there is plenty of room, and obstruction does not arise, though, surely, if the legs acted as splints even the premature spine would also be unable to flex laterally. Lastly, in most cases the difficulty is relieved by bringing down one leg—that is, by reducing the cross section of the foetus. But if one leg is left extended, it should, according to the orthodox theory, be sufficient to act as a splint and prevent spinal flexion.

I believe, therefore, that the indication for bringing down the leg is present in all cases where the child is of average or large size. I admit that here and there we see the seven- or eight-pound baby expelled with the legs in the extended position, and if they had been brought down in such a case the operation would have been done unnecessarily, but, as I said at the outset, it is a far more serious blunder to fail to bring down legs before impaction. The result is the inevitable difficulty of a struggle to reach and flex the legs with all the risk of vaginal and bladder injuries and foetal fractures. All who have had this experience in a really difficult case will, I feel sure, agree with me that it is a lesser mistake to bring the legs down easily at an early stage, before deep descent into the pelvic cavity, in an occasional case where it might not have been absolutely necessary. Hence, my rule is to examine for the feet when the os is nearly fully dilated, and, if not felt, to pass the hand up and bring one, or both, down after making an estimate of the probable size of the baby. Having brought the legs down they should be folded, as far as possible, in the normal position by the buttocks. The reason for this is twofold. First, it may be possible to attain a little wider dilatation of the os as the uterus pushes both buttocks and legs through; and, secondly, that the sight of a foot at the vulva provides such a strong stimulus to pull on it in order to hurry the labour that it is better to avoid the means of the temptation. It is of the greatest importance not to pull on the child, especially if the mother is a primipara, at this stage. I believe that more babies are lost in breech labour indirectly by this cause than by any other in the management.

Extended Arms

When, therefore, the legs are in normal position, with the feet alongside the buttocks, the accoucheur should wait with the utmost patience. The only assistance that may be given for ordinary mild delay is pressure on the fundus with each pain. As the feet appear at the perineum they should be disengaged, but still there should be no pulling on the child, and as the body appears it should be wrapped in a towel, and grasped by the ankles only. At this point it is, as stated above, most important not to hold the child's body. It is by this rather excited grip of the abdomen around the loins that the suprarenals and other viscera are liable to be injured. A grip of the ankles is easy and firm. At this stage an anxious moment arrives. While the body is carried forward away from the perineum by the right hand gripping the ankles, a finger of the left hand is passed along the child's chest to find the elbows. If they are not felt folded on the chest, the arms are extended, and a most difficult manœuvre is necessary to bring them down. Extended arms are, in my opinion, the most serious of the common complications of breech labour. It is not only usually difficult to pass sufficient of the hand past the child's body to reach the arm high enough to flex it, but it all has to be done fairly quickly. When extended legs are being flexed, the operation can be done with the greatest deliberation without harm, but if too much time is taken up in flexing the arms the child may be lost by asphyxia.

It is necessary to remember that everything possible should be done to avoid extended arms. The cases fall into two groups. The first group is primary—that is, the arms are extended when legs are extended as a foetal attitude before labour begins. This was once shown by the late Dr. Briggs of Liverpool, by a very early *x*-ray photograph during pregnancy, before the sixth month, while, since this publication, we have very often seen extended arms in *x*-ray photographs taken at the end of pregnancy. Of this primary group it is obvious that we have no control. The secondary extension is produced during labour entirely by pulling on the foetus during delivery before the elbows can be reached and hooked out from the perineum. If the exciting cause be pulling on the child's body, the predisposing cause is insufficient dilatation of the cervix as the comparatively narrow breech passes through it tightly stretched. We can imagine, as the child's body, with the arms properly folded on the chest, scrapes past the thin, tight edge of the os, the elbows will be caught and lifted up above the shoulders. Not only is the incompletely dilated os responsible for this displacement of the arms, but also the too close pressure on the child's trunk by the incompletely stretched vagina which is liable to occur in all primigravida. We can see, therefore, now the useful effect of allowing both breech and legs, in a flexed position, to pass through the os and vagina in one mass, for they form a larger mass than the breech alone with both legs either extended or brought down, and, therefore, the os will be dilated to a greater extent, with consequently a smaller risk of the arms being displaced upwards.

Recovery of the extended arms is clearly described and illustrated in all the text-books, and need not be given here. There is a useful tip, however, which I learnt by seeing Potter deliver a breech presentation. Taking care not to pull too hard on the body so as to imprison the arms firmly between the head and the brim, press the axillary border of the scapula firmly inwards. This will have the effect of bringing the humerus downwards within reach of the internal hand. Observation of the baby's arm and scapula will show that the humerus can only be fully extended above the head by a movement of the scapula outwards, and it can easily be demonstrated that pressure of the scapula in the opposite direction will have a corresponding effect on the movement of the humerus.

Delivery of the Head

On the delivery of the head largely depends the fate of the child. If done too quickly from a primigravida, especially if the head is not well flexed, there will be too sudden moulding of the cranial bones, with the serious risk of tears of the dural septa and intracranial haemorrhage, while if too much time is allowed, the child will die of asphyxia. Of these dangers the commonest is to deliver the head too quickly. As a stimulus to excited action we have, first, our teaching, and instinctive knowledge of the possibility of asphyxia, and, secondly, the alarm occasioned by the frequent sight of the child's chest attempting premature inspirations. We have been taught

that by these movements the child is sucking in quantities of liquor amnii by which it will be drowned. Surely the child's mouth and nose are pressed tightly against the wall of the vagina, and not free in a bath of fluid, so that literally no liquor amnii can be inspired at this stage of delivery. It is a fallacy that the child can drown himself during extraction of the head, and therefore the inspiratory movements should not influence the accoucheur during his efforts to deliver the head.

The first point to try to be sure of is whether or not the child's head is flexed as it lies in the antero-posterior direction—that is, with its back facing anteriorly. Difficulties will depend more upon absence of flexion than size of head and pelvis; in fact, where the pelvis is normal incomplete flexion is the cause of nearly all difficulty. When, therefore, can we *suspect* that flexion will be imperfect? First, in all cases in which legs and arms have been extended, then in most cases in which the child's body has been pulled down by the contracting uterus, and, rarely, in some cases of flat pelvis. We can, however, *expect* complete flexion in all multigravida where legs and arms have been normally flexed, in all small or premature babies, and in nearly all cases in which the delivery of the child's body has been accompanied by firm pressure on the head through the fundus of the uterus. The last contingency implies the necessity in all cases of instructing the nurse to press firmly on the fundus during the delivery of the body.

Three Clinical Types

In practice, therefore, we have three clinical types. The first is where a multipara has delivered herself of the legs, body, and arms normally and easily. Here we may assume the head will be flexed and give no trouble. The direction is to deliver by the simplest method, which is to grasp the feet in the right hand and lift them gently and gradually up to the mother's abdomen, while the left hand, or a nurse, presses firmly above the symphysis. No other manipulation, or grasp, of the child's body is necessary.

The second clinical type is the primigravida who has been slow and "difficult," possibly with some slight general contraction of the pelvis. Here the head *may* not be fully flexed, and, therefore, for these patients it is well first to pass a finger up to the chin and feel whether it is pressed well down on the sternum. If it is flexed, deliver the child by a grip which will allow some harmless traction —that is, by the so-called Prague manœuvre. Take the feet in the right hand and place the first and second fingers over the child's shoulders. Traction is made on the shoulders, while the feet are carried to the mother's abdomen as the head is pulled down, while, again, the nurse presses firmly above the symphysis. Care must be taken to deliver the chin and face slowly from under the perineum; in fact, as soon as the mouth and nose are liberated there should be a pause for the sake of both the head and the perineum.

The third clinical type is that in which we can assume that the head is extended; for example, where we have already brought down arms and legs from the extended position. It is also likely to be extended if it does not descend well through the brim, and thus appears to be high up with stretching of the neck. Here the "jaw traction" method should be adopted. The right hand is passed into the pelvic cavity so that the index finger slips readily over the lower jaw into the mouth, the child's body lying astride on the right forearm. The first and second fingers of the left hand are placed over the shoulders. Before there is any traction made on the shoulders the head should be flexed by gentle traction on the lower jaw and simultaneous firm pressure on the fundus. Usually the head can be made to flex by this manœuvre, and then firm traction is made on the shoulders, which are, as the head descends, carried towards the mother's abdomen.

Some accoucheurs prefer to deliver all difficult cases by forceps, but of this I, personally, cannot speak from experience.

THE PROGRESS OF ANAESTHESIA*

BY

R. J. CLAUSEN, M.C., M.B., B.S.

It is no doubt fairly generally believed that very considerable progress has been made in recent years in the art or science of anaesthesia, and that great benefit has resulted therefrom to those undergoing surgical operations. New drugs, machines, and methods have been introduced from time to time with a greater or less flourish of trumpets the echoes of which have occasionally reached the public through the daily press. It has in fact occurred to me on more than one occasion that a patient has remarked in the course of preliminary conversation how much these things have improved since the occasion of a previous operation, perhaps ten or twenty years ago, and what wonderful people we doctors are.

Such a state of mind is doubtless very beneficial to the patient, but the flattery though pleasing to us seems hardly justified if, as may well be the case, nothing more remarkable is about to be given than ether or chloroform on a mask, perhaps preceded by a hypodermic injection of 1/100 grain of atropine. However, there is no doubt that the resources at our command have considerably increased, and the object of this paper is to suggest that full advantage has not been taken of them, to inquire into the causes of this neglect, and, if possible, to suggest remedies for it.

It will be obvious that without a very exhaustive inquiry it is impossible to assess the state or progress of anaesthesia as a whole throughout the land with any degree of accuracy, and an incomplete inquiry may be as misleading as none at all or even more so. For operative surgery is carried out not only in the accessible city hospitals but also in numberless small hospitals, nursing homes, and private houses scattered over the country. An example of an incomplete inquiry was provided in a recent number of a periodical devoted to anaesthesia and analgesia, in which a writer made a rather ambitious attempt to survey world conditions. Such an article must be either very general or quite complete, but the author made the mistake of mentioning a few names of individuals; I was mentioned, for instance, as having the only large experience of ethylene in this country, but I am sure that the President of this Section, to name only one other, has a very much greater experience of this anaesthetic than I can claim.

For the purposes of this paper, therefore, I have not attempted any inquiry whatever, and it follows that any criticisms I shall make may be entirely unjustified. A good deal of information may, however, be gathered and inferences drawn from articles and correspondence in the journals, conversation with colleagues, the equipment of cottage hospitals and nursing homes, and so on. Further, to establish my credentials at any rate as regards London, and to avoid any suggestion of individual prejudice, I may mention that during the last ten years I have held resident or honorary anaesthetic appointments in nine hospitals, of which two have medical schools attached. It should also be understood that conditions in this country also

* Read in opening a discussion in the Section of Anaesthetics at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

e under consideration, and that no attempt is made deal with anaesthesia abroad. It is probable that the ost outstanding differences in the practice of other untries arise from the fact that in them the majority operative work is carried out in large hospitals or nics, and very little in private houses or nursing homes. In the large teaching hospitals here, which are of urse the most easily accessible for inquiring visitors, the ndard is probably fairly high, but the adoption of ricate or experimental methods may be hampered by e necessity for teaching general principles and routine ethods to students, who cannot be made fully conrsant with all new developments. On the other hand, ere is at times an unfortunate tendency for some new ethod or technique to be exclusively used in the spital of its origin, with the result that students acquire exaggerated belief in the benefits of this method d a lamentable lack of knowledge of others. As in her branches of practice, of course, the newly qualified an is only beginning to learn, and he may have to rget a good deal of what he saw and learnt as a student; it in the brief time that he then has he should be enabled acquire a general foundation on which to develop a ore specialized knowledge later, should the occasion arise. Before proceeding to a more detailed criticism of our esent methods it would be as well to point out that though the subject may appear to be of most interest this Section, yet actually it concerns the surgeons more osely. For as Dr. Torrance Thomson recently pointed it in the *British Journal of Anaesthesia*, the surgeon must alize the importance of our work if progress is to be ade, since without his interest and co-operation we can ake but little advance, notably in the field of gas-ygen anaesthesia, or any local methods.

SOME CRITICISMS AND SUGGESTIONS

Dealing, then, with our present methods, the following iticisms and suggestions are put forward, though naturly in the space of such a paper as this it is not possible go into very great detail.

I

Insufficient individual attention is given to patients, rticularly in hospital, but also in private practice, since erating theatre habits and customs are acquired in ospital by physicians, surgeons, and nurses.

The saying may be familiar that "routine anaesthesia bad anaesthesia," and this may be correct, but nevertheless a good deal of routine is useful and necessary in our ork, to enable it to be smoothly and easily done. Probbly most anaesthetists adopt and perfect some standard chnique, which tends to be applied to every patient, erhaps without great regard to their needs or desires. It probably true that for operations of reasonable length—ay, under an hour's duration—on healthy persons and here little shock is expected, the choice of anaesthetic akes little or no difference to the recovery of the patient nd but little to the immediate discomfort of the operaion. However, a large proportion of our cases do not ome into this favourable category, and if the scope and dvantages of new methods are not realized these less ortunate patients may suffer.

Besides the lack of adaptation of anaesthetic methods o individual cases there is often a striking lack of regard or the patient as an individual. Both failings are due to r encouraged by the system in large hospitals, where the naesthetist is confronted with a long list of major operaions of all descriptions, on patients he has never seen efore and knows nothing of, while conditions are not mproved by a general atmosphere of hurry and an im-atient surgeon striding from room to room exclaiming "*Let's get on with it.*" Probably arising from these conditions there is sometimes a tendency to regard an anaesthetic as a standardized article which can be applied indiscriminately to any patient, and an anaesthetist may be asked to give his services, no other information being given him about the patient than the nature of the operation it is proposed to perform.

It is interesting to see to what extent the individual patient may be lost sight of in hospital; in the course of instructing students I have often asked, "Who is the most important person in the theatre?" but needless to say I have seldom had the correct reply. A friend with whom I was discussing this subject made the illuminating remark that little else was to be expected so long as the architects designed hospitals with a magnificent front door for the lay committee, staff, and students, whilst patients entered by an underground passage at the back. I do not suggest that a radical reform of hospital architecture will greatly benefit our work, but I cannot help feeling that there are many perhaps apparently trivial points in the treatment of patients which could be greatly improved.

For example, it is, I suppose, laid down somewhere in the regulations that the head must be low when anaesthesia is induced, and consequently a nurse will often take away a patient's pillow and leave him nearly flat on a trolley or table in a position of great discomfort at a time when every effort should be directed towards making him as easy and comfortable as possible. Or, in a hospital which I visit, though a sorbo mattress had been provided for the table it was very difficult to get it used, the reason being that it made the movement of the patient into the lithotomy position a little more awkward, so instead a thin folded blanket was used on the metal-topped table.

Just as every surgeon should undergo an operation or two, and every anaesthetist a few anaesthetics, for instructional purposes, so it would be of value in the training of theatre nurses and sisters if they were dressed, towelled, etc., as for operation and placed in the appropriate position on the table for an hour or so. The incidence of post-operative headache, backache, and even of chest complications might be thereby materially lessened. Another striking example of the way in which the individual can be overlooked, with results that can only be detrimental, is shown by enthusiastic residents and others, who often indulge in vivid discussions in the presence of the next patient while perhaps still wearing bloodstained garments; I have seen a house surgeon actually brandish a fresh prostate gland dripping with blood over the trolley on which a conscious patient was waiting, while he discussed its points with the surgeon.

While the patient may thus be lost sight of, a tendency sometimes appears for the theatre to become a stage on which the star performer displays his skill, supported by leading lady, minor characters and chorus; for some obscure reason it often seems to be expected that the anaesthetist should supply the comic relief, while in addition he is expected to be a sort of stage hand and property man, manipulating the lights, table, suction pump and so on.

In only one textbook on anaesthesia so far as I know is there a chapter dealing with the subject from the patient's view-point, and that book is not an English one. The matter, however, seems one of importance and deserving of attention in the teaching of anaesthesia.

II

The use of mask and drop-bottle methods with chloroform and ether is still too prevalent; the ritual act of dropping liquid on a mask is however firmly established, and alternatives may still be regarded with suspicion.

The mask and drop-bottle have advantages, of course—for example, simplicity, portability, ease of control and so on. Their use, however, should be restricted if possible to induction, and if chloroform or ether anaesthesia is to be maintained for long periods it should be with vapour methods and some amount of re-breathing, preferably with oxygen, the value of which cannot be too highly stressed.

It is not uncommon for protests to be made against the growing complication of anaesthetic procedures, and for the claim to be advanced that the simplest methods are necessarily the best. This may be so in some cases, but actually the best method is that which ultimately gives the best results to the patient. Naturally, if a man arrives with an elaborate machine which takes a long time to erect, wastes everyone's time, and then gives a bad anaesthetic, he deserves some censure; for, besides his other faults, he may have brought a good method into disrepute. On the other hand, if he only spends his own time and his results are good, no surgeon has a right to quarrel with his methods, for we do not attempt to dictate what tools the operator shall use. There are those who support the plea for simplicity by using but few and simple instruments, but even these possibly forget the enormous complication of preparation, sterilization, etc., which precedes the actual entry of the patient.

Open ether, once claimed as the safest and best anaesthetic, has been described as a method invented by amateurs for amateurs; it still has many supporters, though it is probable that as most successfully practised it is far from "open." I can remember the time when the method was introduced into my hospital, which may have been a little backward in this respect, as the latest novelty from America. Its success was rapid and its vogue widespread, and closed methods which had been used with but few exceptions since the introduction of ether were largely abandoned for some years; for the open method first showed how ether could give complete relaxation with relative safety and without limitation of oxygen.

As a result of the work of Haldane, Henderson, and others, the value of re-breathing and the dangers of prolonged open etherization first came to be recognized in America, where a return to closed methods with re-breathing was initiated which later spread to this country. Open ether, however, will die hard, for apart from its actual advantages there is a frank and reassuring sound about its name which cannot fail to be attractive.

III

Local, regional, and spinal methods are not exploited as fully as they might be.

It is commonly said that local anaesthesia is widely used on the Continent because there are no good anaesthetists there, but the converse may well be true, that general narcosis is often unnecessarily used here because few people trouble to master the technique of other methods. It is also said that the people of this country are by their temperament unsuited to local methods, but this is probably in the main not true; at any rate, the behaviour of patients under spinal is usually good and helpful, though naturally the whole theatre method and organization must be altered when dealing with conscious patients.

It is a striking fact how many persons, particularly women, will say, "Oh, doctor, I don't mind the idea of the operation, but I do dread the anaesthetic." Of course, many of these might change their minds when actually confronted with an operation in the conscious state, but the benefits conferred by intelligent pre-medication must not be forgotten in these circumstances.

I have heard the methods of anaesthesia in a Continental clinic summarily dismissed as "a combination of local and straps," but I have often thought that an intelligent use of suitable straps would serve to [illegible] the patient in some of the fantastic operating [illegible] very much better than the makeshift of pillows sandbags which we use, and would thereby facilitate the work of the anaesthetist.

Spinal analgesia is being fully dealt with in another paper, so I will not enter into any detail. It is a [illegible] which is constantly cropping up, for the method is [illegible] covered, written up and more or less widely adopted [illegible] few years, being presumably forgotten in the interval. [illegible] present, needless to say, is a "boom" period. Whether advocating its wholesale use throughout the body, as some, or its routine use for abdominal work, I believe it to be a very valuable aid in many difficult cases, and one to be maintained in an effective state, so as to be available when required.

IV

The advantages of gas anaesthesia, and notably ethylene, are not adequately utilized.

Nitrous oxide and oxygen anaesthesia received an artificial impetus in the later stages of the war, having proved successful in the repeated anaesthesias on shocked and debilitated patients then met with. Later, however, the method was largely discredited in this country owing to its indiscriminate application to unsuitable cases, with inadequate preparation and inefficient apparatus, while its necessary limitations were not realized by operators. I fully agree with the authors of a recent textbook on anaesthesia, who say that "the apparatus available in England has tended to hinder the effective adoption of the method in this country."

It is unfortunate that the recent revival of gas-oxygen here has been attended by, if not actually due to, the use of imported machines, but there can be no doubt that these show considerable advantages, except perhaps in price. A similar lack of enterprise is shown by our engineering firms with regard to electrical suction and pressure pumps for surgical and anaesthetic use, for most of those sold by the instrument dealers are of foreign make.

As regards gas apparatus, there are those who claim that they can give a good anaesthetic with no more than a cylinder of each gas, connected to a bag and mask, or who criticize certain machines on the ground of their complication of dials, gauges, etc., which distract attention from the one essential—namely, the patient. However elaborate the machinery used the condition of the patient must remain the ultimate indicator and control, but the more refined the apparatus used—that is, the more accurately it is capable of giving and maintaining any desired mixture—the better will it serve both novice and expert. In this connexion, I have not yet heard an anaesthetist, or a surgeon, protest at the complication of his motor car, or complain that the number of dials and "gadgets" on the dashboard interfere with his attention to driving.

Wherever possible, in both major and minor surgery, gas-oxygen should be preferred to ether alone, though in many cases small amounts of the latter may be used in addition, while, where circumstances do not prevent it, ethylene should often replace nitrous oxide. In midwifery particularly, gas-oxygen is undoubtedly the ideal anaesthetic, and should be much more widely used. There are of course gas enthusiasts who will not tolerate even the smallest amount of ether, just as there are local enthusiasts who have no objection to injecting unlimited drugs but will not hear of giving any by inhalation. Personally I see no reason why the fullest use should not be made of combined methods, which have many advantages.

Ethylene is usually condemned on the ground of explosive risk, but in view of the many risks we let pass unnoticed this shows a curious lack of proportion. For example, the

now an enormous death rate from the entirely preventable sease of "motoring," but I believe I am right in saying iat neither this Association nor the profession as a whole is taken any steps to deal with it Actually I believe the robability of explosion with ethylene is little if any eater than with gas oxygen ether, or oxygen ether, and t present fires, explosions and fatalities are by no means nknown in our theatres, but in certain circumstances the sulting explosion with ethylene would certainly be more vere and deadly

The widest field for gas anaesthesia has been in the past s use for dental extractions in the chair, and though this now smaller owing to the increase of local and regional ethods, yet there are many cases in which it will be pre rred In patients able to co operate and in the absence f nasal obstruction or gross deformity it should always e given by the nasal route and the mouth properly acked off before extraction is begun The advantages of his method—namely, comfort for the patient, speed of nduction, safety, absence of cyanosis, and prolongation f anaesthesia if required—are so manifest that it is surpris ng that other methods are still tolerated and that full face nask induction is still taught as the routine

For long oral operations, as for other head operations, ome form of intubation is required, preferably using gas xygen, at any rate for maintenance, but it is to be hoped hat the vogue for the endotracheal insufflation of gas ixtures in all cases has now passed, and that this is no onger regarded as providing a short cut to good anaesthesia Gas oxygen, however, depends for its success on free breathing and exclusion of air, and though in general sur gery these may as a rule be obtained with the ordinary nask, yet there may be some occasions when intubation of he larynx may be desirable to ensure these conditions

V

The advantages, or rather the necessity, of adequate pre medication are not fully realized

It often seems to be thought that all that is possible in this respect has been done when 1/100 grain of atropine has been given, and this routine is often hard to break away from There are, I believe two reasons for giving atropine before anaesthesia the first theoretical, because it prevents vagus inhibition of the heart, the second prac tical, because it dries up the mucous and salivary secretions of the mouth respiratory tract I am not in a position to discuss the former, and suspect that the latter is the only one of benefit The same result, drying of the mouth, is obtained when morphia alone is given, though possibly not to the same extent, and it is probable that atropine could often be omitted with advantage, it has no sedative effect but on the contrary a stimulant one, and may facilitate the onset of shock instead of delaying it as does morphia

Morphia or its equivalent is essential if good results are to be obtained from gas oxygen, and to get a good effect it may be given in a divided dose Further, in long opera tions an additional injection may be necessary, while where it is known that it will be needed after operation it is often useful to give it before the end in order that it may have taken effect before the gas anaesthesia is over

In a hospital where both are given there is a striking contrast between the placid and quiet morphia patients and those who have had atropine only, the latter being bright eyed and apprehensive I believe that no patient should come to general or local anaesthesia for any serious operation without preliminary sedatives of the morphia type or an adequate dose of one of the "basal anaesthetics" unless there are real contraindications of which however, there can be but few There is however, a strong pre judice against preliminary morphia, dating probably from the days when induction with open chloroform was the rule In this case it is undesirable, for the combined effect so depresses respiration that progress becomes difficult or impossible, though probably this could be overcome by the use of carbon dioxide

VI

The claim has been made that by the use of carbon dioxide to increase lung ventilation after anaesthesia the respiratory complications which have been too common in the past can with certainty be entirely eliminated Like wise it is stated by some that by the routine use of intra venous glucose vomiting after anaesthesia, another of the bugbears of the past, has been abolished

Though both claims may appear somewhat exaggerated they are doubtless well founded, and the more extensive use of both treatments would appear desirable Carbon dioxide particularly might be more widely employed, since apparatus is available which renders its administration in suitable mixtures automatic, and which could safely be used in the wards by ordinary nurses

VII

Perhaps the most serious failing in our anaesthetic procedures is the fact that in spite of the frequent, or rather continuous, discussions as to the merits of various methods, no real attempt has ever been made so far as I know to investigate this problem in the only place and way in which it could be effectively done—that is, by observation of a large number of cases operated on with different anaesthetics but under otherwise similar conditions

A striking example of this neglect was provided some few years ago when workers at a large teaching hospital, in an attempt to improve on ether and to reduce its after effects, introduced an artificially impure ether as a new anaesthetic Though the conditions were ideal for a proper investigation, since large numbers of operations were done by the same men under conditions identical but for the anaesthetic used, yet no attempt was made to carry one out, and the numbers of cases reported by the partisans of rival methods were too small to be convincing Eventually the manufacture of the product ceased, and there may be many here who have never heard of it

Further, more recent examples might be quoted—such as spinal analgesia with percaine, which has been accused of causing an undue incidence of severe headache as compared with other agents, or the various barbituric acid deriva tives To base a comparison between three of these drugs upon an experience of 262 cases with one and of 23 and 15 with the others, seems to show a certain lack of sense of proportion to which medical men would sometimes appear particularly liable, unless indeed the results with the smaller numbers were uniformly and convincingly disas trous I must plead guilty to the same crime myself, for I drew some conclusions as to the value of ethylene without control records of nitrous oxide cases This series was begun, but was given up owing to the difficulty of collect ing enough material while working single handed in various scattered places

Inhalation anaesthesia, however, is largely a personal matter and is more of an art than a science, and whatever method is adopted by a skilled administrator and used consistently, the results will be apparently the same in most cases hence the wide diversity of agents apparatus and methods This apparent similarity might be dispelled were adequate data available for the various methods, and in any case it does not apply to the large category of poor risks, in which the choice of anaesthetic may make a large difference in prognosis

If what are sometimes regarded as special methods, such as gas oxygen or spinal, are reserved for desperate cases,

not only is insufficient practice obtained with them to obtain the best results but they may come into disrepute owing to the high mortality apparently resulting.

Reasons for Shortcomings

Such then are, in brief, the shortcomings, real or imagined, of our anaesthetic procedure, but before considering remedies it is necessary to investigate the causes.

These fall into two main categories, traditional and economic, which affect both institutions and individuals. The force of habit, custom, or tradition is fairly strong in most of us, and we probably find it easier to go on doing things in the same way when a good procedure is established. Further, there may be strong national traditions, as, for example, the use of chloroform in Scotland, which we are told was until recently almost universal; or local ones, as a result of which one method may be taught and used almost to the exclusion of all others. Hospital routine or tradition may be reinforced by the conservatism of theatre sisters and nurses, which though it may appear unimportant, can yet provide an effective opposition or a damaging passive resistance. Surgeons, again, who have operated with ease and success for a number of years are naturally prone to look askance at new methods, which may not give the same ease of access as the accustomed one, and may at first take longer in induction. The tradition of haste and hurry which still overshadows some of our theatres is in part a relic of the old pre-anaesthetic days when speed was essential, and in part the result of present economic conditions.

Hospital finances are not as a rule too secure, and committees and secretaries naturally hesitate to order new and possibly expensive machines which may not show any apparent benefit and may be discarded after a few years with the change of fashions or of medical staff. The latter, again, are not likely to be unanimous in their needs, and this may lead to unnecessary reduplication of apparatus.

As we know, the financial position of the individual anaesthetist is in most cases more precarious even than that of the hospitals, if such a thing is conceivable, and the same considerations as to apparatus apply even more strongly to him. His troubles are complicated by the fact that his private work, from which his living is derived, is carried out in nursing homes scattered over a possibly wide area and quite devoid of equipment, even perhaps without a lift. Obviously, such conditions tend to portability and simplicity or crudity of apparatus, and do not favour gas-oxygen.

Hospital practice, which may form the great bulk of his work, is almost entirely unremunerative, though the extension of the system of paying beds may alter this. Though many hospitals when advertising for anaesthetists insist that these should be specialists and not engaged in general practice, yet the possession of such an appointment does not guarantee any financial return whatever. It is therefore hardly surprising if anaesthetists limit their hospital attendances to their specified operation days, and show little inclination to embark upon extensive researches, while on these days conditions seldom favour new or experimental work.

Remedies Proposed

If progress is to be achieved it must be through the recognition by all concerned in the work of operative surgery, of the importance of anaesthesia as a subject, and of the fact that its technique is not necessarily perfect and stabilized. The status of our subject must be maintained and improved, and in at least one respect—that is, the time factor—it must take precedence in the theatre; for whatever anaesthetic procedure is adopted it must be completed before the operative procedure is begun. In another respect there is at times room for improvement, and that is in the standard of asepsis, which must be as rigid as possible where spinal, intravenous or other injections are made.

In teaching hospitals at least some attempt should be made by classification and investigation of records to evaluate the advantages and assess the risks of the various methods. This could well be done in the Surgical Units, where conditions should be more favourable, and where an additional anaesthetic assistant might be appointed.

The position of the anaesthetist as a specialist must be made secure and his services fully utilized in both "normal" and difficult cases, while the question of remuneration for hospital services needs to be considered.

Perhaps most important of all, the demon of hurry and hustle needs to be finally exorcized, and the tyranny of long lists broken.

INDICATIONS FOR PHRENIC AVULSION IN BRONCHIECTASIS

BY

W. G. OAKLEY, M.B., M.R.C.P.

Unilateral diaphragmatic paralysis by interruption of the corresponding phrenic nerve is the most recent of the principal methods of securing, by therapeutic collapse, that combination of rest and compression which plays so large a part in the successful treatment of chronic pulmonary diseases. With this object it may be used alone, or in conjunction with such methods as artificial pneumothorax, multiple intercostal neurectomy, and thoracoplasty.

The Radical Operation

The operative procedure now generally employed consists of avulsion or exairesis of the phrenic nerve through a small incision above the clavicle, for a distance sufficient to ensure breaking its connexion with the supra-pleural plexus and all accessory fibres. Although usually successful, this method has been known to fail in the production of a permanent paralysis, even after as much as seven inches of nerve have been avulsed.

Partial Operations

In addition to these permanent methods a number of operations have been devised by which a temporary paralysis may be effected in order to permit of healing of a tuberculous lesion and of a subsequent return of function of the diaphragm. These methods include crushing, freezing, alcohol injection, and section with immediate suture of the nerve, and are generally considered less satisfactory than the permanent operations. In bilateral basal bronchiectasis, however, the crushing operation has been successfully combined with phrenic avulsion in America by Matson in the following way. The phrenic nerve is crushed on the worse side, and the effect of a temporary paralysis on cough and sputum observed. If satisfactory improvement results, then the opposite nerve is crushed or avulsed, and the paralysis is thus made permanent.

Complications of Radical Operation

The complications of the radical operation are more formidable in theory than in practice, and fall into three main groups: (*a*) those due to failure in technique; (*b*) those due to adhesions in the course of the nerve; and (*c*) reflex disturbances.

In the first group haemorrhage constitutes the most frequent and serious of all complications, and results from injury either to the pericardio-phrenic artery that accompanies the nerve and venae comites in the same

sheath) or to the subclavian vein. The former is readily controlled, and never fatal; the latter is far more serious, and has been responsible for the majority of the very few deaths that have been reported. The vein may be torn as the result of tension on the sling formed by the phrenic and accessory phrenic nerves, which pass respectively behind and in front of the vein; the accessory nerve, however, almost always breaks first. The rarity of haemorrhage is shown by the fact that in Felix's series of 150 cases treated at Munich it occurred but once, and not at all in 300 cases reported by Welles at Saranac Lake. Air embolism is said to be more common in phrenicotomy than in phrenic avulsion, but can be avoided by prompt and careful arrest of haemorrhage. Section of the vagus has been reported in four patients, all of whom died.

The nature of the complication in the second group depends upon the structure to which the nerve is adherent, and varies from slight haemoptysis (when infiltrated lung tissue is unduly stretched) to cold abscess formation, pneumo- and pyopneumo-thorax, and even to fatal mediastinitis when caseous foci are opened up. The presence of a tuberculous empyema, and of pleural adhesions over the nerve, are considered by Sauerbruch and others as definite contraindications to avulsion.

Reflex disturbances are cardiac and respiratory, and probably owe their origin to interference with the vagus and intercostal nerves. They are usually slight and transient in nature, consisting of tachycardia, alterations in pulse volume, and dyspnoea.

Sequels

The sequels are insignificant and of short duration, consisting most commonly of pain in the corresponding shoulder, and more rarely of tachycardia, dyspnoea, and digestive upsets, which are as rare on the left side as on the right. In two cases reported by Yates spontaneous pneumothorax occurred on the opposite side, due possibly to the production of some slight contralateral emphysema.

PHYSIOLOGY OF THE DIAPHRAGM: THE EFFECT OF HEMI-PARALYSIS

Before considering the therapeutic application of phrenic avulsion it is important to review the normal respiratory function of the diaphragm and the physiological effects of paralysis of one or both domes, since on these follow, to some extent, the uses and limitations of this method of treatment. In man one-third of the total air inspired is due to the action of the diaphragm in keeping the lower lobes fully expanded, and the basal collapse which results from its paralysis is brought about by the unopposed action of the abdominal muscles. Phrenic avulsion affects primarily the position, movement, and structure of the corresponding half of the diaphragm, and thereby, secondarily, the thorax and its contents. The paralysis induced is strictly unilateral, and is evidenced by an immediate and progressive rise of the dome, which, in the course of three to six months, undergoes complete atrophy and is converted into a thin parchment-like structure. There are two principal forces acting on the paralysed dome to produce this rise: (*a*) the upward pressure of the abdominal contents; (*b*) the intrathoracic pull due to the natural retraction of elastic tissue in the lung, and to the contraction of the abnormal fibrous tissue. The second force may act over a long period, especially in cases of pulmonary tuberculosis, from a case of which Matson obtained the following figures: rise at operation, 3 cm.; rise one year after operation, 9.5 cm.; rise two years after operation, 13 cm.

The rise obtained depends on the side affected, the presence and extent of adhesions (especially in the costo-phrenic angle), and on the consistency of the overlying structure. The upward pressure of the liver on the right, and the interference of the heart on the left, are together held responsible for a difference of about two centimetres between the average figures quoted for the two sides: rise on the right side, 5 to 7 cm.; rise on the left side, 3 to 5 cm. The presence of fluid or of a resistant fibrous lower lobe may greatly reduce these figures.

When the full expiratory position has been reached, any movements exhibited by the paralysed muscle are usually paradoxical in nature, and best recognized by Bittorf's method of attempted inspiration with closed mouth and nose.

The effect of phrenic avulsion on the thorax is to decrease the capacity of the corresponding lung by one-fourth to one-third, or on the right side by four to eight hundred cubic centimetres (Brunner).

Goetze stated that a successful phrenicotomy is as good as a pneumothorax, and this may be true in those cases where a very high rise takes place. This reduction in lung capacity is not sufficient to produce dyspnoea in any but advanced cases of bilateral disease, and, for reasons given below, phrenic avulsion more often relieves than produces this symptom. Even in the few cases of bilateral paralysis reported in man there is the same absence of respiratory embarrassment that was noted by Lemon in experiments on dogs.

The chief intrathoracic structures affected by this sequence of events are the lungs and the heart, the latter being displaced upwards in left-sided paralysis sufficiently to relieve, in some cases, the palpitations and tachycardia which result from the drag of pleural adhesions.

The effects produced on the lung itself are therapeutically by far the most important, and consist of partial compression and relaxation, with the addition of rest, consequent upon the removal of the forces exerted upon it by the contractions of the diaphragm. While the truth of this general statement is accepted, there remains some disagreement about the extent of the lung tissue thus affected, and consequently, from the point of view of localization of the lesion, on the type of case in which phrenic avulsion is most indicated. Some observers limit the effect to the lower lobe, while others claim that the effect on the apex is as great as on the middle and lower lobes, in that the diaphragm exercises an equal pull on any part where there is a counter-pull.

Effect of the Type of Lesion

These divergent opinions suggest that, in addition to, and probably more important than, localization, there is some intrinsic property of the lesion upon which depends the success of treatment by phrenic avulsion. The capacity for spontaneous retraction and collapse being in theory a lesion's most essential property in this or any other form of collapse therapy, better results should be expected in the proliferative or productive than in the exudative type of pulmonary tuberculosis. Alexander and others have found in practice that this property is of more importance than the position of the lesion, and that if present in an otherwise suitable case, not only are the results good, but are in some measure proportional to the degree of collapse and compression obtained.

In bronchiectasis, however, this process of spontaneous retraction is so often responsible for the production and progression of the lesion that the results of phrenic avulsion must therefore depend upon its success in actively collapsing and compressing the dilated bronchi. Now it is obvious that active compression in diaphragmatic paralysis is greatest at the base, and, in the presence of dilated bronchi and pulmonary fibrosis in this position, will become increasingly less as the apex is approached. The position and extent of the lesion, therefore, together with the degree of rise of diaphragm obtained, are likely to be the most important factors in the treatment of bronchiectasis by phrenic avulsion.

Indications for Phrenic Avulsion

Before it is decided whether this supposition is supported by the clinical findings in the cases reported, the general indications for diaphragmatic paralysis in chronic pulmonary disease will be briefly classified. The indications may be considered under the two main headings of tuberculous and non-tuberculous disease.

Tuberculous Disease

1. Definitely basal lesions ; here phrenicotomy has its most consistently successful results in tuberculosis.

2. Unilateral disease in which sanatorium treatment alone is insufficient, and artificial pneumothorax, though indicated, because of adhesions or for social reasons, is not possible.

3. In chronic cases where artificial pneumothorax is impossible and thoracoplasty in contraindicated, phrenic avulsion on the worse side may cause great improvement, especially if the lesion is of the proliferative type.

4. Combined with artificial pneumothorax for one or more of the following reasons: (*a*) basal adhesions ; (*b*) to assist re-expansion ; (*c*) to prolong the interval between refills and lessen the incidence and amount of effusion and mediastinal displacement.

5. As a preliminary to thoracoplasty: (*a*) to remove, if possible, the need for thoracoplasty ; (*b*) to make thoracoplasty possible by improving the patient's condition ; (*c*) to test the opposite lung ; (*d*) to assist by collapsing the base of the lung, or, in tuberculous empyema, by decreasing the size of the cavity ; (*e*) to prevent aspiration to the lower lobe.

6. As symptomatic treatment to relieve: (*a*) cough and vomiting ; (*b*) copious expectoration ; (*c*) haemoptysis ; (*d*) dyspnoea ; (*e*) pleural pain ; (*f*) persistent hiccup ; (*g*) tachycardia and palpitations resulting from cardiac embarrassment ; (*h*) pyrexia.

Non-tuberculous Disease

1. Bronchiectasis.

2. In unresolved pneumonia as prophylaxis against bronchiectasis.

3. Subacute and chronic pulmonary abscess.

4. Hydatid disease of the lung.

Bronchiectasis

As a therapeutic measure in bronchiectasis phrenic avulsion has received less attention than in tuberculosis, and consequently the literature contains fewer opinions on its uses and limitations. The results obtained in bronchiectasis by this form of treatment, and consequently the conclusions arrived at, agree no better than those reported in connexion with pulmonary tuberculosis, and suggest that the indications for phrenic avulsion in the former disease are not fully realized or understood.

The following series of cases, collected over a period of three years at St. Bartholomew's Hospital, have been followed up and analysed to discover, if possible, the indications and contraindications for phrenic avulsion in bronchiectasis.

Clinical Observations.—Seventeen cases are reported, in all of which the diagnosis of bronchiectasis was based on clinical and *x*-ray findings, lipiodol being used in almost every instance. The original lesions responsible for the bronchiectasis were traced wherever possible, and found to comprise the following conditions: pneumonia, 9 ; "influenza," 1 ; foreign body, 1 ; *x*-ray treatment for carcinoma of breast, 1 ; new growth, 2 ; unknown, 3. The operation was carried out nine times on the left side and eight times on the right, paralysis of the corresponding dome being observed by *x* ray in every case. The technique employed was that of avulsion of the nerve, or, failing this, of radical excision.

Complications.—Pain in the corresponding shoulder occurred in about half the cases. Section of the thoracic duct occurred once, and was followed by a chylous discharge of short duration. Serious haemorrhage was entirely absent from this series.

Previous Treatment.—In four cases artificial pneumothorax was attempted, but prevented by adhesions in all but one, in which it was successful in relieving the cough. As soon, however, as the air was absorbed the cough returned, and necessitated a subsequent phrenic avulsion. Creosote baths were unsuccessful in the few cases in which they were tried. Postural drainage was employed before operation in all cases with much sputum

Results in Cases Treated

The results in the seventeen cases of bronchiectasis may be summarized under three headings: (1) those in which the symptoms were completely relieved ; (2) those in which improvement was being maintained when the patient was last seen ; (3) those in which temporary improvement was followed by relapse.

The first group contains four cases which deserve brief mention.

In Case 1 a phrenic avulsion was performed without success on a man who had a persistent distressing cough with copious foul sputum. Five months later a collar stud was removed from the left lung through a bronchoscope, and a complete cure resulted in a few months. In view of the very advanced cavitation of the left lower lobe, demonstrated by lipiodol *x* ray, it is reasonable to suppose that the phrenic avulsion, by assisting in the obliteration of the cavities, was in part responsible for the rapid cure.

Case 2, a girl aged 20, with left-sided bronchiectasis following pneumonia in infancy, was treated by paravertebral thoracoplasty in August, 1926, with great success. Five months later the patient still had a cough, with greatly diminished sputum (1,200 c.cm. to 60 c.cm. per diem), and a left phrenic avulsion was therefore performed, since which there has been complete relief of symptoms. Here the usual sequence was reversed, but the value of diaphragmatic paralysis as a complement to thoracoplasty is well illustrated.

In Cases 3 and 4 no other treatment contributed to the success of phrenic avulsion. In the former, that of a girl aged 15, the only symptom was cough, which was persistent and dry. *Lipiodol x ray* showed dilatation of the left lower lobe. Phrenic avulsion was followed by disappearance of the cough, which has not returned.

The last case of so-called "cure" was that of a boy, aged 14, with a history of broncho-pneumonia when 4, followed three years later by two separate large haemoptyses. Vaccine treatment was carried out at a sanatorium for two years, and the boy remained quite well until, at the age of 14, he developed a cough, with much sputum. Lipiodol *x* ray showed basal bronchiectasis, and phrenic avulsion was performed in June, 1927. There was an immediate decrease in cough and sputum, which fell from over 200 c.cm. of muco-pus to about 5 c.cm. of clear mucoid secretion daily. Nine months later he was symptom-free, and is now able to swim and play football without cough or shortness of breath. There has been no further haemoptysis.

It is important to observe that in these four cases the lesion was not only basal, but completely confined to the side on which phrenic avulsion was performed, a combination of characteristics not to be found in any of the cases of improvement now to be considered.

The second group contains seven cases in which there has been lasting improvement in general conditions and weight, in addition to reduction or disappearance of cough or sputum. In six cases the condition of the patient is stationary, while the seventh and most recent of the series has been improving ever since his operation five months ago. Four cases gave a history of pneumonia

Summary of Results of Seventeen Cases of Bronchiectasis treated at St Bartholomew's Hospital by Diaphragmatic Paralysis between 1927 and 1930

Number of Case	Sex	Age	Side	Original Disease Responsible	Extent of Lesion Indicated by X Ray Examination (Lipiodol used in all but Case 8)	On Admission				Immediately after Operation			Months between Operation and Last Seen	When Last Seen or Heard of			
						Cough	Sputum in 24 Hours in c.cm.	Haemoptysis	Weight	Cough	Sputum in 24 Hours in c.cm.	Haemoptysis		Cough	Sputum in c.cm.	Haemoptysis	Weight
									st. lb.								st. lb.
1	♂	48	R.	Foreign body	Cavitation r. lower lobe, collar stud seen	+++	400	—	?	+++	400	—	?	Nil	Nil	—	?
2	♀	23	R.	Pneumonia	Cavitation r. base	+	30-60	+	8 4	+	30-60	—	45	Nil	Nil	—	8 10
3	♀	15	L.	Pneumonia	Bronchiectasis l. lower lobe	++	Nil	—	?	Nil	Nil	—	12	Nil	Nil	—	?
4	♂	14	L.	Pneumonia	Bronchiectasis l. lower lobe	++	25-100	+	?	+	Less	—	40	Nil	Nil	—	9 7
5	♀	12	R.	Pneumonia	Extensive bronchiectasis of r. lung	++	Trace	—	4 3	+	Nil	—	12	Very slight	Nil	—	4 5
6	♀	56	L.	Carcinoma breast, x ray	Fibrosis and bronchiectasis of upper and mid. zones of l. lung	++	Trace	—	9 1	+	?	—	12	+	ISQ	—	?
7	♀	40	L.	Pneumonia	Bronchiectasis of l. lung	+++	25-50	+	5 12	++	Less	—	11	+	10-25	—	6 5
8	♂	13	R.	Pneumonia	Bronchiectasis of both bases r. more than l.	+++	50-100	—	4 10	++	25-50	—	5	+	C 50	—	5 4
9	♂	13	R.	?	Atelectatic r. lower lobe with bronchiectasis	+++	100-200	+	3 12	++	Less	—	22	+	Nil	—	4 13
10		34	L.	?	Bronchiectasis l. lower lobe	++	50-80	+	8 10	++	2-50	—	33	+	15	—	?
11	♂	13	L.	Pneumonia	Fibrosis and bronchiectasis of both lobes of l. lung	++	25	—	6 4	++	5-10	—	15	+	5-15	—	8 5
12	♂	54	L.	New growth	Solid l. lower lobe, bronchiectatic	++	180	+	7 10	+	ISQ	+	?	++	ISQ	+	?
13	♂	45	R.	New growth	Bronchiectasis of r. base	+++	100-200	—	8 11	+	ISQ	—	22	++	Less	—	9 11
14	♂	26	R.	Influenza	Bronchiectasis of r. lung, l. est. and apex involved	++	150	+	7 13	Nil	Nil	—	33	++	1,0+	++	8 14
15	♂	?	R.	?	Bronchiectasis of r. base	++	1,000	?	?	Less	120	?	?	++	1,200	?	?
16	♂	25	L.	Post-operative pneumonia	Bronchiectasis of mid. zones and bases of both lungs, left > right	+++	300	+	8 11	++	300	—	3	++	ISQ	+	9 11
17	♂	18	L.	Pneumonia	Advanced bronchiectasis of l. lower lobe with fibrosis and collapse	+	15-25	+	8 0	+	5	—	18	+	25	—	9 2

one of x ray treatment following removal of the left breast for carcinoma, and in two no cause could be traced. The maximum daily sputum before operation was 200 c.cm., and after operation 25 c.cm. In two cases sputum has disappeared altogether, in four it has decreased in amount, and in one it has remained the same. In all seven cases cough is still present, but improved, and up to date there has been no recurrence of haemoptysis in the three cases in which it had occurred before operation. In this group the disease in three cases was completely unilateral but very extensive, involving both upper and lower lobes. Two cases showed x ray evidence of involvement of the opposite base, and in the remaining two moist added sounds were persistently audible in the same situation.

The third group contains six cases in which temporary improvement was followed by relapse. The symptoms in two cases were subsequently found to be due to new growth of the lung, which proved fatal shortly after the operation. Quite remarkable improvement followed phrenic avulsion in two cases with much sputum. In one the sputum was reduced from 1,200 c.cm. to 120 c.cm., and thoracoplasty, though indicated on account of the extent of the lesion, was unfortunately refused. In the second case both cough and sputum rapidly disappeared, but recurred after a short interval. Here, again, the lesion involved the whole of one side, retention of secretions causing pain over the upper lobe, which was relieved by postural drainage. The remaining two cases showed a slight but definite improvement, consisting in the one of reduction of cough, and in the other of decrease in sputum. A subsequent thoracoplasty was intended in one case, but had not been performed when the patient was last heard of six months ago. In both these cases not only were there bilateral basal lesions, but the mid zones were also involved, and in one there was evidence before operation of collapse of the corresponding base.

Summary of Results

In the seventeen cases of bronchiectasis phrenic avulsion gave the following results:

	Cases	Percentage
Complete relief of symptoms	4	24·5
Lasting improvement	7	41·0
Temporary improvement with relapse	6	35·5

Conclusions

1. Phrenic avulsion in experienced hands is a safe operation, and the complications are more to be feared in theory than in practice.

2. Only in strictly basal and unilateral cases of bronchiectasis can phrenic avulsion be reasonably expected completely to relieve the symptoms.

3. Improvement is to be expected in unilateral bronchiectasis in which the lesions are confined to the bases and not advanced on the better side.

4. In unilateral bronchiectasis in which the lesion extends into upper or mid zones, temporary improvement *is the rule, but relapse must* be expected unless thoracoplasty is performed.

5. In bilateral basal bronchiectasis with lesions in upper or mid zones, little benefit is to be hoped for from unilateral diaphragmatic paralysis.

6. As a preliminary to thoracoplasty phrenic avulsion should always be performed, but should not be allowed to shelve the larger operation in event of a brilliant but temporary cure.

For permission to record the cases described I am indebted to the physicians and surgeons under whose care they were admitted to hospital, and particularly to Mr. J. E. H. *Roberts, who performed the great majority of the operations.*

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INFANTILE DIARRHOEA*

BY

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Judged from the available statistical reports[1] on fatal diarrhoea in infants, the incidence has fallen considerably. In 1905 in England and Wales the death rate in diarrhoea and enteritis in infants aged from three to twelve months was 62. In 1928 the same record shows a rate of only 23, and it would appear that the overcrowded areas of the big cities are largely responsible at present, the relative rates from infantile diarrhoea in Birmingham[2] being 26.5 in the crowded central wards and only 8.5 in the outer wards. Thus from the public health aspect much has been achieved by way of improving the general hygienic factors concerned in the problem—more particularly regarding regulations of better and cleaner food supplies, especially in the case of milk. Certain uncontrollable factors, however, periodically cause great fluctuations in the incidence of diarrhoeal disease—for instance, the abnormally hot dry summer of 1921.

Clinically diarrhoea in the infant is a common and frequently a most important sign of ill-health. The complex functions of the alimentary tract are easily thrown out of rhythm by a wide variety of causes, some apparently trivial, others grave in themselves. Physiologically the infant's alimentary tract is only capable of dealing with a narrow range of food; hence nature's arrangement for a nearly complete food in one medium—milk.

Clinically we recognize certain principal causes operating in infantile diarrhoea, such as abnormal reactions to food; irritants, bacterial or chemical, ingested with food; irritants produced in the bowel by fermentative changes; specific enteral infections and parenteral infections generally. Excessive carbohydrates or fat is sometimes responsible alone, but intolerance to protein is extremely rare, and the probable reasons for this I will note later.

Of the specific infections of the alimentary tract causing acute diarrhoea in infancy, dysentery bacilli (Sonne and Flexner varieties), and typical and atypical forms of the paratyphoid bacilli are not infrequently responsible, and specific agglutinins may be detected in the blood afterwards.

Various strains of streptococci and the pneumococci are recognizable in some outbreaks. A period of acute diarrhoea is frequently seen at the commencement of an acute exanthem, often, in fact, several days before any other clinical features appear, this being a good illustration of the ease with which the alimentary functioning in the infant is disturbed. Outbreaks of summer diarrhoea may or may not have a recognizable bacterial cause, but several factors in the environment are related, atmospheric humidity and temperature being foremost. The prolonged hot dry summer of 1921 was coincident with a great rise in the incidence of infantile diarrhoea. Blackfan's (Boston) investigations on humidity and temperature in large room-incubators have shown that there is definitely an optimum level for the well-being of the infant, and any rapid or marked variations in the temperature and moisture in the air frequently cause outbreaks of diarrhoea.

Certain physiological conditions which are peculiar to the normal infant have been demonstrated by Klumpp and Neale.[3] The normal reactions of the contents of the small intestines is slightly acidic—*p*H 6.5—and probably any great change is not tolerated. The gastric secretion in the infant is remarkably small, and any infection or minor disturbance is often accompanied by a rapid and complete diminution of the gastric secretions. The enzymes in the pancreatic secretion are present in such small quantity as to be easily minimized below a functionable level, this being specially so concerning the lipase and amylase which are in low concentration during the first year of life. The trypsin ferment, however, is always, from the earliest days of life, present at a high level. These facts may be linked with the rapid intolerance to carbohydrate and fat in the acute enteral dysfunctions of infancy. The ease with which such food substances, which would normally be digested and absorbed, fail to be digested and utilized, may explain many of the parenteral causes of diarrhoea. Pyrexial and infective disorders no doubt adversely affect the digestive ferments and render the food material in the intestine ready prey for putrefactive bacteria, with the result that a highly toxic pabulum replaces the normal healthy contents. Infants vary considerably in their susceptibility to minor intestinal physiological variations—for instance, as seen in the ease with which the so-called "catarrhal" or the "eczema" individual develops diarrhoea. Deficiency in vitamins—more especially in A and B—renders the alimentary tract unstable, and diminishes local resistance to infection.

EFFECTS OF DIARRHOEA

The rapid depletion of tissue fluids is remarkable in infantile diarrhoea, and loss of the normal intestinal secretions is a serious matter to the infant. Ketosis, together with disturbance in the acid-base equilibrium, is soon effected, and a variable degree of acidaemia or alkalaemia occurs. General disturbance of tissue functions ensues, and soon the whole illness may assume much greater import through the secondary effects of the diarrhoea. The delicate protective mechanisms in the bowel are quickly removed, and, by absorption, highly toxic or bacterial or undigested food products may enter the body. Secondary bacterial infections of the bowel may supervene which render matters worse. The absorption of undigested protein substances through the damaged bowel may be responsible for some of the clinical features of the acute intestinal intoxication and anaphylactic phenomena seen, and such may be the explanation of certain cases of protein sensitization producing allergic states in children. Renal and hepatic functions are often seriously disturbed by the dehydration and intoxication, and in fatal cases necropsy reveals evident acute degenerative changes in the parenchymal cells. Failure of the functions of these important organs may directly determine a fatal issue. The myocardium similarly shows the general toxic effect, tachycardia and sometimes unusual rhythm appearing. The marked apathy and the depression of the normal reactive state of the infant indicates the damage to the nervous system, and in severe cases coma may supervene.

CLINICAL VARIETIES

Acute ileo-colitis has a characteristic sudden onset with diarrhoea with or without vomiting. The stools are very frequent, mucus and blood being visible usually. Clinical evidence of abdominal pain and tenesmus is present. The temperature is not usually much raised, but a rapid pulse is a feature and acute severe toxaemia is evident. The usual cause of this type of disease is the dysentery group of bacilli, particularly of the Flexner or Sonne varieties, and occasionally coliform bacilli, resembling but not identical with the paratyphoid group, are present, the latter being probably not at all uncommon infecting microbes in infants and children as judged by routine bacteriological examination of the stools and agglutination tests in the blood. The

* Read in opening a discussion in the Section of Pathology and Biochemistry at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

disease is due to a local infection of the bowel and absorption of the powerful bacillary toxins into the circulation. The local intestinal damage varies from simple acute catarrhal changes to a diphtheritic form of necrosis of the mucosa, but even in the very serious cases remarkably little damage may be visible when the bowel is seen.

Fermentative diarrhoea is associated with acidic, gaseous, frothy, highly irritating, offensive stools causing troublesome excoriation of the skin; gaseous distension of the bowel is evident, and powerful peristaltic movements may be seen preceding the explosive passage of stools. Dehydration is sometimes extreme and becomes a very serious matter. Pyrexial reaction may be minimal or absent or even subnormal. The infant is essentially suffering from starvation, dehydration and much physical discomfort. The intestinal fermentation may arise from irregular feeding or overfeeding with carbohydrates and fats, or may be directly due to a temporary depletion of the normal digestive enzymes as occurs in a parenteral infection. Associated septic and oïdial infections in the mouth are commonly seen. There is a gross disorder of the alimentary physiology affecting equally its digestive, defensive and motility functions.

Acute alimentary intoxication is a serious disorder which may arise from the ingestion of bacterial or chemical toxic material or occurs as a result of absorption of decomposition products from intestinal fermentation. It may seriously aggravate the clinical course in simple fermentative diarrhoea. Very severe diarrhoea with watery stools, vomiting, marked general collapse, subnormal temperature, rapid feeble pulse, scanty urine, clammy skin, pallor, and sighing respiration is the more typical clinical picture. Convulsive movements may appear and terminate the scene. Many of the characters of this illness strongly suggest acute anaphylactic shock, and in great probability the cause is of this nature. Boyd[4] has demonstrated the presence of highly toxic substances in the bowel of this type of case, and portal blood from patients contained the toxic material. Dehydration rendered experimental animals much more susceptible to the toxic substances. Frequently surprisingly little morbid anatomical changes can be seen in the bowel in acute intestinal intoxication with severe diarrhoea (cholera infantum), but intense degeneration is evident in the kidneys and liver, and occasionally suprarenal haemorrhage is present.

DIAGNOSIS

An accurate history of the diarrhoeal disorder, including information concerning the qualitative and quantitative feeding, is helpful. By careful examination of the stools much useful information can be obtained. Pyrexia and tachycardia are indications of an infective origin. Rapid anaemia, with occasionally purpura and a variable degree of cyanosis, are signs of the toxaemia. Depression of the fontanelle, dry inelastic skin, sunken eyes, rapid loss in weight and small urinary secretion denote at a glance the degree of dehydration. Excoriation of the buttocks indicates a diarrhoea of some duration. Careful and complete examinations of the infant must be made to determine parenteral infections of all types. Meningismus may appear and acute pyelitis and cystitis may be recognized as a cause or effect of the enteral disease. An acute intussusception may arise due to the irregular intestinal movements.

TREATMENT

The profound and complex upset of tissue metabolism consequent upon the dehydration, ketosis and toxaemia renders the treatment of infantile diarrhoea a matter of urgency. First-class nursing attention is essential, and the child must be handled with meticulous care. Fluids must be introduced into the body to replace the excessive loss occurring. In a mild case all milk should be stopped for twenty-four hours and replaced by the use of pure water, quarter strength physiological saline, weak tea. Ringer's solution of 2 per cent. pure glucose solution by this route is indicated. All these substances require no digestion and are absorbed rapidly in the upper part of the small bowel, thus affording rest to the lower. Gentle rectal lavage with warm saline during this period will relieve gaseous distension and afford comfort to the patient. In severe cases, especially with associated vomiting, sterile fluids must be given by parenteral routes. Rest to the alimentary tract and the injection of fluids parenterally allays the diarrhoea and lessens the tissue dehydration, and affords establishment of normal kidney and hepatic function to aid in the detoxicating and eliminative processes.

Overcoming the problem of conveying water and glucose to the blood and the tissues plays a great part in the therapy. Water is the drug, *par excellence*, in these disorders. Sterile pure saline can be introduced into the lax subcutaneous tissues in the proportion of about 10 c.cm. per pound of body weight once or twice during twenty-four hours. In expert hands it is a simple matter to introduce, by slow injection, 5 per cent. glucose solution into the superior longitudinal sinus at the anterior fontanelle, or in some cases it may be more convenient to inject the fluid into the internal saphenous vein. Intraperitoneal injection of saline or glucose solution is a useful method also. The methods may be combined in individual cases. It is a matter of vast importance to use perfectly freshly made pure glucose solution for these procedures. Blood transfusion is an invaluable measure in some cases and often seems to determine the recovery of the most serious clinical case of infantile diarrhoea and dehydration. Whole blood from a suitable donor is given, 15 c.cm. per pound of body weight being a useful guide, but slow introduction to the longitudinal sinus or a vein is essential, as too rapid injection may cause over-distension over the right side of the heart.

A matter of some importance, often overlooked, is the loss of protein contained in the fluid escaping from the body by way of the intestine, even in stools in which blood is not detectable. The efficiency of blood transfusion may have a relationship to this.

Parenteral infection must be dealt with, and everything done to check the infection. Pus should be evacuated where possible. Anti-dysentery serum given intramuscularly is efficacious in some cases of acute dysenteric ileocolitis.

The use of drugs forms a very small part in the management of infantile diarrhoea. Morphine is dangerous, but small doses of belladonna may be used to check intestinal spasm and pain. On account of the ease with which the body temperature is affected in the infant a warm room with average humidity is a point of importance. In some severe cases the thermo-regulatory mechanism appears to be thrown out of gear, and in such instances the placing of the infant in an open self-regulating warm incubator of the "Hess" type is of distinct value. Since the return of intestinal digestive power is probably slow, the diet in the recovery stages must be very carefully controlled—always remembering that protein is probably the most easily digested and fat the least so at this age. Breast milk if available at this stage is of high value. Easily assimilable forms of carbohydrates, as pure glucose or dextro-maltose preparations, and buttermilk foods are usually satisfactory until the child gradually reassumes tolerance to a more full and varied diet.

We see, therefore, in the study of infantile diarrhoea, many problems concerning disturbances of the intricate physiology and biochemistry of the tissues, and how a

knowledge of these changes, however meagre such may be at present, controls and guides us in the treatment of this common but really complex disorder in infancy.

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AN ATROPINE TEST IN ASTHMA

BY

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Among the drugs used in the treatment of asthma, atropine has always held a prominent place, but its therapeutical value has been found to be much less constant than that of adrenaline. Atropine acts, presumably, by paralysing the nerve endings of the vagus, and so preventing stimuli from the vagus centre reaching the bronchial muscle. Broncho-constriction has been shown to result from stimulation of the upper respiratory tract—that is, reflex stimulation of the bronchial muscle through the vagus centre. In many cases of asthma the treatment of nasal abnormalities has been sufficient to abolish attacks, which would suggest that these attacks were of "nervous" origin. It is also acknowledged that psychical stimuli in some patients play a considerable part in inaugurating a spasm. Since atropine prevents nervous stimuli from reaching the bronchial muscle, it has been thought that it might be used to differentiate between broncho-constriction due to reflex stimulation of the vagus and that due to direct stimulation of the bronchial muscle—that is, between nervous and chemical stimulation.

By using the method introduced by McDowall and Thornton (1930) for recording the movements of the isolated bronchi, it has been shown that contraction of the bronchial muscle follows the injection of pilocarpine, and that a small dose of atropine immediately after produces complete dilatation. A second dose of pilocarpine now produces no result, but a very small dose of histamine still causes the muscle to contract. Histamine is supposed to act directly on muscle, while pilocarpine acts through the nerve endings. Similar contractions are obtained by injecting other substances known to act directly on the muscle. The amount of atropine injected was small (*0.13 mg.*), as larger doses may paralyse the muscle itself.

The usual method of administering atropine in asthma is as tincture of belladonna in a mixture to be taken by the mouth, but the unpleasant dryness of the mucous membranes and the effect on the pupil prevent its continuous use. As a method of estimating the part played by nervous stimuli in inaugurating broncho-spasm, a full dose of atropine might be injected subcutaneously at the onset of an attack. In those cases where contraction of the bronchial muscle is due to direct chemical stimulation of the muscle, atropine would be expected to have no effect, whereas in the truly nervous type the attack would be aborted. In this way the patients whose attacks are due to psychical stimuli alone could be differentiated from those who owe their symptoms to a fundamental chemical alteration of the blood.

I wish to express my thanks to Professor R. J. S. McDowall, who suggested this method of differentiation.

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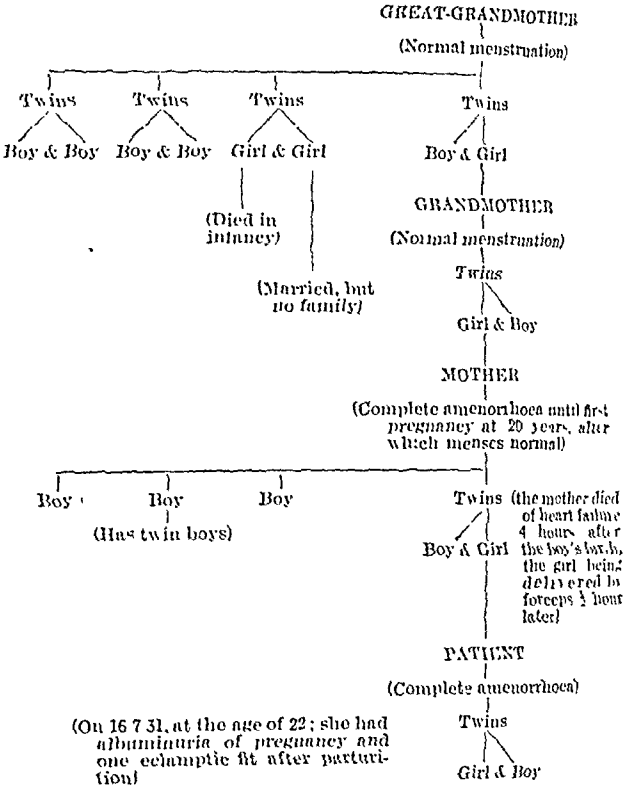
* Working with a grant from the Asthma Research Council.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

FOUR GENERATIONS OF HETEROSEXUAL TWINS WITH PREPARTUM AMENORRHOEA IN TWO GENERATIONS

The genealogical tree shown below is that of a woman who was admitted to hospital on account of twin pregnancy and a mild degree of albuminuria. She was 22, and had never menstruated. Her twins were of opposite sex. Inquiry revealed that this was the fourth generation of heterosexual twins, and that the patient's mother had also had amenorrhoea up to the time of her first pregnancy at the age of 20.



I am indebted to Dr. C. J. Penny for permission to publish this case.

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BILATERAL HERPES ZOSTER

Since Darier has stated that herpes zoster is almost invariably unilateral (*Précis de Dermatologie*, 1918) and Sutton (*Diseases of the Skin*, 1928) makes the same observation, but notes that bilateral cases have been described by Fordyce (*Journ. Cut. Dis.*, 1915, 319) and Howard Fox (ibid., 1915, 492) this case which was recently under my care would seem worthy of publication.

A healthy man, aged 21, consulted me on June 15th, 1931. He stated that on June 12th he felt ill, had a sore throat and a headache, and thought that he had a temperature; as he felt no better on the following day he stayed in bed. On June 14th he had some pain behind the right ear, and later in the day noticed the eruption on account of which I was asked to see him. At this time there were well-marked herpetic vesicles on an area the size of a florin over the right parotid gland and over the outer surface of the pinna of the right ear; he had a temperature of 101° F. He was ordered to stay in bed, and was given sodium salicylate internally and a dusting powder for external application.

On June 17th typical lesions of herpes zoster appeared on a similar-sized area over the left parotid and over the outer and inner surfaces of the pinna of the left ear. During this time he complained of much pain behind both ears, and felt ill. The pains had ceased by June 19th, and the eruption was beginning to dry up. By June 22nd the eruption was disappearing, and he felt quite well.

In this case there was no associated facial paresis, such as is sometimes seen in cases with this distribution. There was no history of any contact with varicella, and the most probable source of the trouble would seem to have been the throat infection.

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Reports of Societies

DISEASES CONVEYED BY MILK

At the forty-ninth annual congress of the National Veterinary Medical Association of Great Britain and Ireland, which was held at Norwich from August 22nd to 28th, Messrs. M'ALLAN and HOWIE of Aberdeen contributed a paper entitled "Milk hygiene," in which they considered the more important diseases carried to man by milk.

Undulant fever had recently been given great prominence, particularly as regards its association with animals. The organisms found in animals gave rise to symptoms in man which were so indefinite that differential diagnosis was almost impossible without the aid of serological methods. Failure in diagnosis probably accounted for the paucity of recorded cases in the past, since the disease was now being reported with comparative frequency from various countries. In Aberdeen seven definite cases had been recorded in the last two years during the routine examination of 250 blood samples sent in for the Widal test. The biological examination of milk in recent years had revealed that about 25 per cent. of cattle were infected in this country, yet the disease was relatively uncommon in man. On the Continent and in America the strain of organism most commonly found in man was the porcine, which was rare in Britain, and might account for the comparative immunity of human beings. One of the human cases in Aberdeen was traced to the milk of a cow which had been vaccinated with a porcine strain. Milk-borne salmonella infections were not common in this country, and were probably, in most cases, the result of human contamination; in some outbreaks, however, the disease appeared to originate with the cow, and three outbreaks were cited to illustrate this. In 1925 an outbreak involving 497 persons was traced to a single cow, the udder of which was infected with a strain of *B. enteritidis* in every way identical with that recovered from the patients. The second instance only involved nineteen persons, and was traced to an intestinal infection of the cow with the *B. enteritidis* of Gaertner. The milk had been contaminated by the faeces, and the outbreak disappeared with the removal of the infected cow. The third case, which was similar to the last, was due to the bacillus of Aertrycke.

Tuberculosis was undoubtedly the most important of the diseases carried by milk. In Scotland there was in progress an investigation into the numerical incidence of tubercle bacilli in milk, in which methods of sampling and laboratory technique were uniform for the four centres engaged in the inquiry. Each centre would examine 1,950 samples during a period of two years (650 samples of raw milk, 650 of pasteurized, and 650 of retailed milk). Results for the first six months indicated that the percentage of positive samples was likely to be greater than was generally accepted. Milk was most frequently infected directly from the udder, and the opinion was expressed that bacilli might be eliminated in the milk some time—perhaps several months—before any clinical evidence could be found in the udder. Even when this was present the discharge of organisms might be intermittent, and might even cease for a considerable period until a fresh focus of infection appeared. Frequent and thorough inspection was the only sure method of combating tuberculous mastitis. The bulk of this inspection had to be conducted when the cows were housed; they had to be examined shortly after milking, for it was a waste of time handling udders when they were partly full. Apart from the establishment of tubercle-free herds, the best method of control was regular clinical examination. These frequent visits had also an educative value, and promoted the control of other diseases also. Bulk biological testing was a valuable accessory method. Although cows were susceptible to the toxin of diphtheria, no true cases of udder infection had been reported. Infection of the milk was usually brought about by sores on the teats being infected by some farm worker who was either suffering from the disease or was a carrier. One such case was reported by the authors from Aberdeenshire.

Among the general measures necessary to ensure a healthy milk supply, it was urged that every encouragement should be given to the production of the highest grades of milk, and that all others should be pasteurized; for this purpose the need for efficient plant was stressed. The supply of cow's milk had never been so safe as it was to-day, but its increasing use as a food, especially for school children, should increase the demand for the best grades and lead to a general, if gradual, improvement.

Calcium and Phosphorus in Milk

Dr. R. G. LINTON discussed the calcium and phosphorus supply of dairy cows, and pointed out that there was a great difference between the modern dairy cow and the cow leading a natural life, grazing at large on suitable food. Normally a cow secreted some 200 gallons of milk for the sustenance of a calf; her food would be grass and various plants which were in their most nutritious state during the normal period of maximum milk yield. The modern cow produced at least four times this amount of milk, it bred at any seasonal period, and reached maturity at an unnaturally early age. Its food was mostly unnatural, and often unsuitable, and it was often badly housed and given insufficient water. Quantitatively its total nutriment had been adequately studied; but it was only in recent years that serious attention had been paid to the need for replacing the mineral constituents drained from the body into the milk. What this amounted to was easily determined, but its significance in relation to the health and well-being of the cow was not clear. There was no definite knowledge of the actual needs of the cow in respect of calcium and phosphorus, either for its body or for milk secretion.

Tuberculosis in Swine

Mr. D. J. ANTHONY, considering some common diseases of pigs, stated that the commonest was tuberculosis, about 9 per cent. of those coming under his attention being thus infected. In the majority the infection was localized in the submaxillary lymphatic glands, and in practically every infected pig the head and throat were affected. The disease was chiefly of bovine origin, resulting from feeding on milk and milk products. This accounted for about two-thirds of the cases, the remainder suffering from avian tuberculosis. Prevention consisted in the cooking of milk foods and the elimination of tuberculous poultry.

Reviews

QUANTITATIVE PHARMACOLOGY

Bioassays: A Handbook of Quantitative Pharmacology,[1] by J. C. MUNCH, is a large volume of nearly 1,000 pages, and is by far the most comprehensive work that has yet appeared on this comparatively new subject. The mere size of the book indicates that this branch of the science has already attained considerable development. Until the end of last century pharmacologists were concerned chiefly with the qualitative aspect of their work, but since then more and more attention has been directed to quantitative studies. Such studies have involved an immense amount of labour, the whole value of which depends on scrupulous attention to accuracy in detail. There was a risk that the subject would be overwhelmed by the mere mass of its literature. The author's object is to provide a guide to this literature. He explains in the preface that his own researches were handicapped by the absence of any critical compilation of general information about quantitative pharmacology, and he has aimed at providing an encyclopaedia of reference for those doing research in this subject. His task has been very heavy; he says that 17,000 references were consulted, and that citations from 5,000 of them are included in the text. Inspection of the volume shows that a very thorough search of the literature has been made, and the author's claim to have covered the literature up to January, 1930, appears to be justified. An outstanding feature is the wealth of tabular matter. This is a very important thing, for it is impossible to do justice to quantitative data without a liberal use of tables.

Dr. Munch has given an encyclopaedic rather than a critical account of his subject. Mention is made of all the quantitative work that has been done, not only the more important and outstanding investigations, but also what may be termed "second-class matter." From the point of view of reference this is a valuable feature, because the lesser known work is always the most difficult to trace. This catholic attitude has, however, the disadvantage that there is no very close relation between the importance of the work mentioned and the space devoted to it. The tragedy of quantitative research is that its value falls so heavily as soon as any new experimental error is demonstrated: one short paper may wipe out the value of volumes of past researches. Dr. Munch treats his subject in a roughly historical manner, and gives a full and interesting account of earlier investigations; but he does not always make it clear when that work is of historical interest only. His book will be of the greatest service to the specialists for whom it is primarily intended, but it may be found rather confusing by those not well versed in the newer pharmacology. A short chapter of 20 pages has been inserted dealing with experimental technique. This subject might well have been omitted as falling outside the scope of the book, but since it is included it should be treated more fully, because the value of any description of experimental technique depends entirely upon full and accurate detail. Modern pharmacology is concerned with small fractions of milligrams, and the letter γ is generally accepted as the sign for one-thousandth of a milligram, but the author uses the contraction μ mgm. This seems an unfortunate symbol to choose, since the letter μ usually stands for micro, which indicates one-millioneth, both in electrical units and in microscopical measurements.

As its title indicates, the volume deals with the measurement of drug action by means of animal experiment, though certain chemical tests are included. Chief attention is paid to those methods of bioassay which are required by the *United States Pharmacopoeia*. For example, digitalis and its allies occupy 150 pages, and references are given to 700 papers on the assay of these drugs. Accounts are also given of methods of biological measurement that have been either established or attempted in the case of a large number of substances other than those officially recognized. Apparently the author has confined his attention almost entirely to experiments on animals, and has not considered clinical work. This seems a pity, for in some cases (such as that of anthelmintics) comparative analyses of the actions of drugs on patients have been carried out with great accuracy on a very large scale, and with controls just as adequate as those employed in animal experiments.

The chief impressions that remain with us are surprise at the amount of investigation that has been done in the subject of quantitative pharmacology, and admiration for the author's industry in collecting this great mass of detailed information. The lack of any full volume of reference on this subject has in the past been a serious handicap to research workers, for without such a book it is really quicker to do a piece of work than to try to find it in the literature. The appearance of *Bioassays* will do much to lighten the task of those engaged in quantitative pharmacology.

[1] *Bioassays: A Handbook of Quantitative Pharmacology*. By James C. Munch. London: Baillière, Tindall and Cox. 1931. (Pp. x + 958; 17 figures, 6 plates. 45s. net.)

THE MONGOL IN OUR MIDST

Dr. F. G. CROOKSHANK has restated his views on the origin of man in a much enlarged version of his book *The Mongol in Our Midst*.[2] Perhaps on account of the opposition his theory encountered, it is not surprising that the present work is more controversial in tone. This may indeed be necessary, but we doubt whether it is a gain either to the profit or pleasure of reading the book, for it involves a large amount of repetition, and one misses the direct appeal of the shorter vision.

As is well known, he has rehabilitated and extended Langdon-Down's ethnic classification of idiots and imbeciles. The original description of the mongolian idiot has become classic, but its anthropological significance has often been denied. Yet in view of the successive waves of Asiatic invasion that flooded the East, and sometimes even reached the middle of Europe, there must have been ample opportunity for a mongolian admixture to European blood, though it remained in the background until some evolutionary or developmental fault brought it to the front again. The author illustrates this by an interesting example unrelated to ordinary mongolism. It is recognized that the Lapps are a primitive mongolian race, whose physical characteristics were classed by Virchow as achondroplasic. Their women have small pelves and narrow acetebula. The heads of the femora of the non-mongolian Norwegians, on the other hand, are large. The offspring of mixed marriages between Lapps and Norwegians are specially liable to congenital dislocation of the hip, inheriting as they do a large head and a small socket for their thigh bones. In crossings, unfavourable variations may appear as easily as favourable ones. Dr. Crookshank holds, then, that the mongolian idiot is an atavism, and produces an astonishing number of observations to prove his point.

But he would go much further than this. He would take mongolism as merely an example of a much wider thesis. It has been almost tacitly assumed by anthropologists that man arose as a single shoot from a simian, or more probably pre-simian, ancestor. But is that

[2] *The Mongol in Our Midst*. By F. G. Crookshank, M.D., F.R.C.P. Third edition, greatly enlarged and entirely rewritten. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1931. (Pp. xv + 539; illustrated. 21s. net.)

assumption justified? Is not the existence of four different blood types, some incompatible with others, very suggestive of separate strains? Dr. Crookshank is struck by the close affinities between the three races of men—black, yellow, and white, and three races of apes—gorilla, orang, and chimpanzee. He infers a polygenetic origin for man, each of these races of men and of apes springing from a particular pre-simian ancestor. Thus, the negro and gorilla originated from one stem of the common ancestral stock of the Primates, the mongolian and the orang from the second, the "white" races and the chimpanzee from a third, and he considers that a study of prehistoric man supports this view, the Cro-Magnon being of the European, the Aurignacian of the mongolian, and the Neanderthal man of the negro type. It would not be surprising, in that case, for atavistic traits which had become recessive to emerge again in the event of an evolutionary failure, for "it is the dreaded law of inheritance that nothing is lost which once gains access to the circulating blood." He would agree with Sir Arthur Keith that the endocrine balance plays an important part in moulding racial characters, and finds this quite compatible with his own theories, since alike in the mongol, the mongoloid idiot, and the orang the thyroid gland is less active. Similarly, both in the negro and the gorilla the suprarenal is less active, while in the white races and the chimpanzee the pituitary is less active.

At least, that is the conclusion we draw from the earlier editions of Dr. Crookshank's book, and though it is less definitely stated in this edition, we take it this is still essentially the author's view. We are assured by certain anthropologists that there are great difficulties in the way of accepting it, but are there not also great difficulties in the way of the more orthodox views? Can all the mass of evidence that the author has collected be lightly brushed aside? We confess that to us it seems to demand most serious consideration.

"IMMUNO-SURGERY"

Under the title of *Immuno-Chirurgie*[3] G. DANIEL has collected all the various forms of specific immune therapy which are, or might be, of use in surgical practice. No doubt such a book would be of considerable service if due care were exercised in the choice of procedures to be recommended, and if the methods of proved value were presented in a modest manner, avoiding anything in the nature of extravagant claims for the results which could be expected from their application. Immune therapy has suffered much in the past from optimists, and is consequently regarded with mistrust by not a few of those engaged in the practice of medicine in this country. It cannot be said that the author of this book has written in such a manner as to improve this state of affairs. In a preamble of some ten pages the various forms of immune therapy, such as antiserums, immuno-transfusion, and different kinds of vaccines, are clearly described and their limitations indicated. The remainder of the book is divided into two portions. In the first the different serums and vaccines are discussed, and their mode of action and the general results obtained by them examined in detail. The application of these procedures in the various realms of surgical practice is then dealt with in the second part. There is quite a lot of sound advice to be found in these pages, but so much that is questionable has been included as to render the book of little value to anyone whose lack of knowledge would prevent him from reading critically. Another feature which reduces considerably the value of this book is the ignorance which its author displays of work done outside France. To give undue prominence to the work done by fellow-countrymen is but a human failing, understandable even though undesirable in scientific writing, but to push it to the extent of attributing the concentration of antiserums to the pioneer efforts of Besredka and Ramon, and of writing on streptococcal and pneumococcal antiserum without the least mention of all that most valuable work which has originated from America, is not only foolish but inexcusable.

[3] *Immuno-Chirurgie.* Par Gaston Daniel. Paris: N. Maloine. 1931. (Pp. 322; 8 figures, 1 plate. 45 fr.)

BEDSIDE PREPARATIONS

So many books published to help nurses in their practical work are too long, or are written in such cumbersome English that it is often difficult to know just what the writer really means. In *Practical Preparations*,[4] by Miss N. POWELL, a sister at St. Bartholomew's Hospital, neither of these disadvantages can be found. The terse, short sentences express what is wanted, and no more, with the result that in this small book of 206 pages there is an astonishing amount of information which will be useful not only to nurses in private and hospital practice, but even to doctors. Detailed instructions are given for the preparation of trays such as stimulant, hypodermic, enema, and rectal trays. Methods and things necessary for the collection of specimens for pathological investigation are succinctly set forth, with useful hints for the recognition of gall-stones, tapeworms, etc., in the stools; and the routine procedure to be adopted in preparing patients for *x*-ray examination of the alimentary tract with barium, of the bronchi with lipiodol, of the gall-bladder with sodium tetraiodophenol-phthalein, is clearly and briefly outlined. The omission of special methods of *x*-raying the urinary tract should be remedied in future editions. In the section on urine testing a method of examining for bile is given which is rarely mentioned even in the standard medical textbooks. As this test is not only simple, but also the most sensitive, we may give the author's description of it: "Half-fill a test tube with urine, and shake thoroughly; if bile be present, the froth will be coloured yellow." The nurse, the medical student, and that bewildered being the newly qualified man who has just been appointed house-physician, will turn to many of these pages with feelings of gratitude, particularly to those dealing with local applications. How many final-year medical students, let alone nurses, know how to apply a mustard leaf, antiphlogistine, mustard and linseed poultices, blisters, dry cups, and leeches? "Should it be necessary to remove the leeches, put a little salt on their heads; they will then drop off. They must not be pulled off, or the bleeding will be extremely difficult to arrest." It is these small observations, the outcome of practical experience, which make the book so useful. Methods of reducing temperature by cradling, ice cradling, sponging, by packs, and by baths are given in full detail, as also are the various ways of inducing diaphoresis. Rectal feeding, rectal lavage, and colonic irrigation are also dealt with in this section.

Two sections will appeal especially to general practitioners who wish to have exact knowledge of practical medical methods that may not have been in use in their student days. The first of these is the administration of continuous nasal oxygen, now thought by many to be an essential routine procedure in the treatment of pneumonia. The second includes lists of diets for use in pneumonia, typhoid, and nephritis, with modified Lenhartz and Sippy diets for gastric and duodenal ulcer, and ladder diet and line ration diet for diabetes. Times and amounts are given in detail, with instructions how to prepare special solutions, such as rice water.

[4] *Practical Preparations.* By N. Powell. London: The Scientific Press, Faber and Faber, Ltd. 1931. (Pp. 206; 1 plate. 3s. 6d. net.)

NOTES ON BOOKS

The third edition has now appeared of Dr. René Cl ogne's practical guide to analysis of the urine, blood, gastric secretion, and faeces.[5] The subject-matter has been thoroughly revised and brought up to date ; it will assist many general practitioners to understand the scope and nature of modern laboratory tests, and to appreciate their interpretation from the clinical point of view. As a simple laboratory textbook this volume will have its uses, though it makes no pretence of being a complete record of all the investigations which are nowadays necessary. Biochemistry receives more attention than in previous editions.

The War Office in February last notified in Army Orders the issue of an *Army Manual of Chiropody*,[6] of which a copy has been forwarded to us. This small pamphlet contains chapters on the elementary anatomy of the human foot, on the fitting and care of boots, socks, and puttees, and the care of the feet, and on hyperidrosis, corns, the care of the nails, on flat-foot, and other minor deformities, and on chilblains, frostbite, and trench-foot. The appendices contain hints to instructors in chiropody, suggested programme for a course in that subject, rules and regulations for regimental chiropodists, list of contents of a case of chiropody instruments, and of materials required. Presumably this pamphlet is not intended for the rank and file, but for the guidance of the chiropodists who are being trained according to para. 775 of King's Regulations, 1928, by officers of the R.A.M.C. No doubt, also, it will be used by unit officers who have to conduct feet inspections.

The *Abstracts of Dissertations Approved for the Ph.D., M.Sc., and M.Litt. Degrees in the University of Cambridge for the Academical Year 1929–1930*[7] consist of brief synopses of studies in various subjects, including agriculture, botany, geology, zoology, biochemistry, physiology, experimental psychology, history, literature, and economics. Among the theses of interest to the medical profession is that " On the bicarbonate and chloride ratios, carbon dioxide dissociation curves, and cell volumes of oxygenated and reduced ox bloods, normal and abnormal, and a comparative study of these bloods with the bloods of the sheep, pig, horse, man at rest, and man at work," by W. O. Morgan ; " Periods of arrested progress in the acquisition of skill," by M. D. Smith ; and " Studies in bacterial metabolism," by R. P. Cook.

" Aglait Illisimatiksat " is the Eskimo equivalent of " Book of Knowledge."[8] Its author, Mr. George Binney, is of the Hudson's Bay Company, London. He tells us in an interesting preface that although many of the Eskimos of Labrador have learned to read and write, there has been until now only one book printed in their language—namely, the Bible, with a liturgy and a few religious tracts. With the increase of sophistication, there is serious danger of demoralization and deterioration of these amiable and hardy people, and the Hudson's Bay Company has therefore had this elementary handbook of hygiene prepared and translated into the Inuit language. It is intended to be sold and not given away, because, as the author says, the Eskimo, like the white man, values most the things he pays for. The English and Eskimo texts are printed on opposite pages, and at the end of the book are maps of Canada, Labrador, Greenland, etc., drawn in the style of the sixteenth century, and so presumably more intelligible to the primitive reader than modern maps. Whether that is so we may doubt, but the *maps are certainly picturesque*. The English version is in simple language, but it might have been even simpler. Such words as retain, produce, obscured, prepared, summit, obtain, etc., might easily be changed for more homely synonyms. The text has been rendered into the Labrador dialect by the Rev. W. W. Perrett, for many years superintendent of the Moravian Mission in Labrador.

[5] *Guide Pratique d'Analyses pour l'Urine, le Sang, le Suc Gastrique, les Matières Fécales, etc.* Par René Clogne. 3e édition. Paris: Le François. 1930. (Pp. 472 ; 66 figures. 32 fr.)

[6] *Army Manual of Chiropody, 1931.* The War Office. London: H.M. Stationery Office. 1931. (Pp. 64. 1s. net)

[7] *Abstracts of Dissertations Approved for the Ph.D., M.Sc., and M.Litt. Degrees in the University of Cambridge for the Academical Year 1929–1930.* London: Cambridge University Press. 1931. (Pp. 125)

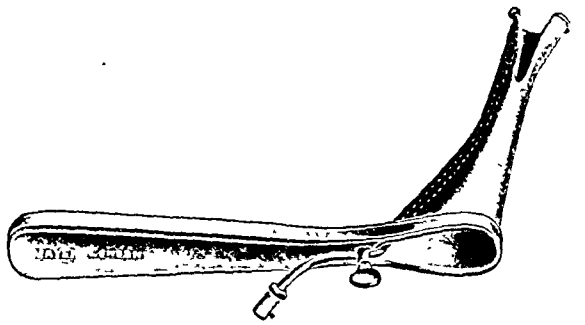
[8] *The Eskimo Book of Knowledge.* By George Binney, B.A. Oxon. Rendered into the Labrador dialect by the Rev. W. W. Perrett, with the assistance of S. K. Hutton, M.D. London: Hudson's Bay Company, 68, Bishopsgate, E.C.2. 1931. (Pp 237 ; illustrated. A limited number of copies are available for the public, 8s. net, post free, on application to the Hudson's Bay Company.)

PREPARATIONS AND APPLIANCES

Naso-pharyngoscope for Radium Application

Mr. John E. G. McGibbon (honorary assistant laryngologist and aurist, Royal Southern Hospital, Liverpool) writes.

The accompanying illustration shows a modified Yankauer's naso-pharyngoscope for the application of radium needles or



radon seeds to malignant growths in the naso-pharynx under direct vision.

The naso-pharyngoscope is distally lighted, and affords a comprehensive and well-illuminated view of the vault, posterior wall, and lateral walls of the naso-pharynx. The lateral wall of the pharyngoscope is slotted (on the opposite side to that drawn in the figure for right-handed operators),



as it has been found that seed-introducers or needle-forceps can be introduced more easily alongside the speculum, and their extremities brought into the field of vision through the slot rather than directly through the lumen of the instrument. The modified naso-pharyngoscope can be used also for simple examination of the post-nasal space, or to obtain specimens of tissue for biopsy.

The radiograph shows fourteen radon seeds which were implanted into an extensive naso-pharyngeal neoplasm through the pharyngoscope under direct vision.

The instrument was made by Messrs. Mayer and Phelps of 59-61, New Cavendish Street, London, W.1.

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PROBLEMS OF ANAESTHESIA

The blessings of anaesthesia are so evident to patients and the profession alike that to help in perfecting the art and the science of that special branch of medicine is clearly to confer a benefit upon humanity at large. That many attempts to increase the safety and the usefulness of anaesthetics and to minimize their drawbacks have been made, especially during and since the war, is common knowledge ; but the very success of some of these attempts has brought about a dilemma as between specialist and general practitioner similar to that which has confronted the medical profession in other branches of specialized study. Briefly, as Dr. R. J. Clausen has indicated in the very careful and broad-minded review of progress in anaesthesia which he read at the Annual Meeting of the British Medical Association in July, there are methods of simplicity and methods of complexity in the administration of anaesthetics.

Students and junior practitioners can learn the simple methods within the limitations of the time they are able to spare ; and, provided always that they are impressed by their teachers and their textbooks with certain well-established fundamental principles. they can make themselves efficient administrators, with a high degree of safety to their patients for the routine ordinary case. There are very many general practitioners up and down the country at large of whom it can be said that they fulfil this description, as any surgeon will readily admit ; and that the proportion of them is very much higher than it was a generation ago is equally indisputable. This is a state of affairs for which the credit is due to the medical schools. The schools in their turn have to thank the specialists in anaesthesia who instruct their students ; and if both schools and teachers owe a debt to one individual more than to any other for insisting on the vital necessity of studying first principles, that individual is the late Sir Frederic Hewitt. Granting the fact of this all-round levelling up, at the same time it has to be admitted that there are still practitioners using and ready to defend methods which every specialist is convinced are dangerous.

On the other hand, there are methods of complexity, mostly of recent introduction, which appear to offer great advantages in the management of difficult and exceptional cases. There is, of course, no hard-and-fast line possible between the simple and the complex ; what is complex to-day may appear simple to-morrow ; what is complex to some practitioners may be simple to others. Many of these methods are at present almost exclusively in the hands of specialists, and are likely to remain so for a considerable time to come. Granted that some of them offer really great advantages to the patient in certain cases, the problem that Dr. Clausen has in mind is how they can be secured for him when a specialist is not available. To this problem there is virtually no solution except by improvement in the training given to students and residents in the hospitals of the country. But an improvement in the standard of training means of necessity an increased period of time for study, and even more for opportunities of practical work, which the already heavily loaded curriculum will not allow. Since all our students cannot be educated up to specialist standard in every branch of medicine, we shall have to remain content with doing the next best thing—that is, training them very thoroughly in first principles and simple methods, offering concurrently an inducement to much larger numbers of them to qualify as specialists. That inducement must include improved remuneration, among other things ; for it is notorious that even in London only a handful of those who take up anaesthetics as a specialty can make a living without doing general practice of some kind in addition.

Dr. Clausen pleads, also—and he is not the first to do so—for a more sympathetic comprehension by the surgeon of the aims and problems of the anaesthetist. Here, too, there is a very different outlook to-day from that of a generation ago ; it is becoming exceptional for the surgeon to treat the anaesthetist as an interloper whose sole function is to produce a deeply relaxed musculature regardless of everything else, instead of as one of a team of workers co-operating to promote the welfare of their common patient. Nevertheless, even quite recently surgeons have been known to object to nitrous oxide and oxygen on the ground that the operation field bleeds more readily, and to suggest the use of chloroform, oblivious of the consideration that vessels do not bleed unless the surgeon cuts them, and that, if he does cut them, it is better for them to be seen and tied (which is likely to happen when the blood pressure is well maintained, as is the case with gas and oxygen) than not to be seen, not to be tied, and to bleed the next day (which has been known to happen owing to the temporary fall of blood pressure under chloroform). Even more vital is full co-operation and mutual comprehension between surgeon and anaesthetist when the various combinations of local, regional, or spinal anaesthesia, with or without pre-medication and basal anaesthesia, are being employed. Here the factor of time is of importance ; in hospital work especially there is too great a tendency to rush and hurry, Dr. Clausen feels, and too little respect in consequence for the patient's point of view of all these matters. This brings us back once more to the economic factor ; for time is money. Without a certain amount of drive in the operating theatre, programmes would never be got through at all ; but all the same there is much force in Dr. Clausen's contention, and one at least of the incidents which he narrates in support of it is clearly indefensible, and, we may hope, quite exceptional.

"HEALTH AT THE GATEWAY"

The problems which engaged the attention of the pioneers of the sanitary movement in England, though they presented themselves in a serious form in congested inland industrial centres, assumed a still more formidable guise in rapidly expanding seaport towns, whose native shortcomings were subject to aggravation by recurrent outbreaks of alien infections introduced in the course of oversea trade. Among such communities the city and port of Liverpool must be held to occupy a conspicuous place, alike for the great and even unique character of the stresses it experienced, and for the very notable success with which these difficulties were overcome. The various steps in the path of progress by which the "most unwholesome of seaports" rose to a level of sanitary efficiency which is acclaimed by all have been set forth by Professor E. W. Hope in a recent work[1] under a happy title, in which he narrates the course of events, portrays the changing conditions of the city, and reviews the remedial measures adopted, many of which he inspired and administered. The sanitary development of the port is traced from the early days of strict quarantine at Sloyne, where suspected ships were detained for long periods, guarded day and night, down to the formation of the Port Sanitary Authority, whose modern methods are more efficacious and more considerate of commercial interests.

The early history of the town itself reveals interesting conditions. It appears that in 1801 2,306 persons in Liverpool were living in cellars. A little later the amazing volumes of smoke which poured incessantly from the works were regarded as "in some respects salutary for the sulphur which they contained." The water supply, however, was less copious, being issued from carts to the inhabitants at a halfpenny a bucket. When the local Sanitary Act of 1846 came into operation the potato famine in Ireland was driving crowds of destitute immigrants into Liverpool. By June 30th, 1847, some 300,000 had landed, and 60,000 and over settled in the town, forcing their way into cellars which had been closed as uninhabitable. Fever broke out and continued to spread. By the end of the year there had been 60,000 cases in the town, together with 40,000 of dysentery. In one district 1 person in 7 died. Over the city as a whole 2 in 7 were stricken. Next, in 1848, cholera came from Dumfries, and in 1849 from Glasgow and Dublin, and the resulting deaths were 6,394. From those repeated shocks, however, the sanitary provisions contained in the Act of 1846, though delayed for the time, gained added force, and, conferring as they did upon the city powers to facilitate scavenging, cleansing, and water supply, and to prevent overcrowding, heralded the approach of a new sanitary era. Another time of pressure was experienced during the cotton famine of the American Civil War, and in 1865 and 1866 the zymotic diseases were still swelling the mortality lists. But a recrudescence of typhus in 1882 and 1883 spurred the council to establish a fever hospital, and the sanitary staff was largely increased in order to deal with the position, though the compulsory notification of infectious disease, possible under the then adoptive Infectious Disease Notification Act, was still opposed by both lay and medical opinion.

District nursing or its equivalent originated in Liverpool in 1859 by voluntary effort, and, owing to the difficulty of finding suitable nurses, a training school for nurses was instituted in 1863, the architect for the building being advised on his plans by Florence Nightingale. Child welfare work began in 1874 in a voluntarily supported day nursery, and in 1897 two women were appointed to the sanitary staff to act as health visitors. The need for the training of health visitors was met by the establishment of the University School of Hygiene. In 1901 the corporation made grants to voluntary agencies supplying milk for infants, and from this beginning the work rapidly expanded till crowned in 1916 by the establishment of the Carnegie Welfare Centre. In connexion with these matters Professor Hope draws attention to the important part played by the University of Liverpool and other universities in the advancement of public health reform. The provision of water for Liverpool was first empowered in 1786 by a local Act of Parliament, and subsequent Acts incorporated two private water companies to meet the needs of the town. The Rivington scheme was authorized in 1848. In 1873 and later the council weighed the rival claims of Bala Lake, Derwentwater, Windermere, Haweswater, and the River Vyrnwy as sources of a high-grade water supply. The choice finally fell upon Vyrnwy, whose great impounding reservoir now furnishes the city with a pure water from sixty-eight miles away at 1½d. a ton. The activities of the corporation in school hygiene, housing, food control, and other undertakings are also fully and clearly reviewed.

Professor Hope records that Liverpool was first in this country to support a medical officer of health, sanitary officers, a city bacteriologist, and women health officers, and was also the pioneer in district nursing, child welfare work, and the training of the blind. The helpful co-ordination of voluntary effort with official schemes emerges often in the story. The period covered is far longer than that of Professor Hope's own tenure of the post of medical officer of the city, and he refrains from focusing attention on matters in which he was intimately concerned or was the prime mover, but his distinguished service is too well known for modesty to disguise. His wide experience and enlightened outlook are set forth in a vigorous and attractive historical study, and what he has written in *Health at the Gateway* will not only stand as a valuable record of good work done, but will serve also as a guide and stimulus to his younger contemporaries in the public health service in the discharge of their increasingly onerous duties.

[1] *Health at the Gateway*. By E. W. Hope, O.B.E., M.D., D.Sc. London: Cambridge University Press. 1931. (15s. net.)

RADIOLOGY AND THE RADIOLOGIST

A generation has passed since the introduction of *x* rays. In the early days the radiological specialist was essentially a technician, and in many instances was not even qualified in medicine. Where the exposure was of long duration (twenty minutes was not too much to give in order to obtain a skiagram of the skull), and the risk of mechanical breakdown of apparatus always imminent, it was necessary to have in charge of the machine someone conversant with its peculiarities who could, without loss of time, make the necessary adjustments and minor repairs. The finished skiagram could be examined at leisure by a man skilled in anatomy, who could then offer the correct interpretation. Formerly, the fixed skeleton was the only part that could be adequately examined. In more recent times, with improved technique, the soft and mobile tissues have also been explored. Nowadays, too, the improvements in design and construction of apparatus allow a greatly increased penetration of rays with a minimum of bother. The comparatively simple control table sets into action a most elaborate switchboard, hidden from view behind a screen in the corner, and requiring a team of skilled workers to unravel and adjust its intricacies; but the actual management of the apparatus appears to require little more than careful attention to a few simple rules of sighting and exposure. Nevertheless, the differences between the results obtained by various workers are so great that we are tempted to look a little more closely into the psychological basis of the *flair* which some possess and others do not. What are the attributes of those who will most successfully tame and employ this monster, at once so docile and so dangerous, devised and constructed by an army of Frankensteins? First, however, we must inquire as to the line of *x*-ray development itself. Will the perfection of the machine, making it fool-proof, allow of its manipulation by every practitioner, or will a specialist branch still be required? Is the *x*-ray apparatus in future to be used, for example, as the electrocardiographic apparatus is used, or as the stethoscope is used? It must be employed more commonly than the former, since the *x* ray offers an unrivalled method of envisaging the skeleton, and of estimating the condition of hollow viscera and soft tissues when these are thrown into relief by barium or bismuth or organically combined iodine. In some of the most up-to-date clinics in Germany radiography has displaced even the stethoscope in the management of phthisis. The cases are almost entirely controlled by laboratory methods, the diagnosis being made by the *x* ray and the prognosis by the sedimentation rate of the red blood corpuscles. Though this is going further than could be acceptable to the clinical traditions of British medicine, radiographic aid is becoming almost a daily need in practice. Efficient and easily worked outfits are available, and knowledge is spreading. A number of *x*-ray atlases and reference books have been published during the past year or two and reviewed in our columns, containing beautifully reproduced illustrations of the *x*-ray appearances of normal and abnormal conditions of bones, joints, and internal organs. The object in publishing these expensive works appears to be to provide a reference library for practising radiologists, whose subject grows so big that specialization is taking place even within its confines. Besides these library editions, however, there are many smaller books which give in not too great detail the methods and the more common results of applying *x*-ray methods. From these the practitioner may learn what will help him in the majority of his cases. In a considerable number, however, his results may be incomplete or negative, and yet a doubt remains about the presence of a lesion. Here an expert must be called in. It should be noted that repetition of *x*-ray examination for reviewing the case is not without considerable risk, owing to the irritative effect of these rays on the skin and superficial tissues of the patient. The future of radiology as a specialty would indeed be hazardous if the consulting radiologist were thus restricted in his opportunities and hampered in his investigations owing to the previous irradiation of the patient's skin. There seems, however, no reason to believe that such may be the trend of this branch of medicine. The radiological expert with an established technique may feel that in methods of diagnosis little remains to be improved; but research in methods of treatment is only beginning. The control by *x* ray and radium of malignant disease—lymphadenoma and leukaemia, for example—is still the subject of much work and discussion. Different radiologists advocate different methods. Careful observation will be required to establish the most efficacious procedures. A start has been made, but in this field of research a great deal remains to be done. Research, however, is for the few. Though all may contribute to the advance of knowledge in some degree by accurate observation and recording of facts, it is rarely that there arises the genius of a synthetic mind to correlate these facts into an ordered body of truth. The radiologist's job is to study form; the best produce a picture of the actual lesion for all to see. This striving after the complete representation reveals the artist. But there is also interpretation. The radiologist is working with shadows on a two-dimensional plane of solid objects in the world around him, and, like other artists, he must suggest the condition of familiar objects—in this case objects of anatomy and pathology.

A MONOGRAPH ON HEART DISEASE

Excessive concentration upon acquired structural cardiac defects was replaced towards the end of the nineteenth century by an unduly exclusive attention to the functional capacity of the heart. The pendulum now swings again, and Dr. Paul D. White[1] laments the modern neglect of physical signs in so far as these conduce to more exact knowledge of morbid anatomy. He therefore bases the present-day conception of cardiology on the "tripod of cardiac diagnosis"—etiological diagnosis, structural change, and functional condition. Physicians, he considers, should direct their attention rather to the first and second than to the last of these elements in diagnosis. In discussing the incidence and causation of heart disease, he remarks that no other single disease group causes death so frequently. This must be due in part to the diminishing deaths from such diseases as tubercle and pneumonia, with a resulting prolongation of life to the age at which degenerative changes set in.

[1] *Heart Disease*. By Paul Dudley White, M.D. The Macmillan Medical Monographs. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1931. (42s. net.)

Several useful tables are given in Dr. White's monograph: one compiled by Abbott contains a classification of congenital cardio-vascular defects, together with their relative frequency, compatibility with life, associated anomalies, and mode of death. Another tabulates statistics from the United States and Europe as to the percentage contribution of the various etiological factors in death from heart disease. Opportunity should be taken in a future edition to omit the series studied by Parkinson and Clark-Kennedy, as this concerns failure with normal rhythm only. Dr. White rightly claims that the determination of etiology is sometimes more important than a structural diagnosis, and he deals very adequately with certain factors whose claim to cause heart disease has in the past been contested. Scarlet fever is placed in the category of rare causes; obesity, strenuous exertion, and tobacco are exonerated on the count of disease causation, but held to be often productive of symptoms and contributory to distress where disease from another cause coexists. On the other hand, insufficient consideration is given to the heart in pneumonia and other acute infections. No description of the circulatory embarrassments in these diseases is given; nor can it justifiably be held that pneumonia does not cause heart disease when it has been demonstrated by Stone that myocarditis is found at necropsy in more than 10 per cent. of patients. In the opening chapters on cardio-vascular examination, very careful consideration is given to history taking and to clinical methods. The importance of investigating functions and organs frequently involved in heart disease is stressed, and a chapter is devoted to this aspect of clinical work. In the realm of clinical cardiological investigation the radiology of the heart is assuming an ever-increasing importance. In fact, the *x* ray, as well as the electrocardiograph, must be regarded as indispensable in the examination of a patient seriously suspected of cardio-vascular disease. Many helpful orthodiagrams accompany Dr. White's very lucid exposition of the technique of screening and orthodiagraphy, and, in addition, there are some reproductions of the excellent drawings of Koch and Wieck. These represent the post-mortem tele-radiogram appearances of hearts in which metal strips and bands have been employed to outline the various chambers, valvular orifices, and vessels. The author's account of radiological methods must be invaluable to those who desire to study the heart possibly or certainly diseased. While the detailed discussion of symptomatology is a valuable feature of this monograph, it appears that in order to avoid much reiteration differential diagnosis has been scantily treated. For example, this aspect of angina pectoris is too briefly mentioned. Concerning the relationship between true angina of effort and neuro-circulatory asthenia, Dr. White remarks that the latter condition "may complicate angina pectoris and even confuse the diagnosis." No one will deny that the difficulty of differentiating angina and the painful forms of neuro-circulatory asthenia is occasionally great, and may be insurmountable. But probably most clinicians would also agree to Gallavardin's assertion that they never truly coexist: "Sans pouvoir catégoriquement nier sa possibilité, je puis bien dire que je n'ai pas observé d'angor d'effort absolument net dans l'angine de poitrine névrosique." Another important clinical point that might have received mention is that variety of angina of effort supervening as a sequel to dyspnoea, usually in hyperpietics, and carrying no menace of death in the attack. But no description or criticism of Dr. White's work can convey the wealth of information that it contains or the stimulating philosophic and scientific spirit in which it has been compiled. Moreover, he has sifted an immense mass of important contributions to the subject in producing a treatise that must have a strong influence upon cardiological thought of to-day.

LONDON WATER

In the introduction to his report for 1930 on the water supply of London,[1] Sir Alexander Houston recalls a number of his past contributions to the study of the characters of potable waters and the methods by which potability is maintained. He refers to his important determination in 1908 of the viability of *B. typhosus* in water, and also to his search of 1928 for the presence of this organism in the raw water of the river. Included in his survey are the uses of storage, rapid filtration, and the excess lime method. The new material of the report sets forth, in the first place, the consistently good results achieved during the year by chlorination, *B. coli* being absent from 100 c.cm. samples of water in percentages ranging from 94.4 for West Middlesex to 98.0 for Kempton Park and Southwark with Vauxhall. In 1930 the Barn Elms experiments in double filtration were on the whole satisfactory; they will not be separately described in future reports, as similar work on a larger scale is now carried out at Walton and Kempton Park. An investigation was made with the view of ascertaining the frequency of *B. typhosus* in sewage, the medium employed being Wilson and Blair's glucose-bismuth-sulphite-iron. In thirty-four twenty-four-hour average samples of London sewage from the Barking outfall, four only contained one typhoid colony each in 0.1 c.cm. of sewage, the remaining thirty all being negative. The attenuation of such a suspension is well conveyed to the mind by the control examination of thirty-four equivalent samples of the sewage artificially inoculated with the bacillus, from all but one of which colonies were recovered in numbers ranging from 1 to 65, with an average of 10.9. Nine further samples were tested for *B. paratyphosus* B, with negative results. The author adds, however, that in the course of another investigation, not detailed in this report, he found no fewer than 73 paratyphoid bacilli per c.cm. in the sewage effluent of a town (unnamed) during a paratyphoid outbreak. In view of the abundance of streptococci in human faeces, their non-multiplication in pure water, and their feeble viability in water generally, he is of the opinion that, if they could be differentiated from their more robust congeners, their presence in drinking water would furnish a valuable indication of recent and specially dangerous pollution. He describes a method according to which the growth of *B. coli* is repressed by partial drying, while the streptococci, which are comparatively resistant to drying, survive. In the miscellaneous section, under the heading "There is

[1] Metropolitan Water Board. Twenty-fifth Annual Report on the Results of the Chemical and Bacteriological Examination of the London Waters for the Twelve Months ended December 31st, 1930. By Sir Alexander Houston. London: P. S. King and Son, Ltd. 1931. (21s.)

othing new under the sun," a curiously interesting tter is reproduced, dated one hundred years ago. It from Michael Faraday to the then engineer of the 'est Middlesex Waterworks Company, reporting on a green substance " sent to him for examination. He ays that he believes the substance to be a conferva, but omplains that the engineer had supplied him with no etails as to the source and circumstances of the growth. Being without details he can express no opinion as to ow to stop its formation! Such complaints by experts, s the heading suggests, are not unknown at the present ime. The report concludes with a description of the iew waterworks at Kempton Park, where double filtra- ion has been introduced with satisfactory results, the amount of water filtered being two and a quarter imes the previous normal daily output of the station. The plant is illustrated by a drawing and photographs, and the route to Kempton and back is traced with a wealth of anecdote and quotation.

CEREBRO-SPINAL FEVER

A memorandum[1] has been prepared in the Medical Department of the Ministry of Health summarizing the epidemiology and characteristics of cerebro-spinal fever, and describing the means of control and specific treatment, with special reference to a scheme for collecting the results of serum treatment. It amplifies and replaces the previous memorandum on this disease which the Local Government Board issued in 1918. Sir George Newman in a prefatory note remarks that the fact that during the past year there has been a definite increase in the prevalence of cerebro-spinal fever in different parts of England and Wales affords an additional reason for the present summary. As regards the assessment of the value of the available serums, and of the different dosages and methods of administration employed, he expresses the hope that medical officers of health, hospital medical officers, and general practitioners will report to the Department on a uniform plan the results that have been obtained with serotherapy, so that some general conclusions may be reached. The clinical details required include the dates of onset, notification, and removal to hospital ; the dates of performing lumbar punctures, and the amounts of fluid so removed ; the dates of administering anti-meningococcal serums and the doses injected (intrathecally, intravenously, or intramuscularly) ; the source of the serum ; and its apparent effect. In the body of the memorandum is a table of the incidence and mortality of this disease each year since 1912 ; the increase in 1929, 1930, and the first quarter of 1931 is noteworthy, the last figure suggesting the possibility of a higher incidence this year than in any year since 1919. Stress is laid on the tendency of the disease to affect children under the age of 5, and the close association of susceptible persons with carrier cases in schools, mines, and naval depots. The infection is of the " droplet " kind, and the chief danger lurks in unrecognized carriers ; there is a relatively low case-to-case infectivity. The virulence of the specific micro-organism recovered from carriers cannot, unfortunately, be estimated, as in the case of diphtheria, where virulence tests have proved so valuable. As regards treatment, the important points stressed are: good nursing ; early and repeated lumbar puncture to relieve pressure, and to promote drainage of the cerebro-spinal system ; the administration of anti-meningococcal serum at the first lumbar puncture, and thereafter at intervals of twenty-four hours ; and the injection of adrenaline (to combat shock in fulminating cases), morphine, and heroin. The intrathecal route is preferred for serum injections, but in some cases intravenous and intramuscular administration has proved beneficial. It is admitted that serum therapy has been ineffective in some recent cases, in striking contrast to the success thus obtained during the war. This may be because most of the cerebro-spinal fever prevalent in the war period was associated with one or two identifiable serological types of meningococcus, whereas other types have since come into activity. This emphasizes the main purport of the memorandum, which is to secure the collecting of information about the effectiveness of the different varieties of serum now in use, and the methods of their administration. Meningococcal vaccine may be employed in the long convalescence stage, but there are as yet no satisfactory data available concerning its prophylactic value. In the case of persons travelling from an uninfected area into a community where the disease is prevalent, it is suggested that doses of 500 and 1,000 million cocci may be injected, such cocci consisting of the types predominating in the affected community. While it is not advised that contacts and carriers should be isolated, special efforts should be made to free them from the cocci by a routine of fresh air and exercise ; as an adjunct, spraying the nasopharynx with a 1.5 to 2 per cent. solution of zinc sulphate may be tried.

[1] Reports on Public Health and Medical Subjects. No. 65. H.M. Stationery Office. (6d. net.)

CONVALESCENT CARE

The Winifred Masterson Burke Relief Foundation was founded and endowed for " the relief of worthy men and women who, notwithstanding their willingness to support themselves, have become wholly or partly unable to do so by reason of sickness and misfortune, or have been discharged from hospitals before they have regained sufficient strength to resume their employment." Its main institution at White Plains, Westchester County, New York State, was opened in April, 1915. It occupies a site of sixty acres, and can accommodate 300 patients. It was used for convalescent purposes by the United States Navy from January, 1918, to April, 1919 ; and in this institution and some small branch homes there have now been treated some 90,000 patients. The ninth report of the Foundation, covering the period May, 1929, to April, 1931, has been issued, and provides a record, with no fewer than fifty admirable photographs, of activities and experiences which may well influence similar movements both in this country and in America. The report shows that the work of the Foundation has been devoted to the latter of its two objects—namely, relief, help, and care during, and immediately subsequent to, convalescence, and the essential difference between this function and that of supplying the needs of chronic cases is emphasized. The distinction must be peculiarly difficult in two classes of case to which some particular attention has been given, " selected cardiacs and mild

psychoneurotics." The report states that "good convalescent treatment is found to be made up of about 50 per cent. inspirational human management, 40 per cent. housekeeping, and only 10 per cent. of nursing. . . . Convalescent care becomes, in best practice, predominantly psychotherapy." This last term, however, clearly has a wide meaning for the authors of the report, for it includes both "occupational therapy" and "recreational therapy." The way in which these are applied has undergone some modification during the past two years in the light of previous experience, and their advantage and great importance during the later stages of convalescence are pointed out. Convalescence may be a critical period in the life of a sick man or woman. Whether recovery or chronicity is to result may depend upon the way in which this period is handled. Experience, such as that recorded in this report, is therefore of considerable value, and opportunities such as those provided by the Winifred Masterson Burke Relief Foundation may well be brought to the notice of philanthropists elsewhere.

BRITISH ASSOCIATION CENTENARY

As previously announced in our columns, the British Association for the Advancement of Science will hold its centenary meeting in London, under the presidency of the Right Hon. J. C. Smuts, from September 23rd to 30th. Concurrently, the Faraday centenary exhibition will be held in the Albert Hall, where General Smuts will be installed on the afternoon of the first day, and will there receive the delegates of societies, institutions, universities, colleges, and cities in which the Association has previously held its meetings. The presidential address will be delivered on the evening of the same day in the Central Hall, Westminster, the subject being, "The scientific world-picture of to-day." Subsequent evening lectures will be given by Sir Arthur Keith, on the construction of man's family tree; by Dr. S. Kemp, on oceanography in the Antarctic; and by Sir Oliver Lodge, on a retrospect of wireless communication. A large number of receptions have been arranged for the delegates, the hosts including the National Physical Laboratory, Bedford College for Women, the Royal Society, the Government in the Imperial Institute, the Wellcome Historical Museum, the University of London, the Forum Women's Club, and the Lord Mayor and Corporation of the City. The greater part of each day will be occupied by discussions. Among the topics of special interest to medical practitioners is a lecture on experiment and observation in the study of child psychology, which will be given on September 24th by Professor C. W. Valentine. On the following day Sir Frederick Gowland Hopkins, President of the Royal Society, will open a discussion on the chemistry of the vitamins and related substances; and on the same day lectures will be given on the social aspects of mental deficiency, by Dr. E. O. Lewis; on the role of genetics in the future of preventive medicine, by Dr. C. P. Blacker; on some psychological experiments on different types of mental defectives, by Drs. R. G. Gordon and Norman; and on the classification of the mental defective and the relative frequency of different types of such deficiency, by Dr. F. C. Shrubsall. On Saturday, September 26th, a discussion will be held on popular problems, to which Professors J. S. Huxley, E. W. MacBride, F. A. E. Crew, and Mr. J. B. S. Haldane will contribute. Dr. H. H. Dale will deliver his presidential address to the Section of Physiology on Monday morning, September 28th, when he will introduce a discussion on the biological nature of filterable viruses. In the Section of Education on the same day there will be a discussion on school clinics and child guidance, which will deal with the problems presented by the maladjusted child, and the value of psychological examination as an aid to vocational adaptation. Air Vice-Marshal Sir David Munro will preside over a discussion on September 29th, on the physiology and psychology of work; and on the same morning, in the Section of Physiology, problems of resuscitation after asphyxiation, anaesthesia, electrocution, and drowning will be considered by Professors Yandell Henderson and J. S. Haldane, Sir Francis Shipway, and Sir Bernard Spilsbury, among others. The Huxley Memorial Lecture of the Royal Anthropological Institute will be delivered the same evening by Dr. J. Thilenius, on some biological view-points in ethnology. Among the excursions arranged are visits to York, where the Association was founded; to Darwin's home at Down House; Liverpool Cathedral; Kew Observatory; Whipsnade Park; the Royal Naval College; the Royal Observatory; the Heritage craft schools and institutions at Chailey and Bishopstone; Colchester; and Romney Marsh. Special attention will be directed to educational centres, and a booklet will be provided dealing in detail with the University of London, the education department of the London County Council, and various unofficial teaching institutions likely to interest members of the Section of Educational Science.

THE EDUCATIONAL NUMBER, 1931

Our next issue, dated September 5th, will be the annual Educational Number of the *British Medical Journal*. Its contents, as in previous years, will include a full account of the requirements of the General Medical Council and of the universities and other licensing bodies in Great Britain and Ireland, as well as information about the opportunities offered by the various medical schools and other teaching institutions, and the fees charged by each. The details given have been revised and brought up to date by the authorities concerned. These sections, the object of which is to furnish a handy guide to intending students of medicine, are supplemented by articles intended for newly qualified practitioners on such matters as post-graduation study in Great Britain, the public health services, tropical medicine, psychological medicine, and the various special diplomas. In the sections dealing with the public services will be found a concise account of the present terms and conditions of service in the R.N.M.S., the R.A.M.C., the I.M.S., and the R.A.F.M.S., which the Representative Body of the British Medical Association has decided are satisfactory and such as can be commended to the notice of the younger members of our profession. The opening article for this year's Educational Number, entitled "The preliminary sciences in medicine," has been written by Dr. R. J. S. McDowall, professor of physiology, and formerly dean of the Faculty of Medicine, King's College, University of London.

POST-GRADUATE MEDICAL WORK IN HUNGARY

e have received from Professor Emile de Grósz, esident of the Hungarian Medical Post Graduate Comittee,* the following account of courses available to edical graduates in Hungary It will be recollected at an article on post graduate studies in Germany was ıblished in our issue of August 1st (p 218)

With the rapid advance of medical science even the ost highly efficient doctors constantly need to supplement their knowledge To day patients are cured who few short years ago were pronounced incurable Confidence in the success and safety of operations is daily ecoming greater, and the knowledge of fatal diseases ıore complete These facts render it imperative that ıedical practitioners should be in a position to perfect heir knowledge from time to time In all civilized states opportunities exist to this end, but the means provided are different In some countries the work is undertaken voluntarily by institutions and social organizaıons, in others it is placed in the hands of the medical aculties of the universities, while in two countries—Germany and Hungary—central committees exist for this purpose

On the occasion of the sixteenth International Medical Congress, held in Budapest in 1909, the Comite International pour l'Enseignement Médical Complémentaire was founded, and its first session, under the presidency of Sir Donald MacAlister, was held at the seventeenth International Medical Congress which met in London in 1913 The discussions that took place at this meeting were published in book form in 1918 The time is now most favourable for the delegates of individual States to discuss the various methods of instituting medical postgraduate work, since the congresses held during the past few years all indicate that the representatives of science, without violating national sentiment, could successfully unite in common action

Historical Note

In Hungary from 1883 to 1904 there were summer courses devoted to the subject of post graduate training These were always arranged during the holiday months by the professors and lecturers of the Budapest University, and also, later on, by the Kolozsvar University, and were attended annually by about a hundred doctors Up to 1918 an aggregate of over a thousand doctors took part in these extension courses No actual problems, however, could be satisfactorily solved at these meetings

Organization of Central Committee

In view of the rapid development of medical science, every doctor should have an opportunity of furthering his professional knowledge at least once in every five or ten years Prompted by this consideration, I submitted in 1908 a proposition to the Minister of Public Instruction for the creation of a central committee, and the founding of a periodical to serve the interests of the desired object The conference was called in December, 1908, by Count Apponyi, who accepted the draft of the statutes which I prepared, while his successor in office, Count John Zichy, brought the central committee into being

The duties of the central committee are to arrange post-graduate courses for civil and military doctors, to found and recommend internal and external institutions, and to organize local committees in the larger provincial towns, further, to found a periodical for the publication of lectures and other scientific work

The cost of the post graduation scheme is borne by the Minister, partly from a charge upon the State budget, and partly from the interest provided by an endowment fund In order to enable doctors of small means to participate in the courses, the central committee endeavours to enlist the aid of various authorities, sick relief bureaux, and the chief commercial enterprises with their medical departments

Arrangement of Courses

Courses are arranged in the following order

1 Post graduate courses of fourteen days with numerous lectures upon the various branches of medical science

2 Special courses of four weeks duration for not more than six doctors who desire a deeper knowledge of the particular branches of their profession These courses are held at clinics, well equipped hospitals, and institutes, in such a manner as to afford students an opportunity of taking part in the day's work Each participant in these courses receives material aid from the committee, either in the form of money or by accommodation in institutes

3 For the benefit of medical officers, fourteen day courses on hygieno bacteriology are arranged

4 For lectures on subjects pertaining to certain minor specialities there are a suitable number of eight day courses

5 With the co operation of the local committees of seven of the larger provincial towns, post graduate courses, lasting from six to eight weeks, are so planned that the lectures occupy one or two days per week only This arrangement has proved very satisfactory, as it enables country doctors to take part in the courses without neglecting their work at home

Subjects of Instruction

During the past twenty years the committee has effected the further training of upwards of four thousand doctors Year by year new subjects have been introduced, of which those relating to infants and child protection have been particularly popular Occupational diseases and accidents have formed the subject of special courses Courses of instruction in tuberculosis have been held at the Queen Elisabeth Sanatorium, while at other public places in Budapest similar courses have been given, dealing with physical therapy, venereal diseases, trachoma, and dentistry During the past few years social hygiene has also received attention

Finance

The periodical *Orvoskepzes* ("The Post graduate") comprises sixty to eighty sheets annually, and during the twenty years of its existence has published more than a thousand essays by competent writers Owing to the paucity of means at the committee's disposal, it has been able to fulfil its mission only by generously giving its services gratis, and by the fact that the lecturers have been content with an exceedingly small remuneration The editors and contributors of *Orvoskepzes* have worked gratuitously, all available funds being devoted as stipends to the provincial doctors for the purpose of defraying their expenses, and to enable them, by suspending their professional appointments, to participate in the courses All the courses are free of charge with the exception of the nominal payment of an entrance fee of 5 pengo (1s) To certain doctors the committee gives grants of 100 to 200 pengö

Government Co operation

The Minister of Public Affairs has founded a doctors' home in Budapest, where those attending the courses may obtain board and lodging either gratis or at a moderate charge The Social Insurance Institution affords special facilities to its doctors to enable them to take part in the continuation courses To promote the development of obstetrics in accordance with the steps taken by the Ministerial Commissioner for Obstetrical Affairs, eleven free places have been allocated to doctors at the women's clinics and midwifery schools

* The address of the Central Office of this Committee is Budapest, VIII, Mara utca 39

Some Figures

Last year 411 doctors took part in post-graduate courses, which were held not only in the faculties of the provincial universities, but also in the hospitals of the provincial towns. It is especially for the provincial doctors that the courses are designed. In Hungary there are 8,000 medical practitioners, of whom more than 4,000 are located in Budapest, and a considerable number in the larger towns.

Conclusion

The problem of medical post-graduation permits of various solutions. It would be well, therefore, to take up the discussion of methods and results and to continue the exchange that was begun in London in 1913. To this end it would seem desirable to have a preliminary collection of data, which could best be done through the Government by means of questionaries. When the data thus obtained have been printed, a conference of delegates will have to continue the work begun in Budapest and in London.

Nova et Vetera

THE THACKERAYS

At the first anniversary meeting of the Provincial Medical and Surgical Association, held at Bristol in 1833, the Council's report contained the following passage:

"They cannot help calling the attention of the members to the liberal proposition of Dr. Thackeray of Chester, who transmitted five pounds to the secretaries, and in a letter to them which accompanied this donation he states: 'If nineteen other individuals would subscribe twenty pounds each and place the money in some public security, I would add fifteen more to the sum I have transmitted. The interest of the £400 might be given annually for the best essay on some medical or surgical subject.'"

Dr. Thackeray's spirited proposition does not seem to have been generously responded to, for at the fifth anniversary meeting at Cheltenham in 1837 the Council reported under the heading "Prize Essay":

"No further contributions have been received for the Prize Essay Fund, but the Council have to announce that Dr. Thackeray has increased his already liberal donation to fifty pounds, to be given as a prize for the best essay on a medical subject to be fixed upon at the anniversary meeting at Cheltenham. The prize, which the Council propose shall be called the Thackeray Prize, to be open to the competition of the members of every accredited school of medicine and surgery in the United Kingdom, and the essays to be sent to the secretaries one month previous to the anniversary meeting in 1838."

Apparently some delay occurred in carrying out the Council's wishes, for it was not till the meeting at Southampton in 1840 that Dr. Forbes was able to announce "that in pursuance of the liberal intention of Dr. Thackeray, who two or three years ago had offered a prize of fifty pounds to the author of the best essay 'on the causes of the continued fevers of Great Britain and Ireland and the circumstances which may have a tendency to render them communicable from one person to another,'" eight essays had been sent in during the past year. Some of the essays were of high merit, and the judges had difficulty in adjudicating. Finally, Dr. Davidson of Glasgow was awarded the prize.

This was not the only benefaction of Dr. W. M. Thackeray, who was physician to the Chester Infirmary from 1798 to 1849, in which year he died. By the kindness of Mr. J. Rowse Mitchell, secretary to the Chester Royal Infirmary, we learn that in 1846 he made a gift to the Infirmary of 100 guineas, to be invested and the interest to be devoted to the annual purchase of [illegible] to be kept in the Infirmary for the use of all practitioners in the neighbourhood, "in grateful recollection of the confidence and kindness I have received for more than half a century in this city and neighbourhood." He also made a deed of gift of his library to the Infirmary. The Thackeray Medical Library Trust is still maintained, and the board of management contributes to its support. It is housed in the Infirmary building and managed by two librarians—one the house-surgeon, appointed by the medical staff, and the other by the board.

Dr. William Makepeace Thackeray of Chester was a son of Dr. Thomas Thackeray of Cambridge, who had fifteen or sixteen children, of whom four were members of the medical profession—namely, Thomas, who is said to have "retired with an ample fortune from the service of the India Company"; William Makepeace of Chester; Frederick, physician to Addenbrooke's Hospital, Cambridge; and Joseph, physician to Bedford Infirmary, who died in 1832, and of whom a long biographical memoir appeared in the same volume of transactions in which his brother's offer of a prize was recorded.

This memoir of twenty-four pages is a good specimen of the fulsome elegy of that day, but it shows clearly that Joseph Thackeray was a typical good physician, although, as his biographer wrote:

"It is illustrative of the present state of the profession of physic, that though he was eligible to the highest honours of the London College of Physicians, even under its own antiquated by-laws, he never connected himself with that learned body by becoming either a Fellow or Licentiate."

He was a scholar and Fellow of King's College, Cambridge, and studied at Edinburgh and Glasgow as well as London. He seems to have devoted himself to the Bedford Infirmary, to which he and his wife and mother-in-law, the last being the widow of one of its surgeons, gave sums amounting to "not less than £2,500." Through his efforts a chaplaincy was endowed, and a fund established for pensioning hospital servants. He was active in removing restrictions on admission and so making the infirmary a general hospital, and he established a library and museum, giving to it 400 books from his own medical library. His biographer says that he had an extensive and lucrative practice,

"which left no leisure for literary research; and it does not appear that he devoted much time either to general literature and general science. The same causes militated against his cultivating the science which he more immediately professed, so as to extend its boundaries by new discoveries or essential improvements."

His friends and admirers, to the number of 370, subscribed to have his portrait painted by "the late Mr Jackson," no doubt John Jackson, R.A., whose work is well known, and who died in 1831. The portrait now hangs on the wall of the hall of the County Hospital at Bedford. An uncle of these four brothers was Dr. Frederick Thackeray, a physician at Windsor.

All these Thackerays were descendants of the Rev. Thomas Thackeray, head master of Harrow and archdeacon of Surrey, who, like his son Thomas, had sixteen children. The novelist—William Makepeace the third—was the great-grandson of the archdeacon through his son William Makepeace the first, who had twelve children, for the Thackerays in the eighteenth century were a prolific stock. It is clear that the author of *Pendennis* and *Philip* had extensive medical connexions, and he has shown his understanding of medical men in his books, particularly in the magnificent tribute which he paid in the character of Dr. Goodenough in *Philip*, no less than in his characterization of a medical humbug and villain in the person of Dr. Brand Firmin.

E. M. L.

England and Wales

Court Dinner of the Society of Apothecaries

ie Court dinner of the Society of Apothecaries on igust 18th was memorable because of the recent retire-ent of Lieut Colonel C T Samman from the post of aster, which he had held for three years, a tenure ipreceden ted in the history of the society During this nod a considerable amount of work has been done part from the formation of the register of biophysical sistants, Apothecaries' Hall has been extensively restored ving to damage caused by the death watch beetle The ew Master is Colonel E C Freeman, who was the nior warden last year In the course of the Court inner Dr C Wakefield recalled the fact that Colonel amman had continued to reside in Ireland for three ears after joining the Court of Assistants in 1927, but ad not missed a meeting of it, and many other eferences were made to the interest and practical help which had always been forthcoming from him Dr Milton Townsend presented to the society, through the Master a loving cup which had been in the possession of his family since 1789, this he did in memory of his father who had been Master in 1914 The cup bears the following inscription 'A commemorative of the esteem and affection of the subscribers of the Dissenting Meeting House at Stoke Newington towards their worthy Pastor, the Rev Meredith Townsend' Mr H de Vere Stacpoole, responding to the toast of "The Guests," said he was one of the oldest licentiates of the society Commenting on the great changes which had occurred in medicine, he remarked that the number of diseases seemed to have increased alarmingly, and there was also a new range of drugs Professor McCrae of Canada emphasized the fact that the tie between the Mother Country and the Dominions was one of sentiment rather than of business Professor Hunt of the United States was also present as a guest During the evening warm tributes were paid to the work of the late Professor W E Dixon and Dr B Taylor, both of whom had been members of the Court

Venereal Diseases Service in London

The staff employed at the Whitechapel venereal diseases clinic at the London Hospital, in the service of the London County Council, have up to the present been engaged in a temporary capacity, because of uncertainty in regard to the tenancy of the premises used for the purposes of the clinic The Council has now entered into a lease for the utilization of a portion of the London Hospital for the diagnosis and treatment of venereal diseases for the next seven years, and has decided to fix the establishment of staff and scales of salaries It is considered, however, that the medical staffs should continue on a part time and temporary basis so as not to preclude its members from taking private work, exclusion from which would have a prejudicial effect on the type of officer employed It is suggested that thirty six hours a week should be the definite minimum prescribed for the medical staff at the clinic At present thirty three persons are employed, including director, eight assistant medical officers, clinical assistants, a pathologist, and assistant pathologist Having regard to the constantly increasing attendances at the clinic, two more junior assistant medical officers, as well as additional lay staff, will be required before the end of the year The maximum rates of salary are to be for the director, £1,000 a year, for two chief assistant medical officers, £750, for four junior assistant medical officers, £500, for three clinical assistants, £250, for the pathologist, £800, and for the assistant pathologist, £500 The director is required to supervise the treatment of patients referred from the clinic to St Peter's Hospital, Whitechapel, where the in patient beds for the clinic are at present provided, and he is to act as consultant for venereal diseases not only in connexion with St Peter's, but also for eight venereal diseases units about to be established in the Council's general hospitals This consulting work, when all the units are established, will occupy approximately two sessions, each of two and a half hours duration a week The work at St Peter's and Bethnal Green Hospitals (at Bethnal Green women patients from the clinic will be received as in patients) will however, make the greatest demand upon the services of the director, who is to be paid an additional sum of £125 a year in his capacity as consultant, this remuneration being increased to £250 a year when all the units are established

Moorfields Hospital

In the annual report for 1930 of the Royal London Ophthalmic Hospital (Moorfields) it is announced that the first portion of the programme of enlargement and reconstruction has been completed at a cost of £41,365, a new private ward unit and two additional blocks for the nursing and domestic staff having been opened last December The private ward unit comprises seventeen rooms for paying patients, and an operating theatre It is hoped during the present year to extend the existing out patients department, and in the building thus erected to provide additional accommodation for the medical school, including a larger lecture hall, extension of the bacteriological and pathological laboratories, allocation of separate accommodation for the physico therapeutic department, the setting apart of a chapel, and the provision of a new and larger library and museum Although the wards on the existing third floor have been out of use during almost the whole of the past year, 2,555 patients have been admitted, a figure which compares favourably with those of previous years So large a number of admissions has been rendered possible by reducing the length of individual stay in the hospital With the completion of the private ward block, the re opening of the third floor, and the provision of a children's isolation ward, the number of available beds has now been increased to 152 During last year 52,272 new out-patients were dealt with, a larger number than in either of the two previous years Other improvements and additions effected last year include the construction of a second operation theatre for general ward patients, the installation of a modern fire alarm system and fire escape doorways and staircases from the three wards at the eastern end of the building, and the provision of a house surgeon's examination room on the third floor There was a surplus of £1,798 on the year's working, and £13,500 is available towards the second portion of the extension scheme which, as previously outlined, will cost about £40,000 The draft plans for this have already been under consideration, and it is hoped that the adoption of the final plans will not be long delayed

Home Ambulance Service

In its report for the quarter ending June 30th, 1931, the Home Service Ambulance Committee of the Order of St John and the British Red Cross Society mentions that over a million patients have now been carried since the service was instituted in 1919 It is noteworthy that half of this number has been carried during the last four years, although the vehicles employed were fewer by fifty owing to the establishment of municipal ambulance services Considerable improvement in methods of transport has enabled sick persons to be conveyed in comfort often long distances, to hospitals and nursing homes where the latest equipment for diagnosis and

treatment is available. Seven years ago the average number of patients carried per ambulance was 180; last year it was 342. The report again emphasizes the voluntary basis of the service. Each station sets aside every year a small sum towards the cost of replacing the ambulances, and the central committee contributes as much as possible from the resources at its disposal. For the rest it has to depend on the generosity of the public. The total number of ambulances in the service at the end of June was 324, including 115 affiliated stations.

The Liverpool Child Guidance Clinic

The Liverpool Child Guidance Clinic is the only existing fully constituted body of this kind outside London, and a comprehensive account of its work and objectives is contributed to the current issue of the *Liverpool Medico-Chirurgical Journal* by Dr. A. A. Fitch, who is secretary of the Child Guidance Council in that city. He contrasts the work at this clinic with that at similar institutions in the United States, pointing out certain modifications consequent on the existence in this country of a uniform school medical system which is at present absent on the other side of the Atlantic. In Liverpool special attention is devoted to the training of parents; the education of adolescents, as regards conduct and vocation; close co-operation with teachers and the educational authorities in dealing with "problem cases," in the organization of curricula, and in the provision of special types of education; advisory action in conjunction with magistrates of juvenile courts and probation officers; the integration of social services for children—medical, sheltering, reformative, and recreational; and the formation of a general bureau of mental hygiene for collecting and distributing information, and for propaganda. Emphasis is laid on the preventive side of this work, and the importance of bringing about closer co-ordination of those able to assist in any way. The clinic provides a link between the medical practitioner who detects mental disability in the child, and the education authority who can take an active part in securing the continuance of the necessary treatment. The way in which this is done is described, and three broad groups of cases are indicated—namely, dependent children who because of some disaster in the home have to have their lives guided by social agencies of some kind; those whose mental equipment is abnormal; and those who present behaviour problems in all degrees from the mild to the grave. In short, the clinic aims at remedying any deficiencies of the home or school by seeking to bring about a better social adjustment of individual children during their early formative years.

Scotland

Laboratory of Royal College of Physicians, Edinburgh

The annual report presented by the curator, Sir Robert Philip, shows that during 1930 the resources of the laboratory have been utilized to the full. In the research department twenty-three investigations have been undertaken by eighteen research workers, and fourteen papers and two articles have been published. These include statistical researches into general epidemiology and into the epidemiology of kala-azar by the superintendent, Lieut.-Colonel A. G. McKendrick, I.M.S., and by Dr. W. O. Kermack, and into antirabic treatment (at the instance of the Health Section of the League of Nations); a histological study of the normal breast during its various phases of growth and activity, and of cancer of the breast, by Mrs. J. W. Dawson, in association with the late Professor J. Lorrain Smith; further development of the "Cabinet Gallery" of tumours, by Lieut.-Colonel W. Harvey and Mr. T. D. Hamilton; observations on rhinthitis in animals, by Dr. J. S. Fraser; experimental work on neuropathology, by Dr. David Orr; a study of haemophilic bacteria in relation to influenza, by Lieut.-Colonel W. Glen Liston; researches in chemotherapy, the Medical Research Council), and the colloidal chemistry of immunology, by Dr. W. O. Kermack and his co-workers; studies in gastric secretion, by Dr. T. C. Mitchell; experiments on the effect of various agents on the physical condition and digestibility of milk, by Dr. Douglas Nicholson; and a mathematical inquiry relating to Professor Whittaker's new theorem in partial differential equations, by Drs. Kermack and McCrea. The reporting department has had to deal with a further increase of work. During the year 14,936 reports were prepared, 3,235 involving histological examination, 9,671 bacteriological, and 2,630 chemical. The excess of expenditure over ordinary income has been met, as in former years, by a grant from the Carnegie trustees.

Scottish Vital Statistics

The Registrar-General's report for the quarter ending June 30th, 1931, states that the number of births, 24,122 (rate, 20 per 1,000 of the population), is 1,285 fewer than the average for the second quarter. Deaths numbered 15,918 (rate, 13.2 per 1,000), which is 316 less than the average. There were 1,867 deaths of children under 1 year, equivalent to a rate of 77 per 1,000 registered births. Deaths from violence amounted to 659, and of these 153 were due to accidents from motor vehicles, which is 38 more than were recorded in the previous quarter.

Central Midwives Board

Out of 136 candidates who appeared for the recent examination 125 passed. Of the successful candidates, 38 were trained at the Royal Maternity Hospital, Glasgow; 27 at the Royal Maternity Hospital, Edinburgh; 5 at the Maternity Hospital, Aberdeen; 12 at the Royal Infirmary, Dundee; 10 at the Elsie Inglis Hospital, Edinburgh; 12 at Bellshill; and the remainder at various recognized institutions.

Edinburgh Royal Infirmary Extension Appeal

The subscriptions received in response to the managers' appeal for £500,000 now amount to some £214,000. It is of interest to note that the largest recent contribution consists of the proceeds from the Command performance of *The Admirable Crichton* by the Masque Theatre Company at the Lyceum Theatre, Edinburgh, on July 11th, amounting to £2,924.

The Royal Samaritan Hospital for Women, Glasgow

The annual medical and clinical report for 1930 of the Royal Samaritan Hospital for Women, Glasgow, includes a compilation of the medical statistics of patients, whose clinical conditions are classified under four headings, regional lesions, general diseases, morbid processes out-side the genital and urinary tracts, and lesions not classifiable in the three previous groups. According to the practice introduced last year the medical statistics are again published separately from the ordinary annual report of the institution, and the hope is expressed that they will be found useful to general practitioners as well as to obstetricians and gynaecologists. The total number of patients treated in 1930 was 2,860, and 2,537 operations were performed, the percentage mortality rate being 1.36. It has not yet been found possible to correlate details of operative and other forms of treatment with the pathological conditions present in each case, although it is admitted that a mere list of operations by itself conveys little information of practical value. As regards the etiology of

conditions dealt with, it is noteworthy that in no ver than 972 out of the total 2,860 cases parturition was ociated with maternal injury, while infection incurred at at time was a causative factor in 866 cases. A tumour cyst was present in 611 instances, and developmental ors were traced in 215. Brief notes are appended of ses which terminated fatally.

Ireland

Immunization against Diphtheria in the Borough of Cork

The annual report of the medical officer of health for the County Borough of Cork for the year 1930 refers to the value of immunization in the prevention of diphtheria. The report states that during the past year 588 cases were notified. In April, 1930, a survey was made of the children who had been immunized in the previous year. Immunization was started in June, 1929, and by the end of the year 1,802 children had been treated. Altogether 12 of these were subsequently reported to be suffering from diphtheria, and each case was investigated. Ten were eliminated for the following reasons: (*a*) four had not completed treatment (three had only one injection, and one only two); (*b*) in three cases a period of less than four months had elapsed (in two cases only one month, and in one case only two weeks); (*c*) in three other cases the diagnosis was not confirmed. Thus out of a total of 1,802 children who received inoculations two subsequently developed diphtheria, which is equivalent to an incidence rate of 1.11 per 1,000. In the same year 298 cases of diphtheria were notified among the child population (under 15 years) of 22,605, or a ratio of 13.18 per 1,000; no case occurred among children who had been Schick-tested after treatment and were known to be negative. During the year there were 238 notifications of scarlatina, the highest number since 1926. Eight deaths were registered as due to the disease, which is equivalent to a case mortality of 3.4 per cent. As whooping-cough is not notifiable, it is impossible to state exactly the incidence of this disease, but it is evident that there must have been a considerable number of cases, as 35 deaths were registered during the winter of 1929–30. There were no cases of typhus or typhoid fever during the period under review.

Panel Patients in Northern Ireland

At a recent meeting the Dungannon Urban Council discussed its liability in connexion with the treatment of panel patients in hospitals other than the Dungannon Union Hospital. It was mentioned that among the accounts was a fee for the ambulance driver for conveying a panel patient to the Tyrone County Hospital. The clerk explained that the fee was in order, as the dispensary medical officer had received a visiting ticket for the patient. The council had decided to be responsible for the treatment of dispensary patients in Belfast and Tyrone County Hospitals, but that did not include panel patients. In regard to the institutional treatment of panel patients, a letter had been received from the Ministry stating that no distinction could be drawn between panel patients and other patients. It was the duty of the Urban Council to make arrangements for such treatment on behalf of any person who was unable to obtain it himself, subject to the deduction of such an amount as the council considered the patient able to pay. With reference to the responsibility for payment of the ambulance driver's fees for conveying patients from Dungannon urban district to hospitals other than the Union Hospital, the Ministry replied that if it was necessary to send patients from Dungannon urban district to any hospital other than the Union Hospital, responsibility for making the arrangements lay with the Dungannon Urban Council, and that that body should obtain the Ministry's consent, under Section 3 of the Local Government Act (Northern Ireland), 1923, to the payment of the necessary travelling expenses. The clerk said that there was no Act of Parliament that he could find which made it compulsory for the Urban Council to do anything of the sort. He had made inquiries and found that Armagh, Portadown, and Cookstown did not send any patients for institutional treatment. All that was done by the respective boards of guardians, and was paid for out of the poor rate. The council decided that the Ministry should be asked under what section of the Local Government Act (Northern Ireland), 1923, the Urban Council was liable for the institutional treatment of panel patients, or for their conveyance to outside hospitals. The motion was unanimously passed.

Hospital Sweepstakes

At its last meeting the Dublin Union Committee considered a circular letter from the Department for Local Government and Public Health, accompanied by a copy of Section 6 of the Public Charitable Hospitals (Amendment) Act, 1931, relating to the application of part of the proceeds of sweepstakes to Poor Law hospitals. The letter stated that the section imposed on the Minister the duty of applying such money as might be available towards the provision, improvement, or equipment of institutions, and towards the prevention, treatment, or cure of physical and mental diseases. It was expressly provided that money so applied should be in addition to, and not in substitution for or towards, ordinary maintenance, and should not be taken into consideration by the local authority when determining the amount to be expended by it; further, that the application of the money might be conditional upon the fulfilment of such conditions as the Minister thought proper to impose. Decisions with regard to the application of the money would not be taken until the exact amount to be distributed was known. In the meantime it would be convenient if each local authority intending to provide, improve, or equip an institution, and to apply for a grant out of the money to be paid to the Minister, would transmit to the department before October 19th next particulars of its proposals. It was decided that the resident medical superintendent, after consultation with the medical staff, should submit proposals for the consideration of the committee.

Correspondence

"A SYSTEM OF BACTERIOLOGY"

SIR,—The review of volume viii of this *System*, published in the *Journal* of August 15th, contains the surprising statement that "in Weil's disease the leptospirae exhibit a variety of serological types . . . which the author omits to mention." It is not clear whether the reviewer is using the term "Weil's disease" for all febrile conditions associated with the presence of leprospira in the blood, or in its more usual restricted application for infectious jaundice, caused by a particular strain of leptospira generally known as *S. icterohaemorrhagiae*; but, since the pathogenic strains of leptospira are distinguished entirely by their serological reactions, it would seem that the reviewer must have adopted the first interpretation. The most cursory examination of my brief account of infectious jaundice and other leptospiral infections (pp. 301–14) would have shown that I not only refer

to some of these different serological types, but actually retain the names that have been applied to them, such as *Spirochaeta* (*Leptospira*) *autumnalis* (p. 312), *hebdomadis* (p. 313), and *pyrogenes* (p. 314). Moreover, I conclude with the statement (p. 314) "that Fletcher isolated six serologically distinct groups of spirochaetes from patients in Malaya, all showing very similar clinical symptoms.—I am, etc.,

London, N.W.3, Aug. 15th. EDWARD HINDLE.

We have submitted the above letter to our reviewer, who replies as follows:

In his excellent article on the leptospiroses Dr. Hindle makes it perfectly clear that the pathogenic leptospira comprise a variety of serological types and that, in fact, by their serological reactions alone can they be distinguished from one another. The remarks to which Dr. Hindle takes exception were made in view of the work of Taylor and Goyle on epidemic jaundice in the Andaman Islands. The condition investigated by them and referred to as Weil's disease possessed all the clinical manifestations and post-mortem appearances of that disease. Further, its epidemiology was that of Weil's disease, in that the cases occurred principally in the wet season—the south-west monsoon—and were confined exclusively to a certain class of individuals—namely, adult males whose occupation entailed wet working conditions. The twenty-eight strains of leptospira isolated by Taylor and Goyle in the Andamans were compared serologically with a representative collection of leptospira from different parts of the world, including *S. icterohaemorrhagiae*. Not one of the twenty-eight strains corresponded serologically with *S. icterohaemorrhagiae*; twenty-four of them differed apparently from any known strain, although forming a homogeneous serological group themselves; the remaining four were serologically related to *S. autumnalis* (Akiyami Type A). These workers further claimed that, from their examination of the various strains of leptospira by cross-agglutination, *S. icterohaemorrhagiae* could be divided into two groups, which they designated A and B. A point overlooked when writing the review was that Dr. Hindle's article had probably gone to press before Goyle and Taylor's work appeared, in which case the criticism of his article was not valid, and an apology is due to him. He might, of course, contend that, since the leptospira isolated by Taylor and Goyle were not serologically identical with *S. icterohaemorrhagiae*, the condition they were investigating was not Weil's disease. It is with considerable hesitation that one questions the opinion of Dr. Hindle on this subject, of which he is an acknowledged authority, but it does seem that narrowing the definition of Weil's disease in this way would be almost comparable to confining the term lobar pneumonia to those pneumonias caused by the Type I pneumococcus.

CONVULSIONS DURING ETHER ANAESTHESIA

SIR,—The following case occurred at Victoria Hospital, Burnley, on August 5th.

A schoolboy, aged 11, was operated upon by Mr. Callam for a gangrenous pelvic appendix, with abscess. The condition began about sixty hours before admission. He had on admission a temperature of 103° F., a pulse rate of 120, rigidity of the lower abdomen, and marked toxaemia.

Before the operation he was given 1/150 grain of atropine sulphate subcutaneously. Anaesthesia was induced by C.E. mixture, followed by open ether, and continued with ether and oxygen by Shipway's apparatus. The anaesthesia was uneventful till the operation had been in progress for about forty-five minutes, when convulsions began just as the operator was beginning to close the wound. The convulsions were first noticed in the lower extremities, and became generalized. The pupils were widely dilated and the conjunctiva was insensitive. There was no clonus of the lower jaw, the tongue being rhythmically protruded and withdrawn. There was no cyanosis. Chloroform and oxygen were then given. The convulsions diminished in severity and ceased in about seven minutes—by the time the operation was concluded. On return to bed he recovered normally from the anaesthetic and there was no recurrence of the convulsions. There was no history of epilepsy or of any previous fit, though the boy was of a highly strung, nervous type.

The ether used was Duncan's "anaesthetic ether," which has been in general use in this hospital for years. The same stock bottle had been used just previously, and was used in the next case satisfactorily. Analysis revealed neither ethyl sulphate, ether peroxide, acetaldehyde, nor other impurity. The absence of impurity in the actual sample used, and the fact that the same brand of ether has been in general use daily for years without a previous case occurring, seems to disprove the theory that the condition is due to impurities in the ether.

One is inclined to think that toxaemia and instability of the nervous system are the most probable causes of the condition in this case, and seem to be the commonest factors in previously reported cases.

I have to thank Mr. Lawrie for his analysis of the ether.—I am, etc.,

JAMES HAWORTH,
Senior Anaesthetist.

Victoria Hospital, Burnley, Aug. 17th.

SIR,—The cause of ether convulsions appears to remain a mystery. During my small experience I have made careful observations which may assist in providing a clue.

Toxaemic patients seem most prone to convulsions, and then only if oxygen is given with the ether. Convulsions apart from oxygen are probably clonus. Toxaemic cases commonly met with are appendices in the gangrenous stage, osteomyelitis, salpingitis, infected compound fractures, etc.

An explanation of convulsions on a physiological basis is beyond my powers; however, the sequence of events leading to convulsions is easy to follow. The induction of a toxaemic case is of the easiest, and deep anaesthesia is quickly attained. Deep anaesthesia, in spite of a perfect airway, causes cyanosis, and it is at this point that mistakes are made and convulsions occur. Oxygen is promptly given and the signs of convulsions soon become apparent.

Convulsions can be avoided by inducing toxaemic cases with caution. Provided the airway is clear, meet any cyanosis by reducing the dose of ether and by removing the mask if necessary. If oxygen seems essential, give the smallest quantity and remove as soon as the colour is normal. In the treatment of convulsions remove the oxygen at once. If cyanosed, remove the mask as well, and replace when the colour is normal. The convulsions will cease in a time approximately equal to their duration. —I am, etc.,

C. J. BASHALL, M.R.C.S., L.R.C.P.

Marlborough, Aug. 18th.

CARCINOMA OF THE OESOPHAGUS

SIR,—On reading the article by Mr. Woodman in the *Journal* of August 15th on the treatment of carcinoma of the oesophagus, I was struck by his omission of simple dilatation from the methods he discussed. Leaving radical extirpation out of the question of the treatment of this condition, we are faced with palliative measures consisting of radium, *x* rays, diathermy, intubation, gastrostomy, and dilatation. Since one of them is to be chosen, it seems to me that the best method is one

which should most nearly fulfil the following conditions (1) the easiest to carry out from the point of view of the surgeon, (2) the least uncomfortable to carry out from the point of view of the patient, (3) brings the greatest relief, and (4) carries the least risk to life

Bearing in mind these conditions, simple dilatation by the Plummer method seems the most satisfactory of the palliative measures, for, with regard to the first two, it is far ahead of any of the others, it certainly brings no less relief, while, seeing that the dilating olive is passed on a thread which has already wormed its way through the malignant stricture, the danger of perforation, with consequent fatal mediastinitis, is almost negligible Lastly, the expectation of life following this treatment is not likely to be less, and in many cases is greater, than that following the other methods enumerated above — I am, etc,

Newcastle-on Tyne, Aug 23rd JAMES H SAINT

PRURITUS ANI

SIR,—Thanks are due to Dr Macarthur for his extremely interesting paper on pruritus ani in the *Journal* of August 22nd (p 334) My experience is that *Enterobius vermicularis* can escape unaided through the anal sphincters, but that the patient is not conscious of their presence until they have emerged outside the internal sphincter I have long been of opinion that these parasites are the cause of diverticulitis, the damage which they do to the intestinal wall originating this disease, but I have not experimentally verified this in animals —I am, etc,

Southampton, Aug 24th A A MACKEITH

A TREATMENT OF WOUNDS IN 1821

SIR —During the war I came across the method of irrigating wounds detailed in the excerpt which I subjoin from an interesting book of travel, *Recollections of West end Life, with Sketches of Society in Paris, India Etc, Etc*, by Major Chambre, during the early years of last century, and which I feel sure will interest many readers I made a reference note, intending to send it along to you at that time, but the reference was lost, and only the other day was I able to find the book It is remarkable that the method was not made more widely known and adopted, for it must have recommended itself to surgeons who saw it in operation

The similarity of this early, pre antiseptic method to that evolved during the war is remarkable I date the visit of the author to Lausanne, as accurately as possible from the context, to be 1821–22

'I must not omit mentioning a visit I paid to the Lausanne public hospital in company with the celebrated surgeon Mayor who was so kind as to show me over the wards He wished to exhibit a method he had of applying cold water to wounds which he requested me to mention to the medical men of the English army whenever I had an opportunity as he thought it might be very useful in campaigning A bucket was suspended from the ceiling in the centre of the room In this holes were bored with a gimlet and strings were passed through them the ends of which were placed on the wounds of the patients It did not signify how many there were because when the bucket was filled with water it trickled down them in whatever direction they were placed The only trouble attending the process was to keep up the supply of water I spoke to the sufferers to ascertain the effect of it and they one and all said that it spared them much pain for it entirely kept down inflammation The usual method of applying wet bandages entails a good deal of trouble, and as far as an unscientific person could judge, I thought his plan a very good one"

—I am, etc, W P CORMACK, M B, Ch B

Role, South Australia, July 20th

Obituary

ROBERT MacNEIL BUCHANAN, J P., M B, C M PRFPS

Late City Bacteriologist, Glasgow

We regret to announce that Dr Robert MacNeil Buchanan died at his residence in Glasgow on August 15th after a long illness He was the first city bacteriologist appointed by the Corporation of Glasgow, and assumed this office in 1899, retiring in November, 1930

Dr Buchanan's choice of the career of a scientist was the natural outcome of his earlier training and experience, as well as of his own predilections, and he himself explained the tendency towards comparative pathology which many of his studies took by the fact that he was a son of the farm



After a period at the Glasgow High School, he went into business but it was always his ambition to take up a scientific career He extended his knowledge and widened his interests by attending classes in French, Spanish, and chemistry at the Technical College He became a medical student at the age of 23 and graduated M B C M Glas in 1888, he obtained the diploma F R F P S in 1895 During his undergraduate career he attracted the attention of Professor Joseph Coats, who then occupied the chair of pathology, and to whom he ultimately became assistant obtaining the John Reid Prize in that subject, Dr Buchanan's son recently carried off the same prize After graduation he was awarded the Foulis Memorial Scholarship which enabled him to study pathology and bacteriology at Frankfurt and Berlin under Professors Weigert and Koch At this period the science of bacteriology was in its infancy, and it was the opportunity to study these two allied subjects under such eminent masters which determined Dr Buchanan's future career along lines which were highly congenial to him Returning home, he delivered a course of university lectures, and in 1892 was appointed the first lecturer on bacteriology to the University of Glasgow, as well as first assistant to the professor of pathology The laboratory at this stage was comprised within the walls of a room 10 feet square The part played by bacteria in the causation of disease was still to a great extent unknown, although generally suspected, and the work of the young bacteriologist in his small room attracted the attention of such men as Sir William Gairdner, Sir Hector Cameron, Professor Samson Gemmell, and also of Dr J B Russell, who was then medical officer of health of the city He next occupied the chair of medical jurisprudence and hygiene in Anderson's Medical College, where he established the West of Scotland Clinical Research Association, an organization which still exists although much of the work it was intended to perform is now carried out in the great laboratories of the voluntary hospitals of the city, and in those of the corporation

Dr Buchanan commenced his duties as city bacteriologist in a single room fitted up for the purpose, with the use of another room in the tower for the preparation of

culture media. The speedy growth of applied bacteriology caused this department to assume a more and more prominent place in public health and prevention of disease, until, under his guidance, there arose that important department where a great variety of scientific duties is now performed on behalf of the corporation and the public. One of his first important duties was in connexion with the outbreak of plague in 1900-1, when he was associated with the professor of pathology in discovering, after long and tedious search, the source of plague in the rats which infested a particular area of the city. Dr. Buchanan himself demonstrated the presence of the plague bacillus in the rat flea. He was thus able to assist in coping with the spread of this serious disease, which might have involved the city in more disastrous consequences than it actually did. He took the extreme risk of performing the necessary post-mortems without the aid of gloves, which were of so coarse a texture as to hamper the delicate manipulations necessary, a proceeding which called forth a protest from a German scientist who was watching him: "Gott bewahr, Herr Doktor." Another of his achievements was the eradication of glanders from the horses of the tramway department, and the laboratory contains the finest series of specimens of this affection in the country. He was called upon to deal with many epidemics, such as that of cerebro-spinal fever in 1906, and various outbreaks of typhoid fever. His laboratory also performs a great variety of routine investigations, ranging from the examination of milk and Loch Katrine water to the diagnosis of insect pests, of which there are about sixty different species to be found in the vicinity.

In addition to his bacteriological work, one of the chief features of Dr. Buchanan's activities was his interest in comparative pathology. He made it manifest in 1922 that much gain could be expected from the correlation of disease processes in man and in the lower forms of life. His interests in this respect led him into such questions as the diseases associated with the vegetable and animal world—diseases of great economic importance—such as the blights affecting various fruits, and the diseases of such foodstuffs as the potato, the currant, the tomato, the apple, and other vegetable products. Dr. Buchanan also showed for many years a strong liking for the study of the insect world. This study was of interest to him both because of its intrinsic appeal and because of the serious economic loss entailed by the destructive activities of many insects. His wide knowledge of the life-histories of insects was consequently of great value, and his advice was commonly sought from all over the country with regard to their identification, their habits, and the methods to be adopted for their extermination. For a number of years he had been greatly interested in the causation of grass sickness in horses, because of its similarity to encephalitis in man. The museum which he instituted in the laboratory has proved of the utmost value to sanitarians and of unfailing interest to lay visitors. Dr. Buchanan published numerous papers dealing with his particular subjects, and had been, in fact, accumulating material for a book dealing with one particular aspect of the many he had studied during his long experience.

On the more personal side, Dr. Buchanan was held in the very highest esteem by his colleagues in the medical profession. In 1925 he received the highest honour which the profession, in its own city, has in its power to bestow, the Presidency of the Royal Faculty of Physicians and Surgeons. He occupied this post with distinction for two years, during which he was called upon to organize the celebrations in connexion with the Lister Centenary, high duties which he performed with dignity and success. In this appointment history has exemplified its habit of repeating itself, though after a long interval, for Maister Peter Lowe, who founded the Faculty in 1599, himself held an official post as surgeon to the corporation. On the occasion of the Pasteur Centenary in 1922, Dr. Buchanan was asked to deliver an oration on Pasteur at the request of the Royal Philosophical Society.

Dr. Buchanan took great interest in the work of the British Medical Association; he was chairman of the Glasgow North-Western Division from 1925 to 1927, and president of the Glasgow and West of Scotland Branch in 1928-29. He was also a representative of the Glasgow Division in the Representative Body for 1929-30, and president of the Section of Microbiology (including Bacteriology) when the Association held its Annual Meeting in Glasgow in 1922.

Although he retired from the services of the Corporation of Glasgow in November, 1930, his colleagues had looked forward to availing themselves of his exceptional and specialized knowledge for many years. His services to the city, love for his work, and the prominent position he occupied by virtue both of his office and of the universal esteem in which he was held by his fellows, are a measure of the loss which the city of Glasgow has sustained by his death. He was a man of charming personality, and ever willing to assist his younger colleagues. Deep sympathy is extended to his widow in her bereavement.

[The photograph reproduced is by T. and R. Annan and Sons, Glasgow.]

GROUP CAPTAIN MARTIN FLACK, C.B.E.,

M.A.Oxon., M.B., B.Ch.Oxon.

Group Captain Martin Flack, director of the department of medical research for the Air Ministry, died in the Royal Air Force Hospital, Halton, on August 16th, in his fiftieth year. Four months ago he became subject to attacks of pyrexia of obscure origin and entered the chief hospital attached to his Service for observation and treatment. His illness proved to be a form of septicaemia, and, in spite of the skilled attention and the loving care of his colleagues, who were deeply attached to him, and the application of the best means available, he ultimately succumbed—in spite of great natural strength of body and will—to his malady. He did much that will be remembered both for medicine and for the Service to which he was attached. To him was entrusted the responsible task of establishing a research service under the Director-General of the medical department of the Royal Air Force in the later years of the great war.



Martin Flack was born in the village of Borden, Kent, and had to make his own way in life. Scholarships and home help carried him to Keble College, Oxford, which he entered as science exhibitioner in 1901, being then 19 years of age. Applying himself to medical subjects, he came under the influence of Professor Arthur Thomson and the late Professor Francis Gotch, from whom he imbibed the spirit of inquiry. One other man had a profound influence on him—as on many Oxford men—the late William Hatchett Jackson, a Fellow of Keble

and Radcliffe Librarian Jackson taught him how a good life should be spent

In 1905, having taken his B A degree, he entered the London Hospital, obtaining the Price Scholarship, Although his work lay in the hospital, his scientific inclinations took him frequently to its medical college, where his great natural abilities were recognized by Sir Leonard Hill, then lecturer on physiology, and by Sir Arthur Keith, who taught anatomy in the college of the London Hospital At that time Sir Arthur Keith was making an inquiry into the arrangement of the musculature round the venous orifice of the auricular chambers of the heart, and was joined by Flack in this inquiry In the following year (1906), Tawara announced his discovery of a system of conducting musculature between the auricles and ventricles of the mammalian heart Keith and Flack at once verified the truth of Tawara s discovery and set out to trace the evolution of the mammalian auriculo ventricular connecting system from the simpler arrangement found in the hearts of lower vertebrates, and also to ascertain if in the region where the heart beat was believed to begin—namely, at the termination of the superior vena cava in the right auricle —there existed tissue of the nature of the node which Tawara discovered at the beginning of the auriculo ventricular bundle They found in all mammalian hearts, at the expected site, a collection of peculiar muscular tissue, which they named the sino auricular node, in forming from its position, and from its resemblance to the tissue at the beginning of the ventricular bundle, that this node was concerned in the inception of the heart beat Four years later (1910), Flack, when working in Professor Kronecker s laboratory in Berne, carried out experiments which supported this contention The credit of demonstrating the exact site at which the normal heart beat begins, and of proving that the site coincides with the position of the sino auricular node, belongs to Sir Thomas Lewis

While carrying out his clinical studies in the wards of the hospital, Flack acted as assistant demonstrator of physiology under Sir Leonard Hill, and assisted his chief in the many researches which were then being conducted in the department—researches which, in the main, related to fundamental problems of circulation and respiration In this way he gained a first hand knowledge of the regulatory mechanisms of the heart and lungs, a knowledge which he applied afterwards with signal success in solving the medical problems of aviation

In 1908, at the age of 26, he became M B , B Ch Oxon , M A Oxon , and married his cousin, Cecile Cooper His income as demonstrator of physiology at the London Hospital was then £150 per annum On this slender income debts contracted for his education were paid off, a happy household was established, to which in due time two sons and two daughters were added Martin Flack was a ' sportsman " in the best sense of that word— a man who welcomed life s handicaps, who enjoyed his work, his home, his life, and was ever ready to lend a helping hand to whomsoever might need it Everyone who worked with him enjoyed his partnership , he was resourceful cheerful, with a brave heart, and met his disappointments with a smile In 1909 he was awarded the Radcliffe Travelling Scholarship by his old university, which gave him the opportunities he had longed for—of working in Continental laboratories He worked, as has just been mentioned, in the laboratory of Kronecker at Berne, and also in the same laboratory with Dr L Asher, in a successful investigation on the nerve supply to the thyroid gland He also worked at the heart with Professor Fredericque at Liege Returning from the Continent, he resumed his demonstratorship in Sir Leonard Hill's department, and shared in the many investigations which were being conducted there He wrote the article on the heart for Hill's *Further Advances in Physiology* (1909) , contributed, in conjunction with Professor J J Macleod, the article on physiological chemistry to Pembrey's *Practical Physiology* (1910) , and wrote, in partnership with Sir Leonard Hill, *A Textbook of Physiology* (published in 1919) In 1915 he was awarded the Radcliffe Prize by Oxford University At this time Sir Leonard Hill was called on to establish a department of applied physiology for the Medical Research Council Flack accompanied his chief to Mount Vernon, and it was while so engaged that he was appointed to take charge of the department of medical research, which the Air Ministry had established under the Director General of the Medical Service of the Royal Air Force

No happier choice could have been made He threw all his energies into his new office The problems he had to solve were of two kinds what were the causes which had led to the breakdown, both in body and in mind, of experienced flyers? how could candidates for the Royal Air Force who were constitutionally unfit for flying be detected? His training in physiology and his experience as an investigator stood him in good stead He devised a series of tests for the detection of physical inefficiency and of physiological instability These tests, the methods of their application, and the results which flying experience brought to light, were made the subject of his Milroy Lectures at the Royal College of Physicians in 1921. Further contributions from his department will be found in the pages of the *British Medical Journal* (" Estimation of physical efficiency," 1923, ii, 921 , " Note on sea sickness," 1931, i, 176) He contributed also the article on the medical problems of aviation to the *Encyclopaedia Britannica* , an article on ' Applied physiology of aviation " to Dr H Graeme Anderson's *Medical and Surgical Aspects of Aviation* (1919) , on ' Stable nervous control in relation to flying (*Lancet* 1925, ii, 1748) and another on " Man and the machine ' to *Military Surgery* (1927, lxi, 758)

At the close of the war his important services were recognized , he was mentioned in dispatches, and received the honour of C B E His enthusiasm was infectious , he knew how to give willing service, and he knew how to obtain it For the welfare and improvement of the department to which he was attached he gave all that was in him No trouble was too much He was an educator, and took every opportunity of addressing men of the Royal Air Force on matters relating to the maintenance of health, of physical efficiency, and of morale None will feel his loss more deeply than those who were associated with him in the headquarters of the medical department of the Air Ministry The sympathy of all will go out to his widow and his four children in their grievous loss

Sir Leonard Hill writes

Martin Flack was a man of high courage and great ability Born in a Kentish village, of a father who could give the weight of a score of live beasts correctly within a few pounds, he raised himself to Oxford University by the winning of scholarships, and won through to the taking of his medical degrees, but hampered with a debt to pay off when he first earned a demonstrator s salary under me Working first with Arthur Keith he discovered anatomically the sino auricular node and then showed experimentally on living animals that this actually was the pace maker of the heart The brilliant after work of Sir Thomas Lewis to some extent obscured Flack s discovery and the world as the excellent appreciation of him in the *Times* of August 19th shows, did not fully realize the fact that he first experimentally proved the function of the node I can well remember projecting,

with his help, the beating heart of an animal on the screen by means of an epidiascope, and showing the whole class at the London Hospital Medical College the startling effect of local cooling on this node. Flack was a splendid and enthusiastic teacher and demonstrator, and he and I together carried out many researches at the London on the effect of want of oxygen and excess of carbon dioxide; in particular, we showed the influence which breathing oxygen had on the power to hold the breath and withstand a notably high concentration of carbon dioxide. We showed that filling the lungs with oxygen just beforehand enabled an athlete to run an unpaced quarter or half mile with astonishing ease and pace, and with no after-feeling of stiffness or fatigue. Flack accompanied Wolffe, the Channel swimmer, on one of his attempts and gave him oxygen when exhausted, and saw him breathe it in from a bag with huge deep breaths, and then start to swim again with astonishing vigour, only at the end, however, to be beaten by the cold, and this within a quarter or mile or so of the French shore. We showed, too, how oxygen given in an interval renewed the vigour of an exhausted boxer. At Eton College an unskilled and exhausted lad, after receiving oxygen, knocked his skilled opponent through the ropes. Flack came with me to the Department of Applied Physiology founded by the Medical Research Council in 1913–14, but when the war demonstrated the need for an investigation into the failure of air pilots at high altitudes, Flack was allocated to this work, and so came to join the Air Service. He now had full opportunity of applying the work we had done together on oxygen want. He not only arranged for the proper supply of oxygen to pilots but also carried out a brilliant set of tests by which he was able to discriminate between pilots who were unfit to fly and those who were fit. Flack's work laid the foundation not only of the medical tests of candidates and pilots, but of physical training for making and keeping pilots fit. He had a genius for applying physiology to such problems.

Flack was troubled with a rheumatic affection of the heart, and as a young man received a grave prognosis; in spite of this he won through, worked very hard, and attained to great ends. A marked characteristic was cheerfulness in the face of all obstacles. At the last he discussed his illness with full knowledge and great courage. We lose in Flack a most cheery, original, and zealous worker, and one of the very best of friends.

Air Vice-Marshal Sir DAVID MUNRO writes:

When I was a Director of Medical Services, R.A.F., I was in close association with Martin Flack, and know better than most the amount of work he did for that Service, and the depth of his loyalty to it. The value to aviation of his scientific investigations into its physiological problems is well known to the world of scientific men, and made him a figure in the world of aviators. In that field of investigation he was in this country the pioneer. Nor was his work known only to his own countrymen: on the continent of Europe and in the U.S.A. workers in the field of medical research, if they had ever heard of the Royal Air Force, knew of it through the name of Flack. Coming to the Service as a trained physiologist, and one who had already made some reputation for himself, Flack's special value to the administration was his grasp of the range of application of physiological principles. He was emphatically a field rather than a laboratory physiologist, and he habitually thought of the everyday actions of human beings in physiological terms. His brain in consequence was fertile in ideas, many of which, if elaborated and written up, would have attracted attention. He always, however, felt strongly that the name of the individual should be subordinated to the name of the Service, and I know that the fear of its being thought that he was trying to gain prominence for himself prevented him from writing up and offering for publication his ideas and findings on many aspects of his work.

I have seldom met a man who had so strong a sense of loyalty, and to the Service which he served so well his loss will be almost irreparable. But it is not only for his knowledge and capabilities that he will be missed; he was, in all his relations, one of the most simple, genuine, and good-hearted of men, and I am sure that there are very many who, like myself, will have experienced in his death a real sense of personal loss.

SAMUEL WILLIS PROWSE, M.D., LL.D., F.R.C.S.Ed., F.A.C.S.

Dean of the Faculty of Medicine, and Professor of Oto-laryngology, University of Manitoba

We regret to record that Dr S. W. Prowse died suddenly from a heart attack in the Winnipeg General Hospital on August 1st, in his sixty-second year.

Samuel Willis Prowse was born in Prince Edward Island, the son of Samuel Prowse, a member of the Senate of Canada. He was educated at Mount Allison University, New Brunswick, and received his medical training in Edinburgh, where he graduated M.B., C.M. in 1893, proceeded M.D. in 1896, and obtained the Fellowship of the Royal College of Surgeons of Edinburgh in 1898. Sir James Purves-Stewart was a classmate, and last year, when the British Medical Association met in Winnipeg, Dr. Prowse had his old classmate as his guest and renewed happy memories. From 1894 to 1898 he practised at Colinsburgh, Fifeshire, and in the latter year he moved to Winnipeg at a time when Canada was entering upon a period of great development. After a year or two of general practice he restricted himself to ophthalmology and oto-laryngology.

In 1902 he became a member of the staff of the Manitoba Medical College, and about that time was appointed to the staff of the Winnipeg General Hospital. In 1910 he was president of the Medico-Chirurgical Society. He took particular interest in the welfare of medical students and of young practitioners, and when the Manitoba Medical College offered to raise a hospital unit in 1916, Dr. Prowse was unanimously selected to act as its head. He was gazetted officer commanding No 4 Casualty Clearing Station, B.E.F., with the rank of lieutenant-colonel, took the unit to France, and while there was appointed dean of the Medical School. His own ill health and the serious illness of his wife compelled him to return to Canada. In a few years the Medical College, an independent institution, though affiliated with the university, transferred to that body its property and equipment, and became the Faculty of Medicine of the University of Manitoba. At a dinner given by his colleagues in 1924, in commemoration of his services as dean, it was announced that his friends had raised £1,000, the proceeds of which were to be devoted to the Prowse Prize for Clinical Research. For many years he was a member of the Royal Society of Medicine; and of the Ophthalmological Society of the United Kingdom. In 1930 he was vice-president of the Section of Laryngology and Otology at the Winnipeg Meeting of the British Medical Association, and at a convocation of the University of Manitoba he received the degree of Doctor of Laws.

To high professional qualifications Dr. Prowse united a courtesy of manner and a dignity of bearing which endeared him not only to his patients and his associates in professional life, but especially to young people. He was singularly unselfish and unsparing of himself, and he carried on the noblest traditions of the profession.

THE LATE PROFESSOR W. E. DIXON

Dr. H. H. DALE, F.R.S., director of the National Institute for Medical Research, writes:

A little more than five years after the sudden death of A. R. Cushny, W. E. Dixon has gone from us suddenly, and at the same age. These two were together chiefly responsible for the rapid rise of activity and interest in pharmacology which has been so manifest in England during the past thirty years. Dixon, the younger of the two, had already been busy with this development for some five years at Cambridge, before Cushny returned from America to London. It is impossible to estimate the effect on a whole generation of Cambridge students of medicine produced by this pioneer work of Dixon in the teaching of pharmacology, and by his stimulating influence on research in that field. Pharmacological teaching in England, when Dixon began, presented an unappetizing mixture of half-obsolete materia medica with empirical therapeutics. In Dixon's hands it became a lively adventure in experimental science, offered with an inimitable racy humour, and a confident enthusiasm. His own scientific interests were wide and unspecialized. For him pharmacology included practically anything on the experimental side of medicine which made contact with therapeutics. This, as others have noted, makes it peculiarly difficult to summarize his work, or to choose any item as his characteristic and outstanding contribution to science. He had an exuberance of ideas, and it was his habit to till widely and sow variously, often leaving others to harvest. A list of additions to knowledge published under his own name, though substantial, gives but a partial idea of his contributions to science, through the many in whom he awakened the desire for research, and to whom he taught its methods. His genial, humorous personality, and his gift of simplification and picturesque emphasis, gave him high repute and authority, not only with his students, but in circles not normally accessible to academic science. There will be many for whom the idea of pharmacology was personified in Dixon, and who will feel the gap caused by his death only less acutely than we who have enjoyed his generous and loyal friendship in the intimacy of scientific association.

Dr. WALTER J. DILLING, professor of pharmacology, Liverpool University, writes:

The untimely death of Professor W. E. Dixon at the acme of his international renown as a pharmacologist is a grievous loss to British scientific medicine and a sad parting to his many intimate friends who delighted in his comradeship.

This is a difficult moment in which to appraise adequately his scientific talents, rare and brilliant as they were; one is, at the moment, overwhelmed by the fact that Dixon, who with tact, courtesy, and outstanding personality has acted as an ideal ambassador of British pharmacology to so many colonial and foreign schools, has fallen with his mission uncompleted. He possessed a masterly knowledge of every detail of his subject, and no matter upon what branch of pharmacology or therapeutics one touched, Dixon had either done some valuable original work upon it or had carefully assessed the literature. Jealous for the reputation of British pharmacology, and keenly judicious, he was enthusiastic in encouraging good work, while his criticisms were couched in terms of kindly and always helpful advice. Possessed of an enviable ability to assess research work rapidly and accurately, yet his generous spirit made him often unwilling to condemn without first seeking confirmatory opinion.

His amazing energies he devoted solely to the advancement of pharmacology and therapeutics by skilfully designed experiments, which always displayed his originality of mind, and by attractive and stimulating lectures. His great breadth of scientific knowledge and organizing ability rendered him an invaluable and wise counsellor on committees of the League of Nations and other organizations concerned with the promotion of the medical sciences.

In nature he was most unselfish and generous to others in both word and deed; many of his juniors unknowingly owe to Dixon remunerative work and appointments for which he recommended them, believing that their monetary needs might be urgent. By the death of Dixon we have lost one of our foremost scientists, who through force of circumstances never achieved the high academic or national honours which he had so abundantly earned by whole-hearted devotion to his subject, his university, and his country.

But it is of Dixon as a warm-hearted friend that many will cherish memories which words fail to express. His charming and buoyant spirit, his joyous love of adventure, and his kindly sympathy and concern for the welfare of others, endeared him to many who will reflect upon many happy hours spent in his society, and sorrow at his passing hence. One's deepest sympathies go out to Mrs. Dixon, who was his inspiration and helpmate in so much that he achieved.

The funeral of the late Professor W. E. Dixon took place at Golders Green Crematorium on August 21st. Among those present in addition to the relatives were: Dr. H. H. Dale (representing the Royal Society); Dr. H. B. Brackenbury, Dr. C. O. Hawthorne, and Dr. Alfred Cox (representing the Council of the British Medical Association); Sir Humphry Rolleston (representing the Cambridge Medical Society); Professor Seward (representing Downing College and the Royal Society); Professor E. D. Adrian (Physiological Laboratory, Cambridge); Dr. M. H. MacKeith (Medical School, Oxford University); Colonel Samman (former Master of the Society of Apothecaries); Dr. J. H. Burn (representing the Pharmaceutical Society); Mr. Owston (representing Cambridge men at St. Bartholomew's Hospital); Dr. F. B. Parsons (representing the Cambridge and Huntingdon Branch of the British Medical Association).

THE LATE LIEUT.-COLONEL LORD

Dr. J. L. BASKIN (Thame) writes:

I have been privileged to know Lieut.-Colonel Lord during the past thirty years; it was through him that I was induced to join the Royal Medico-Psychological Association. He possessed the two qualities most essential for the administration of a mental hospital—namely, sympathy and a firm conception of justice. He was a swift-minded man; the speed of his generalizations was noteworthy, especially as they were based on practical judgement. He spared himself no effort in giving wise assistance to genuine triers after knowledge in the Mental Services, and he will be sadly missed by his medical colleagues.

Dr. JOHN BUCHANAN REID died at his residence in Toronto on May 24th. He was born in Mono Township, near Orangeville, on July 31st, 1861. He graduated M.D. at Trinity College in 1911 and became F.R.C.S.Eng. in 1911. For over forty years he practised at Tillsonburg, where he won the high esteem of all his fellow citizens. Dr. Reid was a member of the British Medical Association. He was an active worker in the temperance movement, and had held several offices in St. Paul's United Church. He is survived by his widow, one daughter, and three sons.

Dr. John O'Callaghan of Pallasgreen, co. Limerick, died on August 4th, after an illness of nine days. He was educated at the Ledwich School, Dublin, and took the diploma of Licentiate of the Royal College of Surgeons in Ireland in 1885, in which year he became L.R.C.P.Ed.; he obtained the F.R.C.S.I. in 1898. After serving as an assistant for a short time at Hull, he was appointed to the Grean Dispensary District, Pallasgreen, co. Limerick, an appointment which he held for thirty years. Failing health caused his retirement some ten years ago. Dr. O'Callaghan was a justice of the peace for Limerick and a member of the North Munster Division of the British Medical Association.

Universities and Colleges

UNIVERSITY OF LONDON

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL

The following scholarships and prizes have been awarded:

Entrance University Scholarship: J. D. Fergusson. Hector Mackenzie Exhibition: W. G. Q. Mills. Open Scholarship in Natural Science: First Scholarship, R. R. McSwiney; Second Scholarship, A. W. Wragg, G. A. Hart, A. G. Moore. Open Scholarship in Arts: First Scholarship, W. R. S. Doll; Second Scholarship, T. H. Clifton. William Tite Scholarship: G. W. Hearn, F. C. Durbin.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

The following scholarships have been awarded for the session 1931-32.

St. Dunstan's Medical Exhibition: Miss Olive M. Singer. Isabel Thorne Scholarship: Miss M. M. Burton. Mrs. George M. Smith Scholarship: Miss Grace E. Reid. Bostock Scholarship: Miss Marjorie F. Landau. Mabel Sharman-Crawford Scholarship: Miss Ruth M. Addison. Dr. Margaret Todd Scholarship: Miss J. C. Goodchild. Special Dr. Margaret Todd Scholarships (two): Miss S. A. M. Herford, Miss J. G. Greenhalgh. Fanny Butler Scholarships (two): Miss M. C. Goodchild, Miss M. A. Powys. School Jubilee Bursary: Miss E. C. Randell. Alfred Langton Scholarship: Miss J. M. Cass. Flora Murray Bursary: Miss H. M. Brown. Ellen Walker Bursary: Miss Q. I. E. May. Helen Prideaux Post-Graduate Scholarships: Miss Ursula Shelley, Miss Beatrice Jolv. Dr. Edith Pechey Phipson Post-Graduate Scholarships: Miss Gulbai P. Patel, Miss Beatrice Board.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—L. F. Donnan, A. K. Guha, J. W. V. Sheldon.

MEDICINE.—V. R. I. Bayhs, G. B. Carter, M. Ditton, E. I. B. Hawes, S. Lokeez, L. R. C. Rose, D. N. Ryalls, E. S. St. John, J. W. V. Sheldon.

FORENSIC MEDICINE.—G. B. Carter, H. W. Davies, B. Dayal, J. M. Durr, S. Lokeez, J. W. V. Sheldon.

MIDWIFERY.—O. A. P. Clark, J. M. Durr, B. N. Halder, S. E. Paterson, D. N. Ryalls, C. F. Vieyra.

The diploma of the Society has been granted to Messrs. G. B. Carter, O. A. P. Clark, A. K. Guha, B. N. Halder, E. I. B. Hawes, S. Lokeez, E. S. St. John.

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel Richard Nugent Stoker, Bengal Medical Service (ret.), died at Duncans, British Columbia, on June 14th, aged 79. He was born on October 31st, 1851, the son of Mr. Abraham Stoker of Clontarf, was educated in Dublin, in the school of the Royal College of Surgeons, and took the L.R.C.S.I. in 1873 and the L.K.Q.C.P. in 1874. Entering the I.M.S. as surgeon on September 30th, 1874, he became surgeon lieutenant-colonel after twenty years' service, and retired on April 2nd, 1900. He served in the Afghan war of 1879, receiving the medal. After the war he was appointed garrison surgeon of Fort Attock, an appointment long ago abolished, and held that post till his promotion to surgeon major in 1876, when he was posted to one of the newly raised Gurkha battalions, with which he served in the Sikkim campaign of 1888 on the North-East Frontier of India, and took part in the forcing of the Jelapla Pass, receiving the frontier medal.

Medical News

The prize distribution and conversazione at the Royal Dental Hospital, Leicester Square, W.C.2, will be held on Friday, October 2nd, at 8 p.m., when Professor Elliot Smith, F.R.S., will preside.

It is proposed to hold a reunion dinner of officers of the No. 3 British General Hospital, Mesopotamia, in London, on October 23rd. Officers of the unit interested in the matter should communicate with Dr. Andrew Topping, Town Hall, Rochdale.

The King Edward's Hospital Fund for London has arranged a river trip to Tilbury Docks on Friday, September 11th. A steam launch will leave Westminster Pier at 9.30 a.m. and arrive back about 6 p.m. There will be a visit of inspection of ss. *Orontes*, on board which a buffet lunch will be served. A representative of the Port of London Authority will accompany the party on a tour of the port and explain its organization and various activities. Tickets for the trip (£1 1s.) can be obtained at the offices of the Fund, 7, Walbrook, E.C.4.

The third annual conference of the National Smoke Abatement Society, which will be held at Liverpool from September 18th to 20th, opens with a reception by the Lord Mayor of that city on the evening of the first day. Papers will be read and discussed on the progress of the electrical grid, and on the production and use in Liverpool of the new smokeless fuel "Dryco." The programme also includes a motor tour, during which visits will be paid to housing estates, the new Clarence Dock power station, and other places of interest. Further particulars about the conference may be obtained from the Society's central offices, 23, King Street, Manchester, up to September 17th, and afterwards at the conference office, Adelphi Hotel, Liverpool.

The Fellowship of Medicine announces special courses in September. At the Hospital for Consumption and Diseases of the Chest, Brompton, the course will last from September 7th to 12th, and will occupy the whole of each day; fee £3 3s. A series of lecture-demonstrations in psychological medicine will take place on Tuesday and Saturday mornings at 11, at Bethlem Royal Hospital, Beckenham, from September 8th to October 3rd; fee £1 1s. A course on diseases in infants will take place at the Infants Hospital, Vincent Square, Westminster, from September 14th to 26th, from 2 p.m. each day; fee £3 3s. Lecture-demonstrations in ophthalmology will be held at the Central London Ophthalmic Hospital, Judd Street, W.C., from September 15th to October 8th; fee £3 3s. At the Westminster Hospital a course in general medicine and surgery, open to men only, will take place from September 14th to 26th, from 10.30 a.m. to 5.30 p.m.; fee £5 5s. for two weeks, or £3 3s. for one week. A course in general medicine and surgery, open to men and women, will be held at the Metropolitan Hospital, Kingsland Road, E., from 10.30 a.m. to 5.30 p.m. from September 28th to October 10th; fee £3 3s., or £2 2s. for either week. Copies of syllabuses of the courses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

An autumn post-graduate course on diseases of the nervous system will be held at the National Hospital from October 5th to November 27th. The general course will consist of thirty-two clinical lectures and demonstrations at 3.30 p.m. on each weekday except Wednesday and Saturday, teaching in the out-patient department on each weekday except Saturday at 2 p.m., and eight pathological lectures and demonstrations on Friday at 12 noon. The fee for the course will be £6 6s. A course of eight lectures on the anatomy and physiology of the nervous system will be arranged on Tuesdays and Thursdays at 12 noon if there are sufficient applications, fee £2 2s. A course of ten clinical demonstrations, chiefly on methods of examination of the nervous system, will be

ven on Tuesdays and Thursdays at 5 p m , fee £2 2s ickets entitling to attend the out patient clinic only ay be obtained from the secretary , fee £2 2s for ree months Applications should be addressed to the cretary, Medical School, National Hospital, Queen quare, W C 1

A conference on tuberculosis organized by the Davos ledical Society, will be held from October 5th to 10th ectures on the development and course of the pulmonary nd extra pulmonary types and on collapse therapy will e given Those wishing to attend the conference should otify the President of the Society before October 1st, nd those wishing to take part in the discussions before eptember 20th Excursions are being arranged Further etails may be obtained from the secretary, Davos ledical Society, Davos Platz Switzerland

A special post graduate course in the pathology of igestive processes will be held in the Hospital de la anta Cruz at Barcelona from October 23rd until the iddle of December The subjects dealt with will include he examination of gastric juices intestinal secretions, nd faeces , congenital anomalies of the alimentary canal , he diagnosis and treatment of gastric dyspepsia, ulcers, nd malignant growths , the pathology and therapeutics f cirrhosis constipation, and pancreatic disease , applied adiology and disorders of the spleen, liver and appendix herapeutic demonstrations will be given of the various iagnostic and therapeutic procedures employed Further nformation may be obtained from the director of the ospital, Professor F Gallart Mones

The second International Congress on the Rat and Plague will be held in Paris from October 7th to 12th urther information can be obtained from the general ecretary Professor Gabriel Petit, 84 bis, Rue de Picpus, Paris XIIe

The second International Congress of Comparative Pathology will be held in Paris at the Faculty of Medicine rom October 14th to 18th Professor Charles Achard will reside The subjects for discussion include B C G mmunization Brucella infections in man and animals mineral salt deficiencies in man and animals the distribu ion of the ultra virus agencies and the diseases attri outable to them , and helminthic infections The congress s open to medical and veterinary practitioners and those nterested in the diseases of plants Further information may be obtained from the general secretary, 7, Rue Gustave Nadaud, Paris XVI

The King has granted permission to Dr Douglas Erith Derry M C to wear the Insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt Dr Salvator Michael Vassallo F R C S has also received licence and authority to wear the Insignia of the Fourth Class of the Order of the Brilliant Star of Zanzibar conferred upon him by the Sultan of Zanzibar The *London Gazette* also announces that the King granted his Royal licence and authority to Dr Theodore Dyke Acland to wear the Insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt (Dr Acland died on April 16th last)

Professor W D Halliburton, M D , F R S , who died on May 21st has bequeathed, on the death of his wife £10 000 to King's College University of London, for endowment or towards the salary of a professor in the subject of physiology or the sciences relating thereto He leaves also £300 to his medical attendant ' as a small recompense for his faithful and untiring service "

The lecture on eugenics which Colonel C J Bond, C M G delivered as an introduction to the Sims Woodhead course of lectures last February, under the auspices of the People's League of Health, has now been published in pamphlet form and can be obtained from the offices of the League, 12, Stratford Place London W 1

William Heinemann (Medical Books) Ltd announce for publication this autumn a book by Dr Bendien, entitled *Specific Changes in the Blood Serum*, translated by Dr V Pines

Letters, Notes. and Answers

All communications in regard to editorial business should be addressed to **The EDITOR British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

Development of the Ovum of Ascaris lumbricoides

Dr. H. WARBURTON LEWIS (Newbury, Berks) asks what is the time occupied by the development of the ovum of *Ascaris lumbricoides* to the adult worm stage.

*** The ovum of *Ascaris lumbricoides* when passed out in the faeces is in an undeveloped and non-infective condition. At 33° C., the optimum temperature for development, a larva develops in the egg in from nine to thirteen days. It is now infective for man, and may remain so for very considerable periods—certainly well over a year. Infection occurs by swallowing the egg, and the larva which hatches becomes mature in from two to two and a half months. Thus, the minimum time for the complete life-cycle (egg to egg) is about two and a half months. The worm is recognizable as an ascaris, of course, some time before it is mature and laying eggs—probably about a month after the egg has been swallowed.

Income Tax

Replacement of Car

"J. F." has in the past claimed and been allowed a deduction for replacement of his cars equal to the excess of the cost of the car displaced as *at the date of disposal* over the amount actually received for it. The last replacement has worked out as follows: cost of car similar to the one displaced, £310; actual amount received, £175; claim, £135. The car purchased, however, cost £206 only, and the inspector of taxes refuses to allow more than £206 − £175 = £31.

*** The inspector is right. The allowance normally is represented by the amount of the actual out-of-pocket expense, but when the cost of cars is increasing generally, or the new car is better than the old one, the cost of "replacement" is strictly less than the actual expenditure, because the latter includes an element of capital outlay which is not allowable for income tax purposes. As a result, the cost of replacement does not work out as fairly as the "percentage depreciation" allowance, and that is one reason why we have consistently advised practitioners to adopt the latter basis.

LETTERS, NOTES, ETC.

Transmission of Ultra-violet Rays through Fabrics

We have received the following communication from the Experimental Department of the Fine Cotton Spinners' and Doublers' Association, Ltd.:

From time to time, during the last few years, statements have appeared in the press to the effect that artificial silk (rayon) fabrics are more permeable to ultra-violet rays than fabrics made from other textiles. A similar remark made at a recent important medical meeting has again called attention to this subject. The original authority for these statements is not clear, and it is obvious that any pronouncement coming from an interested section of the textile industry on the relative transmission of ultra-violet rays through fabrics should be cautiously accepted. So far as we are aware, the only authoritative information on this subject that has been issued by an impartial body of investigators is the report by Messrs. Coblentz, Stair and Schoffstall, which will be found on page 105, vol. i, 1928, of the United States Department of Commerce *Bureau of Standards Journal of Research*. This report not only records investigations in the relative transmission of ultra-violet rays through linen, cotton, viscose and acetate artificial silk, natural silk, and woollen fabrics, but also the influence of weave, dyeing, bleaching, and discoloration with age on the percentage transmission. To those keenly interested in the subject we advise reading the whole report, but the following excerpt, which is taken from the authors' summary of their work, is sufficiently definite to show that artificial silk cannot claim superiority over other textiles in transmitting ultra-violet rays:

"Fabrics of close-weave and open-weave (twill, satin, voile) material were examined. The results obtained on these different weaves are in agreement in showing that, comparing materials having the same weight, there is practically no difference in the amount of ultra-violet transmitted through bleached samples of cotton, linen, viscose rayon, and the rayon made by the cellulose acetate process. The fresh, white, natural silk is almost as transparent as bleached cotton, while wool is only about half as transparent to ultra-violet solar radiation as bleached cotton. In all cases when the fabric is dyed, or slightly yellowed with age, the ultra-violet transmission through the thread is greatly decreased. Hence, as is to be expected, in comparing various kinds of dyed fabrics, the one having the largest openings between the threads transmits the most ultra-violet."

The important point to note from the above is that it is the structure of the fabric that matters, not the [illegible] textile material of which it is made. The details in the report also show that the percentage transmission of ultra-violet rays through an acetate artificial silk fabric dropped from 20 to 2 as a direct result of colouring with a red [illegible]

Holidays for Factory Girls

We have received the following letter, signed on behalf of the Factory Girls' Country Holiday Fund by the Countess of Sandwich, Mrs. Creighton, J.P., Miss Lilian Brutton, Dr. Octavia Lewin, the Chief Rabbi, Mr. J. L. Stocks, and Mr. J. F. Green: At this time, when "all the world" (as we say) is making holiday, or preparing to do so, we trust that they will spare something for that considerable remainder which cannot afford a holiday, or not on a [illegible] scale. In particular, we ask them to remember once more, as they have in former years, the Factory Girls' Country Holiday Fund. Last year this fund arranged 1,230 weeks of holiday for 1,030 women and girls at a cost, including travelling, of £1,630, of which sum more than one-third was contributed by the holiday-makers themselves. We would call special attention to this last point. Those who give to this fund have assurance, not merely that the money they give will be well spent, but also that they encourage the wise spending of much other money, the hard-earned savings of the girls themselves, so that every pound they give will in effect provide a full week's holiday for a working woman. This is surely a good investment from a strictly financial point of view; and if anyone has other doubts, these can soon be settled by a visit to the quarters during the holiday season. The eager and excited crowds alone will tell him much, and a comparison between the group that is ready to go off and the group that has just come back will tell him the rest. Lastly, the subscriber may be assured that the fund is in the hands of careful and competent administrators, who make every effort to secure that girls are helped only so far as they cannot help themselves, and that they are encouraged throughout the year, by means of saving-cards and in other ways, to make the most of their ability to help themselves. Even in these difficult times we hope that support will be forthcoming generously and promptly for this work. Subscriptions and donations will be thankfully received and acknowledged by the honorary treasurer, Mrs. Slater, or by Miss Canney, 75, Lamb's Conduit Street, London, W.C.1.

A Library of X-Ray Films

Messrs. MASSON ET CIE (120, Boulevard Saint Germain, Paris) have recently published a library of radiographical films which consists of groups of x-ray photographs so reduced in size that a package containing thirty or forty can be carried in the pocket. The dimensions of the package are 9 inches by 2¼ inches. In each of these packets are three and sometimes four, light frames, resembling very much the old-fashioned lantern slide, and by simply placing the frames on a piece of white paper or holding them up to the light, a satisfactory illustration of the pathological condition can be obtained. The frames can also be used as lantern slides. Of the fifty groups, mention may be made of those of the ossification of the periosteum, the radio-diagnostic methods of gynaecology, fractures of the carpus. The cost of each group is 25 francs.

A Warning

A doctor informs us that a man calling himself Kelk and claiming to represent the Thistle Press (457, Liverpool Road, N.7) has been hawking specimens of labels for bottles and bottle wrappings in the Wembley district. Our correspondent made a payment to this man for goods that were not delivered; the Thistle Press states that the man is neither one of its agents nor on its staff. Practitioners are warned to be on their guard if they receive similar visits.

Corrigendum

Owing to a clerical error the word "weeks" was substituted for the word "months" in the fourth line of Dr. Harbord's letter in the *Journal* of August 22nd (p. 367). The letter should read: "after suffering from a painful right hernia rather more than two months."

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 34, 35, 36, 37, 38, 39, and 40 of our advertisement columns, and advertisements of partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 171

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

The Duration of Weight Reduction after Dieting

ıBER (*Ugeskrift. f. Laeger*, July 2nd, 1931, p. 703) :tudied the late results of dietetic treatment for y in the hydropathic establishment, Montebello, ıtients of the well-to-do class in Denmark. Since patients could not be summoned to report them- ; for re-examination as if they belonged to the ary hospital class, only those patients were avail- for this study who returned voluntarily from time ne for renewed treatment. Of the 154 patients who repeated their visits as many as 102 were women, 67.5 per cent. were between the ages of 40 and 60. men were most numerous between the ages of 40 and he women between 50 and 60. With only few ɔtions, these patients suffered from other ailments obesity, but many of these ailments were either :s or sequels of the obesity. The average duration reatment was 35 days. The average loss of weight ıg a course of treatment was 5.6 kilos, being 5.8 for and 5.5 for women. The dietetic treatment was ılemented in many cases by thyreoidin, which was :ribed when a mixed diet with a low total caloric e had failed to bring the weight down satisfactorily. ınalysis of the weights of the patients on re-admission ·ed that only 42 per cent. had derived any durable :ovement from their previous sojourn. The most essful cases in this group were represented by 7 men 37 women, who were found on re-admission to have : the same weight to which they had been reduced discharge, or even to have fallen below this weight. :omparison of the patients who kept their reduced ghts down with those who returned to their former ;ity failed to establish any correlation between the nanency of the results on the one hand and the dura- : of the treatment, or the average loss of weight per , on the other hand. The author suggests that the nces of the results of dietetic institutional treatment ıg maintained indefinitely may be enhanced if the ient is taught in the institution to appreciate a diet ch does not inflict the pangs of hunger, and is not oic to the verge of discomfort.

172 Syphiloderma Pustulosum

THURMON and D. BLAIN (*Amer. Journ. Syph.*, April, ·1, p. 213), who record a personal case, state that ·tu'ar syphiloderma, which was first described in detail Wallace of Dublin in 1835, is an uncommon manifesta- ·n of secondary syphilis. Their case, which occurred a man aged 29, was apparently similar to the form of ılignant syphilis which was common during the epidemic the disease at the close of the fifteenth century. The ılignancy was shown by the rapid development of structive ulceration within a few months of the primary ·ion, by the circular character of the ulcers, their wide ·tribution, and their coexistence with mucous patches ıd cutaneous nodules. Osteomyelitis of the right tibia veloped during the acute stage of the infection, while e patient was receiving moderately intensive treatment the form of intravenous injections of salvarsan or ·osalvarsan and intramuscular injections of mercury ıccinimide. Rapid improvement, however, subsequently ·sued, contrary to what usually occurs in malignant ·philis. On histological examination the cutaneous lcers showed acute and advanced stages of inflammation. he acute inflammatory lesions were characterized by the resence of moderate numbers of polymorphonuclears, ·ith plasma and endothelial cells, thrombosed blood essels, and collagen fibre degeneration, while the more dvanced lesions showed an increased number of plasma nd endothelial cells, fewer polymorphonuclears, ·ccasional giant cells, and more extensive collagen degeneration. Intratesticular inoculation of rabbits with emulsions of the cutaneous ulcers failed to reproduce syphilis, but gave rise to a generalized staphylococcal infection. It is considered possible, however, that the therapeutic injections preceding the biopsy had sterilized the ulcer, or had so much reduced the vitality of any treponemes present as to prevent the reproduction of infection in another animal.

173 Hyperazotaemic Nephritis in Typhoid Fever

J. SABRAZÈS and J. LEVY (*Gaz. Hebd. Sci. Méd. de Bordeaux*, May 31st, 1931, p. 337, and June 7th, 1931, p. 354) who record four illustrative cases in men aged from 19 to 38, state that typhoid fever may be complicated by hyperazotaemic nephritis. In two cases the amount of blood urea exceeded 1 gram, and in one case of anuria 10 grams. All these three cases were fatal. Contrary to the opinion of some writers, especially Roch of Geneva, this high degree of azotaemia is due to renal changes, as is shown by the presence of casts and the post-mortem lesions. The hyperazotaemia does not necessarily give rise to a low temperature, nor is it always accompanied by a considerable fall in the excretion of urea in the urine. The onset is insidious; vomiting among other signs is suggestive. In one of the present authors' cases in which the hyperazotaemia exceeded 6 grams recovery ensued, and was attributed in part to a liquid diet poor in nitrogen, subcutaneous injections of an isotonic solution of glucose in doses of 500 c.cm. daily, subcutaneous injections of oxygen, and to washing out the stomach.

Surgery

174 Treatment of Bladder Diverticula

R. LE FUR (*Bull. et Mém. Soc. Chir. de Paris*, June 19th, 1931, p. 414) points out that, owing to the grave surgical risk, the removal of diverticula of the bladder is seldom advisable, and recommends a different method of treatment, particularly for posterior and lateral diverticula. This consists of the permanent drainage of the diverticulum, with evacuation and direct disinfection by means of large urethral or Pezzer-Le Fur sounds, which are introduced directly into the cavity of the diverticulum. Through these lavage can be arranged five or six times a day, with protargol, silver nitrate, collargol, or lipiodol. Even in cases where the removal of the diverticulum is a necessity, preliminary drainage and disinfection lessens the operative risk by reducing the danger of infection. Prostatectomy, in cases of operable adenoma, frequently causes the diverticulum to diminish in size or even to atrophy completely. Antero-superior diverticula of congenital origin, which are usually very large, should not be removed, but should be treated by marsupialization of the diverticulum to the abdomen. A case is quoted in which this procedure was undertaken after the removal of a large calculus from a bladder diverticulum. It was found that the diverticulum atrophied after continued disinfection with silver nitrate, and deep cauterization by high-frequency current of the fistula which resulted. The cystostomy was then closed, and the patient made a good recovery.

175 Course and Treatment of Ruptured Hydatid Cysts

B. PERICIC (*Wien klin. Woch.*, June 5th, 1931, p. 735, and June 12th, 1931, p. 770) reports 57 cases of ruptured hydatid cysts, and arranges them into the following groups. (1) Hydatid of lung perforating into bronchus or pleura (20 cases) has, according to the author, the most favourable prognosis, the great majority of the patients recovering without operation. Surgical treatment should only be considered in the case of complications such as pyothorax.

(2) Hydatid cysts of liver perforating into the bronchus or pleura (8 cases) are not so favourable. An operation is generally indicated, and the approach may be transpleural or peritoneal. In this group it is, of course, better to operate before perforation has occurred. (3) Hydatid of liver perforating into the alimentary canal (7 cases) is usually marked by diarrhoea, with passage of membranes and sudden diminution of the hepatic tumour. An operation is only necessary in cases of complications such as subphrenic abscess, and recovery is the rule. (4) Hydatid of the liver perforating into the bile passages (3 cases) is marked by severe jaundice, and many patients die from suppurative cholangitis. An early operation is indicated. (5) Perforation into the urinary tract (3 cases) is usually favourable in its course, and operations are only undertaken for pain or obstruction. (6) Perforation into the peritoneal cavity (9 cases) is again a serious condition; the diagnosis is difficult, and an operation is usually necessary. (7) Perforation through the skin (6 cases) involves incision and drainage usually, but good results ensue. In one case of perforation into the bronchus it was uncertain whether the primary site of infection was in the liver or the lung. A short history of each case recorded is supplied by the author.

176 Aneurysm of the Pulmonary Artery

Despite their rarity as compared with aortic aneurysms, aneurysms of the pulmonary artery occur with sufficient frequency to require consideration in the differential diagnosis of mediastinal tumours. H. R. Wahl and R. L. Gard (*Surg., Gynecol., and Obstet.*, June, 1931, p. 1129) report a typical case of this type in which the aneurysm, having been diagnosed as a solid mediastinal mass, was opened with resulting fatal haemorrhage. A brief summary of fourteen cases reported in the literature is also given. The clinical diagnosis of pulmonary aneurysm is very difficult; according to Henschen, the diagnosis can be made when seven signs, here enumerated, are simultaneously present. The etiology is not yet definitely established, but sex is apparently of little significance; age is seemingly of greater import, since the majority of cases occur in patients under the age of 30, this being in distinct contrast with aortic aneurysms. Endo- and peri-carditis are probably unrelated, and secondary rather than causal. Pulmonary aneurysms are usually associated with some congenital cardiac malformation, and often have a syphilitic base. In the present case, though there was no history or signs of syphilis, the histology of the pulmonary trunk wall, of the smaller pulmonary branches, and of the aneurysm was exactly comparable with that seen in syphilitic arteritis and aortitis.

177 Oesophageal Carcinoma

D. H. and A. N. Bessesen (*Amer. Journ. Surg.*, June, 1931, p. 437) point out the great difficulty of successful operative treatment in cases of carcinoma of the thoracic oesophagus, but without operation for the complete removal of the growth the mortality is 100 per cent. Carcinoma of the oesophagus is highly malignant, and the patients are always in poor condition, necessitating prolonged preoperative care and a special diet of protein, fats, carbohydrates, iron, and vitamins. Surgical difficulties include the inaccessibility of the organ, its anatomical relations and structure, the absence of a serous coat, and the poor blood supply; these account for the frequency of necrosis, and the danger of post-operative infections of the neck, mediastinum, pleura, and lung. The technique of what the authors consider the ideal operative procedure is described. As a preliminary operation, a Janeway or Witzel gastrostomy is performed under local anaesthesia, and the liver and lymphatics in the region of the diaphragmatic oesophagus are inspected. Two to six weeks are then allowed for recovery before artificial pneumothorax is induced; the thorax is opened under necrosis and local anaesthesia. The pleura must be protected with rubber sheets; the oesophagus is dissected from its mediastinal bed, and drawn out through the neck, care being taken to control haemostasis and protect the vagus nerves. The carcinoma must be completely removed, and finally the air must be removed from the thorax, the chest being then tightly strapped. Healing is allowed to continue for seven days before the stump in the neck is opened, after which the patient is permitted to drink, and to wash the oesophagus through with fluids. A case is reported in which the patient was in excellent condition forty-eight hours after the operation, but suddenly collapsed and died on the third day. The operation is described as a heroic measure; in most cases patients who survive the operation do not live more than about fifteen months, death being due to recurrence and not to metastases. Since death from this disease is certain, however, without operation, surgical removal of the growth should be attempted in every case where there is no evidence of metastasis.

Therapeutics

178 The Administration of Vegetable Vitamins

S. Warren and H. A. Nissen (*New England Journ. of Med.*, July 16th, 1931, p. 135) have devised a comparatively simple apparatus for preparing a vegetable extract with a high vitamin content. Ordinary methods of vegetable cookery are wasteful and leave an indigestible cellulose residue of small nutritive value with hardly any vitamin or mineral content. Vegetables are usually boiled at a temperature sufficient to destroy vitamin activity, and the bulk of their soluble nutrient content is poured away. Cooking them without water necessitates unremitting attention; although the mineral salts are retained, the vitamins are destroyed and the amount of cellulose remaining is excessive. The ideal vegetable food should have a low cellulose content, retain all its vitamins and salts, and contain glucose. The authors' extract is made as follows. After thorough cleansing, all leafy vegetables are sliced or ground; roots are shredded. This pulp is then mixed with a quantity of dilute orange juice and placed in the colander of a ten-gallon steam-jacketed aluminium kettle, the temperature of which is controlled by regulating the admission of steam to the jacket. A steam-driven rotary pump circulates hot water and secures percolation. A cover (removable for stirring) maintains an even temperature. After three-quarters of an hour, the vegetable juice is drawn off into sterilized bottles, which are stored in a refrigerator; fermentation may occur otherwise, and the fluid cannot be sterilized without destroying the vitamins. Patients usually prefer carrot juice; spinach, beet, and cabbage were found to be palatable in the order named. Celery juice thus prepared is too strongly flavoured, except for use in soups. These juices may be given undiluted, or in milk or soup, before boiling temperature. If a known weight of "roughage" is desired, this can be added to the soup from the cellulose residue. Animal experiments showed the high vitamin content of these juices. Since ordinary dietaries are deficient in vitamins and salts, a liquid preparation that can be diluted, added to soups, or mixed with cereals, is obviously valuable in hospitals and elsewhere.

179 Treatment of Chorea by Nirvanol

According to F. Goebel (*Deut. med. Woch.*, July 31st, 1931, p. 1313), nirvanol (phenyl-ethyl-hydantoin) is the most powerful and certain remedy at present in use against chorea; not only is the disease usually controlled or cured by its administration, but endocarditis is said to be especially rare in such cases. On the other hand, it is known to cause severe symptoms; but since the treatment is often unsuccessful unless some of these symptoms appear, they are apparently unavoidable. Nirvanol may damage the haematopoietic system, giving rise to a picture of agranulocytic anaemia or purpura. Nephritis may occur, and the exanthem associated with this drug may run a malignant course suggestive of exfoliative dermatitis. Any of these ill effects may prove dangerous, and the author now only uses this line of treatment when all other remedies have failed and the dangers have been explained to the patient or his relatives.

) Intravenous Vaccination with Haemolytic Streptococci

G. WILSON and H. F. SWIFT (*Amer. Journ. Dis. d.*, July, 1931, p. 42) have attempted to desensitize oup of children susceptible to rheumatic fever with nolytic streptococcal vaccine. The present investiga- covers a four-year period of observation, from 1927 930, during which 172 children were selected for study, majority being under 10 years old. Approximately half of the children received intravenous vaccination, the remainder, a comparable group, served as controls. vaccine was prepared from a strain isolated from tonsillar exudates of a patient who had suffered for ıths from severe polyarthritis and carditis. The first ction consisted of 250,000 micro-organisms, and each sequent weekly injection contained double that of the ceding one until the maximum of 10,000,000 was reached; ; dose was repeated until a total of from nine to twelve ıtments had been given. Fifty children received a ond course of treatment. Twenty patients with active ease were treated—fifteen suffering from chorea and : with active carditis. General reactions, such as rexia and headache, were infrequent and slight, and al reactions were not observed. No untoward sym- ms developed in any child, and 45 per cent. of the ated children, as compared with 18 per cent. of the ıtrols, were free from recurrence for periods of sixteen nths to two years after treatment. The authors think probable that the intravenous vaccination bears some ationship to the diminished incidence of recurrence served, though the relatively few numbers and short iod of observation preclude any very definite con- sions. It was not clear whether there had been specific munization with the haemolytic streptococci, or a non- cific protein irritation, and the data presented do not licate whether yearly courses of such treatment are visable.

Laryngology and Otology

181 Lateral Adenoid Vegetations in the Adult

. JACOD (*Ann. d'Oto-Laryngol.*, April, 1931, p. 399) ıws attention to the well-known clinical observation ıt the lymphatic tissue of the fossa of Rosenmüller ten undergoes important pathological change in adults, en in those patients who have shown no signs of enoids in infancy or childhood. These lateral adenoid getations are subject to attacks of acute inflammation, e condition becoming chronic eventually, with retention caseous material. The process tends to spread to the ıstachian tubes, and, if untreated, produces deformity d stricture. Patients with this condition are often bject to recurrent otorrhoea. Other symptoms are minution of hearing, tinnitus, and shooting pains below e lobule of the ear. Great amelioration of symptoms obtained by squeezing out the inflammatory exudate d caseous material from the adenoid growths. Having ade his diagnosis in such cases Jacod expresses the secre- ın from any vegetations present by palpation of the sopharynx with the index finger. He states that this n be accomplished with very little discomfort to the tient if a little cocaine is placed in the nasal fossae, id the head is inclined to each shoulder in turn. It is aimed that in those cases where Eustachian catheteriza- on produces improvement of a short duration only, the fect is rendered more lasting if the nasopharynx is first eated in the way previously outlined.

182 Tuberculosis of the Middle Ear

rCLAIR THOMSON (*Journ. of Laryngol. and Otol.*, July, 931, p. 460) discusses his findings from examining the ıral condition of all tuberculous patients admitted to ing Edward VII Sanatorium, Midhurst, since 1911. e believes that tuberculosis of the middle ear is a mparatively rare complication in pulmonary disease, curring in less than 2 per cent. of the cases admitted to a sanatorium. The painless onset of a scanty and thick otorrhoea, with marked deafness, in an adult, is suggestive of a tuberculous origin, but only in a minority of cases can the bacilli be found in the oral discharge. This form of otitis media occasionally heals under sanatorium treatment, and active local measures are rarely required. The complication indicates a severe infection, and its discovery justifies a grave prognosis, since the infection is very severe, or the patient's resistance is low. F. C. ORMEROD (ibid., p. 449) discussing this condition, agrees that it is uncommon, or, at any rate, not frequently diagnosed with certainty. The possible pathways of infection are the Eustachian tube and the blood stream, the external auditory meatus being very rarely concerned. Multiple perforations of the drum are usually seen; they may heal or enlarge and finally coalesce. In children there is a pronounced tendency in this condition to mastoid involvement; facial paralysis, due to pressure from granulation tissue, is much more common. Aural tuberculosis in young children is more active than in adults, and there is a greatly enhanced liability to involvement of other parts of the temporal bone and infection of the meninges.

183 Results of the Radical Operation for Otitis Media

J. JESSEN (*Ugeskrift f. Laeger*, April 30th, 1931, p. 470) reports a study of 341 cases of middle-ear disease operated on between 1923 and 1926; 30 patients died in hospital, and 3 died later of diseases unconnected with the ear. Of the remaining 308 patients 107 did not present themselves for re-examination, and 3 were operated on afresh elsewhere. Thus there remained 198 patients (68 men, 73 women, and 57 children) of whom 7 were operated on on both sides, the total number of ears being, therefore, 205. As to the question whether the operation does or does not protect the patient from subsequent dangerous endocranial complications, it was significant that they had not occurred in even one of the cases followed up. But while 102 patients had no discharge after the operation, there were as many as 103 who still had a purulent discharge. Jessen points out that functional improvement after the operation varies greatly in the statistics of different operators, and concludes that the more conservative the surgeon is in his indications for the radical operation the lower will be his percentage of successes. In an analysis of 100 carefully re-examined patients he found that among 52 patients in whom a good operative result could be claimed, there were as many as 43 whose general condition was good. Among the 35 in whom only a moderately satisfactory operative result was achieved, there were only 21 whose general condition was good; and among the 13 with a poor operative result, there were only 4 with good general health.

Obstetrics and Gynaecology

184 Sodium Amytal as an Analgesic in Labour

E. C. HAMBLEN and D. O. HAMBLIN (*Amer. Journ. of Obstet. and Gynecol.*, May, 1931, p. 715) in a preliminary report describe the results of the oral administration of sodium amytal (sodium iso-amylethyl-barbiturate) in fifty patients with regular pains in the commencement of the second stage of labour. This drug, described in 1926, has been used as an anaesthetic by several American observers, and is usually given intravenously. In obstetrics an initial dose of 15 to 18 grains, with not more than two additional doses of 6 grains, is recommended. About half an hour after the first dose the patient becomes drowsy, and sleeps between the pains, but restlessness and excitement during delivery are not uncommon, and call for the administration of nitrous oxide. With the recommended doses amnesia was perfect in twelve out of fourteen primiparae, and in ten out of nineteen multiparae. Variations in susceptibility occur, and there may be idiosyncrasy, careful supervision and regular readings of the blood pressure are necessary. One patient with pregnancy toxaemia had vasomotor collapse requiring treatment by intravenous infusion and ephedrin.

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For terms and further particulars apply to the Medical Superintendent (Telephone No 56, Northampton), who can be seen in London by appointment.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

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A REGISTERED HOSPITAL for the CURE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No 7 Barnwood.

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For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

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Reg Tel Address. Bethlem, Beckenham *Telephone:* Springpark 1180—1181.

Station: Eden Park (Southern Railway)

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Conveniently situated four miles from Charing Cross Easy access from all parts
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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

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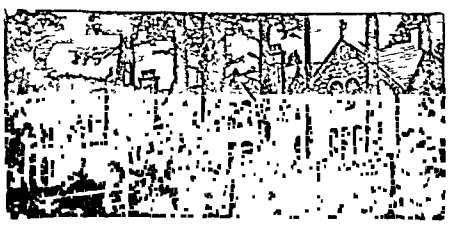
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Telephone: NAYLAND 1.



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LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Tuesday, September 1st

Fees (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)

Further particulars may be obtained from Professor WILLIAM WRIGHT M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Tuesday, Sept. 1st.

The Fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

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(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the December Examination will begin on Tuesday, September 1st, 1931, in the following subjects:

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PHYSIOLOGY AND HISTOLOGY (with Practical Classes).

The classes are conducted by the Professors and Demonstrators in the respective subjects.

Fee for the Course £16 16s., or £9 9s. for either section separately. This fee includes membership of the Students' Club during the period covered by the Course.

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Full Courses are arranged for the London M.B., B.S. Degrees, and the Examinations of other qualifying bodies. Arrangements for *Dental Students (Degree and Diploma)*. The Clinical Course is pursued at the Royal Free Hospital. Arrangements are also made for students to attend the practice of certain Special Hospitals.

Appointments at Hospital and Medical School are open to students after qualification.

Scholarships, Bursaries, and Prizes of the value of £1,350 are awarded annually.

Residence arrangements are made for students in the School Chambers.

The Session begins on October 1st each year.

Prospectus and full information can be obtained from the Warden & Secretary.

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M.R.C.P. CLASS.

A course of Instruction, suitable to the requirements of candidates for the M.R.C.P. Examination in January, will begin on November 2nd, 1931

For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

UNIVERSITY OF LONDON, KING'S COLLEGE.

FACULTY OF MEDICAL SCIENCE.

COMPLETE COURSES OF STUDY ARE PROVIDED FOR THE PRELIMINARY AND INTERMEDIATE EXAMINATIONS OF:

(1) The University of London.
(2) The Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons; and also for
(3) The Degree in Dental Surgery (B.D.S.).
(4) The Primary Fellowship Examination of the Royal College of Surgeons.
(5) The First Professional Examination for the Licence in Dental Surgery of the Royal College of Surgeons.

The College, with a full complement of University Faculties, offers to Medical Students the advantages of a broad university education before they proceed with the purely clinical subjects in the associated or other hospitals.

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For detailed prospectus of the Medical and Dental Courses and for further information apply to the Dean, Prof. D. M. BLAIR, M.B., Ch.B., or to

S. T. SHOVELTON, M.A.,
Strand, W.C.2. Secretary.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

(University Centre for Medical Sciences.)

FACULTY OF MEDICAL SCIENCES.

Anatomy.—G. ELLIOT SMITH, M.A., M.D., Litt.D., D.Sc., Ch.M., F.R.C.P., F.R.S., Professor; J. P. HILL, D.Sc., F.R.S., Professor of Embryology (Vice Dean).

Bio Chemistry.—J. C. DRUMMOND, D.Sc., F.I.C., Professor. (Dean.)

Botany.—T. G. HILL, D.Sc., A.R.C.S., Professor of Plant Physiology, and E. J. SALISBURY, D.Sc., Quain Professor.

Chemistry.—F. G. DONNAN, C.B.E., M.A., LL.D., Ph.D., D.Sc., F.R.S., Professor; C. K. INGOLD, D.Sc., F.R.S., Professor.

History of Medicine.—C. SINGER, M.D., D.Litt., F.R.C.P., Lecturer.

Pharmacology.—E. B. VERNEY, M.A., M.B., B.Ch., M.R.C.P., M.R.C.S., Professor.

Physics.—E. N. DA C. ANDRADE, D.Sc., Ph.D., Professor.

Physiology.—C. A. LOVATT EVANS, D.Sc., M.R.C.S., F.R.S., Jodrell Professor.

Zoology and Comparative Anatomy.—D. M. S. WATSON, M.Sc., F.R.S., Jodrell Professor.

The SESSION 1931-32 will begin on MONDAY, OCTOBER 5th, 1931.

COURSES OF INSTRUCTION are arranged for the First Medical and the Second Medical Examinations of the University, as well as for the corresponding Examinations of the Examining Board of the Royal College of Physicians and Surgeons and of other Licensing Bodies.

Facilities for POST-GRADUATE and RESEARCH WORK are provided in all Departments named above. The Department of Anatomy provides also for research in PHYSIOLOGY, EMBRYOLOGY, HISTOLOGY, [illegible]

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evonshire. Telephone [illegible]RIMARY FELLOW-[illegible]S, begin in Sep-[illegible]2.
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[illegible]er St.), W.C.1

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THE HOSPITAL is the largest in England. There are 839 beds in constant use. Last year, In-patients, 14,256; Out-patients, 86,554 (attendances, 529,543); Dental Patients, 6,063; Major operations, 7401.

THE MEDICAL COLLEGE AND DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and most approved appliances.

SCHOLARSHIPS AND PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £350, and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200.

RESEARCH FUNDS of approximately £115,000 give unrivalled facilities for medical research.

APPOINTMENTS.—Over 160 appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations for the Primary and Final Fellowship Examinations of the Royal College of Surgeons, and for the Membership Examinations of the Royal College of Physicians.

HOSPITAL PRACTICE.—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

Club's Union, Athletic Ground of 13 acres, Students' Hostel, etc.

For prospectus and particulars, apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School. Mile End, E.1.

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F.R.C.S.(Eng.), *Primary* 1906-30	162
Final	161
M.R.C.P.(Lond.), 1914-30	192
D.P.H. (Various) 1906-30 (Completed Exam.)	300
F.R.C.S.(Edin.), 1918-30	46
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LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(University of London)

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.).

The COURSE OF STUDY is now Divided into TWO PARTS: Section A (Clinical and Laboratory Instruction) and Section B (Tropical Hygiene), each of which can be taken independently of the other, Section A being a three months' course and Section B a two months' course.

This Revised Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF COURSES, 1931-32.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION)

1st COURSE: *29th September*—*18th December*, 1931. 2nd COURSE: *4th January*—*24th March*, 1932. 3rd COURSE: *11th April*—*30th June*, 1932.

SECTION B (TROPICAL HYGIENE)

1st COURSE: *18th January*—*18th March*, 1932. 2nd COURSE: *18th April*—*17th June*, 1932.

FEES (inclusive):
Sec. A, £25; Sec. B, £15.

Research Studentships vacant, value £250 p.a.

For *Prospectus and Synopsis of Lectures*, apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1.

MIDDLESEX HOSPITAL MEDICAL SCHOOL,

LONDON, W.1.

(University of London)

The WINTER SESSION begins on October 1st, and new students should apply for admission at an early date.

The Medical School and Hospital occupy a central position within a few minutes' walk of Oxford Circus. They are fully equipped for teaching the entire Medical curriculum both for University Degrees and the Conjoint Course.

The new West Wing of the Hospital is fully occupied; the rebuilding of the remainder is proceeding without the loss of a single bed; the remodelled Out-patient Department continues to expand; the newly built Residents' Block affords greatly improved facilities; the Nurses' Home is the finest in London. These, with other new buildings, including magnificent Laboratories, give to the Middlesex Hospital and its Medical School the most modern facilities obtainable in Great Britain.

THIRTY-ONE RESIDENT APPOINTMENTS are offered annually to students recently qualified. In addition, NINE REGISTRARS are also appointed annually.

SCHOLARSHIPS AND PRIZES of a value exceeding £1,000 are awarded each year.

Large Athletic Grounds at North Wembley.

There is no accommodation for women students. Well equipped Restaurant.

For further particulars and Prospectus, apply to the Dean, T. IZOD BENNETT, M.D., F.R.C.P., or School Secretary, Middlesex Hospital, Mortimer Street, London, W.1.

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Westminster Medical Hospital School (University of London)

NEXT TERM COMMENCES OCTOBER 1st.

Valuable Entrance Scholarships are awarded annually. Hospital Centrally Situated (opposite Westminster Abbey). Extensive Sports Ground. Fees £40 per annum. Entrance Fee 10 guineas.

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A Prospectus and full particulars may be obtained on application to the Dean: A. S. WOODWARK, C.M.G., C.B.E., M.D., F.R.C.P., Westminster Hospital Medical School, Caxton Street, S.W.1. Telephone: Victoria 0765.

Rytad

UNIVERSITY OF BIRMINGHAM

FACULTY OF MEDICINE

(Associated with the General, Queen's, and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 5th, 1931.

The University grants Degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health; also Degrees and a Diploma in Dental Surgery.

The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

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Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine.

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The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies A Dental Scholarship of the value of £46 17s 6d. is offered annually

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The necessary Courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For Syllabus and further information apply to STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

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MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admissions being primiparous cases) Over 2,400 patients are admitted to the Wards annually, and in the Ante natal Department there are over 18,000 attendances per annum

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F.R.C.S.(Edin.).

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MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.G. regulations

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F.R.C.S.(Edin.).

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MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE.

Specialises in CAREERS FOR GIRLS. General Education to Matric., etc. Special Terms to Medical Men. Apply, LADI WARDEN.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £8 8s. for 10 lessons—Address, No 123, B.M.A. House, Tavistock Square, W.C.1.

Hull Royal Infirmary.
(370 Beds)

Applications are invited for the following Resident posts (male):
PARENT INSTITUTION: THIRD HOUSE SURGEON, vacant August 31st Salary £150 per annum, plus board, residence, and laundry
SUTTON BRANCH HOSPITAL: HOUSE PHYSICIAN, vacant now Salary £160 per annum, plus board, residence, and laundry.
Both appointments will be for six months in the first instance, and will be determinable by one month's notice on either side
Applications, stating age, qualifications, and nationality, together with copies of testimonials, should be sent to the undersigned
R. J CARLESS,
August 10th, 1931. House Governor.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of *HOUSE PHYSICIAN* (male). The appointment will be for a period of six months, at a salary of £100 per annum, and will date as from September 9th. Preference will be given to those who have held a resident post
Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, September 4th, addressed to the Secretary.

Victoria Central Hospital,
WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.
Candidates chosen would be *appointed for six* months
Applications, with *copies of testimonials*, to be sent to the Secretary.

Weston-super-Mare General
HOSPITAL (80 Beds)

HOUSE SURGEON

Applications are invited for the post of Resident House Surgeon at this Hospital Salary at the rate of £150 per annum, with board, rooms, and laundry Duties to commence October 1st next Applications, stating age and qualifications, and *enclosing copies* of testimonials, should be addressed to the undersigned.
LESLIE J TURSLAND, Secretary.

Altrincham General Hospital,
CHESHIRE (100 Beds)

Applications are invited for the position of *JUNIOR HOUSE SURGEON* Salary at the rate of £120 per annum, with board, residence, and laundry The appointment is for six months in the first instance, to commence on September 1st next
Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, vacant now
The appointment is for six months, renewable (determinable by three months notice on either side)
Salary at the rate of £150 per annum, with board, lodging, and laundry
Candidates (male) should forward applications, stating age, nationality, etc, together with copies of testimonials, to the Secretary at once.

The Sheffield Royal Hospital.
(340 Beds.)

There are two vacancies for *Residents*:
OPHTHALMIC HOUSE SURGEON. £120 per annum,
ANÆSTHETIST. £80 per annum, rising to £100 in six months
Applications to— W. H BOOTH,
Superintendent & Secretary.

Lowestoft and North Suffolk
HOSPITAL.

JUNIOR HOUSE SURGEON (man or woman) required September 10th. Salary £120 per annum, with board, residence, and laundry.
Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

The Royal Infirmary, Sheffield.
(500 Beds)

The Weekly Board of Management invite applications for the two undermentioned posts:
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.
The salary attached to each appointment is £80 per annum, with board and residence
The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum.
Applications, with copies of testimonials, to be sent to the undersigned forthwith.
JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
July 24th, 1931.

Royal Sea Bathing Hospital for
SURGICAL TUBERCULOSIS,
MARGATE

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.
Candidates for the post must be legally qualified and registered.
The appointment is for six months, but may be extended for a further period of six months
There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.
Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds).

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON
Candidates must be qualified and registered under the Medical Acts
Salary will be £150 per annum, with apartments, board, etc.
Applications, with copies of testimonials (not more than three), to be sent to the undersigned.
WALTER BANKS,
Superintendent and Secretary.
August 21st, 1931

South-Eastern Hospital for
CHILDREN, SYDENHAM, S.E 26.

Applications are invited for the position of ASSISTANT RESIDENT MEDICAL OFFICER (lady) The appointment will be for six months from September 16th. Honorarium £100 per annum, with board, residence, and laundry. Ample time for reading. Applications by letter only, stating age and qualifications, with three copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woodfield," 88, Daerns Road, Forest Hill, S.E.23, to be received not later than Wednesday, September 9th.

The Queen's Hospital for
CHILDREN, Hackney Road, E 2.

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by September 16th.
CHARLES H. BESSELL,
August 10th, 1931. Secretary.

The Royal Infirmary of
EDINBURGH. (1,011 Beds)

There are vacancies for the appointment of CLINICAL ASSISTANTS (unpaid) in the Ear, Nose, and Throat Department Valuable experience is to be gained from these posts, which are tenable for six months, with the option of renewal for a further period if desired. Application should be made on the prescribed form, which may be obtained from the undersigned.
HENRY MAW,
August 10th, 1931. Sec. & Treasurer.

The Children's Hospital,
SUNDERLAND. (70 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female). Candidates must possess double qualifications (registered) Salary £100 per annum, with board, residence, and laundry The appointment is for six months Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.
S. C. FRYERS,
House Governor and Secretary.

Harrow & Wealdstone Hospital,
Harrow on the Hill, MIDDLESEX
(70 Beds)

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer The appointment is for a period of six months from October 1st, after which period applications will be considered for reappointment for further periods not exceeding two years in all
Salary at the rate of 140 guineas per annum, with board, residence, and washing.
Candidates, who must be duly registered Medical Practitioners, and have held a previous House appointment, will not be expected to reside on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital not later than Monday, September 7th
SYDNEY GARBUTT, Secretary

Cumberland Infirmary, Carlisle
(160 Beds)
Resident Medical Staff—Four Qualified Officers

The following post is vacant on October 1st, six months' appointment, male Previous experience desirable Salary at the rate of £100 per annum, board, residence, etc
HOUSE PHYSICIAN.
Applications, stating age, nationality, qualifications, etc, with copies of not more than four testimonials, to be sent to the undersigned who will supply further particulars if desired
J. G HOWITT, Secretary
August 17th, 1931.

Torbay Hospital, Torquay.
(146 Beds)

A HOUSE PHYSICIAN and a HOUSE SURGEON are required The salary for each appointment is £175 per annum, with board, residence, and laundry allowance Candidates must be fully qualified, registered, and unmarried
Applications, stating age, nationality, qualifications, and experience, to be sent to the undersigned on or before September 8th, with copies of not more than three recent testimonials
E. L. GRIST,
August 21st, 1931. Secretary

Bootle General Hospital,
BOOTLE, Near LIVERPOOL. (100 Beds)

Applications are invited for the posts of CASUALTY OFFICER and HOUSE SURGEON (2) for the six months ending March 31st, 1932 Salaries at the rate of £150 per annum, with board, laundry, etc. Duties to commence October 1st
Applications, stating age and qualifications, with copies of [illegible] to the undersigned on

Great Yarmouth General
HOSPITAL (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments)
Applicants must be male and unmarried
Salary at the rate of £140 per annum, with board, residence, and laundry.
Applications, stating age and qualifications, together with copies of three recent testimonials to be forwarded to the undersigned
FRANK JENNINGS,
Secretary

The Lady Chichester Hospital,
HOVE
(For Early Nervous Breakdowns 50 Beds)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, with board, lodging, and laundry. Honorarium at the rate of £50 per annum. The successful candidate will be required to enter in her duties as soon as possible.
Applications must be made in writing, and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North Street, Brighton.
August 1st, 1931.

Liverpool Open-Air Hospital for
CHILDREN. (260 Beds)
Surgical Tuberculosis and Orthopædics

Vacant on October 1st, the post of JUNIOR RESIDENT MEDICAL OFFICER
Salary £200 per annum, with board, residence and laundry.
Applications to be sent not later than September 19th, to the Senior Medical Officer

West London Hospital,
Hammersmith Road, W.6.
(254 Beds.)

Applications are invited for the post of RESIDENT ASSISTANT SURGEON. The present holder of the post is not re-applying, and the appointment is an open one. Salary at the rate of £200 per annum (plus £25 for services in connection with the Venereal Diseases Department), with board, residence, and laundry allowance. (Four weeks' holiday a year). The appointment is for one year, terminable by one month's notice on either side, and subject to annual re-election, may be extended to not more than three years.

Candidates must be duly qualified Medical Practitioners, and it is desirable that they should hold the F.R.C.S. (England) Diploma. As Senior Resident Officer, the Resident Assistant Surgeon will also be responsible for certain administrative duties.

Applications, with copies of testimonials, must reach me not later than first post on Thursday, September 17th. Candidates must attend a Meeting of the Medical Council on Friday, September 18th, at 4.30 p.m., and, prior to that date, call upon and send copies of application and testimonials to each member thereof. They must not canvass Members of the Board, but, if so notified, must attend a Meeting of the Board at 5 p.m. on Tuesday, September 22nd, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, one HOUSE PHYSICIAN, one HOUSE SURGEON (*General and Gynæcology*), one HOUSE SURGEON (General and some Deep X-Ray Therapy), and one RESIDENT ANÆSTHETIST (*male*), for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be on printed forms obtained from me) must reach me not later than first post on Thursday, September 17th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, September 25th at 4 p.m., and the House Committee meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Norfolk and Norwich Hospital.

Applications are invited for the post of HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, *nationality, etc., together with copies of testimonials*, to the undersigned, not later than Thursday, September 3rd.

FRANK INCH,
August 21st, 1931. House Gov. & Sec.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Thursday, September 3rd.

FRANK INCH,
August 21st, 1931. House Gov. & Sec.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management. *Post now vacant.*

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON, single man. Salary £150 per annum. Twelve months' appointment, vacant November 1st. Applications to be received by the Secretary, on or before Wednesday, September 9th.

Bristol Eye Hospital.

Applications are invited for the post of ANÆSTHETIST. Vacant immediately. Applications to be received by the Secretary on or before Saturday, September 5th.

National Hospital for Diseases of THE HEART,
Westmoreland Street, Marylebone, W.1.

Applications are invited for the post of OUT-PATIENT MEDICAL OFFICER (non resident, male).

The appointment is for a period of six months from October 1st, but may be renewed for a further period not exceeding six months.

Salary at the rate of £125 per annum.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Friday, September 4th.

The Out-patient Medical Officer will be required to assist the Honorary Medical Staff on five afternoons weekly or four afternoons and one morning, as may be arranged.

ROBERT G. E. WHITNEY, Secretary.

National Hospital for Diseases of THE HEART,
Westmoreland Street, Marylebone, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (*male*). The appointment is for a period of six months from October 1st, but may be renewed for a further period not exceeding six months.

Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Honorary Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital, not later than Friday, September 4th.

ROBERT G. E. WHITNEY, Secretary.

Nottingham General Dispensary,
BROAD STREET, NOTTINGHAM.

Wanted, RESIDENT SURGEON (male), unmarried. Must have Medical and Surgical qualifications. Salary £250, with £25 increase per year up to £300. Apartments (not board), attendance, lights, and fuel. This Institution is a non-provident one. No beds. No midwifery.

Applications, stating age and accompanied by recent testimonials, to be sent by September 9th to—

5, Thurland Street, Nottingham. R. J. WILLATT, Secretary.

The Hospital for Sick Children,
NEWCASTLE-UPON-TYNE.
(94 Beds.)

Applications are invited for a HOUSE PHYSICIAN (male or female) for a period of six *months as from October 1st*. Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th.

The Hospital for Sick Children,
NEWCASTLE-UPON-TYNE.
(94 Beds.)

Applications are invited for a SENIOR HOUSE SURGEON (male or female) for a period of six months as from October 1st. Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th.

The Hospital for Sick Children,
NEWCASTLE UPON-TYNE.
(94 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female) *non* resident, for a period of six months as from October 1st. Salary at the rate of £100 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr NEIL BRODIE, 18, City Road, Newcastle, on or before September 5th.

Taunton and Somerset Hospital,
TAUNTON. (104 Beds.)

SENIOR HOUSE SURGEON required about the end of September. Applicants must have held a Hospital Resident appointment for at least six months. Salary at the rate of £150 per *annum, with board, residence* and laundry.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

Royal Manchester Children's HOSPITAL,
Out Patients' Department, Gartside Street, MANCHESTER.

Wanted, for the Out-patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be on the *Medical Register*. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number 97,000 per annum. Duties to commence October 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

Royal Manchester Children's HOSPITAL. (190 Beds.)
PENDLEBURY, near MANCHESTER.

Wanted, a RESIDENT MEDICAL OFFICER, salary £125 per annum, who will be appointed for six months. Duties to commence Oct. 1st.

Candidates must be unmarried and duly registered. Previous Hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

Royal Salop Infirmary,
SHREWSBURY. (156 Beds.)

APPOINTMENT OF CASUALTY OFFICER and RESIDENT ANÆSTHETIST.

Applications are invited from fully qualified men for the appointment of Casualty Officer and Resident Anæsthetist, vacant from September 1st next.

The appointment is for a period of six months, subject to re-appointment for a further period of six months, at a salary of £160 per annum, with board, residence, etc. Resident Staff comprises Resident Surgical Officer, House Physician, and Casualty Officer.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned.

Board Room. J. W. NOBLE,
August 14th, 1931. Secretary Supt.

Birmingham and Midland Skin HOSPITAL,
JOHN BRIGHT STREET, BIRMINGHAM.

Applications are invited from registered Medical Practitioners to act as CLINICAL ASSISTANTS in the Out-patient Consulting Room each afternoon, except Saturday and Sunday.

Honorarium at the rate of 26 guineas per annum for one afternoon per week.

Applications (one copy), stating age, qualifications, experience, present engagements, and afternoons at liberty, should be addressed to the Secretary of the Medical Committee not later than September 4th.

The work of the Hospital can be seen each afternoon by doctors and bona fide students.

HUBERT SUMNER, Secretary.

Bedford County Hospital.
(124 Beds.)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

The Liverpool Eye and Ear INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in immediately to— CHARLES W. WRIGHT, Esq., 9, Harrington Street, Liverpool.

Manchester Royal Infirmary.

TECHNICAL ASSISTANT for CLINICAL LABORATORY WORK.
(Non resident, male or female.)

The Board of Management of the Manchester Royal Infirmary invite applications for the above post

Applicants should hold a degree or diploma in medicine or science, or should have had special training in scientific methods of a nature which will qualify them for the work.

The duties of the post require attendance daily (Sundays excepted) from 9 a.m. to 5 p.m., Saturdays to 1 p.m., working under the direction of the Directors of the Clinical and Research Laboratories The work comprises routine examinations of blood, urine, and sputum, estimations of blood urea, basal metabolism and fractional analysis of gastric secretion.

The appointment is for one year, renewable for a further period subject to the provisions of the by laws as to notice, etc., with a commencing salary of £200 per annum.

Applications, stating age, with copies of testimonials, to be sent to the undersigned not later than September 10th.

By Order,
FRANK G HAZELL,
Gen. Supt. & Secretary.

Royal National Orthopaedic Hospital

(Country Branch, Brockley Hill, Stanmore, Middlesex.)

Applications are invited for the post of HOUSE SURGEON Salary £150 per annum, with board, quarters, and laundry. The appointment is for six months from October 1st, renewable for a period of six months on the recommendation of the Medical Board

Applications, with copies of testimonials, should reach the Secretary not later than September 16th.

Royal National Orthopaedic Hospital,

234, Gt Portland Street, W.1.

Applications are invited for the post of HOUSE SURGEON (Two). Salary £100 per *annum, with board, quarters, and laundry.* The appointment is for six months from October 1st, *renewable* for a period of six months on the recommendation of the Medical Board Applications, with copies of testimonials, should reach the Secretary not later than September 16th

Royal Hospital, Richmond, SURREY.

JUNIOR HOUSE SURGEON (male) required to take up duties on October 1st Salary at the rate of £100 per annum, with board, furnished *apartments, and washing.* Candidates must be *fully qualified*, registered, and single The appointment will be for six months, after which the successful candidate will be eligible for the *senior post* Applications, stating age, experience, together with copies of three recent testimonials, must be forwarded to me not later than September 17th

RICHARD ALLEN, Secretary

Royal Infirmary, Wigan.

(180 Beds)

HOUSE SURGEON (male) required on October 1st for a period of six months Salary £150 per annum, with board, apartments, and washing Staff consists of an RSO and three House Surgeons Applications, stating age and qualifications, with copies of three recent testimonials, should be addressed to the undersigned as soon as possible

A. STANLEY BRUNT,
Aug. 24th, 1931. Gen. Supt & Secretary.

Stockport Infirmary.

Immediate applications are invited for the *post of HOUSE PHYSICIAN* (male) Salary £175 per annum, with board, residence, and laundry.

Applicants must enclose copies of three recent testimonials, and give particulars of age, University, and experience

EDWIN J. PEARCE, Secretary Supt.

Ashford Hospital, Kent.

RESIDENT MEDICAL OFFICER required, male preferred, of British nationality, unmarried Salary £150 per annum Duties to commence immediately Applications, stating experience and qualifications, with three recent testimonials, to be sent to the Hon. Secretary *on or before September 5th.*

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the following posts:

(a) HOUSE SURGEON No 1;
(b) HOUSE SURGEON No 2.

Each appointment is tenable for a period of six months, but is terminable at an earlier date by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence, and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned as soon as possible.

W. H. HEAD,
Secretary-Superintendent.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of RESIDENT ANAESTHETIST and EMERGENCY OFFICER (male) The appointment will be for three months Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc, together with copies of not more than four recent testimonials, to the undersigned as soon as possible.

W. H HEAD,
Secretary-Superintendent.

Miller General Hospital,

Greenwich Road, S.E.10.

Applications are invited for the following posts:

CASUALTY OFFICER Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

There are six Resident Officers. Candidates (male) must be unmarried Board, residence, and laundry are provided Each appointment is for six months, from October 1st next Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more *than three recent testimonials, to be sent* to the Secretary as soon as possible.

August 24th, 1931.

Croydon General Hospital.

A vacancy occurs on the Honorary Staff of the above Hospital for a SURGEON in charge of the Ear, Nose, and Throat Department, and candidates for the appointment are requested to forward their applications, stating age, qualifications, and experience, together with copies of three testimonials, to the undersigned not later than September 25th.

GEORGE H. DAMS,
August 24th, 1931. Secretary.

General Infirmary, Salisbury.

(General Hospital—161 Beds)

HOUSE PHYSICIAN (male) required, to commence duty as soon as possible

Candidates must be unmarried, fully qualified and registered Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the Rules may be obtained on application

Harrogate General Hospital.

Applications are invited from British subjects (male) for the post of HOUSE PHYSICIAN (now vacant) for the period terminating February 1st, 1932 Salary at the rate of £150 per annum, with board and lodging Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible

The Infirmary, Harrogate. GEO. BALLANTYNE, Secretary.

Connaught Hospital,

Walthamstow, E.17
(100 Beds, with three Resident Medical Officers)

SENIOR RESIDENT HOUSE SURGEON (male) required Salary £150 per annum, with residence, board, and laundry Appointment for six months, from September 22nd Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be forwarded immediately.

KENELM S. ELLISON, Secretary.

Corporation of Kingston-upon-Hull

HULL AND THE HULL AND GOOLE PORT SANITARY AUTHORITY

ASSISTANT MEDICAL OFFICER OF HEALTH

The Corporation of Kingston upon Hull and the Hull and Goole Port Sanitary Authority invite applications for the appointment of a male Assistant Medical Officer of Health at a salary of £600 per annum, rising by annual increments of £25 to £700 per annum

Applicants must be registered Medical Practitioners, under 40 years of age, and must have a registered degree or diploma in Public Health or State Medicine

The person appointed will be required *primarily* on routine Port Sanitary and Medical Inspection of Aliens, but will also Work, and the control of Infectious Diseases, *but may* be called upon to do work in any department of the Public Health Service in accordance with the Corporation's scheme for the interchange of medical staff

Experience in Port Sanitary Work and Infectious Diseases will be considered as part of the qualifications for the appointment

The candidate appointed will be required to devote the whole of his time to the duties of the office, and also to contribute at the rate of 5 per cent of his salary to a superannuation fund under the Local Government and other Officers Superannuation Act, 1922.

Forms of application and further particulars of the duties and conditions of service can be obtained from the Medical Officer of Health, Guildhall, Hull

Applications, endorsed "Assistant Medical Officer of Health," together with copies of three recent testimonials, must reach the undersigned not later than the first post on Monday, September 14th

Guildhall, Hull 1931. J. R. HOWARD ROBERTS Town Clerk.

Northampton General Hospital.

(246 Beds)

There will be vacancies on October 1st next for one HOUSE PHYSICIAN and four HOUSE SURGEONS British nationality Salary £150 per annum, with board, residence, and laundry

The successful candidates will be appointed for a period of six months, and will be eligible for re-election for a further period

Candidates must be duly qualified and registered.

Applications, stating age, sex, qualifications, etc, with copies of testimonials, to reach the undersigned not later than first post on September 9th

There will also be a vacancy for a RESIDENT DRESSER on October 1st An honorarium of £10 will be given for six months' satisfactory service.

H ST. JOHN WOOD,
August 24th, 1931. Secretary-Superintendent.

Worcester County and City MENTAL HOSPITAL,

POWICK, near WORCESTER

JUNIOR ASSISTANT MEDICAL OFFICER (male), single, required Candidates must be duly qualified in Medicine and Surgery Salary £350 per annum, rising by four annual increments of £25 to £450 per annum together with furnished apartments, board, laundry, and attendance

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, *stating* age and qualifications, together with copies of three testimonials, *to be forwarded* to the Medical Superintendent not later than Friday, September 18th

Borough Mental Hospital, ROWDITCH, DERBY

SENIOR ASSISTANT MEDICAL OFFICER wanted. Commencing salary £400 per annum, rising by £25 per annum to £450 with an additional £50 per annum if in possession of Diploma in Psychological Medicine, with board, apartments, attendance, and laundry Candidates must be registered under the Medical Acts The appointment is subject to 5 per cent deduction on salary and emoluments under the Asylum Officers Superannuation Act 1909 Apply, not later than September 8th, stating age and full particulars, together with copies of three recent testimonials, to the Medical Superintendent.

City of Salford Education COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER (male) required. Salary scale: £520—£30—£780. Last date for receiving applications September 8th Particulars on receipt of stamped addressed envelope from the Director of Education, Education Office, *Salford*

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
CONTRACT PRACTICE.	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	COUNTY BOROUGH OF BELFAST EDUCATION COMMITTEE. *(Full time Male Assistant Inspection Medical Officer.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON *(Medical Officer for Medical Aid Association.)*	STEWARTRY OF KIRKCUDBRIGHT *(Assistant Medical Officer and Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	SURREY COUNTY COUNCIL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 200, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 155, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia

August 26th, 1931. By Order of the Council ALFRED COX, Medical Secretary.

Seamen's Hospital Society,
Greenwich.

The Committee invite candidates for the appointment of HOUSE PHYSICIAN at the HOSPITAL FOR TROPICAL DISEASES, Endleigh Gardens, W.C. Candidates must be male, doubly qualified and registered. The elected candidate will be required to take up duty on October 1st. Salary at the rate of £150 per annum, with board, residence, and washing. The appointment will be for six months.

Applications, stating age, together with copies of not more than three recent testimonials, to be sent in on or before September 8th to the undersigned, from whom further particulars can be obtained.

Greenwich R. E. V. BAX,
August 14th, 1931. Secretary.

Seamen's Hospital Society,
Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from October 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials to be sent in by September 8th to the undersigned.

Greenwich R. E. V. BAX,
August 14th, 1931. Secretary.

Seamen's Hospital Society,
Greenwich.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by September 8th to the undersigned.

Greenwich R. E. V. BAX,
August 14th, 1931. Secretary.

Leicester Royal Infirmary.
(472 Beds.)

HOUSE SURGEONS AND CASUALTY HOUSE SURGEON.

Vacancies are expected to arise on October 1st, for House Surgeons and Casualty House Surgeon.

Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election September 9th.

Applications should be forwarded on or before August 30th to the House Governor and Secretary.

August 7th, 1931.

Leicester Royal Infirmary.
(472 Beds.)

HOUSE PHYSICIAN.

A vacancy is expected on October 1st, and applications are invited for the post.

Salary at the rate of £125 per annum. Applicants must have held a resident Hospital post, or had similar experience of Hospital work. Election September 9th.

Applications should be forwarded on or before August 30th to the House Governor and Secretary.

August 7th, 1931.

Swansea General and Eye Hospital (316 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

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Shrewsbury Road, London, E.7.
(100 Beds.)

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Applications, stating age, experience and full particulars, together with copies of testimonials, should reach the undersigned by first post on September 14th.

REGINALD PERRY, Secretary.

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Shrewsbury Road, London, E.7.
(100 Beds.)

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REGINALD PERRY, Secretary.

(Appointments continued on p. 42.)

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All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,

Tele Address: Triform, Wesdo—London. **Oxford Street, W.1.** Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION have every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.

Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.

Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 DEATH VACANCY.—LONDON, S.W.—PRACTICE about £1,500 p.a. in pleasant suburb. Panel 1,200—1,300. Suitable accommodation to rent.

2 FAR EAST.—For Immediate Sale.—Good-class PRACTICE among foreign residents. Several valuable appointments Cash receipts last year £2,000. Chartered Accountant's report Scope Premium £1,200, to include car, etc.

3 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight roomed house for sale or rent. Excellent educational facilities Sea-fishing, etc. Premium £1,500.

4 W. MIDLANDS. — Country Practice of about £1,000 p.a. in beautiful part Panel 532 Very good house (5/6 bedrooms) Good garden, orchard, etc., for sale or rent. *Premium panm* £1,500

5 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town Panel 1,640. House available Applicant should be a capable Surgeon Premium one third share or one fourth share *1½ years' purchase*

6 S. COAST.—Partnership after Preliminary Assistantship in Practice in seaside resort Share worth about £1,000 p.a. to suitable man, who for preference should be single. Premium £1,600 and considerable scope.

7 KENT.—Country Practice of over £800 p.a. in beautiful part Panel nearly 400 Very *attractive residence* (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale Sport. Premium 1½ years' purchase.

8 LONDON, E.—Cash and Panel Practice of £1,285 p.a. in populous area. *Panel 1,700. House* (3 bedrooms) for sale. Premium 1½ years' purchase

9 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,500 p.a. in small but delightful resort. Considerable scope to one able to operate Premium one half share *1½ years' purchase.*

10 ESSEX.—Practice doing about £1,200 p.a. in outlying suburban district. *Panel 658. Detached house* (6/7 bedrooms), with garage and lovely garden, for sale. Premium—Practice—£1,500.

11 LONDON, W.C.—Practice in Bloomsbury area. Receipts 1930, £870. Panel 500. Surgery accommodation, with large bedrooms, bathroom, etc., to rent. Premium £1,500.

12 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase.

13 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock-up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

14 MIDLANDS.—Practice over £800 p.a. in first-rate town. Panel 500. Large or small house available Premium only £300.

15 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE averaging £700 p.a., including £200 from appointment. The Surgery accommodation can be rented, if desired. Scope for experienced and energetic man.

16 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £6,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent. Partner must hold the F.R.C.S., and be aged about 30. Appointment on Hospital Staff Premium for one sixth to one-fourth share 2 years' purchase. Preliminary Assistantship.

17 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

18 S. of ENGLAND.—Partnership in increasing Practice of over £1,400 p.a., in flourishing Seaport Town Panel 1,000. Plenty of scope for young and energetic man Premium one half share 1½ years' purchase. Preliminary Assistantship entertained.

19 WITHIN 15 MILES OF LONDON.—PARTNERSHIP in Practice of nearly £3,000 p.a., in growing Town. Panel nearly 1,500. House (4 bedrooms), garage, and good garden to rent on lease. Premium one third share 2 years' purchase.

20 S. DEVON.—Practice over £1,000 p.a. in a small town on Coast. Panel 800. House (5 bedrooms), with garage and garden 1/4 acre, for sale. Excellent fishing and yachting. Premium 1½ years' purchase.

21 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft above sea level), in healthy pastoral district. Well-built house (2 bedrooms) to rent. Premium £500.

22. PARTNERSHIP in Ear, Nose, and Throat Practice in first rate Town. Share worth about £1,650 at 2 years' purchase

23 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.), easy access of West End. Premium for one-half share £2,300.

24 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non dispensing Practice of £1,800 p.a. in beautifully situated Country Town. Panel about 650. House (5 bedrooms) to rent. Good schools. Excellent sport. First-class Hospital. One third to one-half share at 1½ years' purchase. Welsh *not necessary.*

25 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 170. House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase

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Practices and Partnerships for Disposal (continued).

26 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one half share 1½ years purchase.

27 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope. Prem. 1 yr's pur.

28 YORKSHIRE (N.R.).—Partnership in old-established Practice of £3,000 p.a. in an important town. Panel 4,000. Premium for one-fifth share 2 years' purchase.

29 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb. Panel £100. Modern house (3 bedrooms). Premium £1,100.

30 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort. Panel 520. Hospital. Good house and garden. Premium 1½ years' purchase.

31 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. Prem. £1,100.

32 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of London. Panel about 1,000. House (6 bedrooms) with small garden for sale. Educational facilities and sport. Prem. 1½ years purchase.

33 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., in first rate town. Panel about 3,000. Suitable house obtainable. Scope for increase. Premium one third share 1½ years purchase.

34 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

35 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district. Panel 2,525. Scope for increase. Premium one half share 2 years purchase.

36 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500. Detached house with garage and small garden, to rent. Sport of all kinds. Premium one third share 2 years' purchase. Preliminary Assistantship.

37 LEEDS. — Very compact mixed Practice over £1,200 p.a. Panel 1,300. Large well situated detached house (4 bed and dressing rooms) with large garden, to rent on lease. Premium 1½ years purchase.

38 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 250. Convenient semi detached house (4 bedrooms) with good garage and secluded garden for sale. Great scope. Premium £860.

39 CO. DURHAM.—Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms) in quarter acre of garden, for sale. Premium for one half share only £1,000.

40 OPHTHALMIC Practice in flourishing Town within easy distance of London. Receipts over £450 (one day's attendance per week). Fees mainly £1 1s. Rent £60. Good Hospital. Premium £800.

41 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p.a., in beautiful hunting centre. Applicant should be aged about 30 ('Varsity man preferred). Cottage Hospital. Scope for Surgery. One fourth share at 2 years' purchase. Preliminary Assistantship.

42 SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 200. House with 6 bedrooms, garage and small garden, to rent or purchase. Scope for increase. Premium £1,300.

43 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town. Panel about 2,400. One third share at 2 years' purchase, payable by arrangement if desired.

44 DORSET.—Country Practice of £1,000 p.a. In beautiful part near the coast. Panel 660. Detached house (6 bedrooms) with garage and beautiful garden to rent. Hunting shooting fishing etc. Premium 1½ years purchase. Suitable for retired Service man.

45 S. DEVON. — Practice over £1,800 p.a. (£800 from panel) in beautiful country district near the borders of Dartmoor. Suitable house available. Hunting, shooting, fishing. Premium 1½ years' purchase.

46 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast. Receipts average £300 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 years pur.

47 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

48 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p.a., in beautifully situated county town. Panel about 1,600. Hospital in town, and incoming Partner must be a good Surgeon. One-fifth share at first at 2 years purchase.

49 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one half 2 years' purchase. Up to-date Cottage Hospital.

50 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,300 p.a. Suitable house to purchase. Premium one fourth share £2,000. Preliminary Assistantship.

51 LONDON, W.—Steadily increasing Practice, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

52 S. OF ENGLAND.—Partnership in Practice, about £2,800 p.a., in favourite seaside resort. Delightful house (5 bedrooms), garage, and nice garden, to rent. Incoming Partner should be a Surgeon (preferably F.R.C.S.). Hospital and appointment on staff. Premium one fourth share 2 years pur.

53 LONDON, S.W.—Practice about £500 p.a. in suburban district. Panel 650. No midwifery. Semi detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

54 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwfy. Six roomed house to rent. Prem. £700.

55 LONDON, E.—Cash Practice of £850 p.a. in populous neighbourhood. Panel over 1,000. House (3 bed rooms) in main road, to rent. Premium 1½ years' purchase.

56 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four ninths share 2 years purchase.

57 MIDDLESEX.—Steadily increasing Practice about £800 p.a. in growing district. Panel about 600. Very good house (5 bed and dressing rooms), garage and excellent garden, for sale. Ample scope. Premium £900.

58 N. OF ENGLAND.—Partnership in lucrative Practice in large city. Panel over 5,000. Small house (3 bedrooms and attics) for sale. A share of £1,650 or £2,500 would be sold at 1½ years' purchase.

59 DEVON.—Partnership in Practice averaging £3,000 p.a. in small town. House to rent. Hunting, shooting, fishing, etc. Premium one third share 2 years purchase. Hospital.

60 WITHIN 12 MILES OF LONDON.—Partnership in rapidly increasing Cash Practice about £1,600 p.a. in developing indust district. Panel 1,800. Small house available. Large Cottage Hospital. Prem. two fifth share 2 years purchase.

61 S. MIDLANDS.—Practice of nearly £400 p.a. in delightful country district, easy distance of London. Panel 300. Attractive house (7 bed and dressing rooms) in grounds of 2 acres, with garage to be sold or let. Very suitable for Resident Patients. Good scope. Premium 1 years purchase.

62 N. MIDLANDS.—Partnership in Practice over £1,400 p.a. in first rate city. Panel 1,800. House with 2 reception rooms and 4 bedrooms to rent. Premium one half share £1,100. Preliminary Assistantship entertained.

MEDICAL PARTNERSHIPS, TRANSFERS, AND ASSISTANTSHIPS (BARNARD & STOCKER) Post free 12/6

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

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Under the personal directorship of Dr. J. FIELD HALL and J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

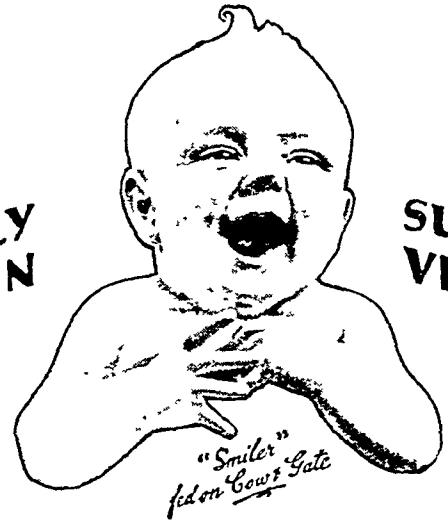
The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants.
Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. MIDDLESEX.—OUTLYING SUBURB.—A third share of an old-established good middle and working-class PRACTICE, offering excellent future prospects, is for disposal. Cash receipts last year amounted to £2,663, including panel of 1,468. Suitable house available, either on rental or by purchase. Premium £2,000.
2. YORKS (EAST RIDING).—Unopposed old-established PRACTICE, in good agricultural district near sea. Cash receipts average about £1,300 p.a., including appt. (£30) and panel 660. Visits 2/6 to 21/-. Exceptionally good house, with ample accommodation, 5 bedrooms, etc. (indoor sanitation, main drainage, central heating, etc.). Garden, small orchard and paddock. Price £1,600, £1,000 on mortgage. Premium £1,800. Good hunting, golf, sea fishing, etc.
3. NORTH CORNISH COAST.—PARTNERSHIP.—A one-half share is offered in a very sound old-established PRACTICE, averaging £2,748, including panel producing over £800 p.a. Appts. worth nearly £300 p.a. Fees 3/6 to 21/-. Very nice house, in excellent position, with 3 reception, 7 bedrooms, etc., good garden. Rent £80 p.a. Sport of all kinds. Premium for share £2,000.
4. WEST OF ENGLAND.—Near Favourite Town.—Unopposed country PRACTICE in beautiful surroundings, averaging about £600 p.a., but offering scope. Panel worth £150 p.a. Fees 2/6 to 21/-. Exceptionally good house, with large garden, containing 3 reception, 7 bedrooms, etc. Price for freehold £2,000, £1,000 on mortgage. Premium £600.
5. MIDDLESEX.—Residential Suburb.—Well-established PRACTICE, averaging about £1,000 p.a., but offering large scope, as district is rapidly developing. Panel of 1,294, and appts. worth about £60 p.a. Fees from 3/6. Very good house, with 3 large reception rooms, 7 bedrooms, etc., separate professional rooms. Gas and electric light. Garage. Good garden. Price for freehold £2,200, of which £1,500 could remain on mortgage. Premium 1½ years' purchase.
6. LONDON, S.W. (near Victoria).—PARTNERSHIP.—A two-fifths share is offered in a better-class non-panel Practice, averaging from £800 to £1,000 p.a. Fees 7/6 to 5 gns. Eight-roomed flat can be rented on lease. Premium 2 years' purchase.
7. LONDON, WEST.—Old-established good middle-class PRACTICE, averaging over £2,500 p.a. (last year £2,600). Medium-sized panel. Visits 5/- to 10/6 and occasionally 21/-. Midwifery discouraged, 2 or 3 cases yearly at 15 to 20 gns. House contains professional accommodation, 2 reception, 5 bedrooms, dressing rooms, etc. Price for freehold £1,650. Premium £4,475.
8. LONDON, WEST.—Old-established good middle-class PRACTICE, averaging for the past three years £870 p.a. Panel 800. Fees from 2/6. Very nice house, with 2 reception, 5 bedrooms, and 2 dressing rooms, etc. Rent on long lease £90 p.a. Premium £1,500.
9. LANCS.—LARGE TOWN.—Old-established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.
10. INLAND SPA.—Old-established upper and middle-class non-dispensing and non-panel PRACTICE, averaging for the past three years £2,450 p.a. Visits 7/6 to 21/-. No midwifery. Very good well-situated house available at the end of 12 months' equal partnership introduction. Rent on lease £120 p.a. Premium 2 years' purchase. Successor will be appointed on staff of Hospital.
11. PARTNERSHIP.—WEST OF ENGLAND [illegible] district within two miles of very favourite tow[illegible]s offered in a good mixed-class Practice, having [illegible] increase. Gross cash receipts for last 12 months approximately £2,000, of which about £600 is from panel. Fees from 3/6 to 21/-. Mid. 2 gns. upwards. Particularly nice house, with 2 reception, 6 bedrooms, etc. Garden; garage. Price for freehold £2,300. Excellent sport and schools. Premium £1,800.
12. SOUTH OF ENGLAND—Pleasant Town near Coast.—Very old-established middle and upper-class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,500.
13. LONDON, WEST CENTRAL.—Old-established good mixed PRACTICE, producing last year £874, including panel of 500. Fees 2/6 to 21/-. Midwifery 5 to 10 gns. Only few cases yearly. Well-situated surgery, with professional rooms, and living accommodation above. Can be rented on lease. Premium £1,500.
14. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000. A fifth share is for disposal, with increase to a third later. Suitable accommodation available. Premium 2 years' purchase.
15. [illegible]N, NORTH (King's Cross area).—Lock-up PRACTICE, estab-£1,50[illegible]nd held by the Vendor for five years. Gross cash receipts for conta[illegible] months over £400, including panel of 360. Fees 2/6 to 10/6. £50 p.[illegible] containing waiting room, consulting room, and dispensary [illegible]nted on lease. Premium £550.
16. NORTH MIDLANDS.—WITHIN 5 MILES OF FAVOURITE TOWN.—Old-established good middle-class PRACTICE, offering large scope. Cash receipts for last 12 months £1,332, including panel of over 1,000. Fees from 3/6. Mid. from 2 gns. Exceptionally nice house, in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc., containing 3 reception, 6 bedrooms, etc. Freehold for sale. Premium 1½ years' purchase.
17. BORDERS OF CHESHIRE AND STAFFS.—Well-established middle and working-class PRACTICE, situated in pleasant district (pop. 10,000) and producing about £900 p.a., including panel of over 1,300, increasing. Visits 2/6 to 5/-. House, with good accommodation (5 bedrooms, etc.), garden, garage Rent £75 on lease. Prem. £1,200.
18. NOTTINGHAM SUBURB.—Well-established middle and good working-class PRACTICE, in residential district (pop. 20,000 to 30,000), worth last year over £1,000, including panel of about 880. Visits 3/6 to 7/6. Very little midwifery. Attractive house, standing in about 3/4 of an acre of garden, with ample accommodation. Price for freehold £1,850. Premium £1,550, to include drugs, etc. Sport of all kinds, and educational facilities.
19. NEAR HUDDERSFIELD.—PARTNERSHIP.—A half share is offered in a very well-established good mixed-class Practice, having considerable scope for increase. Average gross cash receipts for the past three years £4,000; last year £4,273. Panel of 3,500. Fees from 3/6 to 7/6. Midwifery 1½ to 7 gns.; about 50 cases. Very good house, with 4 reception, 6 bedrooms, etc., and 1½ acres of garden. Price for freehold, £2,500, or would be let on lease. Prem. 1½ years' purchase.
20. NORFOLK.—PARTNERSHIP.—A one-third share (with increase later) is for disposal in a very well-established Practice in an attractive town near coast. Average gross cash receipts nearly £4,500. Panel of nearly 3,000. Visits 2/6 to 30/-, with medicine extra. Very nice house, with large garden. Freehold for sale. Premium 2 years' purch.
21. NORTH MIDLANDS.—PLEASANT MARKET TOWN.—PARTNERSHIP.—A one-third share is offered in a very old-established sound mixed-class Practice, rapidly increasing, and producing for the immediate past 12 months over £3,000. No appointments. Panel of nearly 1,400. Fees from 3/6 to 2 gns. Midwifery 2 to 10 gns. Suitable house available on rental, or, if single, purchaser could reside with Vendor on very advantageous terms. Ingoing Partner must be able to do Surgery, as there is very good scope for this work. Hospital with 60 beds. Premium 2 years' purchase, half down, and balance by instalments.
22. MANCHESTER.—Semi-residential Suburb.—Very old-established non-dispensing mainly middle-class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 3 gns. Well-situated house, with good accommodation. Price (freehold) £1,600. Premium £3,750.
23. LINCS. — PLEASANT MARKET TOWN.—PARTNERSHIP.—A half share, with possible succession in two years' time. Average income for past three years £1,900, including appointments and panel producing £500. Advice and medicine 3/- upwards; visits from 5/-. Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200. Sport of all kinds, and excellent schools for boys and girls. Premium 2 years' purchase, payable £1,000 down, remainder by arrangement.
24. WITHIN TWELVE MILES OF MARBLE ARCH.—Middle and working-class PRACTICE, steadily increasing, and producing this year about £800, including panel of 250. Fees from 3/-. Suitable house, with 2 reception, 4 bedrooms, etc., secluded garden. Price for freehold £1,650, of which £900 could remain on mortgage. Premium £800.
25. ESSEX.—Very old-established PRACTICE, situated in pleasant country district in growing area about 30 miles from London, and few miles from the sea. Cash receipts average nearly £900 p.a., including panel of 600. House contains surgery and waiting room, 3 reception, 5 bedrooms, bathroom, etc. Garden. Garage. Gas, but electric light available. Moderate rental. Premium 1½ years' purchase.
26. PARTNERSHIP.—YORKSHIRE.—LARGE CITY.—A one-third share with succession to the whole Practice in about one year's time, is offered in a rapidly increasing PRACTICE, producing for the last 12 months approximately £2,300, including panel of 1,500. One appt. worth £150. A suitable house will be vacant shortly. Premium £1,200. Large scope for further development.
27. HOME COUNTIES.—Within 30 mins.' run of London.—Old-established mixed-class and increasing PRACTICE, situated in small town with pleasant surroundings. Cash receipts average £1,725 p.a., including appt. £70 and panel 1,000. House with good accommodation and small garden. Price for freehold £2,500. Premium 1½ years' purchase. Educational facilities.
28. SURREY.—Increasing residential district, with good train service to town.—Well-established good general PRACTICE, offering Surgical scope. Gross cash receipts for last 12 months nearly £3,200, with panel of about 900 Visits 5/- to 21/-. Suitable house, with 3 reception, 7 bedrooms, etc. Can be bought or rented on lease. Premium 1½ years' purchase.
29. CHESHIRE.—NEAR COAST.—Old-established good mixed-class PRACTICE, averaging for the past 3 years nearly £1,600, including panel of 1,280. Very good house in 5 acres of ground, with 2 reception, 4 bedrooms, etc. Rent on lease £85 p.a. Premium £2,300.

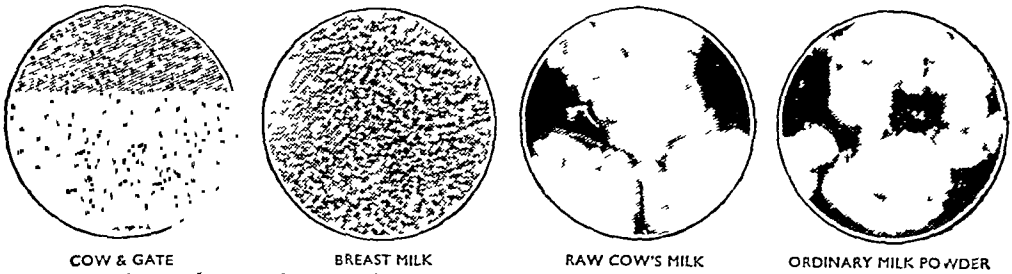
Full Schedule of Terms and Conditions will be forwarded on application.

d by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.



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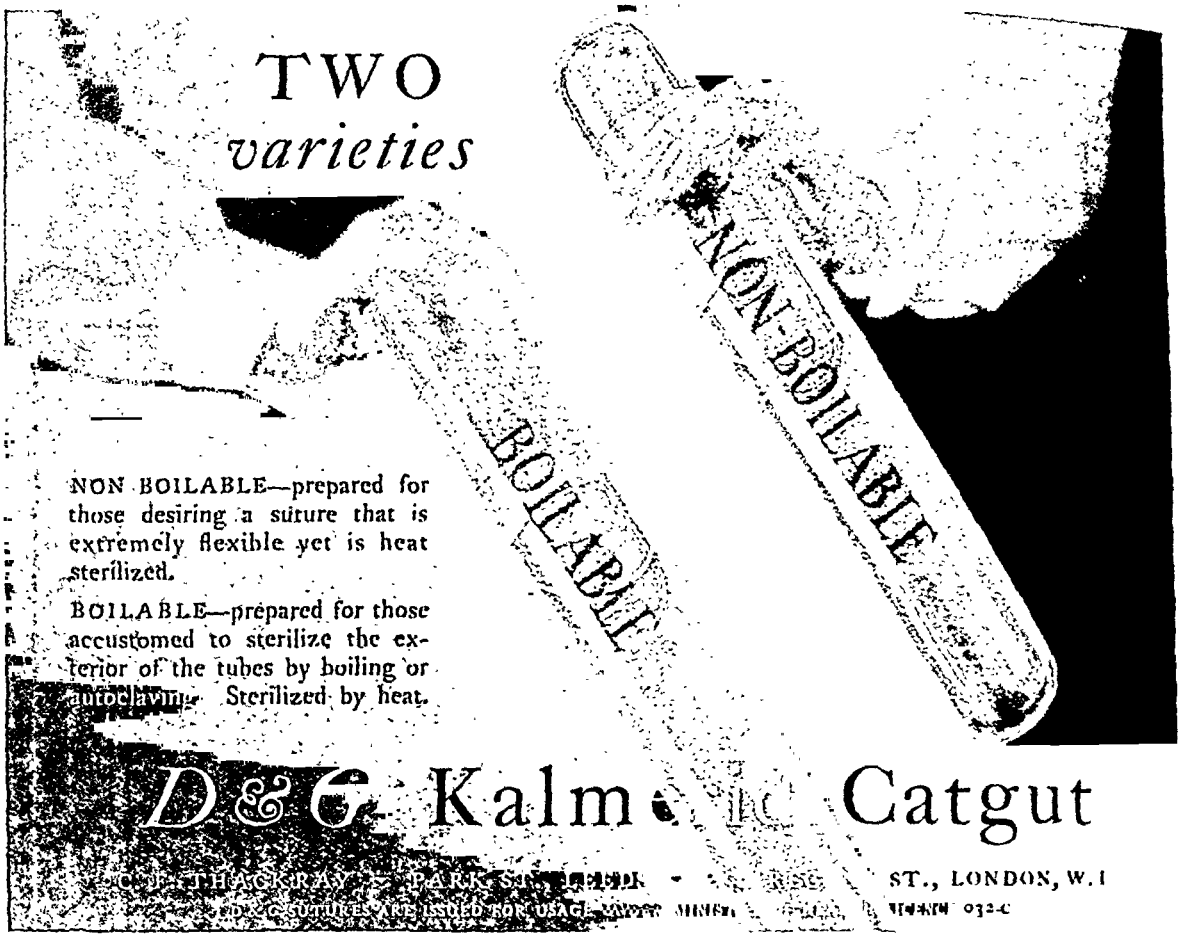
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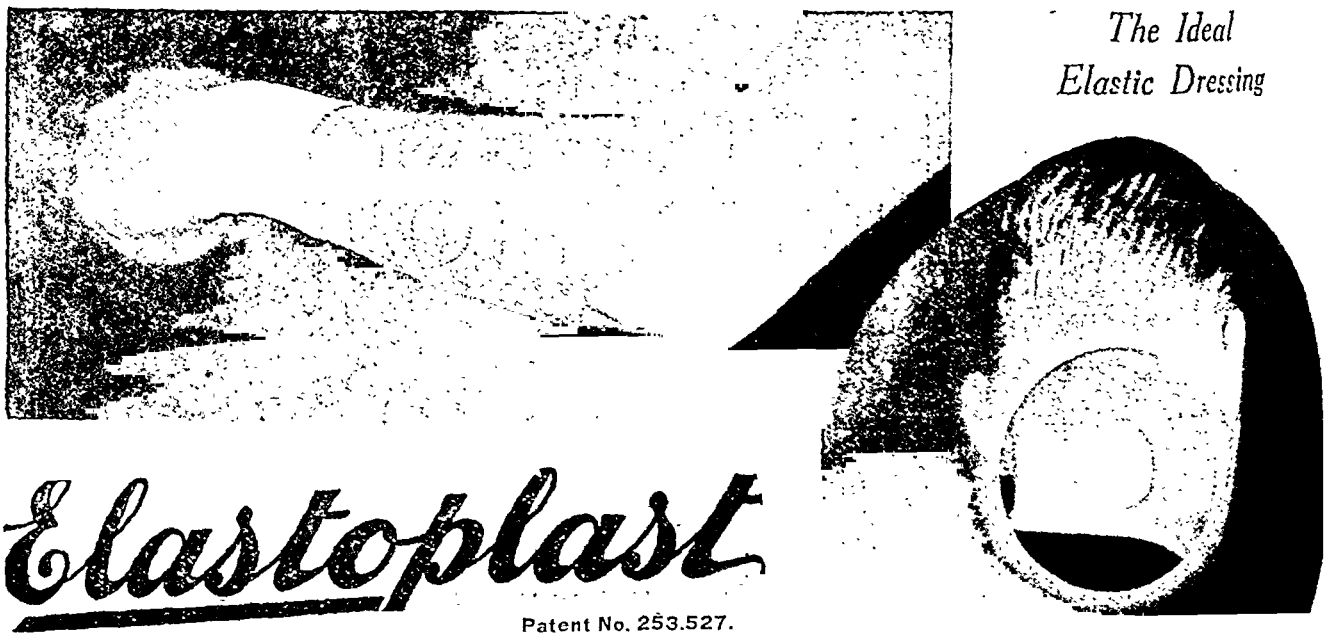
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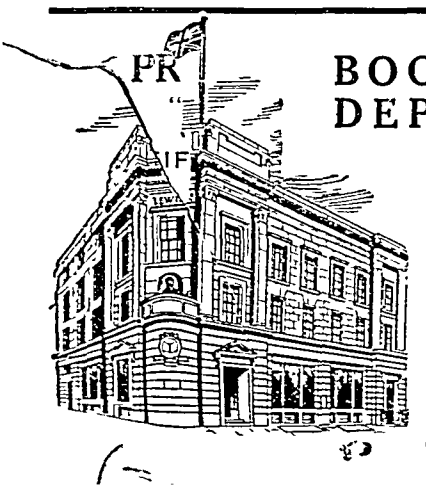
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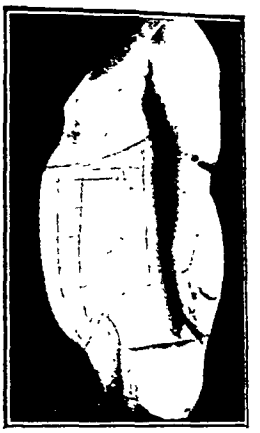
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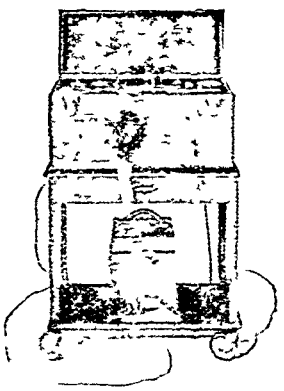


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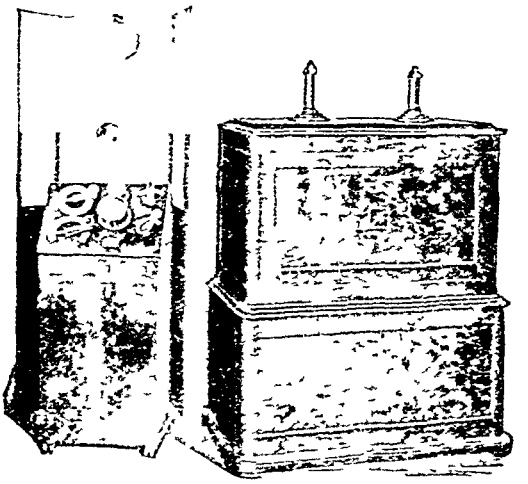
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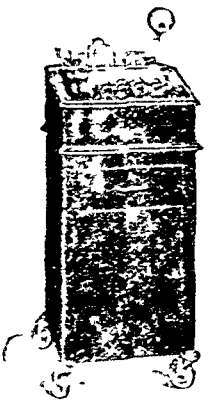
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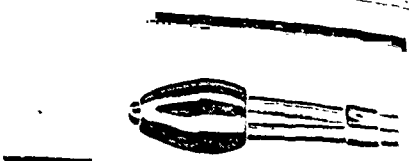
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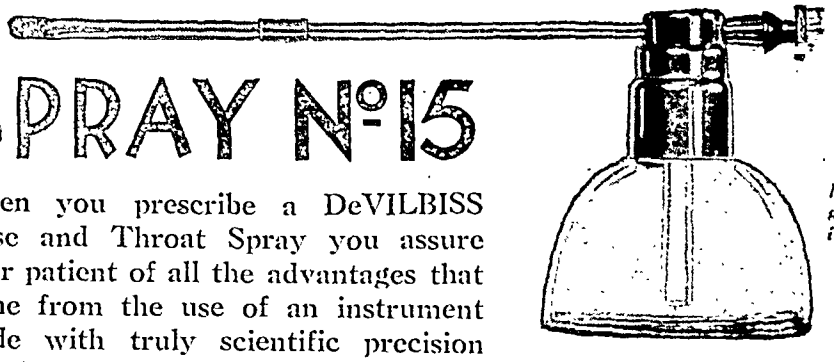
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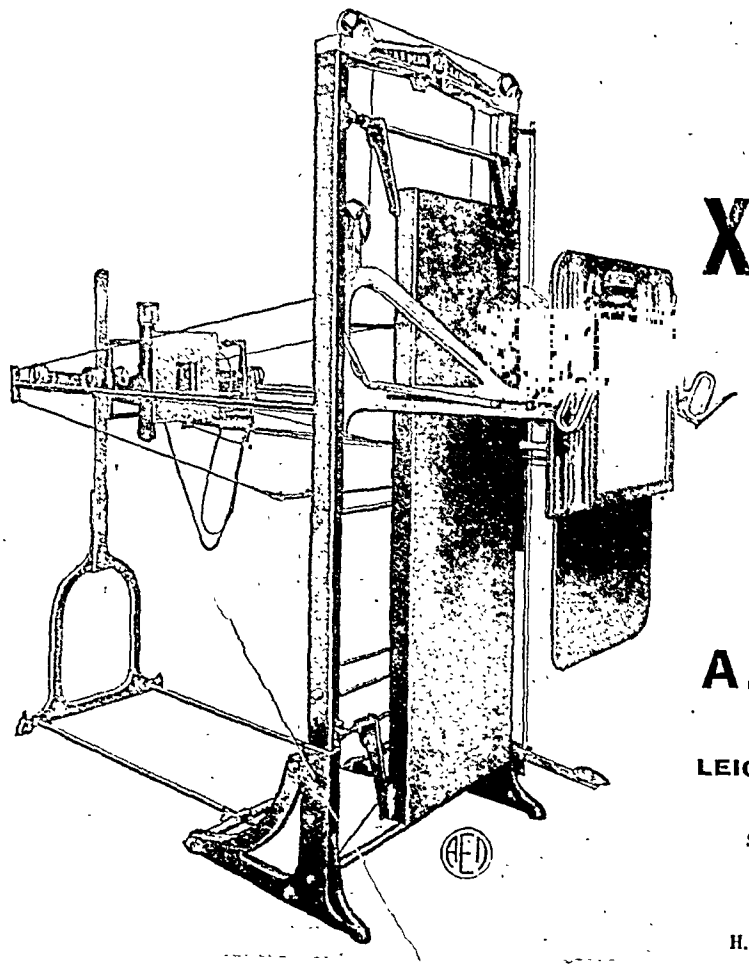
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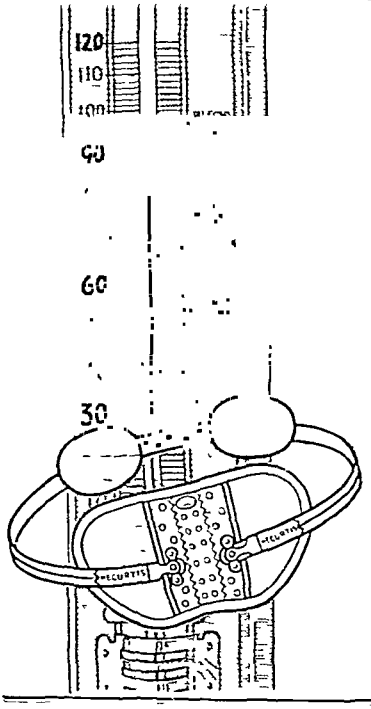
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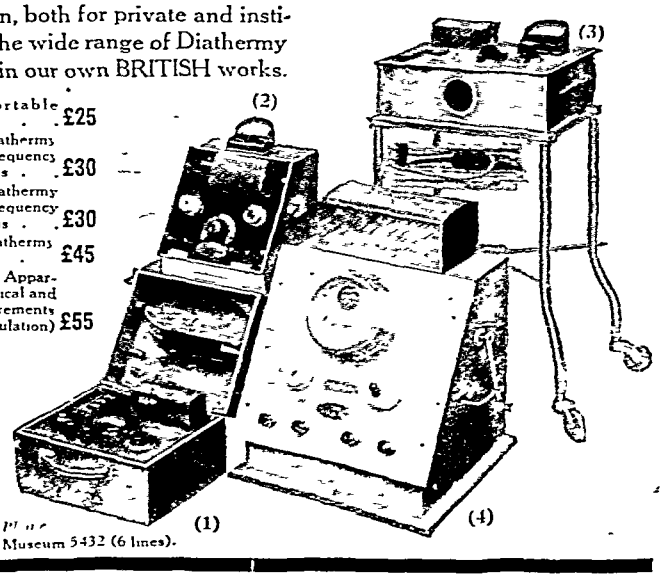
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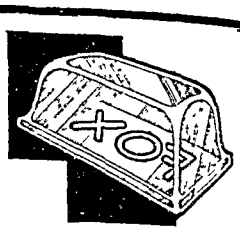
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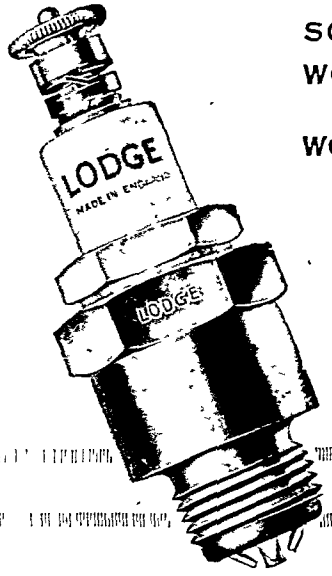
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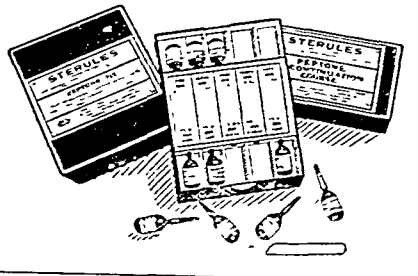
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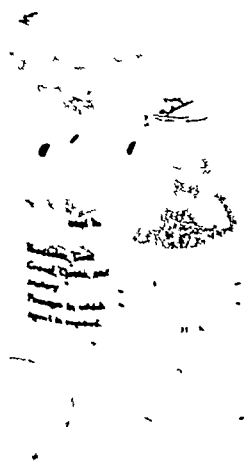
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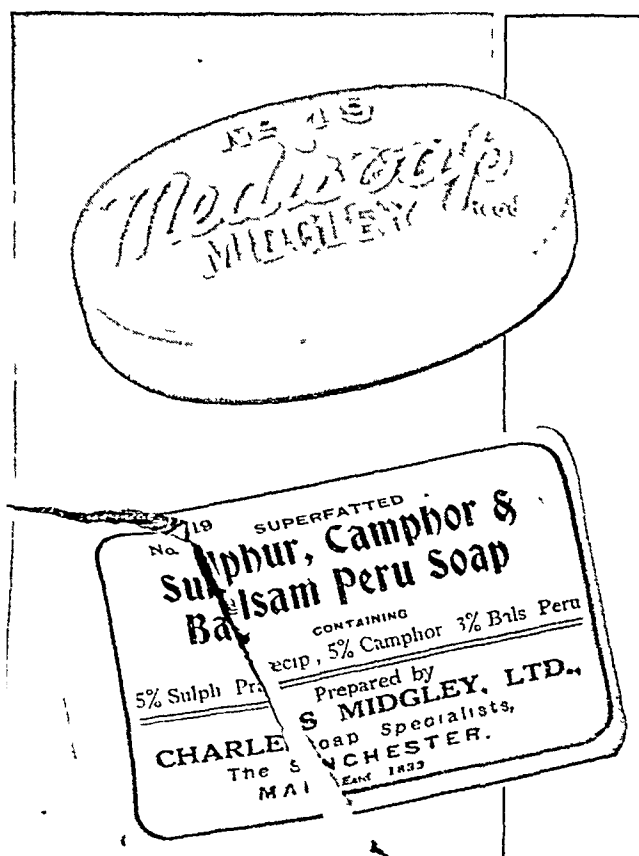
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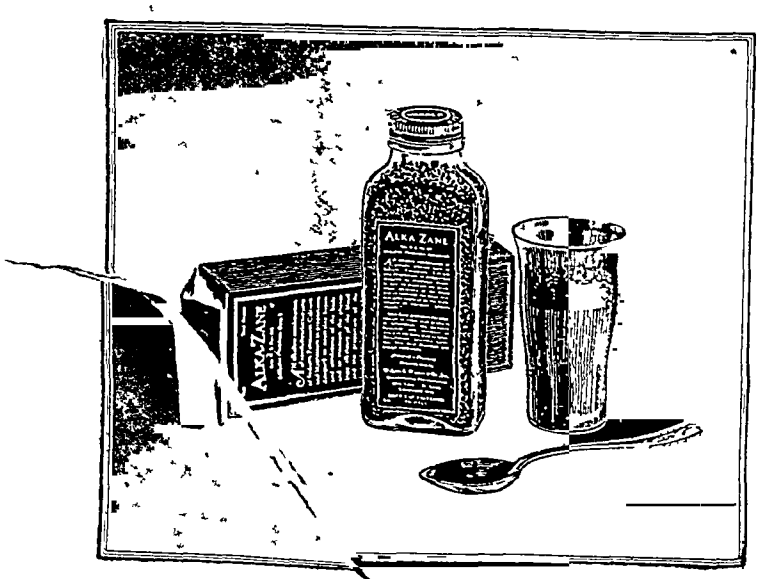
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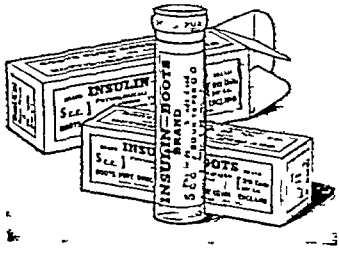
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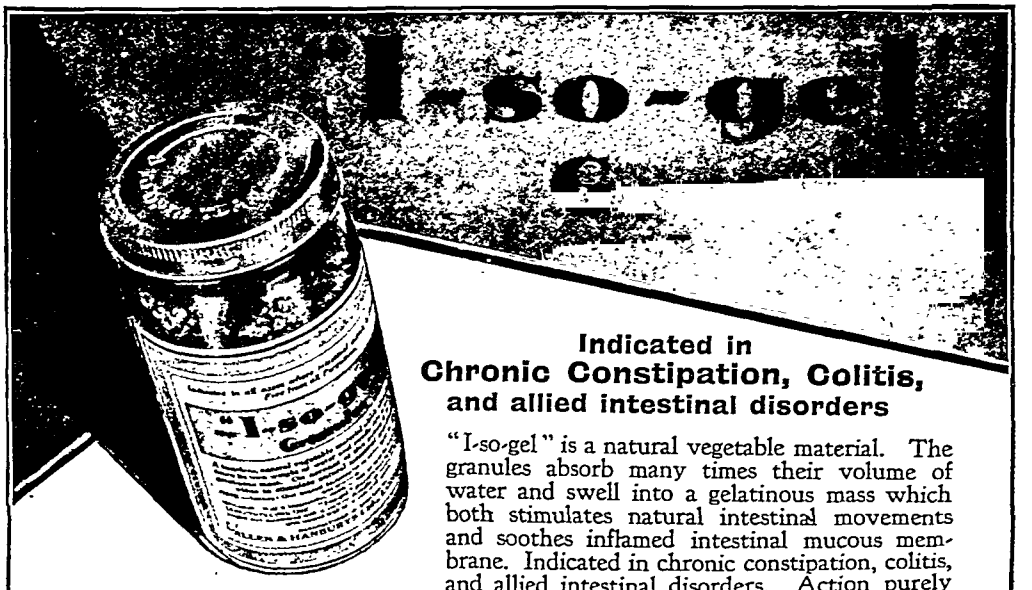
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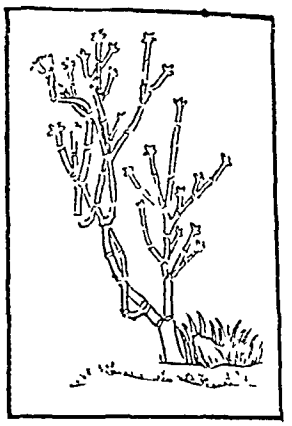
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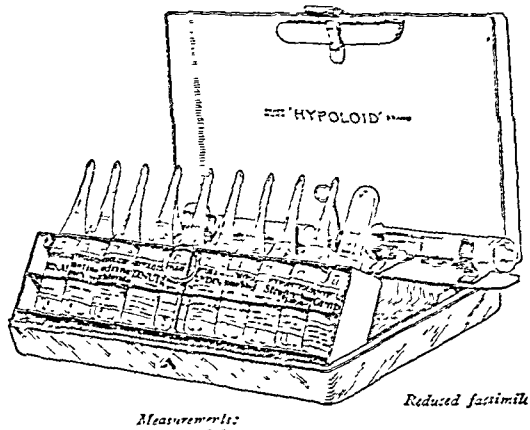
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British Medical Journal

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

LONDON: SATURDAY, SEPTEMBER 5th, 1931

EDUCATIONAL NUMBER, SESSION 1931-32

THE PRELIMINARY SCIENCES IN MEDICINE

A PLEA FOR A NEW OUTLOOK

BY

R. J. S. McDOWALL, D.Sc., M.B., F.R.C.P.Ed.

PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF LONDON; KING'S COLLEGE; EXAMINER IN PHYSIOLOGY FOR THE UNIVERSITY OF LONDON, THE ROYAL COLLEGE OF PHYSICIANS, AND THE ROYAL COLLEGE OF SURGEONS

hundred and fifty years ago there were many more stitutions teaching medicine than at present, they were r the most part places where instruction was given in natomy and materia medica, but only these survived hich had the foresight to become associated with schools science that provided the necessary instruction in emistry, physics, zoology, and botany. During the last entury there have been more and more additions to the me honoured teaching of Sydenham, which depended olely on clinical observation, until so great a part do ne sciences play in modern medical education that the edical student spends almost half his time in studying iem.

MEDICINE THE MAKER OF SCIENCES

The preliminary sciences themselves have greatly ultiplied. From anatomy, or the study of bodily tructure, has developed physiology, the study of func ion, and, from the latter, biochemistry, the chemistry f living processes, and pharmacology, the nature of the ction of drugs. We may recall that in the last three undred years medicine has taken a large part in the evelopment of chemistry and biology. All these subjects ave now become completely independent sciences pur uing knowledge for its own sake irrespective of the needs f medicine. Nor has medicine come to the end of making ew sciences. In the near future we may expect to see he subject of symptomatology, for example, receive more nd more attention. At the present time there is an normous hiatus not only between the sciences and clinical ork, but between medicine and surgery, and much would e gained if a systematic effort was made to take advantage f the opportunities of surgery and to bring the facts thus ollected into medicine. For example, some physicians alk a great deal about toxæmia and auto-intoxication ut how many have investigated the effects of a severe urn or simple septic condition upon the general health? ow seldom, indeed, is a blood pressure apparatus avail ble in a surgical ward, although surgery presents almost nrivalled facilities for the study of blood pressure. The ajority of surgeons have not the time, the training, or he incentive for such research, and much valuable in formation is lost. They are too busy—making a living! I prefer to call this new subject a science, for it is evident that a large amount of information would be obtained which would not necessarily be of immediate practical value. So far the subject has been studied by individual workers for their own interest, some clinical and some not.

GROWING INDEPENDENCE OF SCIENCES

As the early medical sciences gradually developed along their own lines the physician and surgeon lost touch with their work. If we can judge by the writings of thirty years ago, it would almost appear that a certain amount of resentment grew up on the part of the clinicians who saw their children develop into somewhat obstreperous adolescence and full of determination to make their subjects often at the cost of considerable material loss. At a complimentary dinner given to one of our most distinguished physiologists he recalled the difficulties of the relatively recent makers of physiology. Often the pay ment of the laboratory boy was the carcass of the rabbit used in the experiments. Medicine has good reason to admire and be grateful to those pioneers of medical science.

Twenty-five years ago it was fashionable for clinicians to scoff at the early scientific teaching to students. I have beside me an address by a distinguished physician who gives four examples of the futility of physiological teaching. Succeeding years have already shown how limited was his vision, for each of his 'futilities' has borne rich fruit in medicine. One was the then physiological curiosity—the current of action produced when a muscle contracts. Little did he realize that this curiosity would soon become the basis of electrocardiography. Again, a great surgeon once told the members of his class that now they had come to the wards they must put their science behind them. He was reproached by the local professor of physiology, but with characteristic wit and skill he escaped by replying 'Ah, my dear professor, I meant that they were to put it behind them as a *tu a tergo*.' It is pleasing to record that he has since indicated that he does believe in physiological science as a real force even in surgery.

In this connexion it is interesting to recall that some of the great advances in the sciences have not been followed immediately by their obvious application clinically. For example, surgeons continued to remove the whole thyroid for twenty years after Schiff had shown in dogs

that its removal resulted in myxoedema, while we read that Harvey's discovery of the circulation of the blood had no effect on current medical teaching, including that of the great Sydenham, whom, with Boerhaave in Leyden, we look upon as the parents of post-Renaissance clinical medicine. Fortunately such days are now remote.

SCIENCES NOT VOCATIONAL

At the same time we must not imagine that the preliminary sciences are entirely free from the indictment made against them that they do not serve medicine so well as they might, but let it be said at once the fault is as much that of medicine. All the preliminary sciences have grown enormously since they were introduced into the medical curriculum. The medical student receives a course similar to, but less concentrated than, that of the student preparing for a degree in science, and he has to make the best of it; the state of affairs obtaining in many universities bears very little relation to the vocational needs of medical students. It is generally agreed that this arrangement is in some respects ideal, or was so thirty years ago; but, as will be discussed below, how far this non-vocational outlook should be carried is now a very debatable problem, for the sciences are inclined to be taught at the expense of the vocational needs of medicine. This is particularly true of botany, zoology, chemistry, and physics, and is only to be expected when we remember that these departments have to consider many students who will pass on to fields other than medicine, and that the students who are going to continue these subjects in later life are regarded as having first claim.

It is only with the greatest difficulty that the material suitable for science students can be selected, and many strange anomalies exist. For example, the term chemistry in the intermediate examination in science of the University of London does not include organic chemistry, although this examination is the sole intermediate examination in chemistry for a student passing on to honours in physiology, and exempts from the whole chemistry examination for many degrees and diplomas. If those responsible for the science curricula find it difficult, how much more difficult it must be when non-medicals attempt to devise a course for a profession of which they know very little.

BOTANY A RELIC

Botany is an anachronism in the medical curriculum and a relic of the days when the doctor prepared his own drugs from plants, but its retention is insisted upon by those who, knowing little of the composition of a present botany course, feel that somehow it may have some cultural value. They do not realize that one of the chief considerations of botany teachers is to prepare students whose prospect is for the most part the teaching of botany in girls' schools, botany being one of the more polite subjects. In zoology the keynote is still the Huxley types, which are laboriously memorized, and from which the student rarely comes away with much idea of why Huxley emphasized these types or of the great principles of biology.

It cannot be denied that some of the details taught in botany and zoology have a relation to medical work, but in many instances they have little relation to biological principles and are merely crammed for examination purposes and should not be taught. For example, the details of flat and round worms could with advantage be deferred, since they are of greater interest in parasitology. In botany the details of moulds and bacteria could just as well be postponed until the student takes bacteriology. Teachers of these subjects are sufficiently astute to include such matters in the examination for obvious reasons, but they are quite oblivious of the psychological (really biological) consideration that isolated and unrelated facts are extremely difficult to retain except by those of Eastern descent with prodigious memories.

UNDUE DETAIL HARMFUL IN EARLY YEARS

It can indeed be claimed that not only is the requirement of such detail at this stage useless, but it is actually harmful, as it gives the student the idea that he must memorize rather than understand. Those of us who meet students later know that their outstanding characteristic is that they have committed to memory more than they really understand, and as a result their knowledge is in compartments. If they are asked a question in the way they have crammed it they answer volubly, but if the same question is turned the other way round they are strangely silent. This criticism is true, unfortunately, of much so-called education other than medical. It is probable that the old-fashioned natural history was much more valuable as a preliminary to medical education than what is taught at present, as it gave students a real interest in biological problems.

The physiologist, coming into contact with the students in their second year, is in the unfortunate position of seeing how completely inadequate is the first-year teaching. The student comes to him possibly with an excellent idea of the blood vessels of the frog or the bird, but with quite an insufficient knowledge of the mammal. There is a good deal to be said for the study of human anatomy before comparative anatomy. What a great advantage it would be if the mammal was more fully studied, especially with regard to relation of organs and the possible effects of erect posture. The gross errors committed in chemical physiology make it evident that if more attention was paid in the first year of chemistry to technique in weighing, measuring, and handling materials, instead of collecting scattered facts, an enormous advantage would accrue which would be of value throughout the rest of the student's life.

ANATOMY AND PHYSIOLOGY

Nor are anatomy and physiology free from similar defects. Some years ago it was my fortune to take part in clinical teaching, and it will be generally agreed that the student passes on to the wards insufficiently prepared. Under the present system it is practically impossible to avoid this. It would be almost possible to divide the facts of physiology into two categories: those which are essential to medicine and those which are not so essential—for example, the heart sounds and the measurement of the hydrogen-ion concentration of the blood. Suppose questions on these two subjects appear in an examination paper and the pass mark is the usual 50 per cent. It is quite common for students to know much about the latter question and nothing about the former, and, according to custom, to pass; yet it will be agreed that a student who does not know anything about the heart sounds ought not to be allowed to pass to clinical work, but in the science of physiology hydrogen-ion concentration is more important than the heart sounds. It is common for a man to fail in a final examination because he does not know an elementary fact, but this does not occur in the preliminary sciences, nor is it possible, because what is a necessary fact for the science of physiology is not essential to medicine, and vice versa. The student himself cannot be expected to differentiate.

This example brings home to us the difficulty of the present system of teaching the sciences in medicine. The relative importance of the same facts may appear quite different to the science concerned and to medicine; to look from the point of view of the science may be the better culturally but detrimental vocationally. That, at first sight, may not appear serious until it is realized that

student badly educated vocationally in the rudiments undamentally unsound throughout the rest of his course l wastes the time of his teachers and of himself. nicians who have to inculcate elementary anatomy and ysiology upon students in the wards appreciate this as ich as the chemical physiologist or pathologist who has teach students how to weigh and measure.

Having criticized my own subject, I feel that anatomy nnot escape censure. May one ask—Would even the erage surgeon be any the worse if he only knew half e anatomy required for the Second M.B.? Need he ow the relations of even such a large structure as the ominate artery, which he is never likely to have much terest in again except in the post-mortem room, not to eak of many details about bones? Many students who ve not a good visual memory have the greatest difficulty amassing the vast amount of detail required; moreover, is promptly forgotten. We have only to ask ourselves w much we remember of the anatomy we knew to alize the truth of this statement. Surely it would be great advantage if more time was spent on the study movement. The average doctor might then be at least little more capable of treating a multitude of football juries which at present find their way too often into te hands of bone-setters and osteopaths. I know that am raising my voice against a time-honoured tradition, nd we all must honour the tradition which has brought s successfully, thanks to Vesalius and his successors, ut of the Dark Ages when anatomy was at a very low bb. In preserving the Vesalian tradition in teaching o-day, however, we must be careful that we do not lace ourselves somewhat in the position of those who urned Servetus at the stake because by discovering the ulmonary circulation he struck a vital blow at the great nd honoured tradition of Galen which had stood unallenged for actually a thousand years.

Why not let us have a 75 per cent. pass mark on a aller field of knowledge and a 40 per cent. pass mark matters less essential vocationally? This would unoubtedly lead to a generally increased proficiency, hough it might make it more difficult for examiners to fferentiate between the best candidates. The present stem by which an enormous amount of information may required leads to a vast amount of gambling which has ade it necessary for certain questions to be compulsory en in the London M.B. Students, for example, in ysiology often find it more profitable to omit reading e nervous system altogether, especially where there is me choice of questions. In this connexion we should member that a course in Medicine is different from a urse in Arts, or even Science, as it is for many students eir sole preparation for the task of treating patients, nd it is of national importance that there should be a inimum all-round efficiency, and that the time of train-g should be used to the best possible advantage.

It is easy to criticize, but in doing so we must not be nfair to those who have gone before us, and we must member that the general lay-out of the medical rriculum was made when many of its subjects were ry much smaller than they are now. All was then ne for the best. It may be said that it is educaonally good for the student to learn a great deal of hat is really unnecessary, but are we entitled to teach uch that is unnecessary while the curriculum is so overowded that he has scarcely time to think and while we ve to omit a great deal of what would be really useful general practitioners of medicine? Even if we may ach him some facts that are not essential, is it not best teach those things which are in most immediate relationnp to his later work? If he must learn about iron, is it t better for him to learn about the function of iron as emoglobin in the body than to learn how the mineral is obtained from natural ores and converted into steel, however interesting it may be? We cannot make the medical course longer, for it would be an uneconomical proposition not only financially, as it would reduce numbers entering, but because there is a limitation to mental capacity; the evidence is very complete, and indeed it is our common experience that we reach a stage when we can only accumulate new information at the expense of some which we already have.

There is very little doubt that the existing methods of teaching the preliminary sciences merely give the student a loathing for them which may never be dispelled, instead giving him an absorbing interest in the wonderful processes of nature on which his future knowledge will be based. The preliminary sciences have many fascinating problems in common with medicine which are of the greatest possible educational value, but if they are taught at all they form a very minor part of the teaching. In biology there is the problem of heredity, the relation of structure to function and adaptation to environment. In chemistry there are the great problems concerning the passage of substances through membranes; their study would afford excellent training and would also be useful, but they are almost omitted from the usual chemistry course. Such examples could be multiplied indefinitely, but those given serve to indicate that the preliminary sciences might serve medicine more adequately without losing their own dignity.

PURE SCIENCE NECESSARY IN MEDICINE

During this discussion we must be clear that we do not confuse research in the medical sciences with teaching, for there is much evidence in medicine that purely scientific research has proved extremely useful. When von Mehring and Minkowsky removed the pancreas *to see what would happen* they did not suspect that their findings would lead to a treatment of diabetes, nor did Halliburton and Rosenheim, when they studied the chemistry of nervous tissues, imagine that the facts which they collected would lead to a cure for rickets. We may recall Sprat's *History of the Royal Society*, in which he says:

> "If they will persist in contemning all experiments except those which bring them immediate gain and a present harvest, they may as well cavil at the providence of God, that He has not made all the seasons of the year to be times of mowing, reaping, and vintage."

The sciences must be taught to the medical student, because the methods of science are the methods of medical research, and they teach him to think clearly and logically. But they must not and need not be taught *at the expense of his vocation*, and in most instances the principles of a science can be taught, using examples which are of the greatest medical interest and importance. It is not enough to give a medical student a smattering of a science and to cram him with details for this or that examination. That is not education, although it is what commonly goes by that name. The student must be taught primarily to think and to weigh evidence. It would be well if every ten years the syllabus was reviewed to ensure that this principle was being maintained, for there are constant changes in the possibilities of correlation between the preliminary sciences and medicine. It is doubtful if the teachers of these sciences are always capable of judging what should be taught, as they are often not medically qualified; frequently they are juniors in scientific departments waiting for posts in pure science who may have little real interest in medical requirements. There is an increasing need for good chemists, physicists, and biologists who will devote their full energy to the needs of medical teaching and research rather than to pure science. In Scotland some of the universities are already provided with senior posts for this purpose.

As the years go on more and more competent teachers will be required in the preliminary sciences, for these sciences are gradually extending into the clinical years. The establishment of full-time chairs of medicine and surgery is an indication of the requirements of the sciences in more intimate association with the study of disease. For example, our greatest need to-day in the investigation of cancer is a more comprehensive knowledge of the fundamentals of normal growth and repair; and thousands of persons die annually from surgical shock because of our ignorance of the control of the circulation of the blood.

SCIENCE IN THE SCHOOLS

One of the important problems to-day is how far science taught in schools can replace that taught in the first year of the medical curriculum. A great complaint regarding the teaching of the sciences in schools is that the teachers have to cater for a number of men whose intended occupations are very diverse, and it cannot be expected that the science taught can have any particular bias. It should, however, become generally known that, quite apart from bias, it is most unwise for medical students to take their chemistry and physics at school, especially if they do no biology at the same time, since they find themselves for a year with biology on their hands. The universities have been placed in the unfortunate position of receiving students some of whom have studied chemistry and physics at school and some who have not. It becomes necessary to provide for both, and much additional teaching is required. This reacts on the staff, since excessive teaching reduces time for research and makes the ablest men avoid such posts. It would probably be best if Medicine took a firm stand and established a subject of medical chemistry which included not only organic but also physical chemistry, a subject which is becoming increasingly important in the study of physiological processes. Further, intermediate chemistry for a science degree as it at present exists should not be allowed to exempt from medical chemistry, which would then be much more adapted and useful for medical needs. Let it be said at once that this medical chemistry would not in any way be easier than intermediate science chemistry, rather the reverse. Then might follow medical physics and medical biology, which would be a much more useful introduction to medicine than diluted science courses. The revised curriculum of the Conjoint Board is a definite step in the right direction, but it would have been better still if it had not allowed details—even details of medical interest—to obscure the great biological principles which are so important in real education.

RECENT MEDICAL ADVANCES

The great advances in medicine in the last fifty years have shown an interesting grouping. First came the study of pathology, which from investigations post mortem gradually established certain principles by which primary disease in one organ may affect another, and by which it was shown that certain symptoms probably depended on certain pathological lesions. In these days we are inclined to forget the pathologists of fifty to a hundred years ago who, with the aid of often very indifferent microscopes, laboriously searched the organs of the body for evidence of disease, the cause of which was unknown. Often their researches were unrewarded, but with each new advance we are beginning to realize what valuable work they did. But the great work of the pathologists was overshadowed in the later part of the last century by the bacteriologists, who followed in the footsteps of Lister and Pasteur. The bacteriologists demonstrated the bacterial origin of many diseases and treatment on anti-bacterial lines.

In the post-war era the advances have been due to physiology and biochemistry, and the discovery that a large amount of disease can be elucidated by the investigation of normal function. Unfortunately, as a physiologist, I cannot claim that all these advances have been made directly by professional physiologists. The discovery of the successful treatment of diabetes, pernicious anaemia, and rickets was not made by physiologists, but they depended entirely on methods of investigation which had been elaborated in the physiological and biochemical laboratory. It is almost impossible for any new investigation into the causation of any disease to proceed without frequent resort to recent physiological and biochemical literature, and, as we have indicated, the day is dawning when a systematic study of symptomatology with a basis on these subjects will take its place as an indispensable preliminary to the study of medicine and surgery.

THE SCIENCES BENEFIT STILL FROM MEDICINE

It has been said that the art of medicine is national, but that the science of medicine is international, because it stands on the firmer basis of the preliminary sciences, which have certain conventional fixed points. Nothing is more interesting or surprising than to learn how very differently the practitioners of different countries treat many complaints. We no longer look upon the preliminary sciences as being preliminary except in time; they are really auxiliary. We need chemists, physicists, and biologists interested in the problems of physiology and pathology just as we need experienced anatomists, physiologists, biochemists, and pathologists investigating the problems of medicine and surgery. Nor will the sciences suffer thereby; physiology and biochemistry have still much to learn from medicine and surgery. Our knowledge, for example, of carbohydrate metabolism owes much to the study of diabetes; our knowledge of the ductless glands and of the nervous system owes an enormous amount to clinical observation, and the astuteness of the clinician will always be a potent factor in physiological advance. In turn physiology and biochemistry enrich the subject of chemistry and even physics. The oxidation of fats in the body gave chemists a new conception of oxidation processes, while the principle of the string galvanometer, invented by a physiologist, is now extensively used in physics.

It is becoming increasingly common for medical students to supplement their training by taking a science degree in physiology, usually immediately after anatomy and physiology. A physiologist may be accused of emphasizing his own subject, and to a parent the extra year may appear an extravagance. A glance at the subsequent records of students who have taken this additional course shows most clearly how they stand out beyond their fellows, while it is interesting that many of the great leaders of medical science have been among them. Judging by results, then, it can be stated that the extra year is a good investment. The staffs of our universities are recruited largely from such men, and it is they who, by their knowing a little more of the sciences than their colleagues, may be expected to make use of them in the interest of medicine.

THE DUTY OF THE ADMINISTRATOR

Medical education has been slowly evolved, and those who guide it have a great responsibility. It is they who have to say, not that this or that piece of knowledge is valuable, but whether in a given time it is profitable to learn this piece or that; whether, for example, it is more profitable to learn the structure of a plant root, however interesting, or to require a higher standard of knowledge

regarding growth and repair, or to learn why a cardiac patient is breathless

Too often the faculties concerned simply allocate times to definite subjects, and leave the syllabus to the teachers concerned The variety of teaching evident from the syllabuses of various schools indicates the chaos which exists In medicine we know well that when there is a variety of treatments for the same complaint there is something very unsatisfactory about each treatment The difficulty, of course, is that those concerned with final year subjects are a little diffident in advising on subjects about which they admittedly know practically nothing, but many first year teachers would welcome some better attempt to advise them more definitely than is done by the General Medical Council, which is also too remote to give adequate advice In ignoring the syllabus a duty to the medical student is shirked The medical student is the future custodian of our profession and he must not be allowed to muddle through, guided more by the vested interests of the departments concerned than by the real need of his profession He must be encouraged to develop his sense of values and to weigh evidence, in the hope that he will one day add his quota to the sum of human knowledge, and be all the more capable of preventing and alleviating human suffering

Medicine must put its house in order, but those who are most immediately and personally interested in the advance of medical science are seldom the administrators Each administrator might well ask himself, Could I improve the early training of the medical student to equip him better for my own particular specialty? This question he could invariably answer in the affirmative and if he tries to imagine the other specialties he can easily realize that vast changes in the curriculum are really needed Probably the best preliminary science course could be secured if a specialist in each branch of medicine, of surgery, and of public health, well versed in research in his subject as well as in the applied side, was asked what he needed to be taught in the best interest of his specialty, and if these were subsequently welded together then could be added the subjects of cultural value at suitable periods

It has often been suggested that the student would appreciate the science more if he did some clinical work in his early years, but this is probably not so Some schools allow, or used to allow, the men to attend surgical out patients before they had completed anatomy and physiology, but there can be no doubt that the clinical work proved too strong a distraction to men who were visiting for the first time the pleasure of doing something useful, and was definitely detrimental to their more academic studies Experience however shows that the junior student, like the general practitioner, is appreciative, as shown by attendance at voluntary classes, of properly chosen instruction in the preliminary sciences

CULTURE IN MEDICINE

One word about culture in medicine Doctors have often been rather sensitive about being called the worst educated profession, although with the increasing number of men whose education is chiefly scientific the accusation loses much force The term "education" is surrounded by certain conventional ideas born of the school room and in the average university it is bolstered up by vested interests To consider an Arts professor who knows nothing of the natural sciences, or of the functions of his own body, or very little of human nature and quality better educated than a doctor is simply convention and nonsense, for if the limitations of time have made it necessary that the doctor is weak in his classics or history, or his literature, he has gained a vast and varied knowledge of nature which would be of inestimable value to his Arts colleague Probably the best purely cultural subject for the medical student is the history of medicine, by which he is brought to learn to be grateful for his heritage to learn of the years and years of patient endeavour which have led to the discovery of facts which he now considers commonplace, and to realize that he, too may make a modest contribution, whatever his sphere It is a most remarkable fact that medicine is one of the few professions which does not make an elementary study of its history obligatory on those who intend to adopt it, to maintain its traditions, and to reap its rewards

ECONOMICS IN MEDICINE

The preliminary sciences of medicine have to face another problem, which is one of economics There is a Scottish saying that 'the man who pays the piper calls the tune Medicine is entitled to call the tune, and history shows full well that it is generous to the sciences which serve it so well The present strong position of the medical sciences with their associated laboratories is due largely to medicine Medicine realizes full well that the independent anatomist, embryologist, histologist, physiologist biochemist, and pharmacologist justify their existence because of their researches, *provided* they do not forget altogether that they owe much of their welfare to the medical student

This problem is not confined to the medical sciences, but concerns also the older sciences of chemistry and physics, which have also tended to forget the hand that feeds The scientific industries found that the universities were not sufficiently elastic in their outlook, and largely ignored their needs, with the result that they themselves have established laboratories, often better equipped and with staffs better paid than in the universities and so these laboratories have become a strong counter attraction to university life Even the great pharmaceutical chemists have done likewise, to the detriment of the pharmacological laboratories in our universities To think of what many of our scientific departments might have become had they been more willing to assist industry makes us weep for the land of the might have been It is not too late There is no reason why the worker in applied science should not work side by side with the worker in pure science, indeed, both would gain considerably Were the universities really willing as a whole, industry could be made to realize that it is much more economical to endow workers and laboratories in the universities than to establish its own laboratories, in which the workers are more isolated and have not the advantage of discussion of their problems with the diversity of persons to be found in a university

The co operation between science and industry in the universities is much better seen in some other countries than in our own, and of recent years workers in industrial laboratories have made important contributions to pure science We shall see in the near future the foundation of schools of industrial science which will compete with universities for students, if the universities do not recognize this danger

COMPETITION BETWEEN DEPARTMENTS

Unfortunately, for similar reasons there is arising a competition among departments of medicine I refer particularly to the establishment of medical and surgical departments with extensive laboratories which correspond to the laboratories of industry In these departments is duplicated a large amount of apparatus in part time use in physiological and biochemical departments and indeed I know of some medical departments infinitely better equipped in physiological apparatus than the physiological laboratory in the same school But what is still more serious,

the senior departments, by offering greater emoluments, are having first option on the few men willing to take up academic life. In a medical department they may do exactly the same research work as in a physiological department, but they are better paid in the former. Biochemistry, which might be so much more valuable, has undoubtedly suffered particularly from the anxiety of non-medical biochemists to demonstrate their independence of medicine, forgetful of the fact that *every department of science, unless endowed, lives upon an applied science, through which it serves the community*. Biochemistry, it is true, has applications other than medical, but these are insufficient to induce students to study this new science in numbers large enough to maintain it. The result of this attitude of the biochemist is to discourage the foundation of chairs of biochemistry. The hospitals appoint their own biochemists to supply their needs, and academic biochemical departments are scarcely cognizant of the problems which present themselves in the wards. How much better it would have been for biochemistry and for its students if these hospital biochemists had been on the staff of departments of biochemistry. Now biochemistry has to content itself by attempting the impossible—to take over certain chemical parts of physiology. It is beginning to consider that digestion and metabolism, and even more, are its own particular preserve, and appears to imagine that these processes can be studied with little reference to the body as a whole or without any knowledge of the nervous system which controls them.

An unduly independent attitude of the preclinical sciences must lead to their own impairment, for they cannot escape from the ordinary economic laws. The lack of sympathy between purely scientific and medical departments is, however, not only of growing economic importance, but creates a vicious circle which tends to increase lack of sympathy, and the student is very adversely affected. At present the organic chemist teaches certain methods for certain tests and estimations; these are re-taught in another way by the biochemist, and again in still another way by the hospital biochemist. The medical student naturally considers that the methods which have the nearest relation to practical affairs are best, and does not have his opinion of his earlier teachers enhanced. This opinion he will never lose.

It would be well if the words of the late A. D. Waller were better known. They were spoken of physiology, but are applicable to all the medical sciences.

"Physiology must be studied for its own sake, but the physiologist whose immediate motive is *the want to know* may not deny his debt of service to the community of which he forms a part and whose services he enjoys, and the channel through which he can repay some part of that debt lies first of all in the service he may be able to render to the practice of medicine, to the knowledge and power of the physician whose immediate motive is the *want to help*."

THE PROFESSION OF MEDICINE

INTRODUCTORY

In accordance with long-standing custom we publish now, some weeks before the opening of the winter session at the medical schools, a special Educational Number. The form and contents of this annual issue have been modified from time to time, but its purpose remains unchanged, and the seasoned medical reader must expect to find here a great many familiar facts and phrases. The first object of the Educational Number is to give prospective students and their parents full information about the steps that must be taken in order to become a registered medical practitioner. The second object is to assist those wishing to know what a medical career has to offer, and others who, having already decided to study medicine, are uncertain about the line of work for which they are best suited. Our purpose is to supply information rather than to offer advice; but, as in past years, this introductory article gives an opportunity of reviewing some aspects and tendencies of medical study and practice, and of directing attention to a few points which might not occur to anyone without some experience of the medical life.

Intending students will find in the pages that follow an account of the course of training required of them, the places where it can be obtained, and the universities and other licensing bodies which test the knowledge gained and confer degrees or diplomas entitling successful candidates to become legally qualified medical practitioners. Sections are included also on post-graduate medical study, on the higher qualifications, both general and special, and on the many and varied spheres of work open to registered medical men and women at home and abroad. The details given are founded on official information, and arranged along the customary lines.

It may be well to repeat here, what has often been said before, that the aim of a medical education is to impart not only the essentials of medicine, but also the right principles and methods of adding to knowledge after qualification. Such teaching, to be effective, presupposes a good general education. Next in importance is a good scientific education—a thorough grounding in the basic principles of science. Upon these the student of ordinary intelligence and industry can build up an adequate technical equipment for the practice of his profession. An unfortunate tendency in studying the preliminary subjects is to acquire a mere "cram" knowledge, quickly forgotten after the particular examination is passed. These sciences interlock with each other and with the later subjects, and, properly approached, they give a drilling in exact methods and vigorous reasoning which will bear immediate fruit in the clinical part of the curriculum. Chemistry, physics, and elementary biology prepare the way for anatomy and physiology, and so for medicine and surgery and obstetrics. The curriculum is not perfect. It is always undergoing revision, to keep pace with new knowledge and improvements in practice. But all authorities are agreed that the preliminary and intermediate sciences form the only appropriate introduction to the study of clinical medicine, and attempts are made from time to time to bring the teaching of these subjects into closer relation with the life-work of the practitioner.

PORTALS OF THE PROFESSION

The obvious goal of every student is the entry of his name in the *Medical Register*, which is the official statutory list of qualified medical practitioners kept by the General Medical Council. There are many ways in which admission can be obtained to the *Register*. No fewer than twenty-seven bodies—eighteen universities and nine corporations—either separately or jointly issue registrable qualifications; and the number of teaching institutions is even larger. Nevertheless, although in this country we have no single State examination in medicine—no "conportal system"—the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same for all students. As, however, the individual teach-

ing and examining bodies have different standards and requirements, the choice should be made early, so that a definite plan may be followed.

The decision to study for a university degree in medicine should, if possible, be made by the time a boy or girl is 15. A matriculation examination or its equivalent should be attempted without delay, and the parent should ensure that the special requirements of the medical faculty of the selected university are fulfilled. As soon as this examination is disposed of work should be begun at school in the subjects of the First M.B. Few house-masters at public schools seem to be adequately informed about medical requirements under the revised curriculum, and it is doubtful if all schools are fully competent to meet the varying requirements of different authorities. Parents should therefore make inquiries on their own account in order that valuable time may not be wasted during the last year or two at school. This applies to all prospective medical students, but with special force to those seeking degrees at Oxford or Cambridge.

The conditions with which those who wish to enter the profession must comply are regulated by the General Medical Council, which is a statutory body set up under the Medical Acts; a summary of its functions and requirements is given at page 419. Many changes have lately been made in the medical and pre-medical curriculum, and this section, as well as the article on Professional Study and Examination, should be studied with care. It is the business of the General Medical Council, so far as possible, to see that a suitable kind of training and the requisite degree of knowledge are secured to the student, and it is the business of the medical schools and examining bodies to give the training and test the knowledge in accordance with the requirements of that Council. Every student, after passing examinations in the subjects of general education and in the preliminary sciences of chemistry and physics, must take a course of training at a recognized medical school, covering a period of at least five years, but usually extended to six years or more.

Examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain medical corporations in England, Scotland, and Ireland. The requirements of these licensing bodies are summarized elsewhere under separate headings. One of the functions of the General Medical Council, besides that of keeping the *Medical Register* and maintaining discipline within the profession, is to make sure that the tests at each stage do not fall below a certain standard, and that the students examined have undergone prescribed courses at approved institutions. Successful candidates eventually receive either degrees, in the case of a university, or diplomas or licences, in the case of a corporation; these qualifications entitle them to claim insertion of their names in the *Medical Register*. Every student, as soon as he obtains his qualification to practise, should at once register; otherwise he cannot hold a public medical appointment, or sign any certificate required from a legally qualified practitioner (such as a death certificate), or recover professional fees in a court of law.

Holders of diplomas and licences once made up the great majority of all medical men, especially in England and Wales. But universities have greatly multiplied during the present century, and so many practitioners are now graduates in medicine that a student at the threshold of his career will do well to consider the advantages of possessing a degree, though it may be desirable to take also a diploma or licence. The medical degrees (M.B., M.D., etc.) granted by the universities in Great Britain and Ireland are mentioned among the particulars about each university printed in later sections.

COST OF MEDICAL EDUCATION

To those who have already decided to send their sons into the medical profession, no less than to those who are weighing the matter, a few words on the cost of medical education may prove helpful. For the ordinary student this resolves itself into the cost of the training at medical school and hospital, and the cost of living during the five or six years of the curriculum. The expenses under these two main headings vary considerably. Besides differences in the charges made for instruction, there are differences in examination fees, as well as in the fees for certificates of qualification, and those who seek the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. Again, not all students have the knack of imparting what they know to an examiner, and every setback due to failure in the examination room or to illness means added expenses. School and examination fees, together with the cost of board, lodging, clothes, and recreation, form the largest items of expenditure, and to these must be added the money spent on books, microscope, instruments, and so forth.

Since professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living varies much in different parts of the country, while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession should be prepared for an outlay of at least £1,500. Something between two-thirds and three-quarters of the whole amount would probably be spent on maintenance, and the rest in fees, etc., for tuition and examination. The fees charged by the different schools and licensing bodies are stated in the paragraphs relating to each on other pages of this issue. When making an estimate of the probable outlay, the many helps available nowadays for the reduction of expense should not be ignored. At nearly all the medical schools more scholarships and money prizes are offered now than in the past; at the Scottish universities bursaries are numerous; and the Carnegie Trust (whose regulations are summarized at page 432) gives pecuniary help to many Scottish students. The main thing to bear in mind when considering costs is that, as compared with other professions, the period of training in medicine is long, and for most students expensive. Further guidance on this matter will be found in a memorandum,[1] drawn up by the Registrar of the General Medical Council, on the procedure to be followed in order to enter the profession. This pamphlet gives much useful information, including a comparative table of the cost of study and examination at the various institutions.

Since medical students are not commonly the sons or daughters of wealthy parents, it is usual, before setting out upon this long and exacting course of study, to weigh, not only the cost, but also the prospects. The youth and the girl of to-day, when reckoning up their chances in any calling, will wish to know the probable numbers of their competitors for the work that is waiting to be done.

NUMBERS OF MEDICAL STUDENTS

The following brief survey should be read with the notes and tables printed at page 418 on the numbers of registered students and practitioners. More new students mean more new doctors five or six years later, though, as the chart shows, there is in normal times a fairly constant wastage.

At the close of the last century the annual entry of medical students in the United Kingdom had been on the average about 1,800, and then for the next thirteen

[1] *Memorandum on the Procedure to be Adopted by those who desire to enter the Profession of Medicine, with Notes on Costs and Prospects.* General Medical Council, 44, Hallam Street, Portland Place, W.1. Price 1s. post free.

years it stood at about 1,400. During the war period, though many students left to serve with the Forces, the entries grew steadily larger, so that in 1918 they were 2,253, and in the following year, when demobilization was in active progress, they were 3,420. In the next five years the numbers rapidly fell, but from 1923 to 1928 they remained at a fairly steady level rather below the immediate pre-war average. In 1924 the entries were 1,043; in 1925, 1,070; in 1926, 1,260; in 1927, 1,214; and in 1928, 1,362. In 1929 they rose again to 1,502, and last year to 1,792.

The excessive entries during the post-war inflation period, if they had gone on long enough, must have led to overstocking of the profession. In the past decade the numbers of new practitioners registering each year have greatly exceeded the usual pre-war figure of eleven hundred or so. The large additions to the profession in recent years brought the total number of names in the *Medical Register* up to 55,291 at the end of 1930. This is upwards of ten thousand more than the figure for 1920, nearly fifteen thousand more than that for 1910, and nineteen thousand more than that for 1900. The population of the British Isles has not increased at anything like that rate during the same decennial periods, and the ratio of doctors to inhabitants is therefore much higher now than ever before. It should be borne in mind, however, that the scope of medical practice has enlarged considerably in the meanwhile, and many fresh openings for professional work have followed advances in diagnostic, curative, and preventive methods, and the rapid development of administrative medicine. On the whole, it appears that the medical profession of this country is now large enough, but not yet overstocked.

AFTER REGISTRATION: CHOICE OF CAREER

The student, having passed all his tests and placed his name on the *Medical Register*, assumes the privileges and responsibilities that go with legal qualification. But after registration there is usually a period of transition between pupilage and established practice. This time may be put to the greatest advantage by serving as house-physician, house-surgeon, or casualty officer in a hospital, by working as assistant or locumtenent in private practice, or by seeing something of the world as a ship surgeon. As a preliminary to practice of whatever kind, a year or more spent in junior hospital appointments is a most profitable investment.

If his mind is not made up already, the newly qualified practitioner has now to consider in which branch of the profession he can find a suitable outlet for his abilities. The choice is very wide, though the decision is often dictated rather by opportunity than by a nice balancing of tastes and talents. Among the great variety of paths open are general medical practice in town or country; Government service at home or abroad, including the medical branches of the Navy and Army, and Air Force, and the I.M.S.; public health appointments and other administrative or official posts; institutional work, such as that of the municipal hospital, the mental hospital, the fever hospital, and the sanatorium; academic positions in the various schools of medicine; and special work in scientific research or in one of the many subdivisions of clinical medicine and surgery. Most of these careers are discussed in some detail in the later sections, but a few words may be said here about general practice and the work of a consultant or specialist.

Further information about such matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association.[1] This comprises articles on openings for members of the profession; on practical aspects of medical work; on registration and the privileges of practitioners; on practice under the Insurance Acts; on post-graduation study and special diplomas; and on medical defence societies. The section dealing with practical aspects of medical work gives advice on professional conduct, on common medico-legal difficulties, and on the relations between doctor and patient and one doctor and another.

[1] *Handbook for Recently Qualified Medical Practitioners* British Medical Association, Tavistock Square, W.C.1. (3s. 6d. net; post free 3s. 9d.)

GENERAL PRACTICE

Three-quarters at least of those who pass out of the medical schools become "family doctors" sooner or later. The work is onerous and the pay too often inadequate; but it is a full life rich in human interest, and many of the very best students, now as formerly, choose general practice as a career. It is usually entered in one of three ways. The newcomer may take a house, put up a plate, and wait for work to come to him; he may buy the goodwill of a practice rendered vacant by retirement or death; or he may become a partner in an established firm. The first is considered more risky than the second, and the second than the third. A well-managed partnership of three or more has this advantage over single-handed practice, that it allows each partner leisure for recreation and for keeping up with the progress of medicine. Success in private practice demands a great deal of knowledge beyond that gained at the medical schools, and hence a man is more likely to be accepted as a partner, or to do well on his own account, if he has already some experience as an assistant or deputy.

The general practitioner cannot hope to be an expert in every department of medicine, but he should have a more comprehensive outlook than the man whose life is devoted to perfecting himself in the technique and minutiae of one subject. Both types of workers are indispensable in these days: they are complementary. The good general practitioner possesses powers of perspective in disease that are denied to the specialist, and he must remain not only the most useful and encyclopaedic working unit of our profession, but also the member of it to whom, at least in the first instance, the public, for its own good, should turn for relief in sickness and guidance in maintaining health. The opportunities he has of seeing his patients for minor ailments as well as for serious illnesses; his acquaintance with their family history, habits of life, social circumstances, and many other personal details learnt only after long and confidential intercourse, give the "G.P." just that knowledge which enables him to treat the patient and not merely the disease.

The value of the work done by the family medical attendant is better appreciated now than in the past. In its recent Proposals for a General Medical Service for the Nation[1] the British Medical Association puts the matter in the forefront. It states as an axiom that "the medical service of the community must be based on the provision for every individual of a general practitioner or family doctor"; and the whole series of proposals rests on this as a fundamental principle. In regard to the prevention of disease, on which the Association lays great stress in its memorandum, the general practitioner has an increasingly important part to play. Unlike the doctor of yesterday, his time is not now wholly spent in treating developed disease in individuals. As knowledge accumulates he will come more and more to study early disorders of function and the preservation of bodily and mental health in varying circumstances. While this is all to the good, it cannot be denied that encroachments on private medical practice are perpetually being made under the auspices

[1] *Supplement to the British Medical Journal*, April 26th, 1930. The memorandum in its revised form is also issued as a separate document by the British Medical Association.

of the State or of the municipality or of voluntary bodies, and that official requirements and administrative checks imposed by public authorities tend to increase.

"We are living in a transition period, and new methods of medical service are being created. Some plan must be devised whereby the family physician will remain the foundation of medical service, for his knowledge of the patient and his surroundings and his experience in such intimate and personal contact with patients makes him better qualified not only to diagnose and treat but also to direct the management of the case. His obligation is a serious one. No position in our social make-up requires a person of character and industry and deep appreciation of his moral responsibility more than does that of the general practitioner of medicine. With these attributes he has been a great success and will continue to be for a long time to come."[1]

The national system of compulsory health insurance, now more than nineteen years old, has had a profound influence on general medical practice in this country. The Insurance Acts provide domiciliary medical attendance for some sixteen million persons, and more than 17,000 members of our profession undertake responsibility for the medical care of this vast section of the community. Thus the bulk of the general practitioners of the country now give, in large or small measure, medical attendance and treatment under a system embracing almost the whole working population. These practitioners, by placing their names on the panel (or medical list), signify their assent to the terms of service set out in the Medical Benefit Regulations and other relevant provisions.

CONSULTANT AND SPECIALIST PRACTICE

The term "consulting practice" comprises in ordinary usage the work of the general physician, that of the general surgical consultant or operating surgeon, and that of the gynaecologist and obstetrician. These are the three large divisions of consulting practice, as distinct from general practice, which, though they imply some restriction, yet call for a wide range of activity and outlook, in contrast with the smaller ambit of a "specialty" in the narrow sense. Of these main divisions the third is obviously the most limited, but on several grounds it can claim to rank as something more comprehensive than the other specialties. No sharp line can, however, be drawn between consulting practice and specialist practice. Most general consultants, whether medical or surgical, are specialists in some branch of their practice, and most specialists are consultants in the sense that their work largely comes to them through the recommendation of general practitioners, with whom they act (or should act) in a consultative capacity. In any case, whoever holds himself out as one or the other, or both, is assumed to have knowledge and skill above the ordinary.

The successful pursuit of a specialty is hard to achieve except by the aid of appointments to hospitals, particularly those with medical schools. These posts are much sought after, and the time of waiting for a vacancy may be long. It follows, then, that the would-be specialist, since he can scarcely hope at first to pay his way by the exercise of his specialty, must either have private sources of income or be prepared, by teaching or in other ways, to make ends meet. Competition in this branch of practice is very keen. Expenses are heavy, and the young consultant or specialist may have to go through a long period of training and waiting before he makes an income; but on the other hand success, when it comes, is liberally rewarded.

"In the past the lean years of the waiting period were so difficult financially that it was often said that only men with private means could hang on, especially as physicians, with a view to consulting practice. There were, however, many exceptions then; and now, when the posts, such as registrarships at teaching hospitals, open to men at this stage, are much better paid, and there are far more scholarships and grants for original investigation, this difficulty is not so serious. But on the other hand, the possession of a comfortable income is far from an unmixed advantage, for it removes the poor man's obligation to scorn delights and live laborious days; no doubt the possessor of independent means can wait, but there is the danger that he may do little or nothing meanwhile. It has been said, with some degree of truth, that a consultant is made, not born, and there is no doubt that he has a hard task in making himself efficient and successful."[1]

In the larger industrial towns of the North of England there are many "general practitioner specialists" who combine ordinary panel practice with much surgical or other special work in well-equipped local hospitals which admit patients in different categories according to their means. Though the fees are small compared with those earned by operating surgeons and specialists in London, the work is by no means unremunerative.

Additional degrees and diplomas are important factors in securing election to the visiting staff of a large hospital, and a few remarks about them may be made here. Beyond the qualifications which admit to the *Medical Register*, most of the licensing bodies bestow higher titles after further tests. A considerable number of those who have graduated M.B. at a university, including many general practitioners, proceed later to the M.D. When applying for the post of physician to a hospital it is always useful, and may be obligatory, to hold also the Membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which the hospital is situated. So, too, the Fellowship of one of the three Royal Colleges of Surgeons should be obtained by those seeking surgical appointments, and the degree of Master of Surgery is an added distinction. There are also diplomas in a growing number of special branches of work—such as public health, tropical medicine, ophthalmology, laryngology, radiology, tuberculosis, psychological medicine, and midwifery—which are superfluous for most practitioners, but may be useful or even indispensable for those who intend to devote themselves to one or other of these subjects. Information about the special diplomas open to qualified practitioners, and about higher degrees, will be found on other pages.

FINANCIAL AND SOCIAL ASPECTS

The rewards of a profession come under two heads: those that depend on the intrinsic pleasure of the occupation, and those associated with financial success and material dignity. The pecuniary disadvantages of medicine are the long and costly training, the time of waiting after qualification before the practitioner can count upon an adequate income, and the heavy working expenses in proportion to gross earnings. On the other hand, it holds out the prospect of a fairly certain income, with unrivalled opportunities for exercise of the intellect in the service of others. There are many briefless barristers, but the qualified practitioner of medicine should never want for a livelihood so long as he keeps his health and his good name. But while no doctor who is willing and able to work need starve—which can scarcely be said of any other learned profession—those who think of adopting it as a career ought to understand that medicine is a path to fortune only for the few. Yet if medicine, from the financial point of view, offers to most men little more than a means of livelihood always at command, in its social and cultural aspects the outlook is far brighter. As regards the satisfaction derived from the work itself, a doctor's life need yield to none in the matter of sustained and varied interest. His lot is unlike that of many whose business gives little scope to the higher faculties, for he lives in, and by, the exercise of his intellectual powers. The steady improvement in the education of the practitioner has added much to his

[1] E. Starr Judd: Presidential Address to the American Medical Association, June, 1931.

[1] Sir Humphry Rolleston: Address given at King's College Hospital, October, 1930.

influence with the public, and has been a large factor in raising his social status during the seventy-one years that have passed since the General Medical Council was constituted under the first Medical Act. Medicine gives to those who follow it an honourable position. The well-educated doctor stands high among his neighbours, and is the friend and confidant of his patients. Many men go further, and take a prominent part in the public life of their district. A proof of the all-round value of a medical training is the way in which it fits men for leadership.

PROFESSIONAL ORGANIZATION

All who follow the calling of medicine, varied as their work may be, constitute a single brotherhood bound together by common interests and aims. The spirit of comradeship, which counts for so much in student days, should be preserved, both for its own sake and because no doctor can safely hold himself aloof from his fellows. Individuals and isolated groups of practitioners are always at a disadvantage when they try to defend their interests against organized bodies, whether these are Government departments, local authorities, or commercial companies. In his daily work the doctor is well able to deal with the individual patient and the patient's friends, but he cannot stand up single-handed to outside organizations. Medical men and women must therefore band themselves together, and the first step after qualification should be to become an active member of the British Medical Association. Besides having behind him the machinery and the influence of a world-wide professional body, a young practitioner will find in the meetings of his local Division or Branch, and in the Annual Meetings of the Association, many opportunities for keeping abreast of new work and for friendly intercourse with colleagues. Another thing that no new graduate should fail to do is to join one of the societies which for a small yearly sum undertake individual legal defence of their members. The need for protection may arise out of the first case attended in hospital or in private practice.

The British Medical Association was founded in 1832 to promote the medical sciences and maintain the honour and interests of the profession; a brief note on its constitution and activities will be found at page 480. The Association, with Branches throughout the British Empire and a membership of more than 35,000, is the only body that can act for the profession as a whole and speak in its name. The record of ninety-nine years' work shows that vocational organization, wisely directed, can combine service for its members with service for the public. Every medical man and woman should try to take a share in some of the movements, scientific or social or political, with which the Association has identified itself.

NUMBERS OF THE MEDICAL PROFESSION

A REVIEW OF FIFTY YEARS

In order to present a general view of the numerical strength of the medical profession during the past half-century we have extracted from the records and set down below in parallel columns the total number of names in the *Medical Register* on December 31st of each year, and the numbers added annually by registration between 1881 and 1930.

Numerical State of the "Medical Register."

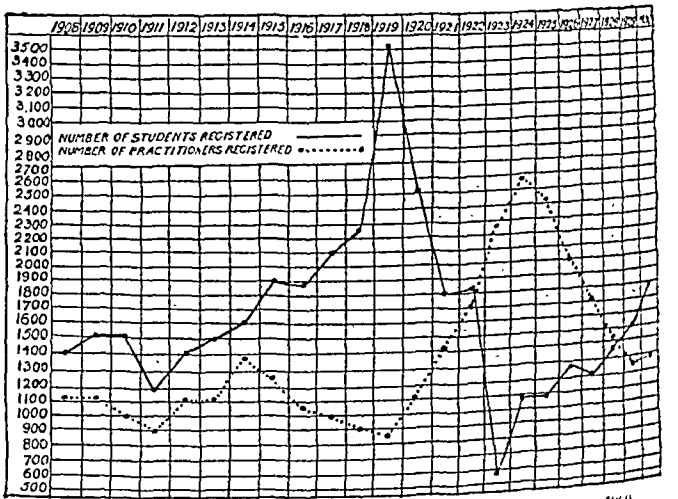
Year.	Names added in Year.	Total No. on Dec. 31.	Year.	Names added in Year.	Total No. on Dec. 31.
1881	1,053	23,275	1906	1,197	39,529
1882	1,171	23,801	1907	1,221	39,827
1883	1,304	24,517	1908	1,137	40,257
1884	1,388	25,321	1909	1,143	39,818
1885	1,377	25,998	1910	1,062	40,483
1886	1,431	26,452	1911	1,042	40,913
1887	1,531	27,246	1912	1,157	41,439
1888	1,184	27,939	1913	1,168	41,940
1889	1,305	28,348	1914	1,433	42,378
1890	1,266	29,163	1915	1,526	43,225
1891	1,345	29,555	1916	1,202	43,481
1892	1,513	30,590	1917	1,134	43,819
1893	1,579	31,644	1918	1,077	43,926
1894	1,426	32,637	1919	1,322	44,510
1895	1,446	33,601	1920	1,457	44,761
1896	1,385	34,478	1921	1,760	45,408
1897	1,230	34,642	1922	1,983	46,476
1898	1,210	35,057	1923	2,482	48,140
1899	1,351	35,836	1924	2,796	50,035
1900	1,345	36,355	1925	2,570	51,738
1901	1,318	36,912	1926	2,120	52,614
1902	1,275	37,232	1927	1,941	53,769
1903	1,233	37,878	1928	1,656	54,336
1904	1,168	38,492	1929	1,410	54,870
1905	1,240	39,060	1930	1,490	55,291

The varying proportion of registered medical practitioners to population during the period under review is shown in the following table. This sets out the total population of the British Isles at each decennial census since 1881, and the number of names on the *Register* in the same year; also the corresponding totals for the mid-census year 1926.

Proportion of Practitioners to Population.

Year.	Registered Practitioners.	Population, British Isles.
1881	23,275	35,241,482
1891	29,555	38,104,975
1901	36,912	41,976,827
1911	40,913	45,370,530
1921	45,408	47,146,506
1926	52,614	48,190,000

These figures show a steady increase in the ratio of doctors to population, which was accelerated during the years immediately following the war. The number of registered practitioners at the end of 1921 was nearly double the number at the end of 1881, but the population of Great Britain and Ireland within that period of forty years only increased by about 34 per cent. There is now considerably more than one name in the *Medical Register* to every thousand of population. In the United States of America it is estimated that there is one medical practitioner to every 800 people. Next to the United States the British Isles appear to have the highest proportion of practitioners to population. Austria has approximately one doctor to every 900 inhabitants; Switzerland 1 to 1,250; Denmark 1 to 1,430; Hungary 1 to 1,480; Germany 1 to 1,560; France 1 to 1,690; Holland 1 to 1,820; Czechoslovakia 1 to 1,970; and Sweden 1 to 2,860.



Numbers of medical students and practitioners, 1908 to 1930.

REGISTRATION OF STUDENTS AND PRACTITIONERS

The relation between the numbers of new students and those of newly qualified practitioners during recent years is shown in the chart above, compiled from returns published by the General Medical Council.

The figures for the registration of practitioners year by year apply only to those whose names were entered on the

British list, entries in the colonial and foreign lists of the *Medical Register* being excluded; hence the slight discrepancy between the totals indicated in this chart and those given in our tables printed above. Some further remarks on the numbers of medical students in recent years will be found in our introductory article on the profession of medicine.

PROFESSIONAL STUDY AND EXAMINATION

THE MEDICAL CURRICULUM TO-DAY

In 1922 the General Medical Council prescribed a readjustment of the medical curriculum, to come into force at the beginning of the following year. The scheme adopted was in effect a compromise between several "schools of thought" which had been debating the matter for fifteen years or more. In this readjustment, among other things, increased emphasis was placed upon sufficient opportunity being afforded for the study, both theoretical and clinical, of those subjects which are now so essential in connexion with the treatment centres of a local authority, such as ophthalmology, venereal disease, orthopaedics, ante-natal conditions, and infant welfare. Our article, commencing on this page, on the functions and requirements of the General Medical Council, includes the text of the resolutions and recommendations of the Council which have applied since the beginning of 1923. We summarize below the leading features of the revised scheme of professional study and examination, and indicate the importance attached by the Council to the preventive aspects of medicine. The first qualifying examinations based upon this readjusted curriculum were held in 1928.

The minimum age for registration as a medical student is now 17 years. There has been no formal lengthening of the medical curriculum under the revised scheme, but in practice it has been added to by transferring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. Thus, in addition to passing a preliminary examination in general education, an examination (written, oral, and practical) in the elements of physics and chemistry is required by the General Medical Council before the admission of a name to the *Students' Register*. In the applications of these two subjects to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry—appropriate instruction is to continue throughout the curriculum, and is to be tested by examination, so that the student shall no longer be able to put behind him as past and done with the knowledge which he acquired as a preliminary. If he has had no facilities at school or otherwise for obtaining what is necessary for the preliminary or pre-registration examination in chemistry and physics, then he can come for it to the university or medical school, but study for this will not count as part of the medical curriculum. In elementary biology comparatively few secondary schools are equipped for tuition, but the General Medical Council has suggested an arrangement for utilizing the work of such schools as are qualified for the purpose. The examination in elementary biology will not be "pre-curriculum," but the instruction may be so, and a licensing body can allow students who so desire to sit for the examination immediately after matriculation. Here again, however, it is the wish of the Council that the applications of biology to medicine, surgery, and midwifery shall continue to receive adequate attention throughout the courses.

A BLOCK SYSTEM OF STUDY

Besides the resolutions of the General Medical Council in regard to professional education and examination printed elsewhere at page 422 a series of additional resolutions was adopted in 1922, as follows:

(*a*) That throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine;

(*b*) That each licensing body should make adequate arrangements for the effective correlation of the several subjects of study throughout its curriculum;

(*c*) That the teaching of anatomy and physiology should include as a regular part of the courses the demonstration on the living human body of structure and function;

(*d*) That the curriculum should be so arranged that a minimum period of three years shall in every case be available for study after the completion by the student of the Professional Examinations in anatomy and physiology held at the close of the second year;

(*e*) That the curriculum should be so framed as to afford sufficient opportunities for the study, during the last three years of the course, of physics, chemistry, biology, anatomy, and physiology in their practical application to Medicine, Surgery, and Midwifery, and that the student's knowledge of these applications should be subject to test in the Final Examination;

(*f*) That before the student is admitted to his clinical appointments he should have received practical instruction in clinical methods and in the recognition and interpretation of physical signs;

(*g*) That instruction should be given, in the courses of Forensic Medicine and Public Health or otherwise, on the duties which devolve upon practitioners in their relation to the State, and on the generally recognized rules of medical ethics. Attention should be called to all *Notices* on these subjects issued by the General Medical Council.

The Council, it will be noted, attaches great importance to the reservation of sufficient time for the later subjects of study, free from all worries about passing the examinations of the earlier parts. To that end it recommends what is practically a block system. A minimum of three years should be available, not merely after the courses of anatomy and physiology have been taken, but after the examinations in these subjects have been passed. Another notable feature is that in assessing marks in the several examinations account may be taken of "duly attested records of the work done by the candidate throughout his course of study" in the subject. This is an effort to meet the long-felt difficulty that a man's mental agility, or the want of it, counts far too much in the examination room.

TRAINING IN PREVENTIVE MEDICINE

The first of the resolutions quoted above should be borne in mind by every teacher throughout the whole curriculum, and not merely in the clinical subjects. All the earlier subjects—physics, chemistry, biology, physiology, anatomy, and, of course, pathology, bacteriology, and therapeutics also—afford opportunities from the very beginning for instilling into the mind of the student the necessity for his keeping constantly in view, in all the advice and treatment he may give throughout his professional life, the primary importance of promoting the general health of those who entrust themselves to his care, and of preventing trivial ailments from developing into definite disease.

The General Medical Council

The General Medical Council was established by the Medical Act, 1858, in order "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." It consists of eighteen members appointed by the Universities in the United Kingdom having medical faculties; of nine members appointed by the Medical Corporations, such as the Royal Colleges of Physicians and Surgeons; of five members appointed by His Majesty in Council; and of six members directly elected by members of the profession as a whole—a total of thirty-eight. To these are added three dentists who are members of the Dental Board, and are appointed for dental business. Although the eighteen members appointed by the Universities and the five members appointed by

His Majesty in Council may all be laymen, only one layman has so far been appointed, and that was by the Privy Council in 1926.

The Council's offices are at 44, Hallam Street, Portland Place, London, W.1, and it has Branch Offices at 12, Queen Street, Edinburgh, and 35, Dawson Street, Dublin.

The Council exists for the protection of the public and not of the profession. Its principal functions are three. First, to keep the *Medical Register*; second, to see that the name of no person is entered thereon as qualified unless he has had an adequate professional education, and to remove therefrom the names of qualified persons who are no longer entitled to public confidence; and third, to provide for the publication of the *British Pharmacopoeia*. It is the appearance of a name upon the *Medical Register*, and not the possession of a degree or diploma, that constitutes a person a duly or legally qualified practitioner of medicine.

The Council has no power to make rules in regard to the medical curriculum or examination, but it can pass resolutions and make recommendations relating thereto, and, if any of these were ignored by the licensing bodies, it would be open to the Council to make representations to the Privy Council, which, if it thought fit, might order that the qualifications obtained from such bodies should not be registrable.

The name of any medical practitioner who has been convicted of *felony or misdemeanour*, or who is proved before the Council itself to have been guilty of "infamous conduct in a professional respect," may be erased from the *Medical Register*.

The Medical Acts prohibit attempts being made to impose restriction as to any theory of medicine or surgery, and, once a practitioner has been trained and tested in the knowledge essential for public safety, he may adopt any "theory" of medicine or surgery in which he honestly believes. The Medical Acts do not prohibit the practice of medicine by unregistered persons, but if they "wilfully and falsely" assume any title implying registration they are liable to prosecution. In this respect the Medical Acts differ from the Midwives and the Dentists Acts, which entirely preclude the practice of midwifery or dentistry by unregistered persons. Unregistered medical practitioners, however, are under certain disabilities, for they cannot recover charges for medical or surgical attendance, etc., in a court of law; they cannot hold an appointment as a medical officer in the Military or Naval Services, or on ships; they cannot give any valid certificate which is required by any Act from a medical practitioner—for example, certificate of death; and they cannot obtain dangerous drugs or attend cases of venereal disease.

An account of the recommendations that the Council has drawn up in respect of the education of medical students here follows.

REGISTRATION OF MEDICAL STUDENTS

The Council recommends that every intending student of medicine should be registered as such at one of its three offices, whose addresses are given on page 421.

Candidates must produce evidence (*a*) that they have attained the age of 17 years; (*b*) that they have passed an examination in general education which is accepted for matriculation or entrance to the Faculties of Arts or Pure Science in a university in the United Kingdom; and in addition thereto that they have passed an examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the Division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from one of the offices of the General Medical Council itself or from one of the various licensing bodies and medical schools.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter, pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION

The rule is that it is only from the date which appears against his name in the *Students Register* that the medical student's career officially begins; thereafter five years at least must pass before he can present himself for the first examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts; but to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. In any case, the period of five years must be one of bona-fide study; and in every course the following subjects should be included:

(i) Elements of General Biology, including an introduction to Embryology. This course, if the licensing bodies permit, may be taken before registration, and the examination may be passed immediately after registration.

(ii) Chemistry, Physics, and Biology in their application to Medicine.

(iii) Human Anatomy and Physiology, including Histology, Elements of Embryology, Biochemistry, and Biophysics

(iv) Elementary Bacteriology, prior to regular clinical appointments.

(v) Pathology, general, special, and clinical, and Morbid Anatomy.

(vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction.

(vii) Forensic Medicine, Hygiene, and Public Health

(viii) Medicine, including Applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Diseases, Skin Diseases, and Vaccination.

(ix) Surgery, including Applied Anatomy and Physiology, and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat, and Nose, Radiology, Venereal Diseases, and Orthopaedics.

(x) Midwifery and Diseases of Women, including ante-natal conditions and infant hygiene.

The Council recommends that during the last three of the five academic years clinical subjects shall be studied

The first two years must be passed at a university, or at a school of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

SPECIAL CONSIDERATIONS

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order.

(1) Pass an examination in arts;

(2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry;

(3) Having attained the age of 17, enter himself at a university or at a medical school recognized by one of the licensing bodies;

(4) Obtain registration as a medical student;

(5) Study for a minimum of five years certain prescribed subjects;

(6) Meanwhile pass sundry intermediate examinations; and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a qualification enabling him to obtain registration in the *Medical Register*, whereby he receives legal authority to practise.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required, even by the man of good abilities and reasonable industry, and some of the universities prescribe a longer period. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place he may miss enough of them to make it impossible for him to be signed up. Then again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards have refused to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects, and the Council now recommends that the professional examinations in anatomy and physiology be passed before the minimum period of three years' subsequent study be entered on; in other words, no clinical study should count as such until these examinations have been successfully completed. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, must in some cases those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

MEMORANDUM ON STUDENTS' REGISTRATION

The following memorandum has been drawn up by the Registrar of the General Medical Council as to the procedure for those who desire to be registered as medical or dental students.

The requirements for the registration of medical and dental students are the same, and every intending student should, in his own interest, register as soon as he commences his professional curriculum.

A recognized examination in general education must first be passed. If the student intends to obtain a university degree, he should apply to the university he selects for information as to its matriculation requirements in arts or pure science, or as to any examinations which may be accepted in fulfilment thereof. If the student intends to obtain a qualification from one of the licensing corporations (these are the Conjoint Boards in England, Scotland, and Ireland, the Society of Apothecaries of London, and the Apothecaries' Hall of Dublin), any of the examinations indicated below will be accepted. The subjects required are: (1) English, (2) Mathematics (elementary), (3) a language other than English, and (4) a fourth subject as required by the regulations of the particular examination, to be chosen from the following—namely, History, Geography, Botany, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by a university for matriculation. School certificates (other than "Higher") must show "Credits" in each of the prescribed subjects. When school certificates with four credits are presented, or certificates from the Educational Institute of Scotland and College of Preceptors, the passes in the four subjects must be shown to have been obtained at not more than two sittings.

The requirements of the preliminary examination in general education being satisfied, it is then necessary for the student to pass a further or pre-registration examination (theoretical and practical) in elementary chemistry and elementary physics, which is conduct[illegible] of the licensing bodies—that is, a [illegible]poration. These subjects must be [illegible] included in the preliminary examination—for example, chemistry taken as one of the four required subjects in the preliminary examination cannot also count as one of the subjects of the pre-registration examination. These subjects may be studied at a university or medical school, or at a secondary school or other institution recognized by the body whose pre-registration examination it is intended to take. The student should, in every case, write beforehand to the body whose qualification he desires to obtain (a list will be found below) for information in regard to its requirements for this examination.

These two examinations (in general education and in physics and chemistry) having been passed and the student having attained the age of 17 years, he should apply to one of the universities or one of the medical schools for admission to its course of medical study. When medical study has been begun, he should apply to the Dean of the School, or to the Registrar of one of the branches of the General Medical Council, for a form of application for registration as a student, and should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years, and the dental curriculum for at least four years, from the date of registration as a student.

A student who has, before registration, studied the subject of elementary biology at an institution recognized by one of the licensing bodies may, if the body sees fit, be admitted to the professional examination in this subject immediately after his registration as a student. For information in regard to this he should apply to the body whose medical qualification he seeks.

A dental student may commence his curriculum, if he so desires, as a pupil in dental mechanics of a registered dental practitioner; but study at a dental school is to be preferred. If, however, he is apprenticed to a dental practitioner, he will have to devote twice as much time to instruction in dental mechanics as he would if he had taken this subject in a school. This will have the effect of lengthening the curriculum. In any case a student can only obtain a concession of twelve months out of the four years' curriculum.

The addresses of the Branch Registrars are:

General Medical Council, 44, Hallam Street, Portland Place, London, W.1.
Scottish Branch Council, 12, Queen Street, Edinburgh.
Irish Branch Council, 35, Dawson Street, Dublin.

Examining Bodies in Preliminary Education

The following is a list of the officials of the examining bodies in preliminary education, with the names of the examinations in parentheses.

Registrar, Queen's University of Belfast. (Matriculation.) Assistant Secretary, Ministry of Education. (Second Certificate.)
Registrar, The University, Bristol. (Matriculation, School Certificate, or Higher School Certificate.)
Registrary, The University, Cambridge. (Previous.)
Secre[illegible] Examinations, Syndicate Buildings, C[illegible]igher School Certificate.)
Medi[illegible] of Dublin School of Physic, Dublin. ([illegible] Preliminary, Junior Exhibition, or Examination for first, second, third, or fourth year in Arts.)
Registrar, University of Durham College of Medicine, Newcastle-on-Tyne. (Matriculation, School or Higher School Certificate.)
Registrar, Irish Conjoint Board, Royal College of Surgeons, Dublin. (Preliminary Examination.)
Registrar, National University of Ireland, Dublin. (Matriculation.)
The Assistant Commissioner of the Department of Education, 1, Hume Street, Dublin. (Senior Grade Examination or Leaving Certificate.)

Assistant Secretary, Ministry of Education, Belfast (Senior Grade or Leaving Certificate)
Academic Registrar, The University of London, South Kensington, London, S W 7 (Matriculation, General, or Higher School Certificate)
Secretary, Northern Universities Joint Matriculation Board, 315, Oxford Road, Manchester (Matriculation, School, or Higher School Certificate)
Registrar, University Registry, Oxford (Responsions)
Secretary, Oxford and Cambridge Schools Examination Board, Schools Examination Office, Balliol College, Oxford (School or Higher School Certificate)
Secretary, Oxford Local Examinations, University Press, Oxford (School or Higher School Certificate)
Secretary, College of Preceptors, Bloomsbury Square, London, W C 2 (Senior Certificate)
Secretary, Educational Institute of Scotland, 47, Moray Place, Edinburgh (Preliminary Medical Certificate)
Secretary, Scottish Education Department, 14, Queen Street, Edinburgh (Leaving Certificate)
Secretary, Scottish Universities Entrance Board, 81, North Street, St Andrews (Scottish Universities Entrance Examination)
Registrar, University of Wales, Cathays Park, Cardiff (Matriculation)
Clerk, Central Welsh Board, Cardiff (School or Higher School Certificate)

[*Note*.—Certificates of the College of Preceptors and School Certificates (other than "Higher") must show "Credits" in each of the prescribed subjects.]

Licensing Bodies

The following is a list of the officials of licensing bodies and their addresses

Secretary, English Conjoint Board, 8, Queen Square, Bloomsbury, W C 1
Clerk, Society of Apothecaries, Blackfriars, E C 4
Dean Department of Medicine, Oxford
Registrary, The University, Cambridge
Registrar, University of Durham College of Medicine, Newcastle-on-Tyne
Principal Officer University of London, South Kensington, S W 7
Registrar, Victoria University, Manchester
Registrar, The University, Birmingham
Registrar, The University, Liverpool
Registrar, The University, Leeds
Registrar, The University, Sheffield
Registrar, The University, Bristol
Registrar, University of Wales, Cathays Park, Cardiff
Secretary, Scottish Conjoint Board, 49, George Square, Edinburgh
Dean of the Faculty of Medicine, The University, Edinburgh
Registrar, The University, Glasgow
Registrar, Royal Faculty of Physicians and Surgeons, Glasgow (*Dental*)
Secretary of the Medical Faculty, The University, Aberdeen
Secretary, The University, St Andrews
Secretary, Irish Conjoint Board, Royal College of Surgeons, Dublin
Registrar, Apothecaries' Hall of Ireland, 95, Merrion Square, Dublin
Medical Registrar, The University, Trinity College, Dublin
Registrar, National University of Ireland, University College, Dublin
Secretary, Queen's University, Belfast

Medical Schools

The following is a list of medical schools (other than universities) and their officials

Registrar, College of Medicine, Newcastle-on-Tyne
Dean of the Medical College, St Bartholomew's Hospital, London, E C 1
Dean of the Medical School, Charing Cross Hospital, W C 2
Dean of the Medical School, St George's Hospital, S W 1
Dean of the Medical School, Guy's Hospital, S E 1
Dean of the Medical School, King's College, Strand, W C 2
Dean of the Medical School, King's College Hospital, S E 5
Dean of the Medical College London Hospital, E 1
Dean of the Medical School, St Mary's Hospital, W 2
Dean of the Medical School, Middlesex Hospital, W 1
Dean of the Medical School, St Thomas's Hospital, S E 1
Dean of the Medical School, University College Hospital, W C 1
Dean of the Medical School, Westminster Hospital, S W 1
Dean of the School of Medicine for Women, 8, Hunter Street, W C 1
*Registrar, University College, Aberystwyth
*Registrar, University College, Bangor
*Registrar, University College, Cardiff
Dean of the Medical School, Welsh National School of Medicine, Cardiff
Dean of the Medical School, University College, Swansea
Dean of the Medical School, University College, Dundee
Dean, School of Medicine of the Royal Colleges, Surgeons' Hall, Edinburgh
Dean, St Mungo's College, Glasgow
Dean, Anderson's College of Medicine, Glasgow.
Mistress, Queen Margaret College, Glasgow
Registrar, University College, Cork
Registrar, University College, Dublin
Secretary, School of Medicine, Royal College of Surgeons, Dublin
Registrar, University College, Galway

* First year only

PROFESSIONAL EXAMINATION

The Council's Recommendations

The following recommendations of the General Medical Council in regard to professional examinations for medical and surgical qualifications were adopted in May, 1922

1 In order to secure due continuity and sequence in the study, two or more professional examinations in the elementary subjects should be held antecedently to the Final Examination in medicine, surgery, and midwifery

2 Three years at least should intervene between the date of passing the professional examination in anatomy and physiology and that of admission to the Final Examination in medicine, surgery, and midwifery

3 A candidate remitted in any subject of a professional examination should, before he is readmitted to examination therein, be required to produce satisfactory evidence that he has, during the interval of remission, pursued the study of the subject in which he was rejected Candidates who obtain less than 30 per cent of the marks in any subject should be remitted for a longer period than three months

4 In all the professional examinations sufficient time should be assigned to practical work, in order to test the thoroughness of the candidate's knowledge and to encourage practical methods of study

5 Candidates in all their examination work should be carefully supervised

6 Two examiners should always participate in the final examination of a candidate, except in subordinate parts of practical examinations

7 In all written examinations the questions in each subject should be submitted for the approval of all the examiners in that subject

8 In all written examinations an average of at least half an hour should be allowed for a candidate to answer each question

9 It is desirable that examiners, and in particular those in the Final Examination in medicine, surgery, and midwifery should be appointed or re elected for at least three consecutive years

10 Whatever may be the system of marking the percentage for a pass in each subject should not be less than 50

11 In the regulations for the several examinations it should be provided that examiners, in assessing marks, be empowered to take into account the duly attested records of the work done by the candidate throughout his course of study in the subject of the examination

12 The Final Examination in medicine, surgery and midwifery, with the exception of the clinical and practical examination in midwifery and gynaecology, must not be passed before the close of the fifth academic year of medical study

13 The three portions of the Final Examination in medicine, surgery, and midwifery should not be further subdivided into sections which may be entered for or passed separately

14 Compensation in respect of marks as between the three different portions of the Final or Qualifying Examination—namely, medicine, surgery, and midwifery—is contrary to the intention of the Medical Act (1886)

15 The Final Examination should include clinical and practical examinations in midwifery and gynaecology

16 The clinical examination in medicine surgery and midwifery should be held in properly equipped hospitals or examination halls well provided with suitable patients

17 In the examinations in clinical medicine at least one hour, and in clinical surgery at least half an hour should be allowed to the candidate for the examination of, and report on his principal case.

18 In medicine, in surgery, and in midwifery, no candidate should be allowed to pass who fails to obtain 50 per cent of the aggregate marks assigned to the whole examination or who fails to obtain 50 per cent of the marks assigned to the clinical examination, or who fails to obtain 40 per cent of the aggregate of the marks assigned to the written and oral examination In midwifery, where a clinical examination is not held, the duly attested records of the work done by the candidate in clinical midwifery must be presented to the examiners for assessment in the Final Examination, and no candidate should be allowed to pass who fails to obtain 50 per cent of the aggregate marks assigned to clinical and practical midwifery and gynaecology.

19 The Final Examination should include the examination of secretions the testing of urine, clinical microscopy, prescription writing, and there should always be an examination in medicine, surgery, and midwifery, which should include an examination on pathological specimens

20 At the Final Examination each candidate should be committed to a practical and oral examination in pathology (macroscopic and microscopic), unless this has been included in a professional examination preceding the Final Examination

21. Whatever be the method of entry for the Final Examination, all candidates should be required to complete the three portions of the Final Examination within a period of nineteen months.

This section of the Educational Number would be incomplete without brief mention of the memorandum, drawn up by the Registrar of the General Medical Council, on the procedure to be adopted by those who desire to enter the profession of medicine, to which reference is made in the introductory article at page 415. This pamphlet (price 1s. post free) sets out in plain language the information for which the Registrar is often asked by prospective medical students or their guardians.

Universities in England and Wales

There are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties.

UNIVERSITY OF OXFORD

The professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period, for the subjects chosen for the arts course may be to a great extent the same as those in which examinations would in any case have to be passed for the medical degree, and the courses are dovetailed together.

In accordance with a statute which came into force on October 7th, 1920, women may be matriculated and admitted to degrees in the university. The statute is retrospective under certain conditions. Before matriculation a woman must have been admitted as a member of one of the five societies of women students (Lady Margaret Hall, Somerville College, St. Hugh's College, St. Hilda's Hall, or the Society of Oxford Home Students). Women members of the university are admitted to all degrees, except those in divinity, under the same conditions as those laid down for men in regard to examinations, courses of study, and fees, and under corresponding conditions as to residence at the university. Among the university diplomas open to women are those in anthropology and ophthalmology.

There are numerous avenues to the B.A. degree, but that which constitutes the *normal* course for medical students, as being the most closely related to their medical studies, is the following. By passing Responsions (or one of the examinations which are accepted as equivalent), the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] in the first public examination, and one of the final honour examinations in the Final Honour School of Natural Science—physiology being that usually taken.

Responsions and the preliminary examinations in natural science may be passed before a candidate is a member of the university[2], a Final Honour School may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions has been passed or exemption obtained.

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions.

[2] Membership is constituted by Matriculation and by becoming either a member of a College or a Hall or a non-collegiate student.

PROFESSIONAL DEGREES

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the preliminary examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the first B.M. is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine and hygiene, materia medica, and pharmacology (subjects of the Second Examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation *unless he be already a registered medical practitioner*, and not until a period of at least thirty three months has elapsed from the date of his passing the First Examination, and he must pass in all the three subjects at one and the same time.

Before admission to the Second B.M. examination the student must produce certificates of instruction from a medical school recognized by the university, of having acted as clinical clerk and dresser, each for six months, and as post-mortem clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, and of proficiency in vaccination and the administration of anaesthetics,[1] and of three academic years of hospital attendance. He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school.

D.M. AND M.CH. DEGREES

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his thirtieth term and must present a dissertation for approval by the appointed examiners on a subject previously approved by the Regius Professor of Medicine. If a candidate for the M.Ch. he must have entered his twenty-first term and must pass an examination, which is held in June.

The examination for the diploma in ophthalmology is held annually in June.

TEACHING

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M., and to some extent those of the Final Examination.

SCHOLARSHIPS

Most colleges grant scholarships open to intending medical students of the maximum value of £100 a year, tenable for four years, in natural science, chemistry, physics, and biology. Exhibitions of varying value are also awarded in these subjects. At two colleges (University and Pembroke) there are medical entrance scholarships of £100 a year. Particulars can be obtained on application to the college tutors. Scholarships for women are also offered by the various women's colleges; from the principals of which details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £300 a year, tenable for two years, is conferred annually; candidates must have taken the B.M. degree. A Schorstein Research Fellowship of £200 a year for two years is awarded biennially. The Fellow must engage in research in one of the medical departments of the university. A George Herbert Hunt Travelling Scholarship of about £100 is awarded biennially to enable a young medical graduate to spend three months abroad in medical study. A Philip Walker Studentship in Pathology

[1] For the certificates that will be required from candidates amenable to the new Regulations of the General Medical Council, see *Examination Statutes*, Clarendon Press, Oxford, 1930 edition.

of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolleston Memorial Prize and the Radcliffe Prize (£50), for research in natural science (including pathology), and the three Theodore Williams Scholarships in Anatomy, Physiology, and Pathology, of the value of £50 each, tenable for two years. A Radcliffe Scholarship in Pharmacology of £50 for one year, open to the university, is awarded annually by the Master and Fellows of University College.

FEES

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are: the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £200, or for women not less than £140.

For further information application may be made to Dr. M. H. MacKeith, Dean of the Medical School, University of Oxford.

UNIVERSITY OF CAMBRIDGE

The professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Chir.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants a diploma in medical radiology and electrology to medical practitioners, not necessarily graduates of the university. Information regarding this diploma will be found in a later section under the heading Radiology. A candidate for the M.B., B.Chir. degrees need not possess a degree in arts; it is sufficient if he has passed the Previous Examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Sciences Tripos. The attainment of a sufficient standard in certain subjects in this Tripos will secure exemption from the corresponding tests in the First and Second M.B. examinations in the case of students who take up medical study late in their university career. Members of Girton College and Newnham College are admitted to the examinations.

PROFESSIONAL EXAMINATIONS

To obtain the M.B. degree the candidate must pass three examinations and keep an Act. The B.Chir. degree (which is a registrable qualification) may be obtained after passing all three examinations.

First M.B.—This comprises (1) general and inorganic chemistry, (2) mechanics, (3) physics, (4) elementary biology. The parts may be taken together or separately. In either case the candidate, before admission to examination, must have passed or been exempted from the Previous Examination. Certain exemptions from the First M.B. Examination are allowed; the regulations may be obtained from the Registrary. The examination is held three times in the year.

Second M.B.—This examination comprises: Part I, organic chemistry; Part II, human anatomy and physiology; Part III, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No student is admitted to the first part of the Second Examination until he has completed the Previous Examination and the first part of the First Examination. No student is admitted to the second part of the Second Examination until he has passed all parts of the First Examination and has been matriculated. No student is admitted to the third part of the Second Examination until he has passed the first and second parts of the Second Examination. The candidate must present certificates of study in the subjects of the second and third parts. The examinations for Part I are held in October, December, and June, and for Part II in December and June; that for Part III in October and April.

Third M.B.—This is divided into two parts, to neither of which the candidate is admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects, and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study, and be duly signed up in all subjects and have completed three years of hospital practice. The examination is in the principles and practice of physic (including diseases of children, mental diseases, and medical jurisprudence), pathology (including hygiene and preventive medicine), and pharmacology (including therapeutics and toxicology). The Third M.B. examinations are held twice a year—in June and December.

Act for the M.B.—Before receiving his M.B. degree a candidate who has passed the Third M.B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as *having "kept the Act," and in due course* receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Registrar a dissertation, which is laid before the Degree Committee.

THE HIGHER DEGREES

The M.D. degree may be taken by a Bachelor of Medicine of three years' standing (and a Master of Arts of four years' standing who has completed the course required for M.B.) after writing a thesis approved by the M.D. Degree Committee, and keeping a further Act, at which he reads his thesis and is examined thereon. Previously to the Act being kept a topic taken from the general subject of his thesis (whether it be physiology, pathology, pharmacology, practice of medicine, State medicine, or the history of medicine) is submitted to the candidate, on which he is required to write an extempore essay.

A candidate for the M.Chir. degree who is an M.A. may be admitted to the examination after he has become legally qualified to practise surgery. Other candidates may be admitted when two years have elapsed after they have passed the Third M.B. Examination. The examination comprises pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical: they include the writing of an extempore essay. The examination is held in February in each year.

FEES

In addition to college fees, tutorial fees, and the expense of living, the following examination fees are payable: First M.B., £5 5s.; Second M.B., £6 6s.; Third M.B., £10 10s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON

Under the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Bachelor of Surgery, Master of Surgery in four branches, Doctor of Medicine in six different branches, Bachelor of Dental Surgery, and Bachelor of Pharmacy. The university has its own matriculation examination, and it is very advisable that candidates should obtain and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days; the first two take place both in London and in certain provincial centres; the September examination is *held in London only.*

In no circumstances is a degree granted to *anyone* in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way; and, unless they are already registered medical practitioners of a certain standing, all medical students must pass not less than five and a half years in professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies.

PROFESSIONAL EXAMINATIONS

M B , B S—There are three examinations the last two being subdivided They are held twice a year

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physics, there being two papers a practical test and a possible oral test in each subject The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself

The Second Examination is held in March and July Part I covers organic chemistry, the candidate's knowledge being tested as in the earlier examination Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination The subjects are anatomy physiology, and pharmacology, the tests being written, oral, and practical Candidates who fail in pharmacology may sit for re examination in that subject alone if the examiners think fit, and candidates who pass in pharmacology only may similarly be credited with that subject

No candidate, unless he is already a registered medical practitioner is admitted to the Third M B , B S Examination within three academic years from the date of his completing the Second Examination The subjects are medicine (including mental diseases), pathology forensic medicine and hygiene surgery and obstetrics and gynæcology They may be divided into two groups one comprising medicine pathology, forensic medicine, and hygiene, and the other surgery and obstetrics and gynæcology Either group may be taken first at the option of the candidate, or the groups may be taken together Only candidates who show a competent knowledge of all the subjects comprising a group are passed There is no separate examination held for honours but the names of successful candidates are divided into an honours list and a pass list and a university medal may be awarded the candidate who has most distinguished himself in the whole examination

THE HIGHER DEGREES

M D —An examination for the M D is held twice yearly —in December and July Every candidate must have passed the examination for the M B B S , unless he became M B before May 1, 1904 He may present himself for examination in any one of the following branches (1) medicine (2) pathology, (3) mental diseases and psychology (4) midwifery and diseases of women (5) State medicine (6) tropical medicine, and if he wishes may pass also in another branch at a subsequent examination

The period that must elapse between acquiring the M B and sitting for the M D in any branch varies between one and two years according to the nature of the candidate's previous work and in all cases evidence must be afforded of special study of the subject chosen both written and practical examinations must be passed though exemptions can be obtained from the former in exceptional circumstances In each branch the scheme of examination is the same two papers on its special subject, a paper on an allied subject—for example medicine in the case of branch (4) pathology in branch (1)—an essay on one of two suggested topics connected with the special subject and a clinical or other practical test In any branch of the M D Examination a gold medal of the value of £20 may be awarded

M S —The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are four branches in which it may be obtained—general surgery, dental surgery ophthalmology, and laryngology, otology, and rhinology

FEES

For Matriculation 25 guineas for each entry First Examination 6 guineas for each entry to the whole examination For re examination in one subject the fee is 2 guineas Second Examination Part I 3 guineas for the first and each subsequent entry Second Examination Part II 9 guineas for each entry to the whole examination For re examination in one subject the fee is 4 guineas M B B S Examination 12 guineas for each entry to the whole examination and 6 guineas for examination or re examination in either group M D and M S Examinations 20 guineas and 10 guineas on re examination

Inquiries should be addressed to the Academic Registrar, the University of London South Kensington S W 7

UNIVERSITY OF BIRMINGHAM

This university confers medical and surgical degrees—namely, M B Ch B , M D , and Ch M —and also diplomas and degrees in State medicine and dentistry The M B , Ch B candidate may also combine with the earlier part of his medical curriculum courses leading to the ordinary B Sc degree in anatomy and physiology The degree of B Sc with honours in one of these subjects requires an extra year The full course of study for the degrees of M B , Ch B extends over six years The Senate has power to accept courses of study and examinations passed at other recognized universities as exempting from the examinations in physics, chemistry, biology, and organic chemistry In the case of such students at least three years must be spent in attendance upon classes at the university A degree of Ph D is also conferred for research study in medicine under special regulations Candidates must be graduates in medicine of a recognized university

Students entering the Medical Faculty for the M B , Ch B degrees must have passed—

(1) Either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester Liverpool Leeds, Sheffield and Birmingham or (*b*) some other examination recognized as equivalent to the matriculation Candidates for medical degrees are required to have passed in English literature and mathematics, and are recommended to take Latin and a science subject—chemistry or physics —at the matriculation examination The matriculation examination of the Joint Board is held in July and September The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board Joint Matriculation Board, 315, Oxford Road, Manchester

(2) A recognized pre registration examination in the subjects of chemistry physics and biology—for example, the higher school certificate of the Joint Matriculation Board or a candidate may attend first year courses in the university October to June (chemistry, physics, and biology)—that is, First M B , Ch B , Parts I and II

PROFESSIONAL EXAMINATIONS

The candidate for the M B , Ch B degrees has five examinations to pass, subsequent to passing the First M B Ch B Examination or exemption therefrom In the Second (Part II) and Final examinations the candidate *must pass in all the prescribed subjects or undergo the* whole examination again

The First M B deals with physics, chemistry, and biology The Second M B (Part I) deals with organic chemistry The Second M B (Part II) deals with anatomy and physiology, and the student must pass in both simultaneously The Third M B deals with pathology and bacteriology The Fourth M B takes place at the end of the fifth year, the subjects being forensic medicine, toxicology, public health, materia medica pharmacology, and therapeutics

Final M B —This comprises medicine, surgery midwifery and diseases of women ophthalmology and mental diseases The candidate in addition to more ordinary certificates, must be prepared with a certificate of having acted as a post mortem clerk for three months and received special instruction in anæsthetics and clinical instruction in diseases peculiar to women asylum ward work, ophthalmology children's diseases venereal diseases ear and throat and skin diseases etc In respect to ophthalmology he must show that he has learnt refraction work He also has to present to the examiners at the time of his examination a short written commentary on a gynæcological subject or case investigated during the period of gynæcological clerking

M D —An ordinary candidate for this degree must be a M B Ch B of not less than one year's standing He presents an original thesis for approval, and then pas-

a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

FEES

The fee for Matriculation is £2 (payable to the Joint Matriculation Board); £2 10s. for First M.B. Examination (if taken in university), and £2 10s. for each of the first four Professional Examinations; M.B., Ch.B. degree fee, £10; M.D. and Ch.M. Examinations, £12 10s. each. For further particulars application should be made to the Dean of the Medical Faculty, University of Birmingham.

UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.). There are also the following diplomas: diploma in public health (D.P.H.), diploma in dental surgery (L.D.S.), and diploma in veterinary State medicine. All candidates for degrees in medicine, surgery, and dentistry are required to reach matriculation standard in the school certificate examination, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees, and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the First Examination in chemistry and physics, of which three shall have been spent in the university, and two of these three subsequent to passing the Second Examination. All candidates for the degrees of M.B., Ch.B. are required to satisfy the examiners in the several subjects of three examinations.

The First Examination.—The subjects of examination are: chemistry (inorganic), physics, and biology, the courses pursued being those for the time being approved for the intermediate part of the B.Sc. curriculum. This part of the curriculum shall extend over one year. (Candidates who have passed the higher school certificate approved by the Board of Education in these subjects will not be required to sit for the First Examination and will be regarded as having completed one year of study.)

The Second Examination.—The subjects of examination are: organic chemistry and elementary anatomy (Part I) and advanced anatomy and physiology (Part II).

The Final Examination.—The subjects of examination are: materia medica and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I); special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative, including ophthalmology and oto-rhino-laryngology), medicine (systematic, clinical, and practical, including mental diseases) (Part II). The subjects included in Part II may be taken in two groups—namely, Group I: surgery and obstetrics; Group II: medicine, public health, special pathology, forensic medicine, and toxicology. Candidates may pass Parts I and II together or separately, and the two groups of Part II may likewise be taken together or separately, but no student can obtain honours who elects to take the two groups of Part II separately. Forensic medicine and toxicology may be taken either with Part I or with Group II of Part II.

Degree of Doctor of Medicine.—Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation. The candidate who elects to pass the examination in State medicine must hold a diploma in public health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof.

Degree of Master of Surgery.—The degree may be taken in general surgery or in special subjects. Candidates shall be Bachelors of not less than two years' standing as such. For general surgery, they shall pass an examination in surgical anatomy, pathology, and bacteriology, and in operative, clinical, and general surgery, and shall present a dissertation. For special subjects—that is, ophthalmology or oto-rhino-laryngology or gynaecology—they shall, in addition to having studied and practised for two years the subject concerned, have held an approved appointment in it for not less than six months; they shall pass a written, oral, and clinical examination in the branch of surgery concerned, as well as in the anatomy, physiology, and pathology of the region of the body concerned (including, in the case of ophthalmology, physiological optics), and also a written examination in the principles of general surgery.

Diploma in Public Health.—Candidates must be at least 23 years of age, be fully registered medical practitioners of not less than two years' standing as such, and have passed the examination prescribed by regulation. The examination is divided into two parts.

UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and Doctor of Medicine (M.D.), Master of Surgery and Doctor of Surgery (M.S. and D.Ch.), Bachelor of Hygiene, Doctor of Hygiene, and Bachelor of Dental Surgery and Master of Dental Surgery (B.D.S. and M.D.S.); it also grants diplomas in public health, psychiatry, and dental surgery. The university accepts the Durham University school certificate examination (if a sufficient standard is obtained in certain specified subjects) for matriculation purposes, but also accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application. In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council. To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts. It is sufficient if, before he presents himself for his final examination, the candidate has spent at least one year in study at the University of Durham College of Medicine, Newcastle-on-Tyne, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while the student works elsewhere.

PROFESSIONAL EXAMINATIONS

There are four professional examinations for the M.B., B.S. degrees. The First, Second, and Third examinations are held in March and June, and the Final Examination in June and December. The first deals with biology and organic chemistry; the second with anatomy and physiology; the third with pathology, bacteriology, materia medica, pharmacology and pharmacy, medical jurisprudence, and public health. At the Final M.B., B.S. the candidate is examined in medicine, including therapeutics, and clinical medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical midwifery and gynaecology; and clinically in psychological medicine, diseases of the throat, nose and ear, diseases of the skin, diseases of the eye, and diseases of children.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine. If the candidate is not an M.B. of the university, he must be a practitioner of fifteen years' standing, 40 years of age, and submit to special tests. (See under Degrees for Practitioners, p. 474.)

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to becoming M.B., B.S.Durham. The subjects of the examination are surgery, systematic and clinical, surgical anatomy and pathology, and surgical operations.

D.Ch.—The university grants also the degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 24 years of age. They must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and ancillary subjects; one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of Faculty of Medicine.

One year must be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as a resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

Degree of Bachelor of Hygiene and the D P H

No candidate is admitted to the final examination for the degree of B Hy. unless he is a Bachelor of Medicine and Surgery, of not less than two years' standing, of a recognized university whose degrees are registrable on the books of the General Medical Council of the United Kingdom.

No candidate is admitted to the final examination for the D P.H. unless he is a registered medical practitioner of not less than two years' standing

The course of study for the B.Hy and D P H extends over a period of not less than twelve calendar months subsequent to the attainment of a qualification registrable by the General Medical Council of the United Kingdom Candidates for the B Hy. must attend this course at the University of Durham; candidates for the D P H may attend it at the University of Durham or at any medical school or institution which is recognized by the university.

The examination for the diploma or degree consists of Part I and Part II, each of which extends over not less than two days, and is conducted by examiners specially qualified A candidate must pass in all the subjects of Part I before being admitted to examination for Part II In Part I, and also in Part II, a candidate must pass in all the specified subjects at one time.

The examination for Part I is practical, written, and oral, and includes the following subjects bacteriology and parasitology (including medical entomology); chemistry and physics; and meteorology and climatology, in relation to public health. Candidates are not admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof

The examination for Part II includes the following subjects: hygiene and sanitation (including sanitary construction), epidemiology and infectious diseases, sanitary law and vital statistics, public health administration The examination is written and oral, and includes practical examinations in infectious diseases, food inspection, inspection of premises—dwellings, factories, workshops, schools, etc Candidates are not admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof

Doctor of Hygiene

Candidates for the degree of Doctor of Hygiene must be Bachelors of Hygiene of the university of two years' standing, and are required to satisfy the examiners that they have conducted original research in the subject of public health.

Diploma in Psychiatry.

Candidates must be registered medical practitioners, and, unless qualified before January 1st, 1911, must have attended, subsequent to passing their qualifying examinations, courses of instruction in (*a*) anatomy; (*b*) physiology, (*c*) pathology; (*d*) bacteriology, (*e*) psychology and experimental psychology; (*f*) clinical neurology, (*g*) psychiatry; (*h*) clinical psychiatry. The examination consists of two parts, namely: (1) anatomy, physiology, pathology, and bacteriology, (2) psychology and experimental psychology, neurology, and psychiatry (systematic and clinical), and candidates may present themselves for the whole examination or for either part separately.

Licence and Degrees in Dental Surgery

L D S—Every dental student must, at the commencement of his studentship, be registered in the manner and under the conditions prescribed for medical students.

The First Examination consists of two parts, which may be passed separately: Part 1, biology; Part 2, theoretical dental mechanics, dental metallurgy (theoretical and practical). Second Examination: Anatomy, physiology (including biochemistry and biophysics), dental anatomy, and dental histology. Third Examination: Pathology and bacteriology, practical dental mechanics, dental materia medica and therapeutics. Final Examination: Medicine, surgery, dental surgery and pathology, orthodontics, operative dental surgery and dental prosthetics, and anaesthetics.

A candidate before presenting himself for examination is required to furnish certificates of instruction in the required subjects, attended after registration as a dental student at recognized colleges or medical schools.

Degree of Bachelor of Dental Surgery—1—Students taking their complete course of instruction in the university must pass the same matriculation tests as medical students, and the same pre-registration examination in inorganic chemistry and physics After registration students must spend five years in the university They must be in attendance in the dental department of the University of Durham College of Medicine for not less than two and a half years, six months of this time must be devoted to the study of the higher branches of dental science There are four examinations. The subjects of the examinations are as follows *First* Biology, organic chemistry, and dental mechanics and metallurgy. *Second* Anatomy, physiology, dental anatomy, and histology. *Third* Pathology and bacteriology, dental materia medica and therapeutics, and practical and dental mechanics *Final*: Medicine, surgery, dental surgery and pathology, orthodontics and operative dental surgery. In this subject knowledge of a much higher standard, and more advanced practical work, are required than for the Licence in Dental Surgery.

2—Candidates possessing a Licence in Dental Surgery of a British university must study for at least one year in the university. During such year they must spend at least six months in the Newcastle-upon-Tyne Dental Hospital in the study and practice of the higher branches of dental science. They must also pass all the professional examinations for the degree of Bachelor of Dental Surgery

Degree of Master of Dental Surgery—Every candidate for this degree must be a Bachelor of Dental Surgery of the university of not less than two years' standing, and present an essay embodying original work and research in some subject connected with dentistry He must also perform to the satisfaction of the examiners a piece of special dental work demanding a high degree of skill and experience.

The examinations are held concurrently with the medical examinations

The practical examinations in dentistry are conducted at the new Dental Hospital affiliated with the College.

FEES

The following fees are payable: Matriculation, £2; Examinations, Pre-registration, £3 3s; First, Second, and Third M.B., B S., each £5; Final M.B., B S, £15; M.D. and M.S., each £5; B.Hy., D.P.H., and D.Psy., each £10 10s., and D.Hy and D.Ch., each £20; First, Second, and Third L D S., each £3 10s., and Final L.D.S. £5; First, Second, and Third B.D S, each £5, Final B.D.S. £8; and M.D.S. £5. For degrees and *diplomas*: M.B., B.S., B Hy., and B.D.S., each £6 6s *plus* the sum of 10s. if it is the initial degree taken in the university, M.S. and M.D.S., each £6 6s.; M.D., D Ch, and D.Hy, each £10; D.P.H., D.Psy., and L.D.S., each £3.

Further information may be obtained from the Dean of the College, University of Durham College of Medicine, Newcastle-on-Tyne.

UNIVERSITY OF LEEDS

The degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M B and Ch.B.), and Bachelor of Dental Surgery (B Ch D), Doctor of Medicine (M D), Master of Surgery (Ch M), and Master of Dental Surgery (M Ch D) It also gives diplomas in public health, in psychological medicine, in dental surgery, and in nursing

Candidates for the M B must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to

the date of passing the first examination They must also have matriculated by satisfying the examiners in

I *Either* English Composition and English Literature, or English Composition and History
II *Either* Mathematics *or* Latin
III, IV, V *Three* other subjects not already taken under I and II above, chosen from the following list

(1) English literature, (2) History, (3) Geography, (4) Greek (5) Latin, (6) French, (7) German, (8) Some one other language approved by the Board, (9) Mathematics, (10) Mechanics (11) Physics, (12) Chemistry, (13) General experimental science (14) Natural history (15) Botany

Provided that (*a*) candidates who take Mathematics under II above must include one of the subjects 4—8, (*b*) candidates who take Latin under II above must include one of the subjects 9—15 In all cases Mathematics is a compulsory subject for admission to the Faculty of Medicine

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination

PROFESSIONAL EXAMINATIONS

The examinations for the M B, Ch B number three The first deals with (1) physics and inorganic chemistry, (2) biology, (3) organic chemistry In each subject laboratory work is included, but the two parts can be taken separately For neither can the candidate present himself until after matriculation and a period of approved work in the respective subjects

The Second Examination —The Second Examination consists of Part I, materia medica and practical pharmacy, Part II, anatomy and physiology Candidates will be allowed to pass any parts separately

The Final Examination —The Final Examination consists of Part I, pharmacology and pathology and bacteriology, Part II, medicine, surgery, obstetrics, gynaecology, and clinical pathology, Part III, forensic medicine, public health, and therapeutics Part I may be taken at the end of the second clinical year, and must be passed before Parts II and III are taken Parts II and III may be taken at the end of the third clinical year but not before the completion of the fifth year of medical study If taken separately Part II must be passed before Part III

M D —Candidates for this degree must be bachelors of medicine and bachelors of surgery of the university, and subsequently to having graduated must have completed two years of hospital practice or special study approved by the university, or four years in the practice of their profession in one or other of its various branches, six months hospital practice or special study to count as the equivalent of one year's ordinary practice Any subject of the medical curriculum except surgery may be chosen for the examination, but a thesis, the title of which must previously receive the approval of the Board of the Faculty of Medicine, may be submitted, and if it is adjudged to be of exceptional merit the candidate may be exempted from further examination

Ch M —The candidate for this degree must have been admitted to the M B, Ch B of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery He must also have attended certain courses, including one on ophthalmology and one on pathology and bacteriology, he is then examined in surgery in all its branches and in ophthalmology and pathology and bacteriology

FEES

The Matriculation fee is £2 and on readmission £1 10s For each of the other examinations £6 and £6 on readmission, Ch M £10 and same on readmission M D £10 On conferment of the degree of Ch M £5 is payable and £5 for the M D degree

UNIVERSITY OF LIVERPOOL

This university, besides granting degrees in medicine (M B and M D) and in surgery (Ch B, M Ch Orth, and Ch M), gives degrees in dental surgery (B D S and M D S), a degree in hygiene (M H), and degrees in veterinary science (B V Sc, M V Sc, and D V S Diplomas are awarded in dental surgery (L D S), tropical medicine (D T M), tropical hygiene (D T H), public health (D.P H), veterinary hygiene (D V H), and radiology and electrology (D M R E) The degree Doctor of Philosophy (Ph D) may also be taken in the Faculty of Medicine

MATRICULATION

The matriculation examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, which accepts, under certain conditions, the tests of several bodies as its equivalent Candidates will be required to have included mathematics among the subjects in which they have passed at such examination

PROFESSIONAL EXAMINATIONS

Candidates for the M B, Ch B degrees have three examinations to pass, the first including (1) chemistry, (2) biology (zoology and botany), (3) physics, (4) special chemistry

Second M B —This test covers (1) anatomy, (2) physiology, including physiological chemistry and histology

Final M B —The subjects of the Final Examination are Part I—(*a*) pathology, (*b*) pharmacology and general therapeutics Part II—(*a*) forensic medicine and toxicology, (*b*) public health Part III—(*a*) obstetrics and diseases of women, (*b*) surgery, systematic, clinical operative and practical, including ophthalmology, (*c*) medicine systematic and clinical, including therapeutics, infectious diseases, and diseases of children Candidates may take Parts I, II, and III separately, provided that candidates may not present themselves for Part III until they have completed the sixth year of medical study

M D —May be conferred on graduates (M B, Ch B Liverpool) (*a*) on candidates of two years' standing who present a thesis acceptable to the Faculty, and certified to be the candidate's own work, together with, if candidate desires, copies of published original papers upon medical science—oral examination on subject of thesis (*b*) on candidates of five years' standing by examination

Ch.M —May be conferred on graduates (M B, Ch B Liverpool) after examination Other information concerning the diplomas of this university and its medical school will be found on page 446

FELLOWSHIPS, SCHOLARSHIPS, AND EXHIBITIONS

The university awards Fellowships annually to students of distinguished merit, as follows

(1) John Rankin Fellowships in Anatomy, two each of the value of £120, tenable for two years (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year open to fully qualified medical students of either sex (3) John W Garrett International Fellowship in Bacteriology value £100 and tenable for one year (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year (5) Holt Fellowships in Physiology and Pathology, two in number, value £150 each and tenable for one year (6) Johnston Colonial Fellowship in Biochemistry, value £150 and tenable for one year (7) Thelwall Thomas Fellowship in Surgical Pathology value £200 and tenable for one year (8) Lady Jones Fellowship in Orthopaedic Surgery, one of £200 offered every two years

There are in addition, scholarships and exhibitions for medical students

VICTORIA UNIVERSITY OF MANCHESTER

This university grants the four ordinary degrees in medicine and surgery—M B and Ch B and M D and Ch M, a degree and diploma in dental surgery, a diploma in public health, a certificate in factory and in school hygiene, a diploma in psychological medicine, a diploma in bacteriology, and a diploma in pathology Candidates for degrees must pass the special matriculation examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof, see the prospectus of the Joint Matriculation Board), and complete at the university itself for at least two years of the five years' curriculum, subsequent to the passing of the First M B Examination The matriculation examination comprises (1) Latin, (2) mathematics, (3) the English lan-

its literature and history, (4) mechanics, (5) one subject at choice as approved by the Joint Board It is held in July and September

PROFESSIONAL EXAMINATIONS

M B, Ch B.—There are four examinations for this degree They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved The First M B is divided into Part I chemistry and physics, Part II, biology—(*a*) botany, (*b*) zoology The parts may be taken separately or together At the Second M B the candidate is examined in anatomy (including histology) and physiology, at the third in pathology, bacteriology, and pharmacology (including materia medica and practical pharmacy) The Final Examination, under new regulations, is divided into two parts which may be taken separately Part I consists of (*a*) forensic medicine and toxicology, and (*b*) hygiene and preventive medicine Part II consists of (*a*) medicine, including dermatology, diseases of children, and mental diseases, (*b*) surgery, surgical pathology, and diseases of the eye and of the ear, nose, and throat, (*c*) obstetrics and gynaecology

M D.—A candidate for this degree must be a Bachelor of Medicine of the university of at least one year's standing He has a choice between presenting an original dissertation or undergoing a written (as well as practical and clinical) examination in medicine and a written and practical examination in pathology, and one other subject selected by himself

Ch M.—A candidate must have held, since becoming Ch B, and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired The examination in Branch I comprises the general field of surgery, Branch II obstetrics and gynaecology, Branch III, ophthalmology, Branch IV, otology, laryngology and rhinology

B Sc and M Sc.—The ordinary degree of B Sc in the Schools of Anatomy and Physiology may be obtained by students in medicine who in their third year of study for the degree of M B, Ch B complete the additional courses in these subjects prescribed for this degree Candidates for the Honours degree of B Sc in anatomy or physiology who are students in medicine are required to attend courses in advanced anatomy and physiology for four terms after passing the Second Examination for the degrees of M B, Ch B Graduates in science of this university of not less than one year's standing from the date of their graduation as Bachelors, may proceed to the degree of M Sc by the presentation of an approved thesis on some subject coming within the scope of the Faculty of Science

FEES

The following examination fees are payable Matriculation £2 on readmission £2 Each M B examination £8 8s on readmission £3 3s M D including the conferring of the degree £15 15s Ch M £10 for the examination and £10 10s for conferment of degree Application for further information should be addressed to the Dean of the Medical School

UNIVERSITY OF SHEFFIELD

The degrees of this university (M B, Ch B, M D and Ch M, B D S and M D S) and the diploma of licentiate in dental surgery are open to candidates of either sex Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose and have passed the further examination in chemistry and physics

PROFESSIONAL EXAMINATIONS

A candidate for the degrees of M B Ch B must produce certificates that he will have attained the age of 22 years by the day of graduation that he has pursued the courses of study required by the university regulations during not less than five and a half years subsequent to the date of his matriculation or exemption from matriculation three of such years at least having been passed in the university, one at least being subsequent to the passing of the Second Examination The following examinations must be passed in due order

First Examination.—The subjects are chemistry, physics, and biology Candidates who have passed the Intermediate Examination of the Faculty of Pure Science in any or all of the subjects of the First M B Examination will, on payment of the fee for the latter examination, be deemed to have passed it when they have passed in such subjects as they did not take for the Intermediate B Sc Examination Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, in (i) chemistry, inorganic and organic (ii) physics, (iii) biology, and of having passed or obtained exemption from the preliminary examination in chemistry and physics

Second Examination.—The subjects are anatomy and physiology (Part I) The candidate must have passed the First Examination, and must have attended (1) courses on anatomy, including lectures and practical anatomy, during five terms, (2) courses on physiology, including lectures and practical physiology, during one year

Third Examination.—The subjects are pathology and pharmacology, applied anatomy, and physiology Candidates must have attended courses of instruction in pathology for five terms in pharmacology for four terms (and one term in pharmacy), in applied anatomy for four terms, and in physiology (Part II) for six terms

Final Examination.—The subjects are Part I, forensic medicine and public health candidates must have attended courses for one term in each subject Part II, medicine (including mental diseases and diseases of children and vaccination), special pathology (including morbid anatomy and clinical pathology), and therapeutics Part III, surgery (including the administration of anaesthetics, diseases of the ear, nose, and throat, ophthalmology, and surgical pathology), and obstetrics and gynaecology (including ante natal and post natal practice and infant hygiene) Candidates for Parts II and III must have completed a minimum of five and a half years of study

M D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M B, Ch B at least three years previously must present a thesis embodying observations in some subject approved by the Professor of Medicine and must pass an examination in the principles and practice of medicine

Ch M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M B, Ch B at least three years previously, and must, since taking the degrees of M B, Ch B, have held for not less than twelve months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology

Other information concerning this university will be found in the section devoted to Provincial Medical Schools

UNIVERSITY OF WALES

The Charter and statutes of the University of Wales provide *inter alia* for a School and a Faculty of Medicine and for the granting of the following degrees Bachelor in Medicine (M B), Bachelor in Surgery (B Ch) Master in Surgery (M Ch), and Doctor in Medicine (M D)

A candidate for the M B, B Ch is required to pursue a course of study of not less than six academic years subsequent to matriculation in the university and of these years at least three must have been passed in one of the constituent colleges of the university These are the University College of Wales Aberystwyth University College of North Wales Bangor University College of South Wales and Monmouthshire Cardiff and University College of Swansea He must also hold an arts or science degree of the University of Wales or of some other university approved for this purpose Certain of the courses of study pursued for a B Sc or a B A degree may be counted as courses required for the degrees in the Medical Faculty

The courses for the M B B Ch are divided into two sections of which the first includes the preliminary subjects—physics chemistry, botany, zoology, and the

ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year; study of physiology and anatomy must extend over at least two academic years; the first section of the course must occupy not less than three years. The second section includes courses in pathology, bacteriology, pharmacology, hygiene and forensic medicine, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced, except in the case of pharmacology, until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in all the subjects are held in June of each year, and in medicine, surgery, obstetrics, and gynaecology in December also.

The university also offers courses of study in public health and in tuberculosis. Candidates for the diploma in public health (D.P.H.) and for the tuberculous diseases diploma (T.D.D.) must possess a medical qualification registrable for practice in Great Britain and Ireland, and must have completed courses of study as prescribed by the regulations either at the Welsh National School of Medicine, Cardiff, or at another institution approved by the university.

WELSH NATIONAL SCHOOL OF MEDICINE

This school has been reconstituted under the provisions of a Royal Charter granted to the school in February, 1931. The school maintains departments of medicine, surgery, obstetrics and gynaecology, pathology and bacteriology, materia medica and pharmacology, tuberculosis, and preventive medicine.

Full particulars of the conditions of admission to the school and the courses of instruction provided may be obtained on application to the secretary, Welsh National School of Medicine, The Parade, Cardiff.

English Medical Corporations

There are in England three medical corporations which grant licences to practise—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD

This body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in public health, tropical diseases, ophthalmic medicine and surgery, psychological medicine, laryngology and otology, and gynaecology and obstetrics—jointly issued by the two Colleges in question. Under the present regulations every candidate for the L.R.C.P. and M.R.C.S. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics; (2) comply with the regulations, which may be had from the Secretary, Examination Hall, Queen Square, London, W.C.1; and (3) pass the two professional examinations of which particulars appear below. The old regulations for the Conjoint diploma, of which an account was given in the Educational Number of the *British Medical Journal* for 1922, still apply to students who passed their preliminary examination in general education before January 1st, 1923.

PRESENT REGULATIONS FOR THE CONJOINT DIPLOMAS

The following is an outline of the present regulations for the L.R.C.P.Lond. and M.R.C.S.Eng. The full regulations and synopses and forms of certificate may be obtained from the Secretary.

PRE-MEDICAL EXAMINATION

Students are required to pass a pre-medical examination in chemistry, physics, and elementary biology, conducted by the Conjoint Examining Board, before commencing the five years' curriculum of professional study, or some other examination recognized by the Board—namely, the examination in chemistry, physics, and biology for the degree in Medicine of any university recognized by the Board, the higher school certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the higher certificates of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, or the Central Welsh Board higher certificate.

A candidate must enter for chemistry and physics together, and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required preliminary examination in general education.

The examination is partly written, partly oral, and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months. Not more than two terms of professional study is recognized before the examination in elementary biology is passed.

PROFESSIONAL EXAMINATIONS

There are two professional examinations, called the First and Final Examinations. The courses of study for the First Examination may be commenced before the pre-medical examination in chemistry and physics or some equivalent examination has been passed provided three terms of study of anatomy and physiology are completed after passing such examination.

First Professional Examination.—The subjects of this are: Section I, (*a*) Anatomy, including histology and embryology; (*b*) physiology, including biochemistry. Section II, Pharmacology and materia medica. A candidate must have attended at a recognized Medical School courses of instruction in anatomy, including embryology, during five terms, in the course of which he must dissect the whole body; courses of instruction in physiology, including biochemistry and biophysics, during five terms; courses of instruction in pharmacology and materia medica. A candidate may present himself for the two sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination, provided that the courses for admission to Section I have been completed. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

Final Professional Examination.—The subjects of this are: Section I, Pathology (including morbid anatomy, morbid histology, and clinical pathology) and bacteriology. Section II, Part I, Medicine, including medical anatomy, forensic medicine, and public health; Part II, Surgery, including surgical anatomy and the use of surgical appliances; Part III, Midwifery and gynaecology. The examination is partly written, partly practical, partly clinical, and partly oral. A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately, or may take the whole examination together. He will be required to produce the certificates prescribed by the regulations before being admitted to the respective parts of the examination. No exemption is granted from any subject in the Final Examination.

FEES

The fee for the *Pre-Medical Examination* is four guineas, for re-examination in Chemistry two guineas, for re-examination in Physics one guinea, and for *Biology one guinea*. The fee for the *First Professional Examination* is ten guineas, for re-examination after rejection in Section I six guineas, for re-examination after rejection in either part of Section I three guineas, for re-examination after rejection in Section II three

guineas The fee for admission to Section I of the *Final Professional Examination* is four guineas for admission to Section II Part I ten guineas, Part II ten guineas Part III six guineas and the re examination fees are respectively three guineas six guineas and five guineas

ROYAL COLLEGE OF PHYSICIANS OF LONDON

This College has three grades—its Licentiates, its Members, and its Fellows The Licence is now only issued through the Conjoint Board The Membership (examinations for which are held in January, April, July, and October) is only granted to those who have obtained the Licence, or to those who are registered practitioners and graduates of a recognized university, in any case they must be persons over 23 years of age Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce, they are also examined in Latin, Greek, French and German The languages are not compulsory, but credit is given to those who show a knowledge of them The fee for the Membership is £42 or in the case of a Licentiate £21 There is a fee of £10 10s, payable before entrance to the examination which in the case of successful candidates is reckoned as part of the Membership fee The body of Fellows is maintained by election from among the Members

ROYAL COLLEGE OF SURGEONS OF ENGLAND

This College has two grades—Members and Fellows The Members are admitted as stated in the section dealing with the Conjoint Board The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years There are two examinations for the Fellowship—the first in anatomy and physiology, held in the months of June and December, which may be passed after the third winter session, the second held in the months of May and November, chiefly directed to surgery, which may be passed after six years of professional study Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years standing of universities recognized by the College for the purpose who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees, which must be registrable in this country

Fees—At First Examination £8 8s for re examination £5 5s At Second Examination £12 12s Admission fee £10 10s for members £31 10s for non members

SOCIETY OF APOTHECARIES OF LONDON

This body confers a registrable diploma in medicine, surgery, and midwifery now known as the L M S S A (Licentiate in Medicine and Surgery of the Society of Apothecaries) on those successful at the following examinations

Pre medical Examination—Chemistry and physics, and elementary biology

Primary Examination—This includes anatomy, physiology and histology, and materia medica and pharmacy Candidates will be excused any or all the subjects of the Primary Examination on producing evidence that they have passed the equivalent examinations before an examining body recognized by the Society Candidates referred in anatomy will be required to produce evidence of further work in the dissecting room before being admitted to re examination

Final Examination—This is divided into four sections A Principles and practice of surgery, including surgical pathology, surgical anatomy, operative manipulation, instruments and appliances, B Principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), bacteriology, pathology, and morbid histology, C, Midwifery gynæcology, diseases of new born children, obstetric instruments and appliances D Forensic medicine, hygiene, theory and practice of vaccination, and mental diseases A, B, C, and D may be taken at separate examinations, but there is no exemption from any subject of the Final Examination (A separate examination in pathology will be instituted during the current year)

The fee for the Pre Medical Examination is £5 5s, for the Primary and Final £21 The regulations and synopses relating to the several examinations and other information may be obtained from the Registrar Apothecaries' Hall Blackfriars L C 4

Mastery of Midwifery

The Society has recently instituted a Mastery of Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante natal care, midwifery, and child welfare The examinations take place in May and November, and candidates are required to submit certificates, etc fourteen days before date of examination It is intended to impose a severe test so as to ensure a high standard of professional knowledge but the diploma will not be registrable under the Medical Acts Admission is open to all who have been for not less than a year in possession of a registrable medical qualification, and who have had certain prescribed experience at recognized institutions concerned with obstetrics, ante natal work, and child welfare work Special conditions apply, until 1932, to practitioners of ten years standing Medical officers employed by a public health authority, and having special duties connected with maternity and child welfare, will be admitted to the examination on production of evidence to that effect The entrance fee for the examination is £10 10s, and a further fee of £10 10s is payable by successful candidates before admission to the Mastery Copies of the regulations may be obtained from the Registrar at the address given in the preceding paragraph.

Scotland

THE UNIVERSITIES

There are in Scotland four universities each possessing a Faculty of Medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together

The universities are those of Edinburgh, Glasgow, Aberdeen, and St Andrews The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland, here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M B), Bachelor of Surgery (Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M) The two former are not obtainable one apart from the other Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry, public health and radiology As for public health, registrable degrees in this subject are granted by the University of Glasgow while diplomas in public health may be obtained from the Universities of St Andrews and Aberdeen

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science (for degrees in pure science) Prospective medical students are also required to pass a preregistration examination in chemistry and physics

PROFESSIONAL EDUCATION

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and, in addition, necessitate definite study for

stated periods of diseases of children, of the larynx, ear, and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the beginning of July.

PROFESSIONAL EXAMINATIONS

The distinctive feature of the Scottish curriculum is that though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in zoology and chemistry. At the end of the first summer session he can finish with botany and physics, and with anatomy and physiology at the end of the second. Pathology and materia medica he will pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects, at the end of the fifth year of study. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, clinical midwifery and clinical gynaecology, and forensic medicine and public health. The first three examinations are held three times a year; the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an arts, science, or medical degree examination in its subjects at any recognized university. When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has already been approved.

THE HIGHER DEGREES

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Service, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES

It is estimated that the class, examination, and other fees for the M.B., Ch.B. come altogether to about £265, the separate examination fees included in this calculation being as follows:

	£	s.	d.
First Professional	9	9	0
Second Professional	7	7	0
Third Professional	6	6	0
Final	9	11	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £21, and on re-entry £5 5s.

More detailed information with regard to the Universities of Edinburgh can be obtained from the *Medical Prospectus*, price 6d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews, information can be obtained either from the Secretary of the University, or, alternatively, from the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with each of the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

THE CARNEGIE TRUST

The following is a summary of the regulations made by the Carnegie Trust for the Universities of Scotland for assistance in the payment of class fees in the universities and extra-mural colleges of Scotland.

Applicants must be over 17 years of age; they must be of Scottish birth or extraction, or have attended for two years after the age of 14, at a school or institution under inspection of the Scottish Education Department. Applicants so qualified who have been pupils of schools under the Scottish Education Department will be eligible for assistance in the payment of class fees if they have obtained the leaving certificate of the Department, provided that it bears evidence of such preliminary education as is required by the universities for their graduating curricula, or that it has been supplemented by such passes either in the Scottish Universities Preliminary examination as will satisfy the above requirement of the universities. Where applicants have not been pupils of schools under the Scottish Education Department, or where other good ground for not having obtained the leaving certificate can be shown, the Executive Committee has power to accept instead what it deems equivalent evidence of attainments.

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adviser of Studies, and they must have passed the graduation examinations belonging to the previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage. Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work, any distinctions gained, and any graduation examinations passed.

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £19 for four years, in all £76. Any unexpended part of a grant will be carried forward to the succeeding year. In combinations of Faculties the allowances available for beneficiaries are: Arts and Medicine—two Arts grants of £8 and two Medicine grants of £19, in all £92; Science and Medicine—two Science grants of £17 and four Medicine grants of £19, in all £110.

Applicants, in writing for application forms, must name the university and faculty in which they intend to study, and state whether they have previously obtained the benefits of the Trust. Applications must be lodged not later than October 25th for the winter session, or May 10th for the summer session. Payments are made by means of fee coupons and fees already paid are not refunded.

THE CORPORATIONS

There are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board, which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P.Ed., L.R.C.S.Ed., and L.R.F.P.S.Glas. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

Professional Curriculum for Candidates registered as Medical Students after October 1st, 1930

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held two times in Edinburgh and two times in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The first examination deals with general biology (systematic and practical), and physics and chemistry (systematic and practical); the second with anatomy, embryology, physiology, biochemistry and biophysics; the third with pathology (including bacteriology and morbid anatomy) and pharmacology (theoretical and practical); and the final with (1) medicine, including therapeutics, applied anatomy and physiology, and clinical pathology, with practical medicine; (2) surgery, including applied anatomy and physiology, clinical pathology, and practical surgery; (3) midwifery and diseases of women, clinical obstetrics and gynaecology, with practical midwifery; and (4) medical jurisprudence and public health. All candidates for the Final Examination must complete portions (1) (2) and (3), which must be taken together, within a period of nineteen months.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the Final Examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint Licence must sit for the Final Examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

FEES

It is estimated that the total cost of lectures and fees for the Conjoint Licence is about £170. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects of the First, Second, or Third Examination the fees are smaller.

Information concerning this Board should be sought either from Mr. David Thomson, 49, George Square, Edinburgh, or from Mr. Walter Hurst, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

This College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be duly registered medical practitioners. Candidates will be required to pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday and Thursday, except in September and October.

Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments of medicine specially professed, and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly, on the second Tuesday and following days of the months of January, April, July, and October, and application for admission to it must be made a month previous to the date at which it is proposed to appear.

For the Fellowship the candidate must have been a Member of the College for at least three years, and, if accepted, pay fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence

As an original qualification the Licence is only granted after fulfilment of the regulations of the Scottish Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable or equivalent qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Fellowship

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice. After having passed the examination he must lodge with the Clerk to the College a petition asking that his name be placed before the College for election as a Fellow. This petition must be signed by two Fellows, as proposer

and seconder, who should be sufficiently acquainted with the candidate to vouch that he is in every way a suitable candidate for the Fellowship Examinations are held four times a year—January, March, July, and September It is desirable that either the proposer or the seconder should be resident in Edinburgh *Candidates are not allowed to appear more than three times at the examinations*

The admission fee is £20 and after passing the examination the candidate shall pay the sum of £30 to the College funds In the case of Licentiates of the College £10 thereof shall be remitted in consideration of the fees they have already paid For further information application should be made to the Clerk of the College Mr David Thomson, 49, George Square Edinburgh, from whom a copy of the *Laws Relating to the Fellowship by Examination* may be obtained

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

This body possesses two classes—Licentiates and Fellows The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy) The fee is £15 15s , and examinations are held quarterly Candidates for the Fellowship must be qualified medical men of not less than two years standing and 24 years of age Candidates approved at this examination are then eligible for election as Fellows The Faculty can also elect three Fellows annually without previously submitting them to examination, provided they "have highly distinguished themselves in medical science or practice " They must be of not less than ten years standing and 40 years of age

The fee for the Fellowship is £50 Further information can be obtained from Mr Walter Hurst, Faculty Hall, 242, St Vincent Street Glasgow

Ireland

MEDICAL REGISTRATION IN THE IRISH FREE STATE

The Medical Practitioners Act, 1927 (Irish Free State), provides for the establishment of a Medical Registration Council for the Irish Free State The main functions of the Council will be (1) to keep a register of medical practitioners who may desire to practise permanently or temporarily in the Irish Free State, and (2) to exercise disciplinary power with regard to all medical practitioners who are on the register and engaged in practice in the Irish Free State The first schedule of the Act contains the agreement between Great Britain, the Irish Free State, and Northern Ireland This agreement provides for the nomination of a member of the General Medical Council, formerly made for Ireland by His Majesty on the advice of the Privy Council, to be made henceforth by His Majesty in Council on the recommendation of the Governor of Northern Ireland The nominations of members of the General Medical Council by universities and medical corporations in Ireland and the election of a member of the General Medical Council by registered medical practitioners in Ireland will be in all respects the same as heretofore The constitution of the General Medical Council and of the several Branch Councils as formerly existing under the Medical Acts, and the powers of holding qualifying examinations and granting diplomas for the purpose of registration in the general *Register* formerly vested in certain universities and medical corporations in Ireland, are not affected by the establishment of the Irish Free State or of Northern Ireland, and for the purpose of the preparation and keeping of the general *Register* the General Medical Council and the Branch Council for Ireland shall have the same powers and jurisdict under the Medical Acts as they exercised formerly T agreement provides also that any person who is cr be registered in the general *Register* shall be entit on the payment of a prescribed fee to be registered in t *Irish Free State Register*, but this fee will not be pay by any person who, on the date of the establishment the *Irish Free State Medical Register*, is registered on t general *Register* Then follow provisions with regard the erasure from the *Register* of the name of a person on account of misconduct

The *Irish Free State Medical Register* was establis on May 26th, 1928, this being the date appointed by t Medical Registration Council The *Register* on establ ment contained the names of every medical practiti who was registered in the general *Medical Register* im diately before May 26th, 1928, and who either was th resident in the Free State, according to his addres stated in the general *Register*, or was living outside th Free State and applied to the Council within one mo before May 26th, 1928, to be registered No fee f registration was charged in such cases

For registration in the *Irish Free State Medical Re* subsequent to its establishment a fee is required, toget with a prescribed form of application A person is eligi for registration if he is at the time of application regis in the general *Medical Register*, or if he possesses requisite qualifying diploma granted by colleges or bod in the Free State as set out in the Act Candidates f medical appointments made under the Appointments Co mission must be registered in the *Irish Free State Me Register* Application for further information may b made to the Registrar, Medical Registration Counc Room 35, Upper Fitzwilliam Street, Dublin

THE IRISH UNIVERSITIES

There are three universities in Ireland, each with a medical faculty These are, in the Irish Free State, the University of Dublin (usually known as Trinity College, Dublin) and the National University of Ireland , and, in Northern Ireland, the Queen's University of Belfast

UNIVERSITY OF DUBLIN: TRINITY COLLEGE

This university grants two degrees in medicine (M B and M D), two in surgery (B Ch and M Ch), two in midwifery (B A O and M A O), and a post graduate diploma in public health It also grants post graduate diplomas in gynaecology and obstetrics, for which nine months study is required, and in psychological medicine, for which two months' study is required The degrees are granted to those who, having passed the professional examinations have also graduated in arts

PROFESSIONAL EXAMINATIONS

A candidate for the Final Examination for the M B B Ch , and B A O degrees must be a matriculated student of at least five years' standing The examinations which students must pass are the Preliminary Scientific the Intermediate Medical, and the Final Before admission to any of these examinations students must have completed the courses of study in the subjects involved

Preliminary Scientific This covers (*a*) chemistry and physics, (*c*) botany and zoology The three divisions may be taken together or at different times

Intermediate Medical —This is divided into two parts (*a*) anatomy, physiology, organic chemistry, and histology (*b*) applied anatomy and applied (clinical) physiology The two parts may be taken separately or together

Final Examination —Part I Pathology and bacteriology, materia medica and therapeutics Part II (*a*) midwifery and gynaecology , (*b*) medicine, mental diseases, medical jurisprudence, and hygiene , (*c*) surgery in its branches, including clinical ophthalmology The th

sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the Final Examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and also examine him viva voce on other medical subjects of a more general nature.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing and have been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in the study of obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST

The degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B.D.S. and M.D.S.) are conferred by the university, and also a diploma in dental surgery (L.D.S.) and a diploma in psychological medicine.

PROFESSIONAL EXAMINATIONS

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology (both theoretical and practical), and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) pathology and practical pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene. Candidates who have passed the Second Examination may present themselves for Part I of the Third (Nos. 1 and 2) at the close of the third year, and for Part II (Nos. 3 and 4) at the end of the winter session of the fourth year.

The Final Examination includes: (1) medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student must pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) systematic, (2) clinical, practical, and oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year, but students invariably take both parts at the end of their course. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

THE HIGHER DEGREES

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (*a*) human anatomy, including embryology; (*b*) physiology, (*c*) pathology, (*d*) pharmacology and therapeutics, (*e*) sanitary science and public health, (*f*) forensic medicine and toxicology, (*g*) mental diseases. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND

The National University of Ireland carries on most of its medical educational work through three constituent colleges—University College, Dublin; University College, Cork; and University College, Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation in the Medical Faculty. The candidates at each constituent college are examined by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the General Board of Studies of the university. In addition to the ordinary degrees in Medicine and Surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as Diplomas in Public Health and in Psychological Medicine.

Application for other information may be made to the Registrar, National University of Ireland, 49, Merrion Square, Dublin, C.17.

THE IRISH CORPORATIONS

There are, in the Irish Free State, three licensing bodies other than the Medical Faculties of the universities; and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries' Hall. In Dublin, as in London and in Edinburgh, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

THE CONJOINT BOARD IN IRELAND

This body requires of candidates either the passage of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the pre-registration examinations in chemistry and physics and biology.

PROFESSIONAL EXAMINATIONS

There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The First Examination deals with Part I—(*a*) biology, (*b*) applied chemistry. Part II—

anatomy, including embryology, physiology, including physiological chemistry and histology The Second Examination deals with (*a*) pathology, including morbid anatomy, clinical pathology, and bacteriology, (*b*) materia medica, pharmacy, and therapeutics, (*c*) forensic medicine, hygiene, and public health, (*d*) ophthalmology and aural surgery, and may be taken separately

Final Examination —This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the pre-registration examinations, and five years at least since the beginning of the curriculum The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children, (*b*) surgery, including operative surgery, (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination

Fees —Preliminary Examination, £2 2s Re-examination, £2 2s Pre-Registration Examination, £3 3s Re-examination in Chemistry, £2 2s, in Physics £1 1s First Professional Examination—Part I, £17 17s, Part II, £10 10s, Second £9 9s, Final, £6 6s Re-examination fee is £2 2s for each division

Diploma in Psychological Medicine

There are two examinations in connexion with this diploma Part I consists of (*a*) anatomy and physiology of the nervous system, (*b*) psychology Part II—(*a*) neurology, including clinical and pathological neurology, (*b*) psychiatry, or psychological medicine, including its legal relationships Fees, £6 6s for each part

Further information can be obtained from Mr Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St Stephen's Green, Dublin

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND

The Diploma in Public Health

Every candidate for the Diploma in Public Health must observe the following rules

1 A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine Surgery, and Midwifery and his admission to the Final Examination for a Diploma in Public Health

2 The curriculum for the D P H shall extend over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification

3 Every candidate shall produce evidence of having attended during a period of not less than five months, at an institution approved by the Licensing Body granting the Diploma practical instruction in—(*a*) Bacteriology and Parasitology (including Medical Entomology), especially in their relation to diseases of man and to those diseases of the lower animals which are transmissible to man (*b*) Chemistry and Physics in relation to Public Health (*c*) Meteorology and Climatology in relation to Public Health

At least 180 hours must be devoted to Course (*a*), of which not less than 150 hours shall be occupied in practical laboratory work At least 90 hours must be devoted to Course (*b*) of which not less than 70 hours shall be occupied in practical laboratory work At least 10 hours must be devoted to Course (*c*)

4 Every candidate shall produce evidence of having received during not less than 80 hours at an institution or from teachers approved by the Licensing Body granting the Diploma instruction in the following subjects (*a*) the Principles of Public Health and Sanitation (30), (*b*) Epidemiology and Vital Statistics (20) (*c*) Sanitary Law and Administration (including Public Medical Services (20) (*d*) Sanitary Construction and Planning (10) [The numbers indicate the normal proportion of time to be given to each subject]

5 Every candidate shall produce evidence that he has attended for three months on the clinical practice of a recognized Hospital for Infectious Diseases and has received therein instruction in the methods of administration At least thirty daily attendances of not less than two hours in each week shall be required

6 Every candidate shall produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties, routine and special of Public Health Administration under the supervision of a Medical Officer of Health who shall certify that the candidate has received, from this Officer or other competent Medical Officer during not less than three hours on each of sixty working days practical instruction in these duties and also those relating to (*a*) Maternity and Child Welfare Service, (*b*) Health Service for Children of School Age (*c*) Venereal Diseases Service, (*d*) Tuberculosis Service, (*e*) Industrial Hygiene, (*f*) Inspection and Control of Food, including meat and milk

Certificates of having received the prescribed instruction in Public Health Administration must be given by a Medical Officer of Health who devotes his whole time to Public Health work, or by the Medical Officer of Health of a sanitary area having a population of not less than 50,000, or in Ireland the Medical Superintendent Officer of Health of a County or County Borough having a population of not less than 50,000

7 The examination for the Diploma shall be divided into two parts, Part I and Part II

8 The examination for Part I shall include the following subjects Bacteriology and Parasitology (including Medical Entomology), Chemistry and Physics, and Meteorology and Climatology, in relation to Public Health

9 The examination for Part II shall include the following subjects Hygiene and Sanitation (including Sanitary Construction), Epidemiology and Infectious Diseases Sanitary Law and Vital Statistics, Public Health Administration The examination shall be written and oral, and shall include practical examinations in Infectious Diseases, Food inspection and Inspection of premises—dwellings, factories, workhouses, schools, etc

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Those whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College and its Licence in Midwifery In either case an examination has to be passed in the subjects indicated questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine For the Licence in Midwifery practitioners of over five years standing are exempted from examination by printed questions The other grades of the College are Members and Fellows The former are admitted after an examination which is open to graduates in medicine of recognized universities whose names are on the *Medical Register* of the United Kingdom or the Irish Free State, and Licentiates in medicine of the Royal College of Physicians and deals with the general subjects of medicine Fellows are selected, by vote, from among the Members of the College

Fees —For the Licence in Medicine 15 guineas Special Examination £21 For the Licence in Midwifery 8 guineas Special Examination, 16 guineas For the Membership 20 guineas to a Licentiate of the College, 35 guineas to other a special examination costs 10 guineas extra The Fellowship £35, in addition to stamp duty, £25

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin

ROYAL COLLEGE OF SURGEONS IN IRELAND

This body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions Its Licence is usually granted conjointly with that of the College of Physicians but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed The examination is held on its behalf by the Conjoint Board and is identical with the ordinary surgical portion of the examinations imposed by that body

The Fellowship —Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology, and the second in surgery (including surgical anatomy) and pathology Both examinations are partly written, partly practical, and partly viva voce, while the Final Examination includes the performance of operations All subjects of either examination must be passed at one time, and in neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*, if, however, the candidate's name is on the

Colonial or Foreign List in the *Medical Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND

A diploma is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Women candidates are eligible.

Fees.—Primary Examination (Parts I and II), £21; Final Examination, £21. Subjects of examination: Primary, Part I, Anatomy and Physiology. Primary, Part II, Materia Medica and Pharmacy; Medical Jurisprudence and Hygiene; Pathology. Final Examination: Medicine, Surgery, and Midwifery. Candidates must enter for and pass at the one time in Anatomy and Physiology. They are at liberty to enter for the subjects of the Final Examination at separate times, but the Final Examination cannot be completed until a period of three years has elapsed from the date of passing Primary Examination, Part II.

Application for other information should be made to the Registrar, 95, Merrion Square, Dublin.

Medical Schools and Colleges

LONDON

Information as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge, and are seeking the medical degrees of those universities.

Charing Cross Hospital

Situated in the centre of London, Charing Cross Hospital Medical School is the most easily accessible of all the London schools. Instruction is given in all the subjects for the final examinations of the universities of London, Oxford, and Cambridge, the Conjoint Board, and other licensing bodies. In addition to the clinical appointments held by every student, courses of systematic lectures, demonstrations, and tutorial classes are held in all subjects of the curriculum. In the School there are departments devoted to bacteriology, clinical pathology, biochemistry, materia medica, public health, operative surgery, as well as laboratories for research. By reason of the abundance and variety of the material available for investigation, the Institute of Pathology, with its whole-time staff of scientific workers and its completely equipped laboratories, offers peculiar advantages to students in this branch of medicine. The Library has ample accommodation, and contains nearly 4,000 volumes, including modern textbooks and contemporary reviews. The Pathological Museum is organized in two sections: one devoted to specimens illustrating general pathological conditions; the other consisting of the Lockyer Collection, the finest collection of gynaecological and obstetrical specimens in the country.

The hospital contains 300 beds, and this number is likely to be increased in the near future by the provision of additional accommodation for paying patients. There are special departments for diseases of ear, nose and throat, the eye, the skin, for children, for mental disorders, for orthopaedic surgery and massage, for *x*-ray, electrical and light treatment, for dental surgery, and for tuberculous and diabetic cases. A number of beds are set apart for diseases peculiar to women and for midwifery cases, and the hospital serves an extensive and thickly populated district in gynaecological and obstetric work. The out-patient department dealt with over 2,800 new cases last year, with 132,000 attendances.

The Students' Club provides for the athletic, recreational, and social life of the students by means of a 13-acre sports ground, by common rooms, restaurant, etc., and by sections of the club designed for a particular purpose, such as the debating society and the dramatic society.

Scholarships.—The following are offered annually: (*a*) For students commencing medical studies, two scholarships, each of the value of £50. (*b*) For students commencing clinical studies, two University Scholarships, each of the value of £120, in pathology; one University Scholarship, value £120; and one Open Scholarship, value £75, in anatomy and physiology. In addition there are a number of exhibitions.

Prizes.—(1) The Llewellyn Prize, £25, for highest distinction throughout final course of studies. (2) Williams Travers Prize, £15, midwifery and gynaecology. (3) Pereira Prize, £4 4s., clinical commentary. (4) T. H. Green Prize, £5 5s., clinical commentary. (5) Clinical Surgery Prize, £3 3s. (6) John H. Morgan Prize, £10. (7) Steadman Prize in Pathology. (8) Numerous class prizes and medals. (9) The Governors' Clinical Gold Medal.

Fees.—The fees are as follows: Entrance, Primary, and Intermediate, £16 16s.; Final, £10 10s.; Annual, 38 guineas.

Further information may be obtained on application to Eric A. Crook, M.A., M.Ch., F.R.C.S., Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

Guy's Hospital

The hospital contains 646 beds in constant occupation. Twenty-five beds are set apart for diseases of the eye, and 42 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There are special wards of 49 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the departments of orthopaedics, neurology, and dermatology, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are also some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in fifteen minutes. The Gordon Museum of Pathology, the Wills Library, the departments of chemistry, physics, pathology, and pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for all medical degrees and diplomas. New departments of anatomy, physics, and biology have recently been completed. They are equipped on the most modern lines, and provide ample accommodation for teaching and research. Special classes are held for the First and Second Examinations for medical degrees of the University of London, for the pre-medical examination, and for the First and Final F.R.C.S.Eng. Examinations. Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty assistant house-surgeons, eight house-surgeons, two ophthalmic house-surgeons, two genito-urinary house-surgeons, two house-physicians (children's department), two house-physicians (dermatological and neurological), and nine resident obstetric assistants are

appointed annually The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and genito-urinary house-surgeons hold office for six months each, and receive free board and lodging in the college Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, actinotherapeutics, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, fractures, and genito-urinary and venereal disease, clinical assistantships in the various special departments are open to post-graduates

Scholarships, Prizes, etc —The following scholarships in Arts and Science are awarded A Open Junior Scholarships (1) An Arts Scholarship of the value of £100, (2) a Science Scholarship of the value of £100, these are awarded annually in June or July (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science This scholarship is open every other year, the next award will be made in June or July, 1932 (in Arts) B Confined Scholarship in Science A Junior Science Scholarship of the value of £100 is offered for competition annually in June or July to candidates who have attended the preliminary science classes at this school Candidates for these scholarships (male students only) must be under 20 years of age on August 1st of the year of the competition C University Entrance Scholarships (1) A War Memorial Scholarship of the value of £100, (2) an Exhibition of the value of £60, both of these are awarded annually in June or July Candidates will be examined in two of the following subjects at their option (1) anatomy and embryology, (2) physiology, (3) pathology, including bacteriology, (4) biochemistry The examination is held in common with the Medical School of St Thomas's Hospital and the Medical College of St Bartholomew's Hospital Full particulars as to the scholarships may be obtained from the Dean of the Medical School Junior prizes for general proficiency, £20, £15 £10, Hilton Prize for dissection, £5, Michael Harris Prize for anatomy, £10, Sands-Cox Scholarship for physiology, £15 for three years, Wooldridge Memorial Prize for physiology, £10, Beaney Prize for pathology, £34, Treasurer's Medal and Prize in medicine, Treasurer's Medal and Prize in surgery, and the Golding-Bird Gold Medal and Scholarship for bacteriology (£20) are awarded annually after competitive examination The Gull Studentship in pathology, of the value of £250 per annum, the Beaney Scholarship in materia medica, of the value of about £70, and the Anderson Demonstratorship in clinical chemistry, value £175 per annum, are awarded without examination to enable research to be carried on in these subjects An Arthur Durham Travelling Scholarship of £100 is awarded triennially The Griffiths Demonstratorship in Pathology of the value of £320 per annum, and the Hilda and Ronald Poulton Fellowship, value £150 per annum, are awarded without examination

An annual composition fee is paid by all students until a registrable qualification is obtained Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S E 1.

King's College Hospital

The medical school of this hospital, which is situated at Denmark Hill, deals with the Final Examination subjects of the medical curriculum. The hospital was opened in 1913, and is one of the most modern and best equipped in England The number of attendances in the casualty and out patient departments during the year 1930 amounted to 287,983 In the education at the hospital a special feature has always been the individual attention given to each student The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors

The Hall of Residence for members of the medical school is situated on Champion Hill Both the Hall and the athletic ground are within ten minutes' walk of the school

Appointments —Sixteen resident medical and surgical officers are appointed half-yearly, as well as dressers and clerks in the wards, out-patient departments, post-mortem rooms, and special departments Each of the special departments has several clinical assistants There are five registrars and four tutors, all of whom receive salaries

The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room

Scholarships, etc —At entrance Science Scholarship £75 At commencement of Final Studies Anatomy and Physiology Scholarship, £75, Pathology Scholarship, £75, two Raymond Gooch Scholarships, each £120, two Burney Yeo Scholarships, each £105 (for Oxford and Cambridge students) Seaman Scholarships, £50 a year up to five years Epsom College Scholarship, £100, Senior Scholarship £40 Teed Prize, Tanner Prize, Ferrier Prize in Neurology, Class Prizes and Medals

Fees —The composition fee is 93 guineas if paid in one sum Entrance fee of 10 guineas includes membership of the Clubs and Societies Union

Dental School —This school was opened in October 1923, and, in conjunction with King's College, provides complete courses for dental degrees and diplomas

The calendar of the school can be obtained on application to the Dean, H Willoughby Lyle, M D, F R C S or to the Secretary of the Medical School, S C Ranner, M A, King's College Hospital, Denmark Hill, S E 5.

The London Hospital

This hospital, with its medical college and dental school is situated in the Mile End Road, E 1 The hospital contains 839 beds, which are in constant use During 1930 14,256 patients passed through the wards and 86,554 out patients received treatment Of the latter number, 40,078 received treatment in the departments for diseases of the ear, nose, throat, eye, skin, and teeth, and in the paediatric, orthopaedic, venereal, radiological, electro- and physico-therapeutical, and inoculation departments The number of major operations which were performed amounted to 7,401.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease

A clinical unit in medicine, under the charge of a whole-time director, assisted by an assistant director, two assistants, and two house-physicians, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research To each medical and surgical firm throughout the hospital there is attached a first assistant, who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations In the department of obstetrics and gynaecology there is a first assistant and two resident accoucheurs In the department for children's diseases there is a first assistant, one house-physician, and two clinical assistants Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects Opportunities for research are provided under the supervision of the staff

All the departments are modern and adapted for the teaching of all subjects in the various curricula Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, and for the Membership of the Royal College of Physicians Special entries can be made for the medical and surgical practice of the hospital. Two resident hostels are provided for the convenience of students and the holders of house appointments. Recent additions to hospital and college buildings include a cardiac department and a laboratory for the manufacture of certain preparations of radium The athletic ground, of over thirteen acres, is at Highbury Park, and is open to all members of the Clubs Union

Appointments —The salaried appointments, open to past students of the hospital, are those of assistants to the medical unit, first assistants to the medical and surgical firms, obstetric registrar, assistants to the department of obstetrics and gynaecology; medical, surgical, and obstetric tutors, clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments, and in the Institute of Pathology There are appointed annually 4 resident accoucheurs, 14 resident

house-physicians and 22 resident house-surgeons, 14 resident receiving-room officers, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department also paid and unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships and Prizes.—The following is a list of scholarships and prizes.—At entrance: Price Scholarship in science, £100 Two open scholarships, each of the value of £100 Scholarships open to students of Oxford and Cambridge Universities: (1) £100, anatomy and physiology; (2) £100, pathology. Entrance Scholarship in science, £50; Epsom Scholarship, "free medical education." After entrance: Buxton Prize in anatomy and physiology, £40; Letheby Prizes in organic chemistry and chemical pathology, £25, Prizes in clinical medicine, surgery, and obstetrics and gynaecology, £20 each; Duckworth Nelson Prize in practical medicine and surgery, £10; Hutchinson Prize in clinical surgery, £60; Treves Prize in clinical surgery, £15; Sutton Prize in pathology, £20; Sir Andrew Clark Prize in clinical medicine and pathology, £14; T. A. M. Ross (prov. acc) Prize in clinical medicine and pathology, £10 10s., Anderson Prizes in elementary clinical medicine, £20; Dressers' Prizes, £20; Practical Anatomy Prizes, £10; Arnold-Thompson Prize in medical and surgical diseases of children, £15, Liddle Prize, £120; Francis Farmer Entrance Scholarship in chemistry and physics, £25, Harold Fink Prize in dental surgery, £8 8s. The "London" Prizes in dental surgery and pathology, £5 5s, and in dental prosthesis, £5 5s Seven class examination prizes, each of the value of £3 3s, are offered for competition at the end of the courses of lectures in the dental curricula. Funds to the value of over £113,000 permit of financial assistance being given to students and graduates engaged in medical research

Fees.—Entrance fee, 20 or 15 guineas, according to examinations passed; annual fee, 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.1.

The Middlesex Hospital

The school and hospital are in Mortimer Street, W 1, close to Oxford Circus, Goodge Street, and Great Portland Street stations There are a gymnasium, squash rackets court, common rooms, and restaurant within the hospital precincts, and an athletic ground within easy reach The hospital contains over 470 beds, including a wing containing 90 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for neurological cases, for cases of venereal disease, and for diseases of children and of the skin and eye. The newly built west wing and residents' house are now occupied.

The medical school, which includes the Bland-Sutton Institute of Pathology, the S A Courtauld Institute of Biochemistry, the Barnato-Joel Laboratories, and the Ferens Institute of Otology, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects, chemistry, physics, and biology. The Bland-Sutton Institute, under the direction of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation, as well as a pathological and anatomical museum Bacteriological and microscopical examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work Junior assistants in the pathological and bacteriological laboratories are elected annually from recently qualified students. Every facility is given for original research. The Biochemical Institute is under the charge of the Professor of Biochemistry, and contains teaching and research laboratories in addition to those devoted to the routine chemical pathological work of the hospital The Barnato-Joel Laboratories offer unrivalled opportunities for the study of cancer in both its clinical and pathological aspects.

Appointments.—Twenty-nine resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and four resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals, after examination; eight house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. One senior and two junior resident assistant anaesthetists are appointed annually. Nine registrars, each at a salary of £300 per annum, are appointed annually. In the out-patient departments and wards the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases; dressers to the department for diseases of women, to the ophthalmic surgeon; to the throat and ear department, to the orthopaedic department, and to the dental surgeon. Extern midwifery clerks and post-mortem clerks are also appointed, every student secures six months' experience in midwifery and gynaecology without leaving London. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Non-resident qualified clinical assistants are appointed in the medical, surgical, skin, neurological, ophthalmic, throat and ear, odontological, children's, and electro-therapeutic out-patient departments.

Scholarships.—There are two Entrance Scholarships, value £100 each. Two annual Entrance Scholarships, of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, anatomy and physiology Students joining the school in the previous April are eligible. The Freer Lucas Scholarship is annually awarded on the nomination of the headmaster to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination) There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Brodrip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s, Freeman Scholarship, value £30, John Murray Gold Medal and Scholarship, value £25, Hetley Clinical Prize, value £25, Leopold Hudson Prize, value 11 guineas, and the Second Year's Exhibition, value 10 guineas.

The rebuilding of the hospital is being completed without the loss of a single bed, or any disorganization of its clinics.

Fees.—(*a*) Pre-medical students For one year or less, £21. (*b*) Students who have completed the Preliminary Science course Entrance fee, 25 guineas, payable on joining the medical school, five annual fees of £45. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £23. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course. entrance fee, 15 guineas, three annual fees of £45, further annual fees as above. These fees are inclusive and cover the cost of instruction in vaccination, fevers, etc., and also the subscription to the amalgamated clubs and hospital journal

Further information may be obtained from the Dean or the School Secretary.

St. Bartholomew's Hospital

This institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 762 beds Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study The medical school buildings, including the library, the museum, and the chemical, biological, and anatomical departments, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive post-mortem room, large and well-equipped

laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country A further large block in Giltspur Street was acquired in 1923, and has been equipped by the construction of new lecture theatres and extensive laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology The new block of surgical wards and five operation theatres (one attached to each surgical unit), with accommodation for 250 patients, was opened in June, 1930 One of the old blocks previously used for surgical cases has been reconverted for the housing of an enlarged gynaecological and obstetrical unit, with separate operation theatres attached The Students' Union owns grounds of some ten acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M B , M D of the Universities of Oxford, Cambridge, and London, and for the higher surgical degrees at the same universities, including the M Ch Oxon , M Chir Cantab , M S Lond , and F R C S Eng

Clinical Units —Special clinical units have been established in medicine and surgery, each under the charge of a professor and director, who devotes the whole of his time to the purpose of hospital practice, teaching, and research In each unit there are an assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees The appointments of clerks and dressers in these departments are open to all students, and arrangements are made for all students to study in these units during a part of their clinical course

Appointments —Clinical clerks to the physicians and to the physician accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students , clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic, orthopaedic, gynaecological, children's, laryngological, aural, dermatological, venereal, electrical, and dental), and in the post-mortem room Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in special departments Ten house physicians and ten house-surgeons are appointed annually During their first six months of office they act as " junior " house physicians and house surgeons, and receive a salary of £80 a year During their second six months they become " senior " house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year A resident midwifery assistant, an ophthalmic house-surgeon, a house surgeon to the skin and venereal department, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed—the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum—and all are provided with board and rooms An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships —Five Entrance Scholarships and Exhibitions are annually awarded after examinations held in July, and one (the Shuter Scholarship) after examinations held in June The subjects of examination and conditions of eligibility for these scholarships are (1) and (2) One scholarship, value £100 and one exhibition, value £60, in any two of the following subjects human anatomy and embryology physiology, pathology (including bacteriology), biochemistry Candidates must have completed their examinations in anatomy and physiology in a British school or university outside the London Metropolitan area (3) One scholarship, value £100, in not fewer than three of the following subjects chemistry physics botany, zoology, and physiology, limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school (4) An entrance scholarship in arts, of the value of £100, in mathematics , Latin or Greek, or French or German , a second language or chemistry or physics (5) The Jeaffreson Exhibition in the same subjects as No 4, of the value £50 Candidates for Nos 4 and 5 must be under 19 years of age (6) The Shuter Scholarship value £50, in anatomy and physiology, is confined to Cambridge graduates The total value of the scholarships and prizes is over £1 500 annually

Further information and a handbook can be obtained on application to the Dean of the Medical College St Bartholomew's Hospital, E C 1

St. George's Hospital

This school is at Hyde Park Corner, and is carried on in connexion with St George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centre of London University established at King's College and University College The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects great attention being paid by the members of the staff to individual teaching A number of special courses are given, in which the requirements of university and all other examinations receive careful attention

The St George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon Students have the advantage of a well-filled library of medical and scientific books A register of accredited apartments and a list of medical men and others willing to receive St George's men as boarders may be seen on application to the Dean

Appointments —Two house-physicians, two house surgeons, and two casualty officers are appointed every two months The house officers reside and board in the hospital free of expense The casualty officers are non-resident, and receive salaries at the rate of £60 per annum After the student has held a house appointment the following are, among others, open to him assistant resident physician at £250 per annum , assistant resident surgeon at £250 per annum , medical officer to the Atkinson Morley Convalescent Hospital at £300 per annum ; medical registrarship at £200 per annum surgical registrarship at £200 per annum , medical officer to the biochemical department at £100 per annum , assistant curatorship of the museum, £100 per annum , obstetric assistantship, resident, at £100 per annum , the post of resident anaesthetist at £100 per annum

Scholarships —The following Entrance Scholarships and Exhibitions in anatomy and physiology and in general pathology are awarded in July to candidates who have passed the second M B London or corresponding examination, Sambrooke William Brown Exhibition of the value of £120 Jun William Brown Exhibition of the value of £80 , Anne Selina Fernee Scholarships (two) of the value of £80 each An Selina Fernee Exhibitions (two) of the value of £60 Dew Pendlebury Scholarship of the value of £50 , and Exhibitions each of the value of £40 and up to four in number Other prizes to the value of £200 are awarded annually to the students of the hospital

Fees —First year (First M B or pre medical course) £36 15s , second and third years, £42 each For the course of clinical study, in the fourth and subsequent years entrance fee, £10 10s , annual composition fee, £42 No entrance fee is payable by St George's students who have studied at King's College or University College

Further information may be obtained from the Dean of the Medical School.

St. Mary's Hospital

This hospital and medical school are situated close to Paddington Station (G W R), having on one side a population district of 500,000 persons, and on the other side the residential district of Kensington and Bayswater The hospital contains 348 beds, and extensions recently completed have provided two new operating theatres In a scheme of affiliation, for teaching purposes, of seven neighbouring hospitals, the teaching facilities extend over 1,000 beds By arrangement with the Lock Hospital students take the courses of instruction in venereal diseases there The athletic ground (ten acres) is situated at Wembley, and can be reached in twenty minutes by a constant service of trains

Clinical Facilities —Clinical units in medicine and surgery were established in 1920, and have now been formally recognized by the University Grants Committee, St Mary's being one of the six medical schools in London which enjoy this privilege Under this system professors of medicine and surgery, with competent assistants, give their whole time to teaching and research This means a regularity of teaching and a degree of individual attention that are only possible where units exist The system also provides additional salaried posts which are open to students after qualification

Teaching of Midwifery —The hospital has lying in beds, and in addition to the instruction thus obtained each student attends a short course at Queen Charlotte's Hospital as part of his training in midwifery, without additional fee Under the new building scheme it is proposed to institute additional lying in wards

Institute of Pathology and Research —Students specially interested in pathology and bacteriology have singular advantages at St Mary's The Institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F R S Research scholarships of £200 each are awarded annually to students working in the departments of the Institute , and research beds are provided Clerkships in pathology and bacteriology and chemical pathology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the pathological and bacteriological investigations of the wards, and learn the necessary technique under supervision Seventy two of these posts are available annually Numerous appointments are open to newly qualified members of the medical school, including ten salaried posts, with salaries varying from £200 to £750 per annum

Rebuilding of the Medical School —Building operations began in August 1930, and it is hoped that they will be completed by the autumn of 1932 The foundation stones of the Medical School and Pathological Institute were laid by H R H The Duchess of York on June 30th, 1931 The new school will contain departments for the teaching of all preliminary and intermediate subjects, and will include a Students' Club, dining and billiard rooms, and a gymnasium and swimming bath

Complete Curriculum —The medical school provides complete courses of instruction, and students can join at once on passing a preliminary examination in arts Terms begin in October, January, and April

Entrance Scholarships —Two Entrance Scholarships of £210 each are awarded annually in July by nomination on the lines of the Rhodes Scholarships The Palmer Scholarship of £25 per annum for two years is awarded in alternate years The Geraldine Harmsworth Scholarship (£200) and one or more University Scholarships of £200 are awarded annually in July

Fees —Composition fees for entire curriculum (6 years) £205 in one sum or £215 by five annual instalments Composition fee for clinical curriculum (3 years) 95 guineas in one sum or 100 guineas by two annual instalments As an alternative students may pay an annual fee of 40 guineas with an entrance fee

St. Thomas's Hospital

This school and hospital are situated in Lambeth, on the south bank of the Thames, facing the Houses of Parliament, and form one of the well known architectural features of London

The school buildings, which are separated from the hospital by a quadrangle, comprise lecture theatres, laboratories and classrooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum A splendid library and reading room and a complete museum are open to all students from 9 a m to 5 p m , on Saturdays to 1 p m St Thomas's House the new Students Club, comprises spacious dining and club rooms, etc , and in addition provides accommodation for some sixty resident students The terrace affords facilities for exercise and recreation The sports ground more than nine acres in extent, is at Chiswick It can be reached in forty minutes from the hospital , it is admirably adapted for football, cricket, lawn tennis, and athletic sports

The hospital proper contains 644 beds In addition to the ordinary provisions of a great hospital there are connected with the out patient department physicians' and surgeons' rooms provided with ample seating accommodation, so that students are enabled to follow closely the practice and teaching of the out patient staff There is a full complement of special departments, and connected with the hospital a special tuberculosis department gives opportunity for instruction of students There is a clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out patient room , it is arranged also for lantern demonstrations Clinical units in medicine and surgery have been established The maternity ward, containing 21 beds, gives students full facilities for maternity training, under supervision, within the precincts of the hospital This obviates any necessity for supplementary instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district The revised regulations of the examining bodies can thus be fully complied with

Appointments —All hospital appointments are open to students without charge A resident assistant physician and a resident assistant surgeon at £225 each per annum, and a resident anaesthetist at £200 per annum, are appointed annually Eight hospital registrars—three medical, one diseases of children, and four surgical—at an annual salary of £250 each, rising by £25 to £300, are appointed yearly The tenure of these offices may be renewed for a term not exceeding three years A pathological registrar to the department of obstetrics and gynaecology (at an annual salary of £250), an ophthalmic registrar (at an annual salary of £200), and an orthopaedic registrar (unpaid) are appointed yearly Ten resident casualty officers and anaesthetists (including two senior) are appointed every six months Seven house physicians (including two obstetric house physicians and one house physician to the department of diseases of children) and nine house surgeons (including two ophthalmic house surgeons, one orthopaedic house surgeon, and two house surgeons to the ear, nose, and throat department) are appointed every six months Thirty six or more clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re election Clinical clerkships and dresserships to the in patient and out patient departments are available to the number of 400 each year

Scholarships —There are five Entrance Scholarships one in arts giving two years free tuition , one of £150 and one of £60 in chemistry physics and biology, for students who have not received instruction in anatomy or physiology , one of £100 and an exhibition worth £60, in any two of the following subjects anatomy, physiology, chemistry, or pathology for students who have completed their examinations in anatomy and physiology for a medical degree in any of the universities of the United Kingdom or the Colonies and have not entered as clinical students in any London medical school The money value and subjects of examination of the remainder are as follows (*a*) William Tite Scholarship for second year students £25 , (*b*) and (*c*) Musgrove Scholarship or (alternately) Peacock Scholarship each for third year students and tenable for two years £35 each (*d*) Mead Medal medicine pathology and hygiene , (*e*) Wainwright Prize medicine , (*f*) Toller Prize, medicine , (*g*) Cheselden Medal surgery and anatomy (*h*) Clutton Memorial Medal in clinical surgery biennial (*i*) Beaney Scholarship £50 biennially surgery and clinical pathology , (*j*) Solly Medal and Prize biennially reports of cases , (*k*) Sutton Sams Prize biennially reports of cases (*l*) Bristowe Medal, pathology and morbid anatomy (*m*) Hadden Prize, pathology and morbid anatomy (*n*) Grainger Testimonial Prize £31 10s anatomy and physiology , (*o*) Louis Jenner Research Scholarship tenable for two years £60 annually pathology (*p*) School Council Research Scholarship £250 per annum (*q*) John and Temple Research Scholarship value £450 per annum (children)

Fees —The annual fees are For each year of study £50 These fees cover all tutorial classes but do not include instruction in infectious fevers

Special courses of instruction are given for various examinations Further information may be obtained from the Secretary to the Medical School St Thomas's Hospital Albert Embankment S E 1

University College Hospital

The school, which forms part of the corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine, surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electro-therapeutics, and skiagraphy. The hospital and school have acquired the National Dental Hospital and College as their dental departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital has also been amalgamated as the Ear, Nose, and Throat Department, and a new hospital for in- and out-patients, close to University College Hospital, is completed.

The school thus provides the final course of study for the degrees of the Universities of Oxford, Cambridge, London, Durham, and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in medicine and in dental surgery, and the Licence of the Society of Apothecaries. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical units in medicine, surgery, and obstetric medicine are now in operation. The whole-time directors of the units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital.

The new buildings of the obstetric hospital of 74 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 33 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are now finished and in full occupation.

A Students' Hostel adjoins the Medical School. Large, airy, and handsomely furnished bed-sitting rooms, each fitted with hot and cold running water, are available.

Appointments.—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, medical registrars, surgical registrar, obstetric officer, Harker Smith radium registrar, ophthalmic registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, skin and venereal diseases departments, and house anaesthetists.

Scholarships.—The following scholarships and prizes are open to competition: Two Goldsmid Entrance Scholarships entitling the holder to the final course of medical study; one Goldsmid Entrance Exhibition entitling the holder to a reduction by £80 of the fees due for the full course of final medical study, open to candidates who are graduates in arts or science of a university of the British Empire; and a Filliter Entrance Scholarship in pathology, entitling the holder to a reduction by £52 10s. of the fees due for the full course of final medical study. The examination for these scholarships is in any two of the following subjects: anatomy, physiology, and general pathology. Candidates for the Filliter Exhibition need take pathology alone. Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £280; the Graham Scholarship in pathology of a sum not exceeding £400 per annum; Leslie Pearce Gould Research Scholarship in surgery for one year, value about £200; the Atkinson Morley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £150; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £75; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery; the Bruce Medal in pathology and surgery; two Tuke Medals in pathology; the Erichsen Prize for practical surgery; and the Roberts Prize in obstetrics and gynaecology.

Fees.—The fee for the full course of final studies at the school is 112 guineas if paid in one sum, or 115 guineas if paid in two instalments. Fees for vaccination, fevers, and pharmacy not included.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

Westminster Hospital

The school, with its hospital situate in Broad Sanctuary opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College, Strand, and University College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 4,000 and out-patients upwards of 30,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery.

Appointments.—A medical and surgical registrar are appointed annually, each with a salary of £150, and an obstetric registrar with a salary of £150. An assistant medical registrar and an assistant surgical registrar, salary £100 per annum each, are appointed for six months. A senior resident and casualty officer, salary £104 per annum and board, appointed for six months, may be extended for a further period of six months. A medical registrar to the children (Wander scholar), salary £230, is appointed for one year. Three house-physicians, three house-surgeons, three assistant house-physicians, three assistant house-surgeons, and a resident obstetric assistant are appointed after examination, and are provided with rooms, commons, and salary of £52 per annum, except the assistant house-physicians and the assistant house-surgeons, who are provided with commons only. The assistant house-physicians, after three months' service, become house-physicians for a further period of six months, and the assistant house-surgeons, after three months' service, become house-surgeons for a further period of six months. Two house-anaesthetists are appointed for three months, non-resident, salary £50 per annum. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students. Every student must perform the duties of out-patient dresser for three months, and afterwards hold the office of in-patient dresser for three months. He is also required to serve two terms of three months each as medical clinical clerk to the in-patient physician, and one term as gynaecological clinical clerk. Two pathological clerks are appointed every three months to assist in the post-mortem room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the Second Examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patient dresserships or clerkships.

The governors of the hospital have now completed the extensive improvements and alterations to the hospital, which render it a still more efficient teaching institution, with an increased number of beds. An annexe devoted to radium therapy and research, containing twenty-two beds, has recently been opened.

The athletic ground is situated at Tooting, and can be reached in twenty minutes from the hospital.

Scholarships.—The following open scholarships are offered for competition during the year 1931–32. In the winter session two scholarships in anatomy and physiology, £75 each. In the spring two scholarships in anatomy and physiology, £75 each. A certain number of scholarships have been allotted to universities of England, Wales, and the Colonies, and to public schools. These scholarships are awarded entirely on the nomination of the Principal of the university or school.

Fees.—The annual composition fee is £40. An entrance fee of 10 guineas is payable by all students—namely, primary and intermediate students, £10 10s.; students entering for the final subjects, £8 8s. These fees, which include subscription for membership of the Clubs Union, are subject to alteration from time to time as the School of Medicine may direct.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital, Westminster, S.W.1.

London (Royal Free Hospital) School of Medicine for Women

The school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of the University of London. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large, well-equipped library, common room, Union Room, and refectory are provided for the use of students. Resident accommodation for 80 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 280 beds, all of which are available for clinical instruction. The obstetrical and gynaecological unit controls 68 beds. A large maternity district is served from the unit with a separate maternity hostel in the Essex Road, Islington. There are separate departments for diseases of the eye, ear, and skin, children and infant welfare, venereal diseases, orthopaedic surgery, massage, light, electrical and *x*-ray work, dentistry, and casualty. Students attend the practice of one of the fever hospitals of the London County Council and receive special instruction in lunacy at Horton Mental Hospital, Epsom; they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, Great Ormond Street, the National Hospital for Nervous Diseases, the South London Hospital, and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination, and also for the Medical School and general hospital course for dental students.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne Entrance Scholarship, value £30, the St. Dunstan's Medical Exhibition, value £60 a year for three years, which may be extended to five years, the Alfred Langton Scholarship of £50 a year for two years, the Flora Murray Bursary of £50, and the Mabel Sharman-Crawford Scholarship, value £20 a year for four years, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years; the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years; the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years; and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The School Jubilee Bursary of £50 a year for three years is offered every third year. The Bostock Scholarship, value £90 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The John Byron Bursary of £20 a year for two years, the Julia Ann Hornblower Cock Prize of £60, the Helen Prideaux Prize of £60, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £16 a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Post-Graduate Scholarship of £100 is awarded annually. Altogether the school offers annually £1,350 in scholarships. Various missionary societies also offer scholarships on certain conditions, and assist women who wish to go to India and other countries as medical missionaries.

Fees.—Courses for the University of London degrees and the diplomas of the Conjoint Board in England, and other qualifications: £50 per annum throughout the course.

The Students' Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs, and to issue a school magazine. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

King's College

In the Faculty of Medical Science instruction is given in the preliminary and intermediate subjects of the first and second examinations leading to the degree of M.B., B.S. of the University of London, of the corresponding examinations of other universities, and of the Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons. The courses are open to women students on the same terms as to men.

Regular students who have completed their preliminary and intermediate examinations proceed to one of the associated or other hospitals to pursue their studies for the final examinations. Special courses in anatomy and physiology are held in preparation for the primary examinations for the Fellowship of the Royal College of Surgeons.

A course for the degree of the University of London and for the diploma of the Royal College of Surgeons in dental surgery is given in conjunction with King's College Hospital Medical School.

Scholarships.—The entrance scholarships are: (1) Two Warneford Scholarships, each £30 for four years; subjects—selected from mathematics, classics, divinity, and science. (2) One Sambrook Scholarship of £30 for three years; subjects of examination selected from mathematics, classics, and science. The holders of the preceding awards must proceed to King's College Hospital. (3) Worsley, £100, paid in five annual instalments. (4) Rabbeth Scholarships, value £30 and £15, in July, for the best student of the first year. (5) Daniell Scholarship, £40, awarded on the results of the University Honours Examination. (6) The Layton and Berridge Studentships, each £150 per annum, and (7) numerous prizes.

Full information as to admission, fees, and scholarships can be obtained from the Dean of the Faculty of Medical Science, King's College, Strand, W.C.2.

University College

This institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy (including embryology and histology), physiology, biochemistry, and pharmacology. The anatomy building, provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31st, 1923, by His Majesty the King. This building forms part of the block which includes physiology and pharmacology. Research work is undertaken in all the above-named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society, with use of the College gymnasium and the athletic grounds. There is also a collegiate residence for about eighty-six men students at Ealing and for about seventy women students at Byng Place, Gordon Square.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 160 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School); two Entrance Exhibitions in the same subjects, each of the value of 55 guineas; a Faculty of Medical Sciences

Entrance Scholarship, value £30 a year, for three years ; and the Bayliss-Starling Memorial Scholarship (physiology and/or biochemistry), £120.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas. These fees may be divided into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, London, Gower Street, W.C.1.

THE PROVINCES

There are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases information is appended about hospitals other than those directly connected with the school in question ; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

Oxford and Cambridge

At both Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently furnished, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them ; but this is not commonly done, and is never, in the ordinary way, advised by the university medical authorities. The local hospitals—the Radcliffe Infirmary at Oxford and Addenbrooke's Hospital at Cambridge—though well equipped, are comparatively small. Students are therefore encouraged, as soon as they have completed the earlier examinations and taken a degree in arts, to join one of the London medical schools, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied. A considerable proportion of Oxford and Cambridge medical students take the London Conjoint diplomas before graduating in medicine and surgery at their own university. The experience gained by holding resident hospital appointments is naturally of much advantage when sitting for the Final M.B. examination and when engaged in composing a thesis.

Birmingham

The school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for the purpose. Together they have upwards of 700 beds for medical, surgical, and special cases, with an array of special departments of all kinds, including one for lying-in women. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures are delivered weekly throughout the session. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities, and for the diplomas of corporations.

Appointments.—The large number of appointments open to past or other students includes the following:—At the General Hospital: two surgical registrars, £100 (commencing) a year ; one resident medical officer, salary £155 a year ; one resident surgical officer, salary £180 a year ; one assistant resident surgical officer, salary £100 a year ; one resident pathologist, salary £70 a year ; two visiting anaesthetists, salary £50 a year ; two resident anaesthetists, salary £120 a year ; four house-surgeons, office tenable for nine months, £70 a year ; one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £70 a year ; four house-physicians, post tenable for six months, £70 a year. At the Queen's Hospital: one resident medical registrar, salary £200 a year ; two resident surgical officers, £100 a year, tenable for three years ; three house-physicians, three house-surgeons, one obstetric and one ophthalmic house-surgeon, one ear, nose, and throat house-surgeon, and one house-physician for duty at the Nerve Hospital (associated with Queen's Hospital), tenable for six months, salary £70 a year, with board, lodging, and washing ; one casualty house-surgeon, tenable for three months, salary £70 a year, with board, lodging, and washing. At the City Public Assistance Institutions: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Mental Hospitals: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year ; four clinical assistants (non-residents). Four non-resident appointments are in the gift of the Public Assistance Committee.

Scholarships.—There are numerous money and other awards for students of sufficient merit, among them being the following: Frank Fletcher and Catherine Fletcher Scholarships (not less than two per annum), tenable for five years, each of the annual value of £100, awarded on higher school certificate examination of the Joint Matriculation Board ; the Walter Myers Travelling Studentship of £300, offered each alternate year for research work and tenable abroad ; the Sands-Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on higher school certificate examination of the Joint Matriculation Board (July)) ; four Queen's Scholarships of £10 10s. each, awarded annually at the second (Part II), third, fourth, and final university examinations respectively ; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men ; the Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women ; the Arthur Foxwell Memorial Gold Medal (clinical medicine) ; the Sampson Gamgee Memorial Medal for surgery (Final M.B.) ; the Russell Memorial Prize (for examination in nervous diseases, final year) ; the Priestley Smith Prize in ophthalmology, value about £6 (awarded in the final examination) ; and the Peter Thompson Prize in anatomy (value about £6) for students in their third university year. There is also a scholarship of £46 17s. 6d. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical Prize, gold medal ; Senior Surgical Prize, gold medal ; Midwifery Prize, gold medal ; Junior Medical Prize, silver medal ; Junior Surgical Prize, silver medal.

Fees.—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine, and some other special work. The total cost for the six years' curriculum, including hospital and examination fees, is estimated at £242 17s. 6d.

Other information should be sought from the Registrar, or the Dean of the Medical Faculty, University, Edmund Street, Birmingham.

Bristol

The school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and for the diploma in dental surgery.

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them more than 660 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to large and well-equipped departments for dental work and large outdoor maternity departments. The Bristol

Royal Infirmary has now been selected by the National Radium Commission as a Radium Centre. At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for *x*-ray work, both for diagnosis and treatment, for electrocardiography, and for the various forms of electrical treatment, including high-frequency currents, electric baths, Finsen light treatment, and massage. The students of the school also attend the City and County Mental Hospital, the Ham Green Fever Hospital, the practice of the Royal Hospital for Sick Children and Women, containing 100 beds, and that of the Bristol Eye Hospital, with 40 beds. In addition, by the kind permission of the Health Committee of the Bristol City Council, students may attend the clinical practice at Southmead Hospital, which has 556 beds. The new Orthopaedic Hospital at Winford is also available.

Appointments.—(1) Undergraduate: Medical clerkships, surgical dresserships, also ophthalmic, obstetric, pathological, dermatological, ear, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate: At the Bristol Royal Infirmary: four house-surgeons, one casualty house-surgeon, two house-physicians, one house-physician for cancer research wards, one resident obstetric officer, one gynaecological and dermatological house-surgeon, one ear, nose, and throat house-surgeon, one assistant house-surgeon and house-physician to the ophthalmic department, one dental house-surgeon, and one unpaid assistant (usually a resident student) to the senior resident medical officer. All these appointments are for six months. Salary in each case at the rate of £60 per annum, with board, apartments, and laundry, except the casualty house-surgeon and the dental house-surgeon, who receive £80 per annum. In each case the salary is increased by £40 per annum if the officer is re-elected for another six months. From the resident medical officers a senior resident medical officer is appointed at a salary of £200 per annum. At the Bristol General Hospital: senior resident medical officer, £200 per annum; casualty house-surgeon, £100 per annum; two house-physicians, £80 per annum; two house-surgeons, £80 per annum; resident obstetric officer, £80 per annum; house-surgeon to special departments, £80 per annum. All the £80 appointments carry a salary of £100 for residents who have previously held another of them; the dental house-surgeon (non-resident), £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years.

Scholarships.—The following are among the scholarships and other awards open to students of the school: The Ashworth Hallett Scholarship, value £40, open to women only; two Martyn Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize, value 7 guineas, for proficiency in practical surgery; the Committee's Gold and Silver Medals, for fifth-year students, for general proficiency; the Augustin Prichard Prize, value about 6 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in gynaecology; the Crosby Leonard Prize, value 6 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett-Roué Scholarship for proficiency in diseases of the nose, throat, and ear, or value £17, open to men only; Lady Haberfield Scholarship, value about 25 guineas; Bristol and Bath City Scholarships and the Scholarships offered by the counties of Leicestershire, Somerset, Wilts, Dorset, etc., are tenable in the university.

Some of the Fellowships awarded by the Colston Research Society for research in the university are allotted to the Faculty of Medicine.

A Beaverbrook Fellowship, tenable for three years, is open to all members of the uni... holding a medical qualification.

The Markham Skerritt Memorial Prize is awarded every three years to that member of the university, not a member of the medical board, who, in the opinion of that board, has published the best original work during the three years.

The Paul Bush Gold Medal is awarded in alternate years to the best resident medical officer at the Bristol Royal Infirmary.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is 205 guineas, paid by annual instalments.

Further information as to scholarships, curricula, and fees can be obtained from the Dean of the Faculty of Medicine, or the Registrar of the University, Bristol.

University of Durham College of Medicine

This, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-upon-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university. Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 600 beds, where there are facilities for the study of the various special subjects. Students do their practical midwifery at the Princess Mary Maternity Hospital, which contains 90 beds, and has an annual indoor and outdoor attendance on 3,000 cases. In the Heath wing of the school itself there is a gymnasium and a set of rooms for the separate use of the students. The bacteriological department is adjacent to Armstrong College.

The Newcastle-upon-Tyne Dental Hospital and School has recently become a component part of, and now constitutes the dental department in, the College. A new dental hospital, erected within the grounds of the Royal Victoria Infirmary and equipped on the best modern lines, is to be opened at the commencement of the forthcoming academic year, and in future it will be possible to undertake the whole of the dental curriculum (that is, systemic lectures, dental and general hospital practice, together with mechanical pupilage) at the College. The Dental Board of the United Kingdom will recognize the school for the purpose of granting its bursaries to students who are able to comply with the conditions laid down by the Board.

Post-Graduate Instruction.—A comprehensive series of post-graduate courses has been arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study which are afforded by the College, the Royal Victoria Infirmary, and other associated hospitals; and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer sessions, as well as an intensive course in the summer vacation. The courses of instruction for the B.Hy. and D.P.H. are suspended for the year 1931–32.

Students' Union.—A Students' Union has been erected and furnished at a cost of over £54,000, and is in daily use. Separate accommodation (non-residential) is provided for men and women students.

Appointments.—Pathological assistants, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months. Resident appointments at the Infirmary are made every six months, and each year medical and surgical registrars (who also act as tutors) are appointed from candidates who have previously held resident appointments at any recognized hospital. These latter posts afford an excellent opportunity for post-graduates, not only at the Infirmary, but also in the departments of anatomy, physiology, pathology, and bacteriology of the College.

Scholarships.—University of Durham Entrance Scholarship, £25 a year for four years; Pears Entrance Scholarship, £40 a year for three years (awarded every third year); Heath Entrance Scholarship (from Kepier Grammar School), £60 (renewable); Province of Durham Masonic (Entrance) Scholarship, £60 (renewable); Heath Scholarship for surgery, £200, available every second year; Rutherford Morison Surgical Scholarship, £180, available every third year.

The following scholarships are tenable for one year—namely: Tulloch Scholarship for elementary biology and organic chemistry, £20; Dickinson Scholarship for medicine, surgery, midwifery, and pathology, Gold Medal and £20; Charlton Scholarship for medicine, £25; Gibb Scholarship for pathology, £28; Luke Armstrong Scholarship for comparative pathology, £25; Stephen Scott Scholarships for anatomy and physiology, two of £50 each; Philipson Scholarships for highest marks in Final M.B., B.S. Examination, two of £48 each; Goyder Memorial Scholarship for clinical medicine and clinical surgery, interest on £325; Hamilton Drummond Memorial Scholarship, in aid of research in clinical surgery, about £50; Gibson Prize for midwifery and diseases of women and children, £10; Turnbull Prize and Silver Medal for surface anatomy; Outterson Wood Prize for psychological medicine, £10; and Sewell Memorial Prize and Silver Medal for clinical pathology.

Fees.—The composition fee for lectures for medical students at the college is £140. Composition fee for hospital practice, £46, plus £2 2s. yearly for three years, payable to the Committee of the Royal Victoria Infirmary. For dental students the composition fees amount to £261 for the B.D.S. and to £241 for the L.D.S., covering all systematic lectures and laboratory work at the College, general and dental hospital practice, and mechanical pupilage. Other information should be sought from the Dean of the College, University of Durham College of Medicine, Newcastle-upon-Tyne.

Leeds

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting rooms, well-arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar classrooms. In addition, there are a library and reading room and museums of pathology and anatomy. The comfort of the students is secured by means of common rooms and a refectory. Extensions of the medical school buildings were opened in October, 1930, and an Institute of Pathology is in course of erection on an immediately adjacent site. The General Infirmary has 632 beds, and includes gynaecological and ophthalmic wards, special children's wards, and a large out-patient department. The Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge, attached to the Infirmary, have 88 beds. The West Riding Mental Hospital at Wakefield is available for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary, the Hospital for Women and Children, and the Leeds Maternity Hospital.

Appointments.—Physicians' clerks and surgical dressers are appointed every six months; clerks in the children's department, orthopaedic dressers, ophthalmic and aural dressers, gynaecological ward clerks, maternity clerks, assistant physicians' clerk, dermatological clerks, assistant surgeons' dressers, dressers in the casualty rooms, junior and senior post-mortem clerks, laboratory assistants and dressers in the venereal clinic every three months. After graduation a considerable number of resident and other appointments become available in the Leeds General Infirmary, Leeds Public Dispensary, Hospital for Women and Children, West Riding Mental Hospital, etc., occupying periods of from six to twelve months at rates varying from £20 to £150 per annum.

Scholarships.—The university awards annually on the results of the first examination a scholarship in the form of free admission to the lectures and classes given in the School of Medicine. The university also awards a scholarship on the results of the second examination, of the value of £68, in the form of free admission to the clinical teaching of the Infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £324, *plus*, of course, the expenses of living during the five and a half years covered by the curriculum. The composition fee for the course for the first, second, and third examinations, and for the clinical work at the Infirmary, is £242. The composition and clinical fee for those who have passed the second examination is £156.

Further information can be obtained from the Academic Subdean or Clinical Subdean, School of Medicine, Leeds.

Liverpool

The Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well-equipped classrooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which a list is given below, have amalgamated to form the clinical school of the university.

The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,500. *They include the following:* Two Holt Fellowships, one in pathology, the other in physiology; a Robert Gee Fellowship in anatomy; two John Rankin Fellowships in anatomy; a John W. Garrett International Fellowship in bacteriology; a Johnston Colonial Fellowship in biochemistry; an Ethel Boyce Fellowship in gynaecology; and a Thelwall Thomas Fellowship in surgical pathology; one Lady Jones Fellowship in orthopaedic surgery (value of Fellowships: two at £200, two at £150, two at £120, four at £100); a University Scholarship of £50, awarded on the results of the Final M.B. Examinations; a Ridgway Research Scholarship (£100); a Scholarship in mechanical dentistry of £20; two Lyon Jones Scholarships, of the annual value of £21 each for two years, one for the junior and the other for the senior students; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in anatomy; John Rankin Exhibition in practical anatomy, £25; the George Holt Medal in physiology; the Kanthack Medal in pathology; Mitchell Banks Medal in anatomy; the Robert Gee Prize of £5 5s. in children's diseases; Mary Birrell Davies Memorial Scholarship (women), £60 per annum for four years; Robert Gee Entrance Scholarship (men), value of £42 10s. per annum for four years; Dental Operating Prizes (four); Orthodontia Prizes (two); Samuels Memorial Scholarships, three at £20 each; one Thomas H. Bickerton Prize in anatomy; Dr. N. E. Robert Prize in zymotic diseases; Ash's Prize in dental surgery, value £2 2s.; Gilmour Medal; and other entrance scholarships. In addition, a number of gold and silver medals have recently been instituted in the following subjects: pharmacology, surgery, forensic medicine and toxicology, medicine, orthopaedic surgery, and laryngology and otology.

Fees.—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School

As many as nine hospitals have combined to form the clinical school of the university, these being: The Royal Infirmary, the David Lewis Northern Hospital, the Royal Southern Hospital, the Stanley Hospital, the Royal Liverpool Children's Hospital, the Hospital for Women (with the Samaritan Hospital), the Liverpool Maternity Hospital, the Eye and Ear Infirmary, and St. Paul's Eye Hospital. Between them they provide over 1,500 beds.

Manchester

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains 590 beds, and has associated with it a large convalescent home (132 beds) and a Central Branch Hospital (54 beds). The courses in mental diseases are partly taken in the County Mental Hospitals at Prestwich and Macclesfield. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: Two surgical registrars at £150 per annum; two pathological

registrars, at £100 and £50 per annum, one medical registrar, at £150 per annum, a cardiographic registrar, at £150 per annum, a surgical tutor, at £30 per annum, a director of the clinical laboratory, at £400 per annum, and two assistants, at £350 and £300, three assistant medical officers and three assistant surgical officers, each at £35 per annum, assistant surgical officers, aural department, at £35 per annum, seven anaesthetists, from £75 to £125 per annum each, one resident medical officer, one year, £200 per annum, one resident surgical officer, one year, £200 per annum, three resident medical officers for Central Branch, one at £200 and two at £100 per annum, one assistant resident surgical officer, £150 per annum, one resident medical officer at the Convalescent Hospital at Cheadle £250 per annum, two assistant medical officers to radiological department, £150 and £105 per annum, medical officer, physiotherapeutic department, £150 per annum, assistant surgical officer, gynaecological department, £35 per annum, assistant to the dermatologist, £20 per annum, and three assistant surgical officers for Central Branch, £75 per annum, ten house surgeons and eight house physicians, appointed during the year for periods of six months, at a salary of £50 per annum Resident officers are appointed to the gynaecological eye, and the ear and throat departments every three months Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months Non resident clinical assistantships for qualified medical men and women, tenable for six months, at an honorarium of £35

Clinical work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well known Hospitals for Children at Pendlebury, and St Mary's Hospitals for Women and Children, the Manchester Hospital for Diseases of the Ear, Monsall Fever Hospital, the Christie Cancer Hospital, the Hospital for Consumption and Diseases of the Throat and Chest, the Ancoats Hospital, and the Salford Royal Hospital, all make arrangements for the instruction of students

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school Rogers and Scatton Scholarships in Arts (in alternate years) £40 per annum tenable for two years Three Hulme Scholarships tenable for three years of £35 one being awarded annually for proficiency in subjects of general education Two James Gaskill Scholarships of £35 tenable for two years one being awarded annually for proficiency in the branches of mechanics and chemistry A Dora Muir Scholarship £30 per annum tenable for three years and open to the competition of women students only This is awarded triennially Sir J P Hay Shuttleworth Scholarship £30 per annum tenable for three years awarded triennially open to the competition of scholars from Sedbergh School Giggleswick School and Burnley Grammar School subjects—mathematics chemistry and mechanics Dreschfield Memorial Scholarship value £20 tenable for two years and awarded triennially on the result of the Entrance Examination John Russell Medical Entrance Scholarship awarded annually value £45 Two Dauntesey Junior Medical Scholarships value £50 each tenable for one year for candidates who have not commenced the second year of study leading to a medical qualification subjects—zoology, botany and chemistry One Dauntesey Senior Medical Scholarship £50 for one year awarded on results of Second M B Examination Two Entrance Scholarships in medicine value 160 guineas awarded annually for proficiency in arts or science respectively Tom Jones Exhibition in anatomy £25 offered annually A Robert Platt Physiological Scholarship of £90 tenable for one year A Leech Fellowship of £100 for original research after graduation A Graduate Research Scholarship in medicine value £70 tenable for one year awarded annually for proficiency shown at Final M B Examination A Dumville Surgical Prize value £15 awarded annually at graduation The Tom Jones Memorial Surgical Fellowship value £105 tenable for one year usually awarded annually The Turner Medical Prizes value 10 guineas each awarded annually for proficiency in certain subjects of the Final M B Ch B Examination The John Henry Agnew Prize of £30 awarded annually for proficiency in the diseases of children The Ashby Memorial Scholarship tenable for one year (£100) for research in the diseases of children offered triennially Sidney Renshaw Prize in physiology one offered annually (£15) Wild Prize in pharmacology (£10) The John Henry Agnew Fellowship in diseases of children £120 offered triennially Eliza Marple Holt Post Graduate Medical Scholarship for Women £60 for one year offered biennially. The details and regulations of the Dickinson Scholarships—(1) for anatomy (2) for pathology (3) Research Scholarship in surgery and (4) Travelling Scholarship in medicine—may be obtained from the Secretary to the Trustees The Morrison Watson Fellowship for research in anatomy is offered annually, value £150 also the Sheridan Delepine Fellowship in preventive medicine value £300 is offered biennially The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum tenable for not more than four years to women students who have passed the First M B Examination the conditions can be obtained from the Registrar The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder —open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the university as candidates for that diploma

Fees.—The composition fee for the university course in medicine is 114 guineas for men 112 guineas for women, payable in four instalments of 28½ and 28 guineas respectively, but this sum does not include the fee to cover the work required for the First M B Examination This is £42 payable in one sum Hospital fees are additional and usually amount to about 77 guineas

A prospectus and further information about the school and scholarships may be obtained from the Registrar

Sheffield

In this city the Medical School is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work and a large pathological museum, which is open daily In addition, there is a large library and reading room There are a number of recreation, athletic, and other societies, all under the management of an annually elected students representative council and large and comfortable common rooms for both men and women students There are also two student unions—one for men and one for women students In the university buildings there is a refectory open to all students of the school, and a university journal is published each term The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 800 beds for medical, surgical, and special cases, including diseases of the eye

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them, whilst at the Royal Hospital there are special out patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases The medical and surgical staffs attend daily, and give clinical instruction in the wards and out patient rooms Clinical lectures in medicine and surgery are given weekly Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the post mortem examinations at both institutions are in charge of the Professor of Pathology and afford ample material for study of this subject Students are able to attend the practice of the Jessop Hospital for Women and the Hospital for Sick Children while special courses on fever are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Mental Hospital

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology (1) casualty dresserships (2) surgical dresserships (3) medical clerkships (4) pathological clerkships (5) ophthalmic clerkships, (6) clerk to the skin department etc These appointments are made for three months commencing on the first day of October, January April and July

Scholarships.—Entrance Medical Scholarship covering cost of tuition fees for a degree course in the Faculty of Medicine,

open to both sexes. Six Edgar Allen Scholarships of £125 a year for three years may be held by students taking the degree course in medicine. Two Town Trustees' Scholarships, each of the value of £50 a year, tenable for three years, for boys or girls under the age of 19 years who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees' Scholarships, value £50 a year, for boys or girls under 19 years of age educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Fellowship, value £50 (with remission of fees), tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years. Kaye Scholarship for proficiency in anatomy and physiology. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete medical course in the university pay an inclusive composition fee of £42 for each of the first five years and £28 for the sixth year. The composition fees for the dental courses are as follows: for B.D.S., first and third years, £80; second, fourth, and fifth years, £30; for L.D.S., first and second years, £80; third and fourth years, £30. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

The Welsh National School of Medicine

The next session opens on October 1st. All classes are open to both men and women students. Particulars relating to the admission of students as from October 1st, 1931, can be obtained on application to the Provost, or to the Secretary, Welsh National School of Medicine, The Parade, Cardiff.

The following is a list of heads of departments: Physics, Professor R. T. Dunbar; chemistry, Professor W. J. Jones; zoology, Professor W. M. Tattersall; botany, Professor R. C. McLean; anatomy, Professor C. McLaren West; physiology, Professor T. Graham Brown; materia medica and pharmacology, Dr W. Mitchell Stevens; pathology and bacteriology, Dr. J. B. Duguid; medicine, Professor A. M. Kennedy; surgery, Professor A. W. Sheen; obstetrics and gynaecology, Professor Sir Ewen J. Maclean; preventive medicine, Professor Edgar L. Collis; tuberculosis, Professor S. Lyle Cummins.

SCOTLAND

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified, or offer valuable opportunities for post-graduation work.

Aberdeen

The school is conducted by the Faculty of Medicine. This comprises thirteen chairs, from which instruction is given in all the main branches of medical science—namely, biology, physics, chemistry, anatomy, physiology, materia medica, pathology, bacteriology, forensic medicine, surgery, medicine, and midwifery. Courses of instruction in public health and infectious diseases, tropical medicine, medical ethics, tuberculosis, and clinical methods are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 370 patients), the Royal Mental Hospital (900 patients), the Sick Children's Hospital (132 patients), the City Fever Hospital (350 patients), the General Dispensary, Maternity, and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (3,000 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in mental diseases at the Royal Mental Hospital; in diseases of the ear, nose, and throat at the Infirmary and Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are: Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.). A diploma in public health is conferred after examination on graduates in medicine of any university of the United Kingdom.

The degree of Ph.D. is also granted in this faculty.

Bursaries, scholarships, and fellowships, to the number of fifty, and of the annual value of £1,200, may be held by students of medicine in this university. They range from £8 to £150 per annum, and are tenable in most cases for two or three years. The winter session begins on October 13th, 1931; the summer session on April 19th, 1932.

Fees.—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M.B., Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £240.

Edinburgh

There are two Schools of Medicine: the School of the University, and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh.

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; zoological laboratory and museum of science and art; physical laboratory; chemical laboratories; dissecting room, bone room, and anatomical museum; physiological laboratory; medical jurisprudence laboratories; John Usher Institute of Public Health; materia medica museum and laboratory; post-mortem department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; tutorial classes of practice of physic, of clinical medicine, and clinical surgery, surgery and midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, clinical midwifery, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, operative surgery, clinical surgery (per term), clinical medicine (per term), and experimental pharmacology, £3 3s. Practical anatomy, (winter), £6 16s. 6d. Practical chemistry, £4 14s. 6d. Regional anatomy, chemical physiology, surgical pathology, and infectious diseases, £1 11s. 6d. Tuberculosis, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology and applied anatomy, £2 2s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition, there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself. No other university is in a better, even if as good, position to smooth the financial path of earnest students.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*; for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a board elected by the Royal Colleges of Physicians and Surgeons and by the lecturers. This board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing

are the following (1) Surgeons' Hall, Nicolson Street, (2) New School, Bristo Street, (3) Nicolson Square, (4) Marshall Street, and other places The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session The courses on the special subjects are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £180 The Calendar, giving full information regarding classes and fees, can be obtained (price 6d) on application to the Dean of the School, Surgeons' Hall, Edinburgh

WOMEN STUDENTS IN EDINBURGH.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed In clinical surgery, however, while the lectures are attended by mixed classes, the women students are restricted to the wards of one charge The particular wards are changed every six months, each of the surgeons to the Infirmary taking the women students in rotation With few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men The women students also have the same privileges as in the past have been given to the men of attending a certain proportion of the extra mural classes taught by the lecturers of the School of Medicine of the Royal Colleges Most of the students societies are open to women, with the exception of the University Union and the Royal Medical Society Their place is taken by the Women Students' Union and the Women's Medical Society There is also a Women's Athletic Club, with playing fields gifted to it by the university The membership of the Royal College of Physicians and Fellowships of the two Royal Colleges are also open to women Information on matters connected with women's studies may be obtained from the Adviser of Women Students, The University, Edinburgh

Glasgow

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation (M B, Ch B) at the University of Glasgow can be taken here Besides ample provision for lectures there is practical and clinical work at the hospitals, and practical courses are conducted in the laboratories of the following departments pathology, public health, pharmacology, physiology, surgery, anatomy, chemistry, zoology, physics, and botany, the Botanic Garden and the Hunterian Museum are also open to students Well equipped new buildings have been provided for botany, zoology, practical anatomy, and operative surgery, as well as for pathology, the very large additions made a number of years ago to the chemical laboratory render it one of the most extensive in Scotland The classrooms and laboratories for the departments of physics physiology, pharmacology materia medica, medical jurisprudence, and public health are also of recent erection and are elaborately equipped In addition to the regius chairs and the chair of pathology at the University there are chairs of medicine, surgery, obstetrics, and pathology at the Royal Infirmary, and a number of university lectureships in clinical medicine, clinical surgery venereal diseases, laryngology, dermatology otology, psychological medicine, tuberculosis, pathological biochemistry and electrical diagnosis and treatment have been founded there Other chairs have been founded at the university in bacteriology, organic chemistry, physiological chemistry, applied physics, public health, and paediatrics There are also lectureships on the surgical and medical diseases of children and on electrical diagnosis and therapeutics The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post graduation and research work A diploma in public health is now also granted Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached, the Royal Infirmary (782 beds), and the Victoria Infirmary (380 beds), while the Royal Mental Hospital Gartnavel (500 beds), the Royal Hospital for Sick Children (290 cots), the Royal Maternity and Women's Hospital (114 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds), Ruchill (540 beds), and Mearnskirk, and other institutions afford facilities for the practical study of special branches The large general hospitals of the parish council are now also available for clinical instruction in medicine and surgery Information regarding post graduate study will be found at page 458

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1 000 while bursaries in any faculty amounting to about the same annual sum may be held by students of medicine a number of both sets being open to women Several valuable scholarships may be held by medical students who have graduated in arts

The following bursaries are open for competition to students entering on their first session of attendance in the Faculty of Medicine Davidson Bursary annual value £40 tenable for four years for students who propose before entering the Faculty of Medicine to take the degree of B Sc in pure science including in their curricula anatomy and physiology Highland Society (Glasgow) Bursaries annual value £25 each, tenable for five years, for students of Highland descent open to women, two bursaries vacant each year Logan Bursary, annual value £25, tenable for four years open to women Robina Eckford MacBrayne Scholarship annual value £50 tenable for three years Marshall Bursary annual value £24, tenable for four years Merchants House Bursary, annual value £35 tenable for four years open to women John Oliphant Bursary annual value £35 tenable for six years James A Paterson Bursaries three each year of the annual value of £35 £25 and £15 respectively each tenable for four years students entering their second session are also eligible, open to women examination in mathematics and natural philosophy

Candidates for the aforementioned bursaries must take the university general bursary competition which is held each year in the month of June

In addition the following bursaries scholarships, and prizes are open to students prosecuting their studies in the Faculty of Medicine Arbroath Bursary, annual value £40, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine to the student who is of the highest merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations Arthur Bursary annual value £20, tenable for three years awarded to the *woman* student who takes the highest place among the Queen Margaret College candidates at the First Professional Examination Mary Allan Bell Bursaries (five), annual value £50 each tenable for three or four years, for students who have gone through the curriculum in arts, special examination, tenable also in theology or law Brisbane Bursary annual value £50 tenable for four years, candidates must be under 22 years of age and must have taken the degree of M A William Gardiner Bursary annual value £18 tenable for two years awarded on results of the First and Second Professional Examinations in the subjects of physiology chemistry and physics Dr Thomas Gibson Bursary annual value £50 tenable for four years, open to medical students entering on their second winter who are preparing for service as medical missionaries Johnston Bursaries (two) annual value £25 each tenable for three years for eminence in the work and examinations of the first and second years of the curriculum Lorimer Bursaries (six) value £20 each tenable for one year are awarded to the best students in each of the following classes botany zoology physics chemistry anatomy physiology Macfarlane Bursary annual value £40 tenable for three years for students who have attended the first session of their professional study in the university examination in elementary anatomy elementary chemistry and botany Mackintosh Bursary value £31 tenable for one year open to medical students of either sex who have attended one of the courses of lectures on insanity examination in that subject John

Monteith Bursary, annual value £21, tenable for two years, is awarded annually to the student who gains the highest number of marks in the subjects of anatomy and physiology at the professional examinations held during the previous year. Rainy Bursary, annual value £50, tenable for two years, for students entering on their third session of medical study; awarded to the candidate whose aggregate of marks in the subjects of anatomy and physiology of the Second Professional Examination, and in chemistry, botany, and zoology of the First Professional Examination, is the highest. A. and B. Stewart Bursaries, annual value £50 each, tenable for three years, for students who have gone through the arts curriculum; there is a special examination. Walton Bursary, annual value £40, tenable for four years; the Earl of Sandwich has the right of appointing to the bursary one of two students nominated by the Senate. Weir Bursary, value £25, tenable for one year, awarded on the results of the Second and Third Professional Examinations. Barbour Scholarship in anatomy or physiology, annual value £250, tenable for two years. Joseph Coats Memorial Scholarship, value £85, tenable for one year, for research in pathology, may be held concurrently with the Perman Memorial Scholarship (q.v.). Faulds Fellowship, annual value £250, tenable for three years, for medical research. Foulis Memorial Scholarship in pathology, value £50. Four McCunn Medical Research Scholarships, value £200 each, tenable for one year. Perman Memorial Scholarship, value £50, tenable for one year, for research in pathology, may be held concurrently with the Joseph Coats Memorial Scholarship (q.v.). The Junior Arnott Prize of about £15; the Senior Arnott Prize of £25. Three Bellahouston Gold Medals. The Brunton Memorial Prize of about £20. The Macewen Medal in surgery. The Captain H. S. Ranken V.C. Memorial Prize of £5. The Straits Settlements Gold Medal. The West of Scotland R.A.M.C. Memorial Prize of about £15.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the University Calendar, and summarized at page 432 of this issue. Scholarships and Fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study.

Fees.—The matriculation fee for each year is £2 12s. 6d. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance at the Western Infirmary students pay £12 12s. for a perpetual ticket, or £1 11s. 6d. for a single term ticket, with an additional fee of £5 5s. for each winter and £2 12s. 6d. per term for each clinical course. The fees are the same at the Royal Infirmary. The university fees for the four professional examinations total £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to about £250.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with classrooms, reading rooms, library, etc. They are taught in some classes apart from male students, in most together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, the Western Infirmary, and the Victoria Infirmary; also *inter alia* in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hawkhead Asylum, the Ophthalmic Institution, the City of Glasgow Hospitals, Belvidere and Ruchill, and the Glasgow Maternity and Women's Hospital.

Scholarships.—The Arthur Scholarship, annual value £2[illegible] tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1931. This scholarship is restricted to women medical students.

Full information can be obtained from the Mistress, Queen Margaret College, Glasgow.

Board for Students.—University halls of residence for women students, Queen Margaret Hall and Robertson Hall, are situated near the college. The cost of board and residence is from 35s. to 42s. a week, according to accommodation. Applications to be made to the Wardens. Another residence near the college is South Park House, Ann Street, belonging to the Student Christian Movement, and open to women students of all colleges in Glasgow. Cost of board is from 32s. to 35s. weekly. Applications to be made to the Warden.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The Infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the Infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The Infirmary has (including the ophthalmic department) 782 beds, 542 for surgical and 240 for medical cases. There are special beds and wards for diseases of women, of the throat, nose, and ear, burns, and septic cases. In the out-patient department in 1928 over 97,000 patients were treated. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most improved apparatus for diagnosis and treatment.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £120. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St. Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in the subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the School Calendar).

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 6 guineas a session. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W., who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, with 160 beds, offers facilities for clinical instruction in the diseases peculiar to women. A university lectureship, the Royal Samaritan Lectureship in gynaecology, is associated with the hospital. The lecturer is Dr. David Shannon. Particulars may be obtained from Mr. T. Mason Macquaker, M.A., Secretary, 200, St. Vincent Street, Glasgow.

St. Andrews and Dundee

The medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects for the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from

14s. 6d. to £4 4s. for practical classes. The hospital ket is £1 8s. for three months, £4 4s. a year, or rpetual, £13 6s. 8d. in one sum. The inclusive or mposition fee for the curriculum is £182. In connexion th both institutions there are bursaries and scholarships considerable value, which are awarded after competitive amination. Information as to these can be obtained om the Secretary of the University of St. Andrews. formation regarding the clinical facilities may be tained from the Dean of the Medical Faculty, Medical hool, Dundee.

Clinical Work

Good opportunities for clinical work are afforded by the undee Royal Infirmary, the instruction given thereat eing recognized for purposes of graduation by all the cottish universities, the University of Cambridge, the niversity of London, the National University of Ireland, id by the Royal Colleges of England and Scotland.

IRELAND

here is a choice of six schools for those pursuing their edical studies in Ireland. For clinical instruction the noice is equally wide and varied, though the hospitals iemselves are comparatively small. Some account of the *hools follows.*

Dublin

School of Physic

his school is in Trinity College, Dublin, and is carried n under the joint auspices of the University of Dublin and f the Royal College of Physicians of Ireland, the King's rofessors of institutes of medicine (physiology), practice f medicine, materia medica, and midwifery being ap-ointed by the latter. Clinical instruction is given at Sir *'atrick Dun's Hospital, and some twelve other metro-*olitan hospitals and asylums are recognized by the Board f Trinity College. The courses of instruction are open o all medical students, whether they belong to the niversity or not.

The Schools of Surgery

These are schools carried on in Dublin under the super-ision and control of the Council of the Royal College of Surgeons. They are formed of the college's own school, combined with two famous old medical schools—Carmichael and Ledwich ; they are attached to the college by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the college.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.) ; the Carmichael Scholarship (£15) ; the Mayne Scholarship (£8) ; the Gold Medal in surgery ; the Stoney Memorial Gold Medal in anatomy ; the *H.* Macnaughton Jones Gold Medal for midwifery and gynaecology ; the Captain Massey Miles Memorial Prize ; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin

This is one of the constituent colleges of the National University of Ireland. The arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for information may be addressed to the Secretary and Bursar, University College, Dublin.

Clinical Teaching in Dublin

There are numerous well-arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds ; Dr. Steevens's Hospital at Kingsbridge, with 150 ; Meath Hospital and County Dublin Infirmary, with 160 ; Mercer's Hospital, with 120 ; the Royal City of Dublin Hospital, with 124 ; the Adelaide Hospital, with 160 ; the Royal Victoria Eye and Ear Hospital, with 100 beds ; Sir Patrick Dun's Hospital, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 330 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the British Isles. There are ante-natal and paediatric departments as well as a thoroughly equipped pathological laboratory, and *x*-ray apparatus. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality. During the year 1929, 3,182 patients were admitted to hospital, this total being made up of 2,424 maternity cases and 758 gynaecological cases ; 1,793 patients were attended at their own homes and 11,041 attended the dispensary.

Two other important obstetric and gynaecological hospitals in Dublin are the Coombe Lying-in Hospital and the National Maternity Hospital. During the year ending December 31st, 1929, the number of cases dealt with in the Coombe Lying-in Hospital were as follows: intern maternity department, total admissions 1,204 ; intern *maternity department, total deliveries* 1,080 ; *extern* maternity department, total deliveries 1,432 ; gynaecological department, number of operations 361.

At the National Maternity Hospital, Holles Street, Dublin, 1,413 patients were admitted to hospital during the year ending March *31st, 1930* ; total deliveries in hospital were 961 ; gynaecological operations 371 ; and dispensary attendances 7,843.

The practice of these hospitals is attended by large numbers of students, post-graduates, and nurses.

Belfast

The Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete *medical curriculum for all purposes.* The laboratories in connexion with the departments of bacteriology, biochemistry, biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a students' union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: the Maternity Hospital ; the Ulster Hospital for Women and Children ; the Hospital for Sick Children ; the Ophthalmic Hospital ; the Benn Ulster Eye, Ear and Throat Hospital ; the Union Infirmary and Fever Hospital ; the Fever Hospital, Purdysburn ; the District Lunatic Asylum ; the Samaritan Hospital ; the Forster Green Hospital for Diseases of the Chest ; and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Eight, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year ; (2) *fourteen* Professional Scholarships, value from £15 to £40 each ; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases ; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially ; (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student ; (6) Magrath Clinical Scholarship, awarded annually, value about £112 ; (7) two Musgrave Studentships of £200 in physiology and pathology. There is also a post-graduate research *fund, open to all graduates of not more than three years'* standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £200. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Bursar, *Queen's University, Belfast, price 4d.*

University College, Cork

This institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the National University, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (130 beds), the County and City of Cork Lying-in Hospital, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well-equipped dental hospital in connexion with the school.

Scholarships.—About £2,500 is available annually for scholarships in the college. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £170.

Further information can be found in the Calendar or obtained on application to the Registrar.

University College, Galway

This institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of the London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway Central Hospital and the Galway Tuberculosis Hospital. The Galway Central Hospital is a general hospital, and at the two hospitals students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £2,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND

Many hospitals in Great Britain and Ireland, though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year, or even longer. Some of the hospitals situated in the great medical centres in the provinces, as well as in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities, but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford, the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Kent and Canterbury Hospital, the Derbyshire Royal Infirmary; South Devon and East Cornwall Hospital, Plymouth; the Royal Albert Hospital and Eye Hospital, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester, the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital, the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Infirmary at Hartshill; the Royal Hants County Hospital, Winchester, the Wolverhampton and Staffordshire General Hospital, the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals

As for the hospitals in the metropolis, so many of them take a share in the giving of clinical instruction that it is worth while to classify them.

Children's Hospitals.—There are at least seven of these the leader among them being the Hospital for Sick Children Great Ormond Street, which has 268 beds. There are also the East London Hospital for Children, Shadwell, with 136, the Queen's Hospital for Children, Bethnal Green, with 134, the Victoria Hospital for Children, Chelsea, with 130; the Belgrave Hospital for Children, which has a considerable out-patient department, and in-patient accommodation for 74 children, the Paddington Green Children's Hospital; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 78 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women, Waterloo Road, S.E.1.

Hospitals for Women.—Queen Charlotte's Maternity Hospital, Marylebone Road, with 100 beds and a residential college for medical students and practitioners, specializes in the teaching of midwifery. The first section of the new Queen Charlotte's Hospital in Goldhawk Road, Hammersmith, an isolation block of 30 beds for cases of puerperal fever and puerperal pyrexia, was opened in July, 1930. The City of London Maternity Hospital, City Road, with 71 beds also admits medical students and graduates to its practice. The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to post-graduates in limited numbers, the Chelsea Hospital for Women, Arthur Street, Chelsea, and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road, E.C.1, 138 beds. At this hospital 2,534 in-patients, 51,924 out-patients in 1929. At this hospital two complete courses of instruction are given during the year—October to February, and March to July—comprising the following subjects: (1) anatomy (including histology and embryology), (2) physiology, (3) optics (including physiological optics), (4) refraction classes, (5) methods of examination and use of the ophthalmoscope, (6) pathology and bacteriology, (7) ophthalmic medicine and surgery, (8) ophthalmoscopic conditions, (9) operative surgery, (10) practical pathology, (11)

tical bacteriology, (12) radiology, (13) physiotherapy (in-ing ultra-violet light, diathermy, and ionization), (14) slit-p microscopy. A fee of 35 guineas will admit the holder to all the lectures and classes, except those on physio-apy and slit-lamp microscopy. The fee of a perpetual et to attend the practice of the hospital is £5 5s ; for e or six months, £3 3s. , for two months, £2 2s. ; for month, £1 1s. Registered medical practitioners and ical students are eligible, under certain conditions, for posts of chief clinical assistant, clinical assistant, and or assistant There are also a number of salaried posts, nnual Clinical Research Scholarship of £50, and a biennial ord Edmonds Prize of £100. Clinical work begins each ning at 9 and operations at 10 o'clock. The course of truction is specially adapted to meet the requirements of e reading for the D.O.M.S and similar diplomas and ees in ophthalmology Further particulars may be ob-ed from the Dean of the Medical School Other eye hos-ls are the Royal Westminster Ophthalmic Hospital, now ult on a new site in Broad Street, High Holborn, and taining 84 beds ; the Royal Eye Hospital, Southwark, and Central London Ophthalmic Hospital, Judd Street, W.C.1, with about 40 beds , and the Western Ophthalmic Hos-l with 18 beds

ever Hospitals.—The London County Council has under its trol a number of institutions in and around London for the tment of the more serious zymotic disorders , it makes ial arrangements for the instruction of students in this ject, and grants certificates at the end of the courses ailed information should be sought from the Medical cer of Health, Special Hospitals Division, London County ncil, Victoria Embankment, E C 4.

Chest Hospitals.—The largest of these is the Brompton Hos-l for Consumption, which has 333 beds and a large sana-um at Frimley with 150 beds There is also the City London Hospital for Diseases of the Chest, Victoria Park, h 185 beds, and the Royal Hospital for Diseases of the st, City Road, with 85 beds, now amalgamated with the yal Northern Hospital, Holloway Road

Nose, Throat, and Ear Hospitals.—The institutions which fine their work to disorders of the throat, nose, and ear make special arrangements for the benefit of senior and t-graduate students They are the Metropolitan Ear, Nose, l Throat Hospital, Fitzroy Square , the Royal Ear Hos-al, Huntley Street, W C 1 (now the Ear, Nose and Throat partment of University College Hospital) , the Central ndon Throat, Nose and Ear Hospital, Gray's Inn Road , d the Hospital for Diseases of the Throat, Golden Square— last, which possesses 95 beds, being the largest of the four stitutions

Miscellaneous Special Hospitals.—Among these are the thlem Royal Hospital, recently transferred from Kenning-n to Monks Orchard, Eden Park, Beckenham, Kent, nch (like the Maudsley Hospital) confines its work to the eatment of mental diseases, and includes a department for rvous and early mental disorders , the Royal National thopaedic Hospital, Great Portland Street , St Peter's spital for Stone and Urinary Diseases, Henrietta Street, vent Garden , St Mark's Hospital, City Road, which votes itself to the treatment of diseases of the rectum, in-ding cancer and fistula , the National Hospital for Diseases the Heart in Westmoreland Street, W 1 , St John's Hos-tal for Diseases of the Skin in Leicester Square , the Hospital r Diseases of the Skin, Stamford Street, Blackfriars ; the rtional Hospital, Queen Square, W C 1, an institution pos-ssing 200 beds for neurological cases and a world-wide putation , and the West End Hospital for Nervous Diseases, Welbeck Street, W 1

Detailed information as to the teaching arrangements of ll these institutions may be obtained on application to eir secretaries

Women in Medicine

he regulations of the General Medical Council and of the arious universities and colleges set out in previous sections pply to women as to men.

Examinations

Women are admitted to all the medical examinations f the following qualifying bodies: all the universities of reat Britain and Ireland ; the Royal College of Physicians f London , the Royal College of Surgeons of England ; he Society of Apothecaries of London ; and the Conjoint Boards of the Colleges in Scotland and in Ireland. In addition, women are eligible for election as Fellows of the Royal College of Physicians of London and the Royal College of Physicians of Edinburgh.

Medical Education

In this country at the present time co-education is the general rule. The schools of the London hospitals have, however, so far shown themselves more conservative in this respect than the rest of the country.

In England the colleges connected with the universities of Birmingham, Bristol, Cardiff, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women students as well as men, whilst in Scotland the universities of Aberdeen, St. Andrews, Edinburgh, and Glasgow also admit women. In Ireland all universities and colleges are open to them.

In London the only schools open to medical women students are the London School of Medicine for Women and, to a modified extent, University College Hospital and King's College Hospital, which last-named has again opened its doors to women students during the past year. It is felt that such a state of affairs can only be temporary, and hopes can be entertained that in the near future the principle of co-education will prevail in the capital.

At the present time it will be seen that the only co-education hospitals in London are University College and King's College. The number of women entrants is restricted, but they are given excellent opportunities whilst students, and also, in fair proportion, are given opportunities of post-graduate experience as residents, house-surgeons, house-physicians, and obstetrical assistants.

Number of Women Medical Students

Returns made to the University Grants Committee at the end of 1930 showed that the total number of full-time women medical and dental students attending university institutions in England, Scotland, and Wales during the past six years were.

	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30
England ..	1,197	1,059	930	852	821	842
Wales	32	30	32	30	14	19
Scotland	431	313	274	264	270	275
Total ..	1,660	1,402	1,235	1,146	1,108	1,136

The corresponding total number of full-time male students of medicine, including dentistry, was 7,623 in 1929-30.

The London (Royal Free Hospital) School of Medicine for Women

The London (Royal Free Hospital) School was started for the training of women in medicine in the days before there were any co-education facilities for them, and it still remains by far the largest school for women In addition to the clinical work at the Royal Free Hospital, which at present has 280 beds, but will shortly have 360 when the extensions now in progress are completed, arrangements are made for students of the school to obtain clinical instruction at the National Hospital for Nervous Diseases, Queen Square ; the Royal London Ophthalmic Hospital, Moorfields , the Great Ormond Street Hospital for Children , the Elizabeth Garrett Anderson Hospital , the South London Hospital for Women , and the Cancer Hospital Its importance for women in medicine can hardly be overestimated, not merely because it was the pioneer which made the way possible, but also because it is still the only general hospital in Britain which offers all its post-graduate appointments, higher and lower, to open competition by women as well as men, thus giving unique opportunity of gaining experience. Not only are all the

resident appointments at the Royal Free Hospital, of which there are twenty-seven yearly, eligible for women, but, in addition, higher posts may be obtained in all the various branches of a general hospital, from those of registrar and anaesthetist to those of visiting physician or surgeon and those in charge of special departments. There is a special unit in gynaecology under a woman professor, and entirely staffed by medical women. This policy has so far not been fully adopted in its entirety by any other hospital, and it may be of interest to note in this connexion that the Royal Free Hospital has many women on its general committee and weekly board of management.

OPENINGS FOR MEDICAL WOMEN

There are at the present time the names of over five thousand medical women on the *Medical Register*. There is an increasing demand by the public for the services of women doctors in all branches of medicine, and statistics show that the number of those who make good is as high as, if not somewhat higher than, that of their men colleagues.

OPENINGS AT HOME

Since the number of men and women qualifying has reached normal standards, medical women on qualification find no difficulty in obtaining house appointments in the recognized teaching hospitals and in non-teaching hospitals, hospitals for women and children, sanatoriums, etc. In fact the supply at the present time does not meet the demand.

General Practice.—There are good openings as assistants or, better still, as assistants with a view to admission as partners in general practice. Medical women also do very well when starting in new districts; and there is considerable scope for them in midwifery work.

Specialist and Consulting Practice.—The number of women doing specialist and consultative practice grows rapidly. There is no branch of medicine in which it is not possible for a patient to consult a medical woman. Women so specializing equip themselves by obtaining the highest essential qualifications, and it is hoped that the time is not far distant when many more women will hold positions on the honorary staffs of all hospitals. Already medical women are on the honorary staff of the Royal Free Hospital, London, and of general hospitals in a number of provincial cities. In London, Edinburgh, Glasgow, Manchester, and Brighton there are hospitals staffed entirely by medical women, doing very fine work and meeting a real need, the latest to be opened being the Marie Curie Hospital in London for the treatment of cancer by radium. Research work also provides interesting openings, as, for example, in dealing with the special problems concerning cancer, nutrition, puerperal morbidity and mortality, statistical work, etc., and for some of these research scholarships and grants are available.

Teaching Posts.—Women hold professorships and lectureships at various universities.

Industrial Medicine.—In this branch there is much interesting work available, and it is undergoing considerable development at the present time. Several women already hold such posts.

Administrative Work.—A certain number of these important posts are admirably filled by medical women. At the Ministry of Health the chief medical officer for maternity and child welfare is a medical woman, and she has a staff of medical women to assist her. Medical women also hold high administrative posts under the Home Office, Board of Education, Board of Control, etc.

The Public Health Service.—This service provides numerous openings for medical women. It has many departments, and its rapid growth in recent years has provided much interesting work in preventive medicine. Senior departmental posts are frequently held by medical women, and several occupy posts as medical officers of health. Notable amongst these is a woman who is M.O.H. of a large London borough. For maternity and child welfare work women have been found to be peculiarly suited; but, by a curious economic limitation, married women, who would appear to be the most suitable of all, are, by many public authorities, excluded from service. This exclusion not only prevents married women from taking part in this work, but also prevents many of the best women from specializing in this branch of medicine, as it is obviously uneconomic to specialize in a branch of public service from which one may be excluded in a few years.

Medical Inspection, etc.—Under the Board of Education there are women serving as medical advisers and school medical inspectors. The London County Council and other important councils in the country have medical women on their permanent medical staffs, in both the senior and junior grades. The London County Council has two of its senior medical women appointed to serve as district medical inspectors. In addition, they have a large number of women medical inspectors of school children, and also women are serving as experts in the departments dealing with mental deficiency, tuberculosis, and venereal disease. Some medical women also serve as examiners of the candidates entering the public services, as, for example, the civil service. The services of medical women are extensively enlisted by public authorities in dealing with employees of their own sex. In several instances women serve as assistant medical officers to prisons. The services of medical women are also enlisted as lecturers and examiners on first aid, home nursing, health, and infant care. The new Local Government Act has meant the taking over of a large number of hospitals by the local authorities, and many good openings for medical women as residents are occurring.

PAY AND STATUS

It is interesting to note that medical women, backed by the powerful assistance of the British Medical Association, have been on the whole successful in resisting the attempt to accept a lower salary for the same work as their men colleagues, thereby not only greatly benefiting themselves, but also maintaining the standard for the whole profession. They realize that ever since the admission of women to the medical profession exactly the same sacrifices for principle have been made by their predecessors as are now demanded from them. With the inauguration of the School Medical Service in 1908, and later when maternity and child welfare posts were created, persistent efforts were made by local authorities to pay their assistant medical officers below the minimum arranged by the representatives of the public authorities and the British Medical Association, and to secure women at a lower rate than men. With rare exceptions these efforts were a failure. Women realize as clearly as men that lowered pay invariably implies a lowered status and prestige, and that the woman who stamps herself as belonging to an inferior grade of doctor cannot complain if she is taken at her own valuation, and that a minimum always tends to become a maximum. Attempts to evade the scale and split the ranks of the profession by offering a post to a man at the agreed rate and a similar post to a woman slightly below that rate are particularly to be deprecated. Where the rule of equal pay for equal work is violated there is no limit to the extent to which women may be exploited.

OPENINGS ABROAD

Colonial Office.—To those to whom oversea service appeals it offers the possibility of useful, interesting, and adequately paid work. At present there are posts for women in Malaya, and East and West Africa. The work is almost entirely hospital and maternity and child welfare work; there have been one or two specialist appointments, such as bacteriologists, and more may follow. Women have, so far, only been appointed to the lower-grade posts, but their pay is the same as that of the men in similar grades. When placed on the permanent staff they are eligible for pension.

Egypt.—Appointments in the Kitchener Memorial Hospital, Cairo, which forms part of the Clinical Faculty of the University of Cairo, are held by women. Appointments in certain dispensaries are open to medical women. There are also posts held under the education authority, chiefly school medical inspection.

India.—See note on the Women's Medical Service for India below.

Mission Field.—Missionary societies offer employment to medical women, chiefly in India, China, and the Near East.

PUBLIC ACTIVITIES

Medical women are frequently appointed to serve on Royal Commissions and Government Committees dealing with medical subjects, and are also requested by them to give evidence of an expert medical nature.

Medical women have always shown considerable interest in medico-political affairs, and take an active part in the work of the British Medical Association, and with the various other societies dealing with medicine as it affects the community in general. With this end in view they also have a Medical Women's Federation, which enables them to voice a collective expression of opinion. This might otherwise be difficult to ascertain, as women are so widely scattered, both as regards their geographical distribution and their varied activities. This collective opinion of medical women has been found of great assistance by the British Medical Association and other allied societies with which it works in cordial co-operation and by whom it is frequently approached, both for information and also as a convenient means of approaching medical women as a whole.

It may be added, with regard to contributions to medical literature, that this is a branch of work in which women are more and more taking their share, and scientific and other works are frequently published by them.

WOMEN'S MEDICAL SERVICE FOR INDIA

Among careers open to medical women abroad the Women's Medical Service for India deserves honourable mention. This Service is open to fully qualified medical women of British or Indian nationality, and with the present amount of Government subsidy the number of medical officers is limited to 44.

Medical women proceeding to India to join the Women's Medical Service receive a sufficient sum for a first-class passage to India. On landing they are posted to one of the larger women's hospitals to gain Indian experience and to learn the language. For a further period they are appointed to act temporarily for medical women on furlough. They are then definitely appointed to the charge of hospitals. Private practice is allowed provided it does not interfere with official duties. The only exception is in administrative or educational posts when an allowance in lieu of practice is given. The amount obtained from practice varies according to the station but in most cases it forms a fair addition to the salary, varying from £150 to £1,000 a year.

Excellent opportunities for surgery—especially gynæcological—are found in the Women's Medical Service. To those who are not keen surgeons opportunities are likely to open in the future in connexion with maternity and child welfare. Rates of pay are as follows:

Years of Service	Overseas Allowance per Mensem	Salary per Mensem	English Equivalent* per Annum
1 to 3	Rs. 100	Rs. 450	£440
4 to 6	Rs. 100	Rs. 500	£480
7 to 9	Rs. 100	Rs. 550	£550
10 to 12	Rs. 100	Rs. 600	£560
13 to 15	Rs. 150	Rs. 650	£600
16 to 18	Rs. 150	Rs. 700	£640
19 to 21	Rs. 150	Rs. 750	£680
22 to 24	Rs. 150	Rs. 800	£720
Over 24	Rs. 150	Rs. 850	£760

* At rupee value 1s. 4d.

Furnished quarters are provided, representing an additional Rs. 150 per mensem.

The cost of living in India is much higher than formerly, but it should be possible for a medical woman (with house provided) to meet actual household expenses for about Rs. 300 per mensem, leaving the remainder of her salary for dress and personal expenses. To this must be added the necessary saving to meet additional expenses for furlough and leave spent in the hills.

Leave on average pay is earned at the rate of two-elevenths of the period spent on duty.

Study leave is granted to the extent of twelve months in the total service, and will not be granted more than twice in the course of an officer's service. During study leave an officer draws half average pay, with a study allowance at the rate of 12s. a day during the course of study. Officers of European domicile are entitled to four free return first-class passages from a port in India to a port outside India in their whole service. The first passage is not granted until after the expiry of four years' approved service, and thereafter passages may be granted at intervals of not less than four years. There is a Provident Fund to which members of the Service contribute 10 per cent. of their pay. The Service contributes another 10 per cent. which accumulates at interest and is repaid on retirement.

Admission to the Service is made by selection in India and England, preference being given to those with Indian experience. Vacancies are few. Candidates in the United Kingdom should apply to the honorary secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c/o Major-General Sir Leonard Rogers, India Office, Whitehall, London. Candidates in India should apply to the Chief Medical Officer, Women's Medical Service, Countess of Dufferin's Fund, Simla and Delhi.

Post-Graduate Study

Post-graduate students may be divided into general practitioners desirous of refresher courses, usually covering a wide field within a relatively short period of time to bring their knowledge up to date; those who wish for instruction in special subjects with a view to obtaining one of the special diplomas or of preparing for some higher examination, perhaps with a view to promotion in one or other of the medical services; or if already general practitioners of adding some form of specialism to their work; and visitors, whether from the overseas Empire or from foreign countries, who wish to pursue intensive studies in special subjects or to familiarize themselves with the methods of practice in Great Britain.

It is clear that London, with the large and varied amount of material available, and with its wealth of professional skill and teaching power, offers ample opportunity for the supply of all these needs if suitable concentration and organization of effort were brought about and established. So far, however, no definite post-graduate school of the character indicated exists. There is no recognized hostel or meeting place to which the student can resort for social purposes, such teaching centres as exist are widely scattered, and their efforts are limited in scope and largely unsystematized. Two hospitals—the West London Hospital at Hammersmith, and the Prince of Wales's General Hospital at Tottenham—have for many years had post-graduate colleges attached to them. Their efforts are valuable and praiseworthy, but they can cater only for a limited number of general practitioners, and these largely drawn from those whose practices are within a relatively short distance of the schools. The general practitioner may also perhaps find a refresher course at the hospital at which he was trained held during a vacation, and similar short courses are organized from time to time at one or other of the London Hospitals under the auspices of the Panel Committee for the County of London. The Fellowship of Medicine too arranges definite courses of study at individual hospitals and at its office—generously placed at its disposal by the Royal Society of Medicine at 1, Wimpole Street, W.1—a list of hospitals, special and general, to which medical graduates may resort, with or without fee, is kept, and the names of the teachers at each hospital are available. Occasional courses

of a more special character may thus be discovered, and there are a few others which are regularly held once or twice a year, such as that in mental deficiency which is organized by the Central Association for Mental Welfare in conjunction with the University of London, and those dealing with various aspects of medical psychology given at the Tavistock Square Clinic.

Over and above such isolated or occasional teaching, it is possible to obtain under one roof instruction in all branches of preventive and of tropical medicine at the London School of Hygiene and Tropical Medicine, at the corner of Keppel Street and Gower Street. This institution has now been open for two years and has already established itself as a most valuable school of the University of London, and probably the most important of its kind. Its work has been arranged in the following divisions: public health, including a section devoted to the physiology of hygiene; epidemiology and vital statistics; bacteriology and immunology; biochemistry, including a department for chemistry as applied to hygiene; medical zoology embracing the departments of protozoology, helminthology, and entomology; and tropical medicine and hygiene, for the clinical work in connexion with which facilities are afforded by the Hospital for Tropical Diseases in Gordon Street close by. At the Seamen's Hospital, too, in co-operation with the London School of Hygiene and Tropical Medicine, special post-graduate courses for ship surgeons are now to be held systematically, as the result of action taken by the British Medical Association during the past year.

The shortcomings of London as a post-graduate medical centre have been recognized for a long time, and it is gratifying to know that practical steps are now being taken to remedy the several disabilities that have been mentioned, and to establish in the very near future under the auspices of the London County Council and the University of London, and with governmental financial aid, a real post-graduate hospital and medical college which will be worthy of the metropolis of the Empire. As long ago as 1921 a committee on post-graduate medical education was set up under the chairmanship of the Earl of Athlone. The establishment of "a school attached to a hospital centrally situated in London devoted solely to post-graduate medical education as a school of the University" was the chief recommendation that resulted. In 1925 a second committee was appointed "to draw up a practical scheme of post graduate medical education centred in London." The scheme finally suggested was to use one of the Poor Law hospitals transferred to the London County Council under the Local Government Act, 1929, as a British Post-Graduate Hospital, and to establish a fully equipped medical school in connexion therewith. The hospital chosen for the purpose is the Hammersmith Hospital at Shepherd's Bush, which is a modern institution with, at present, 400 beds, on a site of sufficient acreage to allow of extension and of the creation of the necessary college buildings. A third committee was appointed just over a year ago. This was known as the Provisional Organization Committee, with Lord Chelmsford as chairman, and had as its reference to report to the Minister of Health upon "(1) the action requisite to lead up to the planning and construction of the medical school, and (2) the form of government appropriate to the hospital and medical school with special reference to the position of the London County Council as the local authority responsible for the hospital, and to the position of the University of London in relation to the medical school." The committee reported at the end of March last on the main questions involved in the second part of its reference, and this has already resulted in the approval by the King in Council of a Royal Charter constituting the Governing Body of the school and defining the functions of the governors. The Governing Body will consist of representatives of various government departments, of the London County Council, of the University of London, and of the Royal Colleges of Physicians and Surgeons, the Society of Apothecaries, the Royal Society of Medicine, and the British Medical Association. It will at once take in hand the actual planning of the building and settle in detail all those arrangements which will be necessary in accordance with the main proposals of the Provisional Organization Committee. It is impossible to say at present exactly when the hospital and school will be opened for teaching purposes, but there is some hope that this may take place before the end of next year. A great step forward has thus been taken. London will, before long, become, as it should be, a world centre of post-graduate medical training.

In the provinces the Universities of Oxford, Cambridge, Birmingham, Bristol, Liverpool, Manchester, and Sheffield have organized courses of post-graduate work and instruction. Liverpool University is now establishing a regular course for ship surgeons on similar lines to that already mentioned in London. Edinburgh receives graduates from many schools in the Dominions as well as in this country. In Glasgow and in Aberdeen courses are available, and, in relation with the University of St. Andrews, courses are given by the James Mackenzie Institute for Clinical Research. At many of these centres the teaching is provided by whole-time intensive courses, by part-time courses, and by means of clinical assistantships. The Joint Tuberculosis Council has provided nomadic courses in its own special subject.

Short particulars about the facilities for post-graduation study at present obtainable in Great Britain and Ireland are given in Section IV of the *Handbook for Recently Qualified Practitioners*, published by the British Medical Association (price 3s. 6d.).

Fellowship of Medicine and Post-Graduate Medical Association

The Fellowship of Medicine has arranged regular courses in general medicine and surgery, including special departments, each lasting two weeks; the fee for each course is 3 to 5 guineas. Courses in diseases of the chest, children, ante-natal, heart, nervous system, throat, nose, and ear; dermatology; gynaecology; proctology; orthopaedics; fractures; psychological medicine; tropical medicine; urology; and venereal diseases are given from time to time at the special hospitals in association with the Fellowship of Medicine. Evening courses for the M.R.C.P. and F.R.C.S. (Final) are arranged also. The Fellowship "General Course" Programme contains a diary of the arrangements available for post-graduates in various general and special hospitals in London. The list for the immediate future special courses includes one week's course in chest diseases, from September 7th to 12th; a two weeks' course in general medicine and surgery, from September 14th to 26th, at the Westminster Hospital; in diseases of infants, at the Infants Hospital, from September 14th to 26th; ophthalmology at the Central London Ophthalmic Hospital, from September 14th to October 10th; general medicine and surgery at the Metropolitan Hospital, from September 28th to October 10th; and in psychological medicine, at the Bethlem Royal Hospital, from September 8th to October 3rd. The office of the Fellowship is, by kind permission of the Royal Society of Medicine, at No. 1, Wimpole Street, W.1 (telephone, Mayfair 2236). The secretary is in attendance daily from 10 a.m. to 5 p.m., excepting Saturday. The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association has been fixed at a minimum of 10s.

which includes the subscription to the *Post-Graduate Medical Journal*.

The Fellowship arranges, during the autumn and winter sessions, a series of lectures. Special clinical demonstrations in medicine and in surgery are arranged also weekly from October onwards. Syllabuses will be sent regularly on application.

National Post-Graduate School of Radiotherapy

The working scheme announced in our issue of June 28th, 1930 (p. 1185), between the London Radium Institute in Riding-house Street and the Mount Vernon Hospital at Northwood, for the establishment under joint control of a National Post-Graduate School of Radiotherapy, is in full operation. The next course of study in radiotherapy will commence on Monday, October 5th, 1931. Applications for copies of the syllabus and other information may be addressed to the Dean (Sir Cuthbert Wallace, K.C.M.G., F.R.C.S.) at the National Post-Graduate School of Radiotherapy (the Mount Vernon Hospital and Radium Institute), Riding-house Street, London, W.1.

West London Post-Graduate College

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. The work of the college is eminently suitable for men in general practice and officers in the services who wish to revive their general clinical knowledge.

As for ward work, the students accompany the senior staff on their visits to the wards daily. The out-patient department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months, no charge being made. Special practical classes are held in medicine, general practical surgery, gastro-intestinal surgery, medical and surgical diseases of children, analysis of blood and urine, cystoscopy, venereal diseases, tropical diseases, retinoscopy, ophthalmic operative surgery, and, when material is available, in operative surgery. The size of the classes is limited. A special clinic for the treatment of venereal diseases (male and female) is held all day. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session. The pathological laboratory is in charge of a pathologist, who attends every day.

Demonstrations are given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees). The general course is recognized as being suitable for practitioners taking a course of study under the Ministry of Health "grant-aided scheme for post-graduate study by insurance practitioners in rural areas."

A prospectus can be obtained an application to the Dean.

Fees.—Hospital practice, including all ordinary demonstrations and lectures, £1 1s. for one week, £4 4s. for one month, £7 7s. for two months, £9 9s. for three months, £15 15s. for six months, £23 12s. 6d. for one year, and £45 for a life ticket. Instruction in the administration of anaesthetics is given at the rate of £3 3s. a month.

North-East London Post-Graduate College

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, Tottenham, N.15, in the midst of this densely populated North London district. It contains 200 beds, and is within a few minutes' walk of South Tottenham Station on the London Midland and Scottish Railway, and Seven Sisters and Tottenham Hale Stations on the London and North-Eastern Railway. It is readily accessible by electric tram from Finsbury Park and Hackney, and from Dalston, Edmonton, and other parts of North London. The North Middlesex Hospital, Edmonton, N.18, with upwards of 1,000 beds, has, under a recent arrangement, taken part in the clinical teaching.

The college is in association with the Fellowship of Medicine and Post-Graduate Medical Association, and is recognized by the Admiralty and India Office for the purpose of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees, the course of practical teaching of bacteriology is approved by the University of Cambridge for its Diploma in Public Health, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities for qualified medical practitioners who wish to take part for a time in active general hospital work, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions, into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff. Operations are performed every afternoon of the week except Saturday. Special vacation or intensive courses are held at intervals throughout the year, each lasting two weeks, clinical instruction being arranged for each hour of each day. The winter session will be opened about the middle of September as regards clinical teaching.

Fees.—For the hospital practice in general medicine or surgery the fee is 5 guineas for three months or 2 guineas for one month. Provided there is accommodation in the special departments the fees are: eye department 3 guineas; gynæcological department 5 guineas; ear, nose, and throat department 5 guineas for three months. All departments—the fee is 3 guineas for one month, 6 guineas for three months, 10 guineas for a year, and 15 guineas for a perpetual ticket.

Additional information can be obtained from the Dean of the Post-Graduate College, at the Prince of Wales's Hospital.

Manchester Post-Graduate Courses

The Faculty of Medicine of the University of Manchester has arranged courses in preparation for the diplomas in psychological medicine, in public health, bacteriology, pathology, and veterinary State medicine. There are classes also for certificates in factory and school hygiene and in venereal diseases. The Faculty of Medicine has also instituted courses to meet the requirements of graduates desiring to refresh their knowledge or to pursue further their studies in various special branches. The arrangements are in the hands of a committee consisting of certain members of the faculty, of representatives of hospitals, and of the medical officer of health for Manchester. Full particulars can be obtained from the Dean of the Medical School, the University, Manchester. Part-time courses will be given during 1931-32 in diseases of the eye, diseases of the skin, practical instruction in local anaesthesia and minor operative surgery, and in practical clinical medicine. A limited number of clinical assistantships at the discretion of the hospitals are offered in the medical, surgical, and special departments of the Manchester Royal Infirmary, the Ancoats Hospital, and certain special hospitals for one, two, or three months, or longer. A clinical assistantship at the Radium Institute for three months is offered. Clinical teaching for post-graduates is given each Thursday during university terms by the honorary staff at Ancoats Hospital, no fee charged.

Post-Graduate Courses at Bristol

The University of Bristol provides courses of post-graduate study for practitioners. Details of set courses at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

Daily Post-Graduate Study.—For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit, in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and post-mortem examinations.

All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Pathological Department, University of Bristol, who can be seen on any day by appointment at the Pathological Department.

Post-Graduate Courses at Newcastle

For the year 1931–32 the following post-graduate courses have been arranged by the College of Medicine, Newcastle-on-Tyne (University of Durham):

1. General courses in clinical medicine, surgery, and pathology at the Royal Victoria Infirmary, meeting once weekly for ten weeks. One course will be held from October to December, and one from April to June.
2. Special courses of clinical instruction meeting once weekly for ten weeks in the following subjects: gynaecology, diseases of the eye, diseases of the throat, nose, and ear, diseases of the skin, venereal diseases, neurology. Special courses in midwifery will be held at the Princess Mary Maternity Hospital.
3. An intensive course of fourteen days' duration in the summer vacation, 1932.
4. In addition to the regular post-graduate courses, practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary, and also at the Princess Mary Maternity Hospital, for specified periods.

Edinburgh Post-Graduate Courses

In connexion with the University and Royal Colleges post-graduate courses are arranged every year, from about the middle of July to about the middle of September, comprising: (*a*) a course in obstetrics, gynaecology, and diseases of children, held from July 13th to August 8th; (*b*) a general practitioner course; (*c*) a general surgical course. Courses (*b*) and (*c*) extend for four weeks from August 10th to September 5th. Similar courses are held each year.

The course in obstetrics, gynaecology, and diseases of children comprises instruction in clinical midwifery and clinical gynaecology, obstetrics and gynaecological pathology, diseases of children, child welfare, and ante-natal clinics, etc.

The general practitioners' course includes lecture-demonstrations, and, where possible, practical instruction on medical anatomy, medical sideroom work, examination of the blood, *x*-ray and electrical therapy, morbid anatomy, and post-mortem examination; clinical instruction in medicine, surgery, gynaecology, diseases of children, diseases of the skin, and infectious diseases; and special instruction in the diseases and methods of examination of the nervous, circulatory, respiratory, alimentary, and renal systems, and in diseases of the ductless glands. The general surgical course includes lecture-demonstrations on surgical anatomy, surgical pathology, and surgical *x*-ray diagnosis; clinical instruction in surgery at the Royal Infirmary and Royal Hospital for Sick Children; clinical instruction in venereal diseases, surgical out-patients, surgical and gynaecological operations, and special instruction in abdominal and genito-urinary and other branches of surgery.

A series of special lectures and clinical discussions, open to all graduates, is arranged on subjects of general medical and surgical interest. Among the special courses also arranged at various times of the year are: examination of the blood, vaccine therapy, diseases of the ear, nose, and throat, pathology of the nervous system, ophthalmoscopy, venereal diseases, *x*-ray physics and electrotechnics, tuberculosis, ultra-violet radiation and their uses, the interpretation and significance of modern diagnostic methods, surgical pathology, clinical surgery, and clinical medicine.

Particulars regarding the courses, dates of commencing, fees, etc., may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Post-Graduate Medical Teaching in Glasgow

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association. This association represents practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Professor Robert Muir. During the winter months special courses in various subjects are conducted, and from November till May there is a series of weekly demonstrations specially designed for local practitioners. Clinical courses are carried out during the summer months, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed.

A general medical and surgical course is held each year during the last two weeks of August and the first two weeks of September, which is arranged to include most of the subjects of interest to the general practitioner. This year the course is being conducted from August 17th to September 11th. The forenoons are occupied with general medicine and surgical diagnosis and minor surgery, in the Royal Infirmary and in the Victoria Infirmary. In the afternoons special subjects are dealt with in the special hospitals and in the special departments of the general hospitals, two subjects being considered most afternoons.

Further information may be had on application to Dr. James Carslaw, Secretary, Post-Graduate Medical Association, 9, Woodside Terrace, Glasgow, C.3.

Australian and New Zealand Medical Association

The Australian and New Zealand Medical Association gives information and advice to medical visitors from the Commonwealth and Dominions with regard especially to attendance at special clinics, post-graduate work, and facilities for preparing for examinations such as the M.R.C.P., F.R.C.S., etc., and also as to house appointments and clinical assistantships in London and the provinces. Information will also be given about lodgings, sports, and social opportunities. Two dinners are held annually. All medical graduates or undergraduates born in Australia or New Zealand and resident in or visiting England are eligible to become members. The fee is one payment of 5s. Further information can be obtained from the joint honorary secretaries, Mr. E. T. C. Milligan, F.R.C.S., 106, Harley Street, W., and Mr. Philip J. Jory, F.R.C.S., 26, Queen Anne Street, W.

Tropical Medicine

There are large and important Schools of Tropical Medicine in London and Liverpool, and the Colonial Office expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees is given in the paragraphs printed below. The University of London alone

gives a degree (M.D.) in Tropical Medicine, and this, being an "internal degree," can only be taken by students who are medical graduates of that university. Diplomas in Tropical Medicine or Hygiene are granted by the universities of Edinburgh and Liverpool, and by the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England.

Diplomas and Degrees

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. The regulations relating to the curriculum and examination correspond to those applying to the other branches.

THE EXAMINING BOARD IN ENGLAND.—This body grants a diploma in tropical medicine and hygiene to candidates after an examination held in the months of January, April, and July. Candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology in an institution recognized for this purpose, together with the clinical practice of a hospital recognized for the study of tropical diseases during not less than three months; and (2) tropical hygiene and sanitation in an institution recognized for this purpose during a further period of not less than two months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries. The fee for admission to the examination is £9 9s. The Board also grants diplomas in public health, in psychological medicine, in ophthalmic medicine and surgery, in laryngology and otology, and in gynaecology and obstetrics. Graduates in medicine and surgery of Indian, Colonial, and foreign universities recognized by the Examining Board of England, whose degrees are not registrable in this country, may enter for the examination for the Diploma in Tropical Medicine and Hygiene on fulfilling the above conditions in regard to study. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary of the Examining Board, Examination Hall, Queen Square, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to students who have attended the courses provided by the Liverpool School of Tropical Medicine and have passed the examination held twice yearly by the university examiners. The subjects of examination are: (*a*) parasitology and tropical pathology; (*b*) entomology; (*c*) tropical medicine, including etiology, symptoms, diagnosis, and treatment of tropical diseases. Fee for the course, £21. A diploma in tropical hygiene (D.T.H.), open to the holders of the D.T.M., has recently been established. The subjects of examination are tropical hygiene (including sanitary engineering, vital statistics and epidemiology, and applied parasitology and entomology); practical sanitation, bacteriology, chemistry (including meteorology and climatology). Fee for the course, £12 16s. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF EDINBURGH.—Candidates for the diploma in tropical medicine and hygiene granted by the University of Edinburgh must be graduates in medicine and surgery of that university, or held corresponding registrable degrees or qualifications of some other licensing body. The course of instruction, which commences in October, extends over two terms. The examinations (Part I and Part II) are written, oral, and practical, and are held at the end of the courses. Candidates, on the first occasion of presenting themselves for examination in either part, are required to appear for all the subjects of that part. Those who fail to pass the entire examination in either part within a period of twelve months after first appearance are required to reappear for all the subjects. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

SCHOOLS

London School of Hygiene and Tropical Medicine (University of London)

The courses of study in all branches of the work of the School will commence in the autumn in the premises in Keppel Street (Gower Street), the gift of the Rockefeller Foundation, which has excellent laboratories and research rooms, a fine lecture theatre and class rooms, library, and museum.

The course of instruction in tropical medicine and hygiene has been divided into two parts: Section A, a three-months' course of clinical and laboratory instruction, and Section B, a two-months' course in tropical hygiene. Each section has been so designed that it can be taken independently of the other, and the examinations by the Conjoint Board will follow closely upon the end of the corresponding course of study. This revised course is recognized by the University of London as a course for associate students.

The dates of the courses for the session 1931–32 are as follows:

Section A (Clinical and Laboratory Instruction).—First course, September 29th to December 18th, 1931. Second course, January 4th to March 24th, 1932. Third course, April 11th to June 30th, 1932.

Section B (Tropical Hygiene).—First course, January 18th to March 18th, 1932. Second course, April 18th to June 17th, 1932.

The course of instruction under Section A includes clinical tropical medicine, applied pathology, medical zoology, and elementary bacteriology. Section B comprises instruction in tropical hygiene, including, in relation to hygiene, bacteriology, medical zoology, anthropology, and vital and medical statistics.

There has been established within the School a new division of clinical tropical medicine. The instruction in the new division will be given by the medical staff of the Hospital for Tropical Diseases and by visiting lecturers. In this way the splendid resources of the hospitals of the Seamen's Hospital Society at Endsleigh Gardens, at the Albert Docks, and elsewhere, become available for the clinical instruction of the students at the School.

The course of study for the diploma in public health will commence on September 28th, and will extend over a period of nine months' whole-time study. It is arranged in compliance with the requirements of the General Medical Council, and students taking the course will be able, should they so desire, to proceed to the academic diploma in public health of London University. The curriculum has been planned on very practical lines, and includes, in addition to work with medical officers of health in two selected areas, a large number of visits to places of public health interest. A series of 5 o'clock lectures is given by eminent authorities on special subjects, and these lectures will be open to members of the medical profession as well as to students of the school. The London County Council, the City of London, and various other bodies have placed their resources at the disposal of the School for teaching purposes.

The special course of study for the diploma in bacteriology covers a period of one academic year beginning in October, and special three-monthly courses will be given in epidemiology and vital statistics.

An interesting recent development is the establishment in the School of a university chair of medical industrial psychology.

The University of Edinburgh

A course of instruction for the diploma comprising a primary and a secondary course is given during the autumn and spring terms (October to March), and includes tropical hygiene, bacteriology, entomology, and parasitology, diseases of tropical climates (systematic and clinical), tuberculosis, and venereal diseases. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine.

Liverpool School of Tropical Medicine

This school is affiliated with the University of Liverpool The university now grants diplomas in tropical medicine (D T M) and in tropical hygiene (D T H)

Two full courses of instruction, each lasting about eleven weeks, are given every year for the D T M , commencing respectively October 1st (autumn term) and January 6th (Lent term) , and two courses for the D T H , beginning on January 13th and April 21st (summer term) The D T H can only be taken by those who have obtained the D T M Students who do not desire to take the diploma examinations held by the university at the end of each term are given a certificate if attendance has been satisfactory

Fees —(1) For the D T M course, 20 guineas for the D T H course, 10 guineas (2) For the diploma examinations 5 guineas An extra charge of one guinea is made for the use of a microscope if required

The laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary The dimensions of the building are 162 feet in maximum length by 84 feet in width In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors The ground floor has (1) lecture theatre, with accommodation for about seventy students , (2) library , (3) a spacious museum with preparation room adjoining The first floor has twelve rooms, in which are housed the departments of tropical medicine and entomology The second floor has the main class laboratory, 69 feet by 58 feet, excellently lighted , and three other rooms, devoted to the department of parasitology The third floor has a large research laboratory and two research rooms On the roof is an insectorium, a mosquito proof house, and other accommodation

Since its foundation the school has dispatched to the Tropics thirty-two scientific expeditions, many of the workers having been taken from among its students The work done by the staff has been published in twenty-one special memoirs—in the *Annals of Tropical Medicine and Parasitology*, issued by the school, and in numerous articles in the scientific press

The school also has a laboratory in the Tropics the Sir Alfred Lewis Jones Tropical Laboratory in Sierra Leone, which was opened on January 10th, 1922, and is staffed by the school Further information may be obtained from the honorary Dean, School of Tropical Medicine, Pembroke Place, Liverpool

Psychological Medicine

It cannot be impressed too strongly upon the medical student that a knowledge of mental disorder is just as essential as a knowledge of the other forms of disease which he will be called upon to treat in the routine of general practice It must be understood that by the term " mental disorder " is not only meant those severe forms which are to be found in mental hospitals, but the term also includes mental defectives of all grades , nervous, difficult, and backward children , the mild and often unrecognized psychoses , and also the various types of psychoneurosis Such disorders provide the general practitioner with a large proportion of his most difficult cases, and he will find a good knowledge of mental disorder invaluable in his work Apart from general practice, the student who proposes to take up a career in the prison service, or, still more important, the school medical service, will find a knowledge of psychological medicine an almost essential part of his equipment

INSTRUCTION

Though at the present time the instruction given to the student is far from adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner, the facilities for the study of psychological medicine in the general hospitals are now much greater than in former years Thus many of the teaching hospitals have out patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given in psychopathology These facilities need not be utilized by the student, however, and the compulsory part of the curriculum is generally confined to formal lectures and a few attendances at some mental hospital Here the student is apt to see mainly the advanced states of mental disease, and is likely to gain the impression that mental disorder is necessarily related to segregation and custody We would therefore impress upon him the importance of attending the out patient department for mental disorders, where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice

At the Middlesex Hospital a small number of mental cases are treated in the hospital as in patients This is an important move from the teaching point of view, because the student will gain true insight into the relation between mental disorder and medicine as a whole and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines

In London, post graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital , and at the National Hospital Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases Courses in mental deficiency are arranged by the University of London There are also post-graduate courses at the various universities which grant diplomas of psychological medicine or of psychiatry

DIPLOMAS

Those who are taking up psychiatry as a career will find it desirable to obtain a diploma in psychological medicine Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time just as it is now essential to obtain the D P H if a career in public health is contemplated Psychiatry is one of the branches of medicine which candidates for the M D degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine (D P M), to which reference has been made can be obtained from the Universities of London Edinburgh, Durham, Leeds, Manchester, Dublin, and the National University of Ireland, and from the Conjoint Board in England The requirements for a diploma differ to some extent in the various universities and colleges

University of London (D P M)

The diploma awarded by the University of London certifies that the candidate has passed the examination in psychological medicine with special knowledge of one or other of the two branches either psychiatry or mental deficiency special provision being made for this in Part B of the examination The examination is held twice in each year Part A in May and October, and Part B in April and November Part A consists of anatomy, histology, and physiology of the nervous system (one paper and a practical examination) and psychology (one paper and an oral examination) Part B comprises neurology (paper, and clinical and oral examination) and psychological medicine (two papers and clinical and oral examinations) Paper I tests the candidate's general knowledge of both mental diseases and mental deficiency and Paper II is a special one consisting of two alternative sections one relating to mental diseases and the other to mental deficiency A copy of the Regulations and of the Syllabus of Study will be sent on application to John Lea M A University Extension Registrar, University of London, South Kensington S W 7

Conjoint Board of England (D P M , R C P and S

Both parts of the examination are held in June and December The examination comprises the following subjects with special regard to their relationship to psychological and

medicine —Part I (*a*) anatomy and physiology of the nervous system (*b*) psychology Part II (*a*) neurology (including clinical and pathological neurology) (*b*) psychological medicine including its legal relationships The examination will be written and oral in Part I and written oral and clinical in Part II No special certificates of study are required for Part I but before entering for Part II candidates must produce certificates of (*a*) having attended clinical instruction for at least two months at a recognized hospital for nervous diseases or in the department for nervous diseases of a recognized general hospital (*b*) having held a resident or whole time appointment at an institution for mental diseases where clinical instruction is given recognized for the purpose for a period of six months or having attended clinical instruction in psychological medicine at a recognized institution during twelve months Further particulars may be obtained from the Secretary Examination Hall S H Queen Square London W C 1

University of Edinburgh (Diploma)

Candidates for the diploma must have held subsequent to graduation (*a*) a resident appointment for one year in a hospital for mental disorders approved by the Faculty or (*b*) a six months appointment as above and six months practical study of nervous diseases in a special or general hospital approved by the Faculty The examination comprises —Part I (1) anatomy of the nervous system (2) physiology of the nervous system (3) psychology and experimental psychology Part II (1) neuropathology (2) clinical psychiatry (3) clinical neurology (4) an additional subject selected by the candidate from a prescribed list Further particulars may be obtained from the Dean of the Faculty of Medicine the University of Edinburgh

University of Leeds (D P M)

The examination is in three parts and is written oral and practical Subjects of examination —Part I (1) the development anatomy and histology (human and comparative) of the nervous system (2) the physiology of the nervous system and of the organs of special sense (3) general psychology Part II (4) the pathology of the nervous system Part III (5) clinical psychiatry (6) experimental and morbid psychology (7) (*a*) clinical neurology (*b*) mental hospital administration (*c*) medico legal aspects of insanity Candidates in order to pass must satisfy the examiners in the practical and clinical parts of the examination in Parts II and III respectively They may present themselves for the three parts of the examination separately or at the same time provided that no candidate shall be allowed to pass in Part II unless he has already passed in Part I or in Part III unless he has already passed in Parts I and II Evidence must be produced by candidates as to attendance at approved courses of instruction before they submit themselves to Part I of the examination Particulars may be obtained from the Academic Sub Dean School of Medicine Leeds

University of Manchester (D P M)

The examination is in two parts Before presenting themselves for either part of the examination candidates must produce evidence of having attended subsequent to qualification certain approved courses of instruction particulars of which may be found in the prospectus of post graduate courses The course of study extends over a period of three university terms two of which must be taken in the university the remaining term may be taken at the university or at some approved institution The subjects of examination are — Part I (1) a written and practical examination on the development anatomy (human and comparative) and physiology of the nervous system (2) a written and practical examination in psychology (theoretical and experimental) Part II (1) a written and practical examination in pathology in relation to the nervous system (2) a written clinical and oral examination in psychological medicine (3) a clinical and oral examination in clinical neurology For further information application should be made to the Dean of the Medical School the University Manchester

University of Durham (D P M)

The examination for the Diploma in Psychiatry consists of two parts Part I anatomy physiology pathology and bacteriology Part II psychology and experimental psychology neurology and psychiatry (systematic and clinical), and candidates may present themselves for the whole examination or for either part separately Particulars of the courses of instruction may be had on application to the Dean College of Medicine University of Durham Newcastle on Tyne

University of Dublin Diploma

A post graduate diploma in psychological medicine is conferred upon registered medical practitioners who have held a resident medical appointment at a recognized institution for the treatment of mental diseases for twelve months or who have held such an appointment for six months and have attended clinical instruction at an approved institution for six months Particulars of special courses of instruction may be obtained from the Registrar of the School of Physic Trinity College Dublin

National University of Ireland Diploma

The National University of Ireland grants a diploma in mental diseases Application should be made to the Registrars of the Constituent Colleges University College Dublin University College Cork and University College Galway for full information

COURSES OF INSTRUCTION

Maudsley Hospital London

A course of instruction for the Diploma in Psychological Medicine is given annually at the Maudsley Hospital Denmark Hill from January to May inclusive the details of the last course being as follows The course consisted of two parts In the first part lectures on the anatomy of the nervous system were given by Professor Le Gros Clark with practical instruction by Mr C Geary A course of lectures on the physiology of the nervous system with demonstrations in physiological psychology was given by Dr J Golla a series of lectures on biochemistry in relation to the nervous system by Dr S A Mann on theoretical and practical psychology by Dr Henry Devine and on mental mechanisms by Dr Aubrey Lewis For the second part of the course lectures on morbid psychology and psychiatry were given by Dr Mapother on the neuroses by Dr R D Gillespie on treatment by Sir Hubert Bond Dr Golla and Dr J S Harris on laboratory methods by Dr Mann and demonstrations on the pathology of the central nervous system by Mr Geary Dr Shrubsall lectured on mental deficiency and Dr East on criminal insanity Dr Golla and Dr James Collier gave instruction on clinical neurology and Mr Foster Moore on eye changes as applied to psychiatry The fee for the whole course (Part I and Part II) was 15 guineas or for either part separately 10 guineas for one single series of lectures in Part I the fee was 4 guineas and in Part II 2 guineas Inquiries as to lectures etc should be addressed to the Director of the Central Pathological Laboratory, Maudsley Hospital Denmark Hill S E 5

Bethlem Royal Hospital

The new Bethlem Hospital has recently been opened at Monks Orchard Eden Park Beckenham Kent where every facility is available for the clinical study of nervous and mental disorder The classification of patients is a prominent feature in the administration of the hospital and treatment in all its modern and specialized aspects can be carried out at the Lord Wakefield of Hythe Treatment and Research Laboratories Two courses of lectures and practical instruction for the Diploma in Psychological Medicine are given each year in spring and autumn These are of an intensive character one commencing in September and completed in early December and the other commencing in the middle of January and ended in the middle of April Each course consists of two parts Part A includes lectures and demonstrations on the anatomy histology and physiology of the nervous system with lectures on psychology and demonstrations in experimental psychology Part B comprises lectures and clinical demonstrations in psychology including lectures and demonstrations in the morbid anatomy of the nervous system a series of lectures with clinical demonstrations on different branches of psychological medicine and lectures with clinical demonstrations on mental deficiency Entrants for the course pay a composition fee of 15 guineas may if due notice is given attend either Part A or Part B of one course and postpone the other

part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months, or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the Physician-Superintendent, Monks Orchard, Eden Park, Beckenham, Kent.

National Hospital, Queen Square

Post-graduate courses which fulfil the requirements of the regulations for the Diploma in Psychological Medicine in regard to instruction in nervous diseases are held at the National Hospital, Queen Square, Bloomsbury, W.C.1, thrice annually, usually during February to March, May to June; and October to November. Lectures on the anatomy, physiology, and pathology of the nervous system and various clinical lectures are delivered and demonstrations are given. Out-patient clinics are held at the hospital on the afternoons of Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays. An inclusive fee of 10 guineas is charged for the whole course, but any part of the course can be taken separately at a special fee. A special arrangement is made for those unable to attend the whole course, and for details applications should be made to the Dean of the Medical School. Fees are payable to the secretary of the hospital on entering for the course.

Tavistock Square Clinic for Functional Nervous Disorders

Courses in the theory and practice of modern psychotherapy are held at this clinic every term. The subjects dealt with include the various schools of analytical psychology, treatment by persuasion and suggestion, differential diagnosis, and physical factors. Syllabus and particulars of dates and fees may be obtained from the Honorary Lecture Secretary at 51, Tavistock Square, London, W.C.1. Clinical assistantships are from time to time available for graduates who have attended such courses. The director of the clinic is Dr. H. Crichton-Miller, the deputy director Dr. J. R. Rees, and there is a large children's department. The "short course" lasts for a fortnight, and consists of twenty lectures, ten case-discussions, and two demonstrations. It is intended for senior students and those engaged in post-graduate study. The "long course" lasts for twelve weeks, and consists of two lectures on Wednesday afternoons. It is intended for senior students, and particularly for general practitioners in the London area.

Particulars of the courses of instruction arranged by the other universities granting the diploma may be obtained on application to the addresses given above (see Diplomas).

MENTAL HOSPITAL APPOINTMENTS

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £300 to £400 per annum, and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition; if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different asylums. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital, and draw various allowances.

Since the passing of the Asylum Officers Superannuation Act of 1909, all officers and others of the established staff of a public (county or borough asylum) mental hospital may retire at the age of 55 on a pension varying from one-half to two-thirds of the value of their pay and emoluments, or one-fiftieth for every year served, paying as contribution 3 per cent. of the value of their appointments annually. This very favourable prospect may not appeal to junior practitioners joining the services, but will eventually prove to be a valuable asset.

PROSPECTS IN THE PUBLIC SERVICE

Appointments to the public mental hospitals are made by the visiting committees, and in most cases only the junior posts are open to those who have not had previous experience in psychiatry. Since the public mental hospital service is a local and, except indirectly, not an imperial one, the promotion tends to be slow and uncertain; and the higher positions are not always advertised and thus thrown open to competition. For this and other reasons mental hospital work has undoubtedly not been in favour with newly qualified men in years past, but the general conditions of service continue to show a progressive improvement.

Both the British Medical Association and the Royal Medico-Psychological Association are working separately and together to improve present conditions of service, and have, for example, already removed the "celibacy" objection to the service. The salaries have also been considerably increased, especially in the junior ranks. During the last few years considerable progress has been made in the conditions under which the insane are treated. The mental hospitals are developing an atmosphere approximating more closely to that of the general hospitals. As a result of these developments the mental hospital service is becoming more attractive, and now affords greater opportunities for the medical graduate who proposes to specialize in psychiatry.

While routine, administrative, and clerical work bulk largely in mental hospital duties, as they do in other public medical services, there is ample material, time, and scope for purely medical work and research—difficult as the subject may be—in psychiatry as one of the branches of medicine open to young graduates. Most mental hospitals are now equipped with efficient clinical laboratories; moreover, those who wish to undertake research are afforded every opportunity of doing so in the pathological department of the Maudsley Hospital and also in various other centres in England and Scotland.

The Public Health Medical Services

The central authority to secure the adoption and effective administration of measures conducive to the health of the people, and to promote research work and the proper training of persons for health services, is the Ministry of Health.

For the purpose of local public health administration the whole of England and Wales is divided into counties, county boroughs, boroughs, and urban and rural sanitary districts. The administrative County of London, exclusive of the City of London, is divided into twenty-eight metropolitan boroughs.

The public health medical services for Great Britain embrace between three and four thousand medical men and women who give whole-time services, and, in addition, a large number who give part-time services. The medical officers appointed for these services may be either medical officers of the Ministry of Health for England and of the corresponding Boards of Health for Scotland and Wales; or—and these form the large majority—they may be medical officers appointed by the many local public health authorities. These latter appointments include: medical officers of health, tuberculosis medical officers, maternity and child welfare medical officers, venereal diseases medical officers, and school medical officers—who must be regarded as working in the health interests of the school child. By the larger public health authorities assistant medical officers of health are also appointed, and these posts often serve as stepping-stones to the higher offices as vacancies, which are required to be advertised, occur.

The Medical Services of the Central Authority

For England, the medical work of the Ministry of Health has been organized under the control of a Chief Medical Officer. It is subdivided into eight sections, with a senior medical officer at the head of each, and about a hundred medical officers, of whom about half are regional and deputy regional medical officers employed for certain duties under the Health Insurance Acts. Briefly, the sections deal with environmental hygiene, epidemiology, and international health; maternity and child welfare; tuberculosis and venereal diseases; the supervision of the food supplies; sanitary administration in relation to infectious diseases; national health insurance; and the school medical service. Vacancies in the staff are advertised from time to time in the medical journals and appointments are made by the Minister on the recommendations of a Selection Committee. These are Civil Service appointments, subject to the usual conditions as to pension, holidays, etc. Medical officers are also employed by the Welsh Board of Health (Cardiff) and the Department of Health for Scotland (Edinburgh).

Medical Officers of Health

The duties of the medical officer of health are: To inform himself upon all influences affecting or threatening to affect, injuriously, the public health within his district; to advise his sanitary authority upon all matters relating to health; and to perform all the duties imposed upon him by statutes, by-laws, and regulations. He must prepare and submit to his local authority special and annual reports; give immediate information to the Ministry of Health of any serious outbreak of disease; and, subject to the instruction of his sanitary authority, he shall direct or superintend the work of sanitary inspection.

By the Sanitary Officers Order, 1926, no person is qualified to be hereafter appointed or reappointed as a medical officer of health of any district or combination of districts unless, in addition to the qualifications prescribed by any statute, he is also either registered in the *Medical Register* as the holder of a Diploma in Public Health, Sanitary Science, or State Medicine, or has had not less than three years' previous experience of the duties of a medical officer of health.

The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health of a county borough or urban and rural district in England and Wales, a part of whose salary is contributed by the Exchequer, shall not be appointed for a limited period, and shall not be removed from his office except by or with the consent of the Minister of Health. A similar security of tenure also applies to all medical officers of health of county councils and of London boroughs.

Under the Sanitary Officers Order, 1926, a medical officer of health who does *not* devote his whole time to the duties of his office, but a portion of whose salary is obtained from Exchequer grant, may be appointed without limit of time, in which case he cannot be removed from office without the consent of the Minister. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal. Where the electing body pays the whole of the salary of such a medical officer of health he may be dismissed from office without reference to the Minister of Health.

A considerable number of authorities have now adopted the Local Government and Other Officers Superannuation Act 1922. Under this Act, if an officer is incapacitated by ill health after ten years of service, or if he has reached 65 years of age, he is entitled to superannuation on the following scale: after ten years' service, 10/60 of the average salary which he received during the last five years of employment, after eleven years, 11/60, and so on up to a maximum of 40/60 after forty years or more of service. This Act, however, remains permissive, and it fails to make due allowance, in computing service for purposes of superannuation, for the more advanced age, as compared with other officials, at which the medical officer of health can enter the public service. In these two respects the position reached falls short of that for which the British Medical Association has been working for some years.

In Scotland the position is different in some respects. Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area unless he possesses the Diploma in Public Health. No medical officer can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and the local authority may not bring about the resignation of the officer by indirect means, such as reducing the salary or attaching new conditions to the appointment. The Act says nothing about superannuation or the age of retirement.

School Medical Officers

School medical officers are appointed by local education authorities. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard education, and to inform the parents of its existence. Most approved schemes of medical inspection include arrangements which facilitate the task of parents in obtaining for their children the necessary treatment, check the results of this treatment, and keep each defective child under skilled observation both at home and at school until it has passed altogether out of the education authorities' hands. Indeed it is now the practice for the education authorities themselves to provide for certain ameliorative work, notably the prescription of glasses where necessary, dental treatment, the removal of adenoids and tonsils, and treatment in connexion with certain diseases of the skin and some physical and mental defects. The general effect of all schemes alike is to make the inspection imposed by law of benefit not merely to the individual child but to the community at large by preventing the development of conditions which lead to the existence of inefficient citizens among the adult population. The work is so related to that of medical officers of health that generally the senior school medical officer fills both appointments, his work when necessary being supplemented by that of whole or part time assistants. A diploma in public health is almost always required of those entering the school medical service.

In Scotland, while the statutory authority for the work of the school medical service is different, the scheme of work is broadly the same.

Tuberculosis Medical Officers

A tuberculosis medical officer is an officer with special training and experience in tuberculosis work, and of a suitable age and attainments to command general confidence. In England such officers are appointed by county councils and county borough councils, and their duties are to carry out the work of diagnosis of tuberculosis, to advise as to treatment, and to take charge of the work of tuberculosis dispensaries and sanatoriums where these are in operation. The work under tuberculosis schemes is co-ordinated with the general public health work of local authorities, and so the medical officer of health is often appointed as the chief tuberculosis officer when a special tuberculosis officer is on the staff of the local authority. The arrangements in Scotland are very similar. In Wales tuberculosis work is carried out under the aegis of the Welsh National Memorial Association, upon which the constituent local authorities are represented, and the appointments of tuberculosis officers are vested in the Association.

Maternity and Child Welfare Medical Officers

Any local public health authority, however small, may make arrangements for maternity and child welfare work within its area, although very generally the smaller local authorities are provided for in county council schemes. For the schemes of the smaller local authorities the services of a part-time medical officer are obtained when the medical officer of health does not himself undertake the duties, but for the larger schemes special whole-time appointments are made. The maternity and child welfare

medical officer is responsible for the work at the centres provided and for directing the home visitations ; and these activities are closely co-ordinated with the other branches of public health work directed by the medical officer of health.

Much of this work was commenced in different parts of the country by voluntary organizations ; some of it still remains in their hands, and is only loosely linked up with the public health local authority ; but the tendency is for the whole of it to be undertaken by the local authorities. A large number of women medical officers have been appointed to these posts.

VENEREAL DISEASES OFFICERS

Schemes for the diagnosis and treatment of venereal diseases are provided and administered by county councils and county borough councils. In some cases the officer is on the whole-time public health staff, and in others he is a part-time official. Special knowledge and practical experience in the treatment of venereal diseases are essential. The officer appointed for either whole-time or part-time service works at one or more clinics, and also gives instruction and assistance in the treatment of venereal diseases to general practitioners, who are allowed to attend the clinics.

REMUNERATION IN THE PUBLIC HEALTH SERVICE

In order to ensure that public health authorities may obtain skilled and highly trained medical officers it is essential that such officers should receive salaries commensurate with their attainments, bearing a reasonable relationship to the time and money expended in fitting them for their important and responsible duties, and comparing well with the income which might be secured in other lines of medical work. With this end in view the British Medical Association and the Society of Medical Officers of Health prepared a scale of minimum commencing salaries for whole-time public health medical officers.

The scale, which was put into operation in 1925, was attended with a large measure of success. There were, however, certain aspects of it which were not entirely satisfactory. For instance, it was not retrospective, and did not, therefore, apply to medical officers who had been appointed prior to the date on which it came into force, and it contained no provision for specified increments in salary.

As the result of a series of conferences between representatives of the various Associations of Local Authorities and the British Medical Association and Society of Medical Officers of Health, under the chairmanship of Lord Askwith, a "Memorandum of Recommendations" in regard to salaries of public health medical officers has been drawn up and came into force in June of last year. This Memorandum was published in the *Supplement* to the *British Medical Journal* of July 27th, 1929 (p. 71). It has been adopted by the Representative Body and has been accepted by the representatives of the following bodies representing local authorities:

The Association of Municipal Corporations.
The Urban District Councils Association.
The Rural District Councils Association.
The London County Council.
The Association of Education Committees.
The Mental Hospitals Association.
The Metropolitan Boroughs Standing Joint Committee.

Unfortunately it has not been accepted by the county councils as a whole, but a recent examination of the position showed that a majority of these authorities have now adopted, and are applying, the Memorandum. The advertisements of local authorities who are not prepared to put into effect the whole of the Recommendations will not be published by the *British Medical Journal*, which in this matter has the co-operation of the *Lancet* and the *Medical Officer*.

The great advantage of the Memorandum is that it embodies a general agreement as to salaries and conditions of service, and is not merely a scale of salaries. It is retrospective, and will therefore benefit officers appointed before it came into force. It provides stated increments for practically all medical officials except whole-time chief medical officers of health, who, as the chief medical officials, may, it is presumed, depend that the commencing salaries mentioned in the agreement will be increased for meritorious work and years of service, and it contains a very valuable provision by which questions of difficulty can be referred to an advisory committee.

For the right class of practitioner with leanings in the direction of public health work the service offers an attractive career, but it must always be remembered that there are comparatively few posts which carry high salaries.

The Curriculum for the Diploma in Public Health.

The new Regulations and Rules of the General Medical Council for Diplomas or Degrees in Public Health come into force on October 1st, 1931.

The curriculum must extend over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable qualification.

Every candidate for Part I must produce evidence of having attended, during not less than 280 hours, at an institution approved by the licensing body granting the diploma, practical instruction in:

(*a*) Bacteriology and parasitology (including immunology, serology, medical entomology, etc.), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man ;
(*b*) Chemistry, physics, radiology, and electrology in relation to public health ;
(*c*) Physiology and biochemistry in their application to nutrition and hygiene ;
(*d*) Meteorology and climatology in relation to public health.

Every candidate for Part II must produce evidence of having received, during not less than 120 hours, at an approved institution, instruction in the following subjects:

(*a*) The principles of public health and sanitation ;
(*b*) Epidemiology and vital statistics ;
(*c*) Sanitary law and administration (including public medical services) ;
(*d*) Sanitary construction and planning.

Every such candidate must also have attended for three months on the clinical practice of a recognized hospital for infectious diseases, and have received therein instruction in the methods of administration. At least twenty-four daily attendances of not less than two hours each are required.

Every candidate for Part II must produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties of public health administration under the supervision of a medical officer of health, who must certify that the candidate has received, during not less than three hours on each of sixty working days, practical instruction in these duties, and also those relating to:

(*a*) Maternity and child welfare service ;
(*b*) Health service for children of school age ;
(*c*) Venereal diseases service ;
(*d*) Tuberculosis service ;
(*e*) Industrial hygiene ;
(*f*) Inspection and control of food, including meat and milk.

(Instruction in (*a*) to (*f*) must include attendance at the centres, clinics, institutions, and premises concerned.)

Certificates of having received the prescribed instruction in public health administration must be given by a medical officer of health who devotes his whole time to public health work ; or by the medical officer of health of a sanitary area having a population of not less than 50,000 ; or in Ireland by the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

THE REGULATIONS FOR THE DIPLOMA IN PUBLIC HEALTH

The Examination

The examination for the D.P.H. is divided into two parts, and no candidate is allowed to sit for the final part until after an interval of two years from the date of his obtaining a registrable medical qualification, which must

be registered in the *Medical Register* before admission to Part II of the examination The object of this two years' interval is " to provide opportunity for candidates, while passing from the state of pupilage to that of responsible practice to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity, in general medical practice, in hospital or laboratory appointments, or in any special branch of clinical work or study related to State Medicine "

The examination for Part I embraces practical, written, and oral tests in the subjects set out in the Regulations of the curriculum relating to that part , and the same is true of the examination for Part II

A candidate must pass in all the subjects of Part I before being admitted to the examination for Part II

Any candidate who possesses a qualification entitling him to registration on the British, Dominion, or Foreign List of the *Medical Register* can be admitted to examination, provided he has complied with the regulations of a licensing body in the United Kingdom based on the rules of the General Medical Council, and that before being admitted to Part II of the examination his qualification has been registered in the United Kingdom Only diplomas in public health granted by approved bodies in the United Kingdom are registrable in the *Medical Register*

TRAINING AND EXAMINING CENTRES FOR PUBLIC HEALTH QUALIFICATIONS

Degrees in Sanitary Science are conferred, in England, by the Universities of London, Durham, Liverpool, and Birmingham , in Scotland, by the Universities of Glasgow and Edinburgh , and in the Irish Free State, by the National University of Ireland In most cases these degrees are conferred only upon medical graduates of the universities granting them

Whereas for the Diploma of Public Health the requirements of the General Medical Council are strictly conformed to, these requirements are extended, as a rule, as to both the period and the scope of special studies demanded, before Degrees in Sanitary Science are granted

Most universities in Great Britain and Ireland grant a D P H and provide for the necessary training The English and Scottish Conjoint Boards and the Irish Colleges also grant these diplomas

The School of Physic of Trinity College, Dublin, was the first body in the British Isles to arrange for courses of instruction and for a Diploma in Public Health

At Cambridge the teaching and training courses for the D P H cease this month but the university will continue to hold examinations for the diploma

The post-graduate teaching and training in public health, in London, is provided mainly at one centre—the London School of Hygiene and Tropical Medicine (University of London), the only other training centre which offers such facilities being the Royal Institute of Public Health

The course of study for the D P H , as provided by the London School of Hygiene and Tropical Medicine (Keppel Street, Gower Street, London, W C 1), covers a period of nine calendar months in the case of whole time students and is so designed that students wishing to do so can proceed to the new academic diploma instituted by the University of London The School undertakes research work in preventive medicine, and members of the public health services have a common room placed at their disposal, and are privileged to attend staff and special lectures

The University of Manchester has a well equipped department of bacteriology and preventive medicine, where candidates preparing for the examinations of the various university and examining boards for the Diploma in Public Health can obtain instruction It also prepares candidates for the Diploma in Bacteriology and in Veterinary State Medicine, granted by the university, and for its Certificates in Factory Hygiene and School Hygiene Full particulars can be obtained from the Dean of the Medical School, the University, Manchester

The University of Edinburgh grants a Diploma in Public Health The course, which extends over an academical year of nine months full time study, can be commenced in October only, and provision is made by the university for instruction in all the subjects Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh or must hold corresponding degrees or registrable medical qualifications, which must be registered before a candidate is admitted to examination The course for the diploma is divided into two parts, for each of which examinations are held twice annually In each part the candidate must pass in all the specified subjects at one examination Admission to the examinations is contingent upon the candidate having complied with the following conditions

PART I.—*(a)* Completion subsequent to obtaining a registrable medical qualification of the course of instruction prescribed for Part I

PART II.—*(b)* Completion subsequent to obtaining a registrable medical qualification of the course of instruction prescribed for Part II *(c)* Lapse of two years after obtaining a registrable medical qualification *(d)* Previous passage of examination in all subjects of Part I

Further particulars can be obtained from the Dean of the Faculty of Medicine Edinburgh

The Royal Naval Medical College and the Royal Army Medical College provide courses of training to the medical officers of these two services

Degrees and Diplomas in Public Health are registrable qualifications, but not so those in Tropical Medicine and Hygiene

QUALIFICATIONS IN TROPICAL MEDICINE AND HYGIENE

The University of London grants a degree (M D in Tropical Medicine) to its medical graduates and the course of training required must extend over at least one academic year

Diplomas in Tropical Medicine and Hygiene are granted, in England, by the University of Liverpool and by the English Conjoint Board , and, in Scotland by the University of Edinburgh Among the institutions which provide qualifying courses are the London School of Hygiene and Tropical Medicine, the Liverpool School of Tropical Medicine, and the Royal Army Medical College In the last mentioned institution the training provided is restricted to army medical officers The training period for these diplomas is about six months Graduates of medicine and surgery of recognized universities whose degrees are not registrable in this country may enter for the examination of the English Conjoint Board, and the conditions of study may be modified on the grounds of previous work in the Tropics or of original investigations undertaken

The Colonial Office has decreed recently that the holder of a D T M and H , or of a D T H , is eligible for appointment as a medical officer of health in places and districts other than those with large populations In the latter cases a D P H is required

Those wishing for the details of syllabus of study, fees, date of commencement of the training courses, and the dates of examinations, etc , should apply to any of the training schools mentioned

The Services

ROYAL NAVAL MEDICAL SERVICE

Examinations for direct entry into the Royal Naval Medical Service are at present in abeyance Entries are made by means of the short service scheme

General Conditions of the Short service Scheme

A candidate must be registered must be under 30 years of age and must be recommended by the dean of his school if however the candidate intends to apply for transfer to the permanent list he must have been under 28 years of age at the time of his entry He must be a British subject of pure European descent Unmarried candidates will be preferred A candidate will be interviewed by the Medical Director General R N and will undergo a physical examination If

considered eligible by the Medical Director-General his name will be submitted to the Board of Admiralty, and he may be appointed "surgeon lieutenant for short service" A candidate must engage for three years, with the option of continuing for a further period of twelve months if his services are still required The present rate of pay is £444 a year, with the same allowances as are payable to permanent officers of their rank Lodging money at the rate of £80 a year is usually allowed when employed on shore, without quarters in the United Kingdom and £56 10s a year in lieu of rations when not victualled in kind On joining an allowance of £50 for uniform is made

An officer engaged for three years is entitled to receive two months' notice of his services being no longer required A gratuity of £8 6s 8d will be payable to officers for each completed month of service on completion of their period of service, or to any who are invalided for causes not within their own control before the completion of the prescribed period

Transfer to Permanent Service

A short service surgeon lieutenant, after six months' service, may be considered, on application to the Secretary of the Admiralty, for transfer to the permanent service, and would be permitted to count his seniority from the date of entry for short service for purposes of promotion increment of full pay, and for retired pay, but for purposes of retiring gratuity on the permanent officers' scale his services will reckon only from the date of transfer to the permanent list

Antedates of Seniority on Account of Civil Hospital Appointments held before Entry

Officers who have held appointments as medical or surgical officers in civil hospitals for any period prior to entry, after becoming qualified medical practitioners, are eligible to have their seniorities antedated by not more than one year The eligibility of appointments in civil hospitals to count for time will be decided by the Medical Director General of the Navy

The increase of seniority will count for the purpose of increase of full and retired pay, etc, as from date of transfer to the permanent list in the case of surgeon lieutenants for short service Short service surgeon lieutenants claiming antedates of seniority must apply for transfer within eighteen months of entry

Promotion

Promotion to surgeon commander is attained on completion of twelve years' service, and officers of that rank are selected for promotion to the twenty seven higher ranks (surgeon captain surgeon rear admiral, and Medical Director General) as vacancies occur

Officers obtaining more than 75 per cent of marks at the examinations held at the termination of Parts I and II of the course for promotion to surgeon commander are eligible for advances of seniority as follows Over 75 per cent marks, 12 months over 85 per cent marks 18 months

Special promotions (limited in number) may be made to the ranks of surgeon commander and surgeon lieutenant commander in cases of distinguished service or conspicuous professional merit

Medals and Prizes

The Gilbert Blane Medal awarded annually to the surgeon lieutenant commander who obtains the highest aggregate marks at the examination for promotion to the rank of surgeon commander, and the Chadwick Naval Prize the North Persian Forces Memorial Medal and the Parkes Memorial Prize are open to naval medical officers

Post Graduate Instruction in the Naval Medical Service

Course on Entry—A course of two months' duration at the Royal Naval Hospital, Haslar, is given to each short service officer on entry

General Professional Courses—These courses at the Royal Naval Hospital Haslar, of four months duration, are normally arranged for officers lower than surgeon captain's rank once in every four years The subjects of these courses of instruction are clinical medicine and surgery and allied subjects, and on the completion of the courses officers are appointed to a large naval hospital unless and until they receive appointments elsewhere

Course for Promotion to Surgeon Commander—This course, of five months' duration, is normally taken by officers of six to eight years' service Three months of the course are spent at the London Hospital, and two months at the Naval Medical School, Royal Naval College, Greenwich

Specialist Courses—These courses, of three to six months' duration, are arranged at recognized civil teaching centres for officers selected for specialist posts, and officers will subsequently undergo courses of three months' duration in the special subjects every four years while employed as specialists

Post Graduate Courses (Old Scheme)—The existing three months' post graduate courses at civil hospitals will to a limited extent, be superseded by the general professional and special courses described above, but they will not be discontinued until the new courses have been in operation for some years

Medical officers R N are given the opportunity to prepare for and take higher or specialist qualifications—for example M D, M R C P, F R C S, D P H, D T M, etc

Rates of Pay

The current rates of full pay and retired pay are stated below They represent a deduction of 8 per cent from the standard rates which were fixed in 1920, when the cost of living was high, 20 per cent of the standard rate is regarded as variable as the cost of living rises or falls

Full Pay

	Per annum £
Surgeon Lieutenant (short service and permanent service)	444 to 487
Surgeon Lieutenant Commander (promoted after 6 years service)	587 to 631
Surgeon Commander (promoted after a further 6 years service)	734 to 913
Surgeon Captain (promoted by selection)	1,092 to 1,141
Surgeon Rear Admiral (promoted by selection)	1,704
Medical Director-General (Surgeon Vice Admiral)	2,300

There are also in certain cases allowances which form a substantial addition to the rates of pay There are sixty specialist appointments open to medical officers They comprise specialist posts in medicine, surgery, diseases of the eye, ear nose and throat, radiology hygiene etc, and in addition at the rate of 5s a day is payable to holders of them

Medical officers in charge of naval hospitals and sick quarters receive charge pay on the following scale

Surgeon Rear Admirals and Surgeon Captains	10s a day
Surgeon Commanders	5s a day

Maximum Retired Pay

(Approximate current rates)

	£	Age for compulsory retirement
Surgeon Vice Admiral	1,100	On vacating post
Surgeon Rear Admiral	929	60
Surgeon Captain	825	55
Surgeon Commander	552	50
Surgeon Lieutenant Commander and Surgeon Lieutenant	414	45

Gratuities on Retirement

The following gratuities are payable if an officer of the permanent list is permitted to retire voluntarily

	£
After 4 years full pay service	500
,, 8 ,, ,, ,,	1,000
,, 12 ,, ,, ,,	1,500
,, 16 ,, ,, ,,	2,250

Further Particulars

Full particulars and a form of declaration can be obtained from the Medical Director-General, Admiralty, Queen Anne's Chambers Tothill Street, London, S W 1

ARMY MEDICAL SERVICES

Entrance to the Royal Army Medical Corps, either by competitive examination or by selection, as decided by the Army Council, will take place half-yearly, in January and July The examinations in medicine and surgery are entirely of a clinical and practical character, partly written and partly oral

In addition to the grant of permanent commissions the War Office offers a number of temporary commissions in the R A M C, the holders of which may be invalided at the end of twelve months' service (if suitable, and provided that vacancies exist) to accept permanent commissions in the Royal Army Medical Corps If a permanent commission is accepted the temporary service is allowed to count as the equivalent of permanent service for promotion, increase of pay, and retired pay The

Pay and Allowances at Home

Rank	Pay per Diem*	Rations	Servant	Married: Lodging	Married: Fuel and Light (Average)	Married: Furniture	Unmarried: Lodging	Unmarried: Fuel and Light (Average)	Approximate Yearly Total: Married	Approximate Yearly Total: Unmarried
	£ s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.
Lieutenant	1 0 2	1 4	2 0	3 6	1 8	2 0	2 6	0 8	560 0 0	437 0 0
Captain	1 4 10	1 4	2 0	4 6	2 9	2 0	2 6	0 8	683 0 0	572 0 0
Captain after 8 years' service	1 7 8	1 4	2 0	4 6	2 9	2 0	2 6	0 8	725 0 0	624 0 0
Captain after 10 years' service	1 9 10	1 4	2 0	4 6	2 9	2 0	2 6	0 8	774 0 0	663 0 0
Major	1 14 6	1 4	2 0	4 6	2 11	2 0	4 0	1 3	862 0 0	756 0 0
Major after 15 years' service	1 19 2	1 4	2 0	4 6	2 11	2 0	4 0	1 3	917 0 0	871 0 0
Major after 18 years' service	2 1 4	1 4	2 0	4 6	2 11	2 0	4 0	1 3	937 0 0	911 0 0
Major after 20 years' service	2 6 0	1 4	2 0	4 6	2 11	2 0	4 0	1 3	1072 0 0	995 0 0
Lieutenant-Colonel	2 12 10	1 4	2 0	4 6	3 0	2 0	4 6	2 5	1159 0 0	1151 0 0
Lieutenant-Colonel after 3 years' service as such	2 17 6	1 4	2 0	4 6	3 0	2 0	4 6	2 5	1233 0 0	1235 0 0
Colonel	3 4 4	1 4	2 0	5 6	3 11	2 0	5 6	2 9	1441 0 0	1326 0 0
Major-General	4 7 4	1 4	4 0	11 0	5 0	2 0	11 0	3 11	2020 0 0	1963 0 0

*Pay Warrant rates less 8 per cent., with effect from July 1st, 1931. The Pay Warrant rates are subject to revision to an extent not exceeding 20 per cent., according to variation in the cost of living. The next revision takes place from July 1st, 1933.
Rates of Allowances vary from time to time, and issues are subject to conditions laid down in the Allowance Regulations.

conditions enable the young medical man to make acquaintance with army life, without detriment to his ultimate prospects, before deciding whether to make a permanent career in the R.A.M.C.

The regulations for admission, giving full details, can be obtained from the Under Secretary of State (A.M.D.1), War Office, Whitehall, London, S.W.1, and should be carefully studied. A personal interview with a representative of the Director-General, Army Medical Services, is readily obtainable. The work is varied, responsible, and interesting. The gratuities after certain periods of service enable an officer, should he so desire, to leave the service with a capital sum large enough to go some way towards re-establishing himself in civil life.

New entrants, who must be 22 and not over 28 years of age, are commissioned in the rank of lieutenant; the first six months of service are spent on probation, during which time, in addition to their military training at the Royal Army Medical Corps Depot at Aldershot, they undergo a probationary course at the Royal Army Medical College in London, in hygiene, pathology, tropical medicine, military surgery, recruiting, the prevention and treatment of venereal disease, and the elements of army administration. At the end of this course, and after qualifying at the necessary examinations, their commissions are confirmed and they take their places in seniority according to the total marks obtained at all examinations up to that date. Officers Training Corps service, with possession of certificate "B" (medical), carries a definite value in marks in this total.

An entrant who is holding or about to hold at the time of the entrance examination an approved whole-time appointment at a recognized civil hospital may be seconded while holding such an appointment up to a maximum period of twelve months. A candidate who has held such an appointment within six months of entry may be granted an antedate up to twelve months in respect of the period the appointment was held. This secondment and antedate count in all respects as commissioned service, except that pay will not be issued for that period.

After a total period of one year's service at home, the young officer goes abroad, probably to India, for his first tour of foreign service. Here he gains his first practical experience of tropical disease and tropical hygiene, and possibly his first experience of active service on the frontiers of India. His tour abroad lasts five years, with probably six months' leave home during that time. On returning home the R.A.M.C. officer has the opportunity to decide whether he will remain in the Corps or accept the gratuity of £1,000 after seven years' service and try his fortune in civil life. If he elects to remain, he will, between his eighth and twelfth year of service, undergo a course of post-graduate study at the Royal Army Medical College and the London hospitals of five months' duration, followed by a course of study of a special subject selected by himself, provided he has shown special aptitude in the post-graduate course or during his previous service. During the period of study he remains on full pay and the fees of the course are paid by the State. When qualified in his special subject the officer is eligible for a specialist appointment. The total number of these appointments is 108, and the additional rate of pay 4s. 8d. a day. After this post-graduate course the officer probably proceeds abroad again, and promotion to major rapidly ensues; from that time onward he receives regular successive increases of pay and is eligible for additional and charge pay as well. Directorates of hygiene and pathology, and the appointment of two serving officers as consultants in medicine and surgery, have been instituted, and have proved a marked success. All these appointments are of the rank of colonel or major-general, and were devised to permit specially selected officers to rise through all ranks to that of major-general on the strength of their professional or purely scientific work.

Promotion

Promotion takes place automatically to captain after three and a half years' and to major after twelve years' service, provided the officer is qualified and recommended for promotion. Promotion to the higher ranks is by selection from those senior in the rank below, but special promotion by brevet or otherwise is open to officers of the Royal Army Medical Corps.

Pay and Allowances

The rates of pay and allowances are given in the table printed above. In addition, an officer at home in charge of a hospital receives charge pay, the daily amounts being from 2s. 6d. to 10s., according to the number of beds. There are other appointments for which charge pay is given from 5s. to 10s. daily.

Retirement and Retired Pay

Retired pay will consist of two parts. (*a*) a service element based on the officer's total service; (*b*) a rank element for the substantive rank from which the officer retires. An officer with less than twenty complete years' service will not be

Rates of Pay for R.A.M.C. Officers Serving in India

Rank	Rates of Pay per Month						
	Unmarried			Married			
	Pay of Rank	Unmarried Rates of Lodging Allowance	Total	Pay of Rank	Married Rates of Lodging Allowance	Marriage Allowance	Total
	Rupees.	Rupees.	Rupees.	Rupees	Rupees.	Rupees	Rupees
Lieutenant	625	25	650	625	50	65	*740
Captain	755	45	800	755	90	100	*945
Captain after 8 years' service	860	45	905	860	90	100	1050
Captain after 10 years' service	930	45	975	930	90	100	1120
Major	1070	55	1125	1070	110	90	1270
Major after 15 years' service	1170	55	1225	1170	110	90	1370
Major after 18 years' service	1320	55	1375	1320	110	90	1520
Major after 20 years' service	1420	55	1475	1420	110	90	1620
Lieutenant-Colonel	1575	75	1650	1575	150	75	1800
Lieutenant-Colonel after 3 years' service	17 0	75	1825	1750	150	75	1975

* Married rate of pay is not admissible to officers whose age is under 30.

eligible for retired pay on voluntary retirement. The scale, subject to the reduction of 8 per cent. referred to below, is, for the service element, £15 a year for each completed year of service as a medical officer. For the rank element the scale is as follows:

Substantive Rank from which Retired	After Completing 1 Year's Service in the Rank	After Completing each Additional Year's Service	Maximum Rank Element
	£	£	£
Major	12	12	120
Lieutenant-Colonel . ..	150	30	240
Colonel	290	50	390
Major-General .. .	440	50	540
Lieutenant-General .	590	50	690

The retired pay of an officer retiring with less than one complete year's service in the rank from which he retires will be assessed as though he had retired from the rank below.

The maximum standard rates of retired pay are as follows:

Captain and Subaltern -	£300
Major	£450
Lieutenant-Colonel .. .	£600
Colonel .. .	£800
Major-General .	£1,000
Lieutenant-General	£1,200

The above rates are those laid down in the Pay Warrant. They have been reduced by 8 per cent as from July 1st, 1931, 20 per cent. of the standard rate is regarded as variable as the cost of living rises or falls

Officers with seven and less than twenty years' service as medical officers may be permitted to retire with a gratuity in accordance with the following scale

After 7 years' service as a medical officer	£1,000
After 15 years' service as a medical officer	£2,800
After 18 years' service as a medical officer	£3,500

Seconded Service

An officer may be permitted to accept employment under the Foreign or Colonial Offices; when so seconded he is not eligible for pay or allowances from Army funds, but his service continues to reckon towards promotion and, under certain conditions, towards increase of pay, pension, or gratuity.

THE ARMY DENTAL CORPS

The corps is administered by the Director-General, Army Medical Services The regulations for admission to the Army Dental Corps should be obtained from the Under Secretary of State, War Office, and carefully studied.

ROYAL AIR FORCE MEDICAL SERVICE

The Air Council attaches great importance to attracting into the R.A.F.M.S. the best type of medical man, since on the capacity of the medical service depends in a peculiar degree the safety and efficiency of the Royal Air Force. The duties of these medical officers include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable, but the special study of the mental and physical stresses imposed on the airman in diverse circumstances and climates—a new branch of medicine which still provides considerable scope for research.

As promotion to the higher medical ranks is by selection from officers who are eligible by reason of length of service, and as a certain proportion of the higher ranks will be reserved for purely professional as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in professional work as well as for those who develop a talent for administration Duties will, as a matter of course, give him flying experience as a passenger, which is necessary for the proper study of the medical problems of aviation and for gaining first-hand knowledge of the conditions under which his comrades serve.

The establishment of the Royal Air Force Medical Service consists partly of permanent and partly of short-service officers

An officer will, on first entry, be granted a short service commission for a period of three years on the active list (which may be extended to five years at the discretion of the Air Council, if the officer so wishes, on the recommendation of the Director of Medical Services) and of four years in the Reserve of Air Force Officers. Selections for permanent commissions will be made from officers holding short service commissions, and those who are not selected will be transferred to the Reserve at the expiration of their period of service on the active list. For those entrants who desire it the prospect of obtaining a permanent commission is approximately an even one.

Arrangements are in force under which an officer granted a short-service commission who has previously held an approved whole-time appointment in a recognized civil hospital may, subject to certain conditions, be granted an antedate of the commission equal to a period of the appointment up to a maximum of one year. A similar arrangement obtains as regards a recognized hospital appointment which is held or about to be held at the date when the short service commission is granted.

Royal Air Force Medical Branch: Rates of Pay and Allowances

Rank	Pay* Daily Rates: Standard	Pay* Daily Rates: Current	Pay* Per Annum (Current Rates) from July 1st, 1931	Cash Allowances at Home Rates in lieu of Quarters, Rations, and Servant, if not available in kind (per annum)† Married	Cash Allowances at Home Rates in lieu of Quarters, Rations, and Servant, if not available in kind (per annum)† Unmarried	Pay plus Allowances (per annum) Married	Pay plus Allowances (per annum) Unmarried
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Flying Officer	1 4 0	1 2 0	401 10 0	191 12 6	118 12 6	593 2 6	520 2 6
Flight Lieutenant...	1 6 0	1 4 0	433 0 0	229 12 11	118 12 6	667 12 11	557 12 6
Ditto, after 2 years as such ...	1 8 0	1 5 10	471 9 2	229 12 11	118 12 6	701 2 1	590 1 8
Ditto, after 4 years as such ...	1 10 0	1 7 8	504 18 4	229 12 11	118 12 6	734 11 3	623 10 10
Squadron Leader	1 14 0	1 11 4	571 16 8	232 13 9	156 12 11	804 10 5	728 9 7
Ditto, after 2 years as such ...	1 18 0	1 15 0	638 15 0	232 13 9	156 12 11	871 8 9	795 7 11
Ditto, after 4 years as such ...	2 0 0	1 15 10	672 4 2	232 13 9	155 12 11	904 17 11	828 17 1
Ditto, after 6 years as such ...	2 4 0	2 0 6	733 2 6	232 13 9	156 12 11	971 16 3	895 15 5
Ditto, after 8 years as such ...	2 8 0	2 4 2	805 0 10	232 13 9	156 12 11	1038 14 7	962 13 9
Ditto, after 10 years as such ...	2 10 0	2 6 0	839 10 0	232 13 9	156 12 11	1072 3 9	996 2 11
Wing Commander	2 15 0	2 10 8	921 13 4	234 4 2	187 1 3	1158 17 6	1111 14 7
Ditto, after 2 years as such ...	2 17 0	2 12 6	953 2 6	234 4 2	187 1 3	1192 6 8	1145 3 9
Ditto, after 4 years as such ...	3 3 0	2 18 0	1053 10 0	234 4 2	187 1 3	1292 14 2	1245 11 3
Group Captain	3 10 0	3 4 4	1174 1 8	305 13 9	247 17 11	1479 15 5	1421 19 7
Air Commodore	4 0 0	3 13 8	1314 8 4	361 19 2	338 14 7	1706 7 6	1653 2 11
Air Vice-Marshal	5 0 0	4 12 0	1673 0 0	425 16 8	359 11 3	2104 15 8	2038 11 3

*Except for periods of service under Indian administration. For such periods officers receive pay and allowances at rates and subject to conditions authorized from time to time by the Government of India.

†These allowances are issued only when accommodation, fuel and light, rations and personal attendance are not available in kind. Normally, provision in kind is available for junior officers. "Married" rates of allowances are payable only to married officers who have reached the age of 30 or the rank of squadron leader. Rates of allowances abroad are fixed in relation to costs in the particular country, and a colonial allowance is granted in certain commands abroad. The rates and general scheme of allowances are liable to revision as circumstances may require.

An officer who has been seconded or whose commission has been antedated as above will be required to serve for a minimum period of three years on the active list from the date of joining for actual R.A.F. duty.

Officers who have been granted permanent commissions may be permitted to attend, for a period not exceeding nine months, a post-graduate course in general medicine and surgery, tropical and preventive medicine, and other special subjects. Such permission may be granted at any time when the exigencies of the service permit during the first sixteen years of service, and when attending these courses officers will receive full pay and allowances.

New entrants into the R.A.F.M.S. will be commissioned as Flying Officers (Medical), and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service. Officers selected for permanent commissions will normally be promoted to the rank of Squadron Leader after ten years' total service. Accelerated promotion may be granted in a limited number of cases to officers who show exceptional ability after the completion of eight years' service. Promotion within establishment to the rank of Wing Commander will be by selection at any period after sixteen years' total service, and to that of Group Captain by selection at any period after twenty-two years' service.

There will be no competitive examination on entry; candidates must be under 28 years of age, be British subjects, the sons of British subjects, and of pure European descent, and will be interviewed by a Selection Board at the Air Ministry, London, presided over by the Director of Medical Services, Royal Air Force, before acceptance, and will be required to pass a medical examination.

On appointment entrants will undergo an initial course, during which they will be given instruction in the special medical aspects of aviation; the organization and administration of the Royal Air Force; and the general and special duties to be performed by officers in the Medical Branch.

Outfit Allowance

An allowance of £50 towards the cost of uniform is made on joining to candidates who have not had previous service as an officer in H.M. Forces or whose previous service was terminated more than three years before the date of their new commission.

Pay and Allowances

The emoluments of medical officers of the Royal Air Force are given in outline above. The rates of pay are fixed on an inclusive basis, and the fact that specialist pay and charge pay are not payable as separate emoluments was taken into account when the rates were fixed. The standard rates of pay and retired pay were drawn up on the basis of the high cost of living in 1919, and 20 per cent. of each standard rate is detachable and subject to alteration upward or downward in relation to the increase or decrease of the cost of living above or below the cost in July, 1919. Under this provision the current rates now in force represent a reduction of approximately 8 per cent. on the standard rates. The next cost of living revision will take effect from July 1st, 1933.

Retired Pay

The minimum period of service qualifying for retirement on retired pay is twenty years. Standard rates of retired pay are as follows:

Air Officers.—Air Vice-Marshal, £790 to £1,010 per annum; Air Commodore, £650 to £950 per annum.

RETIRED PAY (PERMANENT OFFICERS)
Officers Below Air Rank

Age on Retirement	Standard Yearly Rate of Retired Pay	Years of Service	Addition for each Extra Year of Service*	Deduction for each Deficient Year of Service*
	£		£	£
40	300	17	15	15
41	337	17	15	15
42	375	18	15	15
43	412	18	15	15
44	450	19	15	15
45	487	19	15	15
46	525	20	15	15
47	562	20	15	15
48	600	21	15	15
49	637	21	15	15
50	675	22	15	15
51	697	22	22	15
52	720	23	22	15
53	742	23	22	15
54	765	24	22	15
55	790	24	22	15

*Limited to five years.

The maximum standard rates of retired pay and the compulsory retiring ages for the several ranks are:

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
	£	
Air Vice-Marshal	1,010	60
Air Commodore	950	57
Group Captain	900	55
Wing Commander	600	51
Squadron Leader	500	48

Gratuities

A permanent officer allowed to retire before having qualified for retired pay may be granted a gratuity provided he has not less than ten years' commissioned service—namely, £1,500 if he has ten but less than fifteen years' commissioned service; £2,500 after fifteen or more than fifteen years'.

Short-service officers will be eligible on passing to the Reserve for gratuities on the following scale: £100 for each of the first two complete years of service, £150 for each of the third and fourth complete years, and £200 for the fifth complete year; that is, for three years' service on the active list £350; for five years' £700.

These gratuities will not be payable to officers granted permanent commissions, but their service on a short-service commission will count towards retired pay.

Further particulars may be obtained on application to the Secretary, Air Ministry (D.M.S.), Adastral House, Kingsway, W.C.2.

INDIAN MEDICAL SERVICE

Pending a decision on the main constitutional issues now under consideration, the future of the Indian Services necessarily remains in doubt, and the Indian Medical Service is no exception to the general rule. The conditions of service actually in force in the I.M.S. at the present time are in the main those approved by the Association in 1928, but they were based on the decision that, while the I.M.S. would be retained primarily to meet the needs of the Indian Army, Provincial Governments would be required to employ a stated number of officers from the Service, in order to maintain the necessary minimum war reserve and to provide European medical attendance for European officers of the higher civil services and their families. A number of civil posts under the Government of India and the Provincial Governments were therefore reserved for officers of the Service, some being open alike to Europeans and Indians, others to Europeans only, and these posts are actually so reserved under existing regulations. But the recommendations of the Services Subcommittee of the Round Table Conference, presented to the committee of the whole Conference on January 16th, 1931, strike not only at the admittedly temporary numerical adjustment embodied in the regulations, but at the whole basis of the settlement. Subject to the necessary safeguards for the rights of the existing personnel of the Service, the majority of the subcommittee recommended that in future there should be no civil branch of the I.M.S., and that no civil appointments, either under the Government of India or the Provincial Governments, should be listed as reserved for Europeans as such. In their opinion the civil medical services should in future be recruited through the Public Service Commissions.

In view of the terms of these recommendations it is clearly impossible at present to state what, if any, prospects of employment on the civil side will be open to I.M.S. officers under the constitution eventually to be adopted in India. In these circumstances, while candidates for the I.M.S. should understand that they will be liable, if appointed, for military or civil employment as required, it seems advisable to confine attention to the prospects afforded by the military side of the Service which has medical charge of the Indian Army, and which continues to offer wide opportunities of professional experience, including clinical, preventive, specialist, and research work.

Conditions of Service

European candidates for admission to the I.M.S. must be British subjects under 32 years of age, and must be registered under the Medical Acts in Great Britain and Northern Ireland. A gratuity of £1,000 on retirement after six years' service, or £2,500 after twelve years' service, together with free return passages, is offered.

Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank	Service in Rank	Basic Pay	Overseas Pay	Years' Total Service
1	2	3	4	5
		Rs.	Rs.	
Lieutenant		500	150 150	1st 2nd
Captain ...	(i) During first 3 years' service as Captain	650	150 £15	3rd 4th
	(ii) With more than 3 and less than 6 years' service as Captain	750	£15 £25 £25	5th 6th 7th
	(iii) With more than 6 years' service as Captain	850	£25 £25 £25	8th 9th 10th
Major ...	(i) During first 3 years' service as Major	950	£30	11th
	(ii) With more than 3 and less than 6 years' service as Major	1100		12th
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' total service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

Extras.—In addition to the above rates various allowances are admissible for a number of special appointments which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, is limited to one year.

Officers on appointment will receive an outfit allowance of £50.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice so long as it does not interfere with their proper duties.

The rates of pension are as follows.

	Per annum. £
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	420
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1914 to an extent not exceeding 20 per cent. in all. A reduction of 6 per cent. has been made this year on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

Officers are required to undergo courses of instruction at the Royal Army Medical College, and at Aldershot, for approximately six months, prior to their embarkation for India on first appointment.

Further particulars may be obtained from the Under Secretary of State for India, Military Department, India Office, London, S.W.1.

PRISON MEDICAL SERVICE

Candidates for the prison medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners The Chairman of the Board is Mr A Maxwell, C B Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S W 1

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur

Largely as a result of action taken by the British Medical Association some years ago, the salaries of prison medical officers were improved, and now are Medical officer Class II, £350, rising by annual increments of £20 to £600 , medical officer Class I, £650, rising by annual increments of £25 to £800 Unfurnished quarters are provided, or an allowance in lieu is made The civil service bonus is paid on the salary The Association has recently represented to the Royal Commission on the Civil Service, in connexion with a proposal to stabilize salary and bonus, that the remuneration of prison medical officers should be increased

There are 15 medical officers Class II, 12 medical officers Class I, and 23 part time medical officers The service is a small one, and therefore vacancies are comparatively rare and promotion is very slow

LOCAL GOVERNMENT (POOR LAW) MEDICAL SERVICES

A considerable change in administrative conditions in the Poor Law in England and Wales has been effected by the passing of the Local Government Act, 1929, which from April 1st, 1930, abolished the old boards of guardians, and transferred their functions to the county councils and county borough councils This should result in a higher degree of specialization in Poor Law work, particularly on the medical side, and a closer assimilation to other public health services

A number of whole time appointments exist under these new Poor Law authorities in Great Britain, certain of which, notably in the metropolis and the chief provincial cities, maintain large well equipped hospitals organized under purely medical administration Posts are available to medical practitioners as superintendents and assistant officers in hospitals and infirmaries, and as resident officers in other institutions, such as poorhouses, workhouses, etc Conditions and salaries show considerable variation , salaries for resident assistant medical officers in Poor Law infirmaries usually range from £200 to £450 a year, with full board, the duties being much the same as, but as a whole more responsible than, those of a house physician or house surgeon in a general hospital Medical superintendents are paid from £600 to £1,600 a year, with house, light, coal, laundry, etc , and in some cases the first assistant is termed deputy medical superintendent and receives £450 to £750 a year, with similar emoluments This service, therefore, offers openings for young practitioners and the prospect of a reasonable degree of progress for those who may choose to make it their career, with security of tenure, and provision for superannuation It should be added that the attractiveness or otherwise of any particular post has been, and still may be, in some degree affected by the policy adopted by the authority under whose jurisdiction it falls In the more advanced areas there is a high degree of differentiation in treatment between the sick and mentally affected, and the purely pauper class (between the hospital and the workhouse) , the tendency in such areas has been to develop the hospital services on lines approximating to those ruling in the voluntary hospitals In the majority of Poor Law institutions however, lay control through the administration by a workhouse master of the whole organization, has been preserved, and medical appointments in such circumstances are less attractive

In addition to the full time appointments of the character mentioned, the Local Government (Poor Law) Service offers numerous part time posts, such as those of district medical officer, parish medical officer, etc , which are practically all held by general practitioners Public vaccinators are also appointed under contract with the councils of the counties and county boroughs, except in London, where the municipal boroughs are responsible for the vaccination service

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

Medical Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained To these registers medical men educated in the United Kingdom are generally admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be The only exception to this statement that need be made relates to the Dominion of Canada Each of its provinces acts in medical matters as an independent State The result has been that reciprocity of practice has in the past been established between this country and all the provinces of Canada except British Columbia, where certain obstacles were never overcome It has, however, to be recorded that reciprocity with Saskatchewan, New Brunswick, Ontario, and Quebec has recently been brought to an end by those provinces We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register The Licence of the Dominion Council, which can only be obtained after examination, entitles its holder to registration in any of the provinces of Canada, though in regard to Quebec there is a proviso that " he must have been registered in the province five years prior to the application for the recognition of the Dominion Licence " In order to sit for the examination for the Dominion Licence, it is necessary to obtain either a licence from one of the provinces (this can be obtained from one of those with whom reciprocity has been established), or a certificate from a Provincial Council that the requirements of that Council in regard to preliminary education, matriculation, medical curriculum, and graduation have been complied with

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established, though there are other countries which grant a limited recognition to British qualifications Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country The same observation applies to all foreign States in the South American continent Each of the United States of North America has its own laws and regulations governing medical practice and all of them require the holder of a British qualification to submit to an examination A number of the States, including New York, Illinois, Michigan, and Indiana, require naturalization

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the office of the General Medical Council, 44, Hallam Street, Portland Place, London, W 1, price 2s 6d , or 2s 9d post free in the United Kingdom Practitioners who think of going abroad to practise will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed A new edition was published in 1930

MEDICAL APPOINTMENTS IN THE COLONIES AND MANDATED TERRITORIES

Medical appointments in the self-governing Dominions and the territories under their control, and in Southern Rhodesia and Malta, are made by the Governments concerned, and are not in general open to candidates in the United Kingdom. In Ceylon, Mauritius, Jamaica, Barbados, the Bahamas, and Bermuda vacancies are practically always filled by the appointment of qualified local candidates or, in the case of some of the higher posts, by transfer from other colonies. Appointments to the medical services of the remaining colonies and other territories under the administrative direction of the Colonial Office are made by the Secretary of State for the Colonies in this country. Such appointments are to a given colony or group of colonies, for there is no unified service directly administered from the Colonial Office. It follows that conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local government, and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional status of the particular colony, and the detailed information available centrally is not always complete. The intending candidate, therefore, should make comprehensive inquiries as to local conditions, and particularly as to facilities for private practice where this is included in the terms of appointment. He will also do well to supplement official information by reference to the Medical Secretary at the Central Office of the British Medical Association (Tavistock Square, London, W.C.1), where reports obtained from time to time from the local Branches are available. This is the more necessary because opportunities for transfer from the medical service of one colony to that of another are as yet rare, except in connexion with specialist and senior appointments.

To those physically and mentally suited to the climatic and social conditions peculiar to the various colonies the Colonial Medical Services should, and in some cases do, offer a field of professional activity rich in interest and in opportunity for pioneer work, with increasing facilities for specialization and research.

The prevailing trade depression and the consequent curtailment of revenue have inevitably affected the health programme among other activities of the Colonial Governments, but this check is in some degree offset by growing appreciation among the local administrations of the potentialities of sanitation and by quickened parliamentary and departmental interest in the development of a sound medical policy. It is significant in this connexion that the question of the best method of utilizing the funds available under the Colonial Development Act of 1929 for the promotion of medical research, and the application of its results to public health problems in the Colonial Empire, was deemed worthy of special interdepartmental inquiry. The assistance recommended by the Colonial Development Committee under the head of public health during the first eighteen months' operation of the fund amounts to £410,486. The recommendations of the committee on the system of appointment in the Colonial Office and the Colonial Services, published in May, 1930, mark an important step in the development of the Colonial Services in general, including the medical services. Acceptance by the Secretary of State for the Colonies and the Colonial Office Conference of the principle of unification has at last cleared the way for the elaboration of practical schemes for its application. Such unification would secure to members of the smaller medical services much-needed opportunities for promotion by transfer. Meanwhile, reorganization of the work of the promotions branch of the Colonial Office on the lines recommended by the committee should lead to welcome improvements in more than one direction.

Apart from immediate economic stringency, the outlook for the Colonial Medical Service is thus in the main a hopeful one, and especially so in the larger and better organized branches. This cannot yet be said of all the smaller services, some of which are still hampered by conditions which make full efficiency unattainable. The urgent necessity therefore remains for making careful and sufficient inquiry as to the position in any given service before accepting appointment.

The medical services recruited in this country by the Secretary of State for the Colonies include those of West Africa, East Africa, Malaya, Hong-Kong, the West Indies, Fiji and the Western Pacific territories, and Palestine, besides a number of smaller services offering individually one or two appointments at an inadequate remuneration and with no prospect of promotion. Of late years certain medical appointments in the service of the Government of Iraq have been filled with the concurrence and normally upon the recommendation of the Secretary of State; but political conditions make fresh vacancies unlikely at present.

In the Fiji Medical Service, although the basic salary of district medical officers (£500, by £25 to £725) is below the £600 minimum recommended as adequate by the British Medical Association, this fact is offset by the concession of allowances of from £175 to £275 in five of the districts, the value of private practice in the remaining seven being estimated at from £100 to £600 a year.

The services in the West Indies and some of the smaller colonies have not yet conceded the £600 minimum commencing salary, and whilst facilities for remunerative private practice, general conditions of service, and a relatively low cost of living must in some instances be taken into consideration, these compensations are by no means universal. The service in the Leeward Islands is in a condition which requires special notice by way of warning; but the position in Grenada has been considerably improved, and it is hoped that similar improvements will be effected shortly in other islands of the Windward group.

In general, candidates for these services must be between the ages of 23 and 35, although these limits are not for the moment absolute. Appointments are, subject to a varying period of probation, for the most part classed as permanent and pensionable, but there are some appointments by agreement for a specified limited term of service. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the consulting physicians to the Colonial Office. Post-graduate experience in hospital appointments is desirable, and in some cases special allowances are conceded to the holders of a D.P.H. Successful candidates are normally required to undergo an approved course of instruction in tropical medicine, the fees for their tuition being defrayed by the Government and an allowance being paid during their instruction.

At present some sixty medical women are employed in child welfare, maternity, and laboratory work, mainly in the larger services—for example, those in East and West Africa and Malaya. Salaries are the same as for men.

The bulk of the appointments made by the Secretary of State in this country are to the West African Medical Staff, the East African Medical Service, and the Medical Services in Malaya. These are the strongest individual services numerically, and therefore offer more frequent vacancies, better prospects of promotion, and better chances of specialist appointments than the smaller services.

West African Medical Staff

This is amongst the best organized and best paid of the Colonial Services. The territories covered by the service include Nigeria, the Gold Coast, Sierra Leone, and the Gambia. Climatic conditions vary considerably over this area, but they are in general admittedly trying. This fact is at present recognized by the provision of more frequent leave periods than are usual elsewhere.

The service includes medical, public health, and laboratory divisions, and specialist posts are almost invariably filled by promotion from the staff. The rate of pay for a medical officer is £660 on appointment, rising by annual increments to £960, together with a seniority allowance of £72 a year after reaching £720. There are a considerable number of specialist and administra-

tive posts carrying relatively high salaries, varying from £1,300, with duty allowance of £260, to £1,800, with duty allowance of £360 All appointments in the staff are pensionable Officers may retire voluntarily on reaching 50 years of age, and may be called upon to retire at 55 Pensions are calculated at the rate of 1/480th of the officer's pensionable emoluments (salary and house allowance) in respect of each complete month of service An officer of twenty five years service who has reached the maximum of the long scale receives a pension of approximately £790 per annum The pension may be converted into a reduced pension of three quarters of the full pension, with a gratuity of ten times the amount of the reduction Gratuities of £1,000 or £1,250 may be drawn on retirement after nine or twelve years' service Members of the West African Medical Staff are not usually permitted to take their wives or young children with them until they have acquired experience of the conditions of life and have obtained the sanction of the Governor In the case of young children this is only exceptionally given

African Medical Officers

Membership of the West African Medical Staff is limited to British subjects of European parentage but a number of Government appointments for African medical officers exist in the West African Colonies These appointments carry salary on the scale £500 £25 £600 and there is a higher scale £600 £30 £720 In addition in Nigeria and the Gold Coast arrangements have been made for the employment of a few young African medical men temporarily on the hospital staffs with a view to appointment to the Government service later if suitable In such cases a salary of £400 a year is paid

East African Medical Service

This service includes Kenya, Uganda, Tanganyika Territory, Nyasaland, Zanzibar, and British Somaliland In East Africa *there is a very wide scope for clinical work*, both medical and surgical, as well as for research and for preventive medicine and sanitation The service as a whole is fully alive to its responsibilities and opportunities, individual initiative is encouraged, and the career of a medical officer depends, not on seniority alone, but to a large extent on his own capability In all but a few stations conditions allow a medical officer's wife to accompany him, but this is not generally desirable on first appointment In some dependencies the consent of the Governor must be obtained The service includes a medical and a sanitary division The former is open to those holding ordinary medical and surgical qualifications, post graduate experience in a hospital appointment being an advantage, posts in the sanitary division will as far as possible be filled by those holding a Diploma in Public Health or a Diploma in Tropical Medicine and Hygiene Climatic conditions vary considerably In a considerable part of Kenya they approximate more to the temperate than the tropical zone; but there are some areas in the East African Dependencies where conditions more closely resemble those in West Africa The rate of pay for a medical officer is from £600 on appointment, rising by annual increments of £30 to £840, and thereafter, subject to an efficiency bar at this point, by £40 to £920 Holders of the D P H receive a special concession of two increments on appointment, or from the date of obtaining the diploma, thus reaching the maximum of the grade two years earlier than they would otherwise do Private practice may be permitted in certain circumstances, but there is no right to it even in stations where opportunities may exist

As in the case of the West African Medical Staff, a candidate can only apply for appointment to the East African Medical Service in general, and is liable to transfer between the several dependencies, but he may express his preference for any particular colony, and his wishes will, we are informed, be met as far as possible As a rule, transfer only takes place on promotion or at an officer's own request The gratuities available on retirement after nine or twelve years' service are similar to those for the West African Medical Staff Officers may elect or may be required to retire on pension on reaching the age of 50 years Pensions are calculated at the rate of 1/480th of emoluments (including value of free quarters) for each completed month of service The officer of twenty five years' service who has reached the maximum of the long scale receives a pension of approximately £650 per annum Pensions are convertible, under certain conditions, into a reduced pension and a gratuity

Medical Services in Malaya

These services cover the Straits Settlements, the Federated Malay States, the unfederated States, and the State of Brunei in Borneo The salary of 500 dollars a month, rising by 25 to 800 dollars, *plus* a temporary allowance of 5 per cent for single and 10 per cent for married officers, is generally considered adequate A non pensionable allowance of 100 dollars a month is paid to officers holding the D P H The officer of twenty five years' service who has reached the maximum of the long scale receives a pension of approximately £560 per annum Pensions are convertible, under certain conditions, into a reduced pension and a gratuity

The climate of Malaya is, for the Tropics, very healthy It varies little during the year The mean maximum and minimum temperatures are 86 8° and 74 3° F In some parts there are no marked rainy and dry seasons the rainfall being evenly distributed throughout the year In others there are a couple of dry months and a couple of exceptionally rainy months in the year The average rainfall is about 100 inches a year, and vegetation is always green People who lead regular, active lives have no difficulty in keeping in good health European children do well in Malaya up to the age of about 6 Numerous hill bungalows are available already for rest and change, and a large Malayan hill station has been constructed at a height of over 5,000 feet at Cameron's Plateau, on the Perak Pahang boundary

The professional duties of a medical officer may include medical, surgical, medico legal, and public health work His administrative work comprises hospital administration diets, returns and financial work, and includes the inspection of smaller hospitals and dispensaries Clerical work is reduced to the smallest possible amount An endeavour is made to consider an officer's own bent when posting him for duty Districts vary in size, and a certain amount of travelling will be necessary The white population in each district varies The district hospitals hold from 50 to 300 beds There is a staff of locally recruited medical men mostly trained at the Singapore College of Medicine Asiatic dressers and trained hospital assistants are employed in hospitals and dispensaries In addition to European sisters there is a large local nursing staff All hospital equipment is supplied by Government, including instruments At both the Institute for Medical Research in Kuala Lumpur, Federated Malay States, and the King Edward VII College of Medicine, Singapore, there are opportunities for research as well as for routine investigations Promising officers may be stationed at the Institute for short periods if they can be spared from other duties In addition to the full time professional posts at the College of Medicine, several of the medical staff in Singapore hold part time lectureships

It may fairly be said that the Malayan Medical Services now offer considerable scope for suitable candidates There are relatively to other services a large number of special appointments available in surgery, radiology, public health and pathology, and to those seeking a career in teaching the professorships at the College of Medicine Singapore, offer an additional attraction

Sudan Medical Service

This service is a department of the Sudan Government, and includes a number of Syrian medical officers and a number of assistant medical officers who are natives of the Sudan The British medical inspectors are from the outset senior to all other medical officers The service offers ample opportunities for specialization and for research, as well as for general medical and surgical work

The climate varies, but is not in general unfavourable, though hot In the northern desert the nights are cool, even in summer and the winter is pleasant and often cold In the central zone there is a rainy season of about four months, during which large areas become

malarious. The south is more tropical in character, and mosquito protected houses, nets, and protective quinine are essential during the greater part of the year, though even here the winter months are cool and pleasant. It is not considered desirable for medical inspectors to be accompanied by their wives until they have gained some knowledge of the language and the general conditions of life.

The commencing pay of a medical inspector is £E 720. On confirmation of appointment and success in the requisite examinations in Arabic the salary is increased by periodic increments to £E.1,200. Five senior administrative posts carry higher salaries. There is a compulsory contribution of 5 per cent. of pay towards pension, which, for a medical inspector, amounts, after twenty years' service, to £E.500 a year. An officer who is compulsorily retired before completing fifteen years' service is not entitled to pension, but receives a gratuity.

OFFICIAL SOURCES OF INFORMATION

All inquiries in connexion with medical appointments in the self-governing Dominions and their dependencies should be addressed to the High Commissioners or Agents-General for the Dominions. Intending applicants are also recommended to consult the Dominions Office and Colonial Office List, which may be seen at the Colonial Office Library or at the Library of the British Medical Association if not otherwise available, and the Professional Handbook, Part III (price 4d.), issued by the Oversea Settlement Department, Dominions Office, Caxton House, Tothill Street, London, S.W.1.

The position in Egypt is at present uncertain ; questions as to the possibility of any medical appointments becoming available under the Egyptian Government should be addressed to the Director-General, Public Health Department, Cairo.

Inquiries as to vacancies and conditions in the Sudan Medical Service should be addressed in the first instance to Dr. Hodson, 24, Welbeck Street, London, W.1.

All inquiries in connexion with Colonial medical appointments made by the Secretary of State for the Colonies, or such vacancies as may occur in Iraq or Palestine, should be addressed to the Director of Recruitment (Colonial Service), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the Tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought from the Medical Secretary of the British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

DEGREES FOR PRACTITIONERS

At one time it was the almost universal custom for medical students educated in London and aiming at general practice not to seek a university degree, and as that custom still prevails to a considerable extent a large proportion of medical men in England possess diplomas or licences to practise but not degrees in medicine. This is a fact which there [illegible] and reason to regret, and to such practi-
of the Colonial Servic[illegible] paragraphs may be of interest. It
services. Acceptance [illegible]he M.D.Brux. diploma, if obtained
Colonies and the Coloni[illegible] registrable in this country, and
ciple of unification has at[illegible]ssels no longer holds special
elaboration of practical schem[illegible] unification would secure to medical practitioners. Moreover,
services much-needed opportuni[illegible]ham will hold no further
transfer. Meanwhile, reorganizatio[illegible]D. for practitioners of
promotions branch of the Colonial
recommended by the committee shoul[illegible]
improvements in more than one direction.

Apart from immediate economic stringen[illegible] University of
look for the Colonial Medical Service is thus [illegible]s than fifteen
a hopeful one, and especially so in the larger an[illegible]n practice
organized branches. This cannot yet be said of [illegible] below,

[*Note.*—It has been decided by Senate that examinati[illegible]
for this degree shall be discontinued after June, 1932.]

The candidate must be 40 years of age, and must pro[illegible]
a certificate of moral character from three registered m[illegible]
practitioners. Should he not have passed an examinat[illegible]
arts previous to the professional examination in virtu[illegible]
which his name was placed on the *Register*, he is exam[illegible]
in classics and mathematics, if otherwise, he is required
translate into English passages from any one of the follow[illegible]
Latin authors: Caesar, *De Bello Gallico* (first three book[illegible]
Virgil, *Aeneid* (first three books) ; or Celsus (first three book[illegible]
Natives of India or the British Colonies are placed on t[illegible]
same footing as natives of Great Britain, and must be
registered on the books of the General Medical Council of the
United Kingdom.

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene and therapeutics ; (ii) principles and practice of surgery ; (iii) midwifery and diseases of women and children ; (iv) pathology, medical and surgical ; (v) anatomy, medical and surgical ; (vi) medical jurisprudence and toxicology. Candidates are examined by means of written papers, clinical and viva voce at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary. The classical part of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

The examinations are held twice a year, in June and December. Notice, accompanied by the fee and certificates, must be sent to the Secretary of Examinations, at the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty-eight days before the commencement of the examination.

Fees.—The inclusive fee for both professional and classical parts of the examination, together with the degree fee, is 50 guineas ; if a candidate fail to pass, 20 guineas are retained, but if he present himself again 40 guineas only are required.

University of Lausanne

M.D. Examination for Medical Practitioners

It has been possible for a long time to obtain the M.D. degree from one of the State Universities in Switzerland—namely, Bern, Geneva, and Lausanne. The regulations of the Faculty of Medicine of the University of Lausanne have recently been drastically revised by the authorities, and in October, 1930, new regulations came into force, of which a summary is given below. The main effect of these new regulations is to provide a special M.D. examination for medical practitioners from other countries.

Special Examination for Medical Practitioners holding a Diploma from Another Country

Article 34.—Holders of a foreign diploma which gives the right to practise medicine in their country of origin may be permitted to present a thesis for the doctorate in medicine. This thesis must be built up in one of the medical departments or clinics of the University of Lausanne, with the permission of the director of that department or clinic. If authorization is granted by the Faculty, to whom the candidate must make a written request for such, accompanied by a copy of the precise and detailed curriculum which he has followed elsewhere, and all the necessary proofs to support his application (diplomas, certificates of intermediate and preliminary examinations, student's record, etc.). He is actually handing in his thesis the candidate is obliged (*a*) to pursue in the Faculty of Medicine of Lausanne, in the status of a duly matriculated student, a course of study occupying two complete semestres (one academic year, October to July), and embracing the following subjects—pathology, clinical surgery, clinical medicine, public health and pharmacology, the course and laboratory work relating to the subject chosen for his thesis, and the courses on two other subjects at his choice ; (*b*) to undergo a special examination in each of the subjects mentioned above. When this examination has been passed the candidate is permitted to present his thesis which must be sent in to the Dean of the Faculty of Medicine.

The best time to take this special course is as soon after qualifying in this country as possible, when the book work is fresh in mind. The course is also suitable for I.M.S. and other Service men on a year's study leave. Further particulars may be obtained at any time from Dr. Charles A. H. Franklin, M.D., B.S., honorary secretary, Lausanne Medical Graduates, Greenbank, 154, Sandgate Road, Folkestone, Kent (booklet and copy of regulations, post free 2s. 1½d.).

SPECIAL DIPLOMAS

Information about the regulations for the various Diplomas in Tropical Medicine, in Psychological Medicine, and in Public Health is given in the appropriate sections of this Educational Number at pages 459, 460, 464 Further details in regard to the D P H and the D T M will be found in Sir Andrew Balfour's *Guide to the Regulations, Courses and Examinations for Qualifications in Public Health and Tropical Medicine* published by the British Medical Association, Tavistock Square, W C 1, at the price of 3s

It should perhaps be noted here that of the various diplomas in special subjects granted by licensing bodies only those in Public Health and Sanitary Science and State Medicine are at present admissible for entry in the official *Medical Register*, though other special diplomas may, of course, be included among the particulars of qualifications set out in the *Medical Directory*

As stated at page 430, a Diploma in Tuberculous Diseases is granted by the University of Wales to qualified medical practitioners new regulations for this diploma are now in force

DIPLOMAS IN MEDICAL RADIOLOGY

Diplomas in Medical Radiology are granted by the Universities of Cambridge, Edinburgh and Liverpool

The Cambridge Diploma —A Diploma in Medical Radiology and Electrology is granted by the University of Cambridge The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult and which is outside the ordinary medical curriculum The diploma is open only to those who hold a medical qualification approved by the Diploma Committee The course occupies nine months The first three months (October to December), which may be spent either in Cambridge or in London are occupied with lectures and practical work in physics and electrotechnics, together with an introductory course in medical radiology and electrology The work for the second three months (January to March) can be done in London only, and comprises lectures and clinical instruction in radiology and electrology given by lecturers appointed by the Education Committee of the British Institute of Radiology, together with clinical experience in the radiological department of a hospital recognized for that purpose by the Diploma Committee During the last three months a candidate is required to hold a clinical clerkship or other similar appointment, in the radiological department of a recognized hospital Hospitals at a number of provincial centres as well as in London have been recognized by the Committee for this purpose In exceptional circumstances exemption from this regulation may be granted by the Committee The examination for Part I (physics and electrotechnics) is normally taken at the end of the first three months, and the examination for Part II at the end of six months At the conclusion of the nine months course a candidate who has passed both parts of the examination is required to present a thesis composed by himself This thesis must be approved by the Committee before the candidate is entitled to the Diploma The thesis is to be in the form of a critical report, with notes upon six cases, either in radiology or electrology or in both these subjects, and must illustrate various methods of diagnosis or treatment The course for 1931-32 begins on October 5th Examinations for Part I will begin on January 6th and April 13th, 1932, and for Part II on April 12th and July 13th, 1932 Further particulars of the courses and examinations can be obtained from the Secretary for the Diploma, G Stead, M A , Cavendish Laboratory, Cambridge, or from Dr A E Barclay, Radiological Department, Medical Schools, Cambridge, or from the General Secretary, British Institute of Radiology, 32 Welbeck Street London, W 1

The Edinburgh Diploma —Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh, or hold corresponding registrable degrees or qualification from some other licensing body Candidates are not admitted to the examination for the diploma until after the lapse of not less than one year from obtaining a registrable qualification, which qualification must be registered before admission to the examination The course of study begins in October and extends over a period of not less than three terms The examination, which is written, oral, and practical, is in two parts (*a*) physics, and (*b*) radiology The examination is held twice yearly—namely, July and October Full particulars may be obtained from the Dean of the Faculty of Medicine In this connexion it may be noted that radiology can now be taken as the special subject in the examination for Membership of the Royal College of Physicians of Edinburgh Several candidates have already taken radiology as their special subject, it means that an honours standard has to be attained

The Liverpool Diploma —The University of Liverpool grants a Diploma in Medical Radiology and Electrology Candidates before admission to the examination for the diploma must possess a registrable qualification approved by the university in medicine and surgery, and must have attended courses of instruction in (*a*) physics (two terms) , (*b*) (i) radiology and (ii) electrology, during the six months in the x-ray and electro-therapeutic departments of a hospital or hospitals An examination is held in March each year, the subjects being (*a*) physics, (*b*) radiology and electrology Examination in either part may be taken separately Fees tuition £24 5s , examination and diploma £6 5s A registration deposit fee of £5 5s is charged on application and credited to the fees, but is not returnable in the event of the candidate failing to register These courses commence during the first week in October Application should be made to the Dean, Faculty of Medicine, the University of Liverpool

DIPLOMA IN LARYNGOLOGY AND OTOLOGY

The Conjoint Examining Board in England (Examination Hall *Queen* Square, London, W C 1) grants a Diploma in Laryngology and Otology (D L O) after an examination held in June and December The examination comprises two parts Part I on the anatomy, embryology and physiology of the ear nose pharynx, larynx, trachea and bronchi and oesophagus Part II, on the recognition and use of special instruments and appliances, and the medicine surgery and pathology of these regions Candidates may enter for Part I at any time after a registrable qualification in medicine, surgery, and midwifery has been obtained Candidates may enter for Part II on completion of one year of special study of diseases of the ear, nose, pharynx, and larynx, after a registrable qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates The conditions of study may be modified at the discretion of the Committee of Management in special cases The fee for admission or re-admission to each part is six guineas

DIPLOMAS IN OPHTHALMIC MEDICINE

A special Diploma in Ophthalmic Medicine and Surgery is granted by the University of Oxford and by the Conjoint Examining Board in England

University of Oxford —For the Diploma in Ophthalmology (D O) attendance on a twelve months course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine, and on a course of instruction in Oxford lasting two months, is obligatory Candidates must have their names on the *Medical Register* of the United Kingdom unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom they have obtained special permission from the Board of the Faculty of Medicine

The Conjoint Board —The Diploma in Ophthalmic Medicine and Surgery of the Conjoint Examining Board of the Royal College of Physicians of London and Royal College of Surgeons of England is issued after completion of an examination held in two parts—in January and July

The examination in each case is partly written, partly oral, partly clinical or practical. Part I comprises anatomy and embryology of the visual apparatus, physiology of vision, elementary optics; Part II comprises optical defects of the eye, ophthalmic medicine and surgery, pathology with special reference to medical and surgical ophthalmology. Candidates may enter for Part I at any time after a registrable qualification in medicine, surgery, and midwifery has been obtained. Candidates may enter for Part II on completion of one year of special study of ophthalmology after a registrable qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates. The conditions of study may be modified at the discretion of the Committee of Management in special cases. The fee for admission or readmission to each part is six guineas.

Diplomas in Obstetrics

The Society of Apothecaries of London, as stated on page 431, has now instituted a Mastery of Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante-natal care, midwifery, and child welfare. The diploma is, however, not registrable under the Medical Acts.

The Conjoint Examining Board in England, according to the new regulations for its Diploma in Gynaecology and Obstetrics (D.G.O., R.C.P. and S.Eng.), will hold examinations on October 29th, 1931, and in April, 1932. Those eligible for admission to examination must have held a degree in medicine and surgery recognized by the Board, or a qualification registrable in this country, for not less than three years. The subjects of the examination are gynaecology and obstetrics (including pathology, histology, and bacteriology in relation to these subjects), and ante-natal, post-natal, and infant welfare work. The examination is written, oral, and clinical, but only those candidates are admitted to the clinical who satisfy the examiners in the written and oral. A form is issued on which particulars have to be given and certified as to resident appointments in the gynaecological and obstetrical department of a recognized general hospital, in a gynaecological hospital, or a maternity hospital, or as to registrarship or clinical assistantship held in such institutions, together with particulars as to regular attendance, with responsible care of patients, at recognized ante-natal, post-natal, and infant welfare clinics during twelve months. It is added that these conditions of study may be modified in the case of a candidate who has carried out original investigations or written a thesis on some subject in gynaecology or obstetrics, or whose studies have extended over a prolonged time without fulfilling the exact conditions set out; but exemption will not be granted from any part of the examination. The fee for admission to examination or re-examination is ten guineas. Copies of the regulations for this diploma may be obtained from the Secretary, Examination Hall, Queen Square, W.C.1.

The British College of Obstetricians and Gynaecologists was founded and incorporated in September, 1929. The objects of the College are set forth in the memorandum of association. The first, a very important object, is "to encourage the study and practice of obstetrics and gynaecology, subjects which should be inseparably interwoven." The College consists of Fellows and Members, and has power to take part in the examination of candidates for admission to the British register of medical practitioners, in co-operation with teaching and/or examining bodies authorized to conduct medical examinations for the purpose of qualifying candidates for admission to the British register of medical practitioners, if invited by such bodies. It also has power to grant diplomas and certificates in obstetrics and gynaecology, either alone or in co-operation with teaching and/or examining bodies authorized to grant such diplomas. Candidates for the Membership of the College have to show evidence of having held resident appointments in general medicine or surgery, and also in obstetrics and gynaecology, before entering for the examination. The Fellowship of the College is granted to those Members who are judged by the College to have advanced the science and art of obstetrics and gynaecology. The Fellowship and Membership of the College includes practically every teacher of obstetrics and gynaecology in Great Britain, and many distinguished exponents in the British Dominions. It is hoped that in a few years' time one of the essential qualifications for election to the staff of all departments of obstetrics and gynaecology in general and in special hospitals will be the Fellowship or Membership of the College. Consequently, all intending to specialize in these subjects should endeavour to obtain as soon as possible the Membership, the conditions and regulations of which may be obtained from the honorary secretary. The president is Professor W. Blair Bell, the treasurer Mr. Eardley L. Holland, and the honorary secretary Professor W. Fletcher Shaw (20, St. John Street, Manchester).

MEDICAL MISSIONARIES

Missionary societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings. To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools, as training institutions in connexion with some of the larger mission hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well-trained physicians and surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the secretaries of the various Missionary Societies, or from Thomas B. Adam, Honorary Secretary, Medical Advisory Board on Medical Missions to the Conference of Missionary Societies in Great Britain and Ireland, The Crossways, 45, Kenton Road, Harrow, Middlesex, or 19, Furnival Street, E.C.4.

Dental Surgery

Until the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments corresponding very closely with those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice; and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act provided also (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20, and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—and these did not operate to the same extent in the case of dentistry; hence, unqualified practice was far more prevalent in dentistry than

medicine, and increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

DENTISTS ACT, 1921

This unsatisfactory position was remedied by the passing into law of the Dentists Act, 1921; its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30th, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* provided for by the Dentists Act, 1878. The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists," and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered practitioner is £100 for each offence. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, though he may not give dental treatment to insured persons under the National Health Insurance Acts unless he be so registered, and a registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anaesthetic; further, any person may carry out minor dental work in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Dentistry may be carried on by a corporate body provided the majority of the directors and all the operating staff are registered dentists, and that no business other than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions, provided that the name of the company as well as the names of the directors have been entered in a list kept by the Registrar for that purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge, and the court may, in addition to a fine, order that the name of any director convicted shall be removed from the list of directors aforesaid.

THE DENTAL BOARD

On the establishment of the Dental Board in 1921 certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* is made by the Board, which reports its findings to the General Medical Council, the order directing the erasure being made by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purpose connected with dentistry. The office of the Dental Board is at 44, Hallam Street, London, W.1.

DENTAL EDUCATION AND EXAMINATION

The preliminary examination in arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects[1]; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the commencement of professional education, and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years.

Degrees and diplomas in dentistry are granted by the Universities of Belfast, Birmingham, Bristol, Dublin, Durham, Leeds, Liverpool, London, Manchester, St. Andrews, Sheffield, and the National University of Ireland, as will be found stated in the articles on these universities. Licences in dentistry entitling the holder to be registered on the *Dentists Register* are granted by the Royal Colleges of Surgeons of England, of Edinburgh, and in Ireland, and by the Royal Faculty of Physicians and Surgeons of Glasgow.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; King's College Hospital; and the London Hospital. In the provinces there are the Birmingham Dental Hospital; the Royal Infirmary and the General Hospital, Bristol; the Dental Hospital and the Public Dispensary, Leeds; the Dental Hospital, Liverpool; the Dental Hospital, Manchester; the Dental Hospital and School, Newcastle-on-Tyne; the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee; the Incorporated Dental Hospital and School, Edinburgh; and the Incorporated Dental Hospital, Glasgow; and in Ireland, the Belfast Dental School, the Incorporated Dental Hospital of Ireland, Dublin, and the Royal College of Surgeons in Ireland, Dublin.

All who think of becoming dentists may be advised to study a Memorandum, lately drawn up for their guidance by the Registrar of the Dental Board, setting out in convenient form and in untechnical language information for which request is frequently made to the Board.[2] It will be seen from this pamphlet that in order to assist suitable students the Dental Board has instituted a system of bursaries to pay the fees of those who have not the financial means to qualify, and in exceptional cases maintenance may also be given as well.

Recommendations of the General Medical Council

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

The following recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council in 1922.

Preliminary Examination and Registration

1. That every dental student shall, at the commencement of his studentship, be registered in the manner and under the conditions prescribed for medical students.

2. That before registration in the *Dental Students Register* every applicant shall be required to have passed, in addition to the examination in general education, which shall be the same as that required for medical students, an examination in Elementary Physics and Elementary Chemistry, conducted or recognized by one of the licensing bodies, which shall also be the same as that required for medical students.

3. That before registration as a dental student every applicant shall produce evidence that he has attained the age of 17 years.

[1] See the Registrar's Memorandum on Students' Registration printed in the article on the General Medical Council at page 421.

[2] *Memorandum by the Registrar on the Procedure to be Adopted by Those who Desire to Enter the Profession of Dentistry, with Notes on Costs and Prospects.* 1929. Dental Board of the United Kingdom, 44, Hallam Street, W.1. Price 1s. post free.

Professional Study

4 That every candidate for a degree or licence in dentistry or dental surgery shall be required before admission to the final or qualifying examination to produce certificates showing:

(i) That he is at least 21 years of age.

(ii) That he has been registered as a dental student.

(iii) That he has, subsequently to the date of registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall be spent at a school or schools recognized for professional study by one of the

(iv) to the date of registration as a dental student, he has attended at a recognized medical school courses of instruction which shall be the same as those required for medical students, in the following subjects: (*a*) Chemistry, and (*b*) Physics, in their application to medicine; (*c*) Elementary Biology That he has attended at a recognized medical school courses of instruction in the following subjects: (*d*) Human Anatomy (with dissections and demonstrations) for three academic terms, (*e*) Physiology (with laboratory instruction, including Practical Histology) for two academic terms, (*f*) General Pathology (including Bacteriology) for two academic terms, (*g*) Medicine for two academic terms; (*h*) Surgery for two academic terms, (*i*) the practice of a recognized general hospital or hospitals of not less than eighty beds, with certified instruction in Clinical Medicine and Clinical Surgery, for four academic terms

(v) That he has attended at a recognized dental school courses of instruction in the following special subjects. (*a*) Dental Anatomy and Physiology, human and comparative The course should comprise a minimum of twenty meetings of the class (*b*) Practical Dental Histology and Morbid Histology The course should comprise a minimum of sixteen meetings of the class (*c*) Dental Pathology and Surgery The course should comprise a minimum of twenty meetings of the class (*d*) Dental Materia Medica and Therapeutics The course should comprise a minimum of sixteen meetings of the class (*e*) Dental Metallurgy (with practical work and demonstrations) The course should comprise a minimum of twenty meetings of the class (*f*) Dental Mechanics (with practical work and demonstrations) The course should comprise a minimum of twenty meetings and twenty demonstrations (*g*) A course of instruction in the use of Anaesthetics, general and local, employed in dental practice, (*h*) A course of instruction in Radiology as applied to dentistry.

(vi) That he has for at least twenty-four calendar months attended, during the ordinary academic terms, the practice of a recognized dental hospital or of the recognized dental department of a general hospital

(vii) That he has received for not less than twenty-four calendar months, or for 2,000 hours, practical instruction in dental mechanics

Professional Examinations

5 That the examination for a degree or licence in dentistry or dental surgery shall be partly written, partly oral, and partly practical, and shall include the following subjects (*a*) Chemistry Physics and Biology, in their bearing on Medicine and Dentistry (*b*) Human Anatomy and Physiology (*c*) General Pathology, including Bacteriology (*d*) Medicine and Surgery (*e*) Dental Anatomy and Physiology, Dental Pathology Dental Surgery (including Orthodontics), Dental Materia Medica and Therapeutics and Dental Mechanics and Dental Metallurgy (*f*) Practical Examination in Dental Surgery (*g*) Practical Examination in Dental Mechanics and Metallurgy (*h*) Anæsthetics, general and local, employed in dental practice

6 That the prescribed subjects of examination may be combined or distributed at the discretion of the licensing bodies, and may be taken at two or more successive stages during the course of professional study, provided that no candidate shall be admitted to any final examination in dental surgery and dental mechanics until he shall have completed the required four years' course of study

ACKNOWLEDGEMENT

The detailed information published in this Educational Number of the *British Medical Journal* for the benefit of intending students of medicine and newly qualified practitioners has been revised throughout with the co-operation of the deans and secretaries of the medical schools and kindred institutions and of officials in the several public services, to all of whom we wish to acknowledge our indebtedness.

ENCEPHALITIS FOLLOWING VACCINATION AND CERTAIN INFECTIONS

A REQUEST FROM THE MINISTRY OF HEALTH

The Ministry of Health desires to invite the assistance of all members of the medical profession who are in active practice in this country in order to enable the Ministry to maintain full investigation of the characteristics of acute disease of the central nervous system (such as meningitis of any kind or origin, encephalitis, or polio encephalitis) which has been "post-vaccinal," using this term in the sense that the first symptoms have occurred within four weeks of vaccination. It will be remembered that a similar request was made in 1926 with the object of enabling the Department to place all the information so obtained before a committee which had then been appointed jointly by the Ministry and the Medical Research Council to consider vaccination questions The work of this committee terminated with the publication of its two reports of July, 1928, and January, 1931, respectively It was greatly facilitated by the information which was supplied from many quarters in response to this request, and, as there is still need for further particular study of these rare cases, it is now repeated. Similar information is desired of the occurrence of cases of acute disease of the nervous system which follow in the wake of acute infections such as measles, German measles, chicken-pox, whooping-cough, or influenza. It will be remembered that the Committee on Vaccination found that these sequels of infective processes, when of fatal issue, presented pathologically a very close resemblance to cases of post-vaccinal encephalitis, and gave reasons for the continued study and comparison of all these cases as a group. Intimations of the kind requested, if received in time, will permit of local inquiry to ascertain clinical details which may not subsequently be obtainable, and will also in some cases enable the Department to arrange for expert post-mortem examination and pathological examination of specimens. The request which is, therefore, made to all practising members of the medical profession is that when called in to any case of disease of the central nervous system with an acute onset, they will be so good as to inform the Ministry as soon as possible of every case in which they have ascertained that vaccination has preceded the onset of the symptoms within a period of four weeks, or in which the symptoms have immediately followed an acute infectious illness. The intimation should be sent as speedily as possible to the Senior Medical Officer, Med. I., Ministry of Health Whitehall, London, S.W.1. In view of inquiries which have been made as to the possibility of using a specific remedial treatment in cases of post-vaccinal encephalitis, it may be added here that the Lister Institute has prepared an anti-vaccinal horse serum, doses of which can be supplied, if desired, on application to the Ministry, while attention may also be called to the reference in the report of the Committee on Vaccination to the success which has been obtained in certain cases on the Continent by the treatment of this condition by intravenous injection of serum derived from persons who have been recently vaccinated.

A further instalment of the *Collected Papers* of the Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, has now been published in a single volume, covering the years 1929-30 These papers are reprints from various medical journals in Australia and Great Britain, and deal with such topics as snake venoms, the bacteriophage, malignant diseases of different kinds, and the activity of stored anti-poliomyelitic serum in experimental poliomyelitis.

VACANCIES

BEDFORD COUNTY HOSPITAL.—V H S (male).
PETHNAL GREEN BOROUGH COUNCIL.—A M O
BIRMINGHAM CITY EDUCATION COMMITTEE.—Special Schools M O and Director of Child Guidance Clinic (male)
BIRMINGHAM AND MIDLAND EYE HOSPITAL.—H S
BLACKBURN COUNTY BOROUGH.—A S M O and M O H (male)
BOLINGBROKE HOSPITAL, Wandsworth Common, S W 11.—R M O (male)
BRISTOL CITY AND COUNTY MENTAL HOSPITAL.—Fourth A M O, unmarried
BRISTOL EYE HOSPITAL.—R H S
BRITISH MEDICAL ASSOCIATION.—Scottish Medical Secretary
CAERNARVONSHIRE COUNTY COUNCIL.—Deputy M O H and A S M O
CAMBRIDGE ADDENBROOKE'S HOSPITAL.—Two H S
CANCER HOSPITAL, Fulham Road, S W 3.—H S
CROYDON GENERAL HOSPITAL.—S in charge of Ear, Nose, and Throat Department
CUMBERLAND INFIRMARY, Carlisle.—H P
DERBY BOROUGH MENTAL HOSPITAL, Rowditch.—S A M O
DERBYSHIRE HOSPITAL FOR WOMEN, The Grit, Derby.—H S
DUDLEY GUEST HOSPITAL.—H S
EAST HAM MEMORIAL HOSPITAL.—(1) H P (2) H S and C O
GENERAL LYING-IN HOSPITAL, York Road, S E 1.—Jr M O and Anæsthetist
GREAT YARMOUTH GENERAL HOSPITAL.—H S (male, unmarried)
HAMPSHIRE COUNTY COUNCIL.—A M O
HARROGATE GENERAL HOSPITAL.—H P (male)
HARROGATE INFIRMARY.—J H S (male)
HARLOW AND WEALDSTONE HOSPITAL.—R M O
HASTINGS ROYAL EAST SUSSEX HOSPITAL.—S H S (male)
HOVE LADY CHICHESTER HOSPITAL.—J H P
HULL CORPORATION OF KINGSTON UPON HULL AND THE HULL AND GOOLE PORT SANITARY AUTHORITY.—Assistant M O H
JEWISH MATERNITY HOSPITAL, Underwood Street, E 1.—R M O.
KETTERING AND DISTRICT GENERAL HOSPITAL.—R M O (male)
LEEDS CITY.—Chief Assistant M O H
LIVERPOOL CITY.—R A M O at Mill Road Infirmary
LIVERPOOL EYE AND EAR INFIRMARY.—H S to Ophthalmic Department
LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL.—R H S
LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—J H S
MACCLESFIELD GENERAL INFIRMARY.—R H S
MANCHESTER ROYAL EYE HOSPITAL.—J H S
MANCHESTER ROYAL INFIRMARY (Central Branch).—H S (lady)
MANCHESTER ROYAL MANCHESTER CHILDREN'S HOSPITAL.—(1) R M O. (2) Two A M O s for Out-patients Department
MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—H S
MARGATE AND DISTRICT GENERAL HOSPITAL.—R M O (male)
MARGATE ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—H S (male)
MILLER GENERAL HOSPITAL, Greenwich Road, S E 10.—(1) C O (2) H P Males
NEWCASTLE-UPON-TYNE EYE HOSPITAL.—R H S (female)
NORTHAMPTON GENERAL HOSPITAL.—(1) H P (2) Four H S
NOTTINGHAM GENERAL DISPENSARY.—H S (male, unmarried)
OLDHAM COUNTY BOROUGH, BOUNDARY PARK MUNICIPAL HOSPITAL.—R A M O (male)
PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN, W 10.—H P
QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E 2.—(1) H P (2) Assistant S
READING ROYAL BERKSHIRE HOSPITAL.—Radiological H S and Resident Anæsthetist (male)
RICHMOND SURREY ROYAL HOSPITAL.—J H S (*male*)
ROYAL EYE HOSPITAL, St George's Circus, S E 1.—Twelve salaried Refractionists, twelve Clinical Assistants and one Pathologist
ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland Street, W.—(1) Two H S (2) H S for Country Branch, Brockley Hill, Stanmore, Middlesex
ROYAL NORTHERN HOSPITAL, Holloway, N 7.—H S
ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Road, S E 1.—Hon. Clinical Assistant at Rheumatism Supervisory Centre for Children
ST PETER'S HOSPITAL FOR STONE, Henrietta Street, W C 2.—H S (male)
SALISBURY GENERAL INFIRMARY.—H P (male, unmarried)
SEAMEN'S HOSPITAL SOCIETY.—(1) H P and H S at *Dreadnought* Hospital, Greenwich (2) H P at Hospital for Tropical Diseases, Endsleigh Gardens (3) R M O at Albert Dock Hospital. Males
SHEFFIELD ROYAL HOSPITAL.—(1) Ophthalmic H S (2) Anæsthetist
SHEFFIELD ROYAL INFIRMARY.—(1) Assistant Aural and Ophthalmic H S (2) H S and Second Assistant C O
SOUTH EASTERN HOSPITAL FOR CHILDREN, Sydenham, S E 26.—A R M O (lady)
STAFFORDSHIRE COUNTY COUNCIL.—Assistant Bacteriologist and Pathologist
SUNDERLAND CHILDREN'S HOSPITAL.—R M O
SWANSEA GENERAL AND EYE HOSPITAL.—H P (male unmarried)
TORBAY HOSPITAL, Torquay.—(1) H P (2) H S Unmarried
WAKEFIELD CLAYTON HOSPITAL.—H S (male)
WALLASEY VICTORIA CENTRAL HOSPITAL.—J H S (male)
WATFORD PEACE MEMORIAL HOSPITAL.—(1) R M O (2) R S O Females
WEIR HOSPITAL, Grove Road, Balham, S W 12.—R M O (male, unmarried)
WEST LONDON HOSPITAL, Hammersmith Road, W 6.—(1) Resident V S (2) H P (3) Two H S (4) Resident Anæsthetist Males
WESTMINSTER HOSPITAL, Broad Sanctuary, S W 1.—H S to Ear, Nose and Throat, and Eye Departments
WESTON-SUPER-MARE GENERAL HOSPITAL.—H S
WINDSOR KING EDWARD VII HOSPITAL.—H S (woman)
WOLVERHAMPTON ROYAL HOSPITAL.—H S for Orthopædic Department
WOOLWICH AND DISTRICT WAR MEMORIAL HOSPITAL, Shooters Hill, S E 18.—R M O (male)
WORCESTER COUNTY AND CITY MENTAL HOSPITAL, Powick.—J A M O (male, unmarried)

CERTIFYING FACTORY SURGEONS.—The following vacant appointments are announced: Wilnthorpe (Westmorland), Tweedy (Lancs). Applications to the Chief Inspector of Factories, Home Office, Whitehall, S W 1

MEDICAL REFEREE under the Workmen's Compensation Act for part of the Sheriffdom of Argyll. Applications to the Private Secretary, Scottish Office, Whitehall, London, S W 1, by September 24th

This list of vacancies is compiled from our advertisement columns where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Tuesday morning.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQUARE, W C 1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager, Telegrams, Articulate, Westcent, London)

MEDICAL SECRETARY (Telegrams, Mediseera, Westcent, London)

EDITOR, BRITISH MEDICAL JOURNAL (Telegrams, Aitiology, Westcent, London)

Telephone numbers of British Medical Association and British Medical Journal, Museum 9861, 9862, 9863, and 9864 (internal exchange, four lines)

SCOTTISH MEDICAL SECRETARY, 7, Drumsheugh Gardens, Edinburgh (Telegrams, Associate, Edinburgh; Tel., 24361 Edinburgh)

IRISH MEDICAL SECRETARY, 16, South Frederick Street, Dublin (Telegrams, Bacillus, Dublin; Tel. 4737 Dublin)

Diary of the Association

SEPTEMBER

24 Thurs. London Insurance Acts Committee (C), 4 p.m.

POST-GRADUATE COURSES AND LECTURES

ST MARK'S HOSPITAL, City Road, E C 1.—Thurs., 4.30 p.m. Mr W. B. Gabriel: The Elucidation of Rectal Symptoms. (1) Bleeding.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL AND ANTE-NATAL CLINICS.—Royal Infirmary: Mon. and Thurs., 10.30 a.m. Maternity Hospital: Mon., Tues., Wed., Thurs., and Fri., 11.30 a.m.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcement of Births, Marriages, and Deaths is 9s. which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTH

NIXON.—On August 30th, at 7, Lansdown Place, Clifton, Bristol, to Doreen, wife of Dr. J. A. Nixon, a son.

MARRIAGES

GRANT—GAMBLE.—On August 8th, at the Chapel of the Warwick County Mental Hospital, Hatton, Arthur Stanley Grant to Florence Margaret Gamble, M.D. Lond., M.R.C.P.

KERR—KEAY.—On September 1st, at St. George's Presbyterian Church, Southport, Dr. James R. Kerr, C.B.E., to Helen Dorrington, daughter of Mr. and Mrs. A. D. Keay.

RONALD—DRIVER.—At Bolton Abbey Church, on August 27th, by the Rev. C. F. Tomlinson, rector, Archibald Ronald, M.D., F.R.C.S.Ed., Barrow-in-Furness, elder son of Mr. and Mrs. J. K. Ronald, Milnathort, to Florence Elizabeth Driver, M.A., younger daughter of Mr. and Mrs. C. Driver, Nab View, Silsden.

DEATHS

NARAYAN.—On July 2nd, 1931, at 22 Mahendra Mansions, 61A Watson's Hotel), Bombay, Khansedhan, wife of the *late* Lt.-Col. K. S. Narayan, I.M.S., and mother of Major J. K. Narayan, I.M.S. (ret.).

SELBY.—At the Private Clinic, 25 Drumsheugh Gardens, Edinburgh, on August 23rd, 1931, J. J. Selby, M.B., M.B.E.

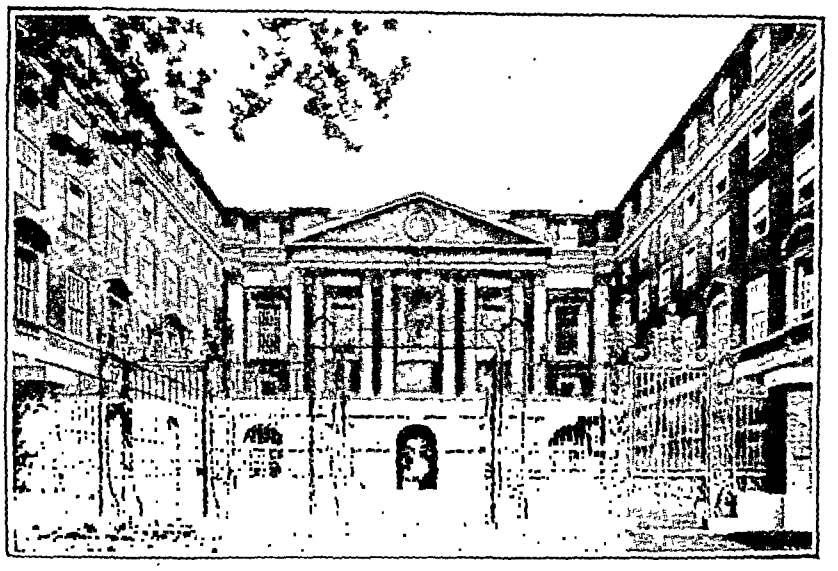
WILSON.—On August 22nd, 1931, in the Westcliff Nursing Home, Horace R. Wilson, M.D., D.P.H., late Medical Officer of Health for Southwark, London.

[The present issue being the Annual Educational Number much current material is held over, and neither the "Supplement" nor the "Epitome of Current Medical Literature" is published this week.]

The British Medical Association:

ITS AIMS, WORK, AND CONSTITUTION

The British Medical Association, as stated in our introductory article on the Profession of Medicine, was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members. To attain these objects it holds periodical meetings for the discussion both of medical and scientific subjects and of professional affairs; it publishes the *British Medical Journal*; it maintains a reference and lending library; it has instituted lectures, and scholarships and grants for research. It thus concerns itself with every side of medical work—science, clinical medicine, public health, and the material interests of professional life. The British Medical Association, with a membership now exceeding 35,000, is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. It has a fine building in Tavistock Square, London, for its headquarters. These premises, designed by Sir Edwin Lutyens, R.A., were formally opened in 1925 by His Majesty the King, Patron of the Association; and the beautiful wrought-iron gates erected as a memorial to the 574 members who fell in the war, by which the main quadrangle is completed, were dedicated on that occasion by the Archbishop of Canterbury. The need for larger accommodation had become insistent owing to the remarkable growth in the central work of the Association during recent years, which had far outstripped the capacity of the premises in the Strand. Further extensions to the building in Tavistock Square have now been completed.



British Medical Association House: Court of Honour

Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies. The Divisions are arranged territorially, and number, in all, 250. For certain purposes of administration or of scientific and clinical work, the Divisions are combined into 100 Branches. Members of Divisions elect representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body. The Representative Body and Council elect standing committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, Ireland, and Wales; and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association; it is the recognized executive and mouthpiece of the insurance practitioners of Great Britain.

Privileges of Members

A member of the Association has the right—

1. To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
2. To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council.
3. To receive by post the *British Medical Journal*, published weekly, which gives a full record, with commentary, of progress in clinical and scientific medicine and of medico-political affairs throughout the British Empire.
4. To receive the help and advice of the central office in any professional difficulty.
5. To use the Library as a reading room, and to borrow current medical or scientific books on payment of postage. Besides modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest.

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession, for the greater the membership and the funds the more efficient and influential the organization. The Association during the past ninety-nine years has been the direct means of benefiting every class of medical men and medical women. In asking for new members it looks not only to the older practitioners but also and especially to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the Association in improving the conditions under which they may hold appointments in the public services or in civil life. The Association's work for the Services is well known. It feels a special responsibility towards those members of the profession who by reason of their position are precluded from taking common action.

Subscriptions and Applications for Membership

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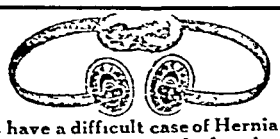
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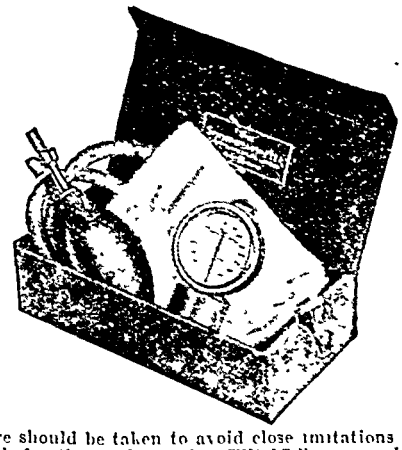


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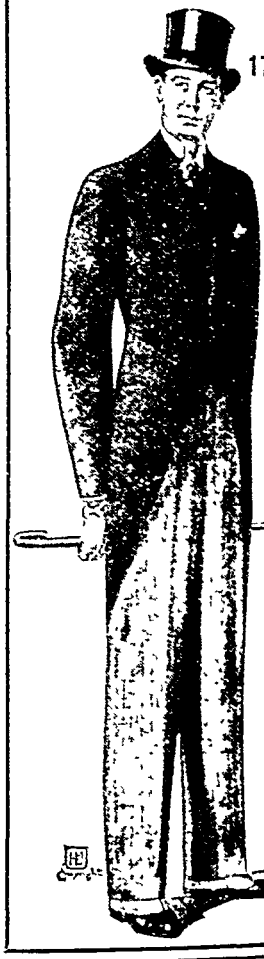


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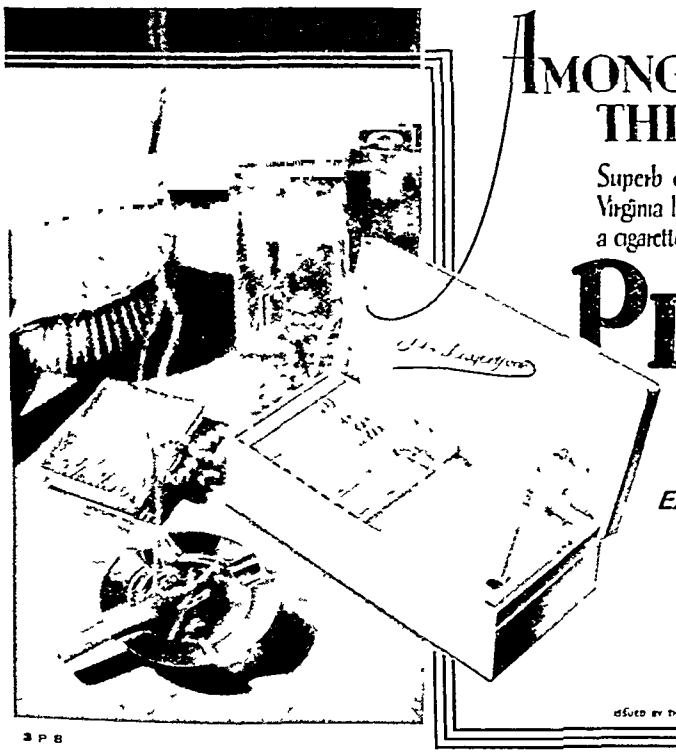
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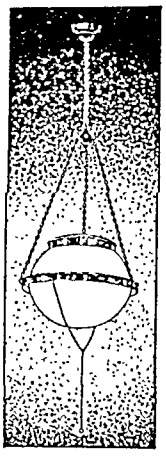
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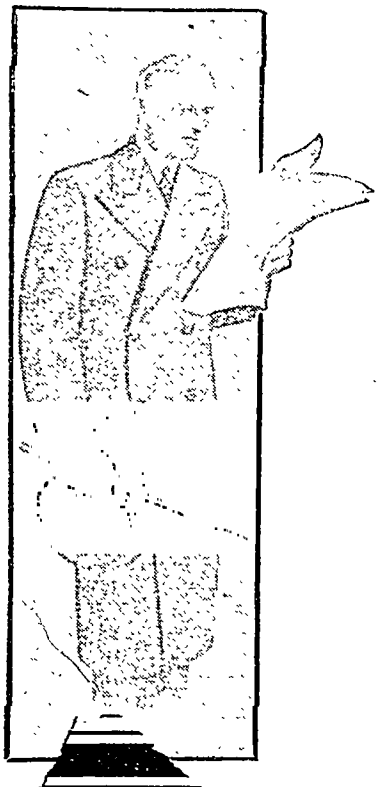
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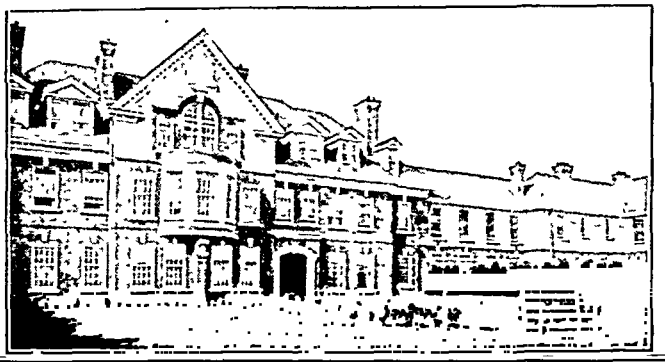
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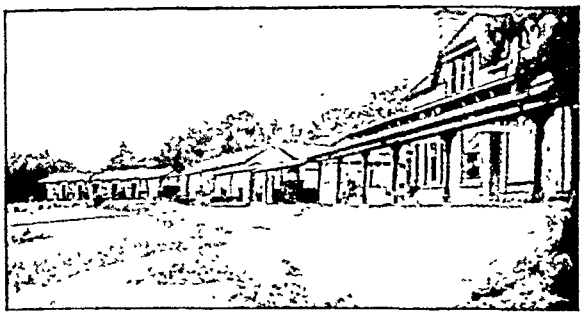
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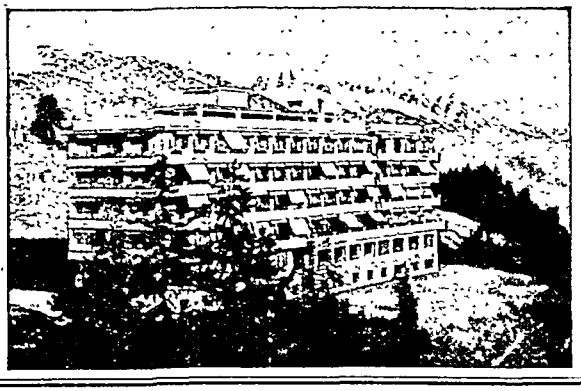
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The Course of Instruction including arrangements for the new regulations of the General Medical Council can be commenced at any time.

The Principal will be pleased to interview intending candidates for the purpose of advice.

Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.

Telephone MUSEUM 0766.

CITY OF LONDON MATERNITY HOSPITAL,
CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL

MEDICAL STUDENTS admitted to Hospital practice with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out to private cases.

DEFECTIVE SPEECH.

Remedial Tuition on modern lines for Stammer, Aphonia, Cleft Palate, Tracheotomy, and Disturbed Co-ordination, by ERIC MIALL, A.L.C.M., who is Speech Instructor at the Middlesex Hospital.

Short courses in elocution, accent, clarity, and public speaking.

39, WELBECK STREET, W.1.
Welbeck 3238

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The WINTER SESSION will begin on THURSDAY, October 1st, 1931.

The Annual Dinner of Past and Present Students will be held on Friday, October 2nd, at the *Trocadero* Restaurant, Sir WILLIAM WILLCOX in the chair.

EXCEPTIONAL SITUATION.	The Hospital is adjacent to a large poor district on the one side, and near to Kensington Gardens and one of the best residential districts in London on the other side, thus providing for the Student the unusual possibility of living in close touch with his work.
ATHLETIC GROUND.	The Athletic Ground (10 acres) is situated at Wembley, and can be reached in 20 minutes from the Hospital.
REBUILDING OF THE MEDICAL SCHOOL.	Building operations were begun in August, 1930, and it is hoped that the new Medical School will be ready for occupation in the Autumn of 1932. The Foundation Stones of the Medical School and Institute of Pathology were laid by H.R.H. The Duchess of York on June 30th, 1931. The new School will include departments for teaching in Inorganic Chemistry, Physics, Biology, Anatomy, Physiology, Organic Chemistry, [illegible]. Special provision is being made for research work in [illegible]. The buildings also include new Administrative [illegible], Students' Club rooms, and a gymnasium and swimming bath.
COMPLETE *CURRICULUM*	The entire Curriculum is provided for Medical Degrees and Diplomas, and Students may join the School at once on passing a Preliminary Examination in Arts.
SPECIAL CLINICAL FACILITIES.	The formation of Clinical Units and the affiliation of other hospitals for teaching purposes have largely extended the scope of the clinical teaching. 1,000 beds are now available for the clinical instruction of Students. Special arrangements have been made for the instruction of Students in Venereal Diseases at the London Lock Hospital, and all Students attend a short course at Queen Charlotte's Maternity Hospital. Recent structural alterations have provided 2 new Operating Theatres and 60 additional beds.
INSTITUTE OF PATHOLOGY.	The Institute of Pathology and Research is under the personal direction of Sir Almroth Wright, F.R.S., and includes seven departments. Students receive special training in Pathology, Bacteriology, and Chemical Pathology by means of clerkships in these subjects tenable for a period of 3 months, 72 of these posts being available in each year.
ENTRANCE SCHOLARSHIPS.	Two Entrance Scholarships of £210 each are awarded by nomination in July annually. The Geraldine Harmsworth Scholarship (£200) and other University Scholarships are awarded by nomination in July annually. The Palmer Scholarship (£25 per annum for two years) is awarded in alternate years.
RESEARCH SCHOLARSHIPS.	Research Scholarships of the value of £200 per annum each are awarded annually for the purpose of enabling newly qualified students to undertake research under the Director of one of the departments included in the Institute of Pathology.
APPOINTMENTS AFTER QUALIFICATION.	Numerous appointments are open to newly qualified members of the Medical School. Six House Physicians (8 months), Eight House Surgeons (8 months), and Four Resident Obstetric Officers (6 months), are appointed annually. Two Resident Anæsthetists (6 months), £150 per annum, Four Casualty House Surgeons (6 months), £100 per annum, with board and residence. Medical Registrar and Surgical Registrar £200 per annum, with partial board. In addition to the above, Five Assistants to the Medical and Surgical Units are appointed from time to time, with salaries ranging from £400 to £750 p.a. C. M. WILSON (*M.C.*), M.D., F.R.C.P., Dean.

The Illustrated Prospectus of the Medical School may be obtained on application to the Secretary.

DIPLOMA IN PUBLIC HEALTH

London School of Hygiene and Tropical Medicine

(University of London)

The 1931-32 course of study, which qualifies students to sit for the University of London Diploma, covers a period of nine calendar months in the case of those who devote the whole of their time to the work.

The course will commence on September 28th, 1931.

The inclusive fee of 54 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instructions in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel St., Gower St., London, W.C.1.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

(UNIVERSITY OF LONDON),
Hunter Street, Brunswick Square, W.C.1.

Full Courses are arranged for the London M.B., B.S. Degrees, and the Examinations of other qualifying bodies. Arrangements for Dental Students (Degree and Diploma). The Clinical Course is pursued at the Royal Free Hospital. Arrangements are also made for students to attend the practice of certain Special Hospitals.

Appointments at Hospital and Medical School are open to students after qualification.

Scholarships, Bursaries, and Prizes of the value of £1,350 are awarded annually.

Residence arrangements are made for students in the School Chambers.

The Session begins on October 1st each year.

Prospectus and full information can be obtained from the Warden & Secretary.

ELIZABETH BOLTON, M.D., B.S.,
Dean.

ST. BARTHOLOMEW'S MEDICAL COLLEGE.

M.R.C.P. CLASS.

A course of Instruction, suitable to the requirements of candidates for the M.R.C.P. Examination in January, will begin on November 2nd, 1931.

For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE,

Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN.*

M.D. THESIS.

Advice and legitimate assistance by an expert in preparation of Theses.—Address, No. 1001, B.M.A. House, Tavistock Square, W.C.1.

LONDON HOMOEOPATHIC HOSPITAL

(Incorporated by Royal Charter)

GREAT ORMOND ST. & QUEEN SQUARE, W.C.1.

Education Facilities for Graduates and Senior Students of Medicine.

WINTER SESSION, 1931-32.

HONYMAN-GILLESPIE LECTURESHIP

23rd Year.

A Course of Lectures on HOMŒOPATHIC [illegible]
MEDICA AN [illegible]
CLINICAL [illegible]
CHARLES [illegible]
Consulting Physician to the London Homœopathic Hospital, at the Hospital, on

Mondays and Thursdays, October, 1931, to March 1932, commencing Monday, October 12th, at 5 o'clock

On the first Thursday of the month the hour is 3.30 p.m.

The COMPTON-BURNETT LECTURES

A Course of Ten Lectures on HOMŒOPATHIC PHILOSOPHY AND PRESCRIBING, as illustrated from the writings of the Organon and More Developments therefrom, are given by JOHN WEIR, C.V.O., M.B., Ch.B.Glasg. (Physician Ordinary to H.R.H. the Prince of Wales, Physician to the London Homœopathic Hospital) are given at the Winter Session only on

Fridays, at 5 p.m., October to December—commencing Friday, October 9th.

AN INTRODUCTORY LECTURE TO THE WHOLE EDUCATION COURSE will be delivered at the Hospital on Thursday

October 8th, 1931, at 5 p.m.

By FRANCIS HERVEY BODMAN, M.D., Ch.B.Bristol., Physician to the Bristol Homœopathic Hospital

Subject: "The Foresight of Hahnemann"

All Medical Men and Women are invited to attend this Lecture.

TUTORIAL CLASS.

A class for individual study of the Materia Medica by the Repertory and Reference to Patients are conducted by DOUGLAS W. BORLAND, M.B., Ch.B.Glasg., Physician to the London Homœopathic Hospital, on

Fridays, at 6.15 p.m., October to March—commencing October 9th.

CLINICAL TUTORIALS.

On Monday and Friday afternoons, at 2 o'clock, throughout both the Winter and Summer Sessions, the Registrar Tutor to the Hospital, WILLIAM WILSON RORKE, M.B., C.M.(Edin.), who is also Physician for Diseases of the Nervous System at the London Homœopathic Hospital, and conducts an Out-patient Clinic for the purpose of instruction in the application of Homœopathic principles.

THE SIR HENRY TYLER SCHOLARSHIP COMMITTEE

also offer SCHOLARSHIPS of £20 for Medical Men in the Provinces desirous of taking a Post Graduate Course at the London Homœopathic Hospital during the Ten Compton Burnett Lectures.—Apply to Secretary, London Homœopathic Hospital, Great Ormond St., Bloomsbury, W.C.1.

FEES AND SCHOLARSHIPS

All information as to Fees and Scholarships may be obtained on application to the Secretary of the Education Course, London Homœopathic Hospital, W.C.1.

CENTRAL LONDON OPHTHALMIC HOSPITAL,

JUDD STREET, ST. PANCRAS, W.C.1.

This Hospital makes a speciality of Clinical Instruction in Ophthalmology, and Lectures and Demonstrations are held in various branches of general ophthalmological interest.

A series of Clinical Demonstrations are given at 5 p.m., on the first Tuesday of every month, and Students of Medicine and Medical Practitioners are admitted without fee.

The post of Clinical Assistant is open to Male and Women Students.

For further particulars apply to the Dean of the School.

Preliminary Examinations

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical Students in London and at Provincial Centres in March, June, September, and December. Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQUARE, LONDON, W.C.1.

Mr. E. S. WEYMOUTH, M.A.(Lond.), Principal. (FOUNDED IN 1882.) *Telephone*: Holborn 6313.

POSTAL OR ORAL PREPARATION FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES.

M.D. (Lond.), 1901-30: (9 Gold Medallists during 1913-30) 336
M.S. (Lond.), 1902-30 (including 4 Gold Medallists) 22
M.B., B.S. (Lond.), *Final* 1906-30 (Completed Exam.) 269
F.R.C.S. (Eng.), 1906-30. *Primary* 162; *Final* 161
M.R.C.P. (Lond.), 1914-30 192
D.P.H. (Various) 1906-30 (Completed Exam.) 300
F.R.C.S. (Edin.), 1918-30 46
M.R.C.S., L.R.C.P. *Final* 1910-30 (Completed Exam.) 467
M.D. (Dur.) (Practitioners) 1906-30 38
M.D. Various. By Thesis. Numerous successes.

Preparation for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board, M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.—M.R.C.P., M.D., Final F.R.C.S., F.R.C.S.(Edin.). Second and Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition for all Medical Examinations and for the Medical Preliminary Arts and Science Examinations.

MEDICAL PROSPECTUS (48 pp.).

Contents:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations.* Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus sent gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: Holborn 6313.)

THE HOSPITAL FOR SICK CHILDREN,

GREAT ORMOND STREET, BLOOMSBURY, W.C.1.

This Hospital contains 252 beds, with an average admission of 7,000 in-patients per annum; whilst in the out-patient department about 30,000 new patients are seen each year. The Medical School is recognized by the Universities of Oxford, Cambridge, and London, and by the Conjoint Medical Board of England, as a teaching institution where two months' clerking and dressing may be carried out by any undergraduate student who is entering for a final qualifying examination. In addition, for students who have completed four years of medical study, six months of the fifth year may be spent there in clinical work under recognition from the Conjoint Board. Post-graduate instruction, open to all qualified medical men and women, is given daily in the wards, out-patient department, operating theatre, and post-mortem room by members of the visiting staff. In addition, lectures are arranged for them throughout the year, announcements of which are made from time to time, and full details of them can be obtained from the Dean or Secretary at the Hospital. Clinical clerkships in the wards and clinical assistantships in the out-patient department are also available for post-graduate students. Opportunities for study are also offered in the Ophthalmic, Dermatological, Dental, Radiographic, and Pathological Departments.

Fees for Hospital Attendances. One Month's Ticket, £2 2s. Three Months' Ticket, £5 5s. Perpetual Ticket, £10 10s. Special reduced fees for Clinical Clerks, Dressers for one month's attendance, £1 1s. Clerks attend for about four hours daily.

Pathological Department. Facilities are afforded to post-graduates for obtaining theoretical and practical instruction in Clinical Pathology and Bacteriology, and in Medical Biochemistry in the Pathological and Biochemical Laboratories.

Courses of 8 to 10 Lecture Demonstrations are given at weekly intervals twice a year in both subjects (Clinical Pathology and Bacteriology and Biochemistry). These Lecture Demonstrations are of one or two hours' duration.

Fees.—For Course of 8 to 10 Laboratory Demonstrations in either Branch £5 5 0
For combined Course of (a) Clinical Pathology and Bacteriology and (b) Medical Biochemistry £8 8 0

JAMES McKAY, Secretary. ERIC I. LLOYD, F.R.C.S., Dean of the Medical School.

THE GOLDEN SQUARE THROAT, NOSE, AND EAR HOSPITAL,

GOLDEN SQUARE, near PICCADILLY CIRCUS, LONDON, W.1.

HONORARY MEDICAL STAFF:

SURGEONS: Mr. T. Jefferson Faulder; Mr. Lionel Colledge; Mr. Gilbert Chubb; Mr. Theodore Just; Mr. F. Cunliffe Ormerod; Mr. A. R. Dingley.

ASSISTANT SURGEONS: Mr. Gilbert Howells; Mr. S. A. Beards; Mr. J. F. Simpson.

The Hospital has recently been enlarged, and has 73 beds for In-Patients, and an annual Out-Patient attendance of over 50,000.

CLINICAL INSTRUCTION

Clinical Instruction in the Diagnosis and Treatment of Diseases of the Throat, Nose, and Ear is daily given in the Out-Patient Department from 2 to 5 p.m. On Tuesdays and Thursdays from 6.30 to 7.45 also. Major operations are performed daily, except Saturdays, in the In-Patient Operating Theatres. Minor operations are performed in the Out-Patient Department by the Assistant Surgeons on three mornings a week.

Practitioners and Medical Students are admitted to the practice of the hospital, and Clinical Assistants, whose duty it is to assist the staff, are appointed from time to time from among them.

For further information apply to the Dean, Mr. F. CUNLIFFE ORMEROD.

Twenty-four rooms are available for the reception of private patients paying a moderate fee.
Further information may be obtained from the Secretary-Superintendent.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART

WESTMORELAND STREET, W.1.

The Clinical Practice of the Hospital in the Out-patient Department and the Wards is open to Post-Graduates. Fees: One Month £2 2s.; Three Months £5 5s.

Under-Graduates who have completed their fourth year are admitted to the Practice of the Hospital at specially reduced fees.

Special Courses of two weeks' duration are held in January, July, and October. Fee £7 7s.

Further particulars may be obtained on application to the Dean or the Secretary at the Hospital.

THE

METROPOLITAN EAR, NOSE, & THROAT HOSPITAL

(1838) (INCORPORATED),

FITZROY SQUARE, LONDON, W.1.

FACILITIES FOR CLINICAL WORK are afforded to Medical Practitioners and Students. Fee for one month, 3 Guineas; for three months, 5 Guineas.

PRACTICAL DEMONSTRATIONS are given daily (Saturdays excepted), at 3 p.m., in the manipulation of instruments used in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat.

CLINICAL ASSISTANTS are appointed as vacancies occur, and have responsible duties.

Further particulars may be obtained from the Secretary.

L. L. PHILLIPS.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL.

THE WINTER SESSION will Open on Thursday, October 1st.

The Hospital is the largest in England. There are 839 beds in constant use. Last year: number of in-patients, 14,256, out patients 8[illegible], attendances, 529,543; dental patients, 6,063; major operations, 7,401.

The MEDICAL COLLEGE and DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and the [illegible] approved appliances. The STAFF is so large as to permit of individual attention being paid to all students.

MEDICAL UNIT.—A Clinical Unit in Medicine, under the charge of a whole-time Director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research.

RESEARCH FUNDS of approximately £113,000 give unrivalled facilities for Medical Research.

SCHOLARSHIPS and PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £[illegible] and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200.

APPOINTMENTS.—Over 160 Appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations, for the Primary and Final Fellowship Examination of the Royal [illegible] of Surgeons, and for the Membership Examination of the Royal College of Physicians.

HOSPITAL PRACTICE.—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or Practice of a Special Department of the Hospital.

A Club's Union, an *Athletic Ground* of over 13 acres, and a *Student's Hostel* promote the recreation, health, and comfort of the [illegible]

For Prospectus and Particulars apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School.

MILE END, E.1.

GUY'S HOSPITAL MEDICAL & DENTAL SCHOOLS.

(UNIVERSITY OF LONDON.)

THE HOSPITAL, which contains 646 Beds, is situated one minute's walk from London Bridge Railway Stations.

SPECIAL CLASSES are held in CHEMISTRY, PHYSICS, and BIOLOGY for the First M.B. Examination of the University of London, the Pre-Medical Examination for the "Conjoint" and L.D.S. Diplomas.

THE WINTER SESSION will commence on TUESDAY, SEPTEMBER 29th, 1931.

ENTRANCE SCHOLARSHIPS.—MEDICAL SCHOOL.

The following Entrance Scholarships are awarded annually in the month of June:—

A.—Open Junior Scholarships.—1. An ARTS SCHOLARSHIP of the value of £100. 2. A SCIENCE SCHOLARSHIP of the value of £100. 3. A WAR MEMORIAL SCHOLARSHIP of the value of £200, awarded alternately in Arts and Science. This Scholarship is open every other year; the next award will be made in 1932, in Arts.

B.—Confined Scholarship in Science.—A JUNIOR SCIENCE SCHOLARSHIP of the value of £100 is offered for competition. Candidates who have attended the Preliminary Science Classes at this School.

The following Entrance Scholarships are awarded annually in the month of July:—

C.—Open Senior Science Scholarships.—1. A WAR MEMORIAL SCHOLARSHIP of the value of £100. 2. An EXHIBITION of the value of £60. Subjects: Candidates will be examined in two of the following Subjects, at their option: (1) Anatomy, Embryology; (2) Physiology; (3) Biochemistry; (4) General Pathology, including Bacteriology.

THE DENTAL SCHOOL.

Offers Two Open Scholarships in June of each year:—1. A WAR MEMORIAL SCHOLARSHIP IN ARTS of the annual value of £40 for [illegible] years. 2. A SCIENCE SCHOLARSHIP of the value of £40 per annum for not more than four years.

Numerous Prizes, Medals, and Scholarships are open for competition during the period of Studentship.

For further particulars and for the Prospectus containing information as to the Course of Study advised, the Resident [illegible] &c., application should be made either personally or by letter to *The Dean, Guy's Hospital Medical School, London Bridge, S.E.1*.

LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE

(University of London).

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.)

THE COURSE OF STUDY IS NOW DIVIDED INTO TWO PARTS: Section A (Clinical and Laboratory Instruction) and Section B (Tropical Hygiene), each of which can be taken independently of the other, Section A being a three months' course and Section B a two months' course.

This Revised Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF THE COURSES, 1931-32.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION).

1st COURSE: *29th September*—*18th December*, 1931. 2nd COURSE: *4th January*—*24th March*, 1932.

3rd COURSE: *11th April*—*30th June*, 1932.

SECTION B (TROPICAL HYGIENE).

1st COURSE: *18th January*—*18th March*, 1932. *2nd* COURSE. *18th April*—*17th June*, 1932.

FEES (inclusive): Section A, £25; Section B, £15. *Research Studentships vacant*, value £250 p.a.

DIPLOMA IN PUBLIC HEALTH

The 1931-32 Course of Study, which qualifies students to sit for the UNIVERSITY OF LONDON DIPLOMA, covers a period of nine calendar months in the case of those who devote the whole of their time to the work.

The Course will commence on September 28th, 1931.

Inclusive FEE, 54 guineas, to cover lectures, demonstrations, and the necessary practical work in public health departments, etc.

DIPLOMA IN BACTERIOLOGY

The Course of Study for the academic year 1931-32, qualifying for the UNIVERSITY OF LONDON DIPLOMA, commences in October next. Inclusive FEE, £47 15s.

EPIDEMIOLOGY AND VITAL STATISTICS

Special Three-monthly Advanced Courses. Composition FEE, 7 guineas.

For Prospectuses, Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1.

POST-GRADUATION SCHOOL

Central London Throat, Nose and Ear Hospital

Gray's Inn Road, London, W.C.1

INTENSIVE COURSE of LECTURES and DEMONSTRATIONS, including ANATOMY and PHYSIOLOGY, OPERATIVE SURGERY, PATHOLOGY and BACTERIOLOGY, and PERORAL ENDOSCOPY CLASSES, given in MAY and OCTOBER each year.

PRACTICAL TEACHING Throughout the Year. Courses in methods of Examination and Diagnosis at frequent Intervals; Clinics and Operations Daily; Lectures Weekly.

CLINICAL ASSISTANTSHIPS available for periods of three, six or twelve months.

The Post-graduate work covers all the requirements for the D.L.O. (R.C.P. & S.Eng.).

Full Syllabus obtainable from the Dean.

WEST END HOSPITAL FOR NERVOUS DISEASES.

OUT-PATIENT DEPARTMENT, WELBECK STREET, W.1.

IN-PATIENT DEPARTMENT, GLOUCESTER GATE, REGENT'S PARK, N.W.1.

Recognized by the University of London and the Conjoint Board.

Courses of **SPECIAL CLINICAL DEMONSTRATIONS** on selected cases, as advertised, are given in March-April and November-December.

The general practice of the hospital is conducted daily (Saturdays excepted).

The Savill Prize (value £15) and medal is offered biennially for the best thesis on a neurological subject submitted by Post-Graduates who have attended the hospital practice on not less than 10 occasions.

A limited number of appointments as Hon. Clinical Assistants are open to Post Graduates.

The Senior and Junior House Physicians are appointed every six months, with remuneration at the rate of £150 and £100 per annum respectively.

For particulars of the above apply to C. WORSTER-DROUGHT, M.D., M.R.C.P., Dean, or to the Secretary of the Hospital at 73, Welbeck Street, W.1.

UNIVERSITY OF LONDON

OPHTHALMIC HOSPITAL MEDICAL SCHOOL.

ROYAL LONDON OPHTHALMIC HOSPITAL

(Moorfields Eye Hospital), CITY ROAD, E.C.1.

Qualified Medical Practitioners and Registered Medical Students may enter on the Practice of the Royal London Ophthalmic Hospital (Moorfields) at any time, and are, on certain conditions, eligible for appointment as Chief Clinical Assistant, Clinical Assistant and Junior Assistant.

Courses of Instruction, extending over a period of five months, begin in OCTOBER and MARCH.

1. Practical Refraction Classes.
2. Methods of examination and use of the ophthalmoscope.
3. Lectures every afternoon on the following subjects: (*a*) Anatomy, including Embryology and Normal Histology; (*b*) Physiology; (*c*) Optics, including Physiological Optics; (*d*) Pathology and Bacteriology; (*e*) Ophthalmic Medicine and Surgery, consisting of: Medical Ophthalmology, External Diseases of the Eye, Motor Anomalies and Squint, Diseases of the Retina and Optic Nerve, Diseases of the Uveal Tract.
4. Ophthalmoscopic Conditions: a practical class with demonstrations each week at 5 p.m.
5. Occasional Lectures on subjects allied to Ophthalmology.
6. Operative Surgery. In these classes the usual operations are performed by the student upon pigs' eyes.
7. Practical Pathology. A course of demonstrations on the normal and morbid histology of the eye is given by the pathologist in the laboratory.
8. Practical Bacteriology.
9. Classes in Radiography.
10. Physico-therapy (Ultra-violet Light, Diathermy, etc.).
11. Slit-lamp Microscopy.

FEES.—A composition fee of 35 guineas will admit Students once to all the lectures and classes (except the classes on Physico-Therapy, and Slit-lamp Microscopy, and the examination fee).

DIPLOMA IN OPHTHALMIC MEDICINE & SURGERY & OTHER DEGREES IN OPHTHALMOLOGY.

The above complete curriculum is specially designed to meet the requirements of candidates entering for these examinations.

Fees for the Practice of the Hospital:

Perpetual	£5 5 0	Two months	£2 2 0
Three to six months	£3 3 0	One month	£1 1 0

Clinical work begins at 9 a.m. daily. Operations are performed between 10 a.m. and 1 p.m.

For further particulars apply to the SECRETARY to the Medical School at the Royal London Ophthalmic Hospital, City Road, E.C.1; or to the Dean, CHARLES GOULDEN, O.B.E., M.D., M.Ch., F.R.C.S.

UNIVERSITY COLLEGE HOSPITAL DENTAL SCHOOL.

NATIONAL DENTAL HOSPITAL, GREAT PORTLAND ST., W.1.

LECTURERS.

Dental Surgery and Pathology.—J. L. DUDLEY BUXTON, L.M.S.S.A., L.D.S.Eng.
Mondays and Wednesdays at 5 p.m. October to March.

Dental Anatomy.—ALAN SHEFFORD, O.B.E., L.D.S.
Mondays at 5 p.m.

Orthodontics.—BERTRAM B. SAMUEL, L.D.S.Eng.
Thursdays at 5 p.m. May to July.

Dental Mechanics.—B. MENDLESON, L.D.S.Eng.
Wednesdays at 5 p.m. January to March.

Dental Materia Medica.—H. DAVIS, B.Sc., A.I.C., Ph.C.
Tuesdays and Fridays at 2 p.m. May to July.

Bacteriology of the Mouth.—Sir KENNETH GOADBY, K.B.E., D.P.H.Camb., L.R.C.P., M.R.C.S., L.D.S.Eng. Wednesdays at 2 p.m. January to March.

General Pathology.—Prof. A. E. BOYCOTT, M.A., D.M., F.R.S.
Mondays, Wednesdays, Thursdays, and Fridays at 12 noon. May.

Practical Pathology.—Prof. C. C. OKELL, M.B., B.C.
Mondays, Tuesdays, Thursdays, and Fridays at 2 p.m. May.

Dental Histology.—A. K. INCE-JONES, L.R.C.P., M.R.C.S., L.D.S.Eng.
Wednesdays at 5 p.m. May to July.

Dental Metallurgy.—H. TERRY, B.Sc.
Tuesdays at 5 p.m. at University College. January to March.

Anaesthetics.—C. W. MORRIS, O.B.E., M.B., B.S.
Alternate Tuesdays at 5 p.m. January to March.

Radiology.—D. A. IMRIE, M.D.Laus., L.R.C.P., L.R.C.S.E., D.M.R.E., L.D.S.
Thursdays at 5 p.m. July.

The WINTER SESSION Commences THURSDAY, OCTOBER 1st, 1931.

This Hospital and School, situated in the centre of a large population, and within a few minutes of University College Hospital, has recently been reorganized and equipped on the highest standard of modern requirements, and is admirably adapted for the teaching of students in every branch of the Science and Art of Dental Surgery. The mechanical laboratory, conservation room, and X-rays department are replete with all the latest approved appliances.

Students (men and women) enter as students of University College Hospital, and attend classes in anatomy and physiology at University College, adjacent to University College Hospital.

Each student serves as a dresser in the extraction, anæsthetic, conservation, and X-rays departments, which provides him with the opportunity of observing and actually carrying out the methods of work in all branches.

Four House Surgeons are appointed half yearly.

The Calendar, containing full information as to lectures, fees, prizes, etc., may be had on application to the Sub-Dean of Dental Students, who attends the University College Hospital Medical School, University Street, Gower Street, W.C.1, on Wednesdays, at 9.30 a.m.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.

TELEPHONE—MUSEUM 7026 and 7027.

(UNIVERSITY OF LONDON).

UNIVERSITY STREET, GOWER STREET, W.C.1.

MEDICAL AND SURGICAL STAFF.

Consulting Physicians—Sir THOMAS BARLOW, Bart K C V O M D D Sc D C L F R S F R C P Sir JOHN ROSE BRADFORD, Bart K C M G, C B C B E, L L D M D, D Sc D C L F R C P F R S, Dr H R SPENCER F R C P Sir GEORGE BLACKER C B E M D F R C P F R C S

Physicians—Dr H BATTY SHAW, F R C P, Dr F J POYNTON F R C P, Dr C BOLTON, C B E, D Sc, F R C P, F R S Prof T R ELLIOTT, C B E D S O, M D, F R C P F R S Sir T LEWIS, C B E D Sc M D, F R C P, F R S, Dr J W McNEE, D S O, F R C P.

Physician to the Neurological Department—Dr F M R WALSHE O B E, D Sc, F R C P

Physician to Skin Department—Dr A M H GRAY, C B E, F R C P, F R C S

Physician for Mental Diseases—Dr B HART, F R C P Dr A F TREDGOLD, F R C P

Physician for Children's Diseases—Dr F J PEARSON, F R C P

Consulting Surgeons—Mr BILTON POLLARD B S F R C S Mr RAYMOND JOHNSON, O B E, B S F R C S Mr PERCY FLEMMING B S, F R C S, Mr H MORRISTON DAVIES, M S F R C S, Mr S SPOKES M R C S L D S (Dental) Mr RICHARD LAKE F R C S, Mr A F RELPH, M R C S, L R C P (Dental) G SECCOMBE HETT B S F R C S Mr H J Relph M R C S L R C P L D S (Dental)

Surgeon—Mr WILFRED TROTTER M S F R C S F R S Mr GWYNNE WILLIAMS M S, F R C S, Prof C C CHOYCE, C M G, C B E, B Sc, F R C S, Mr E K MARTIN, M S, F R C S Mr JULIAN TAYLOR M S, F R C S

Ophthalmic Surgeons—Sir J H PARSONS, C B E D Sc, B S, F R C S, F L S Mr HUMPHREY NEAME, F R C S

Obstetric Surgeons—Mr CLIFFORD WHITE F R C P F R C S Prof F J BROWNE F R C S Ed

Diseases of the Ear and Throat—Mr E A PETERS, L R C S, Mr H A KISCH, B S, F R C S, Mr J F O'MALLEY, F R C S, Mr LIONEL COLLEDGE, F R C S

Dental Surgeon—Mr J L DUDLEY BUXTON L M S S A, L D S

Radiologist—Dr R W A SALMOND, O B E, Ch M

Consulting Anæsthetists—Dr A B KINGSFORD Dr H J SHIRLEY, Dr F S ROOD

Anæsthetist—Dr C W MORRIS, Dr S HUTCHINSON Dr B S WEBBER Dr I J REBBA

Pathology—Prof A E BOYCOTT, M A, D M, L L D, F R C P F R S

Bacteriology—Prof C C OKELL, B A, M B B Ch, M R C P, D P H, Dr F H TEMPLE B Sc, F R C P, Dr D EMBLETON

Clinical Pathology—Vacant.

Morbid Anatomy—Vacant

Chemical Pathology—Prof C R HARINGTON, M A, Ph D, F R S

THE WINTER SESSION will commence on OCTOBER 1st, 1931.

THE SCHOOL IS FOR FINAL STUDIES only

STUDENTS are prepared for the degrees of the Universities of OXFORD, CAMBRIDGE, LONDON, and DURHAM, and for the Diplomas of other qualifying bodies

CLINICAL UNITS in MEDICINE, SURGERY, and OBSTETRIC MEDICINE are now in operation—The whole-time Directors of the Units are concerned with the organization of the teaching generally, but the honorary staff are responsible for the largest share of the teaching in the wards and Out-patient Department of the Hospital. The new Obstetric Hospital is now finished and in full occupation

Director of the Medical Unit—Prof T R ELLIOTT

Director of the Surgical Unit—Prof C C CHOYCE

Director of the Obstetric Unit—Prof F J BROWNE

Assistant—Dr H A HARRIS Dr F A BLAKE PRITCHARD Dr P M D A HART Dr I D PROCTER Dr H P HIMSWORTH

Assistant—Mr A J GARDHAM Mr F F E BARRINGTON, Mr P S PITCHER Mr M COLEMAN Mr W J LEES (Physicist)

Assistant—Mr N I WHITE Miss G H DODDS Mr J C MOIR Mr J. D S FLEW, Mrs J TAYLOR

DENTAL STUDENTS can obtain a complete curriculum at University College, and at University College Hospital Dental School (The National Dental Hospital, Great Portland Street) This Hospital has recently been reorganized and equipped on the highest standard of modern requirements, and is admirably adapted for the teaching of Students in every branch of the science and art of Dental Surgery.

FEES—For the Final Course 112 guineas if paid in one sum, or 115 guineas paid in two instalments of 70 and 45 guineas

APPOINTMENTS—Forty seven appointments are open during the year to students, and paid appointments to the annual value of over £2,000

SCHOLARSHIPS, EXHIBITIONS, and PRIZES, of the value of over £1,000, are awarded annually Amongst the most important are

I. **Goldsmid Entrance Scholarships (Value 112 Guineas each)**, entitling the holder to the Final Course of Medical Study, are offered for competition in July, 1931, and are open to Students who are preparing for the Degrees of the Universities of London Oxford, Cambridge, Durham, or other British Universities, or for the Diplomas of the Royal College of Physicians and Surgeons, or for the Licence of the Society of Apothecaries

II. **Goldsmid Entrance Exhibition (Value £83)**, entitling the holder to a reduction by £80 of the fees due for the Full Course of Final Medical Study **Only Candidates who are Graduates in Arts or Science of a University of the British Empire are eligible for this award**

III. **Fellitter Entrance Scholarship in Pathology (Value £52 10s)**, entitling the holder to a reduction by £52 10s of the fees due for the Full Course of Final Medical Study

GRAHAM SCHOLARSHIP in Pathology £300 per annum

LESLIE PEARCE GOULD SCHOLARSHIP, awarded every two years, about £200

RADCLIFFE CROCKER TRAVELLING SCHOLARSHIP in Dermatology, awarded every five years about £220

MACILATH SCHOLARSHIP in Clinical Medicine, about £150

PERCIVAL ALLEN PRIZE, about £75

ATCHISON SCHOLARSHIP about £50 per annum tenable for two years

ATKINSON MORLEY SCHOLARSHIP, £45 per annum tenable for three years

BUCKNILL SCHOLARSHIP entitles the holder to the Intermediate Medical Course at University College and for the Final Course at the Medical School

STUDENTS HOSTEL, adjoining the Medical School is a specially equipped Hostel solely for the use of the Students in the School Large, airy, and handsomely furnished bed sitting rooms are available as well as Common Rooms All meals are provided in the School Refectory, which adjoins and service in the Hostel is under the control of an efficient Steward and Staff A member of the staff is always in residence at the Hostel

All further information and Prospectus can be obtained from the Secretary and the Dean can be interviewed at any time by appointment

Dean—A M H GRAY, C B E, M D, F R C P, F R C S

Vice-Dean—GWYNNE WILLIAMS, M S, F R C S

Sub-Dean for Dental Students—J L DUDLEY BUXTON, L M S S A, L D S Secretary—R SLOLEY.

THE LONDON SCHOOL OF DERMATOLOGY

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER SQUARE, W.C.2

The CHESTERFIELD LECTURES, constituting a systematic Course in Dermatology, will be given at 5 p.m. on Tuesdays and Thursdays from October to March.

SYLLABUS—WINTER SESSION—1931-32.

1931.		Subject.	Lecturer.
Oct.	6 Tues.	Anatomy and Physiology of the Skin	Dr. W. N. Goldsmith.
,,	8 Thurs.	Morphology and Histopathology of Elementary Lesions	Dr. J. M. H. MacLeod.
,,	13 Tues.	Principles of Treatment	Dr. W. Griffith.
,,	15 Thurs.	Pathology Demonstration	Dr. I. Muende.
,,	20 Tues.	Purpura	Dr. H. T. Barron.
,,	22 Thurs.	Mycotic Diseases	Dr. G. B. Dowling.
,,	27 Tues.	Erythema Multiforme	Dr. J. E. M. Wigley.
,,	29 Thurs.	Principles of Treatment. Local	Dr. K. Sibley.
Nov.	3 Tues.	Diseases due to Animal Parasites	Dr. H. MacCormac.
,,	5 Thurs.	Occupational Dermatitis	Dr. W. J. O'Donovan.
,,	10 Tues.	Tuberculosis Cutis (1)	Dr. A. Whitfield.
,,	12 Thurs.	Tuberculosis Cutis (2)	Dr. A. Whitfield.
,,	17 Tues.	Bacteriology and Mycology	Dr. H. W. Barber.
,,	19 Thurs.	Pathology Demonstration	Dr. I. Muende.
,,	24 Tues.	Immunity and Anaphylaxis	Dr. H. W. Barber.
,,	26 Thurs.	Pigmentation of the Skin	Dr. W. N. Goldsmith.
Dec.	1 Tues.	Cutaneous Syphilis (1)	Dr. A. C. Roxburgh.
,,	3 Thurs.	Cutaneous Syphilis (2)	Dr. A. C. Roxburgh.
,,	8 Tues.	Eruptions due to Physical Agents	Dr. A. C. Roxburgh.
,,	10 Thurs.	Pemphigus and Allied Eruptions	Dr. J. E. M. Wigley.
,,	15 Tues.	Erythemato Squamous Eruptions	Dr. S. E. Dore.
,,	17 Thurs.	Pathology Demonstration	Dr. I. Muende.
,,	29 Tues.	Xanthoma. Herpes	Dr. A. M. H. Gray.
,,	31 Thurs.	Electro Therapeutics	Dr. K. Sibley.

1932.		Subject.	Lecturer.
Jan.	5 Tues.	Acne. Rosacea	Dr. H. Hallé Davis.
,,	7 Thurs.	Ringworm Infections	Dr. I. M. H. Muende.
,,	12 Tues.	Cicatricial Alopecia	Sir F. Graham Little.
,,	14 Thurs.	Stocking Erythrodermia	Dr. W. J. O'Donovan.
,,	19 Tues.	Seborrhœa Seborrhœic Dermatitis	Dr. G. B. Dowling.
,,	21 Thurs.	Pathology Demonstration	Dr. I. Muende.
,,	26 Tues.	The Sarcoids	Dr. A. M. H. Gray.
,,	28 Thurs.	Lichen Planus	Dr. M. S. Thomas.
Feb.	2 Tues.	Affections of the Hair and Hair Follicles	Dr. S. E. Dore.
,,	4 Thurs.	Urticaria	Dr. J. A. Drake.
,,	9 Tues.	Diseases of the Buccal Mucous Membrane	Dr. H. C. G. Sutton.
,,	11 Thurs.	Pruritus. Prurigo. Lichenification	Dr. H. Hallé Davis.
,,	16 Tues.	Lupus Erythematosus	Dr. M. S. Thomas.
,,	18 Thurs.	Pathology Demonstration	Dr. I. Muende.
,,	23 Tues.	Leprosy	Dr. J. A. Drake.
,,	25 Thurs.	Leukæmia Cutis. Mycosis Fungoides	Dr. J. F. M. Wilson.
Mar.	1 Tues.	Eczema (1)	Dr. W. Griffith.
,,	3 Thurs.	Eczema (2)	Dr. W. Griffith.
,,	8 Tues.	Common Eruptions in Childhood	Dr. H. T. Barron.
,,	10 Thurs.	Benign Growths of the Skin	Dr. W. N. Goldsmith.
,,	15 Tues.	Malignant Growths of the Skin	Dr. H. McCormac.
,,	17 Thurs.	Pathology Demonstration	Dr. I. Muende.

An Examination will be held at the end of the Course, and the CHESTERFIELD MEDAL will be awarded to the best candidate, provided the required standard is reached.

CLINICS.—Instruction will be given daily in the Out-Patient Department, as follows:

Monday, 2 p.m.	Dr. Griffith.	Wednesday, 2 p.m.	Dr. Dowling.	Friday, 2 p.m.	Dr. Roxburgh.
6 p.m.	Dr. Dore.	6 p.m.	Dr. Wigley.	6 p.m.	Dr. Dowling.
Tuesday, 2 p.m.	Dr. Goldsmith.	Thursday, 2 p.m.	Dr. Sibley.	Saturday, 2 p.m.	The Medical Lecturer.
6 p.m.	Dr. Wigley.	6 p.m.	Dr. Goldsmith.		

LABORATORY.—Arrangements can be made for Classes, individual instruction, or for research work. For particulars and fees apply to the Dean.

FEES.—For Hospital Practice, including Lectures, One Guinea per month; six months, Five Guineas. *Registered Medical Students may attend the Lectures free on signing their names and giving the name of their Hospital.*

Medical Practitioners will be welcome as occasional visitors on presentation of their cards.

For further particulars apply to the Dean.

J. E. M. WIGLEY, M.B., Dean.

LEONARD G. R. TURPIN, Secretary.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE

(UNIVERSITY OF LONDON)

WINTER SESSION BEGINS OCTOBER 1st, 1931.

THE HOSPITAL has 762 Beds and the MEDICAL COLLEGE contains large Lecture Rooms and Laboratories, as well as a Museum and a Library.

Every Special Branch of Medicine and Surgery has a Department.

ENTRANCE SCHOLARSHIPS.

Five Entrance Scholarships are awarded in July, of the aggregate value of £410.

Other Scholarships and Prizes amount to about £1,000 annually.

PRELIMINARY SCIENCES.

Biology, Chemistry, and Physics are fully taught in the Laboratories apportioned to these subjects.

HOSPITAL APPOINTMENTS.

Forty House Physicians and House Surgeons are appointed annually from those Students who have passed their final qualifying examination.

Five hundred and sixty Ward Clerkships and Dresserships are open annually to Students before qualification.

STUDENTS' UNION.

The Union possesses a Club Ground of ten acres within easy reach of the Hospital.

HIGHER EXAMINATIONS.

Special Classes are held for F.R.C.S., etc.

For further particulars apply, personally or by letter, to—

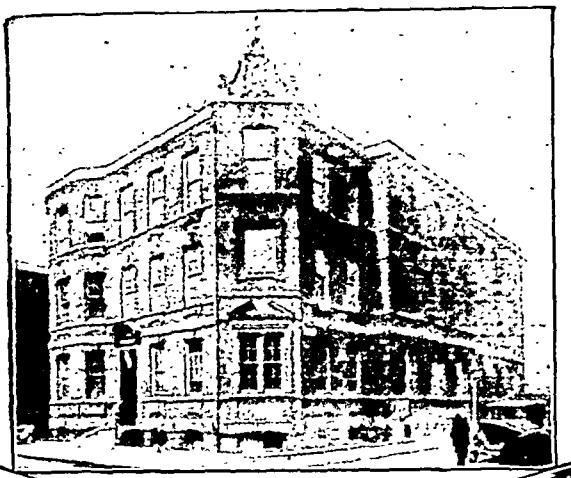
THE DEAN OF THE MEDICAL COLLEGE, St. Bartholomew's Hospital, London, E.C.1.

Westminster Hospital Medical School

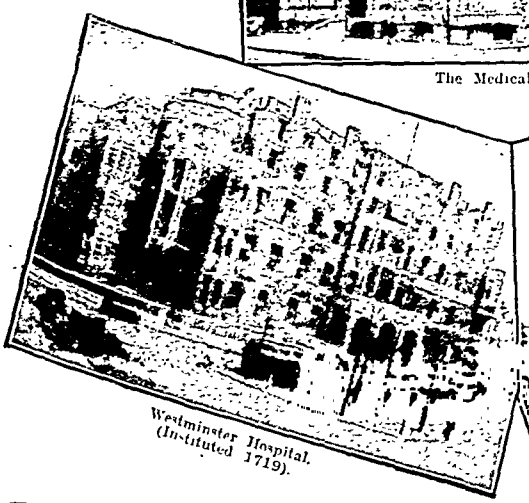
(University of London)

SESSIONS COMMENCE 1st WEEK IN JANUARY, APRIL, OCTOBER

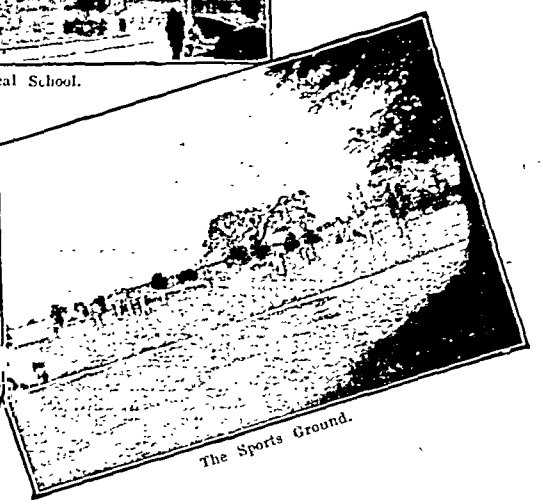
NEXT SESSION COMMENCES OCTOBER 1st.



The Medical School.



Westminster Hospital. (Instituted 1719).



The Sports Ground.

THE MEDICAL SCHOOL, with Library, Museum, Lecture Theatres, Epidiascope, &c., is a few minutes' walk from the Hospital. The entire teaching of the Hospital and School is devoted to the subjects of the Final Examinations. Arrangements are made for the tuition required for preliminary and intermediate subjects.

SCHOLARSHIPS. The School Committee is prepared to grant a certain number of Scholarships, each of the value of £75, to men of outstanding merit, upon the nomination of the Dean of their College or the Principal of their School. Five competitive entrance Scholarships to the value of £375, and prizes to the value of £170, are awarded annually.

APPOINTMENTS. Paid appointments as Medical, Surgical, and Obstetric Registrars, Casualty Officers, House Physicians, House Surgeons, Anaesthetists, and Clinical Assistants, are available for Students when they have passed their examinations. There are excellent opportunities for research work in the recently endowed Carlill Laboratories.

FEES. Annual fee £40. An entrance fee of ten guineas includes membership to the Sports Union Club, with its various branches—football, cricket, tennis, boxing, and Guthrie Society. The Sports ground is within 30 minutes of the Hospital.

The Dean or Sub-Dean will be pleased to arrange for intending students and parents to inspect the Hospital and Medical School at any time.

ONLY MALE STUDENTS ARE ADMITTED.

A Prospectus and full particulars may be obtained on application to the Dean:

A. S. WOODWARK, C.M.G., C.B.E., M.D., F.R.C.P.,

Westminster Hospital Medical School, Caxton St., Westminster, S.W.1. Tel.: Victoria 0765.

Rytad

Charing Cross Hospital Medical School

(UNIVERSITY OF LONDON)

Sessions commence October and April.

The most easily accessible of all the Schools of the University.

Complete arrangements for subjects of the whole Medical Curriculum, with special departments for every branch of Clinical work.

The Institute of Pathology, with the abundance and variety of its material and fully equipped laboratories, offers exceptional advantages for Student, Post-Graduate, and Research work.

The Students' Union includes Common Rooms and Restaurant on the School premises, and a Sports Ground of 13 acres within half an hour's journey of the School.

The large number of resident appointments in proportion to the number of students makes it probable that all students of average ability will be able to secure election to the House Staff.

Scholarships. The following are awarded annually. Three "University" Scholarships, each of the value of £120. One "Open" Scholarship of the value of £75, and two "Entrance" Scholarships of £50 each. In addition numerous Exhibitions and Prizes are awarded each year.

MEN STUDENTS ONLY ARE ADMITTED.

Fees 38 Guineas per annum.

For Prospectus and full information apply personally or by letter to the DEAN:—
ERIC A. CROOK, M.A., M.Ch., F.R.C.S., Charing Cross Hospital Medical School, London, W.C.2. Teleph. Nos.: Temple Bar 3903 & 3904.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

Dean: H. WILLOUGHBY LYLE, M.D., B.S.Lond., F.R.C.S., J.P.

The present HOSPITAL was opened in 1913, and is one of the best equipped Hospitals in England. It serves a population of nearly two millions, and the attendances in the Casualty and Out-patient Departments during the year 1930 amounted to 287,983.

FOURTEEN ENTRANCE SCHOLARSHIPS, total value £1,530, are awarded annually.

RESIDENT HOSPITAL APPOINTMENTS, of which there are sixteen, are made every six months.

ATHLETIC GROUND. The Athletic Ground of the Medical School is within ten minutes' walk of the Hospital, and has accommodation for cricket, football, hockey, and lawn tennis.

SCHOOL HOSTEL. "The Platanes," standing in large grounds, with three lawn tennis courts, provides residence for 80 students, and is within five minutes' walk of the Hospital.

DENTAL SCHOOL. The Dental School was opened in October, 1923. A full Course is given in co-operation with King's College, in preparation for Dental Degrees and Diplomas.

For Particulars, Calendar of the School, and Appointments to see the School and Hospital, application should be made to the Secretary, S. C. RANNER, M.A.Cantab., King's College Hospital Medical School, Denmark Hill, London, S.E.5.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL

UNIVERSITY OF LONDON.

WINTER SESSION BEGINS ON OCTOBER 1st.

The entire Medical Curriculum can be taken at this School. There is no accommodation for Women Students. Annual value of Scholarships and Prizes £1,000. Large Research Funds.

STAFF INCLUDES 6 UNIVERSITY PROFESSORS, 2 UNIVERSITY READERS, 29 LECTURERS, 8 DEMONSTRATORS, and 4 TUTORS.

ENTIRE CURRICULUM.—THE PROVISION WHEREBY ALL THE SUBJECTS OF THE CURRICULUM, INCLUDING CHEMISTRY, PHYSICS AND BIOLOGY, FOR THE PRE-MEDICAL EXAMINATION, ARE TAUGHT WITHIN THE PRECINCTS of the HOSPITAL and MEDICAL SCHOOL, and every effort made to encourage co-ordination, ensures that the student, instead of proceeding to the study of the various subjects as if they were isolated and having little or no relation to each other, is taught each subject by professors and lecturers who are instructing medical students only, and are in close touch with all the other departments of the School. The rebuilding of the Hospital and completion of new buildings in connection with the Medical School have now reached such a point that those working in the Institution have facilities equal to, or superior to those to be found in any other hospital in the United Kingdom, and the rapid progress which is being made with the remaining buildings promises even greater facilities in the immediate future. The new buildings are not confined to the wards, but include a magnificent Nurses' Home, a new Out-patients' Department, the Institute of Biochemistry, and new departments of Neurology, Dermatology, etc. The following description of the work in various departments is designed to show how co-ordination is carried out.

CHEMISTRY is taught by Professor W. B. Tuck, and the class room and laboratories are in the immediate vicinity of those for anatomy, physiology, pharmacology, pathology, and bacteriology. This leads to a close association with these departments and the student realises he is not learning just the chemistry which he requires for his first professional examination, but is acquiring knowledge which he will need and have to apply in later years. Professor Tuck also gives instructions in Toxicology and in the Chemistry required by candidates for the DIPLOMAS IN PUBLIC HEALTH, so keeps in touch with students in their final years and also in their post graduate studies.

THE PHYSICS DEPARTMENT is under the charge of Professor Sidney Russ, who is also Physicist to the Hospital and engaged in research work on the measurements and dosage of X-ray and Radium emanations. He is therefore in close touch with the departments of physiology and pathology, and takes an active part in departments for clinical therapeutics. Under his direction the student will realise at once that he is not studying an isolated subject for the purpose of training his mind or simply to comply with regulations and pass an examination, but is in touch with a subject which will be of great and increasing importance in the proper understanding of his work in later years.

BIOLOGY.—The Lecturer on Biology is Dr. J. H. Woodger, who holds a University Readership in this subject. His teaching in biology is characterized by co-ordination with other departments, and the bearing of the subject on the later stages of the curriculum is emphasized. Not only is the subject taught as an introduction to the study of Anatomy and Physiology, but the increasing importance of a knowledge of the lower forms of vegetable life and of the protozoa in the causation of disease and the study of insect carriers of human diseases is emphasized by co-ordination with the Pathological Institute.

IN THE DEPARTMENT OF ANATOMY, under the direction of Professor Thomas Yeates, with the general scientific study of Anatomy and its wider Biological aspects, the relation of structure to function and pathology is not lost sight of. Facts of clinical medicine and surgery, of pathology, biology, and physiology, are included in the teaching in order to emphasize the significance of anatomical points. By classes in Applied Medical and Surgical Anatomy the study of this subject is continued in the later stages of the student's career.

THE TEACHING OF PHYSIOLOGY is in the hands of Professor Samson Wright, and the department is in close touch with those for the teaching of both the preliminary and final subjects of the curriculum. It is impressed upon the student in this department that he cannot be a good clinician unless he obtains a sound knowledge of Physiology. Later in his career the student has continuous opportunities of applying what he has learnt in the Physiological department, and his physiological knowledge is further extended, notably in the study of PHARMACOLOGY and in the CARDIOGRAPHIC Department, where he has opportunities of studying the electrical conditions of the heart both in health and disease.

IN THE BLAND-SUTTON INSTITUTE OF PATHOLOGY all the departments of the Medical School are brought in touch. Here the student learns the SCIENCE OF DISEASE. The teaching of Pathology is in the hands of Professor J. McIntosh and under his tuition the student is made to realise that Pathology and Medicine are one and that a clear knowledge of Pathology and Bacteriology is essential for the prevention, diagnosis, and treatment of disease. The teaching of pathology is brought into the closest touch with clinical teaching, and the student sees the practical application of the sciences in which he has been instructed in the earlier years of the curriculum—chemistry, physics, biology, anatomy, and physiology.

THE COURTAULD INSTITUTE OF BIOCHEMISTRY is a new building fully equipped with laboratories for teaching and biochemical research. Professor E. C. Dodds, who is in charge of the Department, holds complete courses in Biochemistry for students, both in their early years and during their period of instruction in the wards. In addition to this the student here acquires constant practical experience of the important modern chemical investigations necessary for the detection of disease and the study of its evolution. Several valuable post graduate appointments in this Institute become available to students showing special ability in this direction.

CLINICAL TEACHING is carried out in the general wards and out-patients' departments, and in the special departments, all of which are in close touch with the scientific departments in the School. The student has ample opportunities for carrying out the physical examination of patients, and with his training on the scientific side combines instruction in the Art of Medicine by constantly being brought in contact with patients and being made to realise the human side of his professional work. In order that the student may have ample bedside teaching and opportunities for carrying out the examination of patients himself, the number of students allowed at a Clinique is limited.

There are ample clinical appointments for all students, and twenty-five Resident appointments are open annually to students of the School who have obtained their degrees or diplomas.

THE SOCIAL AND ATHLETIC side of the student's life has been arranged for. There are large athletic grounds with new Pavilion, restaurant, and gymnasium. Common Room Society, Medical Society, Musical Society, and various other Clubs.

Write for Prospectus to the DEAN, T. IZOD BENNETT, M.D., B.S., F.P.C.P., Middlesex Hospital Medical School, Berners Street, London, W.1.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

HYDE PARK CORNER, S.W.

THE HOSPITAL and MEDICAL SCHOOL occupy the finest site in London and are readily accessible from all parts of the Metropolis.

The entire teaching in the School is devoted to the subjects of the Final Examinations; in other words, is specially adapted to the interests of men from the Universities who have passed their Examination in Anatomy and Physiology.

By arrangement with the authorities of King's College and University College, St. George's Students attend at those Colleges for tuition in the Preliminary and Intermediate subjects.

SEVEN ENTRANCE SCHOLARSHIPS IN ANATOMY AND PHYSIOLOGY, AND GENERAL PATHOLOGY, of the value of £120, £80 (3), £60 (2), and £50 respectively, are awarded in July to candidates who have passed the 2nd M.B. or corresponding examination. In addition, EXHIBITIONS, each of the value of £40 and up to Four in number, will be awarded to candidates of approved merit in the Entrance Scholarship Examination.

MANY VALUABLE PRIZES ARE AWARDED EACH YEAR, including the following:—Allingham Scholarship of the value of £87, Laking Memorial Prize of the value of £65, the Brackenbury Prize in Medicine, the Brackenbury prize in Surgery, and the Webb Prize in Bacteriology, each of the value of £33.

RESIDENT APPOINTMENTS may be held for four, eight, or twelve months. A Student of ordinary ability should have an excellent chance of obtaining these posts and afterwards one of the following Paid appointments for a short time. Resident Assistant Physician, £250; Resident Assistant Surgeon, £250; Medical Registrar, £200; Surgical Registrar, £200; Assistant Curator of the Museum, £100; Resident Anæsthetist, £100; Resident Obstetric Assistant, £100.

The ST. GEORGE'S HOSPITAL CLUB incorporates the RUGBY FOOTBALL, CRICKET, LAWN TENNIS, BOXING, RIFLE and other Clubs, and possesses an ATHLETIC GROUND within easy reach of the Hospital, and Smoking and Luncheon Rooms on the School Premises.

Entrance Fee, £10 10s. 0d. Annual Composition Fee, which covers all courses, lectures, etc., in the Hospital and School, £42. Annual Club Subscription, £3 3s. 0d.

The Winter Session will begin on October 1st, but students can enter at any time.

Further information may be obtained from the Dean of the Medical School.

A. FEILING, M.D., F.R.C.P.,
Dean.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

THE WINTER SESSION BEGINS on THURSDAY, OCTOBER 1st, 1931.

SITE.—The Hospital occupies the finest open site in London, facing the River and the Houses of Parliament.

SCIENCE, ANATOMY, AND PHYSIOLOGY.—Classes and Lectures in all Elementary and Intermediate subjects provide complete instruction for the University and the Conjoint Board Examinations.

CLINICAL WORK.—The facilities for Clinical work are second to none in London. Clerks and Dressers, who work under the immediate supervision of the Staff, are appointed every three months in all General and Special Departments of the Hospital.

SPECIAL DEPARTMENTS.—The Special Departments in the Hospital provide Clinical Instruction in all Special subjects.

In connection with the DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY all Students attend the practice of the MATERNITY WARD before proceeding to work in the district.

THE PRIMARY F.R.C.S. CLASSES will commence on Tuesday, September 8th.

THE FINAL F.R.C.S. COURSE will commence during the second week in October.

ENTRANCE SCHOLARSHIPS.—One in Arts, free course for first 2 years of Study. Two in Science (Pre. F. Standard) £150 and £60. Two for University Students (Anatomy, Physiology, Pathology, Applied Chemistry, any two subjects) £100 and £60.

ST. THOMAS'S HOUSE.—A residential Club for Students has recently been opened, providing accommodation for some 60 resident Students, and including spacious Club rooms, etc. The SPORTS GROUND is within easy reach of the Hospital.

ANNUAL FEE.—£50 for each Year of Study. The Annual Fee covers the cost of all Lectures, Classes, etc., except the following: "Fevers," £3 3s. 0d.

AMALGAMATED CLUBS: Entrance Fee £2 2s. 0d.; Annual Subcription £5 5s. 0d.

Full particulars may be had by application to:

R. J. C. THOMPSON, C.M.G., D.S.O., M.D.Durh., M.R.C.P.Lond.,
Secretary to the Medical School, St. Thomas's Hospital, Lambeth Palace Road, S.E.1.
Professor LEONARD S DUDGEON, C.M.G., C.B.E., F.R.C.P.Lond., Dean.

THE UNIVERSITY OF LEEDS

SCHOOL OF DENTISTRY

The First Term begins on **October 1st, 1931.**

The degrees of B.Ch.D. and M.Ch.D., as well as a diploma, L.D.S., are conferred by ıe University.

The systematic Classes and Lectures are held in the School of Medicine and School of)entistry of the University, while the clinical instruction is given in the Leeds General Infirmary nd Dental School Hospital. The combined courses of study are arranged to meet the Jniversity Regulations in the first instance, but they also afford every opportunity for study o students preparing for the dental examinations of other Licensing Bodies.

Intending students can enter as pupils in the Dental School and can obtain instruction n the preliminary scientific subjects in the Department of Science of the University.

For further particulars application should be made to:—
The Warden, School of Dentistry, Leeds.

HE UNIVERSITY OF LEEDS

FACULTY OF MEDICINE

SCHOOL of MEDICINE and THE GENERAL INFIRMARY at LEEDS

The First Term begins on **October 1st, 1931.**

The degrees of M.B., Ch.B., Ch.M. and M.D. are conferred, and diplomas in Public Health and Psychological Medicine are granted by the University.

The systematic Classes and Lectures are held in the School of Medicine of the University while the Clinical instruction is given in the General Infirmary. The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for students preparing for the examinations of any licensing body.

The instruction in the subjects for the First Examination is given in the Department of Science of the University.

The Composition Fee for the Academic Courses and Clinical instruction is £242.

For further particulars application should be made:—
Regarding instruction given at the University to The Academic Sub-Dean, School of Medicine, Leeds.
Regarding instruction given at the Infirmary to The Clinical Sub-Dean, General Infirmary, Leeds.

UNIVERSITY OF DURHAM
COLLEGE OF MEDICINE
NEWCASTLE-UPON-TYNE.

The degrees in Medicine, Surgery, Hygiene, and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

The WINTER SESSION, 1931-32, will be commenced on THURSDAY, OCTOBER 1st.

Students can complete, at the University of Durham College of Medicine, Newcastle-upon-Tyne, the entire course of professional study required for the above degrees, diplomas, and licence; also for the Examinations of the Royal Colleges of Physicians and Surgeons and other Examining Bodies.

Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 600 beds, and there are facilities for the study of the various special subjects. General and Special Post-Graduate Courses are held.

Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 90 beds, with an annual indoor and outdoor attendance on 3,000 cases. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Mental Hospital, Newcastle. Clinical instruction in Infectious Diseases is given by the Medical Officer of Health in the City Hospital at Walkergate.

A Dental Department has been established, which includes a dental hospital, newly erected and equipped on the most modern lines, with abundant material for clinical teaching and facilities for training in practical dental mechanics.

Particulars may be obtained from the DEAN of the College.

UNIVERSITY OF BIRMINGHAM
FACULTY OF MEDICINE
(Associated with the General, Queen's, and Special Hospitals for Clinical Teaching.)

THE NEXT SESSION OPENS ON OCTOBER 5th, 1931.

The University grants Degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health; also Degrees and a Diploma in Dental Surgery.

The courses of instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine.

SCHOOL OF DENTISTRY. (University of Birmingham and Birmingham Dental Hospital)

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diploma and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £45 17s 6d. is offered annually.

PRE-MEDICAL AND PRE-DENTAL EXAMINATIONS.

The necessary Courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For Syllabus and further information apply to STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

THE UNIVERSITY OF SHEFFIELD.
Vice-Chancellor: A. W. PICKARD-CAMBRIDGE, M.A., D.Litt.

FACULTY OF MEDICINE.
Dean: Professor J. S. C. DOUGLAS, M.A., M.D., B.Ch., M.Sc.

The University grants Degrees in Medicine (M.B., Ch.B., M.D., Ch.M.), and in Dental Surgery (B.D.S., M.D.S.). It also grants a Diploma in Dental Surgery (L.D.S.). These are all open to men and women on equal terms.

The session 1931-1932 begins on October 7th.

Lectures and laboratory courses are given in the University, whilst clinical instruction is provided in the General and special Hospitals in the City.

Although the teaching is primarily directed towards the requirements of the University the instruction usually covers those of other examining bodies.

A number of resident hospital appointments are open to qualified students of the school.

Halls of Residence.—There are four Halls of Residence, one for men students and three for women students.

Scholarships.—A number of Entrance Scholarships are open to students wishing to enter the Faculty of Medicine. There are also post-graduate scholarships.

A prospectus containing all necessary details of the School, and one giving particulars of scholarships, may be obtained free from—

W. M. GIBBONS, Registrar.

MANCHESTER UNIVERSITY MEDICAL SCHOOL

POST-GRADUATE COURSES IN MEDICINE AND SURGERY.

The following arrangements have been made for Post-Graduate teaching in Manchester during 1931-32:

1. ANCOATS HOSPITAL:
   A Post-Graduate Day on Thursdays during the University terms. Syllabus available at the beginning of October. No fee charged.
2. PART-TIME COURSES:
   (a) In Ophthalmology (Royal Eye Hospital)—October 6th to November 19th, 1931. Tuesdays and Thursdays. Fee £3 3s.
   (b) In Diseases of the Skin (Skin Hospital, Quay Street)—February 8th to 20th, 1932. Twelve Clinical Demonstrations. Fee £3 3s.
   (c) In Practical Instruction in Local Anaesthesia and Minor Operative Surgery (Salford Royal Hospital)—Wednesdays, October 14th to December 2nd, 1931. Fee £3 3s.
   (d) In Practical Clinical Medicine (Salford Royal Hospital)—Wednesdays, February 3rd to March 9th, 1932. Fee £2 2s.
3. CLINICAL ASSISTANTSHIPS.—Maximum fee £4 4s.
4. RADIUM THERAPY.—Clinical Assistantships at the Manchester and District Radium Institute, one day per week, for three months. Fee £4 4s.

Syllabus and other information may be had on application to the Dean of the Medical School.

UNIVERSITY OF MANCHESTER

FACULTY OF MEDICINE.

The WINTER SESSION commences on OCTOBER 8th.

The Laboratories and Museums afford every facility to students and Graduates for Practical Instruction, as well as for Original Research

SCOPE OF INSTRUCTION.

Complete Courses of Instruction are offered for the Examinations of the University of Manchester and also for the Examinations of other Examining Bodies in the United Kingdom Post-Graduate Courses are held in preparation for the Diploma in Psychological Medicine (Manch.), the Certificate in Venereal Diseases and in various branches of Medicine and Surgery In the Dental Department Complete Courses are given preparing for the Degrees and Diploma in Dentistry granted by the University as well as for the Diploma of the Royal College of Surgeons of England, and other Dental Diplomas The Public Health Laboratories are situated at a short distance from the University The fullest opportunities are offered to Graduates and others in preparation for the Diplomas in Bacteriology in Pathology in Public Health, and in Veterinary State Medicine and for Special Certificates in School Hygiene and Factory Hygiene Particulars may be obtained from the Dean of the Medical School

OPPORTUNITIES FOR CLINICAL STUDY—ROYAL INFIRMARY AND OTHER HOSPITALS.

The Clinical Instruction is given in the new Royal Infirmary, opened in 1909 on a site near to the Medical School It is provided with every modern requirement for the treatment of the sick and the investigation of disease Instruction in Special Subjects is given in other Hospitals associated with the University A large number of beds in the General and in the Special Hospitals are available, thus affording unrivalled opportunities for Clinical Study

1 The Manchester Royal Infirmary	614 beds	6 Fever Hospital for Infectious Diseases	600 beds
2 The St. Mary's Hospitals for Women and Children	216 beds	7 Special Hospitals for Diseases of the Ear Throat and Chest, Skin, and the Christie Cancer Hospital	260 beds
3 Manchester Children's Hospital	190 beds		
4 Manchester Royal Eye Hospital	130 beds	8 Dental Hospital of Manchester	136 beds
5 Manchester Northern Hospital for Women and Children	73 beds	9 Ancoats Hospital	263 beds
		10 Salford Royal Hospital	

HOSPITAL APPOINTMENTS.

In consequence of the large number of Hospitals associated with or in the vicinity of, the University, exceptional opportunities are offered to Graduates to obtain Resident Hospital Appointments

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.

Two Open Entrance Scholarships for Graduates, each of the value of 160 guineas, are offered yearly in July In addition the Dreschfeld Scholarship of £20 per annum, the John Russell Medical Entrance Scholarship of £45 per annum, and other Entrance Scholarships of the value of £30 to £40 a year for two or three years, are also tenable in the Medical Faculty

Fellowships, Scholarships, etc., are also offered for competition to Students of the Faculty

RESIDENCE FOR UNDERGRADUATES.

There are Halls of Residence both for Men and for Women Students, and lodgings can be recommended. Prospectuses will be forwarded on application to the Registrar

THE UNIVERSITY OF LIVERPOOL.

FACULTY OF MEDICINE.

THE MEDICAL SCHOOL provides complete courses of instruction for the Examinations of the University of Liverpool, and also meets the requirements of other Universities and Examining Bodies in the United Kingdom.

Other Schools of the Faculty are:—The School of Dental Surgery, the School of Hygiene, the School of Tropical Medicine, and the School of Veterinary Science.

DEGREES AND DIPLOMAS IN THE FACULTY OF MEDICINE.

Bachelor of Medicine & Bachelor of Surgery	M.B., Ch.B.	Master of Veterinary Science	M.V.Sc.
Doctor of Medicine	M.D.	Doctor of Veterinary Science	D.V.Sc.
Master of Surgery	Ch.M.	Doctorate in Philosophy	Ph.D
Master of Hygiene	M.H.	Licence in Dental Surgery	L.D.S.
Master of Orthopaedic Surgery	M.Ch.Orth.	Diploma in Public Health	D.P.H.
Bachelor of Dental Surgery	B.D.S.	Diploma in Tropical Medicine	D.T.M.
Master of Dental Surgery	M.D.S.	Diploma in Tropical Hygiene	D.T.H.
Bachelor of Veterinary Science	B.V.Sc.	Diploma in Veterinary Hygiene	D.V.H.
		Diploma in Medical Radiology & Electrology	D.M.R.E.

Valuable Fellowships, Scholarships, and Prizes are offered for competition each year.

THE CLINICAL SCHOOL consists of FOUR GENERAL HOSPITALS: The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, and the Stanley Hospital; and of FIVE SPECIAL HOSPITALS: The Eye and Ear Infirmary, the Hospital for Women (including the Samaritan Hospital), the Royal Liverpool Children's Hospital, the Liverpool Maternity Hospital, and the St. Paul's Eye Hospital.

These Hospitals contain in all about 1,500 Beds.

The organization of these Hospitals to form one teaching Institution provides the Medical Student and Medical Practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom.

Infectious Diseases are studied in the Local and District Hospitals, and Mental Diseases at the County Mental Hospital, Rainhill.

For information on all matters concerning the curriculum application should be made to the Dean of the Faculty of Medicine, the University of Liverpool.

W. J. DILLING, Dean.

THE CLINICAL SCHOOL,

UNIVERSITY OF LIVERPOOL.

The following Hospitals are associated for purposes of Clinical Instruction, and form the Clinical School of the University:—

THE ROYAL INFIRMARY.	THE STANLEY HOSPITAL.	THE HOSPITAL FOR WOMEN (Including the SAMARITAN HOSPITAL).
THE ROYAL SOUTHERN HOSPITAL.	THE EYE AND EAR INFIRMARY.	LIVERPOOL MATERNITY HOSPITAL.
THE DAVID LEWIS NORTHERN HOSPITAL.	ROYAL LIVERPOOL CHILDREN'S HOSPITAL.	ST. PAUL'S EYE HOSPITAL.

The Staffs of these Hospitals form the Teaching Staff of the Clinical School. There are over 1,500 beds in the Associated Hospitals, affording a field for Clinical Instruction which is unrivalled in the United Kingdom.

Twenty-one house physicians and house surgeons are appointed every six months in the General Hospitals, and the majority of these receive salaries ranging from £60 to £100 per annum. A number of resident medical officers are also appointed at intervals to the Special Hospitals.

Information regarding the regulations for Hospital Practice may be obtained from the Secretary of the School,
J. C. MATTHEWS, M.A., M.D., F.R.C.P., 61, Rodney Street.

UNIVERSITY OF BRISTOL.

FACULTY OF MEDICINE.

The WINTER SESSION commences on 2nd October, 1931.

The University grants the Degrees of *Bachelor of Medicine* and Surgery (M.B., Ch.B.), Master of Surgery (Ch.M.), Doctor of Medicine (M.D.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.), as well as diplomas in Public Health (D.P.H.), and Dental Surgery (L.D.S.).

The lectures and laboratory courses which are given in the University, although primarily designed for the degrees and diplomas of the University, are equally adapted to those of other Universities and Examining Boards, and Students preparing for such external degrees and diplomas have equal attention paid to them.

Hospital Practice and Clinical Instruction are provided in the Hospitals and Asylum of the City, associated with the University for this purpose, and Students have exceptional opportunities of studying the practice of medicine from a large variety of cases.

Women are admitted to all Classes, Lectures, and Laboratory Practice, and attend them with men. The Halls of Residence for Men and for Women Students are situated in Clifton, near the University.

INCLUSIVE FEES—

For the M.B., Ch.B., curriculum ...	205 guineas.
For the B.D.S. curriculum, including Mechanical Laboratory	215 "
Do. excluding Mechanical Laboratory	155 "
For the L.D.S. curriculum, including Mechanical Laboratory	200 "
Do. excluding Mechanical Laboratory	140 "
For Mechanical Laboratory alone ...	60 "

For additional particulars apply to Professor Edward Mellanby, M.D., F.R.S., Dean.

UNIVERSITY COLLEGE, DUBLIN,
MEDICAL SCHOOL.

SESSION 1931-32.

WINTER SESSION—Lectures commence on October 12th; Introductory Course on October 6th.

PROFESSORS AND LECTURERS

Anatomy.
Professor—EDWARD PATRICK McLOUGHLIN, B.A., M.B., B.Ch., B.A.O.

Physiology.
Professor—JAMES M. O'CONNOR, B.A., M.D.

Zoology.
Professor—J. BAYLEY BUTLER, M.A., M.B., B.Ch., B.A.O.

Botany.
Professor—JOSEPH DOYLE, B.A., D.Sc.

Chemistry.
Professor—Vacant.
Lecturers—JOSEPH ALGAR, B.A., D.Sc. JOHN KEANE, M.Sc., Ph.D.

Physics.
Professor—JOHN J. NOLAN, M.A., D.Sc.
Lecturers—JOHN J. DOWLING, M.A., F.INST.P., PATRICK J. NOLAN, D.Sc.

Pathology and Bacteriology.
Professor—THOMAS J. O'FARRELL, F.R.C.S.I., D.P.H.
Lecturer in Special Pathology—W. M. CROLTON, B.A., M.D.

Public Health and Bacteriology.
Professor—WILLIAM D. O'KELLY, B.A., M.D., D.P.H.

Medicine.
Professor of Medicine—HENRY J. MOORE, M.D., D.Sc.
Professor of Systemic Medicine—JAMES N. MEENAN, M.B., B.Ch., B.A.O., D.P.H.

Surgery.
Professor of Surgery—HENRY L. BARNVILLE, B.A., M.D., M.Ch.
Professor of Systemic Surgery—HENRY S. MEADE, F.R.C.S.I.

Midwifery and Gynæcology.
Professor—ROBERT P. FARNAN, M.B., B.Ch., B.A.O.
Lecturer (Obstetrics)—JAMES J. O'KELLY, B.A., M.B., B.Ch., M.A.O.
Lecturer (Gynæcology)—REGINALD WHITE, F.R.C.S.I.

Materia Medica and Therapeutics.
Professor—THEOBALD W. J. DILLON, M.B.

Ophthalmology.
Professor—LOUIS WERNER, B.A., M.B., F.R.C.S.I.

Medical Jurisprudence.
Lecturer—JOHN McGRATH, M.Sc., M.B.

Dental Surgery.
Professor—T. SHERIDAN, M.D.S., F.R.C.S.I., L.D.S.

Dental Mechanics.
Professor—J. J. POTTER, M.D.S., L.D.S.

Orthodontia.
Lecturer—LAURENCE FLANAGAN, B.D.S., M.B., B.Ch.

All Scholarship Examinations in Medicine will be held on October 1st.

Introductory Course.—Particular attention is paid to beginners for whom a special Introductory Course is delivered at the commencement of the Winter Session, beginning on October 6th.

Regulations for Courses of Study for Degrees, and General Regulations containing information as to Scholarships, etc., may be obtained from the REGISTRAR, University College, Dublin.

ROTUNDA HOSPITAL, DUBLIN.

THE HOSPITAL contains 127 beds. Upwards of 2,000 maternity cases and 1,000 gynæcological patients are treated during the year. Besides the Hospital there is an extern Maternity Department with over 2,000 cases. The routine for Students consists of attendance at the Morning Lectures on Midwifery and Gynæcology, examination of patients in the Gynæcological Department, attendance at operations and the abnormal labours in the Hospital Wards and conduction of labour cases in the intern and extern departments. The Ante-Natal Clinic, the Infants' Ward and Dispensary, and Pathological Laboratory are available also. An X-Ray department is attached to the Hospital.

Qualified Students are allowed to assist at the major and perform some minor gynæcological operations.

The Hospital Courses are always going on during the year, and Students can join at any time. The Class is limited, therefore it is advisable to register in advance. Board and lodging can be obtained in the Hospital.

Extra classes in gynæcological diagnosis and operative midwifery are conducted by the Assistants to the Master.

Fees, one month, £6 6s., months other than the first, £4 4s., three months, £12 12s., L.M. Course, £21.

The L.M. certificate is given to qualified practitioners on examination after six months' attendance at the Hospital.

Full particulars from Bethel Solomons, M.D., Master, Rotunda Hospital.

UNIVERSITY OF DUBLIN
SCHOOL OF PHYSIC.
TRINITY COLLEGE.

THE WINTER SESSION will begin on 1st October, 1931.

All information regarding Courses for the Medical and Dental Degrees, for the Diploma in Public Health, for the Diploma in Gynæcology and Obstetrics, and for the Diploma in Psychological Medicine may be obtained on application to the Registrar, School of Physic, Trinity College, Dublin.

THE APOTHECARIES' HALL OF IRELAND.

DIPLOMA in MEDICINE SURGERY, MIDWIFERY and PHARMACY.

EXAMINATIONS are held twice yearly, January and June.

For particulars apply to THE SECRETARY, Apothecaries Hall, 95 Merrion Square, Dublin.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

UNIVERSITY OF EDINBURGH.

Principal—Sir THOMAS H. HOLLAND, K.C.S.I., K.C.I.E.

The WINTER SESSION, 1931-32, opens on October 6th and closes on March 18th.
The SUMMER SESSION, 1932, opens on April 19th and closes on July 1st.

FACULTY OF MEDICINE.

Dean—Professor SYDNEY SMITH, M.D., D.P.H.

The Faculty embraces 18 Professors and 80 Lecturers, and attached to these there are about 40 Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz.:—

PROFESSORS.

Chemistry—George Barger, D.Sc., F.R.S.
Zoology—J. H. Ashworth, D.Sc., F.R.S.
Botany—Wm. Wright Smith, M.A., F.R.S.
Anatomy—J. C. Brash, *M.C.*, M.A., M.D.
Physiology—Sir E. Sharpey-Schafer, LL.D., F.R.S.
Materia Medica—Alfred J. Clark, *M.C.*, M.D., F.R.C.P.
Pathology—
[illegible] Mackie, M.D.
[illegible] Smith, M.D., D.P.H.
LeLean, C.B., C.M.G., F.R.C.S.
Medicine—W. T. Ritchie, M.D.
Surgery—D. P. D. Wilkie, M.D., Ch.M.
Midwifery and Gynaecology—R. W. Johnstone, M.A., M.D.
Clinical Surgery—John Fraser, Ch.M., M.D.
Clinical Medicine—Edwin Bramwell, M.D., W. T. Ritchie, M.D., and D. Murray Lyon, M.D.
Tuberculosis—Sir Robert W. Philip, M.D.
Therapeutics—David Murray Lyon, M.D.
Psychiatry—George M. Robertson, M.D.

LECTURERS.

Anatomy—E. B. Jamieson, M.D., F. E. Jardine, M.B., W. O. Wood, Ch.M.
Applied Anatomy—F. E. Jardine, M.B.
Histology—May L. Cameron, M.A., B.Sc., M.B.
Biochemistry—Philip Eggleton, M.Sc., D.Sc.
Biophysics—W. A. Bain, B.Sc.
Physiology of the Nervous System—A. Ninian Bruce, M.D., D.Sc.
Materia Medica—C. M. Scott, M.B.
Pathology—Theodore Rettie, D.Sc., W. G. Millar, M.B.
Morbid Anatomy—J. Davidson, M.B.
Bacteriology—J. M. Alston, M.B., H. J. Gibson, M.B.
Physics—G. A. Carse, M.A., D.Sc., J. Paton, M.A., B.Sc.
Chemistry—Edgar Stedman, B.Sc., Ph.D., C. P. Stewart, M.Sc., Ph.D., Ellen Stedman, M.Sc.
Zoology—C. H. O'Donoghue, D.Sc., A.D. Hobson, M.A., A. L. Craig-Bennett, B.A.
Tropical Diseases—Lt.-Col. E. D. W. Greig, C.I.E., M.D.
Medical Entomology and Parasitology—J. H. Ashworth, D.Sc., F.R.S., A. E. Cameron, M.A., D.Sc., T. W. M. Cameron, D.Sc.
Tropical Hygiene—J. du P. Langrishe, D.S.O., M.B., B.Ch. (conjointly with Professor).
Public Health—John Guy, M.D.
Medicine—J. G. McCrie, M.B.
Surgery—J. J. M. Shaw, M.A., M.D.
Clinical Instruction in Infectious Fevers—Alexander James, M.D., W. T. Benson, M.D.
History of Medicine—J. D. Comrie, M.A., B.Sc., M.D.
Surgical Pathology—K. Paterson Brown, M.B.
Venereal Diseases—David Lees, D.S.O., M.B.
Psychology—J. Drever, M.A., B.Sc., D.Phil.
Radiology—J. Duncan White, M.B., D.M.R.E.
Neuro-Pathology—F. E. Reynolds, M.D.
Psychiatry—William McAlister, M.B.
Therapeutics—A. R. Gilchrist, M.B.
Mental Deficiency—R. D. Clark, B.Sc.
Orthopaedics—W. A. Cochrane, M.B.
Clinical Midwifery—R. W. Johnstone, M.D., James Young, M.D., H. S. Davidson, M.B., Douglas Miller, M.D., W. F. T. Haultain, M.B., E. C. Fahmy, M.B., John Sturrock, M.B., Clifford Kennedy, M.B.
Clinical Instruction in Diseases of Children—Charles McNeil, M.D., N. S. Carmichael, M.B., Ch.B., L. H. F. Thatcher, M.D., Gerda Herzfeld, M.B., and Norman Dott, M.B.

CLINICAL TEACHING STAFF, ROYAL INFIRMARY.

Clinical Surgery—Geo. L. Chiene, M.B., W. J. Stuart, M.B., J. W. Struthers, M.B., D. P. D. Wilkie, M.D., Ch.M., Henry Wade, M.D., John Fraser, M.D., Ch.M., J. M. Graham, Ch.M., A. Pirie Watson, Ch.M., F. E. Jardine, M.B., W. O. Wood, M.D., Ch.M., J. J. M. Shaw, M.D., Walter Mercer, M.B., W. A. Cochrane, M.B., K. Paterson Brown, M.B., R. Leslie Stewart, M.B., T. McW. Millar, M.B.

Clinical Medicine—D. Chalmers Watson, M.D., Edwin Bramwell, M.D., Edwin Matthew, M.D., W. T. Ritchie, M.D., John Eason, M.D., D. Murray Lyon, M.D., J. D. Comrie, M.D., Alex. Goodall, M.D., G. D. Mathewson, M.B., A. Fergus Hewat, M.D., H. L. Watson-Wemyss, M.D., W. D. D. Small, M.D., W. A. Alexander, M.D., T. R. R. Todd, M.D., A. R. Gilchrist, M.B., J. K. Slater, M.B.

Clinical Gynaecology—R. W. Johnstone, M.D., H. S. Davidson, M.B., James Young, M.D., W. F. T. Haultain, M.B., Douglas Miller, M.B., E. C. Fahmy, M.B.

Diseases of the Larynx, Ear, and Nose—John S. Fraser, M.B., J. G. Lithgow, M.B., W. T. Gardiner, M.B., G. Ewart Martin, M.B.

Diseases of the Skin—Fredk. Gardiner, M.D., R. Cranston Low, M.D., Robert Aitken, M.D., G. H. Percival, M.B., Ph.D.

Diseases of the Eye—A. H. H. Sinclair, M.D., H. M. Traquair, M.D., E. H. Cameron, M.B., C. W. Graham, M.B.

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Fever Hospital, and the Royal Edinburgh Hospital for Mental Disorders. Upwards of 2,760 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

The minimum Class Fees for M.B. and Ch.B., including Hospital Fee (£12), amount to about £260, and the Matriculation and Examination Fees to £47 15s. 6d. An additional Fee of £21 is payable by those who proceed to M.D., and £21 by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,600, and that of the other Bursaries, etc., tenable by Students of Medicine, amounts to about £1,820.

POST-GRADUATE INSTRUCTION.—Courses of instruction are given for the University Diplomas in Public Health, Tropical Medicine and Hygiene, Psychiatry, and Radiology. These Diplomas are open to approved registered practitioners as well as to graduates in Medicine and Surgery of the University. Courses of instruction for the Diploma in Tropical Veterinary Medicine are also given. This Diploma is open to those holding an approved Veterinary qualification registrable by the Royal College of Veterinary Surgeons. The University also takes part in the Courses given under the auspices of the Edinburgh Post-Graduate Courses in Medicine. In the departments of the Faculty of Medicine provision is made for research by students of graduate standing. In the University laboratories facilities will be provided for candidates for the Degree of Ph.D. whose applications to engage in research have been accepted by the Senatus.

A Syllabus and further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Dean of the Faculty of Medicine; and for Degrees in the Faculties of Arts, Science, Divinity, Law, and Music, from the Deans of these Faculties, or from the Secretary; and full details are given in the University Calendar, published by James Thin, 55, South Bridge, Edinburgh. Price, by post in June, 1931.

By authority of the Senatus, W. A. FLEMING, Secretary.

ROYAL COLLEGE of PHYSICIANS of EDINBURGH ROYAL COLLEGE of SURGEONS of EDINBURGH ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE [illegible] L.R.C.S.E., and [illegible] LOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1931-32. Curriculum, [illegible] The University grants the Degree [illegible] to Mr. DAVID [illegible] urgery (M.B., Ch.B.), Master of [illegible] burgh, or to [illegible] icine (M.D.), Bachelor of Dental [illegible] gent Street, [illegible] tal Surgery (M.D.S.), as well as [illegible] at Edin- [illegible] and Dental Surgery (L.D.S.).

[illegible] and laboratory courses [illegible] ary [illegible] ch primarily designed [illegible] sity, are equally ada[illegible] Boards, and Stu[illegible] iplomas have eq[illegible]

[illegible] may be had on application to THOMSON, 49, George Square, Edinburgh. Mr. WALTER HURST, 242, St Vincent Street, Glasgow, Inspectors and Treasurers of the Royal (Dick) College of Veterinary Medicine, Edinburgh and Glasgow respectively.

[illegible] Instruction are pr[illegible] associated with th[illegible]ASSES or POSTAL TUITION. Full pre[illegible]ave exceptional opportunities for Laboratory Classes with DEMONSTRATIONS will [illegible] from a large variety [illegible]ence shortly. CORRESPONDENCE COURSES [illegible]an. and later Exams. should begin now.—ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

UNIVERSITY OF OXFORD.

DIPLOMA IN OPHTHALMOLOGY.

The next Examination begins on June 20th, 1932. The two months' Course of Instruction starts on April 25th, 1932.

For further information apply to—

6, Holywell, Oxford. — P. H. ADAMS, Margaret Ogilvie Reader in Ophthalmology.

(Incorporated 1505.)

Royal College of Surgeons of EDINBURGH.

COPIES OF REGULATIONS for the FELLOWSHIP, LICENCE, HIGHER DENTAL DIPLOMA, and LICENCE in DENTAL SURGERY, containing dates of Examinations, may be had on application to—

49, George Square, Edinburgh. — DAVID THOMSON, Clerk of the College.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes with DEMONSTRATIONS will shortly. CORRESPONDENCE COURSES Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Royal College of Physicians OF EDINBURGH.

The EXAMINATIONS for the LICENCE of the College (as a single qualification) for [illegible] year will be held on the *First Wednesday* and the following days of every month (except September and October).

Candidates for the LICENCE (as a single qualification) must send their names to the Secretary one week before the date of the Examination at which they propose to present themselves.

The EXAMINATIONS for the MEMBERSHIP of the College are held on the *Second Tuesday* and the following days of *January, April, July* and *October*.

Candidates for the MEMBERSHIP must submit their applications and testimonials to the Secretary one month before the date at which they wish to appear for Examination.

For the Regulations in regard to the above qualifications granted by the College, and all other information, application may be made to the Secretary.

F.R.C.S.(Edin.).

CLASSES, with Museum and Ward Demonstrations, for next Exam., will commence shortly. Correspondence work also. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

SCHOOL OF MEDICINE
OF
THE ROYAL COLLEGES, EDINBURGH.
(Founded 1505)

WINTER SESSION, 1931-32,
Opens 6th October.

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards.

One-half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School.

The School offers a large choice of Teachers upon the various subjects comprised in the Medical Curriculum.

The Calendar of the School, giving all necessary information regarding Classes, Fees, and Examinations, will be published on September 2nd; a copy may be obtained (price 6d.) on application to the DEAN OF THE SCHOOL, Surgeons' Hall, Edinburgh.

UNIVERSITY OF ST. ANDREWS
(SCOTLAND)

Chancellor: The Rt. Hon. STANLEY BALDWIN, M.P., P.C., LL.D.
Rector: Sir WILFRED THOMASON GRENFELL, K.C.M.G., M.D., LL.D., F.R.C.S.
Vice-Chancellor and Principal: Sir JAMES COLQUHOUN IRVINE, C.B.E., D.Sc., I.L.D., Sc.D., F.R.S.

FACULTY OF MEDICINE.
Dean: Professor FRANCIS JAMES CHARTERIS, M.D.

The University confers the following DEGREES AND DIPLOMAS: M.B., Ch.B., M.D., Ch.M., Ph.D., D.P.H., L.D.S., D.P.D. (all open to men or women).

SESSION 1931-32 opens October 9th, 1931. The whole curriculum may be taken at Dundee, or the first two years may be taken in St. Andrews, the remaining three in Dundee.

CLINICAL INSTRUCTION at Dundee Royal Infirmary, Dundee Dental Hospital, and other Medical and Surgical Institutions in Dundee.

BURSARY (Scholarship) Competitions. June annually. Entries due May 9th.

BURSARIES FOR MEDICAL STUDENTS.—At St. Andrews: Taylour Thomson (for women), 1 of £40 and 1 of £30 for 5 years; Malcolm (for men and women), £40 for 5 years, vacant annually. At Dundee: Hepburn (for men or women), £25 for one year, vacant annually.

BURSARIES FOR WHICH MEDICAL STUDENTS ARE ELIGIBLE.—At St. Andrews: About 14 Bursaries ranging in value from £50 to £10, tenable for 3 or 4 years (6 for men or women, 7 for men only, 1 for women only), vacant annually. At Dundee: About 8 Bursaries from £50 to £40, for 4 years.

RESIDENTIAL ENTRANCE SCHOLARSHIPS FOR MEN.—At St. Andrews: Five or six of £100 competed for annually in June. Medical students are eligible.

FEES for complete M.B., Ch.B. Course, exclusive of Examination Fees, Hospital Fees, etc., £182.

PRELIMINARY EXAMINATION.—September and March. Entries due August 11th and February 9th.

PRE-REGISTRATION EXAMINATION (Physics and Chemistry).—September, December, and June. Entries due August 31st, November 4th, May 2nd.

RESIDENCE HALLS for Men and Women at St. Andrews; for Women at Dundee.

Provision made for POST GRADUATE STUDY AND RESEARCH.

Full information may be got from the Secretary of the University, 71, North Street, St. Andrews, or the Dean of the Faculty of Medicine, Westlands, St. Andrews.

THE ROYAL DENTAL HOSPITAL OF LONDON SCHOOL OF DENTAL SURGERY
(University of London),
Leicester Square, London, W.C.

SESSIONS COMMENCE OCTOBER and MAY.

Students are admitted for the curriculum for the B.D.S. Degree and the L.D.S. Diploma.

DENTAL MECHANICS

Pupils may join at the commencement of either the May or October Sessions for the training in Dental Mechanics specified in the curriculum.

HOSPITAL PRACTICE.

The School is thoroughly equipped. The Clinic of the Hospital is unrivalled.

POST GRADUATE INSTRUCTION.

Classes can be arranged for Post Graduate instruction in all branches of Dental Surgery. Write for further particulars and School Calendar to the DEAN as above.

THE WELSH NATIONAL SCHOOL OF MEDICINE.

The next Session will open on October 1st. The Courses of Instruction are open to both men and women students and qualify for the Degrees in Medicine and Surgery of the University of Wales and for the Degrees and Diplomas of other Examining Bodies. Hospital Instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognised Institutions. Full facilities are available for every branch of study.

Medical Practitioners wishing to prepare for the Diploma in Public Health or for the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the School.

Prospectuses can be obtained on application to the Secretary, Welsh National School of Medicine, The Parade, Cardiff.

SOCIETY OF APOTHECARIES OF LONDON

MASTERY OF MIDWIFERY.

Examinations will be held beginning Monday, November 16th, 1931, and Tuesday, May 17th, 1932.

For regulations, apply to the Registrar, Water Lane, E.C.4.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

ALL MEDICAL EXAMINATIONS

Are you preparing for any MEDICAL or SURGICAL EXAMINATION?

Do you wish to coach in any branch of Medicine or Surgery?

Send Coupon below for our valuable publication

"Guide to Medical Examinations."

Principal Contents:

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The Diploma in Ophthalmology.
The Diploma in Laryngology and Otology.
The Diploma in Radiology.
The L.D.S. and all Dental Exams.

¶ The activities of the Medical Correspondence College cover every department of Medical, Surgical, and Dental tuition.
¶ Desultory reading is wasteful for examination purposes.
¶ The secret of success at examinations is to concentrate on essentials.
¶ First attempt success at examinations is the sole aim of our courses
¶ Concentration on the exact requirements is assured by our intensive Revision Courses.
¶ The intensive postal, oral, clinical, and practical courses of the College in every subject are always in progress and meet every requirement.

Post-graduate coaching for all the higher examinations, and hospital attendance arranged in any special department of medicine or surgery.

We can satisfy every requirement. Send for your copy now!

The Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck St., Cavendish Sq., London, W.1. Tel.: WELBECK 8901.

Sir,—Please send me your "Guide to Medical Examinations" by return.

Name . . . . . .
Address . . . . . .
. . . . . .
Examination in which interested . . . . . .

ST. MUNGO'S COLLEGE,
GLASGOW.

THE MEDICAL SCHOOL OF THE GLASGOW ROYAL INFIRMARY.

SESSION 1931-32.

The WINTER SESSION will be opened on MONDAY, OCTOBER 12th, 1931.

LECTURES AND DEMONSTRATIONS.

*Elementary Physics, 4.30 p.m., 4 days weekly.—Prof. Cameron, B.Sc.
*Practical Chemistry, one day per week.—Prof. Alex R. Steven, B.Sc., F.I.C.
*Chemistry, 9 a.m.—Prof. Alex R. Steven, B.Sc., F.I.C.
Biology (including practical)—Prof. A. J. Allison.
**Senior Anatomy*, 11 a.m., *Junior Anatomy*, 3 p.m., Practical Anatomy, 9 a.m. to 5 p.m.—Prof. James Battersby, F.R.C.S.(Eng.), F.R.F.P.S.G.
*Surgery, 11 a.m., Operative Surgery, 4 p.m.—Prof. John A. C. Macewen, M.B., C.M., B.Sc., F.R.F.P.S.G.
Physiology, 12 noon.—Prof. Paulds, M.B., C.M., F.R.F.P.S.G.
Clinical Surgery, 9 a.m.—The Surgeons of the Glasgow Royal Infirmary.
*Midwifery, 2 p.m.—Prof. W. C. Armstrong, M.B., Ch.B.
*Practice of Medicine, 12 noon.—Prof. John Henderson, M.D., F.R.F.P.S.G.
*Clinical Medicine, 9 a.m.—The Physicians of the Glasgow Royal Infirmary.
Materia Medica, 1 p.m., or as arranged.—Prof. Crawford, M.D., F.R.F.P.S.G.
*Pathology, 3 p.m.—Pathologist to Royal Infirmary.
*Ophthalmology, 3 p.m., Tuesdays and Fridays, or as may be arranged.—Professor Barrie, M.B., Ch.B., F.R.F.P.S.G.
*Diseases of the Throat, Nose, and Ear, 11 a.m.—*Prof. James Harper, M.A., M.B., Ch.B.*, F.R.F.P.S.G.
Diseases of the Skin, twice weekly as may be arranged.—Prof. George Harvey, M.B., Ch.B.
*Gynaecology, 12 noon.—Prof. W. C. Armstrong, M.B., Ch.B.
Hospital and Dispensary, daily, 2 p.m.

The fees for all the Lectures, including Hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons, amount to about £100.

Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction and Preliminary Examination are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The Syllabus of the Medical Curriculum, giving particulars of the classes, fees, etc., may be had gratis on application to the Secretary of the Medical Faculty, 86, Castle Street, Glasgow, or from

THOMAS B. FERGUSON, Secretary.
97, West Regent Street, Glasgow.

*These classes qualify for graduation in Medicine in the University of Glasgow.

THE POLYTECHNIC,
REGENT STREET, W.1.
SCHOOL OF CHEMISTRY.

Head of the School:
H. LAMBOURNE, M.A., M.Sc., F.I.C.

DAY COURSE in CHEMISTRY, PHYSICS, and BIOLOGY, and EVENING COURSE in CHEMISTRY and PHYSICS for the PRE-MEDICAL EXAMINATION of the CONJOINT BOARD.

New term commences:
Day - - September 15th, 1931.
Evening - September 28th, 1931.

Fee to London Students:
Day - - £8 8s per term.
Evening - £2 2s per term.

Early application should be made to the Director of Education.

Streatfeild Research Scholarship
IN MEDICINE AND SURGERY.

In accordance with the Trust founded by Mrs. Eliza Streatfeild for the promotion of Research in Medicine and Surgery, a Committee of the Royal College of Physicians of London and of the Royal College of Surgeons of England will proceed (in October) to appoint a Streatfeild Research Scholar.

The emolument will probably be £250 per annum, and the tenure of the Scholarship three years, at the discretion of the Committee.

A form stating the nature of the particulars which each candidate is required to give may be obtained from the Registrar, Royal College of Physicians, Pall Mall East, S.W.1.

Applications should reach the Registrar not later than Wednesday, September 23rd. The envelope should be marked "Streatfeild Scholarship."

Royal Infirmary, Edinburgh.

In this Hospital (with 1,011 beds) Clinical Instruction is given by the Honorary Staff of Physicians and Surgeons to Male and Female Students. Special Instruction is given in the Medical Department on the Diseases of Women, Physical Diagnosis, Diseases of the Skin, and Radiology; and in the Surgical Department on Diseases of the Eye, the Ear and the Larynx, and in Dental Surgery. Separate Departments and Wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear and the Throat, the Skin, and Radiology; also to Cases of Incidental Delirium or Insanity. Post-mortem Examinations are conducted in the Anatomical Theatre by the Pathologist, who also gives Practical Instruction in Pathological Anatomy and Histology.

APPOINTMENTS.

No fees are charged for any Medical or Surgical Appointments in this Hospital, which are as follows:

1. Resident Physicians and Surgeons, who must be registered as legally qualified Practitioners, are from time to time appointed by the Managers on the recommendation of the Physicians and Surgeons. The holders of these offices live in the house free of charge. The appointment is for six months, but may be renewed at the end of that period by recommendation.

2. Non-resident House Physicians and Surgeons and Clinical Assistants, who must be registered as legally qualified Practitioners, are appointed by the Managers on the recommendation of the Physicians and Surgeons. The appointment is on the same terms as that of the Resident Physicians and Surgeons.

3. Clerks and Dressers are appointed by the Physicians and Surgeons. These appointments are open to all Students and Junior Practitioners holding Hospital Tickets.

Assistants in the Pathological Department are appointed on the recommendation of the Pathologist.

HENRY MAW,
Secretary & Treasurer.

County Borough of Blackburn

ASSISTANT SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from registered Medical Practitioners for the post of Assistant School Medical Officer and Assistant Medical Officer of Health (male) to act under the supervision of the Medical Officer of Health, who is also the School Medical Officer.

The person appointed must devote the whole of his time to the service of the Corporation.

The duties of the office will consist largely, but not exclusively, of work in the School Medical Department, and a Knowledge of these duties is essential. Preference will be given to candidates with a Diploma in Public Health and having experience in Infectious Diseases.

The salary will be £600 per annum, to be increased by annual increments of £50 to a maximum of £700 per annum.

Forms of application and further particulars of the duties and conditions of the appointment may be obtained from the Medical Officer of Health, Victoria Street, Blackburn.

Completed forms, accompanied by copies of three recent testimonials, must reach me by Wednesday, September 9th, and should be endorsed on the envelope "Assistant School Medical Officer."

Canvassing will disqualify.

BRIGGS H. MARSDEN,
Town Clerk.

Town Hall, Blackburn.
August 25th, 1931.

Hampshire County Council.

ASSISTANT COUNTY MEDICAL OFFICER.

Applications are invited for the post of Assistant County Medical Officer. Preference will be given to candidates who possess a Diploma or Degree in Public Health, but experience, and previous experience in Tuberculosis work is desirable. Experience in other departments of Public Health work, including Supervision of School Children, Maternity and Child Welfare, and Venereal Diseases, will be considered an advantage.

Salary £600 a year, rising by annual increments of £25 to £750 (subject to deductions under the Local Government and Other Officers' Superannuation Act, 1922). In addition, travelling expenses and subsistence allowance.

When the County Districts Area has been organized, there may be an opportunity of securing a better appointment at increased remuneration.

Applications, with copies of not more than three recent testimonials, upon a form to be obtained from the County Medical Officer of Health, Castle, Winchester, should be sent to him as soon as possible, and not later than the 12th. Canvassing is prohibited.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow.

ANNUAL SUBSCRIPTION £1. ENTRANCE FEE 10/-.

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including indemnity of £2,500 and costs, and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

Corporation of Kingston-upon-Hull and the Hull and Goole Port Sanitary Authority.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Kingston upon Hull and the Hull and Goole Port Sanitary Authority invite applications for the appointment of a male Assistant Medical Officer of Health, at a salary of £600 per annum, rising by annual increments of £25 to £700 per annum.

Applicants must be registered Medical Practitioners, under 40 years of age, and must hold a registered degree or diploma in Public Health or State Medicine.

The person appointed will be engaged primarily on routine Port Sanitary Work, Medical Inspection of Aliens, Bacteriological Work, and the control of Infectious Diseases, but may be called upon to do work in any other department of the Public Health Services, in accordance with the Corporation's scheme for the interchange of medical staff.

Experience in Port Sanitary Work and Infectious Diseases will be considered as important qualifications for the appointment.

The candidate appointed will be required to devote the whole of his time to the duties of the office, and also to contribute at the rate of 5 per cent of his salary to a superannuation fund under the Local Government and Other Officers Superannuation Act, 1922.

Forms of application and further particulars of the duties and conditions of service can be obtained from the Medical Officer of Health, Guildhall, Hull.

Applications, endorsed "Assistant Medical Officer of Health," together with copies of three recent testimonials, must reach the above-mentioned not later than the first post on Monday, September 14th

Guildhall, J. R. HOWARD ROBERTS,
Hull 1931. Town Clerk.

City of Leeds.

CHIEF ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified and registered Medical Practitioners for the post of Chief Assistant Medical Officer of Health for the City of Leeds Candidates must not be more than 40 years of age and, in addition to previous experience in Public Health administration, should also have had experience in one or more of the special branches of Preventive Medicine—e.g., School Medical Work, Tuberculosis, Maternity and Child Welfare, etc

The person selected will be required to devote his whole time to the office, and to perform such duties as are allotted to him by the Medical Officer of Health It will be necessary for him to enter into an agreement of service with the Corporation, terminable by three months' notice on either side, and to pass a medical examination, and contribute to the Superannuation Fund established under the Local Government and Other Officers Superannuation Act, 1922

The salary will be £900 per annum Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, endorsed "Chief Assistant Medical Officer," must be delivered at my office, 26, Great George Street, Leeds, not later than 10 a.m on Thursday, September 10th

THOS THORNTON, Town Clerk.

City of Liverpool.

RESIDENT ASSISTANT MEDICAL OFFICER (Male)

Applications are invited for the appointment of Resident Assistant Medical Officer at the MILL ROAD INFIRMARY (800 beds), Liverpool, for a period of one year, at a salary after the rate of £200 per annum, together with the usual residential allowances. The appointment will be made in accordance with the Standing Orders of the City Council.

Candidates must be single, fully qualified and registered

Applications, stating age, qualifications, etc, with copies of three recent testimonials, to be received by the undersigned not later than Friday, September 18th.

Brougham Terrace, WALTER MOON,
Liverpool. Town Clerk.
August 31st, 1931.

City of Birmingham Education Committee.

APPOINTMENT OF SPECIAL SCHOOLS MEDICAL OFFICER and DIRECTOR OF CHILD GUIDANCE CLINIC.

The Birmingham Education Committee intend shortly to appoint a full time Medical Officer (man) to act in the following capacities:

(i) Special Schools Medical Officer
(ii) Director of Child Guidance Clinic to be established in the near future

Candidates for the post should be fully qualified Medical Practitioners, they should have had good experience in the treatment of diseases of children, and should possess a knowledge of psychological medicine. Psychiatric experience is essential.

The salary offered will depend on the qualifications and experience of the selected candidate, but will not exceed £800 per annum

The successful candidate will be required, if necessary, to train in Child Guidance Work, and in this event a Fellowship will be available.

Canvassing, direct or indirect, will be regarded as a disqualification

Further information as to the conditions of the appointment may be obtained from the Chief Education Officer, Education Offices, Council House, Birmingham, to whom all applications should be addressed Applications should give full particulars as to age, training, qualifications, and special experience, and should be posted in time to reach the Chief Education Officer on or before September 21st.

British Medical Association.

APPOINTMENT OF SCOTTISH MEDICAL SECRETARY

The Council of the British Medical Association is prepared to receive applications from registered medical practitioners for the appointment of Scottish Medical Secretary He will be required to live in Edinburgh, and to give his whole time to the duties of his office Duties to commence as arranged, but not earlier than January 1st, 1932 and the appointment to be subject to six months' notice on either side

Salary £950, rising to £1,250 by annual instalments of £50, subject to deductions for superannuation

Applications, stating experience and age, with not more than three recent testimonials, should be received by the Medical Secretary, British Medical Association, Tavistock Square, W.C.1, not later than by first post, October 1st, 1931.

Canvassing not allowed

ALFRED COX,
Medical Secretary.

Caernarvonshire County Council.

Applications are invited for the post of DEPUTY MEDICAL OFFICER OF HEALTH and ASSISTANT SCHOOL MEDICAL OFFICER for the County of Caernarvon

Candidates must hold a Diploma in Public Health, and a knowledge of the Welsh language is desirable

Salary £700 per annum, rising by annual increments of £25 to a maximum of £800 per annum

The successful candidate must devote the whole of his time to the duties of the office, and will not be allowed to engage in private practice.

Applications, on forms to be obtained from the undersigned and endorsed "Deputy Medical Officer," must be delivered at this office on or before September 12th

DAVID G JONES,
Clerk to the County Council.

County Offices, Caernarvon
August 12th, 1931.

Weir Hospital,

Grove Road, Balham, S.W.12

RESIDENT MEDICAL OFFICER (male, unmarried) required for War Memorial Maternity Home attached to above Hospital Candidates must be fully qualified and duly registered Salary £150 per annum with board, residence, and laundry Applications with copies of testimonials, to be sent to the Secretary Superintendent, from whom further information may be obtained

Staffordshire County Council.

COUNTY BACTERIOLOGICAL LABORATORY.

Applications are invited from registered Medical Practitioners for the post of ASSISTANT BACTERIOLOGIST and PATHOLOGIST

Candidates must be under 35 years of age, and previous experience in bacteriology and morbid histology is essential

The Laboratory is a new building and has all the usual up-to-date equipment. Reasonable opportunity will be given for research in connection with the work.

Commencing salary £700 per annum, rising by annual increments of £50 to a maximum of £850, subject to the usual deductions under the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination as required by the Council for the purposes of that Act, and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary The appointment will be terminable by three months' notice on either side

Applications, with copies of three recent testimonials, should be received by me not later than September 25th.

County Buildings, EUSTACE JOY M.A.,
Stafford Clerk of the County Council

Metropolitan Borough of Bethnal Green

APPOINTMENT OF ASSISTANT MEDICAL OFFICER.

The Bethnal Green Borough Council invites applications for the appointment of a full time Assistant Medical Officer Candidates must be under 45 years of age, have had experience in maternity and child welfare work and of the diagnosis of infectious diseases and must possess the Diploma of Public Health The duties of the officer appointed will be mainly maternity and child welfare work Salary £ 3 0 per annum rising by annual increments of £25 to a maximum of £700 per annum

The appointment will be subject to the candidate satisfactorily passing a medical examination, and to the Council's Superannuation Acts and By laws and Standing Orders

Applications must be on forms obtained from me, and returned so as to reach me at the Town Hall, Bethnal Green, London, E.2, by noon on Monday, September 21st.

Canvassing will disqualify a candidate

DAVID J KEEP, Town Clerk.

County Borough of Oldham.

BOUNDARY PARK MUNICIPAL HOSPITAL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the post of a Male Assistant Resident Medical Officer

Salary £200 per annum, with board, residence, and laundry

Candidates should be unmarried

The appointment will, in the first instance, be for a period of six months The successful applicant, however, will be eligible for reappointment for a further period of six months

The Hospital comprises 355 beds with facilities for gaining experience in medicine, surgery, midwifery, and diseases of children

Applications, on forms to be obtained from the undersigned Resident Assistant Medical Officer should be sent to the Medical Officer of Health, Town Hall Oldham and should be received not later than September 16th

JAMES B WILKINSON
M.D. Officer of Health

Town Hall, Oldham August 25th 1931

Queen's Hospital for Children, Hackney Road, London, E.2

HOUSE PHYSICIAN required on November 1st Six months appointment Salary at the rate of £100 a year, with board, lodging, and washing

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before September 30th.

CHARLES H. BESSELL,
September 1st, 1931. Secretary.

Woolwich and District War Memorial Hospital.

Shooters Hill, London, S.E.18

GENERAL HOSPITAL—112 Beds.

RESIDENT MEDICAL OFFICER

The Board of Management invites applications from suitably qualified male candidates, with special knowledge of surgery, for the post of Resident Medical Officer, at a salary of £175 per annum, with board, residence, and laundry, for one year from the date of appointment, with renewal of appointment for one year at a salary of £200, if approved by the Board of Management.

Applications (accompanied by copies of not more than three recent testimonials), stating age, qualifications, experience, and nationality, should be addressed to the Secretary (at the Hospital) to reach him not later than first post on Monday, September 14th. Candidates should also state when they would be free to assume duty.

General Lying-In Hospital,

York Road, Lambeth, S.E.1.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER AND ANÆSTHETIST. Salary at the rate of £100 per annum, with board, residence, and laundry. Appointment for three months commencing October 1st. The successful candidate will, subject to satisfactory service, be required to succeed to the Senior Medical Officer's post for a further three months.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned not later than September 18th next.

LILY HEARN, Secretary.

Royal Hospital, Richmond,

SURREY.

JUNIOR HOUSE SURGEON (male) required to take up duties on October 1st. Salary at the rate of £100 per annum, with board, furnished apartments, and washing. Candidates must be fully qualified, registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the senior post. Applications, stating age, experience, together with copies of three recent testimonials, must be forwarded to me not later than September 17th.

RICHARD ALLEN, Secretary.

Royal Northern Hospital,

Holloway, N.7.

Applications are invited for the post of HOUSE SURGEON, vacant on October 15th. The appointment is for a period of nine months (six months as House Surgeon and three months as Casualty Officer), with salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned not later than September 11th.

GILBERT G. PANTER, Secretary.

Birmingham and Midland Eye Hospital

Church Street, BIRMINGHAM. (115 Beds.)

HOUSE SURGEON required at the above Hospital. Salary £110 per annum; and £10 laundry allowance.

Applications together with copies of not more than three testimonials, should be addressed to the undersigned, from whom further particulars can be obtained.

C. A. MASON,
General Superintendent.

Bedford County Hospital.

(124 Beds.)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £150, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

General Infirmary, Salisbury.

(General Hospital—161 Beds.)

HOUSE PHYSICIAN (male) required, to commence duty as soon as possible.

Candidates must be unmarried, fully qualified and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the Rules may be obtained on application.

The Cancer Hospital (Free)

(Incorporated under Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules.

Candidates must call upon each member of the Medical Committee not later than Monday, September 21st.

A copy of the rules and the names and addresses of the Medical Committee may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Saturday, September 12th.

JAMES COURTNEY BUCHANAN,
Secretary.

Royal Waterloo Hospital for

CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There is a vacancy for an HONORARY CLINICAL ASSISTANT (male or female) at a Rheumatism Supervisory Centre for Children suffering from rheumatic fever and chorea. Candidates should be interested in children's diseases and cardiology. Previous children's experience desirable. The appointment is for six months in the first instance. Applications, accompanied by testimonials, should be sent to the undersigned, of whom further particulars can be obtained, not later than September 18th.

J. H. TEASDALE, Secretary.

Peace Memorial Hospital,

WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER (female); duties commence on October 30th. Also a RESIDENT SURGICAL OFFICER (female); duties to commence on October 9th. Salary £150 per annum. Appointments for six months, eligible for re-election.

Applications, stating age and qualifications, with at least three recent testimonials, should be received by the Secretary not later than September 21st. No canvassing permitted.

Derbyshire Hospital for Women,

Friar Gate, DERBY. (54 Beds.)

Applications are invited for the post of HOUSE SURGEON (male or female). Salary £150 per annum, with apartments, board, etc. The appointment is tenable for six months, with a possibility of extension for a further period of six months.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than September 16th. Duties commence October 1st.

W. T. COCKER, Secretary.

Swansea General and Eye

HOSPITAL (316 Beds.)

HOUSE PHYSICIAN wanted, gentleman, single. Salary £150 per annum, with board, residence, and laundry. Duties to commence at once.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS,
Secretary-Superintendent.

Margate & District General

HOSPITAL (98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties at once. Salary £150 per annum, with board and laundry.

Applications, accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible.

Newcastle-upon-Tyne Eye

HOSPITAL.

Wanted, a RESIDENT HOUSE SURGEON (female). Salary £150 per annum. Applications, stating experience, if any, age, with copies of recent testimonials, to be sent to CHARLES E. V. UPTON, Secretary.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management. Post now vacant.

Bolingbroke Hospital,

Wandsworth Common, S.W.11.
(121 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

The post is that of Senior Resident Officer, and the work being chiefly Surgical, preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months commencing on October 1st.

Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 9th.

W. S. RANDOLPH BISS,
Secretary Superintendent.

Miller General Hospital,

Greenwich Road, S.E.10.

Applications are invited for the following posts:

CASUALTY OFFICER. Salary £150 per annum.

HOUSE PHYSICIAN. Salary £125 per annum.

There are six Resident Officers. Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months, from October 1st next. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

August 24th, 1931.

Manchester and Salford Hospital

FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months. Salary at the rate of £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Wednesday, 9th.

JOHN NALL, Secretary.

Royal East Sussex Hospital,

HASTINGS. (120 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). The appointment is for a period of six months from October 1st.

Salary at the rate of £150 per annum, with board and residence.

Candidates must be duly registered Medical Practitioners, and should send their applications, with copies of recent testimonials, to me not later than September 14th.

WILFRED G. KEMSLEY,
Secretary.

The Liverpool Eye and Ear

INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

[illegible] age and qualifications, not more than three to be sent in immediately.

W. WRIGHT, Esq.,
Liverpool.

The Queen's Hospital for

CHILDREN, Hackney Road, E.2.

The Committee invite applications for the post of ASSISTANT SURGEON. Attendance required twice a week. Honorarium to cover travelling expenses. The Assistant Surgeons are entitled to beds. Candidates, who must be Fellows of the Royal College of Surgeons, England, should send in their applications, with copies of not more than four testimonials, by September 16th.

CHARLES H. BENSHL,
Secretary.

August 10th, 1931.

Victoria Central Hospital,

WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry, with prospects of appointment to Senior House Surgeon in six months' time, at a salary of £150.

Candidates chosen would be appointed for six months.

Applications, with copies of testimonials to be sent to the Secretary.

West London Hospital,
Hammersmith Road, W 6
(234 Beds)

Applications are invited for the post of RESIDENT ASSISTANT SURGEON The present holder of the post is not re-applying and the appointment is an open one Salary at the rate of £200 per annum (plus £25 for services in connection with the Venereal Diseases Department) with board residence, and laundry allowance (four weeks holiday a year) The appointment is for one year, terminable by one month's notice on either side, and subject to annual re-election, may be extended to not more than three years

Candidates must be duly qualified Medical Practitioners and it is desirable that they should hold the F R C S (England) Diploma As Senior Resident Officer, the Resident Assistant Surgeon will also be responsible for certain administrative duties

Applications, with copies of testimonials must reach me not later than first post on Thursday, September 17th Candidates must attend a Meeting of the Medical Council on Friday, September 18th at 4 30 p m, and, prior to that date, call upon and send copies of application and testimonials to each member thereof They must not canvass Members of the Board, but, if so notified, must attend a Meeting of the Board at 5 p m on Tuesday, September 22nd, when the election will be made

H A MADGE, Secretary

West London Hospital,
Hammersmith Road, W 6 (234 Beds)

Required one HOUSE PHYSICIAN, one HOUSE SURGEON (General and Gynæcological) one HOUSE SURGEON (General and some Deep X Ray Therapy) and one RESIDENT ANÆSTHETIST (males) for six months from October 1st next subject to one month's notice on either side Salary at the rate of £100 per annum, with board lodging, and laundry allowance

Candidates must be registered under the Medical Act Applications (which must be on printed forms obtained from me) must reach me not later than first post on Thursday, September 17th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, September 25th at 4 p m, and the House Committee meeting at 4 45 p m the same day, when the appointments will be made

H A MADGE, Secretary

South-Eastern Hospital for
CHILDREN, SYDENHAM, S E 26

Applications are invited for the position of ASSISTANT RESIDENT MEDICAL OFFICER (lady) The appointment will be for six months from September 16th Honorarium £100 per annum, with board residence, and laundry Ample time for reading Applications by letter only, stating age and qualifications, with three copies of testimonials, should be sent to the Hon Secretary, WALTER MASON, M B E, 'Woodfield,' 88, Dacres Road, Forest Hill, S E 23 to be received not later than Wednesday, September 9th.

East Ham Memorial Hospital,
Shrewsbury Road London, E 7.
(100 Beds)

Applications are invited for the post of HOUSE SURGEON to Special Departments, and CASUALTY OFFICER, for six months, commencing October 1st Salary at the rate of £120 per annum, with board, residence, and laundry

Applications stating age, experience, and full particular together with copies of testimonials, should reach the undersigned by first post on September 14th

REGINALD PERRY, Secretary

East Ham Memorial Hospital,
Shrewsbury Road London, E 7.
(100 Beds)

Applications are invited for the post of HOUSE PHYSICIAN for six months commencing October 1st Salary at the rate of £150 per annum, with board, residence, and laundry Applications stating age, experience, and full particulars, together with copies of testimonials should reach the undersigned by first post on September 14th

REGINALD PERRY, Secretary

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON single man Salary £150 per annum Twelve months' appointment vacant November 1st Applications to be received by the Secretary, on or before Wednesday, September 9th

Harrow & Wealdstone Hospital,
Harrow-on-the-Hill MIDDLESEX
(70 Beds)

RESIDENT MEDICAL OFFICER

Applications are invited for the post of Resident Medical Officer The appointment is for a period of six months from October 1st, after which period applications will be considered for re-appointment for further periods not exceeding two years in all

Salary at the rate of 140 guineas per annum with board residence and washing

Candidates who must be duly registered Medical Practitioners, and have held a previous House appointment will not be expected to call on the Honorary Medical Staff, but should send their applications with copies of three recent testimonials to me at the Hospital not later than Monday, September 7th

SYDNEY GARBUTT, Secretary

Northampton General Hospital.
(246 Beds)

There will be vacancies on October 1st next for one HOUSE PHYSICIAN and four HOUSE SURGEONS British nationality Salary £150 per annum, with board residence and laundry

The successful candidates will be appointed for a period of six months and will be eligible for re-election for a further period

Candidates must be duly qualified and registered

Applications stating age sex qualifications etc, with copies of testimonials to reach the undersigned not later than first post on September 9th

There will also be a vacancy for a RESIDENT DRESSER on October 1st An honorarium of £10 will be given for six months satisfactory service

H ST JOHN WOOD
August 24th, 1931 Secretary Suit

Royal Sea Bathing Hospital for
SURGICAL TUBERCULOSIS,
MARGATE

A Male HOUSE SURGEON is required The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry

Candidates for the post must be legally qualified and registered

The appointment is for six months, but may be extended for a further period of six months

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R S B H Offices 15, York Buildings, Adelphi, London, W C 2

Borough Mental Hospital,
ROWDITCH, DERBY

SENIOR ASSISTANT MEDICAL OFFICER wanted Commencing salary £400 per annum, rising by £25 per annum to £450, with an additional £50 per annum if in possession of the Diploma in Psychological Medicine, with board, apartments attendance, and laundry Candidates must be registered under the Medical Act The appointment is subject to 3 per cent deduction on salary and emoluments under the Asylum Officers Superannuation Act, 1909 Apply, not later than September 8th stating age and full particulars, together with copies of three recent testimonials, to the Medical Superintendent

Torbay Hospital, Torquay.
(146 Beds)

A HOUSE PHYSICIAN and a HOUSE SURGEON are required. The salary for each appointment is £175 per annum, with board, residence, and laundry allowance Candidates must be fully qualified, registered, and unmarried

Applications, stating age, nationality, qualifications, and experience, to be sent to the undersigned on or before September 8th, with copies of not more than three recent testimonials

E L GRIST,
August 21st, 1931. Secretary.

Croydon General Hospital.

A vacancy occurs on the Honorary Staff of the above Hospital for a SURGEON in charge of the Ear, Nose and Throat Department, and candidates for the appointment are requested to forward their applications, stating age qualifications, and experience, together with copies of three testimonials, to the undersigned not later than September 26th

GEORGE H DAMS,
August 24th, 1931. Secretary

St. Peter's Hospital for Stone,
ETC,
Henrietta Street, Covent Garden, W C 2

The office of HOUSE SURGEON will fall vacant on October 1st and applications are invited from male candidates with previous experience in a similar office at a General Hospital The salary offered is at the rate of £75 per annum, with board, lodging, and laundry

At the expiration of six months term of office, and subject to the recommendation of the Medical Committee the House Surgeon is appointed Resident Surgical Officer for a further similar period Candidates should therefore be prepared if successful to remain at the Hospital for twelve months in all

Applications accompanied by copies of testimonials will be received by the undersigned not later than the first post on Wednesday, September 9th

BERTHFA ROGERS Secretary

The Royal Infirmary, Sheffield.
(590 Beds)

The Weekly Board of Management invite applications for the two undermentioned posts

ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER

The salary attached to each appointment is £80 per annum with board and residence

The Resident Staff numbers 14 and after six months service, salary is at the rate of £100 per annum

Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO W BARNES, F C I S,
Board Room Gen Supt & Secretary.
July 24th, 1931

Worcester County and City
MENTAL HOSPITAL,
POWICK, near WORCESTER

JUNIOR ASSISTANT MEDICAL OFFICER (male) single required Candidates must be duly qualified in Medicine and Surgery Salary £350 per annum, rising by four annual increments of £25 to £450 per annum, together with furnished apartments, board, laundry, and attendance

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909 Applications, stating age and full particulars together with copies of three recent testimonials to be forwarded to the Medical Superintendent not later than Friday, September 18th

The Guest Hospital, Dudley.
(General Hospital—107 Beds)

Applications are invited for the post of a HOUSE SURGEON Salary £170—£200 per annum, according to experience with furnished apartments board, and laundry Duties to commence immediately Candidates must be fully qualified and registered

Applications, stating age, qualifications, and experience and accompanied by copies of testimonials, to be sent to the undersigned

H RAYMOND HURST,
The Guest Hospital, House Governor
Dudley and Secretary.
August 28th, 1931.

Nottingham General Dispensary,
BROAD STREET, NOTTINGHAM

Wanted, RESIDENT SURGEON (male), unmarried Must have Medical and Surgical qualifications Salary £250, with £25 increase per year up to £300 Apartments (not board), attendance lights, and fuel This Institution is a non-provident one No beds No midwifery

Applications, stating age and accompanied by recent testimonials, to be sent by September 9th to—

5, Thurland Street, R J WILLATT
Nottingham Secretary

Princess Louise Kensington
HOSPITAL FOR CHILDREN (50 Beds)
St Quintin Avenue North Kensington W 10

HOUSE PHYSICIAN male or female required for six months from October 1st Salary for first three months at the rate of £100 a year, after which should he or she be appointed Senior Resident (of two), the salary would be at the rate of £125 a year with board residence, and laundry in each case It is desirable that applicants should have held a responsible Hospital post Applications, with copies of three testimonials must be submitted on a form to be obtained from the Secretary, and must reach the Secretary not later than first post on Friday, September 18th.

Manchester Royal Infirmary.

CENTRAL BRANCH, ROBY STREET, MANCHESTER

HOUSE SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is tenable for nine months, commencing forthwith, three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, September 17th.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Kettering & District General Hospital, KETTERING. (80 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). Salary £200 per annum, with board, residence and washing. Candidates must be fully qualified, and registered. Knowledge of Anæsthetics desirable.

The appointment is for six months, with eligibility for a further six months.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

G. W. JACKSON,
Secretary-Superintendent.

The Lady Chichester Hospital, HOVE (Brighton).

FOR FUNCTIONAL NERVOUS DISEASES. (62 Beds)

JUNIOR HOUSE PHYSICIAN required immediately. Six months' appointment at £50 p.a., all found.

Valuable experience for Diploma in Psychological Medicine.

Preference given to Junior Resident for Senior post at £100 p.a.

Applications, with testimonials, to the Secretary, 117, North Street, Brighton.

Seamen's Hospital Society, Greenwich

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich for six months from October 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by September 8th to the undersigned.

Greenwich, August 14th, 1931.
R. E. V. BAX, Secretary.

Seamen's Hospital Society, Greenwich.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from October 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by September 8th to the undersigned.

Greenwich, August 14th, 1931.
R. E. V. BAX, Secretary.

A Radiological House Surgeon

and RESIDENT ANÆSTHETIST is wanted at the ROYAL BERKSHIRE HOSPITAL (243 beds). Candidates (male) must be fully qualified and registered. Appointment is for six months at a salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, to be addressed to the undersigned.

F. A. LYON,
Secretary.

Reading.

Westminster Hospital, Broad Sanctuary, S.W.1.

There is a vacancy for a HOUSE SURGEON in the Ear, Nose, and Throat, and Eye Departments. The appointment is for six months (non-resident) and the salary is at the rate of £102 per annum.

Applications should be submitted to the undersigned at once.

CHARLES M. POWER, Secretary.

The Royal Hospital, WOLVERHAMPTON.

(Incorporated under Charter.)

HOUSE SURGEON required for Orthopædic Department.

The Hospital contains 240 beds, includes the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum, board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned forthwith.

Wolverhampton, August 31st, 1931.
W. H. HARPER, House Governor.

The Princess Beatrice Hospital.

RESIDENT MEDICAL OFFICER.

Applications are invited from fully qualified Medical Practitioners for the post of Resident Medical Officer. Duties to include Surgical, Gynæcological, and Obstetric beds. The In-patients Department of this Hospital, which is now entirely rebuilt and is being equipped, will open shortly with approximately 60 beds. Casualty and Out-patient Departments open now.

Applications, accompanied by copies of three recent testimonials, should be sent to the undersigned (from whom full particulars may be obtained) not later than Tuesday, Sept. 15th.

S. BARKER, Secretary.
194, Finborough Road, S.W.10.

The Loughborough and District General Hospital

WANTED, to commence duties on October 1st or earlier by arrangement, RESIDENT HOUSE SURGEON (male or female and unmarried), possessing a medical and surgical registered qualification. Practical experience in the administration of anæsthetics is required. Salary £175, with apartments, board, and laundry. All applications, stating age, etc., with copies of testimonials, to be sent to me at once.

9, Leicester Rd., Loughborough.
FRANK TOONE, Secretary.

King Edward VII Hospital, WINDSOR. (181 Beds.)

HOUSE SURGEON required for six months from date of appointment. Applicants must be fully qualified women and registered, and have had experience in Ear, Nose, and Throat work.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than September 17th.

ARTHUR E. CHURCHER, Secretary.

Connaught Hospital, Walthamstow, E.17

(100 Beds, with three Resident Medical Officers.)

SENIOR RESIDENT HOUSE SURGEON (male) required. Salary £150 per annum, with residence, board, and laundry. Appointment for six months, from September 22nd. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be forwarded immediately.

KENELM S. ELLISON, Secretary.

Royal Infirmary, Wigan.

(180 Beds.)

HOUSE SURGEON (male) required on October 1st, for a period of six months. Salary £150 per annum, with board, apartments, and washing. Resident Staff consists of an R.S.O. and three House Surgeons. Applications, stating age and qualifications, with copies of three recent testimonials, should be addressed to the undersigned as soon as possible.

A. STANLEY BRUNT,
September 1st, 1931. Gen. Supt. & Sec.

Stockport Infirmary.

Immediate applications are invited for the post of HOUSE PHYSICIAN (male). Salary £175 per annum, with board, residence, and laundry.

Applicants must enclose copies of three recent testimonials, and give particulars of age, University, and experience.

EDWIN J. PEARCE, Secretary Supt.

Borough of Chesterfield

MUNICIPAL MATERNITY HOME.

APPOINTMENT OF CONSULTANT OBSTETRIC SURGEON.

The Chesterfield Corporation invite applications for the appointment of Consulting Obstetric Surgeon to the Municipal Maternity Home.

The scale of fees for this appointment is as follows:

(a) Lectures to Pupil Midwives—£1 1s. per lecture.
(b) Consultations—£2 2s. per consultation.
(c) Minor operations—£5 5s. per operation.
(d) Major operations—£10 10s. per operation.

Forms of application, together with the terms of appointment, may be obtained from the Medical Officer of Health, Saltergate, Chesterfield, to whom applications must be returned not later than Saturday, September 19th.

Town Clerk's Office, Chesterfield.
J. L. HEATHFIELD, Town Clerk.

Jessop Hospital (Ruth Paterson Memorial Auxiliary), NORTON, SHEFFIELD

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female) and should be addressed at once to the undersigned at the Jessop Hospital for Women, Sheffield.

The appointment will be for one year, commencing October 1st, with a salary at the rate of £150 per annum, plus board, residence, and laundry. Previous obstetrical experience desirable.

This Hospital contains 46 beds for the treatment of puerperal sepsis, and for ante-natal and gynæcological cases. 23 beds are set apart for puerperal sepsis.

H. B. SHELSWELL, Secretary.

The Jessop Hospital for Women, SHEFFIELD. (146 Beds)

(Gynæcological and Maternity Departments)

The Board of Management invite applications for the following posts:

A SENIOR RESIDENT OFFICER (male) for one year from October 1st. Salary £200 per annum, plus board, residence, and laundry.

TWO ASSISTANT HOUSE SURGEONS (male) for a period of six months from October 1st. Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be received by the undersigned on or before September 22nd.

H. B. SHELSWELL, Secretary.

University College Hospital, Gower Street, W.C.1.

Applications, stating qualifications and accompanied by not more than two recent testimonials, are invited for the post of CLINICAL PATHOLOGIST to the Hospital and Medical School, and must reach the Secretary by noon on Saturday, September 19th.

The appointment is a whole-time one and private practice is not allowed. Salary £1,000 per annum, with superannuation benefits.

For further particulars apply to the Secretary of the Hospital.

Altrincham General Hospital, CHESHIRE (100 Beds)

Applications are invited for the position of JUNIOR HOUSE SURGEON. Salary at the rate of £120 per annum, with board, residence and laundry. The appointment is for six months in the first instance, commencing at once.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

Grosvenor Sanatorium, Ashford, KENT.

SECOND ASSISTANT MEDICAL OFFICER (male, single, under 40 years of age) required for above Institution. Salary £230, with board, lodging, and laundry. Applications, together with copies of recent testimonials, to be sent to ARBUTHNOT MILNE, Medical Superintendent.

King George Hospital, Ilford

(8 miles from London).

Applications are invited for the appointment of HOUSE SURGEON (male). Salary £100 per annum, with board, residence, etc. Term of six months, with eligibility for a further term. Applications should be sent at once to the Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	CITY OF BIRMINGHAM. *(District Medical Officer and Public Vaccinator—Male)*
EBBW VALE, MON. *(Workmen's Medical Society)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association)*	STEWARTRY OF KIRKCUDBRIGHT. *(Assistant Medical Officer and Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE *(Assistant School Medical Officer)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*		
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

September 2nd, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Royal Manchester Children's HOSPITAL,
Out Patients' Department, Gartside Street, MANCHESTER

Wanted, for the Out patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be on the *Medical Register*. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number 57,000 per annum. Duties to commence October 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

The Sheffield Royal Hospital.
(340 Beds.)

There are two vacancies for Residents:
OPHTHALMIC HOUSE SURGEON. £120 per annum.
ANAESTHETIST. £80 per annum, rising to £100 in six months.
Applications to—
W. H. BOOTH,
Superintendent & Secretary.

Lowestoft and North Suffolk HOSPITAL.

JUNIOR HOUSE SURGEON (man or woman) required September 10th. Salary £120 per annum, with board, residence, and laundry.
Applications together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Royal Manchester Children's HOSPITAL (190 Beds)
PENDLEBURY, near MANCHESTER

Wanted, a RESIDENT MEDICAL OFFICER, salary £125 per annum, who will be appointed for six months. Duties to commence Oct. 1st.
Candidates must be unmarried and duly registered. Previous Hospital experience essential.
Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Wednesday, September 9th.
Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
August 21st, 1931. Secretary.

The Children's Hospital,
SUNDERLAND (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female). Candidates must possess double qualifications (registered). Salary £140 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.
S. C. FRYERS,
House Governor and Secretary.

Great Yarmouth General HOSPITAL (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).
Applicants must be male and unmarried. Salary at the rate of £140 per annum, with board, residence, and laundry.
Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.
FRANK JENNINGS,
Secretary.

Bristol City and County Mental HOSPITAL.

Applications are invited for the post of FOURTH ASSISTANT MEDICAL OFFICER.
Candidates must be duly registered and single.
Salary £350 per annum, rising by annual increments of £25 to £450, with an additional £50 for D.P.M., with emoluments valued at £150.
The appointment will be subject to the Asylum Officers Superannuation Act, 1909.
Applications, stating age, qualifications, and full particulars of experience to be sent to the Medical Superintendent, Bristol Mental Hospital, Fishponds, Bristol, on or before September 19th next.
The Council House, Bristol. JOSIAH GREEN, Clerk to the Visiting Committee.
August 27th, 1931.

Addenbrooke's Hospital,
CAMBRIDGE

Applications are invited for the following posts:
(a) HOUSE SURGEON No. 1.
(b) HOUSE SURGEON No. 2.
Each appointment is tenable for a period of six months, but is terminable at an earlier date by one month's written notice on either side.
The salary of each officer will be at the rate of £130 per annum with board residence, and laundry.
Candidates (male) who must be unmarried and duly registered are requested to forward their applications stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned as soon as possible.
W. H. HEAD,
Secretary Superintendent.

(Appointments continued on p. 84)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted October 1st, Male ASSISTANT, single, English or Scotch; ex H.S. or H.P., or gentleman with experience in G.P. Cyclist or motor cyclist. Mixed Practice, near Manchester. Dispenser kept. £300 per annum, or more according to experience. Partnership considered later if suitable. Usual bond. Recent testimonials and photo.—Address, No. 5552, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, Glamorgan Colliery Practice, single, male, British. Work light. Would suit newly qualified. £400 per annum. Good opportunity for anæsthetics, etc., at local hospital. Motor cycle provided. — Address, No. 5553, B.M.A. House, Tavistock Square, W.C.1.

Wanted, early in October, male indoor ASSISTANT, for South Wales Port. Must be good anæsthetist. Very little night work or midwifery. Salary £300 p.a. State age, nationality, and all particulars. Dispenser kept. Must be able to drive a car. — No. 5538, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view to Partnership, by Woman M.B., B.S. (Lond.), aged 28, ex H.P., H.S., experience private and panel practice. Own car. Free September.—Address, No. 5506, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, part-time entertained, in Sussex or borders, by M.B., Ch.B. Ex H.S. and H.P., S.R.M.O. Sanatorium, 3 years' G.P. Excellent testimonials. F.T. Own car.—Address, No. 5530, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, male ASSISTANT, British, ex Hospital, abstainer. Panel and private. W. Riding City. Usual bond. House available if required. Good salary to suit person. Parties., refs., *when free.* — No. 5513, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, Scottish or English, under 30; preferably some experience and own car. October. Mixed Practice, clean Midland Town. Possible Partnership later. Commence £400.—Address, No. 5534, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, October 1st, Assistant, indoor (£280), outdoor £380); English or Scotch, age 25 to 30; ex H.S. and some exp. desirable. Semi-rural panel and priv., near Manchester. Dispenser and car. *Photo., tests.*—No. 5515, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Married Assistant, with own rooms, board, and attendance. Ex H.S. or H.P., and general experience. Six guns weekly. *Usual bond.* State particulars, height, etc. Send photo.—Address, No. 5523, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, indoor, by Woman Doctor, N.U.I., 9 years' General Practice (sole control); wide midwifery experience. R.C. Drive any car.—Address, No. 5502, B.M.A. *House, Tavistock Square,* W.C.1.

Wanted.—Assistant in Surgical Practice, British, Graduate, F.R.C.S.; with operative experience. Salary £500.—Address, No. 5527, B.M.A. House, Tavistock Square, W.C.1.

Wanted, about end of Sept., a male ASSISTANT for a panel Practice in Midlands. Protestant preferred. Salary £300 indoors. — Address, No. 5551, B.M.A. House, Tavistock Square, W.C.1.

Wanted *immediately.* — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, indoor Assistant, for mid-day Surgery. General Practice, Lancashire University Town. R.C. preferred. —Address, No. 5501, B.M.A. House, Tavistock Square, W.C.1.

Wanted on October 1st, male ASSISTANT for mixed Practice, North of England. Single, British. To live at Surgery. Salary £320 p.a., all *found.* — *Address,* No. 5531, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistant in Country Town Practice (with small Hospital), North Wales. *Work light. Able to* drive car. Usual bond.—*Address, No.* 5512, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant. Mixed Practice. Light work. Bristol. Suit recently qualified man. £250 p.a. Usual bond.—Address, No. 5557, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—Welsh-speaking ASSISTANT, Carmarthenshire. Must own motor cycle, part expenses paid. Salary £250, all found. Usual bond.—Address, No. 5561, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, male ASSISTANT, single, near Manchester. Send recent photo., age, etc. — Address, No. 5517, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant (British), £350, outdoor, *rising. Time* for reading. Suit newly qualified.—Address, No. 5526, B.M.A. House, Tavistock Sq., W.C.1.

Assistant wanted by October 1st (male), single, active, sober, recently qualified. Mixed Practice, *Cambridgeshire.* Local Hospital. Salary £300.—Address, stating age, with photo., No. 5559, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted abroad.— Four years Tropics, ex H.S., Post-grad., Eye, E.N.T., Surgery, V.V. Injections, Anæsthetics, aged 29; abstainer. — *Address,* No. 5326, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with view or Succession, wanted by Woman M.B., Ch.B. (Edin.). Experienced Hospital and G.P. Accustomed midwifery, night work, and sole charge. Own car. Free October.—Address, No. 5535, B.M.A. House, Tavistock Square, W.C.1.

Assistant (indoor) **wanted.** Salary £250, commission on mids. and fees collected. *All found,* except washing. Recently qualified, unmarried, Protestant preferred. — Address, No. 5525, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Birmingham Suburb.—Practice is mainly private in residential district. Very little midwifery. Attractive house and garden. Would consider disposal of share to suitable man at later date.—*No.* 5505, B.M.A. House, Tavistock Sq., W.C.1.

Assistant, young, wanted at once, *outdoor, single, Cheshire. Mixed Practice* in pleasant town. *Dispenser* kept. Usual bond. Coupé provided. Salary £400.—Address, No. 5533, B.M.A. *House, Tavistock* Square, W.C.1.

Indian, M.B., B.S., M.R.C.S., D.P.H., etc., desires ASSISTANTSHIP, preferably with view to Partnership. Could develop branch surgery. Locum considered. Experienced panel and private. Good refs. Young, energetic, abstainer.—Address, No. 5554, B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Wanted, Welsh-speaking outdoor ASSISTANT, with or without view, for General Practice, private and panel. Salary £435, with car allowance. Usual bond. References required.—Address, No. 5558, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

HOLIDAY LOCUMS
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, *Tel.* Adelphi, W.C.2. TEMPLE BAR 1054, RIVERSIDE 1254. *(Night Calls).*

Wanted. — Locums by Medical Woman, L.R.C.P.S., L.M., D.P.H., five years' experience. Accustomed sole charge and dispensing. Good midwifery. Free *Sept.* 25th. Reduced terms for seaside.—Address, No. 5554, B.M.A. House, Tavistock Square, W.C.1.

Experienced Woman Doctor, *with own car,* will do LOCUMS; £6 6s. per week. Free *now in* London.—Address, No. 5555, B.M.A. House, Tavistock Square, W.C.1.

Locum wanted in second week of *September.* Welsh desirable, not essential. —Address, No. 5507, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO
PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
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After Office Hours: Epsom 9142.

PARTNERSHIPS.

Wanted. — Partnership, with succession 3/4 years, by L.R.C.P. & S. Qualified over 2½ years; excellent Hospital experience and used to good-class practice. Income must be £1,200 p.a.—Address, No. 5303, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Partnership, North Wales or near district, by M.B., Ch.B., Liverpool, aged 26; 4 years' G.P.—Address, No. 5539, B.M.A. House, Tavistock Sq., W.C.1.

Durham.—Quarter Share of old-established PRACTICE. Receipts £2,500 p.a., including panel 3,000. House available. Income of £650 guaranteed. Offers invited.—Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

London, S.W. — Half Share of cash and panel PRACTICE. Total receipts £2,500, including panel 2,075. Flat or house available. Premium for share 2 years' purchase or near offer.—Apply, PEACOCK & HADLEY, LTD., 19, Craven St., Strand, W.C.2.

Norfolk. — Third Share worth £700—£800 p.a. of an old-established PRACTICE. Total receipts average £2,400 p.a., good panel. Offers considered, easy terms agreed to. — Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

Partner wanted (man) about November, to replace one going overseas. Country district near Coventry. No resid nt opposition in parish. Good sport, golf course near-by. Hunting district. Remaining Partner is a woman. Receipts last year £2,146. Very few bad debts. Good cash Practice. Half share for sale for £1,900. Good furnished house, with 1/4 acre garden, for sale, part can be mortgaged.—Address, No. 5518, B.M.A. House, Tavistock Square, W.C.1.

Yorks. — Partnership in good Practice. Receipts £1,600 yearly. Panel 1,500, increasing rapidly. House available. Price one-third share (to commence) £1,000.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

MEDICAL POSTS DISPENSERS, etc.

Wanted immediately, qualified [illegible] (country Practice [illegible] parish records [illegible] Must be reliable [illegible] experience, etc [illegible] ss, No 5509, B M A House, Tavistock Sq, W C 1

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN Preparation for Examinations — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W 2

Dispensers supplied to Doctors at short notice, without fee Qualified and experienced in private and panel practice Permanency and part time *Bookkeeper Dispensers, Secretary Dispensers, Nurse-Dispensers, and Chauffeuse Dispensers* —Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E C 1

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or *Chauffeuse Dispensers, are invited* to write wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W C 2

Lady Dispenser - Bookkeeper - SECRETARY, 15 years experience good general practices, requires permanent Post Free end of September Typist Excellent references —Address No 5536, B M A House, Tavistock Square, W C 1

Lady Dispenser (Hall), bookkeeper Secretary wants permanent POST Live out Thorough knowledge private and panel work Help minor oper, dressings, ex V A D Typing, keen, economical, tactful, cheery 11 yrs exp Ex refs. Per interview —Address, No 4820, B M A House, Tavistock Sq, W C 1

Lady Dispenser, Secretary, Bookkeeper (23), desires POST in London or south of England Hall certificate 3½ years' experience, private and panel Excellent references Free now —Address, No 5536, B M A. House, Tavistock Square, W C 1

Lady, trained Secretary-Chauffeuse, clean license, seeks POST with doctor, preferably Provinces, to live as *family* excellent education, fluent French Highest references Young, bright, and capable —Address, No 5522, B M A House, Tavistock Sq, W C 1

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, W 1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants Male Nurses, Mental and Special Treatment Orderlies, Dental Clerks, *Porters* Caretakers, etc, without charge to prospective employers

Typewriting and Duplicating undertaken by Expert Testimonials, also Legal Documents Numerous letters of appreciation from *Doctors* —HEATHCOTE RADFORD 341 Finchley Road, N W 3 'Phone Hampstead 6430 (any hour)

PRACTICES.

Wanted, in a Home County or within 100 *miles* of London, a good PRACTICE or PARTNERSHIP (not much sel) returning an income of £1,500 or *more*, an experienced married man with £4,000 command —Address in first instance to No 12 c/o Mr PEACOCK'S AGENCY, 4, Adam St, Strand W C 2

Wanted. — Mixed Practice, income £1,500 to £2,000, or PARTNERSHIP, in or near London, by experienced M B, D M R F act 27 *Capital* available, Address No 5555, B M A House, Tavistock Square, W C 1.

Doctor, retiring after 40 years, is prepared

to Give Goodwill in unopposed, charming seaside COUNTRY PRACTICE near London, in return for taking over very cosy, comfortable house at bargain price.



Economical upkeep, easy work, nice people Golf, tennis, sea Ideal for Resident Patients.

Dr. V., White Lodge, Beltinge, Herne Bay.

Wanted.—South or South-West Coast or near Torquay, Exeter especially preferred PRACTICE £1,300 upwards Good house with garden essential Capital available No *agents* Partnership *considered* —Address No 5516, B M A House, Tavistock Sq, W C 1

Wanted. — Mixed Practice (income about £1,500—£2,000) or PARTNERSHIP in or near London by experienced M B, L D S, D M R E, act 27 Capital available —Address No 5520, B M A House, Tavistock Square, W C 1

Wanted in a few months, PRACTICE or PARTNERSHIP Income £1,500—£2,000 Good panel Cash available Strict confidence Country preferred, but not essential — Address No 5518, B M A House Tavistock Square, W C 1

Wanted.—Practice in Southern Counties from £3,000 per annum upwards offering surgical scope Large panel and cottage hospital preferable Full particulars in confidence —Address No 5538, B M A House, Tavistock Square, W C 1

Wanted, in South-East, Country PRACTICE of £1,600—£2,000 Cash available —Essential details, in strictest confidence, to No 5004, B M A House, Tavistock *Square*, W C 1

Wanted. — London Practice. Income £800 to £1,600 p a Good panel Any district Strict confidence No agents Ample capital — Address No 5519, B M A House Tavistock Square, W C 1

Wanted.—Scotland, near Coast, preferably on or near Firth of Clyde, panel and private PRACTICE Cash available Consider Assistantship with view — Address No 5524, B M A House, Tavistock Square, W C 1

Wanted. — Cash Practice in London Panel over 500 Doctor advertises — Address, No 5529, B M A House, Tavistock Square, W C 1.

Advertiser would pay cash for good mixed PRACTICE of £2,000 p a or over large panel essential, in London or Bournemouth Strictest confidence No agents — Address, No 5503, B M A House, Tavistock Square, W C 1.

Death Vacancy.—Lake District. Old-established PRACTICE about £900 Panel 539 Attractive house and garden for sale, garage, etc Excellent opportunity — Address, No 5514, B M A House, Tavistock Square, W C 1

Doctor, with experience, desiring to move into or near Edinburgh for family reasons, wishes to hear of a mixed PRACTICE likely to be for sale at an early date Income £600 to £800 with prospects — Add, B M A, 7, Drumsheugh Gard, Edinburgh

For Sale.—Practice in N E seaside town Growing area with first prospects Panel about 600 For particulars — Address No 5511, B M A House Tavistock Square, W C 1

For Sale.—West Sussex.—Small high-class PRACTICE in growing seaside district near large town Cash receipts £420. Scope for young man —Expenses small House available —Address, No 5528, B M A House, Tavistock Square, W C 1

General Country Medical PRACTICE for Sale in East Anglia with exceptionally delightful country residence and grounds Income £3,000 per annum Would *sell outright or two-third-share* —Full details of WOODCOCK & SON, Ipswich

Kent. — Within easy reach of *London and Coast Country PRACTICE*, £1,500 p a (£600 from panel) Freehold house containing 2 recep 4 bed consulting and waiting rooms with separate entrance electric light good garden and garage Premises *Practice and house*—£3,750 part on mortgage —No 5125 B M A House Tavistock Sq, W C 1

London, E (Suburb). — Old-established PRACTICE Receipts now about £500 p a, panel 350 Nice house with garden rent only £30 p a Vendor retiring Price moderate —Apply PEACOCK & HADLEY, LTD, 19 Craven Street Strand, W C 2

London, S.E. — Old-established. Receipts £1,250, last year £1,350. Panel 633, excellent scope increase Nice house, garden, garage rent £75 Price £1,850, part deferred — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street

Manchester.—Middle-class PRACTICE Receipts £650 (panel and appt £100) Excellent well-situated house £70 Premium £600 or near part by arrangement —Address No 5534, B M A House Tavistock Square, W C 1

Medical Woman's old-established PRACTICE in County Town for Sale, about £900, unusual appointments should do own surgery £2,500 including furniture money must be available — Address, No 5527, B M A House Tavistock Sq, W C 1

Nose, Ear, and Throat Nucleus in Cathedral City West of England Hospital appointments excellent prospects Receipts £550, accounts audited Premium £500 — Address No 5560 B M A House, Tavistock Square, W C 1

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED)

33, Cross Street, MANCHESTER

Telephones: {MANCHESTER-CENTRAL 3925. {MANCHESTER-RUSHOLME 2549 (Night calls).

Telegrams: "LOCUM, MANCHESTER."

Recommended with every confidence to the profession by the BRITISH MEDICAL ASSOCIATION as a thoroughly trustworthy medium for the transaction of all Medical Agency business

TRANSFER OF PRACTICES & PARTNERSHIPS.
INTRODUCTION OF RELIABLE ASSISTANTS & LOCUMTENENTS.
VALUATION AND INVESTIGATION OF PRACTICES, ETC.

Practices & Partnerships Wanted. **Large List of Bona-fide Purchasers with Ample Capital Available.**

FOR DISPOSAL.

Full Particulars Free on Request.

DEATH VACANCY.—CUMBERLAND.—Cash receipts last year £851. Panel 539. Great scope, especially for a good Surgeon. Charming house, with ample accommodation and attractive garden.—No. 290.

LANCS. TOWN.—MEDICAL WOMAN'S PRACTICE.—Cash receipts last year £451. Panel 303. House 4 bedrooms, 2 reception, to rent at £35 p.a., or would sell for £350. Premium £500, or near offer.—No. 289.

LANCS. TOWN, near MANCHESTER.—Old-established PRACTICE. Cash receipts last year £1,406. Panel nearly 1,000. Excellent house, 2 reception, 6 bedrooms, garage and garden. Rent £90 p.a. Good local hospital. Premium £2,050.—No. 260.

MANCHESTER.—RESIDENTIAL SUBURB. Middle-class PRACTICE. Suitable for two in partnership (one a good surgeon). Cash receipts 1931, £4,578. Panel 1,400. Two excellent houses with ample accommodation, to rent. Premium 1½ years' purchase, part by arrangement.—No. 277.

LARGE LANCS. TOWN.—Old-established PRACTICE. Average cash receipts £1,546 p.a. Panel 1,052. Excellent detached house, 3 reception, 4 bedrooms. Garage and garden. Rent £74 10s. p.a. Premium 1½ years' purchase. Vendor retiring.—No. 267.

SOUTH WEST YORKSHIRE.—Excellent Country PRACTICE. Cash receipts last year £1,421. Panel 880. Good freehold detached house to rent with nice garden, 4 bedrooms, 2 reception rooms. Premium—Practice—£2,000.—No. 271.

LIVERPOOL.—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception, 7 bedrooms, garage and garden to rent.—No. 276.

MANCHESTER.—INDUSTRIAL PRACTICE. Cash receipts 1930 £889. Panel 721. Great scope. House 2 reception, 5 bedrooms. Rent £50 p.a. Premium, best offer.—No. 190.

CUMBERLAND.—Old-established Country PRACTICE. Cash receipts last year £1,320. Panel 500. Appointments £140 p.a. Attractive house, 2 reception, 4 bedrooms, garage, and garden. Rent £70 p.a. Charge of Cottage Hospital. Premium £1,250 for quick sale.—No. 281.

LANCS. TOWN, near MANCHESTER.—PARTNERSHIP in good Practice. Cash receipts 1930, £2,452. Panel nearly 2,000. House available, 3 reception, 5 bedrooms, garage. Rent £65 p.a. Premium—Half share—£1,500 (to include drugs, fittings, and debts).—No. 285.

BIRKENHEAD.—PRACTICE with great scope. Cash receipts about £700 p.a. Panel 900. Good house, 3 bedrooms, garden. Premium—Practice—£800 or near offer.—No. 265.

MANCHESTER.—RESIDENTIAL SUBURB.—PRACTICE. Cash receipts last year £1,243. Panel 530. Plenty of scope. Charming modern house, recently built for Practice, 5 bedrooms, 2 reception rooms. Garage and garden. For sale, or may be rented on lease. Premium—Practice—1½ years' purchase.—No. 288.

EAST COAST.—PARTNERSHIP in large Town Practice. Income over £10,000 p.a. Panel over 5,000. Good house available. 2 reception, 4 bedrooms. Garden. Premium—1/6 or 1/4 share—1½ years' purchase.—No. 258.

SEASIDE TOWN.—MEDICAL WOMAN'S PRACTICE. Cash receipts last year £632. Panel 465. For letting rooms at £36 p.a. Premium £850 or near offer.—No. 274.

NEAR LIVERPOOL.—Small PRACTICE, with much scope. Cash receipts last year £348. Panel 512. Good house, 2 reception, 4 bedrooms. Garage and garden. Premium 1 years purchase.—No. 284.

SPECIAL NOTICE.

For the convenience of Practitioners, Branch Offices have been opened as under:—

LIVERPOOL & DISTRICT.
28, Exchange Street East, Liverpool.
(Tel. Central 1970. 'Grams. Legal, Liverpool.)

YORKSHIRE.
Phoenix Chambers, South Parade, Leeds.
(Tel. 26771.)

NORTHERN IRELAND.
72, High Street, Belfast.
(Tel. 7636 7. 'Grams. "Vouch, Belfast.")

LANCS. TOWN.—Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house, 3 reception, 5 bedrooms. Garage and garden. For sale or rent for a period. Premium £1,600 payable by arrangement.—No. 232.

SOUTH COAST.—SEASIDE RESORT.—PRACTICE. Cash receipts £685 p.a. Panel 660. Excellent house, 3 reception, 5 bedrooms, garage and garden, to rent.—Premium 1½ years' purchase.—No. 197.

MANCHESTER.—PLEASANT RESIDENTIAL SUBURB.—Old-established PRACTICE. Average cash receipts £685 p.a. Panel over 600. Much scope. Excellent house, 2 reception, 4 bedrooms, garage and good garden, to be sold or may be rented for a period on lease. Premium 1 years purchase. Vendor retiring.—No. 246.

BIRMINGHAM SUBURB.—Middle-class PRACTICE with great scope. Receipts last year £700. Small select panel. Excellent house, 2 reception, 6 bedrooms. Garage and large garden. Price £750. Premium—Practice—£750, or near offer.—No. 283.

SOUTH YORKSHIRE.—Old-established PRACTICE. Cash receipts 1931, £1,273. Panel 1,430. Excellent house, 3 reception, 4 bedrooms. Garage and good garden. Premium 1½ years' purchase.—No. 253.

NEAR MANCHESTER.—PLEASANT TOWN, largely residential.—Old-established PRACTICE. Average cash receipts £995 p.a. Panel 902. Appointments not included £100 p.a. Great scope. Excellent detached house (freehold), 3 reception, 5 bedrooms. Garage and garden and tennis court. Premium—Practice—1½ years' purchase.—No. 234.

NEAR LIVERPOOL.—Cheshire Coast Town.—Old-established PRACTICE. Cash receipts last year £1,134. Excellent house to rent, 3 reception, 6 bedrooms, garage and garden. Premium 1½ years' purchase.—Vendor retiring.—No. 189.

WANTED IMMEDIATELY.—INDOOR AND OUTDOOR ASSISTANTS FOR TOWN AND COUNTRY PRACTICES, WITH OR WITHOUT A VIEW. Good salaries offered. State full particulars. LOCUMTENENTS (male and female) SHOULD REGISTER AT ONCE FOR IMMEDIATE ENGAGEMENTS.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880)

12, Stratford Place,
Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London. Telephone: Mayfair {1783 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION have every confidence in recommending its members to consult MR. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUM TENENS.

Assistants and Locum Tenens can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 S. OF ENGLAND. — Partnership (after preliminary Assistantship) in good class Practice in first-rate residential district, within 60 miles of London. Incoming Partner should be Graduate of Oxford, Cambridge, or London (aged about 30). Share of about £1,000 p.a. to suitable man at 2 years' pur.

2 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first-rate town. Panel 1,344. Good house (6-7 bedrooms) to rent. Premium one-third share 2 years' purchase.

3 HOME COUNTIES.—Practice in desirable country district, within 35 miles of London. Cash receipts about £800 p.a. (including £300 from panel and appointments). Centrally situated detached house (7 bedrooms), garage, and acre of garden, to rent. Premium 2 years' purchase.

4 LONDON, N.W.—Increasing Practice (in hands of Medical Woman) of about £600 p.a. in residential district. Panel 850. Modern detached corner residence (5 bed and dressing rooms), garage, and good garden for sale. Great scope. Premium 1½ years' purchase.

5 S.W. OF ENGLAND.—Practice of £1,350 p.a. in first-rate town. Panel about 2,000. Choice of houses. Premium 1½ years' purchase.

6 LONDON, N. — Practice in thickly populated area. Receipts past year over £950 p.a., including about £100 from appointment and panel of 370. Accommodation consists of bedroom, surgery, waiting room, to rent on lease. Great scope. Premium 1 year's purchase.

7 DEATH VACANCY.—LONDON, S.W.—PRACTICE of £2,350 p.a. (over £600 from panel), in pleasant suburb. Suitable accommodation to rent.

8 FAR EAST.—For Immediate Sale.—Good-class PRACTICE among foreign residents. Several valuable appointments. Cash receipts last year £2,000. Chartered Accountant's report. Scope. Premium £1,200, to include car, etc. Might consider preliminary Manager-Partnership.

9 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight-roomed house for sale or rent. Excellent educational facilities. Sea-fishing, etc. Premium £1,500.

10 W. MIDLANDS. — Country Practice of about £1,000 p.a. in beautiful part. Panel 532. Very good house (6 bedrooms), good stable and orchard, etc., for sale or rent. Premium £1,500.

11 S. COAST.—Partnership after Preliminary Assistantship in Practice in seaside resort. Share worth about £1,000 p.a. to suitable man, who for preference should be single. Premium £1,600 and considerable scope.

12 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

13 LONDON, E.—Cash and Panel Practice of £1,285 p.a. in populous area. Panel 1,700. House (5 bedrooms) for sale. Premium 1½ years' purchase.

14 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,500 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one-half share 1½ years' purchase.

15 ESSEX.—Practice doing about £1,200 p.a. in outlying suburban district. Panel 658. Detached house (6-7 bedrooms), with garage and lovely garden, for sale. Premium—Practice—£1,500.

16 LONDON, W.C.—Practice in Bloomsbury area. Receipts 1930, £870. Panel 500. Surgery accommodation, with large bedrooms, bathroom, etc., to rent. Premium £1,500.

17 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc., and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase.

18 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock-up Surgery £95 p.a. Premium, to include furniture and drugs, £500.

19 MIDLANDS.—Practice over £800 p.a. in first-rate town. Panel 500. Large or small house available. Premium only £300.

20 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE averaging £700 p.a., including £250 from appointment. The Surgery accommodation can be rented, if desired. Scope for experienced and energetic man.

21 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £2,600 p.a. in delightfully situated Country Town, easy distance of London. Attractive house (4 bedrooms) to rent. Partner must be M.R.C.S., and be aged about 30. Appointment on Hospital Staff. Premium for one-sixth to one-fourth share 2 years' purchase. Preliminary Assistantship.

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Practices and Partnerships for Disposal (continued).

22 EAST ANGLIA.—Partnership in good-class non dispensing Practice in favourite Seaside Resort Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

23 S. of ENGLAND.—Partnership in increasing Practice of over £1,400 p.a., in flourishing Seaport Town Panel 1,000 Plenty of scope for young and energetic man Premium one half share 1½ years' purchase Preliminary Assistantship entertained

24 WITHIN 15 MILES OF LONDON. — PARTNERSHIP in Practice of nearly £3,000 p.a., in growing Town Panel nearly 1,500 House (4 bedrooms), garage, and good garden to rent on lease. Premium one third share 2 years' purchase

25 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent Premium £500.

26 PARTNERSHIP in Ear, Nose, and Throat Practice in first rate Town Share worth about £1,650 at 2 years' purchase

27 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.), easy access of West End. Premium for one half share £2,300

28 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in beautifully situated Country Town. Panel about 650 House (5 bedrooms) to rent. Good schools. Excellent sport. First class Hospital One third to one half share at 1½ years' purchase. Welsh not necessary.

29 W. MIDLANDS.—Practice £800 p.a. in market town Panel 170 House (5 bedrooms), garage and garden, to be sold or let Premium 1½ years' purchase

30 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600 Nice house (4 bedrooms) to rent. Premium for one half share 1½ years' purchase.

31 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House, with lovely garden and paddock, for sale. Scope Prem 1 yr's pur

32 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000 Premium for one fifth share 2 years' purchase

33 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb Panel £100. Modern house (3 bedrooms) Premium £1,100

34 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort Panel 520. Hospital Good house and garden Premium 1½ years' purchase

35 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. Prem. £1,100

36 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of London. Panel about 1,000 House (6 bedrooms) with small garden for sale Educational facilities and sport Prem 1½ years' purchase

37 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., in first rate town. Panel about 3,000 Suitable house obtainable Scope for increase. Premium one third share 1½ years' purchase.

38 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport Premium £1,350

39 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district Panel 2,525. Scope for increase. Premium one half share 2 years' purchase

40 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district Panel 1,500 Detached house with garage and small garden, to rent. Sport of all kinds Premium one third share 2 years' purchase. Preliminary Assistantship.

41 LEEDS. — Very compact mixed Practice over £1,200 p.a. Panel 1,300 Large well situated detached house (4 bed and dressing rooms), with large garden, to rent on lease Premium 1½ years' purchase.

42 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district Panel 250 Convenient semi detached house (4 bedrooms) with good garage and secluded garden, for sale Great scope Premium £860

43 CO. DURHAM.—Partnership in Country Practice easy distance of coast Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale Premium for one half share only £1,000

44 OPHTHALMIC Practice in flourishing Town within easy distance of London Receipts over £450 (one day's attendance per week) Fees mainly £1 1s. Rent £60 Good Hospital Premium £800.

45 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p.a., in beautiful hunting centre. Applicant should be aged about 30 ('Varsity man preferred). Cottage Hospital Scope for Surgery. One fourth share at 2 years' purchase. Preliminary Assistantship

46 SOMERSET. — Practice averaging £870 p.a. in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,300

47 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small town Panel about 2,400 One third share at 2 years' purchase, payable by arrangement if desired

48 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast Panel 650 Detached house (6 bedrooms), with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc Premium 1½ years' purchase. Suitable for retired Service man.

49 S. DEVON. — Practice over £1,800 p.a. (£800 from panel) in beautiful country district near the borders of Dartmoor. Suitable house available. Hunting, shooting, fishing Premium 1½ years' purchase

50 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast. Receipts average £300 p.a. (including £100 from panel) Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's pur.

51 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash

52 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p.a., in beautifully situated country town Panel about 1,600. Hospital in town, and incoming Partner must be a good Surgeon. One fifth share at first at 2 years' purchase.

53 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town Panel 785 Share up to one half 2 years' purchase. Up to date Cottage Hospital.

54 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,300 p.a. Suitable house to purchase. Premium one fourth share £2,000. Preliminary Assistantship

55 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900

56 S. OF ENGLAND.—Partnership in Practice, about £2,800 p.a., in favourite seaside resort Delightful house (5 bedrooms), garage, and nice garden, to rent Incoming Partner should be a Surgeon (preferably F.R.C.S.) Hospital and appointment on staff. Premium one fourth share 2 years' pur

57 LONDON, S.W.—Practice about £500 p.a. in suburban district Panel 650 No midwifery Semi-detached corner house (6 bedrooms) for sale. Scope. Premium 1½ years' purchase.

58 WEST HAM. — Practice (carried on by Medical Woman) in populous area Receipts last year £580 p.a. Small panel No midwfy Six roomed house to rent Prem. £700

"MEDICAL PARTNERSHIPS, TRANSFERS, AND ASSISTANTSHIPS" (BARNARD & STOCKER) Post free 12/6.

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams: BOVMEDICAL, WESTRAND-LONDON. Telephone: TEMPLE BAR 1616 (3 Lines).

Under the personal directorship of Dr. J. FIELD HALL and J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants. Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1 DEVON PARTNERSHIP Half share of very old established unopposed Country Practice, offering scope, and situated in pretty village within reach of large town Cash receipts last year £2,220, including appts and panel of 880 Visits 3/6 to 21/-, medicine extra House contains 2 reception, 4 bedrooms, bathroom, etc Garden Garage Rent £30 p.a Premium £2,000 Hunting, shooting, fishing, etc

2 MIDLANDS—COUNTY TOWN—PARTNERSHIP—A one third share (with increase to one half later) is for disposal in a particularly sound well-established mixed class Practice, owing to the retirement of the Senior Partner Gross cash receipts average £4,379 p.a (last year £4,437) Panel of 1,344 Consultations 3/6 upwards Visits 1/- to 21/- Very suitable house, with 3 reception, 6 to 7 bedrooms etc Good Garage Rent on lease £100 p.a Post-graduate schools and sport Premium 2 years' purchase

3 SOUTH DEVON Pleasant agricultural district, within easy reach of coast OLD established PRACTICE producing £1,850 p.a., including panel and appts bringing in about £1,000 p.a Fees 3/6 to 21/- and 2 to 5 gns About 40 cases Suitable house, with 2 reception, 5 bedrooms bathroom etc Half an acre of garden Garage for 2 cars Price for freehold £1,000, two-thirds on mortgage Premium 1½ years purchase

4 NORTH DEVON & CORNWALL BORDERS—Very old established unopposed Country PRACTICE in beautiful district near coast Cash receipts average just over £1,100 p.a., including appt and panel of 330 Suitable house available Premium £1,600, to include drugs, etc Hunting, golf, fishing etc

5 LONDON, EAST—Very old established working class PRACTICE averaging for the past 12 months over £2,500, including panel of over 2,800 Good appts worth about £160 Visits from 2/6 Very low expenses Suitable house can be rented or bought Central surgery can be rented Premium £4,250

6 BELGRAVIA—Good class non-panel PRACTICE bringing in from £800 to £1,000 p.a Fees from 7/6 to 5 gns. Suitable flat can be rented Premium 1½ years' purchase

7 LONDON, W.C. (Bloomsbury) — Well-established good middle-class PRACTICE. Income last year nearly £900, including panel of 500. Fees 2/6 to 21/- Midwifery 5 to 10 gns Only few cases Well-situated surgery with living accommodation for single man above, or rental Premium £1,400

8 DEATH VACANCY—LONDON S.W.—Residential district—Old established good middle-class PRACTICE, averaging between £1,500 and £2,000 p.a Panel of 1,200 to 1,300 Commodious house, with large surgery and part rent on lease Premium 1½ years' purchase.

9 MIDDLESEX OUTLYING SUBURB—A third share of an old established good middle and working-class PRACTICE, offering excellent future prospects is for disposal Cash receipts last year amounted to £2,965 including panel of 1,468 Suitable house available, either rental or by purchase Premium £2,000.

10 YORKS (EAST RIDING)—Unopposed old-established PRACTICE, in good agricultural district near sea Cash receipts average about £1,300 p.a including appt (£50) and panel 660 Visits 2/6 to 21/- Exceptionally good house with ample accommodation, 5 bedrooms etc (indoor sanitation main drainage, central heating, etc) Garden, small orchard and paddock Price £1,600, £1,000 on mortgage, Premium £1,800 Good hunting, golf, sea fishing, etc

11 NORTH CORNISH COAST—PARTNERSHIP—A one half share is offered in a very sound old-established PRACTICE, averaging £2,748, including panel producing over £800 p.a Appts worth nearly £300 p.a Fees 5/6 to 21/- Very nice house in excellent position, with 3 reception 7 bedrooms etc good garden Rent £80 p.a. Sport of all kinds Premium for share £2,000

12 WEST OF ENGLAND Near Favourite Town—Unopposed country PRACTICE in beautiful surroundings averaging about £600 p.a., but offering scope Panel worth £150 p.a Fees 2/6 to 21/- Exceptionally good house with large garden, containing 3 reception, 7 bedrooms, etc Price for freehold £2,000, £1,000 on mortgage Premium £600

13 LONDON, W.1.S.—Old established good middle-class PRACTICE, averaging over £2,500 p.a (last year £2,600) Medium-sized panel Visits 5/- to 10 gns and occasionally 21/- Midwifery discouraged, 2 or 3 cases yearly at 15 to 20 gns House contains professional accommodation, 2 reception, 5 bedrooms, dressing rooms, etc Price for freehold £1,950 Premium £4,475

14 LONDON W.1.S.—Old established good middle-class PRACTICE, averaging for the last three years £870 p.a Panel 1,850 Fees from 2/6 Very fine house, with 2 reception, 5 bedrooms, and 2 dressing rooms, etc Rent on long lease £90 p.a Premium £1,500

15 LINCS. LARGE TOWN—Old established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970 Visits 2/6 to 10/6, with medicine extra Suitable house, with 2 reception, 6 bedrooms, etc Garage, garden. Rent on lease £95 p.a Premium £2,000

16 PARTNERSHIP—WEST OF ENGLAND—Rapidly developing district within two miles of very favourite town—A one half share is offered in a good mixed-class Practice, having exceptional scope for increase Gross cash receipts for last 12 months approximately £2,000 of which about £600 is from panel Fees from 5/6 to 21/- Mid 2 gns upwards Particularly nice house, with 2 reception, 6 bedrooms etc. Garden; garage Price for freehold £2,300 Excellent sport and schools. Premium £1,800.

17. SOUTH OF ENGLAND—Pleasant Town near Coast—Very old-established middle and upper-class PRACTICE Cash receipts average nearly £1,750 p.a., including panel of 500 Visits 5/6 to 21/- Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town Price, freehold, £1,950

18 CATHEDRAL CITY (NORTH) Partnership acquired in very old-established and Half a working-class Practice Cash receipts for past three years average £4,544 p.a (last year £4,911), including panel about 4,000 A fifth share is for disposal, with increase to a third later Suitable accommodation available Premium 2 years' purchase

19 LONDON, NORTH (King's Cross area)—Lock-up PRACTICE established and held by the Vendor for five years Gross cash receipts for past 12 months over £400, including panel of 360 Fees 2/6 to 21/- Surgery, containing waiting room, consulting room, and dispensary can be rented on lease Premium £350.

20 NORTH MIDLANDS—WITHIN 3 MILES OF FAVOURITE TOWN—Old-established good middle-class PRACTICE, offering large scope Cash receipts for last 12 months £1,332, including panel of over 1,000 Fees from 3/6 Mid from 2 gns Exceptionally nice house, in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc, containing 3 reception, 6 bedrooms, etc Freehold for sale. Premium 1½ years' purchase

21. BORDERS OF CHESHIRE AND STAFFS—Well-established mid-Peak working-class PRACTICE, situated in pleasant district (pop 10,000) and producing about £900 p.a., including panel of over 1,300 increasing. Visits 2/6 to 5/-. House, with good accommodation (3 bedrooms, etc), garden, garage Rent £75 on lease Prem £1,250

22 NOTTINGHAM SUBURB—Well-established middle and good working-class PRACTICE, in residential district (pop 20,000 to 30,000) worth last year over £1,000, including panel of about 880 Visits 3/6 to 7/6 Very little midwifery Attractive house, standing about 3/4 of an acre of garden, with ample accommodation Price for freehold £1,850 Premium £1,550, to include drugs, etc Schools of all kinds, and educational facilities

23. NEAR HUDDERSFIELD—PARTNERSHIP.—A half share is offered in a very well-established good mixed-class Practice, having considerable scope for increase Average gross cash receipts for the past three years £4,000; last year £4,273 Panel of 3,500 Fees from 3/6 to 7/6 Midwifery 1½ to 7 gns., about 50 cases Very good house with 4 reception, 6 bedrooms, etc., and 1½ acres of garden Price for freehold, £2,500, or would be let on lease Prem 1½ years' Partn

24 NORFOLK—PARTNERSHIP.—A one-third share (with increase later) is for disposal in a very well-established Practice in an attractive town near coast. Average gross cash receipts nearly £4,500 for last of nearly 3,000 Visits 2/6 to 30/-, with medicine extra Very nice house, with large garden Freehold for sale Premium 2 years' Partn

25 MANCHESTER—Semi-residential Suburb—Very old-established high-class dispensing mainly middle-class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension Visits 5/- upwards Only about 20 cases of Midwifery from 5 gns Well-situated house, with good accommodation Price (freehold) £1,600. Premium £5,750.

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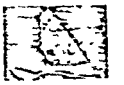
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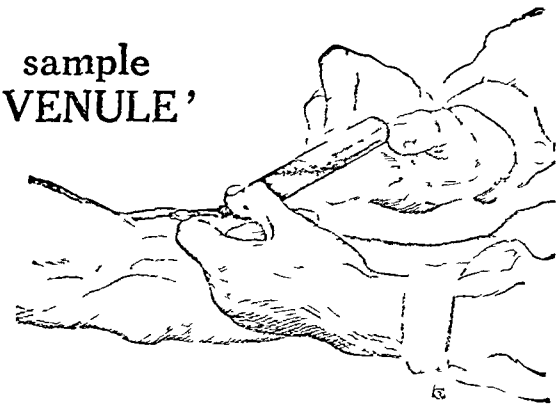
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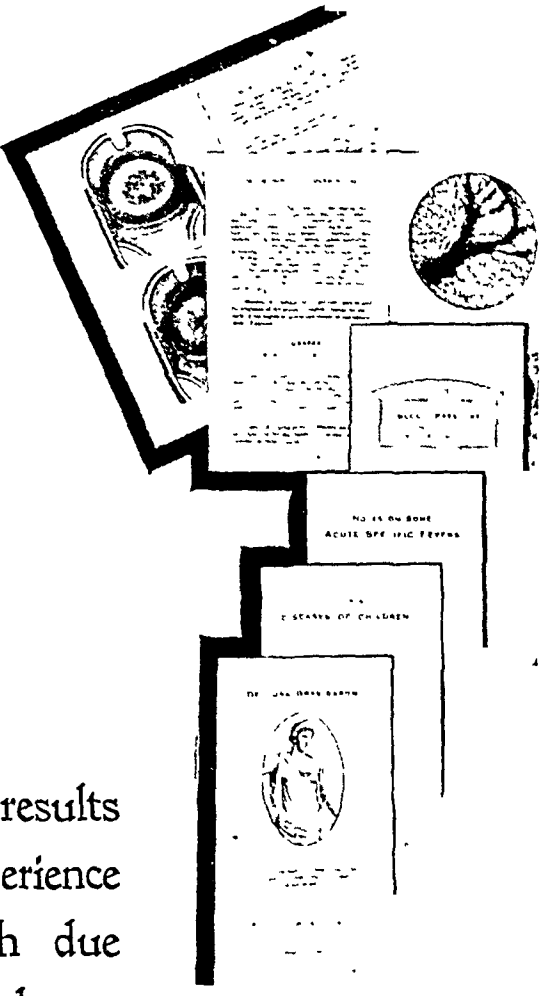
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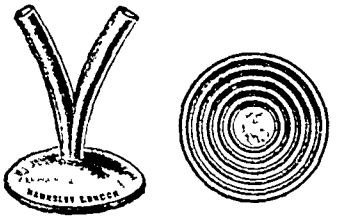
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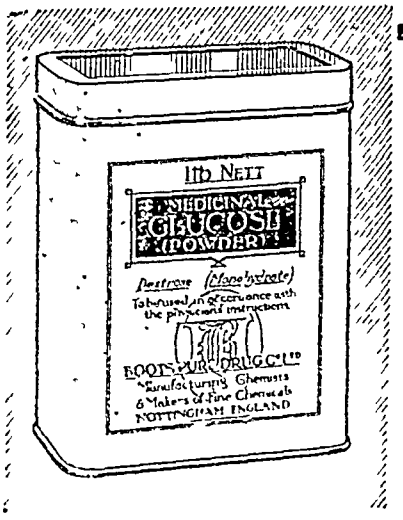
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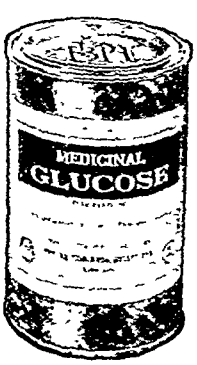
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In a discussion which took place at the recent meeting of the British Medical Association (*B.M.J.*, 1931, 2, 204) attention was directed to the value of intravenous injections of glucose in the treatment of jaundice in childhood, one member stating that the results obtained rom glucose injections in the terror-stricken condition accompanying cholaemia led him to try similar treatment for night-terrors, for which condition also glucose administration has now become the routine treatment.

For intravenous administration the employment of a pure form of glucose is of vital importance.

Medicinal Glucose B.D.H. is a pure chemical substance prepared specially for administration by intravenous injection.

MEDICINAL GLUCOSE B.D.H.

Sample and literature on request

THE BRITISH DRUG HOUSES LTD. LONDON N-1

Cl.15

Dimol

"T" (TONIC) PULVERETTES

prepared to the following formula:—

Dimethylomethoxyphenol	gr.	1
Acid Arsen.	gr.	$\frac{1}{180}$
Ext. Nuc. Vom.	gr.	$\frac{1}{10}$

The value of a nerve and general tonic combined with a non-toxic intestinal bactericide of high potency is so apparent that we feel certain it will be of the greatest service in all cases of toxic degeneration with an intestinal focus, and associated with anaemia and diminished vitality of the neurones and endocrine glands.

Medical men are invited to try them personally if run down or over-worked.

"I think Dimol 'T' is the most useful and best preparation of its kind on the market." . . . . . , *M.D.*

London, W.1.
14th Nov., 1930.

DIMOL LABORATORIES LTD., 40, LUDGATE HILL, E.C.4.
Distributing Agents:
SANGERS LTD., 258, Euston Road, LONDON, N.W.1

It is Wise to Add "Wright's" when prescribing "Liquor Carbonis Detergens"

Although there is no secrecy as to the composition of *Liquor Carbonis Detergens* (it is described as "an alcoholic solution of coal tar"), the method of manufacture is unique. Imitations will be found to be produced by simple digestion, usually accompanied by some primitive, perfunctory and inadequate stirring; whereas, in the case of the genuine product, the intimate contact required for the complete extraction of all the soluble antiseptic constituents is attained by a series of complicated processes, involving the use of highly specialized machinery.

On receipt of your professional card, a package will be sent containing a sample of each of the following—

Wright's Coal Tar Soap.
Wright's Coal Tar Ointment.
Wright's Lysol.
Wright's Liquor Carbonis Detergens.

WRIGHT, LAYMAN & UMNEY LTD., 66, PARK STREET, SOUTHWARK, S.E.1.

'CAPROKOL'

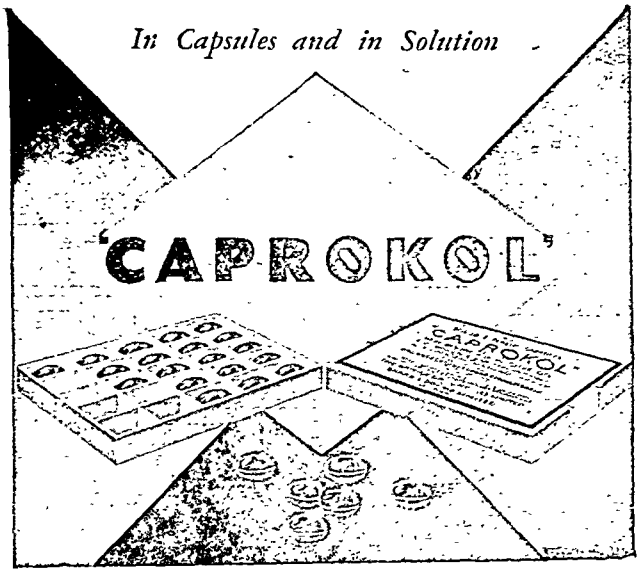
Brand of Hexylresorcinol

For oral administration in the treatment of infections of the Urinary Tract

The immediate result of 'Caprokol' therapy is the establishment of a condition of ease and comfort; continued treatment results, in the majority of cases, in complete sterilisation of the urinary system.

Sample and literature on request

In Capsules and in Solution



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THE BRITISH DRUG HOUSES LIMITED
and
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LONDON

ep.145

Has the Ordinary Diet Sufficient Vitamin B?

At the request of many correspondents a series of tests were recently conducted at the Bemax laboratories to determine how far the ordinary daily diet is an adequate source of Vitamin B.

The diet chosen for the tests included Eggs, Bacon, Bread, Butter, Beefsteak, Cabbage, Potatoes, Cheese, and a suitable percentage of A and D Vitamin.

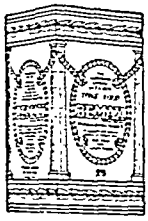
The results prove conclusively that such a diet is in fact deficient in B Vitamin and cannot, by itself, meet the nutritional requirements of adults or promote normal growth in children.

Ample evidence is already available to show that partial B Vitamin deficiency results in a progressive deterioration of the digestive system, and may well be the principal cause of the many intestinal complaints which are so common to-day.

Bemax provides an ideal way of supplementing the ordinary diet with an adequate supply of B Vitamin, of which it is the richest known source in B, Bii, and Biii.

Its value as a tonic restorative food can hardly be over-estimated and its use has been attended with striking results in Dyspepsia, Constipation, Sleeplessness, Nervous Debility, Rheumatism, and all B deficiency diseases. As its content of E Vitamin is also exceptionally high it can be used with great advantage in the treatment of Sterility.

Medical Men are invited to write for reports of the tests referred to in this advertisement.



Laboratory Reports on Bemax and Clinical Sample for personal trial will be sent to any Medical Man on request.

BEMAX

THE NATURAL VITAMIN TONIC FOOD

THE BEMAX LABORATORIES, 23, Upper Mall, Hammersmith, London, W.6.

CHLOROFORM

(DUNCAN)

PURE

PREPARED from ETHYL ALCOHOL.

METHYLATED

PREPARED from INDUSTRIAL ALCOHOL.

BLUE LABEL

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These three varieties are guaranteed to be absolutely pure according to the specifications of the British Pharmacopoeia. They are the result of many years' experience in the manufacture of anaesthetics, and are recognized as the most reliable and perfect products offered to the medical profession.

LITERATURE AND PRICES ON APPLICATION.

DUNCAN, FLOCKHART & CO.

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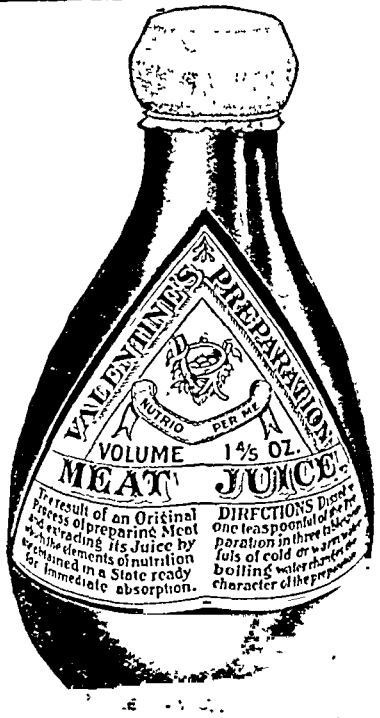
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Valentine's Meat-Juice

IN Typhoid and other Fevers, Extreme Exhaustion, Critical Conditions, Before and After Surgical Operations, when Other Food Fails to be Retained, Valentine's Meat-Juice demonstrates its Ease of Assimilation and Power to Restore and Strengthen.

Clinical Reports from Hospitals and General Practitioners of Europe and America posted on application.

For sale by European and American Chemists and Druggists.



Valentine's Meat-Juice Co., Richmond, Vir., U.S.A.

JB 98

Gastric Disturbances

An ACID Liq. Pepsin et Bismuth Co.

LIQ. GASTRORUBE

℞ Pepsin (O S. & Co 1-3000), gr. 1; Tinct. Nuc. Vom., m. 5; Ac. Hydrocyan. Dil. B P., m 2, Bismuth (equal B P. Liquor, ad dr. 1).

Special attention is directed to the fact that this solution is acid, thereby retaining the full proteolytic activity of the Pepsin. The chemical difficulties of producing an acid solution of Bismuth have been successfully overcome, and the therapeutic advantages of prescribing LIQ. GASTRORUBE are obvious.

SAMPLES AND FURTHER PARTICULARS ON REQUEST.

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Handforth Laboratories, CLAPHAM ROAD, LONDON, S.W.9.

..PUERPERAL SEPTICAEMIA

MONSOL LIQUID for dressings, douches, packs, and all sick-room purposes.

MONSOL CAPSULES, keratin-coated, for intestinal disinfection.

MONSOL OINTMENT and MONSOL THROAT PASTILLES.

MONSOL DENTAL CREAM.

MONSOL MEDICATED SOAP.

MONSOL PESSARIES.

IN the treatment of Puerperal Septicaemia as with specific and non-specific cervicitis, douching is sometimes undesirable or inadequate. To meet these cases, and in response to repeated requests from the medical profession, Monsol is now available in the form of Pessaries containing the equivalent of 2½% of Monsol in colloidal form in a glyco-gelatine base. Powerfully germicidal, non-caustic, and possessing all the essential characteristics of Monsol Liquid, these pessaries have proved invaluable in obstetrics and venereal work.

MONSOL BRAND PESSARIES

Manufactured by THE MOND STAFFORDSHIRE REFINING CO., LTD., ABBEY HOUSE, LONDON, S.W.1

ALIMENTARY TOXAEMIAS

PUTREFACTIVE bacteria increase in numbers in the intestine as age advances. They are relatively scanty in the young child, but after middle life are usually present in considerable numbers. Of the micro-organisms concerned, proteolytic anærobes are probably the most important.

In individuals with a normal intestine and free evacuations, they may do little harm, but in those subject to intestinal catarrh, these putrefactive bacteria become more numerous and active, their products are formed in greater quantity, and are more freely absorbed, and the condition of alimentary toxæmia results. The manifestations of this state are very protean, *e.g.*, "rheumatic" conditions, digestive upset, neurasthenia and neuralgias, increased blood pressure and its complications, and many others. The treatment, in the first place, obviously should be *intestinal disinfection*. For this purpose nothing surpasses the use of KEROL CAPSULES. They have solved for years the question of disinfection of the alimentary tract. They definitely reduce the bacterial content of the intestine, as shown by the reduction in *B. coli* by 99% when the capsules are regularly administered for a period of from seven to ten days. We have from time to time published several booklets containing clinical evidence as to their value, and these we will gladly forward, on receipt of a postcard, to any member of the Medical Profession.

Intestinal Disinfection

Please send for Literature and Samples, which will be sent free to any member of the Medical Profession.

KEROL LTD.
Ravens Lane
Berkhamsted
England.

Kerol Capsules

Famous as The Food of Royal Infants
also for invalids, the aged, and all persons of weak digestion

ROBB'S NURSERY BISCUITS have no equal. Easy of assimilation, a nourishing and sustaining diet, its appetising flavour is greatly appreciated by both young and old. Very welcome as a substitute for the ordinary bread and milk diet. Can also be lightly baked, with eggs and milk, to supply a delicious custard pudding.

Robb's NURSERY BISCUITS

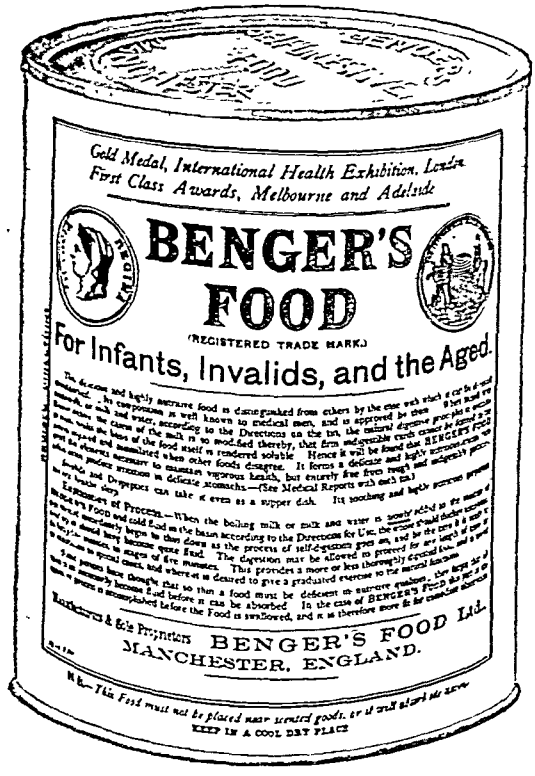
Highly recommended by eminent Accoucheurs and Physicians throughout the world as the most reliable food for Infants over six or seven months.

ROBB'S NURSERY BISCUIT POWDER is recommended when a feeding bottle is to be used, also as a diet for invalids, Nursing mothers and the aged.

ROBB'S DIGESTIVE RUSKS, TOPS and BOTTOMS, GINGER NUTS, and CHARCOAL BISCUITS are specially recommended for invalids and convalescents.

Send for large free sample and descriptive booklet, etc

Alex Robb & Co Ltd. (Dept. 6), NURSERY BISCUIT FACTORY, ATKINS ROAD, LONDON, S.W.12.



Benger's Food—*the adjustable diet.*

The "LANCET" describes it as "Mr. Benger's admirable preparation."

Owing to the presence of the natural enzymes of digestion (*Amylopsin* and *Trypsin*), and its method of preparation for a patient, the extent of self-digestion of Benger's Food and the milk with which it is mixed *can be regulated to suit the digestive powers of the patient.*

Benger's Food is prepared with fresh cows' milk. It forms a dainty cream which becomes the easier of digestion the longer it is allowed to stand after mixing. The process may be arrested at any time by simply bringing the mixture to the boil. (A useful average time for standing is 15 minutes).

Patients ordinarily unable to digest milk can take this mixture satisfactorily, as the Benger's food so softens the casein that when under the influence of the gastric juice it forms into minute flocculi instead of a heavy curd.

Benger's Food is of the highest nutrient value and is not found to pall, even when taken over long periods.

A Physician's Sample will be sent post free to any member of the Medical Profession making application to the Proprietors—

BENGER'S FOOD, LTD., Otter Works, MANCHESTER.

Benger's Food in sealed tins is on sale throughout the world by chemists, etc.

Branch Offices—NEW YORK (U.S.A.) 90, Beekman St.
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BENGER'S Food

Food Poisoning—
The Kaylene Treatment

The following letter has been received.

Messrs. KAYLENE, LTD.

DEAR SIRS,

I am in receipt of your sample of Kaylene, for which I thank you. I do not dispense and do not wish to be without some in the house.

My last sample was used on a patient suffering from acute Ptomaine poisoning following a meal of shell fish (mussel) at 10.30 p.m. Symptoms first appeared at 12.30 a.m., and when I saw him at 3 a.m. he was vomiting blood and passing almost pure blood per rectum. He had commenced cramps and nervous twitchings which would shortly have gone on to tonic convulsions. He was very collapsed and had a weak pulse. I gave him **only** Kaylene in cold water, one drachm every quarter of an hour, from 3.0 until 8 a.m., when I felt it safe to leave him. For the next two days Kaylene was given every one to two hours, and was then followed by Kaylene-ol. No other medication of any sort was used, and he made an excellent recovery. This follows a somewhat similar case which I treated at the end of last year.

Your excellent preparation should supplant Bismuth for any purpose.

Yours faithfully,

Physician to————. ————, M.B.

Literature and supply for clinical trial obtainable from the manufacturers.

Kaylene Ltd

Waterloo Road, London, N.W.2.

Telephone— GLADSTONE 1071.

Telegrams— KAYLOIDOL, CRICKLE, LONDON.

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"HOMMEL'S HAEMATOGEN"

A natural organic TONIC associated with nourishing albuminous proteids.

AN EFFICACIOUS REMEDY IN ALL FORMS OF ANAEMIA

associated with constitutional diseases.

Obtainable in Syrup *and* Tablets.

"SEDIN"

Nervinum-Sedativum

Consisting of

Pot. Brom.	0.4	gramme	(grains 6½ approx.)
Sod. „	0.4	„	(grains 6½ approx.)
Ammon. „	0.2	„	(grains 3 approx.)
Salt „	0.1	„	

combined with Vegetable Extract in form of soup tablets. (A disguised dietetic form.)

Samples free and carriage paid on application to—

HOMMEL'S HAEMATOGEN & DRUG CO., 121, Norwood Road, Herne Hill, London, S.E.2

Announcing

For over a decade this antirheumatic has been prescribed where prompt relief from pain and fever were desired, without toxic by-effects.

References
Lancet, ii/28, 638.
Jl. Clin. Invest., Oct., '28
Am. Jl. Med. Sci., '23, 165, 708

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TOLYSIN.
(Æthylester-paramethyl-phenyl-cinchoninic Acid)

NOVOCAIN

The Original Preparation
English Trade Mark No. 276477 (1905)

The Safest Local Anaesthetic for all Surgical Cases.

Ample supplies of Novocain are available for the use of Surgeons at all the chief Hospitals. Specify "Novocain" for your next operation.
Does not contain Cocaine, and does not come under the Dangerous Drugs Act.
WRITE FOR LITERATURE.

GLAUCOSAN

For the treatment of GLAUCOMA according to Dr. Carl Hamburger (Berlin).

GLAUCOSAN.
LAEVO GLAUCOSAN.
AMINO GLAUCOSAN.
} In Sterilized Ampoules.

The following are a few of the Hospitals where "Glaucosan" is used:

ROYAL LONDON OPHTHALMIC HOSPITAL.
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KENT COUNTY OPHTHALMIC HOSPITAL, MAIDSTONE.
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OXFORD EYE HOSPITAL.
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Regd. BRAND. Trade Mark.

METHYL STANNIC IODIDE

OINTMENT
Immediately stops the pain in all cases of burns, scalds, etc.

DUSTING POWDER
For application where a greasy substance is contra-indicated.

LINIMENT
Remarkably effective in treatment of Rheumatoid Arthritis.

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A panacea for Mosquito and other insect bites. Most effective for all purposes where *Tr. Iodine* is employed. Does not stain the skin and there is no sting.

TABLETS
Staniform being an organic compound is more easily assimilated than the Tin preparations at present in use.

Supplies may be obtained through the Wholesale Druggists, Druggists' Sundriesmen, or Dental Supply Companies.

What the Profession says

The following are two recent unsolicited testimonials reported to the Manufacturers by Medical Men.

"After using 'Staniform' Ointment in cases of Impetigo and other septic conditions of the skin, I was much impressed by the rapid response to treatment. Also herpes on the lip quickly disappeared after application of 'Staniform' Ointment."

"Festering wound on left heel—when first seen was about the size of a shilling, with a good deal of pus. Foot much swollen—dressed with 'Staniform' Ointment—healed splendidly in four days."

Similar testimony has been received from a large number of medical men when "Staniform" has been used for the treatment of Burns, Wounds, and Skin Ailments

STANIFORM is used in Leading Hospitals.

STANIFORM over a wide field of clinical experience has exhibited positive curative properties. Combining the well-known usefulness of Tin in staphylococcic infections with the powerful germicidal properties of Iodine, *Staniform* is indicated generally in local inflammations, inducing an immediate soothing effect with rapid healing.

STANIFORM LTD., CARNWATH ROAD, LONDON, S.W.6



NUTRITIONAL ANÆMIA IN INFANCY

The investigations into the nutritional anæmia of Infancy have been brought to a successful conclusion, and the results fully reported in the Medical Research Council Report (Special Report Series No. 157) 1931.

The milk food used in this extensive work is now available to Medical Practitioners under the name of

HĒMOLAC

(Full Cream Milk Powder with Iron Ammonium Citrate)

The exhibition of Hēmolac rapidly restores the hæmoglobin percentage of anæmic infants to a normal figure. It has also been demonstrated that Hēmolac acts as a prophylactic against the common catarrhal infections of the respiratory and alimentary tracts. The morbidity rates of the infants supplied with the extra iron in Hēmolac, was less than half that of the controls fed on diets without additional iron. It is significant that ultra-violet ray and vitamin therapy were without effect.

Clinical samples and literature will gladly be sent on request to any Medical Practitioner

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"STERULES"

(Registered Trade Mark)

FOR

Hypodermic, Intramuscular, Intravenous, and other forms of Injection.

(Care should be taken to prevent confusion as to use in each instance.)

ARSENIC AND IRON *(hypod. and intram.), successful in the treatment of anaemia,* No. 1, weak; and No. 2, strong ...	Box of 10 3/6
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EMETINE HCl. *(hypod., intrav. or intram.),* $\frac{1}{4}$ and $\frac{1}{3}$ gr., 4/6; $\frac{1}{2}$ gr., 5/-; 1 gr., 10/0 *In amoebic dysentery, often in conjunction with "Auremetine."*	
GLUCOSE SOLUTION, *Conc., for producing 1 pint of 5% solution for intravenous feeding*	... each 2/6
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INDIGO-CARMINE *(intrav.) Renal indicator,* 0.4%, 5 c.c., 5/6; 10 c.c., 10 7/6	
MANGANESE BUTYRATE *(intram.), in furunculosis, boils, etc.,* 1%, 1 c.c.	„ 4/6
PEPTONE FOR ASTHMA, *series of 10 graded doses. Intravenous and Intramuscular. (See special leaflet on request.)*	„ 7/6
PITUITARY (Infundibular) *(intram.),* made under Licence, $\frac{1}{2}$ c.c., 6/0; 1 c.c.	„ 10/0
QUININE-URETHANE, 2 c.c., *for varicose veins*	„ 5/0
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AMYL NITRITE "STERULES" *for inhalation in fainting and collapse and in treatment of angina pectoris* ... 12 3/0

N.B.—The above are strictly prices to the Profession. An additional fee is charged on prescriptions to patients.

The above is only an abbreviated list of "Sterules." Full list on receipt of card.

"STERULES" to special formulae, any size up to 100 c.c., are prepared promptly.

You may rely on immediate attention to postal enquiries.

W. MARTINDALE, *MANUFACTURING — CHEMIST —*

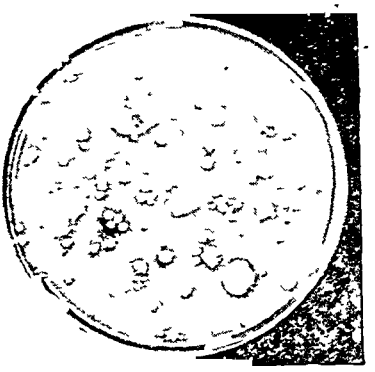
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BETTER MILK FOR BABIES

ORDINARY MILK

1/1,000 c.c. plated—over 200,000 bacteria per c.c.





LACTOGEN
Full strength mixture.

1/10 c.c. plated—less than 100 bacteria per c.c.

FACTS ABOUT LACTOGEN

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Lactogen is under hygienic and scientific control from the time the raw milk is collected until the despatch of the finished product.

The fresh milk used for its preparation is obtained from selected farms, the herds receiving close supervision from the Company's farm inspectors.

A stringent examination is also carried out in the factory laboratory, and with these precautions a constant high degree of purity is maintained.

The modern manufacturing process is carried out under the most strictly hygienic conditions, and the bacterial count of Lactogen, as reconstituted, is less than 100 organisms per c.c.

Lactogen is prepared in England by Nestlé's—famous for more than fifty years for the purity of their milk products—from the pure, fresh milk of specially selected herds, grazing on picked English farms.

Lactogen is neither a new nor untried product. First introduced in Australia, it has for many years enjoyed a large sale in overseas countries.

FREE SAMPLES with detailed descriptive literature will be sent to any Member of the Medical Profession upon request.

Lactogen Bureau (Dept Z7), Nestlé and Anglo-Swiss Condensed Milk Co., 6 & 8, Eastcheap, London, E.C.3.

"LACTOGEN"

BETTER MILK FOR BABIES



(*Æsculapius*).

Vaccines of Seasonal Interest

EVANS' WHOOPING COUGH MIXED VACCINE

Inoculated as soon after exposure as possible, is useful in establishing immunity. In treatment it decreases the severity and duration of the attack and reduces risk of complications.

R/ B. Pertussis ... 50 mills.
Pneumococci ... 50 „
Streptococci ... 50 „
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EVANS' COMMON COLD and ANTI-CATARRH VACCINE

Specially designed to produce the necessary protection during those seasons when one is most susceptible to colds. At this period it is especially indicated to provide protection during the coming months.

R/ Micrococcus catarrhalis 200 mills.
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Manufacturers of Fine Chemicals, Pharmaceutical and Biological Products

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INSULIN "A.B."

The world-wide supremacy of Insulin, 'A.B.' is due to its unequivocal purity no less than to its well-known potency and stability under all conditions.

Supplied in three strengths

20 units per c.c. Packed in bottles containing:
5 c.c. (100 units or 10 doses) 2/- each
10 c.c. (200 " 20 ") 4/- "
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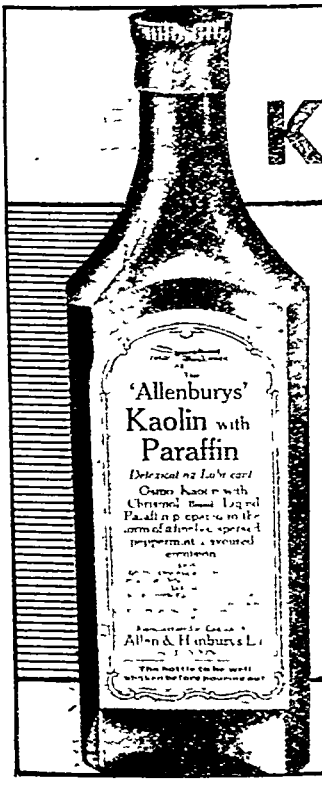
40 units per c.c. Packed in bottles containing:
5 c.c. (200 units or 20 doses) 4 - each

80 units per c.c. Packed in bottles containing:
5 c.c. (400 units) 8 - each

Full particulars and the latest literature will be sent free to members of the Medical Profession.

Joint Licencees and Manufacturers

Allen & Hanburys Ltd. The British Drug Houses Ltd.



The 'Allenburys' Kaolin with Paraffin

A Detoxicating Lubricant

The "Allenburys" Kaolin with Paraffin contains a combination of two already well known preparations —20 per cent. of "Osmo" Kaolin with 33⅓ per cent. of "Chrismol" Liquid Paraffin. These two constituents are so finely diffused that they form an emulsion which ensures the highest possible therapeutic effects

The "Allenburys" Kaolin with Paraffin is indicated in all conditions in which elimination of intestinal toxins and protection of the intestinal mucosa are necessary, *e.g.* in chronic constipation, intestinal toxæmia, colitis, summer diarrhœa, food poisoning, cholera, etc

In bottles 8 oz. and 16 oz. for prescribing
80 oz. for dispensing.

Literature and sample will be sent free on application.

Allen & Hanburys Ltd., London, E.2

Telephone Bishopsgate 3301 (10 lines) Telegrams "Glaxo, Hoston, London"

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preparations of

THERAPEUTIC BACTERIOPHAGES

BACTÉ-INTESTI-PHAGE—For Intestinal Infections.

BACTÉ-COLI-PHAGE—For Bacillus Coli Infections.

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BACTÉ-PYO-PHAGE and

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A Paper
ON
RECOGNITION AND TREATMENT OF BIRTH INJURIES IN THE NEWLY BORN*

BY

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The infant in its passage through the genital canal probably experiences more severe trauma than at any future stage of its existence. Few adults could survive such an experience. It is small wonder, then, that some infants die forthwith from what is miscalled "asphyxia pallida," really from shock, and that others die in a few days as the result of birth trauma. The majority fortunately survive, but all are injured to a greater or less extent. From Cruickshank's[1] pathological work on neo-natal mortality, it appears that about 30 per cent. of all neonatal deaths are due to birth injury. The minor injuries are complacently dubbed physiological, though an adult with a caput succedaneum or cephalhaematoma would certainly not consider his condition physiological.

There is a remarkable contrast between the recuperative powers of infants from sepsis and from injury. To the former they show little, while to the latter they show wonderful powers of resistance. Injuries to the skin and subcutaneous tissue, in the absence of sepsis, usually heal without leaving either deformity or disability. Fractured bones nearly always unite with great rapidity and without deformity. Injuries to the viscera on the other hand are usually fatal, at least those that are recognized usually end in death, though there must be many minor injuries which pass unnoticed and leave no after-effects. Of all the birth injuries those to the nervous system are most likely to leave permanent disability, though here again a grossly paralysed limb may, within a few weeks, recover completely, and even intracranial haemorrhage may be absorbed without leaving any disability either mental or physical. Retinal haemorrhages always clear up within 10 days or a fortnight. Once the first critical days have passed, if infection be avoided, most infants make a rapid and complete recovery from the trauma of birth. Of the deaths from birth injury 68 per cent. occur in the first three days of life.[1] If the trauma is insufficient to kill rapidly the majority recover completely.

The present paper is based on the case records at the Royal Maternity Hospital, Glasgow, over a period of 3½ years. During that time all the infants who had received recognizable birth injuries were under my care. In this period approximately 8,000 infants were born alive, and from these I have records of 350 more or less severe birth injuries.

The birth injuries are best classified on an anatomical basis—injuries to the skin and subcutaneous tissues, to the muscles, to the bones, to the viscera, and to the nervous system.

INJURIES TO THE SKIN AND SUBCUTANEOUS TISSUE

Even in normal labour some injury to the skin and subcutaneous tissue always occurs. Many of the injuries are of minor importance and clear up so rapidly that in a few days no trace can be found. The caput succedaneum in vertex presentation may be said never to give rise to trouble. In face presentation, however, the oedema and swelling of the lips and buccal mucous membrane may interfere with sucking. In breech presentation the vulva or penis and scrotum may be severely bruised and oedematous; in these cases danger of sepsis is considerable, for it is almost impossible to protect the damaged tissues from contact with the excreta. Cellulitis arising from this cause is not uncommon.

Severe bruising of the scalp with forceps or from pressure on the promontory of the sacrum may lead to sloughing of the soft tissues. This most commonly occurs when there is an abrasion of the injured scalp which becomes infected. The sloughing may extend down to the skull and a considerable area of bone may be laid bare. The greatest care should be taken to protect these abrasions from infection. Misapplied forceps may cause very extensive damage. I have seen a case in which, besides numerous fractures of the skull, one of the ears was almost severed from the head.

The cephalhaematoma only rarely gives rise to trouble. It can be recognized by the limitation of the swelling to the margins of one of the flat bones of the skull. Its edges are usually firm and the condition must not be mistaken for a depressed fracture. Meningoceles which may simulate this condition alter in tension with changes in intracranial pressure and are situated over sutures. Only on very rare occasions does the cephalhaematoma become infected, and in the absence of infection it is always absorbed, leaving no trace.

The subcutaneous tissues are sometimes damaged by pressure and the condition of adipo-necrosis neonatorum produced.[2] These lesions consist in round or elongated indurated swellings immediately under the skin. They are usually of a dusky red colour and are not tender. The upper parts of the neck, the back, and the shoulders are the usual areas affected. They disappear in 5 or 6 weeks after birth.

Bednar's ulcer, though strictly speaking not a birth injury, occurs so soon after birth that it is worthy of mention. It is an ulcer of varying size on the palate or fauces and is caused by the misguided efforts of the attendant in attempting to clear mucus from the pharynx of the newborn infant. In itself the injury is of minor importance, but it provides a portal of entry to infection, and on this account all procedures which are likely to damage the very delicate mucous membrane of the infant's mouth or pharynx should be avoided. The ulcers usually heal rapidly without treatment.

INJURIES TO MUSCLES

The only injury to muscle which calls for special comment is injury to the sterno-mastoid muscle. Sometimes the coincident swelling of the skin and subcutaneous tissues of the neck may prevent recognition of the muscular lesion for 2 or 3 days. It is almost always situated in the lower half of the muscle and may reach the size of a pigeon's egg. There is considerable difference of opinion regarding the nature and cause of the swelling. Some consider it to be due to rupture of the muscle in cases of difficult labour, while others think it is caused by ischaemic contracture of the muscle resulting from prolonged venous stasis either during labour[3] or *in utero* before labour commences.[4] There does not seem to be any sound reason why simple rupture of the muscle should result in extensive fibrosis and wry-neck, and it seems probable that the cases which show this deformity are due to venous obstruction and ischaemic contracture.

FRACTURES

Fracture of the Skull.—The most common fracture as might be expected, is fracture of the skull. I have records of 16 cases, and it is probable that others occurred but were not detected owing to the displacement being of minor degree. Of these cases 14 were vertex presentations and 2 breech. There were five deaths. Three occurred

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

within two days of birth, and in each case there was very extensive damage to the meninges and laceration of the brain. One child died when 10 days old and one when 6 weeks old from gastro-enteritis. Only one infant required operation; he made a good recovery. The commonest bone to be fractured was the frontal—9 cases in this series. In one, the orbital plate of the frontal bone was fractured and there was great haemorrhage into the orbital cavity. Recovery, however, was complete. The parietal bone was damaged in 5 cases, and the temporal and occipital bones each in one case. The fracture usually occurs in cases of difficult labour and is commonly caused by one of the forceps blades, though in women with deformed pelves the sacral promontory may cause the damage.

Surgical intervention should as a rule be avoided. The infant's skull is so elastic that depressions in the skull are unlikely to cause symptoms from increased intracranial pressure. Symptoms may arise from damage to the underlying brain or from haemorrhage from a torn tentorium or falx, but surgical treatment cannot restore damaged brain substance, and the structures in the region of the brain stem are beyond its reach. Experimentally it has been shown that fracture and depressions produced by slow localized pressure do not cause damage to the brain or meninges.[5] For these reasons it is only in those cases where there are definite signs of active mischief at the site of the fracture that operative procedures should be undertaken.

Fractured Clavicle.—Fracture of the clavicle occurred in 8 cases in this series. It was right-sided in 3 cases, left-sided in 4, and in one case double. In one infant, a breech presentation, there was a right-sided Erb's paralysis and a fractured left clavicle. In 4 of the cases the presentation was breech and in 4 vertex. In all the cases in which the presentation was vertex the infants were very large and the labour difficult. Manipulative interference with the delivery of the shoulders is thought by Hukewytsch[6] to be a frequent cause of the fracture. There is seldom much displacement of the bone and on this account the condition is often overlooked, or owing to immobility of the arm it may be mistaken for Erb's paralysis. An early sign is swelling of the soft tissue over the affected clavicle,[6] and the callus, which forms in a few days, makes the diagnosis plain. As the newborn infant habitually lies on his back elaborate methods of fixation are not necessary. A pad may be strapped between the shoulder blades in order to throw the shoulders back, and the arm of the affected side may be fixed to the trunk. The fracture almost always unites without leaving any deformity. This is said to be due to the fact that in early infancy the thorax grows so quickly that overlapping is naturally counteracted.[7]

Fracture of the Humerus occurred in 8 cases, 5 of which were left-sided and 2 right-sided; in one, both bones were fractured. In 7 cases the presentation was by the breech and in one by the vertex (occipito-posterior). The fracture usually occurs in the upper third of the bone and is probably always due to manipulative interference. The immobility of the arm, the swelling and the crepitus, which can usually be elicited, make the diagnosis clear. In newborn infants it is extremely difficult to fix a limb to an ordinary splint; the converse, to fix a splint to a limb, is possible, but useless. Probably the best and simplest method of splinting the humerus is to wrap a thin layer of gamgee round the arm and then encircle the limb from the shoulder to the elbow in a fairly firmly applied band of adhesive plaster. The arm may then be fixed to the side with the elbow bent at a right angle. In some cases the same type of splint as that used for Erb's paralysis is useful. By this means the arm is fixed in a position of abduction and external rotation with the forearm flexed at a right angle. The results are almost always excellent. In one of my cases, however, there was damage to the musculo-spiral nerve with drop-wrist. This disappeared in two months.

Fracture of the Femur occurred three times, twice in breech presentation and once in a case delivered by Caesarean section. In the latter the fracture almost certainly occurred when the infant was being extracted from the uterus. The diagnosis is usually easy, but in one of the cases, in which the fracture was in the lower third of the bone, there was great swelling of the leg as well as the thigh, and the fracture was thought to be in the tibia. This was disproved by *x*-ray. The best method of fixing the bone is by vertical extension with the thigh at a right angle. A light bar of wood across the top rail of the cot provides a satisfactory fixture from which to suspend the limbs. This position is not uncomfortable and it has the great advantage of enabling the buttocks to be cleansed without disturbing the affected limb. In all the cases union was sufficiently firm in three weeks to permit us to dispense with the extension apparatus. The results in all cases were satisfactory. In fixing the limbs of newborn infants the greatest care must be taken not to cause damage to the skin from pressure. For this reason wooden or metal splints are not to be recommended. Even a sharp edge of adhesive plaster pressing on one of the folds of the axilla may produce a dangerous abrasion. It is therefore of great importance to inspect the fixation apparatus frequently and to reapply it if there is any suspicion of underlying damage.

INJURIES TO THE VISCERA

Injuries to the organs in the thorax or abdomen are not as a rule recognized during life. It is common in cases of asphyxia to find at necropsy pleural or pericardial haemorrhages. Cruickshank[1] found visceral haemorrhage 81 times in 800 neo-natal deaths (lung 28 cases, liver 18 cases, suprarenal 23 cases, kidney 20 cases and retroperitoneal tissue 1 case). In one case that came under my notice there was a large swelling in the region of the left kidney; the urine was normal. In 9 weeks the swelling had become much less but could still be detected; at the age of 5½ months no trace of the swelling could be found. I think this was a case of perirenal haemorrhage. The testicles may receive injury in breech presentation. I have seen several cases in which there was great swelling of one or both testicles probably due to haemorrhage into the tunica vaginalis. These swellings usually subside rapidly and leave no trace.

INJURIES TO THE NERVOUS SYSTEM

Of all birth injuries those to the nervous system are most likely to leave serious and lasting disability. Injury to peripheral nerves may result in permanent paralysis, while intracranial or spinal trauma is not only an important cause of neo-natal death, but may, in the infants that survive, give rise to most serious sequelae. In these injuries the remarkable recuperative power of the infant shows itself in the same way as is seen in injury to other tissues, but, none the less, damage to the nervous system gives rise to serious sequelae more commonly than any other birth injury.

Injury to the Peripheral Nerves

The two common lesions are injury to the facial nerve and to part or all of the brachial plexus. It is extremely rare to meet with damage to other nerves though paralysis from injury to the sciatic and peroneal nerves has been recorded.[8] I have records of two cases of paralysis of the

anterior tibial muscles. One was a case of breech presentation; the presentation of the other is unknown as the child was born before admission to hospital. Both infants made good recoveries. In these cases it is extremely difficult to differentiate between paralysis from injury to peripheral nerves and paralysis from damage to the spinal cord. Retention of urine and loss of the anal sphincter reflex point to cord injury.

Facial Paralysis

This is usually caused by pressure on the 7th nerve in its course outside the skull, though the nucleus or the nerve trunk in its intracranial course may be damaged by fracture or haemorrhage. In the great majority of cases the paralysis is caused by pressure of a forceps blade on the nerve after it leaves the sterno-mastoid foramen. The paralysis may be complete or partial, the extent depending on whether the main trunk of the nerve or only some of its branches have been damaged. The condition is easily recognized; when the child cries the mouth is drawn to the sound side, the eye on the affected side does not shut and the face on that side remains impassive. There is usually some swelling and bruising in the region of the mastoid. Sucking is not interfered with. Treatment is unnecessary though the local bruising and excoriation may require attention. I have records of 66 cases. The presentations were as follows: 62 vertex (of which 6 were occipito-posterior); 2 face; 1 infant delivered by Caesarean section after labour had been in progress for two hours; the presentation was not recorded in one case. Sixty-three of the infants were delivered by forceps. The paralysis almost always passes off in 1 to 2 weeks. In one of my cases there was still slight paralysis after 8 weeks, but it is possible that in this infant the lesion was of central origin as there was a shallow depression in the fronto-temporal region on the contralateral side though there was no other paralysis suggesting an intracranial lesion.

Brachial Paralysis

Paralysis of the arm from injury to the brachial plexus is the most important peripheral nerve lesion as it is extremely common, though less frequent than facial paralysis, and produces grave crippling if recovery is incomplete. Two principal forms are recognized. In one (the Erb-Duchenne type) the paralysis is due to damage to the 5th and 6th cervical roots or the trunk formed by their union. In the other (Klumpke's type) the injury involves the 7th and 8th cervical and first dorsal roots. Atypical forms are also met with; the whole limb may be affected or single muscles such as the deltoid or supinator longus alone may be paralysed. There is considerable difference of opinion as to how the injury is produced. Some hold that it is caused by pressure on the brachial plexus from the forceps, the hand of the obstetrician, or the clavicle in cases where there is difficulty with the delivery of the shoulders; others think that stretching or even laceration of the nerve trunks or spinal roots is responsible. Probably over-stretching of the nerve trunks is the most common cause.[9] In the Erb-Duchenne type the muscles most commonly affected are the deltoid, the supra and infra spinati, the teres minor, the biceps, the brachialis anticus and the supinator longus. There is probably little or no sensory loss. The signs are characteristic. The arm is internally rotated and held close to the side, the forearm is extended and pronated. Supination and flexion of the forearm is impossible and the arm cannot be abducted or rotated outwards. Klumpke's paralysis is much less common than the Erb-Duchenne type. In this condition the triceps and practically all the muscles of the forearm and the hand, except the supinator longus, are paralysed. The forearm is flexed at the elbow and supinated. The hand is flaccid. In this form of paralysis there may be narrowing of the palpebral fissure and myosis on the affected side from damage to sympathetic fibres. In rare cases there is paralysis of the whole arm. In these the whole plexus has been injured. The recognition of the condition is as a rule easy, though fracture of the clavicle or humerus may at first be mistaken for true paralysis on account of the immobility of the arm. The pseudo-paralysis of osteochondritis is practically never present at birth; pseudo-paralysis from scurvy never occurs till about the age of 6 months; paralysis from poliomyelitis is never present at birth. Paralysis from cerebral lesions is of the upper neurone type. It is, however, not always easy to distinguish between upper and lower motor neurone paralysis in the newborn. I have found the embrace reflex[10] of some assistance in this respect. If the infant is laid on his back on a table and this is suddenly struck with the hands on each side of the infant a normal child or one with an upper motor lesion will abduct its arms and then, with the forearms flexed, bring the limbs towards the middle line, going through the motion of an embrace. In lower motor neurone lesions the affected arm will remain immobile.

It is most important to recognize brachial paralysis early, for the earlier treatment is commenced the better the result. The guiding principle, as in the treatment of all lower motor neurone lesions, is to place the affected muscles in a position of relaxation and to maintain them thus for a prolonged period of time. For the first few days after birth, or at any rate till a satisfactory splint can be made, the affected arm should be fixed in an abducted and externally rotated position with the forearm flexed to a right angle and supinated. This can be done by fixing a band of adhesive plaster round the child's wrist and pinning this to the pillow with the arm suitably abducted and the forearm flexed and supinated. In the less severe cases recovery begins to show itself in a few days. Frequently, however, it is necessary to fix the arm in a splint. Plaster of Paris may be used, but this is heavy and liable to harbour dirt. Light pexaloid or vulcanized fibre splints are the most useful. The splint consists of a wide body-piece moulded to and partially encircling the thorax; from this the arm-piece springs at a right angle and from this the forearm and hand portion of the splint is set at a right angle; this section of the splint is set in a position to hold the forearm in full supination. By this means the arm can be fixed in an abducted and externally rotated position with the forearm flexed at a right angle and supinated. The arm should be kept fixed in the splint night and day for at least six months unless recovery takes place before then. Subsequently operative procedures may be resorted to. Good results have been claimed from nerve suture,[11] but I think the present opinion of most surgeons is that there are few cases in which this operation is advisable. Operation on the muscles of the shoulder joint to permit of external rotation of the arm are, however, of considerable value.

I have records of 28 cases of brachial paralysis. Twenty-seven were of the Erb-Duchenne type and showed considerable variation in the extent of the paralysis. In one other there was complete paralysis of all muscles of the right upper limb. Twenty-one of the cases recovered completely within 3 months of birth, 5 are still under treatment, and though 4 have made some recovery they still show more or less severe disability. In all of them fair abduction of the arm can be obtained, but this is chiefly achieved by scapular movement. The supinators are still paralysed and owing to unopposed action of the teres major muscle there is internal rotation of the arm. The case with complete paralysis of all arm muscles shows no improvement after 10 months. Two cases have been lost sight of.

Injury to the Spinal Cord

This is commonly produced during breech extraction. Probably many of the fatal cases pass unrecognized. Damage to the upper cervical region is necessarily fatal. Crothers and Putman[12] have reported 28 cases in which the child survived injury to the lower cervical, dorsal or lumbar regions. The symptoms are those of transverse myelitis, and depend on the site of the lesion in the cord. The diagnosis is often difficult, especially as sensory disturbances in young infants can only be determined in a very rough-and-ready way. Cerebral lesions and injuries to the brachial or lumbar plexus or their spinal roots are sometimes difficult to distinguish from injuries to the cord itself. The treatment consists in education of muscles and sphincters and orthopaedic measures to correct deformities and contractures.

Intracranial Haemorrhage

Haemorrhage within the cranium of the newborn is extremely common. Eardley Holland and Lane-Claypon[13] found it present post mortem in 25 per cent. of still-births and neo-natal deaths, while Cruickshank[1] in a series of 800 neo-natal necropsies found gross haemorrhage in 20 per cent. Capon[14] has emphasized the frequency with which it occurs in premature infants. The most common lesion is tear of the tentorium, though damage to the falx cerebri or to the tributary veins of the longitudinal sinus or to the veins of Galen may also give rise to bleeding, while haemorrhage from the choroid plexus may fill the ventricles with blood. Haemorrhage of any extent into the brain substance is probably not very common, though Schwartz[15] holds that petechial haemorrhages into the brain substance are of frequent occurrence. Reuss[16] does not consider these petechiae to be of pathological importance.

Unfortunately it is extremely difficult to diagnose intracranial haemorrhage with certainty during life, and for this reason it is impossible to estimate the proportion of infants who survive. The diagnosis even post mortem is not always easy. If the head is opened by the method of Beneke,[17] and the dural septa thereby preserved, the brain must be removed piecemeal and only gross lesions in its substance can be detected, while if the brain is removed intact the membranes are damaged to such an extent that rents and subdural haemorrhages caused during birth cannot be recognized. By injecting the arteries of the brain and meninges through the carotid artery with opaque fluid and taking *x*-ray photographs (preferably stereoscopic) before the head is opened, haemorrhages can frequently be displayed and located. This method has been successfully used by Campbell[18], Roberts,[19] and Allen and McClure.[20] It seems to me that the difference of opinion among pathologists regarding the frequency of cerebral and meningeal haemorrhage is to some extent due to differences in method of examination.

The diagnosis during life is usually even more difficult. Some cases can be recognized without doubt, but I must confess that on numerous occasions I have been astonished to find at post-mortem examination a quite unsuspected intracranial lesion. I imagine others have had the same experience.

The signs pointing to intracranial haemorrhage are drowsiness, feeble cry, inability to suck, muscular rigidity, even at times simulating tetanus,[21] convulsions, bulging fontanelle, intermittent attacks of cyanosis. Any or several of these signs may be present without intracranial haemorrhage, though Clein[22] holds that intermittent attacks of cyanosis are diagnostic. Bulging fontanelle is not very common, and the other signs mentioned may arise from various causes. A definitely pigmented or uniformly blood-stained cerebro-spinal fluid with crenated red cells is probably the most important manifestation available. Even this sign does not afford absolute proof. It is held by some that the cerebro-spinal fluid of all premature infants is tinged with yellow.[23] Possibly haemorrhage or capillary oozing occurs in a large proportion of newborn infants, especially in premature babies. Judging by the frequency with which haemorrhage into the retina (the only part of the central nervous system that we can see) occurs, it seems possible that capillary haemorrhage from the meninges may occur with equal or even greater frequency. In 349 infants without any other birth injury Dr. Morton and I[24] found retinal haemorrhage in 88 (25 per cent.). Other observers[25] have recorded an incidence of 23 per cent. *In 81 cases with intracranial haemorrhage we found it in* 38 (47 per cent.), while 23 patients of our series died before examination could be carried out; probably an even larger proportion of these would have shown retinal haemorrhage.

Certain fallacies must be guarded against in examining the spinal fluid. The spinal theca of the newborn infant is of such small calibre that veins in the spinal canal are very easily injured during the puncture, and blood may thus be introduced into the specimen. The fluid should always be centrifugalized as soon after withdrawal as possible; a definitely yellow supernatant fluid is strong evidence of haemorrhage. The presence of crenated red cells is also of significance, but here again a fallacy lurks. If the cells are exposed to any haemolytic agent, water, alcohol, etc., they become crenated. It will be seen, therefore, that there are many pitfalls, and even after exercising the utmost care it is impossible in some cases to be certain of the diagnosis.

Treatment must to a great extent be symptomatic. Careful and skilled nursing is essential. If the child is unable to suck, food should be given by the stomach tube; this is a much more satisfactory method than giving it by the spoon or pipette. Some think[26] that the condition is commonly associated with haemorrhagic disease of the newborn, and, if there is any suspicion of this, whole blood should be injected subcutaneously. I do not think, however, that this is a common cause. I have never seen symptoms of intracranial haemorrhage in a frank case of haemorrhagic disease. If there are signs of increased intracranial pressure lumbar puncture is of use, while, if the great fontanelle is tense and bulging and is not relieved by lumbar puncture, fluid should be withdrawn from the cerebral ventricles. Convulsions should be prevented as far as possible by giving chloral; 1-grain doses at two-hourly intervals will usually suffice. Good nursing is of more importance than any active therapeutic measures; it requires the greatest skill and experience, and unfortunately few nurses have the opportunity of acquiring a knowledge of this most important branch of their subject.

The sequelae of intracranial injury are of importance. The most common are mental deficiency, asymmetrical spastic paralyses and hydrocephalus; probably true spastic diplegia owns a different cause.[27 & 28] In 33 cases which Morton and I[24] followed up for a year or more 5 were found to be mentally deficient, and in 4 of these there was spasticity of one or more limbs. One infant was hydrocephalic, and one of them presented the picture of true spastic diplegia. Munro[29] followed up 48 infants with intracranial birth injuries and found cerebral defects in 7 cases. Orthopaedic measures may do much for the paralyses, and removal of the appropriate sympathetic ganglia is yielding hopeful results.[27] Obstructive hydrocephalus has been successfully treated by operation,[30] but the risks are great.

CONCLUSION

The prevention of birth injuries lies with the obstetrician, the treatment with the paediatrician. Obstetric manœuvres employed on behalf of the mother are frequently the cause

of injury to the child The induction of premature labour may be essential for the wellbeing of the mother, while for the infant a Caesarean section at term would be a safer procedure The use of anaesthetics and opiates may be necessary for the mother, but it cannot be advantageous for the infant to arrive in its new surroundings in a drugged state Ante natal treatment must prove of advantage to both mother and child Treatment can sometimes be instituted so that pregnancy may be allowed to go to term and malpresentation can be rectified before labour commences By ante natal care there should be reduction in both the maternal and neo natal death rates

SUMMARY

The points in the recognition and treatment of birth injuries that I would emphasize are

1 The prevention of sepsis in even the smallest superficial abrasion

2 The recognition and treatment of fractures

3 The recognition and early treatment of injuries to nerves

4 The careful nursing of the infant with intracranial damage

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SORE THROATS OF OTHER THAN TONSILLAR ORIGIN*

BY

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SURGEON IN CHARGE, THROAT DEPARTMENT, ST BARTHOLOMEW'S HOSPITAL

The aim of this paper is to emphasize the importance of the nose in the production of faucial and pharyngeal complaints The way in which tonsils affect the nose is well recognized, but the converse is also true There is nothing new in the idea—I find the connexion mentioned in the textbooks, but I think that this connexion is often missed to the detriment of the patient I am assuming that dental sepsis has been eliminated in all the cases under discussion, and that the alimentary canal is healthy

Now it is unfortunately impossible for a laryngologist to follow up all his cases of tonsillectomy and see if the operation has always succeeded in stopping sore throats, but general practitioners have sometimes the thankless task of so doing, and I suggest that they have sometimes been disappointed in the results of tonsillectomy done for this purpose One reason why this aspect of sore throats has to be examined afresh is a change that has arisen with regard to the skill displayed in tonsillectomy Before the war, the explanation of the failure to cure symptoms was often that portions of the tonsils were still present after operation, especially during the period of enthusiasm that followed the demonstration by Sluder and by Willis about 1910 that one could completely enucleate tonsils with the guillotine, and for ten or fifteen years the prevalence of tonsillar remnants and of scarred up palates sufficiently explained the many failures to cure throats by tonsil operations But although skill acquired by practice has led to a noticeable decrease in the number of incomplete operations, yet we not infrequently see cases, both in children and adults, of sore throats persisting in spite of careful removal of tonsils and adenoids especially in certain years This was the case in 1919 and 1929 and also this year—a point to which I will return later

PHYSIOLOGY OF NOSE AND THROAT

It would be well here to consider for a moment some of the physiology of the nose and throat Too little work has been done in this direction, and so difficult are the problems that there is not even yet a well defined and generally held belief in the function of the tonsil and the rest of the lymphatic tissue in the nasopharynx One has one's choice of beliefs, therefore, and I would range myself on the side of those who regard the tonsil as a sort of immunity factory Long after any nasopharyngeal infection, and often during epidemics in which the individual has escaped infection, one can find in the tonsillar crypts the epidemic organisms in the act of being ingested by white corpuscles And having regard to the lack of epithelium at the bottom of the crypts and to their close relationship with the deep cervical lymphatics it is reasonable to suppose that the endotoxins thus liberated are passed via the tonsillar lymphatic channels and the thoracic duct into the blood stream, with a view to the production of antibodies against the organisms in question Be the interpretation what it may, however, it does seem that it is the proper function of the fauces to inflame at the intrusion of micro organisms An illustration of this, more familiar to laryngologists than to practitioners, is the rare case in which the patient complains of sudden sore throat on one side, associated with the occurrence of secretion in the throat for which there appears to be no origin I saw such a case in which the nose was demonstrably guiltless, and yet there was the pus whenever the throat was inflamed One day a large discharge of pus was seen issuing from the mouth of the Eustachian tube, due to an overlooked otitis media in which presumably an infection had persisted long after the pharyngeal part of it had cleared up, and the cause of the sore throat was clear While on the subject of what may be termed this "watch-dog" function of the fauces, it is illuminating to remark upon the absence of this property in the buccal mucous membrane This mucosa takes little or no notice of dental sepsis at a time when the fauces may be responding most actively to this very same insult Some change then, takes place in the function of the mucous membrane at the anterior pillars of the fauces, the faucial mucosa and the buccal mucosa are very different organs I contend that one of the duties of the faucial mucosa is to register indignation at the arrival of strangers at the gates, in which case a sore throat may sometimes have to be regarded as a remedial effort—in

* Read in opening a discussion in the Section of Oto-Rhino-Laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931

attempt to draw attention to infection from elsewhere. And rather than try to stop the dog's bark, we should try to find out what he is barking at!

These suggestions are not scientific, I am afraid; but I find no need to apologize for this. It is not given to all of us to have the time or the special ability to make the long series of controlled observations necessary for definite statements; but I submit that there is value in clinical impressions remaining after numerous observations, even if uncontrolled. Luckily there are some among us who, though in active practice, have the divine spark of curiosity coupled with the necessary mental outfit; and our specialty occasionally gets the benefit of the light thrown by methodical examination upon clinical material.

The cilia were rediscovered by StClair Thomson in 1895. And again Mr. Yates in his *Modern Treatment of Catarrh* has shown us how to appreciate just what a prominent part these much neglected little organs play in the hourly war which the nasopharynx is waging against inspired organisms. For the benefit of those who may have had time to keep up with recent work, we will touch briefly upon some of his researches. If Indian ink is introduced into a sinus, it presently appears at the mouth thereof, and thence proceeds as a thin black line by quite a definite path, to a position in the nasopharynx above the Eustachian orifice. The ink then descends behind the Eustachian cushion, and finally reaches the opening of the oesophagus, where it is duly swallowed. The black line can occasionally be seen to send an outlier which passes over the posterior pillar of the fauces—runs over the tonsil, and then rejoins the parent stream. When one knows the classical pathway, it is most intriguing to watch mucopus following the path (which it can be seen to do during a sinusitis, before definition becomes swamped by a large amount of discharge). And when one has become familiar with the route, one can, from the position of the redness in the pharynx, get a fairly good idea whether a sore throat is nasal in origin or not. Yates did another important piece of work of clinical value by showing that if indigocarmine be introduced into a nose in which the ciliary activity is normal, it is swept down via the usual pathway in blue lines, which can be wiped off; whereas from a nose in which ciliary activity is depressed or absent the dye appears in blue lines *behind* the pharyngeal mucosa—lines which cannot be wiped off and which are sub-mucosal lymphatics. This is a most convincing test, which anyone can carry out without special technique, and is easily demonstrable in the type of case I wish to discuss, that of faucial inflammation caused by sinusitis. A little more of physiology before we consider the clinical aspect. Is it ever recognized what a huge area of mucus-producing membrane there is in the nose and accessory sinuses? I have not been able to think out how to measure it accurately, but if one calls the septal area four inches by two, it is evident that the total area is 30 square inches or more; this explains in some measure where all the phlegm comes from. Further, the nasal mucosa should, in health, be of a nice pink colour, and should be moistened with clear transparent mucin; these conditions should normally be present upon both sides of the nose. Finally by transillumination, light should glow evenly and clearly through symmetrical crescent-shaped areas in the infra-orbital region, and all sinuses should be translucent to *x* rays.

CLINICAL FEATURES

What, then, are the symptoms and signs in a case of sore throat which should lead us to the idea that the inflammation may not be primary in the throat but that it is a mere result of infection higher up—in fact, what one might term a "nasal" sore throat? I think that perhaps the most characteristic thing about a nasal sore throat is its onset. When interrogating a patient, we are always taught to ask, "How long?" It has now become one's practice never to omit two other questions—"What began it?" and, "Is this the first time?" The patient may have no idea as to the origin of his trouble. But surprisingly often he may answer that it began after a pyrexial attack which occurred in February 1929, or even during influenza just after the war. To the second question he may answer that, having begun one winter, it now comes regularly whenever he gets a cold. Now if these answers were only to be obtained from patients with tonsils, we would be no wiser with regard to diagnosis. But the whole point of this paper is that these answers are characteristically obtained from patients in whom the tonsils have been correctly removed. Indeed, patients occasionally say that their habit of sore throats dates from tonsillectomy. (So much so as to give rise to a fleeting pang of doubt as to whether nasal sore throats, or in other words sinusitis, were not actually to be caused by the removal of some necessary function of health vested in the tonsil.)

Another thing which may point to a nasal origin for a sore throat is its frequent asymmetry. Indeed, I would say that one should always suspect a nasal origin when one side of the throat is noticeably worse than the other, even in children. I will quote from a letter of an observant doctor:—

"Feb. 12th, temp. 102° F., cold and cough. Feb. 15th, temp. 100° F., rt. ear drum red. Large gland rt. mandibular angle. Rt. tonsil enlarged with white patch."

Transillumination showed that the right antrum was opaque and the left translucent. This is confirmed in the radiograms shown. The age of that patient was, and still is, just over three years. Before the war the existence of sinusitis in children was not widely recognized, and we owe a great debt to Cleminson in this country and Dean in America for demonstrating not only that it could occur, but that it occurs very commonly, if only transiently.

So far, then, we have the onset and the asymmetry to guide us. The nature of the soreness, best recognized in the tonsil-free patient, may help in diagnosis. It is usually worse in the morning, and persists until the patient has brought up some phlegm from the back of the nose or the throat. Other indications of nasal origin are rashes upon the skin of the nose and lips, redness of one eye, pain or inflammation in one ear, and an excess of secretion sticking upon the hairs of one nostril. In the throat itself, one can get more direct evidence by examining the posterior pharyngeal wall, upon which there is often a very obvious coating of yellowish discharge. If one is obsessed with the tradition that tonsils are the sole cause of sore throats, one can disregard this film as completely as one can disregard the messages from the unemployed eye when using a microscope. The attitude which is content to assume that this evidence of nasal inflammation is merely an example of nasopharyngitis produced by inflammation in the tonsils is falsified when one realizes that the same appearances are found in the tonsil-free patient. If the film is transparent and difficult to see, it can be made obvious in a tolerant patient by lightly sweeping a blunt probe across the posterior pharyngeal wall. Whatever the condition of the tonsils, the presence of a large sheet of post-nasal mucus must cause one to suspect the nose; the mucus glands in the post-nasal space are not enough to produce a large and constantly moving sheet of discharge. As a practical point, great relief may be afforded by removal of sticky secretion that has defied the patient's own efforts. Another very important piece of evidence is to hand if there are laryngeal symptoms, or a cough, accompanying the sore throat. Personally, I have begun to doubt whether

laryngeal symptoms ever occur with what I call a "primary" tonsillitis; the nose and larynx work together in these affairs, and if tonsillitis be present as well, it is often to be regarded as a mere *result* of the nasal disturbance. Tonsillectomy in such cases is worse than useless. One may instance the parallel of the erstwhile fashionable operation of cutting off a piece of a lengthened uvula, with a view to curing a cough. Although it was utterly unsuccessful in achieving its purpose, although laryngologists no longer advise it, and although, from the position of the uvula and its relationship to other parts, the operation could never have been reasonably expected to cure a tickling cough, yet it was earnestly carried out all over the world during a period of, say, twenty years. One still gets patients sent up for it to be done. Similarly, the removal of tonsils is earnestly carried out with a view to curing what is obviously a nasopharyngitis, although the trouble can be seen to go on occurring just the same in spite of the operation.

To return to our review of the circumstantial evidence which should make us suspect a nasal origin for a given sore throat. I have confined myself so far to signs evident without special instruments or special training. In the nose the most obvious thing is the colour of the mucosa; any departure from the normal, especially if on one side, increases our suspicions, and any departure from normality in the amount and nature of the discharge takes us a step further. The most difficult cases, and this year a type very commonly met with, are those in which the appearance of the front of the nose is above suspicion, and transillumination normal. In these one should examine the post-nasal space shortly after a shrinkage of the nasal mucosa followed by a gentle wash-through of the nasal passages with a 2 per cent. solution of sodium bicarbonate. If one is persistent, and lucky in choosing the moment, one will discern an exiguous trickle of muco-pus appearing over the top of the posterior end of the middle turbinate, and will be able to make a presumptive diagnosis of posterior ethmoiditis or sphenoiditis. Whereas also the faucial symptoms are singularly unrelieved by the usual paints and gargles, immediate improvement follows the removal of the load of phlegm with which the cilia have been unable to cope because of its viscosity. Most people over the age of five can be taught to wash the nose out with a couple of drachms of a warm 2 per cent. solution of sodium bicarbonate from a coarse spray, repeated in about ten minutes. The first application softens the phlegm, and the second initiates a process of removal which can thenceforward be carried on by the cilia. The relief thus obtained lasts for about an hour—that is to say, until the next lot of phlegm has taken the place of that removed.

TREATMENT

Granted, then, that we have a case of sore throat presenting all the above-mentioned stigmata of a nasal origin, what line of treatment should we follow? In a case of an antrum which is dark to transillumination, and obviously overflowing into the middle meatus of the nose, the indications are easy—we must wash out the antrum. Such a procedure should precede or replace any question of tonsillectomy. For one thing, tonsillectomy is not of much avail when the cause of the trouble is still maintaining its bombardment of the virtuously indignant pharynx; and for another we cannot hope for an easy passage as regards operative, reactionary and secondary haemorrhage where there is still in the nasopharynx a cause of reflex vasodilation. I am beginning to think that bleeding with tonsillectomy is now a thing to be surprised at, and that it seldom occurs except in cases where we have overlooked some unresolved inflammatory process. Persistent pain, too, is rare after tonsillectomy, and its occurrence should make one suspect something outside the tonsils. I recall a case in which I had been satisfied with the appearance of the teeth and had found the antra translucent. Tonsillectomy led to pain on one side, with pyrexia persisting till the sixth day; transillumination then showed that one antrum had become opaque, the trouble having arisen from a "flare-up" in connexion with an overlooked dead tooth in the floor of the antrum. This is a digression: we were discussing the treatment of nasal sore throat, and agreed to wash out the antrum if obviously full up. There are numerous cases of latent sinusitis, however, in which diagnosis is not so simple. How shall we decide when we are dealing with one of these more recondite cases of sinusitis—an antral infection, say, which needs treatment? A perusal of most of the available textbooks will leave the student with the (perfectly safe) belief that if proof-puncture produces pus, then there is pus in the antrum! And this, furthermore, seems to be the only permissible indication for drainage.

Laryngology is not a very old subject; and before the war the number of observers who had the opportunity of becoming familiar with the vagaries of antral infections was limited; so that it was at that time desirable that indications for treatment should be outstandingly definite and incontrovertible. I submit that, in view of the increased number of trained workers, and of the long period during which the subject has now been studied, it is permissible and desirable to widen the indications for operative treatment of antral infections. If operative treatment of an infected antrum is withheld until one can definitely say there is an empyema, a very large number of people will continue to suffer from curable disease, not only from the sore throats we are here to discuss, but from catarrh, deafness, headaches, gastro-intestinal troubles, rheumatism and the like.

Now if the only antral operation is to be the Caldwell-Luc operation, carried out through the mouth as well as the nose, then perhaps it is best to defer operation unless there is an empyema, diagnosed with all the solemn and redundant ritual of proof-puncture; for if we are to await the ciliary breakdown which obtains in this degree of sinusitis it is probable that anything less than a Caldwell-Luc operation will be inadequate. But I, personally, have only performed this radical operation twice since the war, and as I find that a great many surgeons seldom perform it, I feel that there is a legitimate case for adopting another attitude about antral operation. I hold that we should operate earlier upon infected antra, and that the operation should consist merely of the provision of an intra-nasal opening, perhaps not more than half an inch in diameter, through which the patient can perform the regular lavage; and if the configuration of the nasal passage permits us to make this opening without touching the inferior turbinate, so much the better. We should rely more upon after-treatment; and the operation should not be regarded so much an attempt to wipe out the disease at one fell swoop, as the provision of an aperture to permit ventilation and to prevent the accumulation of discharge. The first aim of a sinus operation should be by ventilation and drainage, to encourage the restoration of ciliary activity, and the more we limit the severity of the operation, the less do we inhibit the return to normal. Our chances of being able completely to cure a sinusitis by a small operation diminish *pari passu* with the time we allow it to persist. There is this traditional belief that operation upon an antrum should [illegible] till pus can be washed out of it, and radicalists even go to the length of devising ingenious methods for showing a fluid level in an antrum. A high fluid level certainly indicates a breakdown in ciliary activity; but there are many gradations between normal activity and complete

breakdown, and if we wait for complete ciliary palsy it is a difficult business getting the cilia to function again.

We have in the history of appendicectomy what may prove to be in some measure a parallel to the treatment of antral infections. One of the chief indications for appendicectomy used to be a bulging of the abdominal wall by the abscess; and those who first advocated removing the appendix early enough to prevent such a state of affairs were regarded as enterprising, to use the least radical term. But the profession now prides itself upon early diagnosis, and upon removal of the appendix before it has made the patient really ill! Similarly we now do tracheotomy in time to prevent the very things which used to be given as the indications for tracheotomy. Surely the time has come to adopt a similar attitude with regard to antral infections, and to operate in time to prevent the occurrence of empyema.

LATENT SINUSITIS

There are some antral infections which begin suddenly, with obvious suppuration—inflammations which may yield permanently to one or two lavages. But the commonest antral infection is an insidious affair, the origin of which seems very often to be traceable to one of the big influenza epidemics, as mentioned earlier. It may occur in noses apparently quite normal in structure, but it is usually found in cases where the nose offers some pronounced mechanical predisposition. (In this connexion, perhaps someone at this meeting will be able to give us some fresh ideas as to why, in a nose with marked disparity between the two sides, the antrum on the roomier side is so often the one to show signs of infection first.) But even in the absence of mechanical troubles there are definite signs. The first thing to notice is the general appearance of the nasal mucosa. Is it moist, and pink as a kitten's tongue? No. On one or both sides the mucosa has the appearance of raw steak that has been allowed to dry, and in place of the colourless mucin which should moisten its surface there is a dryish, scanty film of muco-pus which over the middle turbinate is usually aggregated into small flakes. This appearance of the middle turbinate as a sign of recondite sinusitis is of the greatest value; but it is difficult to be sure of any diagnostic difference between its appearance in frontal, ethmoidal or antral infection. On palpation it is found that the mucosa over the middle concha, which should fit the bone like a glove, may be several millimetres thick, and may in ethmoiditis be actually oedematous.

Now for transillumination. There are laryngologists who soar above the evidence obtainable by this test. The meaning of a relative opacity may not be obvious, but it is not to be regarded as a criterion of normality. Transillumination cannot be dismissed with a wave of the hand; and it is surely our function to supply guidance as to the possible significance thereof. It is of particular importance in cases in which a previous transillumination has shown a symmetrical translucency. During the early stages of a nasal infection one usually finds that in place of a pair of clearly defined infra-orbital crescents, there are two equally vague and undefined sub-luminous areas—not black, but lacking their former clear-cut translucency. After a week or so, one infra-orbital crescent may clear up, while the other remains vague. Now what is the significance of this diminution of the normal light? Antral lavage at this stage may produce nothing, or at most a small "blob" of muco-pus—much too small to prevent the transmission of light. The dimness is due to hyperaemia or to oedema of the lining, and its existence is duly noted, chiefly for future reference, for hyperaemia on one occasion is no indication for operation. The importance of the discovery is that it is a contraindication to light-hearted tonsillectomy later on.

Let us suppose that we have a sore throat which presents all the stigmata of a nasal origin, and suppose the symptoms duly subside. We are in a stronger position when it recurs (for recur it will, if the antral lining is deeply infected) because we can note the reconstitution of our chain of circumstantial evidence as the separate items arise again. The first thing complained of is probably the sore throat; but I would here remark that there are probably always premonitory signs before the sore throat if one is lucky enough to see the patient at the right time. How often is a house-surgeon frightened by a rise of temperature after some clean operation, only to find 48 hours later that the patient complains of a sore throat. The temperature is not the only sign that precedes the sore throat. If in a suspected case you make a practice of transillumining the antra, you will suddenly one day find a dimness where there was usually translucency; whereupon you can safely tell the patient he will have a sore throat or a cold in a day or so. Sooner or later there will be a glazed look upon the middle turbinate, and a pharyngeal film, with tenderness of the glands. The presence or absence of the tonsils naturally leads to some alteration of the picture, but the knowledge gleaned during the previous attack will permit one to see the tonsillar involvement in its right perspective—namely, as a result rather than a cause.

CONCLUSIONS

It will be seen that this paper, ostensibly upon throats, is really a covert attack upon the antrum. I freely admit this, except that I would include hidden ethmoidal infection as being at least as frequent.

I urge no operation upon the ethmoids in this connexion, but I submit that there is a case for an early and not extensive operation upon the antrum; and believing as I do that it is doubtful whether the mucosa can ever return really to normal when once it has got to the stage of chronic empyema, I ask for the pontifical blessing of the Section upon indications for drainage based on the repetition of a convincing chain of circumstantial evidence rather than a belated positive result to a proof-puncture.

SUB-ARACHNOID BLOCK

GENERAL ANALGESIA; "SPINAL" ANAESTHESIA; RESPIRATORY PARALYSIS; FALLACIES AND METHODS*

BY

W. HOWARD JONES, M.B., B.S.Lond.

SENIOR ANAESTHETIST TO CHARING CROSS HOSPITAL

The title of this paper comprehends all the results obtainable on the nervous system by the injection of analgesic substances within the sub-arachnoid space. It includes nothing which was not observed as a result of the earliest employment of cocaine, but the interpretation of the results over the intervening period has been clouded with error, copied from one textbook or paper into another, and persisting in some of the latest publications. The basis of understanding is anatomical and physical.

ANATOMY AND PHYSICS

"The arachnoid membrane is a gauzy reticulum of almost web-like delicacy which in reality pervades the space it occupies. Its outer surface, or that closely related

* Read in opening a discussion in the Section of Anaesthetics at the Annual Meeting of the British Medical Association, Leicester, 1931.

to the dura mater and bounding the sub dural cavity, alone shows a sufficiently organized structure to merit the name of a membrane This quickly grades into a loose, spongy reticulum which pervades the thick sub arachnoid cavity throughout, and the strands of which are directly continuous into the more compact tissue of the pia mater This sponge like arachnoid tissue holds the cerebro-spinal fluid of the sub arachnoid cavity, the meshes of the sponge constituting a reticular web of intercommunicating spaces The cranial sub arachnoid cavity is larger and the strands of the web are relatively more abundant than in the spinal canal' (Morris)

The spinal sub arachnoid cavity passes up through the foramen magnum and enlarges into the cisterna magna, which is posterior, and in the dorsal decubitus dependent, and into the cisterna pontis and the cisterna basalis, which are anterior, more elevated, and contain the cranial nerve roots The sub arachnoid space surrounds the entire brain stem, and the roots of all the nerves in the body pass through it In this situation they are bare of fibrous sheath and therefore easily affected by analgesic solutions The sensory root of the fifth cranial is the largest and most compact in the body, but the spinal roots have their constituent fibres spread out into a fan like arrangement of entry and exit from the cord Those of the cervical and lumbar enlargements supplying the limbs are more bulky than those of the intervening thoracic nerves The lowest roots of the conus medullaris are centrally placed in the cauda equina and are overlaid by the higher trunks of the leash As these higher lumbar nerves escape through their foramina, the lower become more isolated and exposed The pia mater spinalis consists of two layers, the outer fibrous, and between them ramifies a rich plexus of blood vessels The dentate ligaments support the cord in its central position but do not effectively divide the space into an anterior and posterior compartment The reticulate formation of the arachnoid, the structure of the pia mater and the vascularity of the intra dural contents, the superficial area of which is relatively very great, are factors of prime importance which determine the distribution of soluble injected substances

The cerebro spinal fluid is secreted by the choroid plexuses and passes through the medial and lateral foramina of the fourth ventricle into the cisterna magna, whence it is distributed over the brain and cord The secretion of fluid can be very rapid, and it is probable that when a large quantity is withdrawn it is rapidly replaced The absorption of additional fluid injected is also very rapid, and because of the great vascularity of the lining membranes and the large surface area, the absorption of foreign chemical substances into the blood is only second in effectiveness and rapidity to direct intravenous injection, the rate of absorption being proportional to the concentration, and decreasing progressively as this becomes lowered Though it is impossible to imagine complete stasis in any living body fluid, there is not in the spinal canal any movement which can be called a circulation which would effect the immediate distribution of drugs injected Waves of condensation and rarefaction are communicated to the fluid by the respiratory and cardiac impulses which may have some effect over a more prolonged period The specific gravity of the fluid is not constant, but varies between 1 004 and 1 010 The movement of injected solutions is determined by their relative weight The sinking of a hyperbaric fluid in one which is relatively hypobaric is determined by a difference so delicate that an estimation of the difference would be impossible by any coarse method If the surface layer of water is cooled it sinks to the bottom of the container, or if the bottom layer is warmed it rises to the top Thus a hypobaric injection moves only when the heavier cerebro spinal fluid can descend from above and displace it upward The rate of movement will depend on the degree of difference between the specific gravities of the two fluids and the angle which the spine makes with the horizontal The behaviour of solutions injected into the sub arachnoid space is modified by the anatomical contents, and the ab orptive surface to which they are exposed

FALLACIES

The experimental work of Corning and its clinical application by Bier and other subsequent workers is described in most textbooks on the subject but it is noteworthy that operations on the head and neck were performed under this method early in its history, long before Barker experimented in this country This is not surprising since the moderate Trendelenburg position has always been thought necessary to ensure a good blood supply to the medullary centres and some of the solutions then used were among the heaviest ever employed while cocaine was used in dosage not thought permissible to-day It was this extension of the analgesia to the head, and a high mortality rate, which proved so alarming to the early workers, who had an abiding fear of the direct action of the drug on the medullary centres and stimulated Barker to try to devise a method whereby the effect could be controlled to the lower regions of the body Barker demonstrated that the drug could not spread upward by a process of simple diffusion, a *fact which is indisputable*, and by injecting relatively heavy solutions into glass tubes shaped to the curve of the spine and containing saline solution, he showed that unless the inclination was too great the solution descended to the lowest part of the dorsal curve and 'here it would remain more or less undiluted in contact with the structures around

These glass tube experiments have been the origin of much misconception because there is no clear run down for the solution in the body, nor do they represent the rapid absorption by the tissues and into the blood which is such an important feature *in vivo* They also give the impression that the dose descended in concentrated form to a certain level of the cord where if held long enough it became fixed' by the nerve tissue Barker refers to the action of the drug on the roots, but writes more frequently of the cord, suggesting that he was not clear on this point The term 'fixed' is very inapt, because a very large portion of whatever drug is injected is rushing round the body in the circulation until it is either excreted or destroyed Remembering that before Barker's time the saline and other solutions were said to "diffuse" into the neck, and that analgesia of the whole body was obtained it is not surprising to find that his heavy stovain glucose solution, S G 1 030, controlled by dosage and posture to the dorsal region, came to be known as 'indiffusible' and the saline solutions as "diffusible"

This in spite of the fact that the 'diffusible' Chaput solution, S G 1 080, was heavier than anything Barker subsequently employed Arising from this muddle is the fallacy prevalent in our textbooks to day that mixtures containing glucose are heavy solutions and saline solutions "light' solutions Gwathmey' states that solutions of lighter specific gravity than the cerebro-spinal fluid are generally called diffusible, whereas those of heavier specific gravity are called non diffusible Actually 10 per cent novocain in distilled water S G 1 017, is a heavy solution Another error prevalent in America and sponsored by Labat' is that when cerebro- pinal fluid is the solvent of novocain crystals no spread by gravity will take place in the Trendelenburg position It is impossible to add anything soluble to the cerebro-spinal fluid without increasing the specific gravity of that portion of it which happens for the time being to be solvent Assuming a fluid of S G

1.006, then a 10 per cent. addition of novocain crystals will raise the S.G. to 1.023. Addition of 250 mg. to 10 c.cm. of fluid will raise the S.G. to 1.010, and will operate in precisely the same manner as that amount of 2½ per cent. novocain in normal saline and will be subject to gravitational diffusion. The large volume of the low concentration will move just as effectively, though at first more slowly, as the small volume of the high concentration.

SPINOCAIN AND DUROCAINE

The addition of alcohol to a solution to make it lighter, attempted by Babcock in 1909 and patented by Dr. Pitkin nearly twenty years later, serves only to effect a temporary reduction of specific gravity after injection. The two mixtures spinocain, S.G. 1.005, and durocaine, S.G. 1.002, appear to respond to a variety of different treatments. An expansion of the solution over the thoracic nerve roots is said to be effected by an addition of cerebro-spinal fluid of anything between 1 and 10 c.cm. in volume without regard to the length of the spine. After injection, some tilt the table into the head-up position and others into the Trendelenburg. For the past two and a half years incomparable analgesias have been claimed in the dorsal decubitus, but recently both administrator and patient have made a *volte face* and the ventral position is adopted. A viscous substance called gliadine, 0.00325 gram per c.cm., is said to delay absorption and to prolong analgesia, but the dosage has coincidentally increased beyond anything previously heard of. One claims constant complete abdominal analgesia in the up-tilt lateral position in 1 minute 25 seconds, another that it may be delayed as long as 47 minutes. These fall into a separate system known as "controllable spinal analgesia." One observer has asked, "After all, does controllability matter?"

The explanation of the fallacies underlying the administration of these solutions is a very simple one. The ingredients fall into two distinct classes, volatile and non-volatile. The low specific gravity is due entirely to the volatile member. The rate of absorption into the blood of a volatile substance is out of all proportion more rapid than that of a non-volatile substance. If spinocain were floated on to the surface of a warm saline, the alcohol would evaporate into the air, and the novocain would be dissolved in the saline. When injected into the sub-arachnoid space and mixed with cerebro-spinal fluid, the specific gravities of the two fluids become averaged, and the mixture only slightly hypobaric. The rate of upward displacement would therefore be slow and progressively retarded by further mixture with heavier fluid. The "air bubble in a spirit level" arrangement is possible only between two media which are not miscible. The rate of absorption of the volatile alcohol will be far more rapid than the non-volatile novocain, and the solution quickly passes through an isobaric stage and becomes hyperbaric. The end-result is always novocain dissolved in cerebro-spinal fluid. The one constant feature in the ritual of these administrations is the Trendelenburg position.

The dosage of novocain is so high that the amount absorbed into the blood causes a general analgesic state, and the itching, drowsiness, and stupidity of the patient which has been described by various observers[5] is evidence of the action of the circulating drug on the sensory nerve endings in the skin and on the cortical cells of the cerebrum. When the Trendelenburg position is adopted immediately after injection the solution hangs until the alcohol has been absorbed, when gravitational diffusion commences. All the novocain absorbed into the blood before this begins serves only to poison the patient and effects no useful purpose. In consequence, the dosage sometimes used is more than double that necessary for the production of analgesia by a more rational method.

GRAVITATIONAL DIFFUSION

The process of diffusion by gravity in the body differs from the descent of a heavy fluid *in vitro*, because of the meshwork of baffles which the solution encounters, resulting is more and more mixture with the lighter fluid, and the fact that the drug is all the while being rapidly extracted into the blood and by the nerves. Thus absorption and dilution result in progressive diminution of specific gravity and a progressive slowing of the movement, which is also limited in the horizontal position by the curve of the spine. In the Trendelenburg position the effect of gravity is not to move the dose in high concentration to the most dependent part, but to spread it out in ever-decreasing concentration over a distance which will be proportional to the amount of drug injected, and as more butter is required to spread a large piece of bread than a small one, so more drug is required to spread a long spine than a short one, a factor which has never been considered. The body weight is important in relation to blood dosage, a fact which is apparent when considering the high relative dosage and frequent development of sleep in children, reported from the earliest period to the present day.

The dentate ligaments no doubt have at first some directing action in supporting and spreading the solution over the anterior roots, but it always tends to sag and give the greater concentration to the posterior roots, especially in the higher regions. When the high tide of effective concentration reaches well above the centre, then both anterior and posterior roots receive the drug; when it sinks below the centre, then only posterior roots are affected. This result, together with the fact that with moderate dosage only a low concentration reaches the neck, explains how the motor roots of the phrenics and upper intercostals can carry on when the head is analgesic. Analgesia always extends higher than paralysis, and the upper segments of the abdominal muscles may be imperfectly relaxed with absence of pain sense at the same and at higher levels. The arms are not paralysed even in the highest analgesias by this method. The graded effect of all analgesics on mixed nerves has long been known both experimentally and clinically. Pain sense is the first to go, then follow touch, muscle sense, and finally motor power. Return is in the reverse order, and a leg may be operated on long after movement has returned. If the injection is dilute, short analgesia is developed without loss of power. The size of a nerve root or trunk also determines the effect of a particular concentration of drug. Gravitational diffusion is an inaccurate method, wasteful of power, and uneven in distribution, for if the drug wanders beyond its intended area, loss of concentration results where it is most needed. But although moderate doses of novocain spread by gravity into the neck may not paralyse respiration, they undoubtedly impair the activity of the centre and the conductivity of the motor roots of the phrenics and intercostals in proportion to the concentration which each receives, the one through the blood and the others directly, for the respiration under high blocks is often reduced to a minimum.

KOSTER'S THEORY AND EXPERIMENTS

There has lately been some attempt to reintroduce this method for operations on the head and neck, and the name of Koster of America has been prominent in this connexion. Koster[4] exposed the medulla and upper cervical cord in frogs and guinea-pigs and applied novocain solution direct to this region. He records that the animals became analgesic all over and that they also became somnolent. He also applied solution to mixed nerve trunks in order to demonstrate that sensory fibres are more easily affected than motor, a fact which was already known. He deduced from these experiments that the strength of novocain which was

effective in interrupting the sensory conduction paths in this region did not affect the respiratory centre because this is a motor mechanism and therefore not so easily affected. He also states that the somnolence was due to diffusion of novocain to the cortex. Applying these results to human beings he propounds the theory that all past fears of paralysing respiration have been groundless, and all that is necessary is to keep the patient's head low in order to ensure a good blood supply to the medullary centres. All administration in the human being has until recently been by means of hyperbaric solutions. The anterior root block seen under hypobaric solutions of percaine revealed definite proof that the action of the analgesic is not direct into the cord but only on the roots, for it became evident that the motor side could be paralysed when the sensory fibres were left free. This disposes of the theory that muscular relaxation is due only to lack of stimulus, and suggests that the pia mater is impervious to analgesics; it should also be remembered that the spinal pia has a fibrous layer. Koster's experiments depend on the direct action of the drug through the pia mater into the conduction tracts. Before applying novocain he determined that the lumbar reflex arc was intact by stimulating the skin of the leg. After a presumed transverse section of the sensory conduction paths by novocain, he states that the animals became analgesic all over and that stimulation of the legs produced no response. Now 1 per cent. novocain injected up the spine of human beings will paralyse motor fibres of the anterior roots, but Koster states that a 2½ per cent. solution applied to the medulla of these animals did not. Is it not obvious that this strength never reached the motor mechanism in this region? Did it reach the sensory tracts? Assuming that it did, what abolished the reflex arc in the lumbar region, for no novocain was applied here, and it could not have run down to the lumbar roots because the animals were in the Trendelenburg position? Was this due to central motor inhibition? Is it not possible that the animals were analgesic and somnolent from blood absorption? Whatever the explanation may be the experiments were based on a fallacy, and provide no material evidence whatever for a generalization applicable in our operating theatres. One case of respiratory embarrassment on the operating table is worth a thousand such experiments.

RESPIRATORY EMBARRASSMENT AND COLLAPSE

The danger in intra-thecal administration is not a vaso-motor effect from a regional block of the thoracic and lumbar roots, which proves to be of much less significance than was formerly thought, but from blood absorption and paralysis of the vaso-motor centre, leading in some cases with excessive dosage to severe collapse to a pulseless state. The nausea and vomiting which sometimes occur after injection, apart from surgical manipulation, is similarly due to stimulation of the vomiting centre by the poison, as well as low blood pressure. This may be realized by injecting the full contents of a spinal ampoule into a muscle. It is not to be expected, therefore, that the respiratory centre will escape entirely, and the degree to which it may be affected will depend on the amount of the dose in relation to the body weight of the patient. The effect on the cortex shown by the drowsiness and tendency of the patient to sleep also depends on the amount of the drug circulating in the blood. The zenith of blood content is probably reached about 15 to 20 minutes after injection by the gravitational method, and a little earlier by the direct method, because of the larger absorptive surface to which the drug is immediately exposed.

Cushny[3] states that the relative non-toxicity of novocain is due to the fact that novocain is destroyed by the liver and cocaine is not. The slow absorption from infiltrations, especially with adrenaline, gives the liver time to deal with the poison, but when novocain is injected intravenously the toxicity more nearly approaches that of cocaine. On account of the rapid absorption of spinal injections their toxicity must be reckoned as only less high than those administered intravenously. If the dosage is high and the body sloped, a variable concentration will reach the anterior roots of the phrenics and intercostals and reduce their conductivity in proportion to the concentration, and the respiration becomes shallow and slow. Anoxaemia will further reduce the centre and increase a tendency to sleep, for it is a powerful, and our last, anaesthetic.

The respiratory centre may therefore be paralysed by an overdose of the drug in the blood, or by a combination of reinforcing agents of which the analgesic and a preliminary narcotic may be the cause. If the centre is badly fatigued and poisoned by drugs it may be difficult to keep it active, whatever means may be adopted. An overdose of percaine whether by infiltration or by intra-thecal injection will paralyse the centre, and a competent hypobaric solution injected into the neck will paralyse the phrenics and intercostals. Koster states in relation to the human subjects, "In many patients, particularly in children, when head anaesthesia is induced by encouraging diffusion of the drug upward to the medulla, it is found that sleep results." This appears to have been the experience through the history of the method from the earliest cocaine days, and is but due to the fact that the dosage has been relatively high in children compared with body weight. This sleep has also been ascribed to the complete isolation of the consciousness from all body stimuli: a mind deprived of body sensation, yet capable of that most potent of all experiences, fear, and falling asleep on the operating table out of sheer boredom from want of stimuli. To produce general analgesia, all that is necessary is to inject a sufficient dose of novocain in the lumbar region, thereafter inclining the body in the Trendelenburg position. This spreads the drug over the nerve roots, at the same time exposing it to an enormous absorptive surface. The general effect on the patient may be profound. Koster admits that in some cases a peripheral pulse is not be expected, but implies that this is no disadvantage, since the surgeon can always refer to the aorta, a consolation not available to the specialist in anaesthesia. This condition almost resembles a state of suspended animation, and I have remarked that the patient is "hibernating." And so it seems. Every function of the body is depressed to its lowest level: no pulse can be felt or, when palpable, may be reduced in rate as low as 30 to 40 per minute. The conductivity of the phrenics is reduced and respiration is just sufficient for life. A short period of sleep may be observed and the lips and cheeks may puff out as they do under chloroform.

There are two components at work, a regional nerve root block and a blood dose of novocain. To what extent the cranial nerve roots are directly involved is an interesting question. In the dorsal decubitus the novocain will first be directed towards the cisterna magna, and from here it may spread over the base of the brain, but the arachnoid reticulum is here at its densest and the amount of fluid far greater than it has already encountered in the spine. In such high dilution the novocain has to attack the largest and most compact sensory root in the body.

Is it not probable that an amount of novocain injected in the lumbar region, capable of spreading the sub-arachnoid space as far as the fifth cranial roots, may also be capable of producing general analgesia apart from nerve block, if not actually general anaesthesia?

Dickson Wright[4] is an enthusiastic advocate of spinal injections for operations on the head and thorax, but says

that "shallow and slow respirations may be worrying." He records a respiratory rate of six per minute, and says, "The patient was asleep and I did not care to wake her to tell her to breathe faster." When admonition is inapplicable, carbon dioxide and oxygen are indicated. The outstanding clinical features of such cases are a reduced frequency and amplitude of respiration, and very low blood pressure, sometimes reaching a pulseless state. The one means imperfect lung ventilation, and the other a reduced rate of blood flow through the lung capillaries. Both tend to anoxaemia and a vicious circle which may end in an arrest of respiration, and it is no recommendation to claim that the majority survive.

JONNESCO'S PRACTICE

Jonnesco's practice was based on the fallacy of direct medullary action, and on the principle that strychnine injected with the drug stimulated the centre and kept it active. Strychnine has no action on nerve fibres, and to reach the cells of brain or cord must first be absorbed into the circulation. But cells paralysed by an analgesic would not respond to stimulants, nor would the latter avail to stimulate cells whose conducting fibres were blocked. Nothing but the possibility of damaging the cord prevents Jonnesco's puncture between D1 and D2 from being a practical method. Short analgesias in the area of the cervical nerves could be obtained by injecting small volumes of dilute solutions, and the motor roots of the phrenics and some of the extraordinary muscles of respiration would have their conductivity reduced but not abolished. To gain longer analgesias stronger solutions would be required which might paralyse the phrenics and some extraordinary muscles, leaving the intercostals to carry on respiration. But the rigid chests of old people would be a bar to such a procedure. It follows therefore that only short analgesias would be advisable by this method. Dilute solutions can be injected up from the lumbar region, but the large volume required means more drug for blood absorption. There must be a very dilute solution of percaine which could be operated in this manner, but what the strength is I cannot say at the moment. The 1-1,500 strength would paralyse the phrenics, and must not be injected into the neck.

Clearly separated from the foregoing is that kind of administration which is intended for abdominal and lower operations, the acknowledged territory of what is generally known as spinal analgesia. Such administrations have in the past frequently passed intended limits, and merged into general anaesthesia, from want of interpretation of the factors involved. This division comprises two subdivisions which require different treatment, limited thoracic nerve root block, and intra-dural caudal block.

LIMITED THORACIC NERVE ROOT BLOCK

Splanchnic block for abdominal surgery requires that the drug shall pass the roots of the 4th or 5th thoracic nerves. Between these and the 4th cervical roots is a sufficient interval to give a wide margin of safety. There are only two possible ways of spreading an analgesic over the roots from the lumbar region:—

(1) Gravitational diffusion, which can be limited only by dosage and a moderate angle of the table, and gives an uneven distribution.

(2) By manipulating a syringe:

(a) Using cerebro-spinal fluid; simple addition of drug is followed by gravitational diffusion.

(b) direct injection of foreign fluid charged with the drug; if this is hyperbaric gravitational diffusion follows; if it is isobaric or hypobaric no spread follows in the Trendelenburg position.

The adult spine is most variable in length. Measurements in my series of cases from the inter-iliac line to the 7th cervical spine with the body in full flexion have varied between 16 and 22 inches, and both shorter and longer probably exist. In addition, the cubic capacity of the dura in women must be reckoned as rather less than that in men.

The Method of Barbotage or Replacement

This is the method of withdrawing the cerebro-spinal fluid and adding the drug to it before reinjecting. This is impracticable with novocain, because a hyperbaric solution is always produced. Percaine may be used up to 3 c.cm. of 1 in 200 dissolved in acidulated distilled water. This will produce an approximately isobaric solution, and will apply equal concentration to both anterior and posterior roots. Analgesia will therefore outlast abdominal muscular paralysis, but relaxation will be good. The amount of fluid withdrawn must be proportioned to the length of the spine, otherwise no constant nerve root level can be expected. The disadvantages of this method are that the withdrawal of a large quantity of fluid is tiresome and not always successful with a fine needle, and the addition of so small a quantity of acid fluid to a large quantity of alkaline fluid may result in the precipitation of the percaine. Quarella,[9] who favours this method, regards scopolamine and morphine as an essential part of the technique, and it may be that this is because the level of root block is not always what has been aimed at, for how can it be constant if the spine has not been measured?

The Method of Direct Injection

This means the injecting of a dilute hypobaric of the drug without withdrawing cerebro-spinal fluid. This is the simplest method, a full account of which has been given elsewhere.[10] To calculate the volume of fluid required to pass the 5th thoracic roots, take a measurement from the inter-iliac line to the 7th cervical spine with the body in full flexion; from the number of inches recorded deduct 4 for men, and 6 for women; this result indicates the number of cubic centimetres of solution to inject between L1 and L2, or L2 and L3. This formula is put forward as a basis for a moderate increase with experience, and as a reminder that women require rather less than men. If the operation is pelvic the injection should be made between L4 and L5 in order to hit the lowest nerves in their most exposed situation. For gynaecological operations 10 to 12 c.cm. should be ample.

In the dorsal decubitus a hypobaric solution tends to apply itself in greater concentration to the anterior roots, and in some cases may give abdominal muscular paralysis and no analgesia. In the lateral position, a unilateral effect is produced, a result of importance, because the upper affected side is at the disposal of the surgeon. The degree of this separation depends on the amount of the difference between the specific gravities of the two fluids, and the rate of injection. To produce this effect in the lateral position, make a slow injection, for the more rapid the injection the better the mixture of the two fluids. To ensure analgesia, the patient must be put in the ventral decubitus after injection for from 5 to 10 minutes; the duration of the analgesia will depend on the time spent in this position. If in any case this position seems inadvisable, the two lateral may be used consecutively. It will be found that, as a result of the continued action of the drug on the anterior roots when the patient is put on the back, the paralysis of the abdominal muscles will probably outlast the analgesia. The nearest approach to an ideal drug for this method yet produced is percaine, because it is capable of producing a prolonged effect on nerve fibres in such high dilution that the rate of absorption into the blood is very slow. A rapid general toxic effect is thus avoided. It may be used in strengths of

1 1,000, 1 1,500, and 1 2 000, dissolved in acidulated 0 5 per cent saline (S G 1 0034) The normal saline solutions, S G 1 006, are midway between possible variations in the specific gravity of the cerebro spinal fluid By this method sufficient acid fluid is injected with the percaine to keep it in solution

The latest fallacy to arise is that "percaine gives such marvellous relaxation" The perfect and lasting relaxation is due to the method of administration whereby the powerful drug is efficiently applied to the anterior roots It is correct to say that isobaric and more especially hypobaric solutions give good relaxation, and that hyperbaric solutions spread by gravity tend to give poor relaxation in the upper segments of the abdominal wall Thus a percaine glucose solution would have this defect In spite of this profound regional root block the fall of blood pressure after percaine injections, though occasionally smart, is never so severe as after massive doses of novocain, nor is toxic vomiting and pallor so much in evidence Novocain may be used in this way 1 per cent dissolved in 0 25 per cent saline, S G 1 003, or in 0 5 per cent saline, S G 1 005 If 1 per cent in normal saline is used, S G 1 0077, the patient may be kept horizontal in the dorsal decubitus until absorption has reduced the specific gravity, and both roots should be fairly evenly affected The strength of these solutions may be increased in proportion to the faith of the user in the non toxicity of this drug When higher percentage is used sodium chloride must be left out proportionately to preserve the required specific gravity of the solution The strength limit in which novocain can be used as a certain hypobaric solution is 2 per cent in distilled water When dosage becomes high, blood absorption will dominate the picture

LIMITED INTRA DURAL CAUDAL BLOCK

Intra dural caudal block requires different treatment from that of thoracic root block because the nerve trunks are more resistant than the roots The 1 in 1,500 percaine solution when completely effective in the abdominal area sometimes leaves some power of movement in the legs, and deep sensation, showing that the lumbar nerves are more difficult to affect both in their roots and trunks than the thoracic For limited caudal block, stronger solutions are therefore required The novocain and stovaine solutions in common use always hit the cauda equina in their strongest concentration, and the most profound effect is in the legs and perineum, but the only way they can be limited is by sitting the patient up after injection Limited block in the horizontal position requires an isobaric or a hypobaric solution Percaine dissolved in acidulated distilled water or 0 5 per cent saline may be used in strengths from 1 in 100 down, and the amount of drug need never exceed from 5 to 10 milligrams Thus ½ to 1 c cm of 1 100, 1 to 2 c cm of 1 200 and so on Six to eight hours duration of analgesia is possible with this drug, but such prolonged effects are doubtful practice A great variety of strengths may be used, the object being to effect a good local mixture with cerebro spinal fluid at the site of puncture When the operation is on the leg the barbotage must be sufficient to spread the drug on to the first lumbar nerve, or higher according to the site of the operation The duration of analgesia will depend on the amount of barbotage used and the dilution attained in the cerebro spinal fluid Novocain up to 4 per cent in distilled water may similarly be used

GENERAL CONSIDERATIONS

One of the most prevalent fallacies used to be that spinal analgesia is a method to be used when the patient is in too low a condition to take a general anæsthetic and a common utterance was "He is too bad for a general better give him a spinal," and this in relation to serious cardiac disease It hardly seems necessary to condemn the administration of massive doses of novocain, with the possible severe fall in blood pressure, when the mechanical efficiency of the heart and the state of the myocardium is defective A profound fall in blood pressure means a reduced coronary circulation, and only a sound heart can be submitted to such an ordeal It is certain that ephedrine cannot be relied upon to prevent fall of pressure, though it may alleviate it It should be injected into a muscle or into a vein and not into the fibrous tissue of the intervertebral ligaments, where absorption must be slow A limited caudal block or a block of a few thoracic roots may be undertaken when a more extensive effect would be inadvisable and it is necessary to distinguish clearly between the risks involved in low and high operations since the necessities of dosage and the vaso motor effects are greater in the latter The advent of percaine undoubtedly extends the use of this method in poor risks and the 1 in 2 000 solution will accomplish much in short abdominal interventions with very low general toxicity But this drug will not confer immortality on anyone High thoracic root block finds its best application in the muscular man about to undergo a gastric operation who would otherwise require a harsh general anaesthesia to bring him into a good state of relaxation

My own outlook is This man is too strong for a general better give him a spinal For normal people spinal analgesia may be offered as an alternative to anyone who wishes to avoid general anaesthesia, and its advantages in lung disease, especially tuberculosis and other pathological conditions are well recognized But because in bad risks spinal analgesia has disadvantages of its own it does not always follow that its use is excluded in such cases for the post operative risk of general anaesthesia may be even worse The temporary stimulation of ether may be the most certain way of getting a patient off the table alive but the subsequent depression may yet be disastrous and it cannot be expected that an anæsthetist shall devote the whole of his experience to avoiding the coroner's court and qualifying his patient for a death certificate

For such judgement as may be required in these cases no rule can be made For operations on the head and neck this method cannot compare in regard to safety with a well planned sophisticated gas anaesthesia by intubation methods, or a two way insufflation of ether In operations on the thorax when a mechanical difficulty in respiration already exists I believe no valid argument can be found in its favour, though a unilateral effect with 1 in 2,000 percaine may be of service for an operation on the lower chest wall In relation to its employment for such operations as dissection of tonsils after injection of massive doses of novocain in the lumbar region I am reminded of the criticism attributed to Dr Johnson when shown a little dog walking on its hind legs Sir to be sure it is done, but it is not well done, the marvel is that it can be done at all"

MILK-BORNE STREPTOCOCCAL INFECTIONS*

BY

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In these brief notes on milk-borne streptococcal infections I propose to deal only with those of scarlet fever and sore throat.

That milk may be a vehicle of infection has long been established, and, although the recognition of streptococci as infective agents followed much later, so much work on the subject has been done during the last twenty years or so that it is now possible not only to classify strains of this organism as of human or bovine origin but to identify many of the strains concerned with individual cases of illness.

Milk outbreaks, whether due to streptococcal or other infections, have certain well-known characters, such as their sudden, often explosive, onset; the almost precise limitation of attacks to the consumers of a particular milk; the special incidence upon classes who can afford, or upon persons who drink, most milk; the persistence of attacks as long as the infected milk is used, and their sudden cessation upon its disuse or sterilization. While such characters are common to all epidemics dependent upon milk-borne infection, the outbreaks themselves may vary greatly in their duration, extent, and severity, from a few cases of mild scarlatina occurring in a few days in houses served by a single roundsman to a widespread epidemic, lasting several weeks, of attacks of serious illness with considerable mortality.

TWO RECENT OUTBREAKS

I have recently been concerned with two milk-borne outbreaks of disease, both in this part of the world, and both presenting what may be considered the classical characters of such outbreaks, but which differed from each other considerably in many ways. They serve, I think, as illustrations of two different ways in which infective organisms may gain access to milk—namely, by direct contamination by some person handling it or indirectly by the proliferation in the udder of the cow of organisms derived from a human source. One of the outbreaks was of scarlet fever, the other of streptococcal sore throat.

I

In the scarlet fever outbreak some 66 persons were attacked in 10 days, 44 of the cases being attacked on the fourth and fifth days of the outbreak. The cases were promptly notified, and at the same time a number of persons, estimated at about 100, were reported to have suffered from sore throat. Two deaths occurred, both of elderly patients, one a sufferer from scarlet fever, the other from sore throat. All these persons were consumers of either milk or cream from a certain dairy. On the sixth day of the outbreak two members of the dairyman's family were segregated, and from the sixth to the tenth day the milk was boiled, and no further cases occurred. The dairyman concerned supplied some 65 gallons of fresh, unpasteurized milk daily to about 300 customers, chiefly in a residential area. Most of the milk was delivered in bottles, but some into customers' jugs, and there was also a small counter trade in milk and cream. The dairy was an old-established one with a good reputation, and its premises, which included a milk shop, were clean, and there was a good supply of both hot and cold water in the shed in which the milk vessels were cleaned and stored. This shed was in direct communication with the dwelling-house.

The dairyman and his wife were elderly people apparently in good health, who had little to do with the milk. With them lived their grown-up son and daughter, the son being one of the roundsmen employed in the business, and the daughter serving in the milk shop. The son, when seen on the sixth day of the outbreak, said that his throat had been rough for a few days, but that, except for this, he was, and had been for a long time, quite well. Because of this "rough throat" he was ordered to have nothing to do with the milk, and three days later he went to stay with friends at a distance. On this day the daughter, who had been slightly unwell the previous day, developed scarlet fever, and was immediately isolated. The son returned from his visit 18 days later, but, as he was then desquamating, he was at once taken to the isolation hospital. This desquamation is of interest because, according to the statements of the man himself and others, including medical men who saw him on several occasions, he never had a rash. Swabs from the throats of several of the patients, including the dairyman's daughter, examined just as the outbreak ceased, showed the presence of haemolytic streptococci of scarlatinal type II. On the return of the son his throat, as well as those of his parents and all the personnel of the milk business, were swabbed. The swabs from the dairyman and the son yielded haemolytic streptococci of the same type as that previously obtained from patients; those from the rest of the personnel were negative. It will thus be seen that haemolytic streptococci of scarlatinal type II were obtained from the throats of certain scarlet fever patients, of a man who had a sore throat, and who desquamated, but was not known to have had a rash, and from another man who presented no sign of either scarlet fever or sore throat.

The dairy obtained its milk from two farms, and careful inquiries made at both failed to disclose any circumstances affecting either their personnel or their cows which might account for the infection of the milk.

The dairyman's son would seem to have been the source of infection of this outbreak. In its early stages he was suffering from a "rough throat," later he desquamated, and the swab then taken from his throat yielded haemolytic streptococci of the same type as that recovered from the throats of scarlet fever patients. Moreover, this man had had more to do with the milk than anyone else. He received it on its arrival and poured it from the farm churns into the dairy storage churns. He bottled the milk received in the evenings for the next morning's delivery, and on arrival of the morning's milk from the farm poured most of it into delivery churns for the second round. He also had a milk round, though a small one, and it is significant that, although he delivered milk at only 47 houses, cases of scarlet fever occurred in 20 of these houses, as compared with 29 of the 236 houses served by the two other roundsmen; thus, while cases of scarlet fever occurred in 12.2 per cent. of the houses served by the two other roundsmen, such cases occurred in 42.5 per cent. of the houses at which the dairyman's son delivered milk.

II

The other outbreak to which I have referred, that of sore throat, occurred among the same large urban population, but at an interval of about a year. As sore throat is not a notifiable disease, some time elapsed before its presence in epidemic form was recognized. Attacks were spread over about a month, during which members of over 1,000 families were affected, and 65 deaths occurred. The primary illness was in most cases follicular tonsillitis, often severe, and this was in many instances accompanied, or followed, by complications, mostly of a septic character. Relapses were common. Some of the earlier patients were thought to have "influenza throats," while others were

* Read in opening a discussion in the Section of Pathology and Biochemistry at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

suspected to be suffering from diphtheria, and many swabs were sent to the municipal laboratories for examination for Klebs-Löffler bacillus. The swabs, however, yielded not K.L.B., but streptococci, and inquiries then made led to the discovery that all the patients were consumers of milk from a particular dairy. This was a large dairy distributing some 1,500 gallons of milk daily to some 6,000 consumers, chiefly of the well-to-do classes. Except that it had no pasteurizing plant, the dairy was exceptionally well equipped with modern dairy appliances. It had an excellent reputation, and was very clean. Up to the time of the inquiries no suspicious illness had occurred among its personnel. Its milk was obtained from a number of local farms, the churns from which were emptied into large mixing tanks on arrival, and, after being clarified, the milk was bottled mechanically for distribution. On a certain morning some weeks after the earliest cases had been attacked, a sample of the milk from each farm was taken on its arrival at the dairy and was examined microscopically at the municipal laboratory. One of these samples was found to contain abundant streptococci, and on the use of this milk being stopped the epidemic ceased. Inquiries were then instituted at the farm at which this milk was produced. It was found to be a model of its kind; the cowsheds were modern buildings, well lighted and ventilated, kept scrupulously clean, and provided with ample supplies of hot and cold water. The cows were groomed daily and milked mechanically, and all the milk, except a little used locally, was sent every morning and evening in sealed churns to the dairy. The farm was in charge of a resident bailiff, who, about two months before the outbreak of tonsillitis, had been in hospital for appendicitis. On his return a few weeks later he found some of the cows suffering from mastitis, and from then onwards certain other cows suffered from inflammatory conditions of the udders, leading to the removal of some of them from the herd. Three cows had been removed a day or two after the streptococci were discovered in the milk from this farm.

Except for the bailiff's appendicitis there had been no recent illness among the personnel of the farm prior to the epidemic of tonsillitis among the dairy's customers, but almost simultaneously with the earliest of these cases similar cases had occurred in the bailiff's house and in a cottage which communicated with it and, somewhat later, in the family of one of the milkers. Cases continued to occur among the personnel of the farm for some weeks, the bailiff himself being one of the later patients to be attacked. The patients at the farm, like those in the town, suffered from complications of a septic character as well as from relapses. Two of the attacks proved fatal.

In the course of inquiries after the cessation of the outbreak, swabs were taken from a number of patients, then mostly convalescent, both from among the dairy's customers and the personnel of the farm, and some of the swabs from patients of both groups yielded haemolytic streptococci, which were also isolated from some of these same patients several weeks later.

The streptococci conformed generally to the reactions of the common *Streptococcus pyogenes*, but had certain colonial and serological characters which permitted of their identification; their haemolytic properties were marked, as was also their virulence for mice. These characters agreed very closely with the description of organisms yielded by patients during epidemics of tonsillitis in America in recent years.

Several inspections of the dairy herd were made, and on at least one occasion milk from each quarter of every cow was bacteriologically examined. Haemolytic streptococci were recovered from the milk of many of the cows, only a few of which had clinically apparent mastitis. All the organisms were of the bovine type, and on no occasion were haemolytic streptococci of human type recovered from the milk. In this connexion it should be borne in mind that attempts to isolate streptococci of the human type from the milk were not undertaken until some time after the attacks of tonsillitis had ceased, and that in the meantime cows which might have been excreting such organisms may have ceased to do so or may have been removed.

AN AMERICAN OUTBREAK

Reference has been made to outbreaks of tonsillitis in America. Of these one of great extent and severity was that which occurred at Chicago during three months of 1911 and 1912 during which, it was estimated, some 10,000 persons were attacked.[1] The epidemic resembled in many ways the one I have just described, the clinical features of the attacks being almost precisely similar, and haemolytic streptococci of a somewhat special character were isolated from the throats of many of the patients. Infection was conveyed by milk from a certain farm at which certain of the milkers had been suffering from sore throat and certain of the cows from mastitis. Following this outbreak, Drs. Davis and Capps[2] conducted a series of experiments to determine whether haemolytic streptococci derived from human sufferers from tonsillitis were pathogenic for cows and "to determine possible avenues of udder infection through the teats." As a result of their experiments they found that while haemolytic streptococci of human origin could be applied to the uninjured surface of cows' udders and teats without causing infection, yet when applied to an injured or abraded surface of the teat or injected directly into the udder through the milk channels the organisms may proliferate enormously, and mastitis may be caused lasting for several weeks. Such mastitis may exist without physical evidence, though pus may be secreted in the milk as well as streptococci in enormous numbers for several weeks. The appearance of the milk may or may not be altered.

COMMENTARY

Although no haemolytic streptococci of human type were found in the milk in the recent English epidemic of tonsillitis there can be little doubt that they would have been found had the necessary bacteriological investigations been undertaken while it was in progress, for it has been seen that such organisms, with identical characters, were isolated both from the dairy's customers and from the farm personnel, between which, except for the milk, there was no possible source of infection exclusively common to both.

The extent and duration of the outbreak can hardly be explained except on the assumption that the milk was grossly infected for some weeks with organisms pathogenic to man, and that this can occur in the case of haemolytic streptococci of human origin is demonstrated by the experiments of Davis and Capps.

It will have been noted that the attacks among the dairy's customers and among the farm personnel were coincident, and this suggests that both were infected at the same time from the same source—namely, the milk. The source of the infection of the milk, while not definitely proven, is believed to be a prior case of similar illness occurring in a house a few miles from the farm which it was the bailiff's duty to visit daily, taking with him butter and cream. Some weeks previously an inmate of this house had suffered from an attack of sore throat which he had acquired elsewhere, and from which he suffered a relapse about a week before the first attacks of the outbreak. The bailiff did not milk the cows at his farm, but it was his duty to examine any which were not well. It has been seen that both during and prior to the outbreaks

of tonsillitis several of the cows at the farm had suffered from mastitis and other inflammatory infections of the udder, and it is thus possible that the bailiff may have conveyed to one or other of such cows the infection which in some way he had brought from the patient at the house he visited daily.

Incidentally, it may be mentioned that following the cases at the farm there was a small outbreak among the occupants of this house and that the doctor who treated patients both at the farm and at the house considered that all of them were of the same nature.

Both the outbreaks I have described, the one of scarlet fever and the other of sore throat, were due to haemolytic streptococci of closely allied though distinguishable types and in both the infection was spread by milk. While, however, the scarlet fever epidemic lasted only for a few days and the attacks, numbered by tens, were almost limited to persons served by a single roundsman, himself a carrier of infection, the epidemic of sore throat was spread over several weeks and the patients, numbering many hundreds, received their milk from many roundsmen, none of whom, so far as is known, was infected. The difference in the duration of the outbreaks is doubtless attributable, at any rate in part, to the circumstance that scarlet fever is notifiable, this permitting of prompt preventive measures, while sore throat is not. The difference in their magnitude, however, is only to be explained, I think, by the different ways in which infection was spread. The scarlet fever patients owed their infections, I believe, to the direct infection of the milk by the infected roundsman by whom they were served, while to account for the many hundreds of attacks of sore throat occurring among persons living in all parts of the area served by a large dairy, some gross infection of the milk must be assumed. It has been seen that when the milk from a single farm of the many supplying the dairy was discontinued the outbreak ceased, and it would thus seem that for this milk to have infected so many consumers, greatly diluted as it was with other milk before it reached them, it must have been grossly infected. Such gross infection of milk with organisms pathogenic to human beings is, I think, best to be explained, in the light of the experiments of Davis and Capps, by the infection of cows, already susceptible owing to the condition of their teats and udders, with organisms derived from a human source.

[1] Miller and Capps: *Journ. Amer. Med. Assoc.*, Vol. lviii, 1912.
[2] Davis and Capps: *Journ. Infect. Dis.*, Vol. xv, 1914.

INTUSSUSCEPTION ILLUSTRATED BY THREE UNUSUAL EXAMPLES

BY

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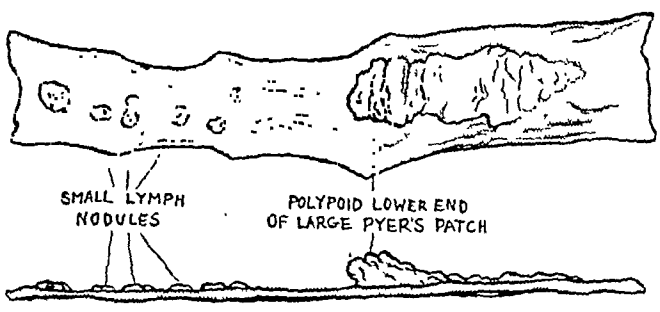
Three cases of intussusception recently operated upon at the Hospital for Sick Children have certain points of interest. In the first I was able to discover the exact cause; in the second a recurrence was shown to have the same point of origin as the previous intussusception; and in the third, recovery followed intestinal resection and anastomosis in a baby aged 8 months.

CASE I

This baby girl, aged 6 months, provided an opportunity of obtaining a good specimen of bowel indicating the cause of the intussusception. As a rule the intestine of such of these children as come to the post-mortem room is gangrenous, and it is impossible to determine precisely the exact starting point of the intussusception by an examination of it. This baby, however, died twenty-four hours after operation from respiratory failure, the cause of which was proved by the necropsy to be mal-development of the diaphragm.

At the operation the apex of the intussusception reached half-way down the descending colon; on following it backwards the colon was found to pass under the right costal margin, so that the incision had to be prolonged upwards. The liver lay completely in the right side of the chest. The point of origin of the intussusception, which reduced easily, was six inches proximal to the ileo-caecal valve, and could be felt as a definitely localized and thickened patch in the bowel wall, of the area of a sixpenny bit. The surrounding gut was not obviously thickened.

The necropsy showed that the muscle of the diaphragm was absent, save for a few fibres in its left posterior part; the rest was solely represented by a thin complete fibrous sheet; this lay over the liver, which was herniated into the right side of the chest. The right lung was unexpanded and occupied only the apex of that side of the chest. The Peyer's patches in the ileum were large, and the thickening in the bowel wall corresponding to the starting-point of the intussusception was an almost polypoid hypertrophy of the lower end of one particularly big patch. This is well shown in the figure. There could be no doubt that this thickened part of the patch projecting into the lumen of the bowel had acted like a polyp in causing intussusception. The mesenteric glands were moderately enlarged.



Half-scale drawing of bowel of Case I. The upper figure shows the large size of the lymphoid patch, and the lower profile sketch indicates how it projected into the lumen.

CASE II

Operation on this boy, aged 6 months, revealed an intussusception which had reached the splenic flexure. Reduction was difficult, but the intestine was considered viable. The starting-point, which was unusually high, being eighteen inches proximal to the ileo-caecal valve, was indicated by a definite dimple, but the whole of the affected bowel was so oedematous that no localized thickening could be felt. There was no evidence of a Meckel's diverticulum.

At the age of 12 months this boy was again presented to me by his mother, within two and a half hours of a recurrence of his symptoms. Even after this short time the intussusception, which had again reached the splenic flexure, was difficult to reduce. Healed scars of the peritoneum covering the bowel showed clearly the extent of the previous invagination, and this second intussusception had the same starting-point as the first. Again there was a dimple, but no localized thickening could be felt, the whole of the bowel involved being oedematous. A year has passed since the second operation, and there has been no recurrence.

CASE III

A baby girl, 8 months old, was brought to the Hospital for Sick Children with a history of having been seized by abdominal pain seven days before. She had vomited once at the onset, but since then had taken her food well, and had not apparently had further pain. She passed one stool on the first day, but since then the bowels had not opened, except for the passage of a little dark blood on the fourth day.

On examination she did not appear to be in pain, but was pale and listless. The abdomen was distended, particularly in its upper part, where it was marked by the pattern of underlying coils of bowel. No localized tenderness was discovered, nor could a tumour be felt apart from the general

distension Rectal examination revealed that the bowel was empty, there was no tumour and no blood on the examining finger

At the operation some turbid fluid was found in the peritoneal cavity and the small bowel was greatly distended An intussusception reached half across the transverse colon It reduced easily to within an inch or two of its apex which was eight inches proximal to the ileo caecal valve The last inch was gangrenous and perforated Three inches of ileum were resected the ends closed and a side to side anastomosis of ileum to ileum just above the ileo caecal valve was performed

For the first thirty six hours after the operation 5 per cent glucose in normal saline solution was given subcutaneously every six hours the baby was kept under the influence of morphine and nothing was given by the mouth Thereafter feeding was rapidly resumed There was no vomiting and the bowels opened three times on the second day Further progress was uneventful but for a mild wound infection until the morning of the eighteenth day when the child vomited and became collapsed She remained so and appeared to have periodic abdominal pain In the evening the abdomen was opened again through the original incision There was generalized turbid exudate and in the right iliac fossa lay a coil of distended small bowel adherent to a loop of collapsed ileum, above the anastomosis On dividing the adhesion the obstruction was relieved The turbid exudate was removed and the abdomen was closed 150 c cm of 10 per cent glucose saline solution was injected into a vein Uninterrupted recovery followed and during the past year the baby has been perfectly well

It will be noticed that these three examples are ileo-colic intussusceptions This type has its point of origin in the small intestine, it is primarily enteric, but when the ileum has passed into the colon it is conveniently classified as ileo colic Out of thirty seven consecutive operations, in which I made a careful examination of the point of origin of the intussusception after reduction, it was in the ileum in thirty four, thirty three of these were ileo colic in type, and one was enteric Of the remaining three, the ileo caecal valve formed the apex in two, the third had a dimple in the caput caeci, and according to Perrin and Lindsay, should be classified as ileo caecal also These surgeons, in their monograph in the *British Journal of Surgery*, 1921, based on the surgical records of 400 cases and not upon their personal experience, give the incidence of the ileo colic type in intussusception as 31 5 per cent, in marked contrast with my small series, where it is over 89 per cent Each of the thirty four cases showed a definite thickening or dimpling in the ileum to indicate the point of origin or apex, for these two terms are synonymous I am in entire agreement with Perrin and Lindsay when they find no evidence to support Leichtenstern's theory that an intussusception may grow at the expense of its entering layer only If such were the case, there would be no thickening or dimpling to indicate the apex for this would be continually changing Thirteen of the thirty seven children were girls, the average age was 13 months, the youngest was 3 months old, and the oldest 4 years and 10 months

This high incidence of intussusception in young children starting in the ileum confirms the belief that the common cause is enlargement of a Peyer's patch, which excites uncontrolled peristalsis This is illustrated by Case I Case II suggests that such a patch may remain hypertrophied, or become so again, and then lead to a recurrence of intussusception Case III shows that resection of a gangrenous intussusception may be confined to small intestine, involving an easier and safer operation than the removal of the colon Further, it is the enteric intussusception which has become ileo colic that is most liable to be gangrenous since both the intussusceptum and its vessels have passed through the tight ileo caecal valve

I wish to thank the surgeons to the Hospital for Sick Children for allowing me to operate on these children and for permission to publish this note

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

EXOTOXINS IN RELATION TO VACCINE THERAPY

I think it may be fairly stated that where a germ forms, as the major part of its poisoning properties, an exotoxin, —that is, a powerful diffusible poison secreted into the liquid culture medium in which it grows—a serum is usually the most successful antidote Examples of this are tetanus, diphtheria, botulism and dysentery On the contrary, when the endotoxic factor is almost wholly predominant—that is when the toxin is contained firmly within the germ and only liberated after autolysis—a vaccine is indicated as the appropriate antidote

The clinical pathologist probably makes more vaccines from the staphylococcus and streptococcus than from any other germs and in respect of these two organisms I would like briefly to point out that diffusible exotoxins are secreted by both as well as endotoxins as also in dysentery of the bacillary type albeit in the last the exotoxic factor is by far the more important, and so important, in fact that serum therapy is chiefly useful, rather than vaccines *Staphylococcus aureus* and some strains of *Staphylococcus albus* form haemolysins and leucocidins, the former being quite powerful as cultures on blood media show The zone of haemolysis around the colonies of *Staphylococcus aureus* is markedly conspicuous The streptococcus also forms exotoxins—streptolysin, which is a very powerful diffusible toxin whose effects we are aware of in fulminating cases and also a haemolysin well shown in the haemolytic strains

Kolmer[1] has shown that the body not only contains antitoxins to these poisons but that it can be stimulated to form more if so desired by appropriate and graduated inoculation

The average autogenous vaccine ignores the important toxins The staphylococcal emulsion is washed off the agar slope and suspended without the least regard for the exotoxin That is the usual procedure As a matter of fact, with the immunogen of Ferry and Fisher,[2] actually the reverse process is utilized and the washings are utilized alone, and the very important endotoxic factor is ignored I maintain that either process is irrational, and I have endeavoured to combine the two factors in vaccine therapy as applied to the above two organisms as follows The ordinary saline emulsions ignore the potent haemolysin and less potent leucocidin and therefore it is more rational to make one's vaccine from liquid media and to include a certain proportion of that liquid medium in the vaccine

The technique is quite simple Twenty four to forty eight hour glucose serum broth emulsions are prepared and centrifuged The emulsion of germs is made up in saline, and 5 per cent of the supernatant fluid containing the endotoxins is added to the vaccine I am sure that the results by this technique are superior to those formerly obtained and that this method constitutes a more rational way of making vaccines from the organisms in question

Reviews

DANGEROUS DRUGS

The Yale University Press has published a book[1] of some 120 pages entitled *Dangerous Drugs: The World Fight against Illicit Traffic in Narcotics*. The author, Mr Arthur Woods, was formerly Police Commissioner in New York City, and he has written with the advantage of a close observation of the League of Nations' Advisory Committee on Opium and other Dangerous Drugs. Much of the material for the book was collected in the course of the opium inquiry in the Philippine Islands, which was undertaken by a commission of which Mr Woods was a member. The book, however, is not confined to the Philippines, but deals with the whole problem of the illicit traffic in narcotics and the efforts which have been made to control it. Mr Woods has also had the opportunity of observing the working of the Permanent Central Opium Board, which is the executive body set up by the Geneva Convention of 1925 to control the international trade in narcotics. [illegible] Mr Woods has been able to obtain information from official sources which is not generally available. The number of addicts in the United States has been variously estimated at from 100,000 to over 1,000,000. The author points out that there can be no doubt that narcotic addiction, as it exists in the present day, is a comparatively modern evil, and that "it is the product of a civilization which has developed a vast and complex machinery of production and distribution, and of a social organization which has developed certain types of character." He traces the efforts at international control of the traffic in narcotics from the Shanghai Commission of 1909 to the action by the League of Nations under the Geneva Convention of 1925. Although most of the nations have bound themselves, in accordance with Article 9 of the Hague Opium Convention, to limit the manufacture, sale, and use of medical opium, morphine, heroin, cocaine, and their preparations to exclusively medical or legitimate purposes, and to co-operate internationally to prevent their use for any other purpose, yet illicit production and distribution of these drugs is admittedly "enormous" and "appalling." The huge financial interests involved in the contraband traffic, and the ingenious methods of the international gang of smugglers who thrive on the gigantic profits derived from this illicit commerce, are abundantly demonstrated.

Mr Woods's final chapter on "What is to be done?" has little that is new to suggest in order to remedy the evil he has exposed. He says "the need for drastic action is clear," but such action amounts to little else than the vigorous and universal enforcement of the provisions of Article 9 of the Hague Opium Convention of 1912, referred to above. He holds that it is also essential that the acreage devoted to the culture of the poppy and coca leaf should be reduced. The default of even one producing country may "put the world at its mercy," and so long as Turkey, Persia, and China are unable, or unwilling, to ratify and effectuate the opium conventions, the leak of illicit production has not been stopped. Even some European countries have notoriously failed to fulfil their contractual obligations, and have been the source from which huge illicit consignments of narcotics have emanated. Mr. Woods is sanguine enough to hope that a more educated public opinion in regard to the social peril involved will so influence Governments as to ensure effectively both the internal and international control of the trade in drugs of addiction.

[1] *Dangerous Drugs. The World Fight against Illicit Traffic in Narcotics.* By Arthur Woods. New Haven: Yale University Press; London: Milford, Oxford University Press. 1931. (Pp. xi + 123. 9s. net.)

MEDICAL STATISTICS

Statistics can be made a dangerous instrument if carelessly used, as the Editor has pointed out elsewhere, and it is more and more in the care of the medical health posts into the hands of one kind or another it be [illegible] safeguards imposed to guard against the pitfalls which may accompany their use. We therefore welcome *An Introduction to Medical Statistics* by Hilda M. Woods and W. T. Russell, which sets out in a concise and intelligible form the elementary principles and methods with which every expert in public health should be familiar.

Here are [illegible] which custom more than can be readily defended by the average medical man or woman who does not specialize in the study of the elements of vital statistics. From a perusal of one of these larger books the student will probably emerge with a rather confused idea of masses of figures relating to a great many classes, but without any very clear notion that the study of vital statistics contains anything which can be of real benefit to the clinical staff of a public health department. A glance over their work may lead him to the opposite view, that this is clearly a business for experts with some flair for mathematics and a prolonged training in statistical methodology. In this latter view he will be mistaken if he is thinking of statistical research into medical problems, but as regards the preparation of his annual report which he becomes a medical officer to some public body or institution either point of view is unfortunate. These reports will perforce be full of statistical tables and summaries, and from them he will at least be expected to draw some clear-cut conclusions which may influence future policy in the control or treatment of disease.

Hence a course of training in State medicine should include as clear a presentment as it is possible to give, in the short time which can be devoted to this subject, of the principles involved, not only in the collection and analysis of statistical data, but in the drawing of legitimate conclusions from them. Having such a purpose in view, this small book undoubtedly fills a gap which has long been felt. That it does so adequately is guaranteed by the fact that the joint authors are colleagues of Professor Major Greenwood, who writes the preface. A study of the book justifies the confidence that such a recommendation inspires. It contains eleven chapters, of which six deal with the collection, representation, and standardization of vital statistics and construction of life tables, another four deal with frequency distributions, variability, correlation, and regression, and the last with the application of the theory of sampling to estimating the reliability of rates and averages. Such an attempt at condensation and simplification must necessarily carry with it certain dangers, in that the student may be left unaware of the limitations of some of the methods described. One feels, for example, that in the chapter on correlation a warning that the correlation coefficient can only be usefully employed when the regression is approximately linear might perhaps have been added.

The authors are to be congratulated on carrying out a difficult task in an admirable way.

[2] *An Introduction to Medical Statistics.* By Hilda M. Woods and William T. Russell. London: P. S. King and Son, Ltd. 1931. (Pp. x + 125. 7s. 6d.)

PHYSIOLOGY OF MUSCULAR EXERCISE

The study of *The Physiology of Muscular Exercise*[1] is one of the most interesting applications of physiology to human affairs that have engaged the attention of investigators during the present century It illustrates in the clearest manner the wonderful reserve powers of the body and the way in which various and complicated co ordinating processes succeed in keeping the physico chemical state of the blood and tissues almost unchanged in spite of the many disturbing tendencies which are brought into play during severe exertion The present (third) edition of BAINBRIDGE'S book on the subject has been rewritten by two young American physiologists, and very ably rewritten too The defeat of the Oxford and Cambridge (England) athletes by the clearly superior team from Harvard and Yale on July 18th is not without its significance for us The Americans beat us at sport because they study the subject and organize their training on scientific lines An event is won, "in the long run," as much by cerebral as by muscular effort

The treatment of the subject, as with the original edition, centres round the means by which the tendency to alteration in the properties of the blood during exercise are counteracted, partly by the peculiar properties of the blood itself, partly by alterations of a compensatory nature in the action of the circulatory and respiratory systems It is evident that the physico chemical properties of the blood are of fundamental significance to the whole question, hence the importance of the discussion of these properties from the standpoint of the remarkable investigations which have been so ably conducted at Harvard by L J Henderson, and in which the present authors have participated It is not too much to say that these studies not only form the most conspicuous feature of the changes in this volume, but that they represent one of the most brilliant scientific contributions of the present century It is abundantly clear that our friends across the Atlantic know how to organize teams, whether for work or for play, and if we claim that they are rather apt to work at their play, we must also admit that they work at their work In the language which they are alleged to use, we "hand it to them" The question of exercise at high altitudes including that of acclimatization to those altitudes is also dealt with, and is another illustration from which we see that the centre of gravity has apparently left the Oxford and Cambridge controversy—so long an entertainment for the cultured—and crossed to America

The book has undergone thorough and competent revision, on which the authors deserve warm congratulations The bibliography is considerably extended, particularly as regards recent American work, and the book as a whole is a well balanced presentation of the prevailing opinions on this closely interwoven fabric of exact data No better book could be read by anyone who wishes to know how physiological methods can be applied, or whether physiology has any real value in human affairs

POST TRAUMATIC CAUSALGIAS

In his Lyon thesis Dr PAUL BLANCHET gives an account of the post traumatic causalgias described by Weir Mitchell,[2] and their prognosis, by abstracting thirty five cases previously recorded, by describing in considerable detail a case dating from a gunshot wound in 1914, and by a critical analysis In a bibliography of 200 items, twelve bear a date before the European war, no fewer than 145 appeared during the war, and the remainder (of various dates) bear less directly on the subject Causalgia is ascribed by the author to hypersensitiveness of the sympathetic, and he quotes the dictum of his teacher, Professor Froment, that it is "the cry of the sympathetic Causalgia, or burning pain in the cutaneous area supplied by an irritated nerve and showing the well known glossy skin, is divided into two forms—the hyperaemic and the ischaemic These are characterized respectively by redness and heat, and by pallor and a depressed temperature, and are due to stimulation and to degeneration of the vaso dilator nerves The form with hyperaemia as its predominant manifestation is the more frequent, and fortunately the more susceptible of cure, most of the patients recovering spontaneously in the course of some months, whereas the rarer ischaemic form is much more obstinate and runs a course of years The *psychological manifestations are secondary, not primary* The surgical measures for the relief of causalgia are numerous, amputation should be avoided when possible as it often aggravates the pain and extends its area; peri arterial sympathectomy is the most successful procedure, but ramicotomy, provided that all the branches supplying the painful area are divided, has given good results This is an example of a thesis useful to the compiler

CLINICAL RECORDS BY MEANS OF *X* RAYS

The book on this subject,[3] by Privatdozent VICTOR HOFFMANN of Cologne, with its English and German texts, is useful and unique In the preface its object is stated to be "to demonstrate the most important bone and joint diseases and their subsequent course *X* ray photographs have been used because by them it is possible to show the various stages and general course of this disease group, and because after histological representation, they leave the most profound impression" This is quite true when as in this case, the radiographs are of first rate quality and well reproduced The author says that the pictures are intended to take precedence over the text, and he properly insists on the lesson they teach of the healing power of nature Such a series as that of four pictures showing the course, ending in regrowth of a vertebra, and cure of a case of osteomyelitis of the spine on pages 14 and 15 is of extraordinary interest, and most attractive Indeed, we may say as much for all the cases which have been selected after many years' hard work We cordially endorse the author's wish that the publication of the book in English and German may "be beneficial to mutual scientific work between the different nations" It includes 156 series of radiographs, each consists of a number of radiographs, the total number being nearly six hundred.

A SURGEON'S MUSINGS

The tenth edition of Dr JOHN CHALMERS DACOSTA'S *Modern Surgery* has recently appeared but in the meanwhile he has written widely, often with a reminiscent flavour and always with an interesting touch as is shown in the twenty one *Selections from the Papers and Speeches*[4] As Samuel D Gross Professor of Surgery at the Jefferson College, Philadelphia, he writes with admiring affection of his predecessors in that chair the elder Gross "the emperor of American surgery

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[1] *The Physiology of Muscular Exercise* By the late F A Bainbridge M D D Sc F R C P, F R S Third edition rewritten by A V Bock M D, Ph D and D B Dill Ph D London and New York Longmans Green and Co 1931 (Pp viii + 272, 46 figures 15s net)

[2] *Les Causalgies post traumatiques de Weir Mitchell et leur Diagnostic* Par Dr Paul Blanchet Paris E Le François 1930 (Pp 257)

[3] *Clinical Records by Means of X Rays* By Victor Hoffmann Privatdozent Cologne Berlin J Springer 1931 (Pp x + 24 and 156 plates)

[4] *Selections from the Papers and Speeches of John Chalmers DaCosta* M D LL D Philadelphia and London W B Saunders Company 1931 (Pp viii + 443, 13 illustrations 25s)

latter's son, S. W. Gross, who "said what he meant, and meant what he said"; and Professor W. W. Keen, the veteran surgeon of North America's two great wars, who is happily still with us. In his account of the foundation and the founder (George McClellan) in 1825, in the "last surgical clinic in the old amphitheatre" in 1922, and in the history of the old wooden operating table, of Jefferson Medical College Hospital, he has constituted himself its historian. Like Professor Harvey Cushing, to whom this collection of essays is gracefully dedicated, the author has travelled far in biographical studies—for example, in "Medical Paris during the reign of Louis Philippe," his sketch of Baron Larrey, and "The personal side of Pepys." In "Then and Now," his oration at the jubilee of the Philadelphia County Medical Society in 1899, the history of the city of brotherly love when appendicitis was practically unknown, is another footnote to medical history. Admittedly "subject to the luxury of musing," Dr. DaCosta writes "behind the office doors" about medical authors, and the doctors in Dickens's novels.

NOTES ON BOOKS

The fact that Colonel L. W. HARRISON has found it necessary to bring out a fourth edition of his *Diagnosis and Treatment of Venereal Diseases in General Practice*[7] indicates that this book has established a reputation in medical literature. Room has been found for a considerable amount of new matter by excising information which appears in standard textbooks on medicine and surgery, and is superfluous in a work devoted to venereal disease. The chapter which bears the chief marks of alteration and re-editing is that devoted to the treatment of syphilis. The author has always felt strongly that, in spite of repeated warnings, under-treatment of syphilis is still a common fault, and he again brings out the importance of prolonged and intensive treatment, even in cases where the disease is diagnosed at an early stage. An analysis of his results at St. Thomas's Hospital has led him to the conclusion that the programme of treatment which he laid down in his first edition is barely adequate, although at the time of publication it was thought by many to be longer and more intensive than necessary. Consequently, in the present edition he has still further extended the courses required for the treatment of primary disease. Additional matter now appearing for the first time is a description of that somewhat rare and puzzling condition, granuloma venereum, and climatic bubo. The practitioner will undoubtedly find in this book everything he requires in the way of guidance in the diagnosis and treatment of venereal troubles. He can also rely on it to furnish him with precise information about the correct procedure in practically all the circumstances which he is likely to encounter.

In reviewing the American translation of Dr. CEMACH'S book on Surgical Diagnosis[8] in the early part of 1929 we endorsed the translator's dictum that the author had furnished an exceptional amount of information in an easily accessible form. The fifth, improved, and enlarged edition of the original German work deserves similar approbation. In some respects it is better than the American translation, for it is less cumbrous, yet it contains more plates and tables, and, notwithstanding the drawbacks to this form of handbook, which we pointed out two years ago, it gives at a glance useful information on surgical diseases of wonderful amount in small compass. Some of the illustrations are adequately coloured in order to illustrate such lesions as erysipelas, lymphangitis, and others. This edition is a useful picture-book of surgical diseases and injuries, but its value would be much enhanced by the provision of a far more copious index. With its 589 illustrations it is not dear at 18 marks, unbound.

Professor CURTIS M. HILLIARD'S attractively written book on *The Prevention of Disease in the Community*[9] resembles those in the Boston Health Lecture Series in being intended for non-professional readers, and especially to provide college students with the rudiments of preventive medicine and hygiene in addition to the elements of personal hygiene, which are more generally taught in American schools and colleges. The instruction is conveyed with suitable examples: thus, "the typhoid mother-in-law" was a kindly woman who visited her six married daughters, and with the best intentions assisted in their kitchens, thus infecting at least thirteen persons, though, curiously enough, her own daughters and sons escaped any recognized infection.

The continued popularity of the injection treatment of varicose veins is shown by the appearance of another handbook on this subject, entitled *The Rational Treatment of Varicose Veins and Varicocele*.[10] The author, Mr. W. TURNER WARWICK, has endeavoured to supply answers to the many questions of detail as regards the actual procedure and its sequels, and the various kinds of emergencies which may occur. The subject-matter is more thoughtfully conceived than in some similar publications, and the bibliographical references throughout are numerous. Mr. Warwick gives reasons for the various practical suggestions that are made, and his little book can be recommended to the attention of our readers.

A new edition has been published of the Register[11] of members of the Chartered Society of Massage and Medical Gymnastics, corrected up to April, 1931. A valuable feature of this reference book is the fact that it contains an index of those practising massage classified under postal districts, as well as information about the qualifications in each case.

[7] *The Diagnosis and Treatment of Venereal Diseases in General Practice.* By L. W. Harrison, D.S.O., M.B., Ch.B., F.R.C.P.Ed. With a chapter on the Medico-Legal Aspects, etc., by F. G. Crookshank, M.D., F.R.C.P. Fourth edition. London: Milford, Oxford University Press. 1931. (Pp. xv + 567; 79 figures, 19 plates. 25s. net.)

[8] *Chirurgische Diagnostik.* Von Dr. med. A. J. Cemach. Fünfte, verbesserte und vermehrte Auflage. München: J. F. Lehmann. 1931. (Pp. xi + 7; 165 tabular forms, 589 figures on 131 plates. Paper cover, R.M. 18; bound, R.M. 20 50.)

[9] *The Prevention of Disease in the Community.* By Curtis M. Hilliard. London: McGraw-Hill Publishing Company, Ltd. 1931. (Pp. viii + 193; 25 figures. 8s. 9d. net.)

[10] *The Rational Treatment of Varicose Veins and Varicocele.* By W. Turner Warwick, M.B., F.R.C.S. London: Faber and Faber, Ltd. 1931. (Pp. 188; 12 figures. 5s. net.)

[11] *The Chartered Society of Massage and Medical Gymnastics: Register of Masseuses and Masseurs,* July, 1920–May, 1931. London: Tavistock House (North), Tavistock Square, W.C.1. 1931. (4s.)

PREPARATIONS AND APPLIANCES

VITAMIN CONCENTRATE OF COD-LIVER OIL

McKesson's vitamin concentrate of cod-liver oil is a fluid preparation which contains both vitamins A and D in eleven times the concentration at which they occur in a potent sample of cod-liver oil. This preparation has been accepted by the Council of Pharmacy and Chemistry of the American Medical Association (*Journ. Amer. Med. Assoc.*, 1930, xcv, 1347). The makers state that their preparation has been subjected to careful tests as regards stability. The preparation is free from the well-known odour and taste of cod-liver oil, and the dose recommended is three to six drops three times a day.

LACARNOL

Lacarnol is an extract of certain mammalian organs. It has a selective dilator action on the coronary arteries, but does not influence the general blood pressure. The preparation contains nucleosides, and the evidence available suggests that the active principle is adenosin. This preparation has been subjected to numerous laboratory and clinical tests in Germany. Fahrenkamp (*Munch. med. Woch.*, 1930, No. 44, p. 1914) has reported favourably on its action in angina pectoris. He states that the preparation produces benefit even after oral administration. (Supplied by Bayer Products Ltd.)

"TABLOID" CAROTENE

"Tabloid" carotene is a new preparation put forth by Messrs. Burroughs Wellcome and Co. Carotene is a pigment found in various vegetable and animal foods, and is an unsaturated hydrocarbon with an empirical formula $C_{40}H_{56}$. It is believed to be converted in the animal body into vitamin A which is colourless. Each tabloid of this preparation contains 0.002 gram of carotene, and two tabloids are approximately equivalent to the vitamin A content of one teaspoonful of an average cod-liver oil.

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SATURDAY, SEPTEMBER 12th, 1931

WAR AS AN EDUCATOR IN HYGIENE

War is perhaps the severest test of hygiene and preventive medicine Many theories and prejudices apparently unassailable in normal times are shaken or upset by war conditions, most of all in an invaded country, where the destruction of towns and villages, and the flight of the civilian inhabitants to other parts of the country, add to the health problems created by martial law, mobilization, and the transport of troops How France reacted to this position in 1914 and afterwards is described by Professor Léon Bernard in one of the monographs of the Carnegie Endowment, lately published, entitled *La Défense de la Santé Publique pendant la Guerre* [1] These monographs contain a history of the war in the different countries concerned, and, as pointed out by Mr J T Shotwell, professor of history in the University of Columbia, they are intended to give "something between a personal description and an official report" Professor Bernard, while explaining how the sanitary conditions of France were affected by the war, and the steps which were taken to preserve the public health, claims that on the whole the new and urgent questions brought into existence at that time were met with intelligence and vision, the more remarkable because many of the problems which had to be faced were new and demanded methods not previously understood or willingly accepted

Before the war the French were inclined to trust normal civilization and the climatic advantages of their country to preserve the public health, but with the war upon them they had speedily to learn the necessity of adding every scientific weapon available for the purposes of hygiene As soon as hostilities began, the civil authorities had to realize the necessity of arranging systematically for the treatment of their civilian sick and of dealing with infectious diseases—hence better civilian notification and prophylaxis, the interchange of information between civil and military authorities, as well as the isolation of the patient and the disinfection of his belongings In addition, new ideas arose for preventing disease in districts where troops were billeted, prisoners of war were interned, or refugees arrived from the invaded areas Water purification, the maintenance of pure food supplies, the institution of campaigns against flies and rats, and the cleansing of areas occupied by troops, had also to be undertaken They were not, in one sense, new measures, but their application was enormously extended and consolidated

Professor Bernard's story brings out some points of interest peculiar to a country in which military service is compulsory It is wiser to call young soldiers to the colours in the summer time rather than in winter, "children's diseases," such as scarlet fever, measles, mumps, diphtheria, occurred more frequently among the 1917 class, recruited in January and training until August, 1916, than among the 1918 class, whose period of training was from April to November, 1917 In the case of measles, France, in consequence of compulsory service, was more fortunate than England or the United States, as, owing to the normal requirements of conscription, the mass of the male population had already served in the army, and most susceptibles who had not suffered from measles in childhood had probably caught it during their pre-war military service Even so, however, measles was fairly prevalent in the French army during the war, among the troops of the interior which included those in barracks, training camps and depots, and the case mortality was twice as high among these men as in the pre war army

In France special dangers arose from the introduction of epidemics by entrants from neutral countries, by persons repatriated from German internment camps, and by refugees from the evacuated areas All of these had to be examined for infectious diseases, and, when necessary, isolated, cleansed, and perhaps vaccinated Use was made of preventive inoculation to a far greater extent than in any previous war As the war went on, vaccination against small pox, inoculation against typhoid, cholera, and plague, and immunization of diphtheria contacts were increasingly used, not only in the army, but also, when necessary, among civilians

The account given of the control of the enteric group of diseases in France is particularly interesting Deaths from these diseases had been growing less for some years before 1914, and it might have been expected that the upheaval of war in an invaded country would have arrested the fall Except, however, for a rise in 1914–15, chiefly among the front-line troops, the fall has continued both during and after the war Professor Bernard claims, with some reason, that this has been due to the energetic prosecution of water sterilization, and especially to anti-typhoid inoculation That the diminution of the prevalence of typhoid during the later war years was to a great extent due to inoculation is suggested by the consideration that originally in 1914, *B typhosus* was the cause of the majority of infections in the army Inoculation by anti-typhoid vaccine, on a large scale, reduced these, but infections due to *paratyphosus* B increased during 1915 Following the experience gained among the North African troops, the mixed T A B vaccine was introduced in France in the autumn of that year with the happiest results as regards all enteric infections One effect of the contrast between the morbidity from typhoid diseases among the civil population and that among the inoculated troops was that the former in districts where typhoid broke out themselves pressed for inoculation All enteric infections, it is stated, had

[1] *La Défense de la Santé Publique pendant la Guerre* Par le Dr Léon Bernard Paris Les Presses Universitaires de France, New Haven, U S A Yale University Press, London Milford, Oxford University Press 1931 (25 6d net)

almost completely disappeared from the army in 1917 and 1918.

To English readers, the comparative ease with which preventive measures against small-pox can be undertaken in a country where anti-vaccination societies do not flourish is refreshing. The readiness with which vaccination against small-pox is accepted in France is well known, and sometimes envied, by our own public health authorities. At the commencement of this war, therefore, the populace, especially in Paris, where the epidemic which followed the Franco-Prussian war was remembered, sought and obtained vaccination on a large scale. Although, normally, vaccination is performed in France at the ages of 1, 11, and 21 years, a surprisingly large proportion of vaccinations were found to give successful results in 1914 and 1915—a result which led to the legislation of September 7th, 1915, for the compulsory vaccination during war, public calamity, and at times of epidemic or threat of epidemic, of all persons, irrespective of age, who could not prove that they had been successfully vaccinated during the previous five years. As a result, 1,005,468 vaccinations were performed during 1914, 1915, and 1916. In 1917 there occurred eighteen cases of small-pox, with four deaths, in Lyons. General vaccination of the population was immediately decreed, thirty-three centres of free vaccination were set up at different points, and in addition all the school children of both public and private schools were vaccinated; the outbreak was stopped. This may have been using a steam-hammer to kill a fly, but at any rate the fly was effectively killed. During the whole period of hostilities there were 561 deaths from small-pox in France. These included imported cases, and form a striking contrast to the 60,000 deaths which were caused by small-pox in 1870–71.

It is interesting to note, in a volume of this kind, the attention which had to be given to the epidemic diseases of childhood—such as chicken-pox and whooping-cough. Mumps was second only to the great influenza epidemic of 1918 in the number of cases it caused among young soldiers in the French army, though influenza was, of course, incomparably more deadly. As in England, cerebro-spinal fever was, until the influenza arrived, the most formidable epidemic disease with which the French medical authorities had to contend in their standing camps. In Paris and its suburbs there were more than twice the number of notifications in 1915–18 than in the years 1911–14, the greatest number occurring in 1915. In the army it was the recruits under instruction who suffered most, the disease never gaining a firm foothold in the trenches. Variations in the predominating type of meningococcus were found in different years. The suggestion that the most deadly of these were importations from the British army can hardly be substantiated; the type of organism predominating in outbreaks of cerebro-spinal fever varies in epidemic and inter-epidemic times, and may even do so in different periods of the same epidemic. The activity for health which the war made so imperative in France, as in other countries, produced movements for dealing with venereal disease and alcoholism and for the care of mothers and children which have been actively continued since.

The campaign against tuberculosis was perhaps the most remarkable of the French war-time efforts. Before 1914 there existed only a small number of sanatoriums, dispensaries, etc., unconnected and of very unequal value, while the general public was largely ignorant of or indifferent to the disease. Faced with the fact, however, that tuberculous soldiers were apt to spread the disease if discharged direct to their homes, the Government instituted various schemes under which tuberculosis patients could be treated and trained in the hygienic routine necessary to enable them to live at home without risk to others. These schemes included: (1) sanitary hospitals where the patients were sorted out into very slight cases likely, under suitable treatment, to become fit for light work in depots or on the reserve, hopeless cases which were cared for here until their death, and severe but curable cases which were transferred to the sanitary stations; (2) sanitary stations where patients remained for about three months for educational treatment; (3) local committees whose chief task was the care of the patient and his family at home, though, when necessary, they would arrange for treatment in sanatoriums and hospitals; (4) a central committee which was responsible for collecting money for the local committees, issuing literature, and generally exercising a central control over the anti-tuberculosis crusade. Since the war this organization for combating tuberculosis has been adapted to peace requirements.

Professor Bernard's interesting volume, in short, is eloquent testimony of the numerous measures for the preservation of the public health which were introduced in France during this critical time. They may not always have produced all the results expected from them, but they were at least successful in preventing the calamities from disease and destitution formerly believed to be inseparable from war. And evidently their effects did not end with the period of hostilities. The public conscience of the country was stirred to a sense of its duty in these matters, and an interest in hygiene was created which will bear fruit in the future and will serve as an important item on the credit side to set against the burden of misery, ruin, and debt left by the years 1914 to 1918.

THE ROLE OF FATS IN THE STOMACH

Fats form a regular constituent in the foods of most races, and the relatively high caloric value of fats makes them a particularly useful addition to the diet in temperate and cold countries. It is nevertheless a common experience that fatty foods are "heavy" (that is, difficult of digestion), and in the case of weak stomachs they are eschewed. The mechanism of the action of fats on digestion in the stomach was elucidated in the experiments of Pavlov, who showed that fat did not excite a secretion of gastric juice when introduced into a dog's stomach, and, further, that fat given with

meat inhibited the secretion normally evoked by meat. This inhibition was brought about, not by the fat coating the mucous membrane of the stomach and so preventing the flow of gastric juice, but reflexly from the duodenum. The motility of the stomach is reduced by fats, and this, too, has been shown to be reflex, the presence of fat in the duodenum producing a contraction of the pylorus. This reflex effect of fats is initiated in other parts of the intestine. Ewald and Boas had shown in 1886 that the addition of olive oil to an enema mixture considerably reduced gastric secretion. Their discovery was not used, however, till later, when other workers found that fat was a means of reducing gastric acidity.

The frequency of gastric hyperacidity as a cause of symptoms of indigestion, and the common association of hyperacidity with gastric and duodenal ulcer has led to a system of dieting whose aim is to neutralize or reduce the acidity. For the latter purpose fats are a leading constituent of most of the standard ulcer diets; milk, pure cream, unsalted butter, or various oils, especially olive oil, enter largely into the diets advocated. The form in which fats are taken is probably of importance. A recent research by Morrell Roberts,[1] on the effect of oils on gastric secretion and motility has shown that inhibition follows the addition of oils to the sample test meal or the administration of oil before the test meal. A series of oils was tested; of the glyceryl esters of the higher fatty acids other than oleic acid, several were found to be relatively more efficient in inhibiting gastric secretion than olive oil, which is usually given in the treatment of gastric ulcer. Linseed oil, cod-liver oil, and cotton-seed oil all showed more inhibitory power that olive oil. Roberts found, thus, that the more efficient oils were composed of the less saturated fatty acids. The higher fatty acids themselves were also inhibitory, while the alkali salts of the higher fatty acids (that is, the soaps) actually stimulated gastric secretion. Glycerol and liquid paraffin appeared to be entirely without action on secretion or motility. Linseed and olive oil were found, further, to inhibit the action of recognized evokers of gastric secretion, such as sodium bicarbonate, caffeine, and meat extracts; the only exception being histamine, which was unaffected by giving oil. Histamine appears to have a central action, and differs from the other stimuli to gastric secretion, which have a local action on the stomach.

Clinical observation of the results of treatment of gastric and duodenal ulcer, and of the state of the gastric secretion after cure of the ulcer, has shown that a lasting inhibition of acidity is not necessary. Ulcer cases often show a higher acidity after treatment and healing of the ulcer than before treatment is begun. Some factor other than the acidity, therefore, must be sought when considering the causes of gastric and duodenal ulcer. A new theory of their causation has been put forward in a recent book.[2] Many English and Continental observers have postulated a condition of gastritis antecedent to ulcer; this pre-ulcerative gastritis is usually most definite in the pyloric antrum. Dr. Spira believes that a pre-pyloric gastritis is set up by the combined retention of acid and regurgitation of bile into the stomach that follows the ingestion of an excessively rich and fatty diet. He points out that experimentally the combination of hydrochloric acid and bile salts is able to produce ulcers of the mucous membrane in animals. He would therefore advise limiting the intake of fats as a prophylactic measure against the pre-pyloric gastritis which is regarded as a forerunner of ulcer. The weakness of Dr. Spira's theory is that regurgitation of bile and pancreatic juice is not abnormal; it is the usual means of neutralizing the gastric secretion. Without further evidence in support of this theory, physicians will probably continue to treat conditions of excessive secretion of gastric juice in the customary way with fatty foods and oils.

[1] *Quart. Journ. Med.*, January, 1931, 133.

[2] *The Causation of Chronic Gastro-Duodenal Ulcers.* By I. Jacques Spira, M.R.C.S., L.R.C.P. With an introduction by Sir Humphry Rolleston, Bt. London: Humphry Milford, Oxford University Press. 1931. (7s. 6d. net.)

FINANCIAL COMMITMENTS OF THE MINISTRY OF HEALTH

Special interest attaches at the present moment to the recently issued twelfth annual report of the Ministry of Health,[1] which covers the twelve months ending March 31st, 1931, and indicates the extent of financial liability involved by the activities of this Department of the Government. Mr. Neville Chamberlain, who signs it, recalls that the report was prepared before the present National Government assumed office, and that it relates to a period for which the previous Government was responsible. The annual report of the Chief Medical Officer is being published separately, as usual. The services administered by the Department involved expenditure classified under five heads—namely, the Ministry of Health Vote of £19,224,200 net; grants to local authorities concerned with employment schemes in necessitous areas in England and Wales, amounting to £440,000; Exchequer contributions to local revenues, which totalled £39,560,000 net; National Health Insurance Funds, which entailed a sum of £32,220,000; and £30,800,000 in respect of the Pensions Account. The gross total of the Ministry of Health Vote was £20,484,200, including housing grants (£11,855,000), grants in aid of insurance funds (£6,050,000), central administration (£2,235,250), and miscellaneous grants (£343,950). An amount of £1,260,000 was recovered by the Department from various sources, and further expenditure was incurred, so that the estimated net cost to the taxpayer of the services for which provision was made in the Ministry of Health Vote is assessed as £19,836,326. As regards the Exchequer contribution to local revenues a total grant of £44,100,000 was provided, £43,828,056 being actually disbursed in the year, but of this grant £4,540,000 represented an allocation from the Road Fund. An interesting table indicates the way in which loans to local authorities in England and Wales for public works (excluding housing purposes and temporary provisions for current expenses) have risen from £35,068,344 in 1929–30 to £47,365,434 in 1930–31. In this connexion it is noteworthy that public health requirements rose from £10,162,383 to

[1] H.M. Stationery Office. (5s. net; postage 4d.)

£14,378,952; education loans from £7,150,327 to £9,362,513; and roads, bridges, and street improvements from £8,761,145 to £11,642,179. The heaviest increases were those in loans to county councils, county borough councils, and urban and rural district councils; there was a definite decrease in those to metropolitan borough councils. In England in 1930 the cost of medical benefit was over £8,862,000; of this sum medical practitioners received over £6,447,000, and £1,927,500 of the balance was expended on drugs and appliances. About £200,000 was paid to rural practitioners on account of mileage, nearly £10,000 was set aside for providing post-graduate courses for them, and about £196,000 was paid to medical practitioners for drugs and appliances supplied by them. There was a decrease of over 6.5 per cent. in the number of insurance prescriptions dispensed in 1930 as compared with 1929; the total of the chemists' accounts fell from £1,922,800 to £1,739,708, and the average total cost of drugs and prescribed appliances per insured person from 3s. 1¼d. to 2s. 8¾d. Excessive prescribing, it is added, has been reduced to very small proportions. In spite of the continued production of houses on a large scale, the average building price of non-parlour houses has only fallen from £362 in the calendar year 1928 to £344 in the twelve months covered by the report, and to this building cost has to be added the expense of land, roads, sewers, and fees, an addition which may, in towns, range normally from £45 to £95, and in rural areas from £10 to £40 for each house. A special review of the position is therefore in progress by an inter-departmental committee, and mention is made in the report of directions in which economies are possible. The gross expenditure by local authorities on tuberculosis schemes during 1929–30 was £3,382,553, which is an increase by £112,919 on the figure for the previous year. Loans amounting to £130,697 were sanctioned by the Minister during the year for the provision of open-air swimming baths; it is pointed out that such baths can be constructed much more cheaply than can closed baths, are larger in area, and are more effective for the promotion of physical health.

THE DEUTSCHES HYGIENE-MUSEUM, DRESDEN

There are two museums in Germany which every member of the medical profession should endeavour to see—the Deutsches Museum at Munich and the Deutsches Hygiene-Museum at Dresden. The former is concerned with science and industry; the latter with popular education in all matters appertaining to health. The Munich museum is a stupendous achievement, which sets a standard for all time in museum technique and organization. Both museums have departed from the fixed exhibit. As far as possible the "Do not touch" fetish has been abolished. The Deutsches Hygiene-Museum, with which this note is chiefly concerned, has been described in some detail in a recent number of the *Museums Journal* (xxxi, No. 4, 140). It is pointed out that the organization is a national one—a "registered association" to which belong representatives of the national Government, various States, municipalities, insurance companies, and other organizations. The administrative director is Government-Councillor Georg Seiring, M.D., and the scientific director Dr. Martin Vogel. In 1930 the new building was completed, and it may be said to be a home worthy of a collection that is, in many ways, unique. Practically every object in the exhibition has been manufactured on the premises to serve a definite purpose: it is a collection built round an educational scheme. Moreover, it is deliberately constructed for the benefit of other similar undertakings, in that practically all of the objects shown can be reproduced for exhibition elsewhere. In the workshops of the museum over a hundred skilled craftsmen are employed. The building is designed on a lavish scale, with spacious corridors, exhibition halls, workshops, laboratories, store-rooms, packing rooms, offices, a vast reception hall, and two lecture theatres. Special and adequate arrangements have been made for heating in winter and cooling in summer. The lighting is excellent, all galleries being flooded evenly with diffused light. Great attention has been devoted to the decoration, which is simple but varied, each hall having its own distinctive colour. The arrangement of exhibits enables the visitor to study the whole collection in logical sequence; he can make a complete tour of the museum without retracing his steps or losing the thread of continuous instruction. The aim of the Deutsches Hygiene-Museum is to teach the public to think and act hygienically. The exhibits are well conceived to achieve this object, for they attract and interest at the same time. Every device of movement and illumination has been utilized to fix the attention. The transparent man, with intermittent lighting of the various organs, teaches a striking lesson in elementary anatomy. Working models demonstrate the circulation, the action of the valves of the heart, the passage of nervous impulses, reflex action, the mechanics of muscular power, joint movement, voice production, etc. Here in the central hall, as a groundwork to all hygiene, we have the study of *man*, aptly introduced by models of cells, tissues, plants, and animals, with the various factors which determine healthy life and stimulate growth. In the galleries the story of life is elaborated so as to embrace the various contacts and activities which influence the health of the people. Here are sections dealing with the woman as wife and mother, with heredity and eugenics, popular education, nutrition, housing, and physical culture. Here, too, are shown historical exhibits and demonstrations of cancer, tuberculosis, industrial and sexual diseases. It is too much to expect perfection, or even complete uniformity, at this early date. Many of the illustrations are crude; certain of the sections, especially in the upper gallery, are not up to the standard which the museum has set for itself, but where there is so much that is admirable it would be ungracious to lay stress upon such defects, which time will remedy. The external work of the museum is of international importance. In this department an effort has been made to supply the material so urgently needed throughout the world for health education. The benefit of a central institution for such an object is obvious, for in this way apparatus, models, and pictures, devised and constructed under carefully controlled conditions, can be reproduced cheaply and effectively for universal distribution. Probably, however, it would be better for each country to have its own institution, so that the material could be made to conform to national susceptibilities and

requirements. The International Health Service of the Dresden Museum supplies anatomical and biological pictures, films, lantern slides, posters, charts, and casts. The casts, which reproduce various skin lesions, are made of a durable material which can withstand tropical heat. Possibly the representations of the conditions are not so perfect as in the old wax models, but for popular teaching they are adequate, and the price is very reasonable. A word of caution must be given with regard to the posters. In some of them the English translation of the German text is very bad, so that it is always advisable, before ordering, to see the exact English wording. It will be clear, from this summary of the work of the Deutsches Hygiene-Museum, that the project is an ambitious one ; it is a pioneer effort of vast magnitude, and one which merits the support of all who are interested in health as an international responsibility.

ADMINISTRATION OF TEACHING HOSPITALS

The organization of hospitals becomes more and more complicated as the treatment of the sick becomes more efficient and specialization more necessary. This process of evolution is taking place along as many different lines as there are hospitals, and it is a subject of interest and importance to all who work in hospitals, and to all who apply to hospitals for aid. In the teaching hospitals the problems to be solved are more numerous and more intricate than in the non-teaching hospitals, for the interests of medical education must there be considered, as well as those that concern the care of the sick. For those who direct or influence the changes that must be continually taking place in the organization of a teaching hospital it is helpful to hear of the difficulties that are encountered in other institutions, and of the experiments that are being made to solve them. In a small book entitled *Medical Administration of Teaching Hospitals*,[1] Dr. Emmet B. Bay has reported the results of a study of the organizations, from the medical as contrasted with the business points of view, of nineteen teaching hospitals in the United States of America. Numerous problems are studied, such as the duties of the dean of the medical school in relation to the superintendent of the hospital, the allocation of beds to the different specialties, the administrative duties of the medical staff, the carrying out of laboratory tests, and the keeping of the case-records. The results of the study are analysed briefly, details dependent on local conditions are avoided, and the conclusions are expressed in general terms, and are suggestions rather than deductions. Many of the problems studied are naturally of more interest to those concerned with teaching hospitals in the United States of America than to those concerned with similar problems in this country, but the book has an international interest because it indicates the points that are worthy of attention and which should be considered in all teaching hospitals, if unnecessary friction is to be avoided, economies of time and money are to be effected, and the hospital is to serve efficiently both the patients and the medical school. In the hospitals where this study was carried out, difficulties were found to be due in some instances to the weight of tradition. It is probable that in the hospitals in England this factor would be encountered much more frequently, and it is comforting to read that the author considers that even such difficulties are remediable. Dr. Bay has dealt with only a small part of the subject covered by the title of the book, and has treated that part so cautiously that the reader is tempted to ask for more.

[1] *Medical Administration of Teaching Hospitals.* By Emmet B. Bay, M.D. The Medical Economics Series. Chicago: University of Chicago Press ; London: Cambridge University Press. (9s. net.)

THE BRITISH DENTAL ASSOCIATION

The meeting at Cardiff of the British Dental Association during the last week of August was a very successful event, and the discussions were longer and more animated than usual. Some prominent Canadian dental practitioners, visiting Cardiff on their return from the Orthodontic Congress at Paris, gave a transatlantic flavour to the debates, and, taking a leaf out of the book of the British Medical Association, the dentists decided to make Canada the scene of their next annual meeting, which will coincide with the meeting of the Canadian and Ontario Dental Associations. Mr. William Kittow's presidential address was a historical retrospect of dentistry in England, with many quaint and interesting touches, as, for example, an advertisement put out in 1746, by two practitioners in Racquet Court, Fleet Street: " Artificial teeth set in so firm as to eat with them, and so exact as not to be distinguished from Nature. They are not to be taken out at night, as is by some falsely suggested, but may be worn years together: yet are they so fitted that they may be taken out and put in by the person who wears them at pleasure, and are an ornament to the mouth and greatly help the speech." The problem of pulpless teeth was the subject of a keen debate, the opener of which, Mr. Frank J. Pearce, urged ionization as a means of treatment, and expressed the opinion that this process was even capable of combating sepsis in the periapical tissues. Mr. Owen C. Morphy suggested the need of revision of the drugs customarily sealed in the root canals of teeth if the healing process was not to be inhibited. Dental pharmacology, he said, was in need of drastic modernization. On the question of extraction, Mr. Frank Coleman said that he had rarely regretted the removal of a pulpless tooth, even when there was little or no evidence that it was acting as a foreign body, for in most cases he had found one or more of the roots to be discoloured or even necrotic. He pointed out that the treatment of pulpless teeth should be directed primarily to the living tissues surrounding the teeth, and not to the inert calcified matrix ; hence the periapical tissues should be treated as wounds, drained as long as inflammation continued, and thereafter treated as healed wounds or scars. A demonstration of the removal of teeth by hand pressure was carried out by Mr. F. N. Doubleday. As he pointed out, all ordinary extractions may be said to result in the removal of a tooth by hand pressure, but what he had in mind were those cases in which broken-down teeth or roots had been closed in by a covering of bone, and were only revealed by skiagrams. Removal with forceps was impossible, or could only be achieved by great trauma, and resulted in considerable after-pain and discomfort. He illustrated the removal of these buried roots and impacted teeth after the surgical excision of the alveolar process by chisels, operated by hand pressure. A special kind of chisel devised by Dr. Coupland of Ottawa was employed. The last day of the meeting was devoted to

a discussion on the dental aspect of ante-natal care, and the care of the pre-school and the school child. *Dr. Gilbert I.* Strachan dealt with the dental aspect of pregnancy, especially the question of diet. The best thing for the dental welfare of the pregnant woman and the expected child was for the mother to be on a diet rich in vitamin D, in calcium and phosphorus, and in irradiated material ; though if the diet were deficient in this respect the foetus would not necessarily be starved of these substances, as the mother would draw on her own store of vitamin D for its sustenance. But the maternal drain of this vitamin had two important effects: the mother became more liable to the development of dental caries on account of the acquired deficiency of vitamin D, while during lactation the vitamin D deficiency was found to produce defects in the developing infantile deciduous teeth. Mr. A. T. Pitts discussed the problem of the conservation of the deciduous dentition in the school child, and the indications for extraction, laying it down as a rule, rarely, if ever, to be departed from, that a deciduous tooth with an infected pulp should be extracted. A septic pulp in a permanent molar was also, in his opinion, an indication for extraction. Mr. J. W. Doherty spoke on the treatment of the teeth of the pre-school child, and mentioned some of the difficulties which this entailed for the dental surgeon, difficulties worth overcoming, however, in view of the immensity of the benefits that the possession of a sound deciduous dentition might bring. The question of the most suitable anaesthetic for children bulked largely in the ensuing discussion. Mr. George Northcroft held that gas anaesthesia for children was much to be preferred to the use of a local anaesthetic. He himself always favoured nitrous oxide, but it was necessary to be careful of the percentage of oxygen employed ; with children this might easily be overdone. A matter which aroused some controversy was the position of the dental officer in public schools and his relation to the private dental surgeon treating the family. Mr. Pitts and others urged that while it was very desirable that pupils in public schools should have their teeth inspected, the inspection should be carried out in such a way as not to invade the rights of the private dentist.

ENCEPHALITIS FOLLOWING VACCINATION AND CERTAIN INFECTIONS

At page 478 of our last issue (the Educational Number, 1931) we gave immediate publicity to an announcement by the Ministry of Health inviting the co-operation of medical practitioners in maintaining full investigation of the characteristics of acute disease of the central nervous system arising within four weeks of vaccination. Similar information is desired of the occurrence of cases of acute disease of the nervous system following such infections as measles, rubella, chicken-pox, whooping-cough, and influenza. Information of the kind requested, if received in time, will permit of local inquiry to ascertain clinical details which may not subsequently be obtainable. It may also, in some cases, enable the Department to arrange for expert post-mortem examination and pathological examination of specimens. All practising members of the medical profession are therefore asked, when attending patients suffering from disease of the central nervous system with an acute onset, to report to the Ministry as soon as possible every case in which they have ascertained that vaccination has preceded the onset of the symptoms within a period of four weeks, or in which the symptoms have immediately followed an acute infectious illness. The intimation should be sent to the Senior Medical Officer, Med. I., Ministry of Health, Whitehall, S.W.1.

INTERNATIONAL CENTRE FOR RESEARCH ON LEPROSY

At the first session of the Council of the League of Nations, held at Geneva on September 1st, the Brazilian Government made an offer to establish at Rio de Janeiro an international centre for leprosy research, and to place it at the disposal of the League. The cost of the establishment and upkeep will be met by a grant from the Brazilian Government, the League incurring no financial or other responsibility, though it may contribute up to a maximum of £2,000 towards the travelling expenses and allowances of specialists engaged to carry out investigations on leprosy. It will be the object of the centre, under the auspices of the Health Organization of the League, to undertake any work which may contribute, by means of epidemiological, clinical, and biological research, towards prevention and treatment. By means of a specialized course of instruction open to scientists, members of the medical profession, and hygienists of the countries which may desire to take advantage of such a course, the centre will also promote universal co-operation in the anti-leprosy campaign. The governing body administering the centre will consist of the members of the Health Committee of the League, with one representative of the donating Government. The cost of the installation, working, and upkeep of the centre is to be met by an annual subsidy from Brazil amounting to some £4,000, but gifts, legacies, and grants from Governments, institutions, or private persons will be welcomed. The duration of the engagement entered into by the Brazilian Government is five years, at the end of which time its extension or renewal may be proposed. A technical, administrative, and financial report on the work of the centre will be submitted each year by the governing body to the Council of the League and to the Brazilian Government. The offer was accepted by the Council, which tendered hearty thanks to Brazil for its generous action.

Sir William R. Morris, Bt., has made a gift of £25,000 to the British Empire Cancer Campaign for the foundation of a research fellowship in radiology, tenable at Mount Vernon Hospital, Northwood. We understand that it is intended to appoint to this fellowship a whole-time radiologist for the investigation of deep *x*-ray therapy, and that it is hoped to secure for the post a worker of such standing as to be eligible for a professorship in connexion with the National Radium Centre and Post-Graduate School of Radiotherapy.

A revised edition of the *Manual of the International List of Causes of Death*, as adapted for use in England and Wales, Scotland, and Northern Ireland, has been published this week by H.M. Stationery Office, at the price of 3s. It is based on the fourth decennial revision by the International Commission, held in Paris in 1929.

SIR CHARLES HASTINGS MEMORIAL FUND

To celebrate the centenary of the British Medical Association the Council has opened a fund for the purpose of establishing a permanent memorial to its founder, Sir Charles Hastings. The memorial will take the form of a stained-glass window in the cathedral at Worcester, a city with which Charles Hastings was intimately associated all his life; the placing of a tablet on the house in Worcester in which he practised; and the restoration and permanent upkeep of his grave in the Astwood Cemetery, Worcester. Any balance left over after these objects have been fulfilled will be given to the Sir Charles Hastings Fund, which is controlled by a small body of trustees, who have power to distribute the income for the benefit of individual members of the profession or their dependants in any way that the trustees may think fit. The fund has proved exceedingly useful in cases which do not come within the ordinary scope of the Royal Medical Benevolent Fund, and in cases in which there is urgent need for help.

The first list of contributors to the memorial fund was printed in the *Journal* of June 27th, 1931 (p. 1127). The Council appeals with confidence to members of the Association all over the world to contribute to this fund. The opening ceremony of the Centenary Meeting will be a pilgrimage to Worcester on Sunday, July 24th, 1932, when the unveiling of the memorial window and plaque will form an important part of the ceremonies of the day, which are already being anticipated with eagerness by the city authorities and by the public.

A second list of contributors to the memorial fund is appended.

Dr. G. C. Anderson	Dr. M. McKerrow
Mr. A. C. Devereux	Sir Robert Philip
Dr. A. Dey	Dr. B. H. St. Clair Roberts
Dr. J. Henderson	Dr. D. Ross
Dr. W. M. Hewetson	Dr. W. W. Shrubshall
Dr. R. Hutchison	Dr. H. Ferguson Watson
Dr. J. Lockhart Livingston	Dr. C. Wilson
Dr. D. McKail	Mr. T. Wilson
Dr. E. McKerrow	Dr. A. E. Wynter

Members are requested to send in their contributions (maximum £1 1s.) as early as possible, as the Council desires to close the fund as soon as the amount required for the objects chosen is reached. Cheques should be made payable to the "Sir Charles Hastings Memorial Fund," and sent to the Financial Secretary, British Medical Association House, Tavistock Square, London, W.C.1.

SAFETY IN THE FACTORY

CHIEF INSPECTOR'S REPORT

The annual report of the Chief Inspector of Factories for 1930,[1] which has recently been published, records that the total number of accidents during the year was 144,758. Fatalities numbered 899, a slight reduction as compared with last year, the decrease being most marked in those industries in which safety organization has been placed on a sound basis. The greatest number of fatalities in any one industry (125) again occurred in the building trade, in which there has been an increase in both fatal and non-fatal accidents. Many accidents on buildings are caused by want of thought, resulting in planks or pieces of wood with projecting nails being left lying about on floors, scaffolding, and staircases. Several illustrations are given of very successful work on the part of safety committees composed of members of the managerial staff and of workers. Under the heading of "Fire" instances are given of locked fire exit doors, and passages and stairways obstructed by packing cases, goods, or trade refuse. An example was a boot factory employing 139 persons, where one of the main exit doors was padlocked on the outside, and several of the subsidiary exits closed. In this case proceedings were taken, and the maximum penalty of £10 was imposed. The year was marked by a number of explosions arising from dusts, gases, vapours, and chemical compounds; one of these occurred in an oil-cake mill, and was responsible for eleven fatalities and injuries to thirty-two other persons; another occurred at a chemical works, and resulted in thirteen fatalities and injuries to about fifty other persons.

Very bad cases of illegal employment of women and boys are cited, brought to light no doubt by complaints, a useful table of which is given. They numbered 4,884, but only 1,801 were verified by the inspectors; operatives including trade unions, contributed 910. In order of frequency they related to questions of employment (1,112), defective ventilation (397), insufficient sanitary accommodation (265), lack of cleanliness (243), too low temperature (226), and insufficient fencing of dangerous machinery (152).

In the metal-grinding industries much has been done by regulations to remove the dust, but one inspector refers to the frequently careless way in which workers allow the throats of the ventilating hoods to become choked, and in a few cases even block them up deliberately. There are some interesting remarks on the manufacture and use of cellulose solutions in spraying motor-car bodies, locomotives, furniture, shop fittings, household goods, machine parts, etc., by the spray gun. Notwithstanding the memorandum and official leaflet published by the Department for the guidance of employers, and containing full particulars of the precautions recommended, the inspectors state that old plant still exists, and that the general supervision of working conditions and plant leaves much room for improvement. The defects found from time to time covered practically every one of the precautions specified in the official leaflet. Storage under dangerous conditions of large quantities of highly inflammable solutions in the workrooms was found to be not infrequent. Eight fires occurred in premises under the Petroleum Acts. In the eighth case the cause of the fire was difficult to determine, as the spraying room was completely burnt out. There seems abundant evidence of the need for regulations to control these growing processes.

In a chapter eulogizing the usefulness of the Home Office Industrial Museum in Horseferry Road, an inspector states that the sections of the museum which attract most interest are those appertaining to lighting, electrical and transmission machinery; of these the lighting section easily takes first place. Instances are given of how, as a result of a visit to the museum, conditions of lighting have been improved, work made easier, and eye-strain lessened.

The medical inspector refers to the useful coloured and illustrated pocket card on anthrax, remarking that it is primarily intended to put medical practitioners on their guard when confronted with an apparently simple pimple in a worker exposed to infection. Useful details of each of the 43 cases (6 fatal) of anthrax notified are given, bringing out the advances made in treatment by anti-anthrax serum injection instead of excision. The total number of cases of skin cancer was 194 (36 deaths), of these 82 (21 deaths) occurred among cotton mule-spinners. The advantages of [illegible] medical examinations, could they only be made general, are shown by the results among the patent fuel workers of Cardiff, where men of 30 years of age and over who have been employed for ten years were examined by the certifying

[1] H.M. Stationery Office. (2s. 6d. net.)

surgeon, to the number of 257. Twelve growths were detected, two of which showed the characteristic appearance of epithelioma. Voluntary periodic medical examination of workers in tar distilleries is now carried out in eighty-six works and in fifteen gas companies' works.

The incidence of dermatitis is stressed, there having been 789 voluntarily reported cases during the year. A warning is issued that a large number are due to the methods of cleansing the hands after work. It is difficult to remove stains from the hands without damage, but a very great measure of safety is provided, it is said, if the following routine is observed: (1) Where practicable, coat the skin with a film of ointment before handling materials that will stain. (2) Whatever cleansing agents are employed, use as weak as is compatible with efficiency. (3) Wash very thoroughly and at once after the stains are removed, and apply a small quantity of ointment. Of these it is perhaps the third that is the most important.

Reference is made to the traumatic angioneurosis of the capillary vessels of the fingers (resulting in Raynaud's disease) among men engaged on "pounding-up" machines in the boot and shoe industry—a condition similar to that resulting from the use of pneumatic drills. "Dead hand" is produced by grasping the last, which is necessary in holding the boot against the rapidly vibrating jigger. The remedy can be found only in some new type of machine. Far more attention appears to have been paid to this subject in Germany than at home, largely, no doubt, because incapacity from the effects is included in the schedule of industrial diseases for which compensation can be claimed.

Nova et Vetera

A SURGEON TO THE DUTCH EAST INDIA COMPANY IN THE SEVENTEENTH CENTURY

In 1677 Christopher Fryke, surgeon and member of a medical family of Ulm, in Würtemberg, yielding to an overpowering curiosity and desire of travel, left his home and spent the best part of three years travelling in Hungary and Central Europe, until about Christmas, 1679, he found himself in the famous city of Amsterdam. There he applied for the post of surgeon to the Dutch East India Company, and, after examination with twelve other candidates, he was fortunate enough, as he thought, to be one of six chosen, despite his youth. He was so anxious to see the world that, failing an appointment as a surgeon, he would have shipped in almost any capacity. An English translation of a Dutch version of his journal, "A Relation of a Voyage made to the East Indies by Christopher Fryke, one of the Surgeons to the E. India Company, from the Year 1680 to the Year 1686," has lately been published in the Seafarers' Library.

The Dutch Company of the East Indies was at this time at the height of its power and wealth, and altogether overshadowed the English Company, which it had practically ousted from the trade of the Spice Islands and Ceylon. Such a small country as the Netherlands could not, however, man all the ships, fill the ranks of the armies and the gaps made by disease and casualties, out of its native population. Many foreigners were employed, and the means of recruitment did not differ a great deal from those employed much later by crimps and kidnappers in other lands. But the ship surgeons were important persons, in whom obviously the crews put great confidence, just as the buccaneers did in the West Indies (see Nova et Vetera, *British Medical Journal*, 1922, ii, 397; 1927, ii, 511; 1928, ii, 113).

Each East Indiaman carried a physician, a surgeon, and a mate who served as a barber. The physician's pay was the equivalent of £2 16s. a month, with a subsistence allowance ashore of 15s. a month. In 1658 the English Company at Surat were paying to chaplains and surgeons £50 a year, with full board and lodging, and facilities for private trade such as the Dutch did not allow.

Fryke was engaged for the usual five years, and sailed from the Texel on the ship *Ternate* on the last day of May, 1680. He gives interesting details of the discipline and internal economy of the ship. Punishments were cruel. Keel-hauling, running the gauntlet, and nailing the offender's hand to the mast with a knife till he chose to pull it away were some of them.

His ship was wrecked in False Bay, near the Cape of Good Hope, and only 43 out of 343, including Fryke and two other surgeons, came safe to land. He gives an interesting account of the Cape Colony, but describes the Hottentots as particularly loathsome savages. He makes no mention of other natives. He arrived at Batavia at the end of November, six months after leaving the Texel. On arrival he was sent to a fort, for the terms of his engagement bound him to serve on land as well as at sea. Consequently he saw a good deal of fighting at and after the capture of Bantam by the Dutch, and on one occasion he was, so he says, made captain of the ship *Europa*, which had 800 men and three surgeons. Of the attack on Bantam he wrote:

"I went down into the boat with the other surgeons which were about seventy in number upon our vessel, which was attended always by two or three small boats, that were ready in case of any wounded, that they might carry them off to any other place and upon ever so shallow a water."

After the capture of Bantam he was put in charge of the wounded ashore.

"So I took my lodging in the *Chinesen Straet*, where I was very commodiously seated for my business. There were also two assistants with me and three Under-Surgeons, who were lodged in their several quarters, for the better looking after their patients. Those were obliged to come to me ever and anon to give me an account of those they had under their hands, and to fetch the remedies, which were all in my custody, and to take my directions. Only those other necessaries, as linen for plaisters, Arack, Sack, Olive Oil, and such like were to be fetched from the Steward who had them in keeping; but they were never delivered without I sent a special order under my hand. The number of our sick and wounded was great, and that of the former increased by reason of the Flux, which was very rife amongst them; and some were seized with a lameness in all their limbs; so that we had enough to keep us in employment."

During his engagement to the Company, Fryke saw a great deal of fighting, and travelled to Japan and to Ceylon and most of the Dutch settlements. He gives an interesting account of pearl diving, with and without a diving bell. In one skirmish he was wounded in the leg, and the bullets could not be extracted till after his return to Holland. His account of native cruelty in Java and Sumatra is revolting, but the Dutch reprisals did not lag behind in barbarity. By the time his ship reached Holland his leg was giving him great trouble, so that he had to be carried ashore. He says:

"My pain increasing rather than diminishing, and I growing daily worse and worse, I sent for a Doctor and two Chirurgeons, not willing to trust to my own skill only. And being I was not able to go and receive my money myself, I was obliged to send a person to the *East India* chamber to receive my money and goods by virtue of a letter of Attorney which I gave him. The money that was due to me from the Company did not amount to more than 4 or 500 Ducatoons which was all the fruit of my labours; except some considerable East India goods I had brought over on my own account, which I had to sell; But by that time I had satisfied my Attorney, my Doctor and the two Chirurgeons, and defrayed the rest of my charges, I found my bag very light. My Doctor did not cost me above forty Dutch Gilders: the two Chirurgeons who were two of the most famous artists in the whole city of Amsterdam, had eighty Rixdollars; they had

taken out my two bullets and cleared the bone of above twenty splinters great and small for my lodging I paid two Rixdollars a week and had but a very poor accommodation neither The Apothecary, too, came in with a hideous bill"

He managed at last to get to Cologne, whence he ascended the Rhine and got home at last by Frankfort to the "city where I was born," nine years after he first left home for Vienna Although he does not say so, we infer that his thirst for adventure and travel was assuaged

E M L

Scotland

New Glasgow Professor

On the recommendation of the Secretary of State for Scotland, Dr John Glaister, jun, professor of forensic medicine in the University of Egypt at Cairo, has been appointed to the chair of forensic medicine in the University of Glasgow The new professor is the son of the present occupant of the chair, and his appointment takes place as from the end of this month After receiving his early education at Glasgow High School Dr Glaister graduated M B, Ch B at the University of Glasgow in 1916 From 1916 to 1919 he served with the Royal Army Medical Corps, and afterwards was appointed assistant to his father In 1926 he took the M D degree with honours, and in the same year qualified as a barrister at law of the Inner Temple In the following year he took the degree of D Sc at Glasgow University, and in 1928 was appointed professor of forensic medicine in the University of Cairo, as well as medico legal adviser to the Egyptian Government Among his publications is a work entitled *Legal Medicine*, published in 1925

Study of Child Development

Professor Stuart A Curtis of London, who recently conducted an investigation among the Dunfermline school children, has written a letter to the Carnegie Dunfermline Trust expressing his thanks for the facilities afforded to him by the trustees In it he states that he has conducted similar surveys in London, Geneva, and Rome and that the material received from Dunfermline came through in better shape, more quickly, and at less cost than in any of the other three cities He pays a tribute to the work in this connexion of Dr Mackenzie chief medical officer of the Trust In one particular only was he disappointed Very full data were available up to 1928, when the cards passed from Dr Mackenzie's control to that of the public authority Since then the records have been imperfect and in marked contrast to those for which the trustees had made themselves responsible In Professor Curtis's judgement, this is a clear illustration of the fact that research work carried on by trust funds must be continued to the point where it has proved its worth before being transferred to public control He considers that "the Carnegie Dunfermline trustees will confer a benefit on the entire world if they will carry through an organized series of dental, physical, mental, and social development records for the children in its unique community"

Highlands Medical Services

A question was recently raised in the House of Commons by the Right Hon Ian Macpherson, M P for Ross and Cromarty, regarding the facilities in the houses of doctors in the Highlands and Islands for waiting rooms and rooms in which minor surgical operations could be performed Mr Westwood, late Under Secretary of State for Scotland, prior to demitting office, addressed a letter to Mr Macpherson, in which he agreed that the Department of Health for Scotland would provide, in houses already existing or to be erected in accordance with the Department's plans, porches of sufficient size to accommodate two or three persons, while for surgical operations the doctor's consulting room would be suitably arranged as part of the normal accommodation provided in doctors houses erected with the assistance of the Department

Ayr Hospital Memorial

A memorial was recently unveiled at Ayr County Hospital to Dr John Finlayson McGill Sloan, *V C*, who graduated M B at Glasgow University in 1912, and had practised at Alloway Place, Ayr He had been honorary surgeon to the hospital, and had devoted special attention to the training of the nurses in the institution The memorial consists of a bronze wall tablet mounted on oak, bearing an inscription 'In Memory of Dr John F McGill Sloan, Lecturer in Surgery to the Nurses in training in this Institution, from 1911 to 1931 Erected by the Nursing Staff" The unveiling ceremony was carried out by Colonel W T R Houldsworth, president of the hospital board

England and Wales

Mental Diseases Research in Birmingham

Further developments of the work in which the Joint Board of Research for Mental Diseases set up by the City and University of Birmingham has already made its name are outlined in the annual report of the laboratory for the year ending March 14th, 1931 In all, 5 367 specimens for bacteriological examination have been examined and reported upon by the laboratory details of which are given in Table I The work has necessitated the manufacture and use of 42 500 tubes of media and 5,470 plates of culture media an average of 3 500 tubes and 456 plates per month Research into nasal sinus bacteriology accounts for the greater part of these In brain has been examined for organisms in suitable post mortem cases 24 specimens from 12 cases showed that 15 aerobically and 22 anaerobically were sterile The organisms which have been found vary considerably in individual cases and so far are of little value as positive evidence A year's subculturing of organisms in media containing potassium iodide did not alter their Gram-staining characteristics A new method of the examination of faeces for typhoid dysentery organisms, by intraperitoneal injections of specially prepared material into mice, is being studied Further work on agglutination tests has been carried out, and it is hoped to collect the results for publication shortly In the histological department, serial sections of the carotid arteries and adjacent tissue from three cases have been examined for Gram positive organisms, the findings being recorded by sketches A further twelve specimens of sphenoidal sinuses have been examined for Gram positive organisms A large number of tonsils removed at operation have been sectioned and stained As the result of a large

haemorrhages. Chemical experiments have been continued on the resistance of red blood corpuscles to haemolytic agents under varying conditions, and the permeability of the corpuscular envelope to inorganic substances and dyes has been quantitatively investigated. By the use of masses of raw white of egg the permeability of colloid albuminous substances without lipoidal envelope has also been determined. An attempt is being made to separate viruses from brain mash obtained post mortem by cataphoresis, using haemoglobin as an indicator. Since it is known that during malarial treatment of general paralysis of the insane, a temporary increase in the permeability of the brain membranes occurs, a series of experiments has been undertaken to show whether heat alone causes such increase. After treatment with bromide, rabbits were kept for varying periods in a warm chamber. Results so far seem to indicate an increase in permeability due to simple heat effects.

Eversfield Chest Hospital, St. Leonards

Lord Brentford, president of the Eversfield Chest Hospital, inaugurated a new annexe to this institution on August 27th. Since the hospital was opened in 1891, with fifty-three beds, a number of alterations and additions have been made at various times, including an extension to the east wing in 1923. The annexe was formerly the neighbouring Railway Mission Convalescent Home, which was offered to the committee with its furniture and fittings at a figure a little above that intended to be expended on a new small wing. The committee proposes to transfer to the annexe all women patients and to reserve the wards of the hospital itself for men. Altogether there will be accommodation for about a hundred beds. Small wards will be available for private patients, and beds will be provided for women on the ground floor. The purchase price and cost of reconstruction have amounted to about £6,000. According to the forty-sixth annual report of the hospital for 1930, a deficit of £295, with which the year opened, had not been fully covered, although the financial statement showed a credit balance on the year's work. In appealing for annual subscriptions and donations to its general fund, and for assistance to meet the cost of the latest extension, the committee reminds subscribers of its endowment fund, which is intended to provide free treatment in appropriate cases. Up to the present the hospital possesses only one permanently endowed bed and one partly endowed.

Conference of Cremation Authorities at Ipswich

The tenth annual conference of the Federation of Cremation Authorities was held at Ipswich from June 19th to 23rd, when a wide range of subjects of medical interest was considered. Mr. J. A. Sherman, architect to the Ipswich Burial Board, read a paper on the construction of crematoriums, in which he mentioned that the up-to-date local crematorium had cost just over £6,000, apart from the expenses incurred in respect of gas mains, roads, fees, and local charges. Crematoriums, he urged, should be kept away from cemeteries, and should be situated in pleasant surroundings. It was a curious fact that, while earth graves were often permitted within a dozen yards of a dwelling, yet a crematorium, which eliminated the possibility of putrifying matter and the discharge of noxious gases, might not be brought within 200 yards of a house. It would seem desirable to reduce this distance to not more than 50 yards. The type of furnace should be definitely determined before work was commenced on the plan, and gas was probably the best means of heating. Dr. A. M. N. Pringle, medical officer of health for Ipswich, maintained that the management of cemeteries was essentially a public sanitary duty, and should be in the hands of the local authority. The public required education in the advantages of cremation, and teaching might well be given during "health week." In a paper on cremation and crime, the late Professor W. E. Dixon dealt in detail with the objection that cremation might destroy evidence in suspected cases of poisoning. He was satisfied that under the precautions at present adopted in this country such an objection was no longer valid. From the point of view of the public, it was obviously better to take such measures as would enable poisoning to be discovered before burial. Even though a miscarriage of justice might occur once or twice in a century, he was convinced that the immense benefit of cremation to the community definitely outweighed the possible risks. He firmly believed that cremation protected the public against poisoning, since the necessary legal inquiry was of such an exhaustive nature.

University of London Officers' Training Corps

The medical unit of the University of London Officers' Training Corps (Senior Division), which consists entirely of students of the London hospitals, with members of their staffs as its officers, camped at Shorncliffe from July 12th to 26th, together with the other units of the Corps. Special attention was devoted to first-aid and bandaging, care and transport of the wounded, and sanitation and hygiene, with a certain amount of squad and stretcher exercises, and considerable field medical and tactical work. Two or three days were spent some little distance from the camp practising the establishment of advanced and main dressing stations, full use being made of the equipment available under war conditions. The contingent was inspected by the Chief of the Imperial General Staff and by the Deputy Director-General of Medical Services. Such training is obviously of value to students who intend to enter any of the medical units of the Services.

London Ambulance Service

The total number of calls received by the London ambulance service (accident section) during the year ending March 31st last was 43,746, or 432 fewer than during the previous year, which had constituted a record. The average time taken to reach cases was 6.5 minutes, and the average time which elapsed between receipt of a call and the arrival of the case at hospital was 13.6 minutes, in both respects a gain in speed upon the figures for the previous year.

Ireland

Vital Statistics for Northern Ireland

In his report for the quarter ended June 30th, 1931, the Registrar-General states that the annual birth rate for the quarter was 22.5 per 1,000 of the population, as compared with rates of 16.5, 20.0, and 20.6 for England and Wales, Scotland, and the Irish Free State respectively. Births in Ulster numbered 7,005. The death rate for the quarter was 14.5 per 1,000, as compared with a rate of 13.8 for the corresponding quarter of last year, and a rate of 15.6 for the average of the second quarters of the ten preceding years. The corresponding rates for England and Wales, Scotland, and the Irish Free State were 11.5, 13.2, and 15.3 respectively. Deaths in the province numbered 4,502. A slight decrease in deaths from tuberculosis and a marked increase in deaths from cancer were recorded during the quarter, as compared with the figures for the corresponding quarter of 1930. Deaths from enteric fever, whooping-cough, diphtheria, and influenza showed a fairly appreciable decrease, compared with the average number in the corresponding quarters of the five preceding years; but deaths from measles, as in the previous quarter, were still high. The measles epidemic, however, seemed to be

declining, since the notifications of this disease in Belfast county borough during the quarter numbered 748 as against 3,634 in the previous quarter.

National Health Insurance and the Poor Law (Northern Ireland)

At a recent meeting of the Ballymoney Guardians a circular letter from the Ministry was read stating that cases had been brought to its notice in which insured persons had been recommended by panel doctors for surgical appliances which were not on the list of approved appliances procurable out of the National Health Insurance funds, and that while the guardians were relieved of any responsibility for providing medical treatment for insured persons in so far as they were entitled to receive it under the Act, it was nevertheless the duty of the Board to provide medical treatment not so covered by any insured services. If the patients were in poor circumstances, necessary appliances would have to be provided by the guardians. A small committee was appointed to go into the whole matter of the running of the hospital and of medical fees.

Health Insurance

Notice has been given in the *Belfast Gazette* of a proposed new Order to come into force next January, relating to certain classes of employment which are excepted from compulsory insurance on the ground that they are ordinarily adopted as subsidiary employments only and not as the principal means of livelihood. The new Order aims primarily at removing certain difficulties which have arisen in interpreting the present Order. For example, church officers, sextons, and lamp-lighters have hitherto been excepted from insurance if employed for part time only. Difficulties have arisen owing to the absence of any definition of part time, with the result that a number of persons who derive their main source of livelihood from these employments have been deprived of the benefits of the health insurance and pensions scheme. Under the new Order these persons will be insurable if they are employed for a specified number of hours in the week. The Order makes a change in the position of cinema and theatre attendants, who will, as in Great Britain, be excepted from compulsory insurance unless the weekly hours of employment amount to twenty-eight or more, or unless they are employed before 6 p.m. for four or more hours during the week. A copy of the draft Order can be obtained by any person affected on application to the Ministry of Labour, Stormont, Belfast.

Tyrone Hospital

At a recent meeting of the Dungannon Rural Council the chairman said he had read with much concern that part of the Tyrone County Hospital might be closed owing to lack of funds. It would be shameful if any part of the building had to be closed and if such an up-to-date hospital was not financially supported. The chairman of the Tyrone County Council (Colonel R. J. Howard, J.P.) mentioned that the County Council had contributed £4,200 every year to the upkeep of the hospital, while it was entitled to contribute only £1,400. Last year it gave an additional sum of £2,200 to balance the accounts of the hospital, and it was understood that that would be the last extra payment required. In referring to the splendid work that had been done by the County Hospital, the clerk said that patients were being sent from all districts for special treatment. A deputation was appointed to put the situation before the County Council. In the meantime it was decided to issue paying orders for the salaries and wages of the hospital staff amounting to about £900 and to withhold the paying orders for the contractors amounting to £1,000.

Correspondence

RADIOLOGY AND THE RADIOLOGIST

SIR,—Your illuminating article in the *Journal* of August 29th "gives the radiologist furiously to think," and possibly may stimulate him to gird up his loins for the future. I am not a pessimist about the future of radiology in this country. As, however, in the natural course of events, I must before many years be *hors de concours*, I have yielded to the wish of many colleagues to ask you to permit me to make some comments upon your annotation, not by any means in the nature of criticism, but as the cogitations of one of many radiologists still living who have watched the growth of radiology from its birth. We have seen the indispensability of radiography in every department of medicine. We have also seen how inevitable it was that its uses could not be confined to those of us who have taken it up as a specialty. We have, however, regarded such further use much as we should regard the use of the laryngoscope or the ophthalmoscope by the clinician—*as an aid to him in* his daily work, but not with any idea that he would wish to perform endolaryngeal or ophthalmic operations.

In the one sentence towards the end of your article I find the kernel of the whole matter. You say: "But there is also interpretation." The present is an age of team work, and the *summum bonum* of the patient is found in this way. May I take one instance of what is in my mind? Radiography of the chest is full of pitfalls, even for the most experienced, be he clinician or radiologist. Supposing (and I admit the assumption) the radiologist to be at fault in his interpretation, the patient still has behind him to act as a corrective the clinician, with his greater knowledge of history, physical signs, and symptoms. But supposing the clinician, and especially the consultant, acts in the double capacity, is he of necessity so much of a superman as to be inhibited from making similar errors in interpretation? What, then, is the position of the patient? Deprived of the judge, who can sum up all the evidence? The only court of appeal is a change of consultant, and this would be a pity.

Recently I have had the good fortune to come in contact with a consulting physician who makes use of *x* rays to aid him in such things as the control of artificial pneumothorax. He had made a screen examination, and found sufficient evidence to justify further examination by a radiologist, the only proviso being that the latter should be one experienced in the radiography of the chest. There is the clinician of one's dreams—namely, the man who uses *x* rays much as he would use a laryngoscope. Naturally, the warning note in your article as to over-exposure must be taken into account.

I am well aware that the necessity is laid upon the tuberculosis officer, for example, for doing his own radiography. I still maintain that this does not vitiate my argument, for there are many ways in which this can be done to the greater advantage of the patient. Thus (*a*) the tuberculosis officer may, as several already have done, take one of the university diplomas in radiology, (*b*) work in collaboration with another clinician, (*c*) attend special courses at a chest hospital.

Many years ago I was fortunate enough to be the radiologist in a hospital where my work [illegible] contact with a physician who taught me to [illegible] graphy from the point of view of the [illegible] the pathologist. Would there were more such [illegible] There would be but little fear of the clinician complaining of the failure of the radiologist to give the help needed. The training of the radiologist of the future is no simple matter to-day, and the technical and other knowledge

required is very great. Is all this great work to be allowed to go for nothing in the one country in the world that has appreciated the necessity for proper training in the subject of radiology?—I am, etc.,

London, W.1, Sept. 5th. STANLEY MELVILLE.

CARDIAC PAIN

SIR,—In your review of Dr. White's recent monograph on heart disease (August 29th, p. 391), an assertion is made that requires comment. Dr. White's statement that true angina and the pain of neuro-circulatory asthenia may coexist is criticized, and in support of the criticism Gallavardin is cited as follows: "Sans pouvoir catégoriquement nier sa possibilité, je puis bien dire que je n'ai pas observé d'angor d'effort absolument net dans l'angine de poitrine névrosique." This citation is apparently from Dr. Gallavardin's monograph, *Les Angines de Poitrine* (p. 98). Reference to the context shows that Dr. Gallavardin makes no such assertion as that attributed to him by your review. The paragraph, from which this isolated sentence has been quoted, means that the pain of neurotic angina never has the precise relation to effort that the pain of true angina has. In the next paragraph he states that the absence of this precise relation to effort is not exclusive to neurotic angina, as many patients with true angina do not have pain induced by effort.

I have certainly seen cases of typical left mammary neuralgia in which true angina developed or coexisted. Neurotic subjects may have angina pectoris, and, when they do, diagnosis may be really difficult. I believe, Sir, that all with much experience of angina pectoris will agree with Dr. White, and admit this difficulty.—I am, etc.,

London, W.1, Sept. 2nd. D. EVAN BEDFORD.

*** Dr. Evan Bedford's point arises from a phrase which was perhaps inexplicit in the review. The "painful forms of neuro-circulatory asthenia" referred specially to the group designated by Dr. Gallavardin "angor névrosique." Dr. Gallavardin distinguishes carefully between this clinical entity and the milder forms of infra-mammary pain; he takes a non-committal attitude regarding its possible association with true angina, and refrains from discussing this problem. A major theme in his monograph is the differentiation of these syndromes, and the reviewer considers that attention might have been directed by Dr. White rather to this vital matter of differentiation than to problematic association.

BREECH PRESENTATION

SIR,—As the outcome of the records quoted by Mr. Gibberd, and printed in the *Journal* of August 29th, may I record the statistics for breech deliveries during twenty years at this hospital?

Clapham Maternity Hospital, 1911–30

Total breech deliveries 511: primiparae 320, multiparae 191.
Total stillbirths 90 = 17.6 per cent.
Neo-natal deaths 34 = 6.5 per cent.
Stillbirths: In primiparae 51 = 15.9 per cent.; excluding macerated 13.2 per cent.
Stillbirths: In multiparae 39 = 20 per cent.; excluding macerated 16.2 per cent.

TABLE I

	Total Cases	Foetal Deaths Per cent.	Neo-natal Deaths Per cent.
Uncomplicated breech ...	311	6.1	4.1
Complicated breech ...	206	31	7.7

TABLE II

	Total Cases		Stillbirths Per cent.		Neo-natal Deaths Per cent.	
	Prim.	Mult.	Prim.	Mult.	Prim.	Mult.
Uncomplicated breech...	231	80	6	6.3	3.4	6.2
Complicated breech ...	88	118	31.8	20.3	12.5	8
Twins	6	9	33⅓	nil	nil	nil

Among the uncomplicated breeches are included all presentations, complete or incomplete; and also included in this group are all cases of slight disproportion or of contracted pelvis. No contracted pelvis is included among the "complicated" group, but only associated complications, such as placenta praevia, transverse presentations, prolapse of cord, etc. The difference so marked may be partly accounted for by the increased neo-natal death percentage, but even allowing for this there is a surprising difference in the figures, which it is difficult to understand. Every breech extraction takes place in the presence of a doctor or midwife well experienced in breech deliveries. I do not know if this is the practice in all maternity hospitals.

The statistics are reproduced by kind permission of Dr. Annie McCall.—I am, etc.,

E. JOYCE NEWTON, M.B., M.M.S.A.
Clapham Maternity Hospital, London, S.W.4,
Sept. 1st.

SIR,—The articles appearing on this subject in the *Journal* of August 29th are very helpful and informative, but there is a seeming contradiction between the statistics of Messrs. Gibberd and Bourne *re* foetal abdominal injuries. The former states that he had only one such case in over six years' post-mortem examinations at Guy's Hospital, while the latter declares them to be present in nearly all cases. He quotes Herbert Spencer as his authority, but I think we should have more specific information from Mr. Bourne on this point. I am inclined to agree with Mr. Gibberd about the infrequency of abdominal injury; I am of opinion that handling of a nature sufficient to pulp the child's kidneys and suprarenals is not midwifery but murder.

I cannot grasp Mr. Bourne's point about the extended legs not splinting the body and preventing curving; I am sure they do. In the natural position of the child in the uterus the legs and arms are flexed in front of the body, more or less guarding the "mark," to use a boxing term. This position prevents the uterus from forming the uniform envelope that occurs when legs and body are one mass, as in extended leg cases. The legs themselves may not form a splint, but extended legs, plus the closely fitting uterus, assuredly do.

As regards insufflation, I think any cord compression causes respiratory efforts in the child. This may occur while yet the head is in the uterus, and there is nothing then to prevent liquor amnii being insufflated. In fact, it does undoubtedly occur.

I also think it wrong to saddle the practitioner with the intracranial injuries. They occur in both vertex and breech cases which have not been handled at all. To a great extent they are due to uterine pressure acting on a difficult exit. Anyone who has experienced the surprising force with which the uterus can grasp one's contained hand cannot doubt the ability of the uterine muscle to tear the tentorium, etc. I would like Mr. Bourne to provide more particulars about the manœuvre he learned from Potter. As I understand him he is holding the child's feet in one hand. He has therefore only one other hand, which is in the vagina, wedged between the baby and the maternal parts. The patient is a primipara—tight fit—and the arms are extended above the baby's head and the uterus is shut down on all its contents. Mr. Bourne states that one hand, in these conditions, can push the angle of the scapula downwards and inwards, firmly and gently, and so bring the humerus down to grasping position. I am lost in admiration of that hand!

It seems to me to be wrong, and risking a fracture, to do anything to the humerus at all. Slip the hand gently, slowly, and boldly along the arm till the child's forearm

is reached, then sweep that downwards and inwards across the child's body, and so bring the arm down —I am, etc,

Glasgow, Sept 1st JAMES COOK M D

THE CAUSE OF TORTICOLLIS

SIR,—Mr G F Gibberd, in his admirable remarks on breech presentation in the *Journal* of August 29th, while referring to one matter of orthopaedic interest—namely, the origin of Little's disease—omits all mention of an equally interesting one, the origin of 'sterno mastoid tumour" and wry neck

I do not wish to take up your valuable space unnecessarily, but I should like to place on record the fact that eight out of ten cases of non spasmodic torticollis met with in my clinic at the Miller Hospital have occurred in children born breech first This proportion is far too high for it to be a mere coincidence Has Mr Gibberd any theory to offer which will explain the connexion between the two? The usual one given is that the chin catches on the pelvic brim, and the strain tears through the sterno mastoid muscle But this does not account for cases which occur where the birth has been normal My own view is that the "sterno mastoid tumour' is due to a tear, not of a normal muscle, but of a previously contracted one May it not be possible that the same cause, whatever it is, may produce the breech presentation and the shortened muscle?

An added reason for thinking that the child with the ruptured sterno mastoid muscle is not normal is that when the condition is recognized within a few days of birth one notices that the asymmetry of the face—one of the clinical signs of torticollis—is also present —I am, etc,

London W 1, Aug 28th PAUL BERNARD ROTH

CONVULSIONS DURING ETHER ANAESTHESIA

SIR —Dr Haworth's description, in the *Journal* of August 29th, is typical There was no cyanosis, but oxygen was given from the commencement Oxygen seems to be the crux of the whole situation, why is it given, and what is the effect? Oxygen is given to relieve cyanosis What is the cause of the cyanosis? If the air way is free, and there is no other interference with respiration, it is due to deep anaesthesia If the dose of ether is reduced and, if necessary, more air given, the cyanosis improves Again, does oxygen assist in the elimination of CO_2 which is causing cyanosis in the deeply anaesthetized subject? The colour will improve, but does the tension of CO_2 in the venous blood become less?

Convulsions appear to resemble the second stage of asphyxia While oxygen is being given to a deeply anaesthetized subject, is the patient being asphyxiated? The hyperpnoea of asphyxia is indicated by the rapid, shallow respiration; in the same stage the pulse rate increases enormously This is also noticed in the first stage of convulsions If the same dose of ether and oxygen is continued, convulsions commence In the former case we are dealing with an occluded airway and responsive muscles, in the latter, with a deeply anaesthetized subject with a free airway but a semi paralysed respiratory centre and muscles In each case convulsions are being caused by an excess of CO_2, and not by lack of oxygen Toxaemia evidently lessens the resistance of the respiratory centre, and, consequently, convulsions are most common in this type

In conclusion, I would like to stress the following points 1 Always attempt to rectify cyanosis without oxygen, which is not harmful, but masks cyanosis Given from the commencement, there is no cyanosis and the anaesthetist is on false ground (2) Should the effort of using bellows on the Shipway be too tiring, use compressed air and not the oxygen cylinder (3) Convulsions are probably due to careless anaesthesia and can be avoided —I am, etc,

C J BASHALL, M R C S, L R C P

Burbage Vale, 31st

A SIMPLE METHOD OF EMBALMING

SIR —Noticing in the *British Medical Journal* of August 22nd (p 358) an article suggesting that ship surgeons might be called on to embalm bodies on board ship, and knowing how frequently it has to be performed by men practising abroad, I thought the following notes might be helpful

First of all plug lightly the pharynx and each nostril with cotton wool Push the plugs fairly far back into the nostrils Then heat some paraffin wax in a small enamelled jug (the wax requires to be fairly hot so that it does not harden too quickly) If necessary open the mouth with a gag then take a small funnel and pour the paraffin through it into the pharynx putting in about one and a half ounces Next pour a small quantity down each nostril In a few minutes the wax sets and completely seals the nasopharynx It is essential to do this as otherwise the formalin, when injected under pressure, always escapes through the mouth and nose Next expose one of the femoral arteries and tie a metal or glass cannula firmly into it, then attach about seven or eight feet of rubber tubing to it and a metal or glass douche can to the other end Raise the douche can to a height of about five feet and fill with full strength formalin allowing it to run slowly and filling up as necessary Half to one gallon is run in allowing four or five hours for this if possible I generally opened a superficial vein in the arm to prove that the formalin had circulated When the required amount has run in tie off the femoral artery above the cannula and stitch up the wound

I was able to prove the efficacy of this method, as two bodies I had treated were left in a mortuary chapel for six weeks during the heat of the summer in Southern Italy, pending the arrival of relatives I went and inspected the bodies at the end of that time, and found them both looking as fresh as the day the injection was done —I am, etc,

F B EYKYN O B E, M B

Dulwich S E 22, Aug 22nd

HUNGER PAIN AND PRESERVATIVES

SIR,—In a recent leading article on duodenal ulcer and pyloric gastritis reference was made to the acidity of the stomach contents About five years ago, in your correspondence columns, I recorded a form of indigestion that, after much endeavour, was finally tracked down to preservatives in food During war service I experienced symptoms simulating a duodenal ulcer The usual tests were made, and, while surgeons recommended a short circuit, I accepted the advice of physicians relying upon medicinal and dietary measures Almost no improvement resulted until food containing preservatives was excluded, then the attacks ceased So long as the food is pure the trouble does not return, but anything containing preservatives occasions the old symptoms They are always identical, and consist in a tenderness in the epigastrium with pain in the stomach, relieved by food constipation being also a feature To no article of diet is my stomach sensitive, and I can eat the most indigestible of things without any after effects, but my susceptibility to preservatives still remains On innumerable occasions during the

past few years have I been given adulterated food under the guise of pure, but never has my stomach failed to detect the difference. Nor does my sensitiveness to preservatives lessen, and only by excluding them can I purchase freedom from a form of indigestion that simulates duodenal ulcer. It is an immunity that is not easily secured. To follow a dietary involves little trouble, but to avoid preservatives requires greater supervision, and from the kitchen must be banished much which the modern cook uses. My butter comes straight from a farm; margarine and lard are taboo, as are also the various flavouring and thickening agents, and the only prepared foods that are used are made at home. By these precautions my chronic indigestion has been overcome, though I again pay the penalty when sojourning in hotels or partaking of restaurant food. Whether my hunger pains are an expression of hyperacidity, excessive motility, or of a pyloric inflammation may be a matter of contention, but on one point there can be no doubt, and that is their cause. This sensitiveness to preservatives, which nothing modifies, is striking, and that others in a varying degree are similarly susceptible is highly probable. The similarity of the symptoms to those of a duodenal ulcer is of significance. Being an oculist, the subject is outside my professional sphere, but I again bring my experience to the notice of those whose study it is.—I am, etc.,

London, W.1, Aug 27th. JAMES FORREST.

Dr. BENDIEN'S CHEMICAL TEST

SIR,—The focusing of interest on the spectro-photometric part of Dr. Bendien's test appears to have overshadowed, for the time being, the chemical part of the test. Considering the cost of the apparatus required to carry out the former—Adam Hilger Ltd. offer an outfit for £384—and in view of the probability that the information yielded by it may not exceed that offered by the chemical test, it is probable that the latter will become more extensively used should the contentions of Dr. Bendien become generally confirmed.

A large scale investigation is at present being carried out at the County Laboratory, Stafford, the results of which will be published later. The results of the first batch of four tests are, however, of sufficient interest in themselves to justify preliminary notice. It was arranged that this batch, which was numbered 1 to 4, should include one blood from a case of cancer. The result of the Bendien test was: No. 1, positive; Nos. 2, 3, and 4, negative. A comparison of the results with the clinical diagnosis showed a discrepancy, since blood No. 2 had been taken from a case of cancer. Further investigation, however, showed as follows.

Blood No. 2 was taken on August 31st from a case of carcinoma of the breast of two years' duration. The breast had been removed two months ago (June 29th, 1931). The patient showed local metastases, and was progressing favourably. Blood No. 1 was from a case of normal breech delivery of a primipara admitted as coronary heart disease, and which had just been reached. It was found that which had been previously diagnosed was taken before the case was re-examined. Death to the cardiac on the former case-sheet being provisional. After the blood had been dispatched it was found that pulmonary the patient had developed, in addition to symptoms, marked dullness over the left region. The removal of a large quantity of fluid did not restore the resonance, and a radiogram was taken. The result, which came in after the result of the Bendien test, indicated neoplasm of the lung. Specimens 3 and 4 were from cases of gastric ulcer.

	Neo-natal	Per cent.	Prim.
3.4	12.5	above	

If further results prove as consistent as the first batch, the case for the Bendien test will be greatly strengthened. The fact that a positive result is obtained in three different conditions—namely, carcinoma, tuberculosis, and gall-stones with jaundice—does not very greatly detract from the value of the test, for it must seldom constitute a difficult problem for the clinician to distinguish between these conditions.

One difficulty in the test is the large amount of blood required; in the complete test with twenty tubes, 10 c.cm. of serum are used. Although this difficulty is not insuperable, it must be an advantage to use a technique in which the test may be performed with smaller amounts of material. This I am attempting to do by cutting down all the quantities used in the test to one-fifth: thus 0.1 c.cm. of serum is mixed with 0.1 c.cm. of distilled water (or better still, 0.2 c.cm. of a 50 per cent. solution of serum is taken), and 1 c.cm. of the acetic acid-sodium vanadate mixture is added. A 5 by 1 cm. tube is convenient for this technique. Very thorough shaking is required, I find, in order to obtain the same results as with the larger quantities. I also omit tubes 11 to 20, since they are irrelevant to the diagnosis, and in this way the test may be very compactly performed with 1 c.cm. of serum.

I have pleasure in acknowledging facilities granted by Dr. Menton, county bacteriologist, Stafford, to carry out these tests, and for permission to publish the above results.—I am, etc.,

County Laboratory, Stafford, Sept. 7th. J. FINE, B.Sc., M.B., Ch.B., D.P.H.

Obituary

LOUIS SAMBON, M.D.

Formerly Lecturer, London School of Tropical Medicine

Dr. LOUIS SAMBON, well known for his work on tropical disease and his theories on the etiology of cancer, died suddenly in Paris on August 30th, at the age of 65. He was a member of the Société de Médecine Tropicale of Paris, a Fellow of the Royal Society of Tropical Medicine and Hygiene, and an honorary Fellow of the Manila Medical Society. His published writings included an account of the cholera epidemic of 1884, a paper on prevention of infectious diseases, read before the seventh International Congress of Hygiene and Demography, held in London in 1891, communications on sleeping sickness and blackwater fever, and various articles describing in much detail his inquiries in Italy and elsewhere, which led him to believe in the existence of "cancer houses" and "cancer streets." At the Annual Meeting of the British Medical Association held at Sheffield in 1908, Dr. Sambon was a vice-president of the Section of Tropical Diseases.

We have received the following appreciation from Dr. GERALD HOLROYDE, who worked in close association with Dr. Sambon during recent years:

By the death of Louis Westenra Sambon the world of medicine has lost one of its brightest ornaments. Born in England of Anglo-French parentage, his mother being an Englishwoman and his father a Frenchman, he received his medical training at St. Bartholomew's Hospital and the University of Naples, graduating M.D. in 1891. While still a student at Naples he worked all through the terrible cholera epidemic. For his work in this connexion he was decorated by both the Italian and French Governments.

He started his professional career as a gynaecologist in Rome, but the lure of England was too strong for him, and he came to London, against the strongly expressed wishes of his father. Here he met Sir Patrick Manson, and a close friendship sprang up between them, which persisted up to Manson's death. He nearly ruined his career

at its very onset by publishing, in the *British Medical Journal*, an article on "Acclimatization," in which, contrary to universal opinion at that time, he held and proved that it was the parasite and not the climate which killed the white man in tropical lands. Though universally ridiculed at the time, Sambon, sixteen years later, in Panama, had the satisfaction he so well deserved. Invited to see what the Americans had done for the sanitation of the canal zone, General Gorgas, before the assembled physicians and surgeons, turned to him and said, "My colleagues and I are pleased to have been able to prove that you were right." To detail his many triumphs in the field of tropical medicine would occupy more time and space than is possible, but perhaps this tribute to his ingenuity may be permissible. In 1902 Sir Patrick Manson, at that time medical adviser to the Colonial Office, sent for Sambon, and asked him if he would go to Uganda to study sleeping sickness. Here was an opportunity after Sambon's own heart, but, unfortunately, for family reasons, he had to refuse. Unable to go himself, he urged the claims of a friend then studying at the London School of Tropical Medicine (Castellani). Sore at heart, he returned to his study, determined to do his best to unravel the mystery of the African sleeping sickness. He gathered all available literature on the disease, and soon obtained some inkling of its topographical distribution and epidemiology. He felt sure the peculiar patchy riverside distribution of sleeping sickness, which he had been able to glean from the literature, would soon reveal its causation. Indeed, when Castellani, working in Uganda, found first a streptococcus, then a trypanosome in the cerebro-spinal fluid of sleeping sickness patients, Sambon strongly supported, against Manson himself, the etiological importance of the trypanosome, and pointed out that the infection was transmitted by the dusky tsetse fly.

A man of many parts, an acknowledged authority on parasitology throughout the world, it is as an epidemiologist that Sambon will be chiefly remembered. Few men possess the breadth of vision, combined with the knowledge of so many interallied subjects, necessary for the production of the successful epidemiologist. No man can earn a livelihood by it, and no man has even attempted to do what Sambon did. He devoted his life to the subject. His last years were given to the study of cancer. Whilst travelling on the Continent in this connexion, on Christmas Day, 1929, lunching at a café in the shadow of St. Peter's wonderful cupola, he suddenly turned to me and said, "I shall hate to die." Asked his reason, he said, "Because there is so much to do, and so little time in which to do it." Prophetic words indeed! With his passing, much that would have benefited the human race is lost. In common with many people, in several lands, I mourn the loss of a warm-hearted, courteous friend and colleague.

Dr. WYKEHAM TRACY LYDALL, who died on August 20th, was born in 1871. Receiving his medical education at Bristol, he obtained the diplomas M.R.C.S., L.R.C.P. in 1895, and graduated M.D.Brux. two years later. He commenced practice in Birmingham in 1897, and associated himself actively with the British Medical Association, being one of the honorary local secretaries at the Annual Meeting in Birmingham in 1911. Dr. Lydall held the posts of secretary and chairman of the Birmingham Division, and served for a long time on the Birmingham Panel Committee and many of its subcommittees. He was editor for several years of the *Midland Medical Journal*. During the war he held a temporary commission in the Royal Warwickshire Regiment. He was medical officer to the Royal Air Force squadron at Castle Bromwich, and for some years acted as assistant regional officer to the Ministry of Health. He was a member of the council of the Medical Defence Union. Dr. Lydall is survived by a widow, a daughter, and three sons.

Lieut.-Colonel ANDREW ALEXANDER WATSON, C.M.G., D.S.O., R.A.M.C.(S.R.) (ret.), of Gaerstones, Church Stretton, Shropshire, died in a nursing home at Shrewsbury on August 31st, at the age of 75. He was educated at the University and Royal College of Surgeons, Edinburgh, and took the L.R.C.P. and S.Ed. in 1880. He served in the R.A.M.C. Special Reserve throughout the South African war, taking part in operations in the Orange Free State, was mentioned in dispatches in the *London Gazette* of April 16th, 1901, and gained the King's and Queen's medals, with two clasps each. During the war of 1914-18 he was mentioned in dispatches in the *London Gazette* of February 17th, 1915, January 1st, 1916, and January 4th, 1917, and received the D.S.O. in 1917 and the C.M.G. in 1919. He retired in 1922. He had been surgeon, and later honorary consulting surgeon, to the Victoria Hospital at Burnley.

The following well-known foreign medical men have recently died: Dr. OSKAR MINKOWSKI, formerly professor of internal medicine at Breslau, who discovered the internal secretion of the pancreas, at Wiesbaden, aged 73; Dr. GASTON BOSC, senior physician to the hospital at Tours; and Dr. FERDINAND CHAILAN, a Marseilles ophthalmologist.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Parliament reassembled on September 8th for a short emergency session, which may be followed by an autumn General Election. There was a full attendance of members, including Dr. Salter and Mr. Somerville Hastings, chairman and honorary secretary of the Parliamentary Medical Committee, who had just returned from a tour in Russia. During the week the Economy Bill and a Supplementary Budget were introduced by the Government in the House of Commons.

On September 8th the PRIME MINISTER moved that the House should resolve itself into a Committee of Ways and Means for raising supply. He appealed to all classes and conditions to go cheerfully over the broken road, along which our security, honour, and well-being would be found. The burdens they would be asked to bear would be, in relation to the national services required, not inadequate nor inequitable. This was not a selfish attack on incomes, a pernicious cutting down of expenditure, an inroad on standards of living; it was a ranging of all in a common contribution to uphold the credit of the nation, on which the life and income of every citizen depended. The Prime Minister made no specific reference to any social service.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Dr. Eric G. Holmes, Christ's College, has been appointed University Lecturer in Pharmacology for three years from October 1st next; and Dr. Frank Robert Winton, Clare College, has been appointed University Lecturer in Physiology for three years from the same date.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

Honorary Fellowship

On the occasion of the 250th anniversary of the Royal College of Physicians of Edinburgh it has been decided to confer the Honorary Fellowship of the College on Sir David Bruce, K.C.B., Lord Dawson of Penn, G.C.V.O., Sir Archibald Edward Garrod, K.C.M.G., Sir William Hale-White K.B.E., Sir Robert Hutchison, M.D., Sir Thomas Lewis, C.B.E., Sir Donald MacAlister of Tarbert, Bt., K.C.B., Sir Edward Sharpey-Schafer, Sir Charles Scott Sherrington, O.M., Charles Achard (Paris), Frederick Grant Banting, M.C. (Toronto), A. A. Hijmans van den Bergh (Utrecht), Knud Faber (Copenhagen), George Richards Minot (Boston), Friedrich von Müller (Munich), Hermann Sahli (Bern), William Sydney Thayer (Baltimore), and Julius Wagner-Jauregg (Vienna).

Medical News

The British Science Guild announces that Dr. H. H. Dale, F.R.S., will give the Norman Lockyer Lecture at the Goldsmiths' Hall, E.C., on Tuesday, November 24th, at 4.30 p.m.

The opening of the winter session at King's College Hospital will take place in the Medical School, Denmark Hill, S.E.5, on October 1st, at 2.15 p.m. The introductory address will be given by Professor H. R. Dean, professor of pathology in the University of Cambridge, and Mr. A. D. Power, vice-chairman of the committee of management of King's College Hospital, will preside. The annual dinner of past and present students will be held the same evening, at 7.30, at the Connaught Rooms, Mr. L. Vernon Cargill presiding.

The annual congress of the Chartered Society of Massage and Medical Gymnastics will be held in London from September 29th to October 3rd. The annual dinner will be held at the Connaught Rooms, on October 2nd, at 7.30 p.m. Reduced railway rates are available.

The Fellowship of Medicine and Post-Graduate Medical Association announces the following courses: medicine, surgery, and specialties at the Metropolitan Hospital, Kingsland Road, E., from September 28th to October 10th, occupying the whole of each day; fee £3 3s. or £2 2s. for one week only. A similar course at the Prince of Wales's Hospital, Tottenham, from October 12th to 24th; fee £5 5s. or £3 3s. for one week. A course of lectures for the M.R.C.P. in the evenings, at 8.30, at the Medical Society of London, 11, Chandos Street, Cavendish Square, on Mondays and Wednesdays, beginning October 5th; fee £6 6s. for eighteen lectures, or 10s. 6d. per lecture, payable at the lecture room. Diseases of the throat, nose, and ear at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, occupying the whole of each day, from October 5th to October 31st, and including a clinical course, fee £5 5s.; a pathology class, fee £5 5s. (limited); a peroral endoscopy class, fee £6 6d. (limited); and an operative class, fee £7 7s. (limited). Tropical medicine at the Hospital for Tropical Diseases, 25, Gordon Street, from October 5th to 24th, occupying the whole of each day: fee £8 8s. Copies of syllabuses of all courses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1, also syllabuses of the series of free lectures and demonstrations for October, November, and December.

A new series of post-graduate lectures at King's College Hospital Medical School, Denmark Hill, S.E.5, will commence on Thursday, October 8th, at 9 p.m., when Sir StClair Thomson will speak on cancer of the larynx. The lectures will be continued on succeeding Thursdays till March 17th, 1932, with the exception of December 24th and 31st.

A post-graduate course, free to all medical practitioners, will be held at St. Mary's Hospital Medical School from Friday, October 2nd, to Sunday, October 4th, inclusive. It will occupy the mornings and afternoons of the first two days, and the morning only of the third day. The subjects to be dealt with include the treatment of some common fractures, rheumatoid arthritis, chronic indigestion, slow labour, colitis, and chronic cough, diseases of the tongue, prenatal care, surgical operations in old people, the pregnancy toxaemias, disabilities of the foot, new methods of genito-urinary surgery, and fever without signs.

A three months' course of lectures and demonstrations on clinical practice and in hospital administration for the diploma in public health will be given by the medical superintendent, Dr. A. Joe, at the North-Western Hospital, Hampstead, on Mondays and Wednesdays at 3.30 p.m., and on alternate Saturdays at 11 a.m., commencing on Wednesday, September 30th. The course complies with the requirements of the revised regulations of the General Medical Council, which come into operation on October 1st, 1931; fee £3 13s. 6d.

On September 22nd an exhibition representing the publications and history of the Cambridge University Press will be opened by General Smuts in the Old Court House at Messrs. J. and E. Bumpus's bookshop in Oxford Street, W. The publications to be found in the current Cambridge catalogue, some 4,000 volumes, will form the main part of the exhibition, but there will be a historical exhibit illustrating the history of the University Press and the development of printing craftsmanship at Cambridge since 1521. This exhibit will comprise documents from the archives of the Press and a collection of old books covering the four centuries of Cambridge printing; it will include works by Erasmus, James I, Milton, George Herbert, Donne, Fuller, William Harvey, and Sir Thomas Browne, and more recent famous books, all of which were first printed at Cambridge. The exhibition will coincide with the Centenary Meeting of the British Association, and the range of scientific works in the catalogue makes it suitable that the president of the meeting, who is himself a Cambridge man, should perform the opening ceremony.

The Minister of Health, the Right Hon. Neville Chamberlain, M.P., has appointed Mr. A. Nevil Rucker to be his private secretary, and Mr. W. H. Howes to be his assistant private secretary.

The third International Congress of Psychotherapy, Hypnology, and Applied Psychology will be held in Paris from September 28th to October 4th, under the presidency of Dr. Berillon. Further information can be obtained from the general secretary, Dr. Pierre Vachet, 8, Boulevard de Courcelles, Paris, XVIIe.

The fourteenth Italian Paediatric Congress will be held at Florence from September 23rd to 26th, when the following subjects will be discussed: (1) purulent pleurisy in infancy, introduced by C. Cocchi of Florence, A. Laurinich of Naples, and I. Nasso and E. M. Castronuovo of Messina; (2) encephalitis in childhood, introduced by M. Bergamini of Parma, G. De Toni of Bologna, and G. Tacone of Milan; (3) directions for diet in communities of children, introduced by P. Brusa of Milan, A. Lucca of Turin, and G. Macciota of Cagliari.

We are informed that the Second International Congress for Light, which was erroneously reported in our issue of August 22nd to have been held this year, will take place in Copenhagen from August 15th to 18th, 1932. The following are the subjects for discussion. (1) The role of pigment in light biology and the therapeutic effect of general light baths. Principal speakers: Dr. Brody (France), Professor Miescher (Switzerland). (2) How is the action of the general light bath in tuberculosis to be explained? Principal speakers: Sir Henry Gauvain (England), Professor Jesionek (Germany). (3) Heliotherapy, climatological research in relation to public health: its organization and physiological basis. Principal speakers: Professor W. Hausmann (Austria), Professor A. Rollier (Switzerland). (4) Report by the international committee for the determination of a standard unit of measurement for ultra-violet radiation. Read by Dr. Saidman (France). Further information can be obtained from the general secretary, Dr. Kissmeyer, Finsens Lysinstitut, Strandboulevarden, Copenhagen.

The National Birth Control Council and the Birth Control Investigation Committee have amalgamated under the title of the National Birth Control Association. Since it was set up last year the council has been engaged mainly on work with local authorities in regard to the Ministry of Health's memorandum on birth control. So far thirty-five local authorities have authorized the giving of advice on contraceptive methods. Sir Thomas Horder is president of the association, and Sir Humphry Rolleston, vice-chairman. Inquiries should be addressed to the secretary, 26, Eccleston Street, S.W.1.

The Neech Prize of the Society of Medical Officers of Health for the best paper read at a meeting of the Society during the session 1929–30 has been awarded to Dr. G. C. M. M'Gonigle of Stockton-on-Tees, for his address on the biological concept of preventive medicine, delivered before the Northern Branch and published in *Public Health*, May, 1930.

Under the auspices of the French Government a group of American doctors recently visited the principal thermal and climatic resorts of France The delegation included Dr Charles Gordon Heyd and Dr Max Einhorn, emeritus professor and consulting physician at the New York Post-Graduate Medical School The last days of the tour were devoted to the watering place of Vichy, where the visitors inspected the springs, thermal establishments, hydrological laboratories, and the bottling and dispatch departments Dr Durand Fardel, president of the Vichy Society of Medical Science, Professor Einhorn, and Dr Gustave Monod, F R C P Lond , a former president of the International Society of Medical Hydrology, gave lectures Distinguished French medical men who attended the farewell banquet included Professor Leon Bernard, Professor Labbé, and Professor Achard, all of the Faculty of Medicine of Paris

At a conference in July of the Association of Special Libraries and Information Bureaux the question of abstracting foreign publications was considered carefully in an informal discussion A conclusion reached was that the abstract of a book should not be written by the author, but by a specialist in the same subject Reports were given by various scientific societies and institutions on the way in which they obtained such abstracts, and a considerable variety of method was revealed It was suggested that the service of the panel of expert translators belonging to the Association of Special Libraries and Information Bureaux might be extended to form a panel of foreign abstractors A small subcommittee was appointed to draft a questionary to be sent to the bodies represented at the meeting (and other similar organizations) about the methods of abstracting which they had found to be most satisfactory

A table has been issued by the Ministry of Health, based on the returns made by the Poor Law authorities in England and Wales, comparing the average number of persons receiving poor relief in June, 1931, with the number recorded in June, 1914 In June, 1931, the average number (including men, women, and children under 16 years) in receipt of outdoor relief, mainly on account of unemployment, was 152 500, while those to whom relief was granted for some other cause numbered 627,400 This classification is not available for 1914, but the number receiving unemployment relief at that time is stated to have been almost negligible In June, 1931, the total number in all classes was 779,900, compared with 372,600 in 1914—an increase of 407,300 It is added that the number recorded in June of this year was less by 3,800 than that recorded in the previous month The figures given above do not include 13,200 persons in receipt of medical relief only in their own homes In 1914 the average amount of outdoor relief, estimated per person, was 2s 6d , compared with 5s 8d in June, 1931 (approximately 3s 11d , allowing for the increased cost of living) Persons receiving institutional relief—other than rate aided patients in mental hospitals and casuals—numbered 246,200 on a day in June, 1914, compared with 195,600 on a corresponding day in June, 1931 This number is stated to be 2,700 less than the total number recorded in May, 1931

Professor Carl Neuberg, director of the Kaiser Wilhelm Institute for Biochemistry, who recently lectured in Paris before the Société Chimique de France and Société de Chimie Biologique, has been awarded the Pasteur and Leblanc medals, as well as the Pasteur Commemoration plaquette

Owing to the present unfavourable economic conditions the Congress for Diseases of Digestion and Metabolism, which was to have been held this year in Vienna, under the presidency of Professor Falta, has been postponed till next year

Messrs Cassell and Co , Ltd announce for immediate publication *Modern Medical Treatment*, by Drs E Bellingham Smith and Anthony Feiling, in two volumes, and *Radiology in Relation to Medical Jurisprudence*, by Dr S Gilbert Scott

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W C 1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated Correspondents who wish reply to be taken of their communications should authenticate them with their name not necessarily for publication

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QUERIES AND ANSWERS

Disturbed Sleep

"C M" writes A young woman aged 21 has suffered for some months from weeping and moaning in her sleep sufficiently severe to waken her No cause can be discovered for this distressing symptom and the usual hypnotics have failed to give relief Can any reader suggest a remedy?

Tobacco and Irritable Heart

Dr W M M JACKSON (Folkestone) writes I should be glad to know if there is any tobacco suitable for a patient with irritable heart who is unable to smoke ordinary tobacco however mild without symptoms of cardiac distress

Treatment of Threadworms

In reply to the inquiry by F (August 29th p 407) two correspondents have written to recommend bismuth carbonate one advising 10 to 40 grain doses for a child under the age of 7 at four hourly intervals and 20 grain doses for an adult The other suggests that for a child aged 8 the administration of 10 to 15 grains four times daily would be sufficient in addition to the necessary local treatment and disinfection of the clothing and finger nails Garden soil is said to be often infested with these worms

Dr G W WILLCOX (Crowborough) records a case in a child of about the same age in which saline enemas continued for a long period, cleared up the condition temporarily recurrence following when the treatment ceased Removal of an appendix packed with worms resulted in a cure

Dr H T MACAULAY (Peterborough) suggests the trial of batolan (Bayer Products Ltd) in half tablet doses three times a day On alternate nights hydrocumcret should be administered, followed by milk or cream of magnesia the next morning Quassia enemas and other forms of treatment should be given simultaneously

"E G" who advises removal of the appendix writes Recently a patient of mine was operated on for chronic appendicitis In addition to its obvious pathological defects there was a pocket at the distal end of the appendix which was a nest of threadworms Whether or not that was the original focus at any rate the place was inaccessible to ordinary methods of treatment In such a severe and persistent case as F describes the more serious operation I have suggested might be justified

Another correspondent recommends that he [illegible] three or four ginger biscuits after each meal [illegible] ginger keeps the duodenum and small intestines and the rectum free from *E vermicul* even in adults Ginger cakes and puddings are palatable methods to enable the ginger to reach the site of the trouble

Treatment of Brittle Nails

Dr. A. J. TURNER (Lee-on-the-Solent) writes: In reply to the inquiry by "J. W." (August 22nd, p. 367), I had a case of mother and child, both of whom had nails like paper. The mother informed me that for many years she had not been unable to untie a knot. Both patients were under treatment for the rheumatic diathesis, and were having sodium salicylate. When I heard about the nails, I added daily doses of 1/10 grain of thyroid extract for the mother, and proportionately smaller doses for the child. The nails became of normal strength and consistency in the course of about three months. It was difficult to say whether the cure was due to the salicylate or to the thyroid extract, or to both. Possibly the same treatment would apply to a condition of brittleness of the nails alone.

Harvest Mites

A correspondent writes: If "Sufferer" has been disappointed in the classical cure recommended, let him try the Marcussen formula for the Danish treatment of scabies. He may find his dispenser shy about compounding, but this ointment has recently appeared in England under various registered names. One dab of the ointment kills the parasite, and, if rubbing is avoided, irritation soon subsides; if irritation returns the treatment should be repeated. "Sufferer" still awaits a suggestion for removing this terror from the garden, and may obtain substantial satisfaction from the following. Let his gardeners kill every "red spider" seen throughout the year. The bright colouring makes it an easy prey, especially when it is pregnant in spring and early summer. Let "sticky bands" be kept around the trunks of his fruit trees from May till October. With or without a lens the observed results should be encouraging.

The Plural of Os Calcis

Dr N. PINES (London, E.) writes. Dr. Anderson is right; the plural for os is ossa, and the plural for os calcis may be ossa calcis or ossa calcium.

"A. C. B." writes: I put Dr. Kenneth Anderson's query to a classical scholar, and the answer was ossa calcis.

Colonial Medical Services

"E. G." (Wales).—Information about the Colonial Medical Services appeared at page 472 of the Educational Number of the *British Medical Journal*, published on September 5th.

Income Tax

Change in Partnership Share

"T. C." has been in partnership with A, on the basis of two-thirds and one-third. As from January 1st, 1932, that basis will be changed to equal shares. How should the assessment for 1931-32 be divided between the partners?

*** "T. C." had two-thirds for three-quarters of the year, and half for the remaining quarter—that is, over the whole year he had (2 3 × 3 4 + 1 2 × 1 4 =) 5/8, and A had the remaining three-eighths, of the year's earnings. The gross assessment, therefore, should be divided on that basis, and the personal allowances adjusted as may be necessary.

Allowance for Bad Debts

"I. I. C." makes his accounts up as for the year ending September 30th, but usually is unable to find the necessary time until, say, the following May. His practice is still increasing, and he cannot therefore claim to be assessed on the basis of cash receipts. In the past he has regarded as "bad" all debts due as at the previous September which were unpaid when he has made up the year's account. It is objected that this is too drastic an allowance (though, of course, debts so regarded as bad but subsequently paid have been returned for assessment), and that debts should not be regarded as bad until they had remained unpaid for, say, two years.

*** The legal position is that each debt should be separately reviewed and an estimate made of the probable amount recoverable, and the difference regarded as "bad or doubtful." This, of course, is a cumbrous method of calculation, and even when considerable trouble is taken the result may prove to be wide of the facts. Consequently, where it is adopted for the sake of the convenience of the taxpayer the revenue authorities are not unreasonably entitled to be to some extent on the safe side. Perhaps some rule-of-thumb method has much to commend it, but "I. I. C." could arrange some half-way compromise—for example, to regard as bad all debts due up to September 30th not paid by the following Christmas twelve-months.

LETTERS, NOTES, ETC.

Prophylaxis of the Common Cold

Dr. ELIZABETH MCKERROW (Workington) writes: At the onset of another winter—and particularly after such a poor summer—I should like to suggest through your columns a simple method of attempting to reduce the amount of illness that sweeps the country every year, directly and indirectly, through the common cold. My suggestion is merely that of every operating theatre—namely, the wearing of a gauze veil in every case of cold. If each unfortunate patient could be persuaded to use this method of protecting others from infection its good effect would soon be apparent. The only objection would be the "oddness" of wearing something so unusual, but that would easily be overcome if it were widely suggested, and adopted, by practitioners. One point in its favour—in popularizing it—would be the possibility of having veils that were becoming to the wearer, after the manner of the Egyptian yashmak, for instance. This would certainly be a vast improvement on the appearance usually presented by the nose and mouth of most victims of the common cold.

Management of Breech Labour

Dr. A. T. ROSS (Mevagissey) writes: With reference to Mr. Aleck Bourne's "Management of breech labour" in the *Journal* of August 29th, to deliver the head I was taught that I must put my fingers in the mouth. After about two attempts—with the feeling that the jaw was going to go—I used forceps, and have never used any other method for some thirty years. Forceps, to apply, are simple; to produce (if necessary) flexion they are mechanically correct; and to achieve the object—delivery—they are excellent.

Motor Car Insurance Policies

Mr. L. FERRIS-SCOTT (Honorary Secretary, Medical Insurance Agency) writes: May I ask you to issue to your readers a warning that they should be careful to see that the insurance policies in connexion with their motor cars are kept in force and are not allowed to lapse by inadvertence owing to the non-payment of premium on the due date? An insurance company doing motor car business was recently fined £50 on a summons under the Road Traffic Act for issuing a certificate of insurance which was false in a material particular. The prosecuting counsel explained that the case was the first of its kind, and it is understood that notice of appeal was given; but, pending the hearing of the appeal, the judgement stands. A motor driver was found to have a certificate of insurance which expired on June 3rd. When spoken to about it by a policeman he went to the office of the insurance company, where he was given a certificate dated back to June 4th. It was held that the certificate should have been dated on the date it was issued, and that the different date constituted a statement which was false in a material particular, and the insurance company was fined accordingly. It will be seen, therefore, that as the law now stands it is dangerous for an insurance company to date back a certificate of insurance under the Road Traffic Act, and in consequence, if the policy is allowed to lapse owing to non-payment of premium, there would be a break in the continuity of the policy, during which period the doctor concerned would be uninsured and liable to all the penalties under the Road Traffic Act attaching to that condition.

Warning

Dr. HELENA P. KELLY (Leytonstone) writes: I should be much obliged if you warned readers of the *British Medical Journal* against giving orders to the man Kelly (August 29th, p. 408) on the plea that he is a friend or relation of mine. He has been to several of my medical friends, and got cash for orders which never materialized, on my supposed recommendation. I know nothing about him beyond the fact that he called on me a few months ago looking for orders for bottles, etc. I ordered bottles, but when he told me that the terms of "his company" were cash with the order, I immediately cancelled my order. Since then I have heard that he also goes under the name of Burke.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, 46, 47, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 179.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

191 Acute Cerebral Rheumatism

E. TOULOUSE, L. MARCHAND, and A. COURTOIS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 12th, 1931, p. 1119) describe the case of a young woman, aged 20, who contracted acute articular rheumatism on January 1st, 1930, and was admitted into the Tenon Hospital on February 5th, where she was treated with 8 grams of sodium salicylate daily. She was transferred to the Henri-Rousselle Hospital eight days later, since she had developed cerebral symptoms on February 9th. There were at that time no articular symptoms, but mental confusion, motor agitation, and continuous cries were noted. The temperature varied between 100° and 102°. There were no lymphocytes or abnormal albumin in the cerebro-spinal fluid. The Wassermann reactions of the blood and cerebro-spinal fluid were negative. Although 2 grams of salicylate were daily injected intravenously there was no improvement; stupor supervened, and the patient died on February 20th. The brain was found to be congested, and there were some adhesions between the frontal lobes and the inner table. The pia mater was healthy, but the cerebrum showed diffuse cellular lesions with atrophy of the cell body so that the nuclei appeared large. The chromophil bodies were fragmented, and the nuclei eccentric and sometimes extruded. In the subcortical white matter there were small groups of six to ten embryonic round cells, but no involvement of the neuroglia was detected. In the central grey nuclei, the optic thalami, the cerebellum, and the peduncles, there were acute cellular lesions, and in the bulb there was a slight lymphocytic reaction of the pia mater. Well-marked cellular lesions were found also in the nuclei of the cranial nerves.

192 Circulatory Efficiency in Heart Disease

H. W. BANSI and G. GROSCURTH (*Deut. med. Woch.*, July 24th, 1931, p. 1276) have made 250 observations of the minute-volume circulation unit (using Grollman's acetylene method), the oxygen intake and carbon dioxide output, the effect of oxygenation on the pulse rate, and the blood pressure on 90 persons, under varying conditions. They found that in heart disease the minute-volume of the circulation did not rise during muscular exertion so much as in normal persons; in severe cardiac cases the volume per beat remained the same, the only increase in circulation rate being brought about by tachycardia. The circulation is thus insufficient for the needs of the body at the time, and an "oxygen debt" is incurred. The increased minute-volume condition has to be continued after the work is finished, and, instead of falling sharply as in normal persons, its curve after exercise shows only a slow return to normal. An abnormal curve of this type was found, not only in cardiac failure, but also in apparently fully compensated, symptomless cases of valvular disease and in myocarditis. Cases of cardiac neurosis, exophthalmic goitre, and supposed post-infective cardiac weakness, on the other hand, gave normal results.

193 Tremor in Industrial Mercurialism

G. PIERACCINI (*Med. Welt*, June 20th, 1931, p. 878) states that tremor is one of the most important and characteristic signs of mercurial poisoning, although it is not pathognomonic of this industrial disease. It is found in almost all cases, alike in mild or severe attacks, and in acute and chronic cases. In mild and moderate cases small fine tremors are seen in the hands, lips, and outstretched tongue, while in severe cases the tremors are much more pronounced and generalized. The tremor ceases as soon as the patient comes under treatment by rest, good nourishment, and removal of the cause, but it is apt to return or to be aggravated by consumption of a small quantity of alcohol or tobacco. The tremor ceases in sleep, except in severe cases, in which three or four attacks may occur in the course of an hour, and be sometimes so violent as to drive the patient out of bed. Recovery may be regarded as complete when administration of alcohol does not produce any tremor in the hands.

194 Malignant Hypertension in Childhood

Essential hypertension is predominantly a rare disease under the age of 30, but J. CRAIG (*Arch. Dis. in Child.*, June, 1931, p. 157) reports a case of its occurrence in a girl, aged 8, including the post-mortem findings. She had had headaches for many years, and the period of the malignant phase, which lasted for at least one year, was punctuated by attacks of convulsions, cerebral amaurosis, unconsciousness, transient haemiplegia, and paralysis of a cranial nerve. Some renal impairment was present, but only became pronounced at the end of the disease, though blood was passed in the urine from time to time. The blood pressure rose steadily, and was particularly high in at least two of the series of acute exacerbations. The typical picture of hypertensive retinopathy was always present, with macular exudates, neuro-retinitis, sclerosis of the retinal vessels, and haemorrhages; woolly patches were only noticeable at the beginning of the observation. The necropsy revealed the typical arteriolar changes of essential hypertension, and the renal arteriolosclerotic atrophies and necroses of the malignant phase of the disease. There was no history in this case of any family tendency to vascular disease at an early age.

195 Serum Reaction following Desensitization

J. C. S. BATLEY (*Arch. of Ped.*, May, 1931, p. 338) records the case of a boy, aged 10, who developed diphtheria after a prophylactic injection of 1,500 units. Desensitization was effected first with 0.12 c.cm. antitoxin with no reaction, followed in half an hour by 0.25 c.cm., and then 0.5, 1, and 2 c.cm. were given at half-hourly intervals. Two hours after the last injection patches of erythema and urticaria appeared on the skin in several places. Vomiting began, and the boy became progressively worse. He had two loose stools. His face and extremities were cyanosed and his pulse could not be felt. After a subcutaneous injection of 1,300 c.cm. of saline the rectal temperature rose from 101 to 106°. The following day he had a generalized morbilliform rash and slight swelling of the cervical glands, but on the next day the rash disappeared, and the temperature was only 99°. Uninterrupted recovery ensued without any more antitoxin.

196 Syphilitic Cardiac Disease

E. P. CARTER and B. M. BAKER, jun. (*Bull. Johns Hopkins Hosp.*, May, 1931, p. 315), review cardio-vascular syphilis from its historical aspect, and remark that the fuller knowledge of syphilitic aortitis dates back at the most fifty years. They have analysed the admissions to the Johns Hopkins Hospital during twelve years, and find that the incidence of the disease is four times greater among coloured than among white patients. Of all patients proved to be suffering from syphilis rather more than one-fifth had aortic insufficiency or aneurysm. In its evolution cardio-vascular syphilis was regarded as falling essentially into four groups: aortic insufficiency, insufficiency with aneurysm, aneurysm, and syphilitic myocardial disease. A detailed analysis of 100 patients suggested the following points as of most importance in the diagnosis: a relatively abrupt and unexpected onset of circulatory embarrassment; increased retro-manubrial dullness, with alteration in the quality of the second sound; absence of evidence of rheumatic infection; dyspnoea on exertion; paroxysmal dyspnoea, often nocturnal; precordial pain, especially if paroxysmal; and a

positive Wassermann reaction. The special characters of paroxysmal dyspnoea in syphilitic aortitis and the great infrequency of coexisting auricular fibrillation were very noticeable. In their views on treatment the authors conform to the modern view, treating first any failure or anginal condition that is present, and later giving iodides and mercury for at least ten or twelve weeks. The importance of exhibiting small initial doses of the arsenicals is emphasized, and reference is made to the successful results of treatment along these lines reported by Danglade.

197 Herpes Zoster and Encephalitis

ANDRÉ-THOMAS and J. B. BUVAT (*Paris Méd.*, June 27th, 1931, p. 600) who record an illustrative case, state that among the numerous nervous manifestations in patients with herpes zoster hemiplegia is one of the most frequent, especially in cases of ophthalmic zoster. The causal relations between zoster and hemiplegia have not always been firmly established, especially when the hemiplegia does not occur at the same time as the zoster, only appears several weeks after the eruption, and develops in an arterio-sclerotic, atheromatous, or syphilitic subject. The question arises whether the area of softening which gives rise to the hemiplegia differs from those frequently observed in old persons who are not suffering from herpes zoster. The case recorded was that of a woman, aged 58, who had been suffering for several weeks from a complicated psychosis, and suddenly developed fever and thoracic zoster. Coma rapidly ensued, followed by death in eight days. No mention is made of a necropsy, but inoculation of the contents of the herpetic vesicles on to the cornea of a rabbit failed to produce keratitis.

198 Nervous Complications of Acute Leukaemia

M. KIEGER-PARENT (*Thèse de Paris*, 1931, No. 169), who records three illustrative cases in young children, states that three forms of nervous complications may be found in leukaemia—namely, the haemorrhagic, a leukaemic infiltration of the neural axis or cranial nerves, and spinal complications. The haemorrhagic complications are much the more frequent, cerebral haemorrhage occupying the first place among them. Cerebral haemorrhage in most cases occurs in the course of acute leukaemia, and has principally been found in children. It is often the first and only sign of a leukaemia which has hitherto been latent. It may sometimes assume a medico-legal interest, especially in cases of sudden death in children.

Surgery

199 Thyroidectomy with the Radio-knife

A. S. JACKSON (*Annals of Surgery*, June, 1931, p. 1132) discusses the advantages and disadvantages of the radio-knife, which he has employed in 160 operations. It has been tried as a routine in all goitre operations, but it was found that a more satisfactory skin incision and a better scar result from using the scalpel. The radio-knife is so rapid in action that it is apt to penetrate the platysma and to cause bleeding from the anterior jugular veins. It was found that the radio-knife is a time-saving factor in thyroidectomy, that haemostasis is better, and that with a drier surgical field the operation is facilitated, fewer forceps being required. More thyroid tissue can be removed with less danger to the recurrent laryngeal nerves and the parathyroid glands than with the scalpel; the radio-knife is also more successful than the scalpel or cautery in the treatment of malignancy of the thyroid. It is of particular value in resecting the hyperplastic or exophthalmic type of goitre, since with the radio-knife it is possible to hollow out the gland, preserving a very thin lateral, capsular wall and narrow posterior strip protecting the recurrent laryngeal nerves and the parathyroid gland. There are some disadvantages following the use of the radio-knife, the most important being post-operative haemorrhage, of which there were three cases in the series. Occasional skin burns have resulted from coagulation too near the surface of the skin, and these cause slight disfigurement of the scar. The radio-knife has proved unsatisfactory in resecting large multiple cystic degenerating adenomas. Other disadvantages are the tendency of the apparatus to fail to function when needed and the fact that the surgeon is dependent on the co-operation of others in the use of the radio-knife. In spite of these drawbacks Jackson concludes that the radio-knife should be used as a routine, since it permits the surgeon to perform a smooth, speedy, and comparatively dry thyroidectomy, thus increasing the patient's chances of recovery.

200 Crossed Renal Dystopia

M. TRINCAS (*Arch. Ital. di Urol.*, May, 1931, p. 447), who records a case in a woman aged 20, applies the term crossed renal dystopia to the kidney which has crossed the vertebral column and is situated above or below or at the same level as its fellow. The two kidneys sometimes remain separate, but more frequently they unite at their poles or inner margins, forming a unilateral renal symphysis. The anomaly is due to a deviation in the embryonic evolution of the kidney, the nature of which is unknown. The dystopic kidney is an essentially anomalous organ with diminished resistance; it often retains its foetal type, and is sometimes atrophied. The pelvis, calyces, and ureter are often the seat of malformations. The various anatomical changes found in the dystopic kidney explain the frequency of hydronephrosis, pyonephrosis, and calculus formation. As the result of compression or traction the dystopic kidney sometimes gives rise to intermittent pain which is usually situated in the corresponding lumbar region, and radiates to the groin and lower limb. Until recently the diagnosis was extremely difficult, but the intravenous injection of uroselectan now enables pyelograms to be obtained similar to those furnished by retrograde uretero-pyelography without the drawbacks associated with catheterization of the ureters. Treatment consists in division of the two kidneys followed by nephropexy of the dystopic organ, or in cases where this is impossible, as in Trincas's patient, the whole renal mass should be attached to the psoas muscle on the posterior and lateral wall of the abdomen. By this method the pain, which is often the only symptom, is abolished.

201 Results of Treatment of Varicose Veins by Injections

S. HANSEN (*Ugeskrift f. Laeger*, June 11th, 1931, p. 646) reviews the experience of the treatment of varicose veins at the surgical polyclinic of the Rigshospital in Copenhagen and in his private practice during the three-year period beginning April, 1927. Of the total of 589 patients, 175 were not treated by injections for various reasons. Among the remaining 414 there were as many as 332 women. The ages of the patients ranged from 17 to 75 years, the average being 37, and the average duration of the varicose veins before treatment was 10 years; they had begun in many cases in childhood. In ninety-six cases one or more ulcers existed, and in eighty-four cases these ulcers were still open when the injections were started. In most cases the injection consisted of a 20 per cent. solution of sodium salicylate. These injections were sometimes preceded by injections of a 50 per cent. solution of grape sugar, which possesses the advantage of practically never provoking pain or necrosis. The fourteen cases of necrosis following the injections of sodium salicylate could largely be traced to faulty technique, for in the first year this complication occurred in 10 per cent. of the cases, in the second year in 2 per cent., and in the third year in 1 per cent. Phlebitis with a rise of temperature and disturbances necessitating rest in bed occurred in six cases. General disturbances with pain and malaise occurred in three cases, mental disturbances in one, tinnitus and vomiting in two, and menstrual troubles in one; there was no case of embolism, but in four cases there was, at the time of injection, a sense of faintness or even signs of collapse. Altogether there were thirty-eight cases associated with more or less troublesome complications during

the treatment. As to the permanency of the results, they were checked from one to three years later in 107 cases. The author classifies these results in various tables, according as the condition was or was not obscured by complications such as ulcers. He concludes that it is well to induce patients to report periodically after treatment, and to warn them that it may have to be repeated after an interval of months or years.

202 Schuller's Disease

J. FREEMAN-DAHL and R. FORSBERG (*Norsk Mag. f. Laegevid.*, May, 1931, p. 523) record a case of Schüller's disease or xanthomatosis with cranial defects, which was first described by A. Schüller of Vienna in 1915 and subsequently in 1919 by H. A. Christian of Boston, under the name of "defects in membranous bones, exophthalmos and diabetes insipidus," and hence sometimes known as "Christian's syndrome." Of fourteen cases collected by Rowland, six were in girls and eight in boys, aged from 3 to 16 years. The most constant feature is the characteristic defects in the bones of the skull, but sometimes defects are found in other bones, most frequently those of the pelvis, vertebrae, and ribs, and also in the long bones. Diabetes insipidus and exophthalmos are the next most constant symptoms. The exophthalmos, which may be unilateral or bilateral, has been regarded as a mechanical result of defects in the orbit. The course is chronic but progressive. Of Rowland's fourteen patients seven died of their disease. The present case was that of a girl, aged 14, who had injured her left temporal region at the age of 5. Five years later she developed polydipsia and polyuria; she also showed exophthalmos and retardation of growth. *X*-ray examination of the cranium revealed a typical map-like skull. The diagnosis of Schüller's disease was confirmed by the negative Wassermann reaction in the blood and cerebro-spinal fluid, the absence of Bence-Jones bodies in the urine, and, last but not least, the high blood cholesterol which indicated a disturbance of lipoid metabolism. A trial was being made of *x*-ray therapy.

203 Isolated Forward Dislocation of the Fibula

W. SCHWARZHAUPT (*Zentralbl. f. Chir.*, June 20th, 1931, p. 1579), who records an illustrative case, states that dislocation at the tibio-fibular joint unaccompanied by fracture is a very rare event. Hirschberg in 1888 collected nine forward and two backward dislocations, and Rinehart, in 1902, seven forward and five backward ones, while seventeen cases of isolated dislocation of the tibio-fibular joint were recorded by Teichmann in 1926. In most of the cases in which the head of the fibula is dislocated, the upper third of the bone shows an oblique fracture. Schwarzhaupt's patient was a lad, aged 19, who a year previously had developed a haemorrhagic effusion into the left knee-joint while playing football. The accident on this occasion was due to a fall while he was trying to free his left leg from the mud into which it had sunk. There was a well-marked protrusion of the head of the left fibula, which was very tender. The knee-joint was freely movable, and a skiagram showed an isolated forward dislocation of the head of the fibula without fracture. The dislocation was reduced under general anaesthesia. A plaster bandage was applied for a fortnight, and after another fortnight's mechanical treatment the patient was able to resume his work.

204 Treatment of Increased Intracranial Pressure

F. KENNEDY and S. B. WORTIS (*Journ. Amer. Med. Assoc.*, April, 1931, p. 1284) state that for the treatment of increased intracranial pressure to be effective it must be based on an intelligent appreciation and proper application of exact physiological knowledge. In 1927 they conducted extensive experiments in order to record pressure changes inside the skull. Their findings were that pressure is increased during sleep, and by the assumption of the horizontal position, coughing, stool straining, struggling, and ether anaesthesia; it is also raised by injections of morphine, glyceryl trinitrate, and hypotonic solutions. The pressure is reduced by raising the head above the level of the heart, by injecting caffeine sodium benzoate and hypertonic solutions, by the removal of cerebro-spinal fluid by the lumbar route, and by periodically sustained deep breathing. Clinically, the causes of increased intracranial pressure in the order of frequency of occurrence are: skull fracture, brain tumour, meningitis, cerebral haemorrhage and thrombosis, subarachnoid haemorrhage, hydrocephalus due to inflammation around the ventricular foramina, hypertension associated with headache, and acute cerebral oedema. The authors outline their method of procedure in all cases of increased intracranial pressure. A full clinical examination is associated with estimation of the blood pressure, a blood count and biochemical investigation, urine analysis, gastric lavage and analysis, and complete examination of the cerebro-spinal fluid for diagnostic purposes. The treatment given is lumbar puncture; the intravenous injection of 100 c.cm. of a hypertonic 50 per cent. solution of dextrose three times daily; the hypodermic injection of 7½ grains of caffeine sodium benzoate every four hours; the introduction at four-hourly intervals into the rectum of 120 c.cm. of a 25 per cent. solution of dextrose; and the elevation of the head of the bed by 15 to 45 degrees. If these measures prove inadequate a skull trephine is performed for ventricular puncture in the posterior fossa. In comatose patients with marked papilloedema who do not react to such procedures within two to three hours, a right subtemporal decompression is undertaken. In suitable cases anti-meningococcal serum is effective.

Therapeutics

205 The Effect of Saponin in Spinach

The dietetic and medicinal properties of spinach have been long known; experiments have shown that when two or three teaspoonfuls of it are given to an infant a rapid increase in weight often follows. In 1914 the presence of saponin in spinach leaves was discovered; spinach has, consequently, a definite haemolytic action in blood gelatin, and it has been suggested that this constituent of spinach might be deleterious. L. KOFLER (*Wien. klin. Woch.*, June 26th, 1931, p. 852) has found that other vegetables such as beetroot and potatoes contain a larger quantity of saponin than is present in spinach. The haemolytic action depends on the *p*H concentration in the vegetable juices, and this compound is decomposed by the hydrochloric acid of the gastric juice. Kofler concludes that the presence in spinach of chlorophyll, mineral salts (especially those of iron), secretin, and vitamins explains the food value of this vegetable. Saponin stimulates the digestion and promotes peristalsis and absorption.

206 Treatment of Dementia Paralytica by Diathermy

C. A. NEYMANN and M. T. KOENIG (*Journ. Amer. Med. Assoc.*, May 30th, 1931, p. 1858) report a comparative study of the therapeutic results in dementia paralytica following the employment of diathermy, and the induction of malaria and rat-bite fever (sodoku). They find that the remission and improvement rates were definitely more favourable when diathermy was used. The death rate was 18 per cent. for malaria, 10 per cent. for sodoku, and 0 for diathermy. The remissions in the case of sodoku persisted only for one or two months; in malaria for three years. They occurred in 8 per cent. of cases in the first form of treatment, and in 22 per cent. in the second. Diathermy resulted in 24 per cent. remissions, many patients showing signs of improvement shortly after the treatment had been instituted; the authors believe that still more satisfactory results will be obtained by more intensive and prolonged applications. Diathermy, moreover, can be tried in cases where the induction of hyperpyrexia by inoculation is contraindicated, and can be employed by any physician who has mastered the simple technique. In many cases ambulant patients can be thus dealt with, for complications are infrequent; the height of the consequent pyrexia can be regulated with absolute

precision, in sharp contrast with the less controllable sequels of inoculation therapy. The authors add that it is more difficult to arrest the course of rat-bite fever than is always realized ; one single injection of neoarsphenamine is often inadequate, and five or six injections may be required. They have used diathermy without untoward effects in patients suffering from arterio-sclerosis, diabetes, and advanced organic cardiac disease.

207 Serotherapy in Scarlet Fever

A. STEWART (*Minnesota Med.*, June, 1931, p. 537) restricts the use of scarlet fever antitoxin to septic or toxic cases ; all the patients in his series recovered who were so treated before the fourth day of the disease. In 7.5 per cent. adenitis and otitis media developed, and 23 per cent. of the patients had serum sickness, a few reactions being moderately severe, though most were mild. Stewart commends scarlet fever antitoxin as a specific and prompt cure for this infection, if given early, and particularly valuable in septic and toxic cases. He advises against its prophylactic employment, however, because some patients do not become immunized, and others lose such induced immunity very quickly. Moreover, in many instances the reactions are very severe, and Stewart has had one fatal case. He finds the Schultz-Charlton blanching test helpful in distinguishing scarlet fever from erythemas and drug rashes, but of little use in the diagnosis of mild cases where the rash is only slight.

208 A. LICHTENSTEIN (*Acta Paediatrica*, June 30th, 1931, p. 549) records his observations on 512 cases of moderate and severe scarlet fever treated with scarlet fever streptococcus antitoxin at the Stockholm Epidemic Hospital between 1926 and 1929, during which period the total number of cases of scarlet fever under treatment at the hospital was 2,104. The dose was 10 c.cm., and in exceptional cases 20 c.cm., injected intravenously. In uncomplicated cases the serum obviously had a rapid and favourable effect. If given within the first three days of the disease it appeared to reduce the frequency of subsequent complications as compared with cases which did not receive the serum until the fourth to seventh days of disease, or did not have any serum treatment at all. None of the cases proved fatal in which serum had been given before the appearance of any complications. Apart from slight collapse in a few cases, and one instance of serum disease, this treatment had no bad effects.

209 Liver Therapy in Anaemia

R. T. BEEBE and G. E. LEWIS (*Amer. Journ. Med. Sci.*, June, 1931, p. 796) find that the maintenance dose of liver, or a potent substitute, in cases of pernicious anaemia varies with different patients. They were able to classify 108 patients into four groups: (1) 64 in whom the red cell count remained at the normal level, with relatively small amounts of effective substance ; (2) 31 who needed large amounts ; (3) 5 in whom the count remained 20 per cent. below normal with large doses of liver and iron ; (4) 8 patients whose red cells and haemoglobin remained below normal with large amounts of liver, but maintained normal level when iron was given. They confirm previous observations regarding the inhibitory effect on liver treatment caused by infection, and suggest the special effect of arterio-sclerosis in conditioning the response to liver therapy, a larger maintenance dose being needed when arterio-sclerosis is present ; it was noted that neuromuscular symptoms decreased less in these cases. The authors conclude that the maintenance dose is " not some liver, but enough liver for the given case."

210 F. AMANTEA (*Il Policlinico*, Sez. Prat., June 22nd, 1931, p. 873), by giving doses of liver extract subcutaneously to dogs rendered anaemic by bleeding, and to human subjects suffering from various types of secondary anaemia, has obtained satisfactory evidence that these anaemias may be successfully treated by hepatotherapy. Out of 11 human subjects one only failed to show improvement ; 2 c.mm. of extract were given daily over periods of three to four weeks. The author considers that the lack of success reported by other observers may be accounted for by the administration of too small doses, by the presence of infection or other complication, or by not commencing the treatment soon enough. He is opposed to the use of fresh liver in any form, believing it is usually distasteful to the patient, disturbing to the appetite, and in consequence not taken regularly.

211 Alepol in Leprosy

B. D. DIKSHIT and T. M. ROW (*Indian Med. Gaz.*, June, 1931, p. 317) describe the action in leprosy of a sodium salt of the fatty acids of hydnocarpus oil termed alepol. Of fairly low toxicity, it is rapidly absorbed when given hypodermically or intramuscularly. Intramuscular injections of 3 per cent. strength are well tolerated and cause no marked irritation. Alepol irritates mucous membranes and, owing to this action on the gastric mucous membrane, it causes vomiting when administered orally. It possesses marked haemolytic properties ; when given intravenously it causes a fall in blood pressure due to its action on the heart. It has no special action on other systems of the body. The effects of the drug in eight cases are briefly summarized ; apparently improvement occurs only in cases with lesions falling into the group A1.

Neurology and Psychology

212 The Vibration Sense in Post-encephalitic Parkinsonism

C. WORSTER-DROUGHT and T. R. HILL (*Journ. Neurol. and Psychopathol.*, April, 1931, p. 318) record twenty-five cases of generalized post-encephalitic Parkinsonism, all of which were found to exhibit definite impairment of the vibration sense, and deep-pressure pain. The test employed was measurement of the vibrations by a tuning-fork, the base of which was placed firmly upon a bony surface or prominence. Clinically there is an extremely close correlation between this sense and the ability to recognize passive movements; when one is lost or impaired, the other is affected proportionately. The curves obtained by plotting the time readings for various bony projections, in both normal and Parkinsonian patients, were found to be parallel, but in Parkinsonism the curve obtained differs in showing a diminution in the period of perception of the stimulus amounting to five to twelve seconds. The more severe the syndrome, the greater was the reduction in the period of perception, this period being at its shortest in cases with marked bradyphrenia. Cases of Parkinsonism in which one side of the body was more involved than the other yielded lower readings on the more affected side. The authors discuss the explanation of the slight diminution of vibration sense, and of appreciation of the deep-pressure pain, and suggest the presence of some degree of depression of the essential thalamic function consequent on the encephalitic infection.

213 Integration of Sensory Processes

R. S. CREED (*Brain*, April, 1931, p. 29) reviews critically the various opinions held about the physiological integration of sensory processes within the grey matter of the nervous system. He agrees that the afferent pathway from a receptor organ to the higher levels of the brain can no longer be visualized as a telegraph line, being more similar to a complicated telephone exchange. Impulses travelling along peripheral nerve fibres influence, and are influenced by, stimuli from end-organs of similar and of diverse function, being at different times inhibited or reinforced. Special attention is devoted to the case of the eye, and the way in which physical integration of the processes originated in the retina is brought about. The classification employed by the author is based on the character of the interaction which is manifested, the types being: (1) temporal summation ; (2) spatial summation ; (3) simultaneous contrast phenomena ; and (4) inhibition in the retino-cerebral apparatus. Creed discusses the physiological interaction between the two retino-cerebral apparatus, and asserts that binocular fusion and rivalry of contours, of brightness, or of colour are mainly psychical

phenomena involving interplay between sensations and percepts There is no more than a slight degree of convergence of the conducting paths from corresponding areas of the two retinæ to form a final common path to the sensorium Examples are taken also from the sensations of pain cold, and heat originating in other organs and Creed adds that in the past far too little attention has been paid to such integrated mechanisms by most workers on the physiology of sense organs

214 Ascending Medullary Syphilis

L BOURRAT (*Journ de Med de Lyon* June 20th 1931 p 381) states that besides the common form of medullary syphilis giving rise to spastic paraplegia there exist, though rarely, flaccid paraplegias which are due neither to radiculitis nor to tabes since motor troubles with muscular atrophy alone attract attention, and sensory disturbances are absent Such a case is recorded, commencing as a flaccid paraplegia, with weakness in the lower limbs it developed into a quadriplegia without any pyramidal symptom Though the patient denied alcoholism and specific infection, the Wassermann reaction of both the blood and cerebro spinal fluid was strongly positive The complete absence of sensory symptoms excluded radiculitis or polyneuritis, and in conjunction with the results of laboratory tests, pointed to a medullary syphilis of poliomyelitic type The patient responded rapidly to treatment with mercury cyanide and novarsenobenzol before the muscular atrophy became pronounced The elective site of the disease is the anterior horns and as demonstrated anatomically, in the anterior radicular arteries Bourrat, agreeing with Lortat Jacob and Delille and Girot that medullary syphilis never occurs in regularly treated subjects, but mostly in those completely ignorant of their infection, believes that a similar ignorance is found in many cases of radiculitis yielding to arsenobenzol therapy In such cases an intensive specific treatment instituted early in the disease, always gives complete and rapid functional cure

Obstetrics and Gynaecology

215 The Action of Adrenaline on Abnormal Uterine Contractions

P RUCKER (*Gynecol et Obstet* May, 1931 p 412) states that adrenaline will cause an intense contraction ring in the pregnant uterus to disappear for a sufficiently long period to permit the performance of version or extraction by forceps Prolongation of labour is frequently due to an unrecognized contraction ring round the neck of the foetus A case is quoted in which a contraction ring in this position had proved resistant to deep anaesthesia A hypodermic injection of 0 5 c cm of a 1 in 1 000 solution of adrenaline caused the disappearance of the ring in a few minutes, it was then easily possible to extract the child by version As the effect of adrenaline is of short duration it sometimes becomes necessary to repeat the dose Since this preparation causes cessation of uterine contractions its use in threatened abortion is logical Rucker quotes a case in which by repeated injections parturition was postponed for three weeks after the first pains, normal delivery of a live child resulted

216 Pregnancy Toxaemia with Persistent Hypertension

R MITCHELL (*Canadian Med Assoc Journ*, July 1931 p 71) reports a case of recurrent toxaemia in a multipara which was associated with persistent hypertension The patient aged 46 came under observation owing to three pregnancies having been complicated by toxaemia and her systolic blood pressure remaining steadily over 200 Details are given of pregnancies in 1924, 1927 and 1929, respectively, these being the last three of nineteen pregnancies sixteen living children having been born the patient was apparently in good health until 1924 Mitchell remarks that the patient is still able to carry on her full duties as the mother of a large family, and it is difficult to diagnose the existence of a chronic nephritis since the urinary signs are negative although she undoubtedly has hypertension, which gives rise to such symptoms as severe headache He concludes that the strain of repeated pregnancy has been too great for the liver and kidneys bringing about serious crises in her last three pregnancies, during them albuminuria was present and casts were found Although renal efficiency tests have failed to reveal any kidney defects there is little reason to doubt that another pregnancy would be attended with a recurrence of the toxaemia Menstruation continues regularly, and such a possibility has therefore to be seriously considered The author adds that it is probable that after several years the hypertension will lead to arteriosclerosis of the kidneys

217 Protozoal Vaginitis

J P GREENHILL (*Journ Amer Med Assoc* May 30th, 1931, p 1862) finds that vaginitis due to *Trichomonas vaginalis* is fairly common in both pregnant and non pregnant women A profuse vaginal discharge is associated with burning or itching sensations in the vulva The vaginal mucosa is usually orange red and roughened and the discharge is greenish yellow foamy purulent and foul smelling The *Trichomonas* organisms are easily detectable in hanging drop preparations because they are actively motile For treatment Greenhill recommends thorough cleaning of the vulva and vagina with tincture of green soap washing this out with mercuric chloride or tap water applying hexyl resorcinol freely and inserting into the vagina tampons soaked in glycerin This treatment is repeated every two hours until two consecutive examinations of hanging drop preparations are found to be free from the organisms Patients should be re examined immediately before and just after the subsequent menstrual periods since recurrence of the infection then is not uncommon The author adds that the source of these parasites is still uncertain Some authorities hold that they pass from the rectum into the vagina but others believe that the intestinal form of *Trichomonas* is a different species The infection does not appear to be contagious

218 H G FURNELL (*Med Journ of Australia* May 16th 1931 p 604) discusses two cases of infection by the *Trichomonas vaginalis* which were at first suspected to be gonorrhoeal the motility of the infecting organism cleared up the diagnosis He employed the usual treatment of scrubbing the vagina with a swab using green soap and a little water After drying, the mucous surfaces were painted with 2 per cent mercurochrome and a glycerin tampon was subsequently introduced He is inclined to think that diathermy may prove effective in this condition

219 Uterine Bleeding from Essential Thrombopenia

According to B ZONDEK (*Zentralbl f Gynak* May 30th, 1931, p 1791) essential thrombopenia is a not very uncommon cause of severe uterine haemorrhage this may be the most prominent, or even the only clinical symptom The diagnosis is made by examination of the blood which shows a prolonged bleeding time usually a normal coagulation time and a striking reduction in the thrombocyte count The best treatment consists in blood transfusion, followed by *x* radiation in stimulant doses of the bone marrow irradiation of the spleen is more likely to do harm than good and improvement following splenectomy may be vitiated by relapses The case is described of a patient who at puberty had to remain in bed for three months on account of menorrhagia accompanied by bleeding from the nose and gums At the age of 23 to 25 these symptoms recurred in such a degree as to end [illegible] life, the platelet count was reduced by 94 per cent [illegible] the haemoglobin to 15 per cent Splenectomy was performed as a last resource and the patient [illegible] re establishment of the blood picture enjoyed [illegible] for four years until copious metrostaxis accompanied by generalized subcutaneous bleedings again [illegible] life Recovery now followed the transfusion of 200 c cm of blood and irradiation of the long bones of one leg

Pathology

220 Effect of Carbon Dioxide on Respiration

J. BARCROFT and R. MARGARIA (*Journ. Physiol.*, June 26th, 1931, p. 175) have experimentally investigated the effect of CO_2 inhalation upon human respiration. They find that the rates of both inspiration and expiration are quickened, and that the time taken by each phase is shortened. The rate of inhalation of air at the middle of inspiration varies almost exactly with the total ventilation. These variations were found by the authors to be the same for a person, whether the hyperpnoea was produced by CO_2 inhalation or by exercise. The maximum total ventilation produced by exercise was nearly twice as great as that produced by the highest concentration of CO_2 which could be breathed for a quarter of an hour. The authors conclude, therefore, that CO_2 inhalation and exercise act in a similar way, but the maximal effect of the first falls short of that of exercise. The breathing of 7.5 per cent. of CO_2 for twenty minutes produces a shock from which the system does not wholly recover for some hours. It seems clear that carbon dioxide can only be one contributory factor in the production of dyspnoea by exercise.

221 Bacteriolysis of Koch's Bacillus in the Tissues

After summarizing their previous work on the bacteriolysis of Koch's bacillus, C. RICHET, jun., DUBLINEAU, and R. COUDER (*Journ. de Physiol. et de Pathol. Générale*, June, 1931, p. 277) record the results of further experiments, which indicate that bacteriolysis is caused by healthy tissues; similar work on tuberculous subjects has not yet been undertaken. This bacteriolysis in the tissues is believed to be due to a chemical principle (not a bacteriophage), which is thermolabile and filterable; it belongs to certain proteins of animal origin, and was found to be particularly abundant in the hepatic, muscular, and globular proteins. While the important process in the cure of tuberculosis—namely, the elimination of the bacilli by the bile, urine, or intestine—is not ignored, the authors consider this chemical defence, either by the phagocytic ferments or more especially by the parenchymatous cells, to be a predominant factor.

222 Sedimentation of Red Cells

B. ENOCKSSON (*Acta Med. Scand.*, May 26th, 1931, p. 360) has shown that the electrolytes are determining factors in the sedimentation rates of red cells. Red corpuscles in one and the same suspension can be separated into at least two groups with different rates of sedimentation, suggesting that structural qualities of the corpuscles may also be of significance in determining the sedimentation rate. The author has also shown that this differentiation in the sedimentation rate may be caused by quite minute variations in salt concentration such as are not unlikely to occur *in vivo* under pathological conditions. It is suggested that the cause of these phenomena may consist in variations in agglutination produced by different salt concentrations, in conjunction with structural differences in the red cells which may be present even in the same blood.

223 The Suprarenals in Experimental Rheumatism

G. ALEXANDRESCO and MARIE LAUTIER (*Acta Rheumatologica*, May, 1931, p. 19) made a study of the lesions in the suprarenals of monkeys experimentally infected with the diplo-streptococcus of rheumatism, with the following results. The lesion bore a direct relation to the intensity, duration, and method of administration, and the form of the micro-organism. In attenuated parenteral infection of short duration the suprarenals showed a histo-physiological reaction in the form of overactivity which was most marked in the cortex; this reaction was in no way characteristic of rheumatic infection. In repeated and prolonged infection by the intestinal tract with the diplococcal form an extensive degeneration with defective function of the cortical parenchyma was found at the end of six weeks, together with an almost complete necrosis of the medulla, and an intense lympho-connective tissue reaction. In an attenuated and prolonged infection by the intestinal tract the suprarenal parenchyma at the end of three months was much reduced quantitatively and qualitatively, both in the cortex and in the medulla, and there was an intense connective tissue reaction. Generally speaking, in experimental rheumatism in monkeys the suprarenals are constantly affected, but, contrary to what the authors found in the case of the thyroid gland, the histological reactions were in no way characteristic.

224 Morbid Histology of Pink Disease

Very few necropsies in pink disease have included a microscopical examination of the nervous system, and, therefore, W. G. WYLLIE and R. O. STERN (*Arch. Dis. in Childhood*, June, 1931, p. 137) record the results of the histological examination of this system in seven cases. In all of these the spinal cords showed the diffuse infiltration with small cells first described by Paterson and Greenfield, and considered by those investigators to be glial rather than haematogenous. The present authors agree with this conclusion, but they could not demonstrate the existence of cellular processes by either neuroglial or microglial staining methods. Chromatolysis of the central type was found in the anterior horn cells of the spinal cord in five cases; it was more apparent in the lumbo-sacral region, particularly extensive in the most chronic case, and clearly due to an "axonal reaction." In only two instances was there any abnormality above the level of the medulla. The authors conclude that the essential lesions in pink disease appear to be situated in the skin and in the nervous system, though it is probable that the skin lesion is not pathognomonic. In all the cases the clinical symptoms were much in excess of the pathological findings, although cellular infiltration was always present, and degeneration of the peripheral nerves was found in four cases. Discussing the pathogenesis of this condition, the authors remark that vitamin deficiency can be excluded, and that no history of a preceding infection or the presence of an inflammatory cervical adenitis was obtained. Liver therapy proved effective in the general condition of some of the patients under observation, the irritability and pain quickly subsiding, and there being no recurrence.

225 Yellow Fever in White Mice

J. E. DINGER (*Zentralbl. f. Bakt.*, June 24th, 1931, p. 194) has confirmed and extended the work of Theiler on the susceptibility of the white mouse to yellow fever. The intracerebral inoculation of mice with 0.05 c.cm. of infective blood from a *rhesus* monkey gives rise, after an incubation period of five or six days, to an illness characterized by ruffling of the coat, loss of the usual activity, photophobia, paresis of the hind legs, tonic and clonic contractions of the whole body, and finally coma and death in six to nine days. At the necropsy there is found an acute encephalitis, often accompanied by dilatation of the skin vessels, swelling of the lymph glands, haemorrhages into the stomach, erosion of the gastric mucosa, fatty degeneration of the liver, and enlargement of the suprarenals. Microscopically the brain shows dilatation of the capillaries, proliferation of the vascular endothelium, and cellular infiltration, but no specific eosinophilic inclusion bodies, similar to those described by Torres, are to be found in the ganglion cells. By the intracerebral passage of the brain suspension the disease can be carried on indefinitely through mice, and even after eighteen passages the virus is still capable of giving rise to typical yellow fever in monkeys. In the mouse the virus has a strong neurotropic affinity, being limited in distribution to the central nervous system and the suprarenals. Infection is possible by the subcutaneous, intramuscular, and intraperitoneal routes, but the proportion of positive results is lower than after intracerebral inoculation, which is almost uniformly successful. Filtration experiments with brain suspension in 10 per cent. rabbit serum showed that the virus readily passed through Seitz filters; saline solution was found unsuitable for making suspensions, since it killed the virus very rapidly. The filtrates can be neutralized by immune monkey serum.

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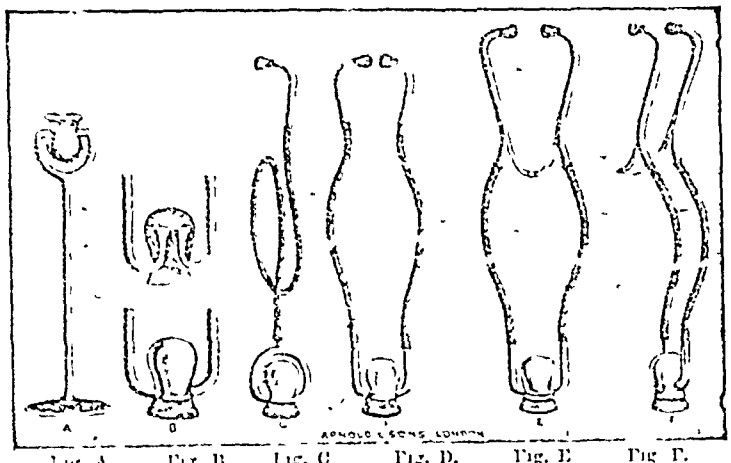


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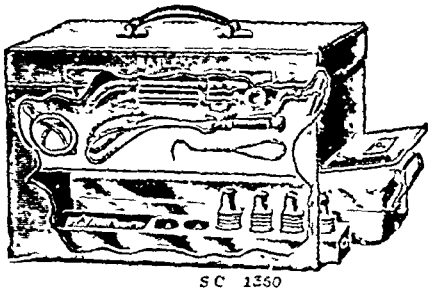
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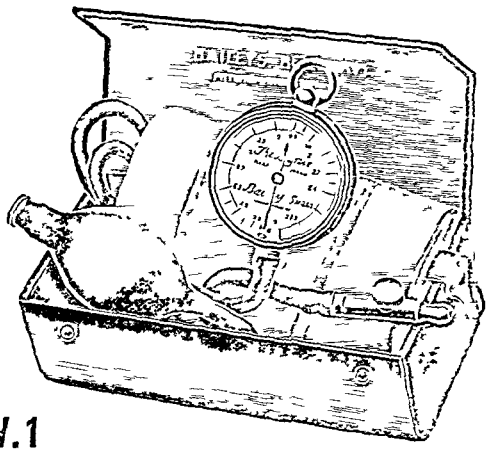
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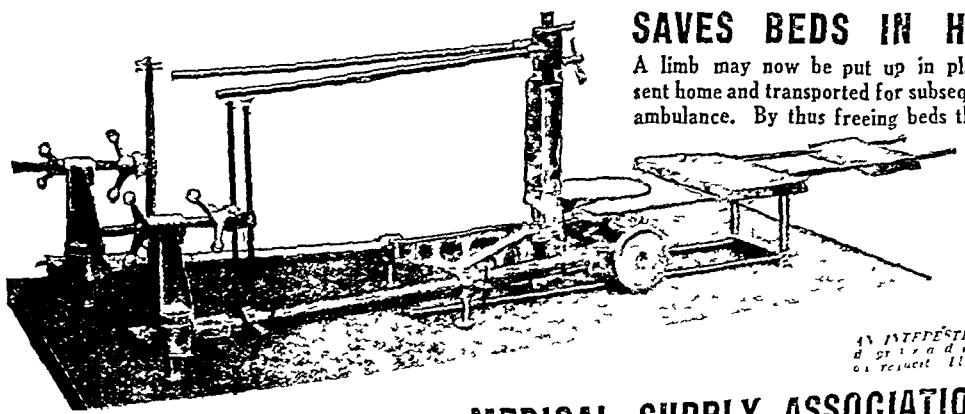
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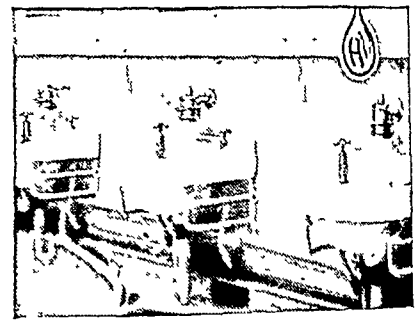
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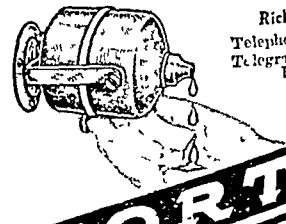
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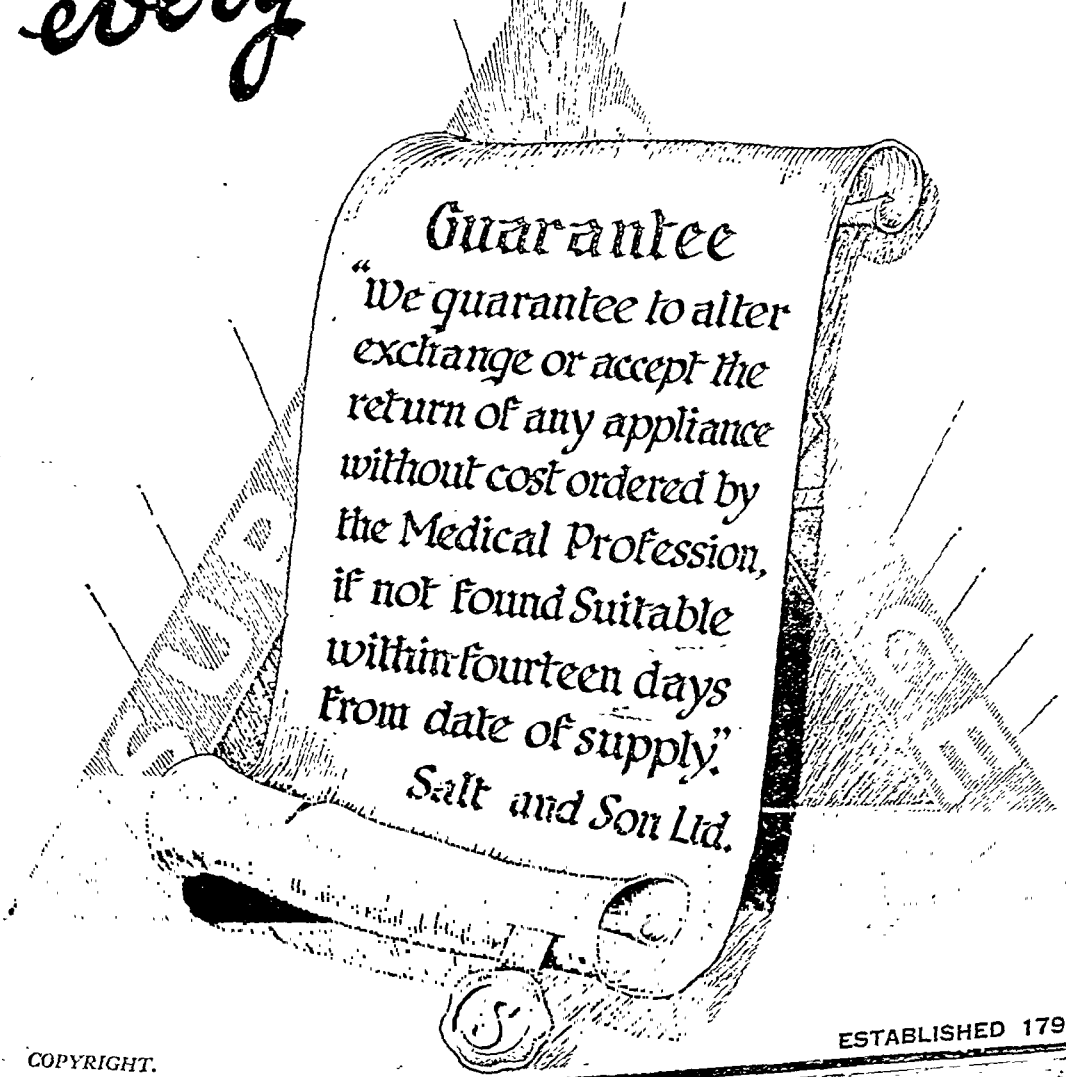


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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent*

TYKEFORD ABBEY, NEWPORT PAGNELL,
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FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray, and Ultra-violet Light. Diathermy and Foam Baths. Billiards, tennis, etc. Fees from five gns. per week.

Apply, Dr. D. E. M. DOUGLAS-MORRIS. *Telephone*: Newport, Pagnell 121.

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

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HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES, either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out-door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

Now removed to:

CHISWICK HOUSE, PINNER, MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful and secluded grounds.

Fees from 10 guineas per week.

Voluntary Patients received for treatment.

Special provision for "Temporary" patients under the new Mental Treatment Act.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

[illegible] to terms, etc., apply to—
[illegible] M.D., Medical Supt.
7 Barnwood.

FENSTANTON,
CHRISTCHURCH ROAD,
STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (*See Medical Directory, p. 2234.*) Apply J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8450.

THE LAWN, LINCOLN.

This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions in adults. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,
Dr. MARY R. BARKAS, M.D., D.P.M.

FUNCTIONAL NERVOUS DISORDERS.

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For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 2231 GATLEY.

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Ladies and Gentlemen received for treatment under certificates, and without certification as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards.

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The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

BETHLEM ROYAL HOSPITAL, for Nervous and Mental Disorders,

Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg. Tel. Address: Bethlem, Beckenham *Telephone*. Springpark 1180—1181.
Station. Eden Park (Southern Railway).

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
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Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
With a view to early treatment voluntary or uncertified patients are admitted
Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise.
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Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
Furthermore, provision is made for Electro-Therapy and Hydro Therapy to be carried out in all their forms
In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.
The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms
For forms and further particulars apply to the Physician-Superintendent at the Hospital

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GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON" *Telephone* NORTH 0828

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses
Conveniently situated four miles from Charing Cross. Easy access from all parts
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification
Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the Medical Superintendent.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods. Telephone 51.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." *Telephone*: RODNEY 4731—4732

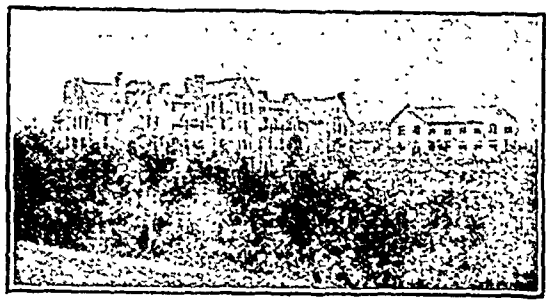
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Physician Superintendent. - J. M. JOHNSTON, M.B., D.P.H., etc.

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Dr Jane Walker, C.H., J.P., LL.D., Medical Superintendent. Dr. Eleanor Soltau, Assistant Medical Supt.

For all information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone: NAYLAND 1.

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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)



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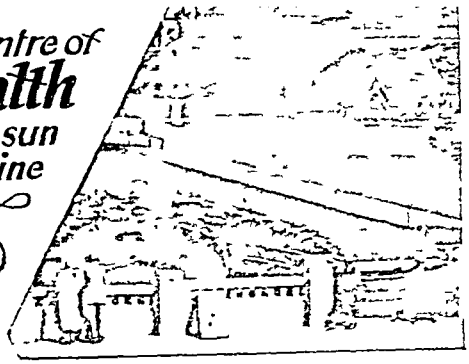
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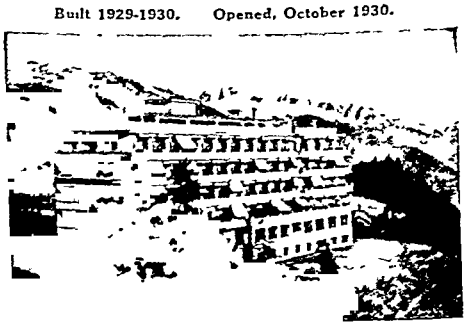
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According to this principle, which has turned out well, we are successfully treating since 6 decades: Inflammation of Vertex, Arthritis, Deformations, hereditary Luxation of Hip-joint, particularly after unsuccessful taxis, Paralysis of any kind, consequences of Meningitis of Children, Curvature of the Spine. The beautiful quiet situation of our Sanatorium in the midst of vast parks, and the excellent diet, provide for the increased general health of our patients. Prospectus with full particulars.

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King's College Hospital Medical SCHOOL (University of London),

Denmark Hill, S.E.5.

CENTENARY YEAR 1930-1931.

At the Opening of the Winter Session on Thursday, October 1st, the Introductory Address will be given at 2.15 p.m. by Professor H. R. DEAN, M.D, F.R.C.P., Professor of Pathology and Master of Trinity Hall, in the University of Cambridge.
Mr. A. D. POWER, Vice-Chairman of the Committee of Management of King's College Hospital will preside.
All past Students of the Medical School are cordially invited to attend.
The Past and Present Students' Dinner, at which Mr. L. VERNON CARGILL, F.R.C.S. will preside, will be held the same evening at 7 for 7.30, at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2. (The Secretaries to the Dinner Committee are Dr. G. de B. Turtle and Dr. J. L. Livingstone.)
H. WILLOUGHBY LYLE, M.D., F.R.C.S., Dean.

The Queen Alexandra Sanatorium FUND.

A limited number of GRANTS will be made during the Autumn from this Fund to help British patients of small means suffering from Pulmonary Tuberculosis to obtain Treatment at Davos, Switzerland. Applications should be made before the end of September. Forms and particulars may be obtained from Mr. W. G. LOCKETT, Davos Platz, Switzerland.

LONDON HOSPITAL MEDICAL COLLEGE & DENTAL SCHOOL.

THE WINTER SESSION will Open on Thursday, October 1st.

The Hospital is the largest in England. There are 859 beds in constant use. Last year's number of in patients, 14,256; out patients, 86,554; attendances, 529,543; dental patients, 6,063; major operations, 7,401.

The MEDICAL COLLEGE and DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and the most approved appliances. The STAFF is so large as to permit of individual attention being paid to all students.

MEDICAL UNIT—A Clinical Unit in Medicine, under the charge of a whole time Director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and coordination of medical research.

RESEARCH FUNDS of approximately £113,000 give unrivalled facilities for Medical Research.

SCHOLARSHIPS and PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £360 and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200.

APPOINTMENTS—Over 160 Appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations, for the Primary and Final Fellowship Examination of the Royal College of Surgeons, and for the Membership Examination of the Royal College of Physicians.

HOSPITAL PRACTICE—*Exceptional opportunities are offered to qualified Practitioners* wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

A Club's Union, an *Athletic Ground* of over 13 acres, and a *Student's Hostel* promote the recreation, health, and comfort of the Students.

For Prospectus and Particulars apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School.

MILE END, E.1.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

POST-GRADUATE STUDY AT THE
NORTH-EAST LONDON POST-GRADUATE COLLEGE

The Prince of Wales's General Hospital, Tottenham, N.15.

Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

NEXT INTENSIVE FORTNIGHTLY COURSE, DEALING WITH SPECIAL & GENERAL SUBJECTS, COMMENCES ON OCTOBER 12th, 1931.

Prospectus and Syllabuses on application to the Dean.

FELLOWSHIP OF MEDICINE,

1, WIMPOLE STREET, W.1.

Special Courses in September: Medicine and Surgery at the Westminster Hospital and at the Metropolitan Hospital, Diseases of Chest at the Brompton Hospital, Infants' Diseases at the Infants Hospital, Ophthalmology at the Central London Ophthalmic Hospital, and Psychological Medicine at the Bethlem Royal Hospital. V.D. for Women Graduates only.

Write, or telephone Langham 4266 for detailed syllabuses.

NATIONAL POST-GRADUATE SCHOOL OF RADIOTHERAPY.

The Mount Vernon Hospital and Radium Institute, Riding House Street, London, W.1.

Dean - Sir CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S.

An intensive Course in

RADIOTHERAPY

especially in its relation to Malignant Disease

will be held at the above School, commencing Monday, October 5th, 1931.

The Course will be repeated on subsequent dates.

Copy of the syllabus and full particulars may be obtained on application.

In addition, periods of hospital practice can also be arranged.

The Dean will be glad to see prospective entrants by appointment.

THOS. A. GARNER, Secretary.

LONDON SCHOOL OF DERMATOLOGY.

St. John's Hospital for Diseases of the Skin,
Leicester Square, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 15th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam. will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

34th ANNUAL EDITION.

PATON'S LIST OF SCHOOLS.

An aid to Parents in the selection of Schools and Tutors

Crown 8vo. 1,080 pages. Price 5/-, post. 9d.
Contains particulars, with illustrations of Preparatory, Private, and Public Schools for Boys and Girls, Tutors, Co-Educational Schools, Domestic Science, Secretarial Training, and Physical Training Colleges, etc.
ADVICE ALSO GIVEN, FREE OF ALL CHARGE.
J. & J. PATON, Educational Agents,
143 Cannon Street, London, E.C.4.

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in *Chemistry*, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology. *New Science Buildings*, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925.

Prospectus from Head Master.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are [illegible] for practical instruction in Midwifery. These include delivery of normal cases and attendances at all abnormal cases, operative work, ward rounds of visiting staff, V.D. clinics, ante-natal clinics. For further particulars, etc., apply to EDGAR DIEDEN, the Secretary,

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

MEDICAL COACHING

for STUDENTS and PRACTITIONERS.

ARE YOU PREPARING FOR ANY MEDICAL EXAMINATION
DO YOU WANT TO PASS AT THE FIRST ATTEMPT?
DO YOU WANT TO REDUCE YOUR WORK TO A MINIMUM?

Enrol for a Course of Postal Tuition for your Examination at the

MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1.
Telephone: Welbeck 8901.

Courses always in progress for the
1st, 2nd and Final M.B., B.S. London, and all other Universities.
1st, 2nd and Final Conjoint, Edinburgh. Triple, and L.M.S., S.A.
D.P.H. (Cantab., Lond., Vict., Dublin, &c.)
M.D. London, M.R.C.P. London and Edin.
M.D. Theses (all Universities, Brit. and Colonial).
F.R.C.S. of England, Edinburgh and Ireland, M.S. Lond., M.C. Cantab., &c.
Diploma in Psychological Medicine.
Diploma in Tropical Medicine.
Diploma in Ophthalmology.
Dental Examinations.

DO NOT RISK FAILURE!

VALUABLE BOOK FREE!

Write at once for our "Guide to Medical Examinations," and a copy will be sent post free by return.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(University of London).

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.).

The COURSE OF STUDY is now Divided *into TWO PARTS:* *Section A (Clinical and* Laboratory Instruction) and Section B (Tropical Hygiene), each of which can be taken independently of the other, Section A being a three months' course and Section B a two months' course.

This Revised Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF COURSES, 1931-32.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION).

1st COURSE: 29*th September*—18*th December*, 1931. 2nd COURSE: 4*th January*—24*th March*, 1932. 3rd COURSE: 11*th April*—30*th June*, 1932.

SECTION B (TROPICAL HYGIENE).

1st COURSE: 18*th January*—18*th March*, 1932. 2nd COURSE: 18*th April*—17*th June*, 1932.

FEES (inclusive):
Sec. A, £25; Sec. B, £15.

Research Studentships vacant, value £250 p.a.

For Prospectus and Synopsis of Lectures, apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1.

UNIVERSITY OF LONDON, KING'S COLLEGE.

FACULTY OF MEDICAL SCIENCE.

COMPLETE COURSES OF STUDY ARE PROVIDED FOR THE PRELIMINARY AND INTERMEDIATE EXAMINATIONS OF:

(1) The University of London.
(2) The Conjoint Examining Board of the Royal Colleges of Physicians and Surgeons; and also for
(3) The Degree in Dental Surgery (B.D.S.).
(4) The Primary Fellowship Examination of the Royal College of Surgeons.
(5) The *First Professional Examination* for the Licence in Dental Surgery of the Royal College of Surgeons.

The College, with a full complement of University Faculties, offers to Medical Students the advantages of a broad university education before they proceed with the purely clinical subjects in the associated or other hospitals.

Valuable Scholarships and Prizes are awarded on the results of examinations held annually.

The hostel for men students (King's College *Hall, Champion Hill, S.E.5) contains accommo*dation for 80 students. The hostel for women students is at 58, Queensborough Terrace, Bayswater.

For detailed prospectus of the Medical and Dental Courses and for further information apply to the Dean, Prof. D. M. BLAIR, M.B., Ch.B., or to

S. T. SHOVELTON, M.A.,
Strand, W.C.2. Secretary.

UNIVERSITY OF LONDON.

WILLIAM JULIUS MICKLE FELLOWSHIP.

Applications are invited for the William *Julius Mickle Fellowship, which is of the value* of at least £200, and is awarded by the *Senate to the man or woman who, being* resident in London and a graduate of the University, has, in the opinion of the Senate, done *most to advance Medical Art or Science* during the preceding five years. Applications must be made before October 1st, 1931. Further particulars can be obtained from the Academic Registrar, *University of London, South Kensington, S.W.7.*

July 7th, 1931.

County Borough of Burnley.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF SCHOOL

Applications are invited from registered Medical Practitioners (male or female) for the post of Assistant Medical Officer of Health.

The officer appointed should either have held a previous appointment as Medical Officer of an Ante-natal Clinic, with the approval of the Ministry of Health, or have had at least three years' experience in the practice of his or her profession, and special experience of practical Midwifery and Ante-natal work. The holding of a Diploma in Public Health will be deemed an *additional qualification for the post.*

The successful candidate will be required to act as Resident Medical Officer at the Council's Maternity and Children's Hospital (45 beds), and perform duties in connection with the *Maternity and Child Welfare Scheme, including* infant welfare and ante-natal clinics; duties in connection with the School Medical Service, and, in addition, such other duties as may be required from time to time by the Medical Officer of Health.

The salary will be at the rate of £500 per annum, rising by *annual increments of £25* to a maximum of £700 per annum, *subject to a deduction of £125 per annum for board,* lodgings, and laundry.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the selected *candidate will be required to pass a medical* examination.

Application forms, together with conditions of service, may be obtained from the Medical Officer of Health, Public Health Department, St. James's Street, Burnley, to whom applications, accompanied by copies of three recent testimonials, *should be forwarded not later than* Wednesday, September 30th.

Canvassing, either directly or indirectly, will be a disqualification.

COLIN CAMPBELL,
Town Hall, Town Clerk.
Burnley.
September 4th, 1931.

MIDDLESEX HOSPITAL MEDICAL SCHOOL,

LONDON, W.1.

(University of *London.*)

The WINTER SESSION begins on October 1st, and new students should apply for admission at an *early date.*

The Medical School *and Hospital* occupy a central position within a few minutes' walk of Oxford Circus. They are fully equipped for *teaching the entire* Medical curriculum both for *University Degrees* and the Conjoint Course.

The new West Wing of the Hospital is fully occupied; the rebuilding of the remainder is proceeding without the loss of a single bed; the remodelled Out-patient Department continues to *expand*; the newly built Residents' Block affords greatly improved facilities; the Nurses' Home is the finest in London. These, with other new *buildings, including magnificent* Laboratories, give to the Middlesex Hospital and its Medical *School the most modern facilities obtainable in* Great Britain.

THIRTY-ONE RESIDENT APPOINTMENTS are offered annually to students recently qualified. In addition, NINE REGISTRARS are also *appointed annually.*

SCHOLARSHIPS AND PRIZES of a value exceeding £1,000 are awarded each year.

Large Athletic Grounds at North Wembley.

There is no accommodation for women students. Well-equipped Restaurant.

For further particulars and Prospectus, apply to the Dean, T. IZOD BENNETT, M.D., F.R.C.P., or School Secretary, Middlesex Hospital, Mortimer Street, London, W.1.

Department of Health for SCOTLAND.

APPOINTMENT AS MEDICAL OFFICER.

The Department of Health for Scotland are *prepared to receive applications from regis*tered Med[illegible] (men and women) for the po[illegible]

Medical must have had at least five years' experience in Medical work, and have knowledge of Pharmacology. Experience in administrative medical work will *be regarded as an additional recommendation.*

Age.—Must not be over 45 years.

Salary.—£600, rising by annual increments of £25 to £850, and thereafter by annual increments of £50 to a maximum of £1,000 per annum. Cost of living bonus is at present payable in addition. The bonus at present rates on £600 is £126, and on £1,000 is £146 9s., but the amount of the bonus is liable to review. Salary on appointment is normally at the *minimum* of the scale, but in an exceptional case a candidate possessing special qualifications or experience may be appointed at a higher point in the scale, subject to a maximum entering salary of £700 per *annum, plus* Civil *Service bonus* (at present £133 14s. per annum).

Duties.—Administrative duties in connection with medical services under the National Health Insurance Acts, including association with Regional Medical Officers of the Department and their contacts with Medical *Practitioners.*

Further particulars and forms of application may be had *from* the Secretary, Department of Health for Scotland, 125, George Street, *Edinburgh.* Letters applying for forms of application, etc., should have the words "*Medical* Officer" boldly written on the top left hand corner of the envelope. No application will be considered if received after October 8th.

Borough of Chesterfield.

MUNICIPAL MATERNITY HOME.

APPOINTMENT OF CONSULTANT OBSTETRIC SURGEON.

The Chesterfield Corporation invite applications for the appointment of Consulting Obstetric Surgeon to the Municipal Maternity Home.

The scale of fees for this appointment is as follows:

(a) Lectures to Pupil Midwives—£1 1s. per lecture;
(b) *Consultations*—£2 2s. per consultation;
(c) Minor operations—£5 5s. per *operation*;
(d) Major operations—£10 10s. per operation.

Forms of application, together with the terms of appointment, may be obtained from the *Medical Officer of Health*, Saltergate, Chesterfield, to whom applications must be *returned* not later than Saturday, September 19th.

J. L. FEATHER,
Town Clerk's Office, Town Clerk.
Chesterfield.

The East London Hospital for CHILDREN, Shadwell, E.1.

There will be a DEMONSTRATION of Clinical cases on Wednesday, September 16th, at 4.30 p.m., to which you are cordially invited. Tea at 4 p.m.

City of Birmingham Education COMMITTEE.

APPOINTMENT OF SPECIAL SCHOOLS MEDICAL OFFICER and DIRECTOR OF CHILD GUIDANCE CLINIC

The Birmingham Education Committee intend shortly to appoint a full time Medical Officer (man) to act in the following capacities.

(i) Special Schools Medical Officer
(ii) Director of Child Guidance Clinic to be established in the near future

Candidates for the post should be fully qualified Medical Practitioners, they should have had good experience in the treatment of diseases of children, and should possess a knowledge of psychological medicine Psychiatric experience is essential

The salary offered will depend on the qualifications and experience of the selected candidate, but will not exceed £800 per annum

The successful candidate will be required if necessary to train in Child Guidance Work, and in this event a Fellowship will be available

Canvassing directly or indirectly, will be regarded as a disqualification

Further information as to the conditions of the appointment may be obtained from the Chief Education Officer, Education Offices Council House Birmingham to whom all applications should be addressed Applications should give full particulars as to age, training, qualifications, and special experience and should be posted in time to reach the Chief Education Officer on or before September 21st

City of Birmingham Education COMMITTEE.

APPOINTMENT OF ASSISTANT SCHOOL MEDICAL OFFICERS (Women)

Applications are invited for the appointment of Two Women Assistant School Medical Officers Candidates must have had at least three years experience in the practice of their profession subsequent to obtaining a registerable qualification Salary £500 rising by annual increments of £25 to a maximum of £700 £10 per annum travelling expenses are allowed Form of application which should be returned not later than first post on October 5th, together with further information, may be obtained from the undersigned Communications should be endorsed Assistant School Medical Officer

Canvassing will disqualify

Education Offices P D INNES
Margaret Street, Chief Education Officer.
Birmingham September 12th 1931

City of Birmingham.

PUBLIC HEALTH DEPARTMENT

LITTLE BROMWICH HOSPITAL FOR INFECTIOUS DISEASES

JUNIOR ASSISTANT MEDICAL OFFICER (male) required

Candidates must be unmarried and must have held previous resident posts in General or Children's Hospitals

Salary at the rate of £300 per annum together with board, etc This appointment is limited to 12 months

The officer appointed will be required to pay to the Council all fees, allowances, and emoluments (other than the foregoing) received by him

It is not feasible to attend classes for Part I of the D P H in conjunction with this appointment

Forms of application may be obtained from the Medical Superintendent, Dr F H R HARRIES and should be returned to him on, or before, Thursday, September 24th

F H C WILTSHIRE,
The Council House, Town Clerk
Birmingham

City of Birmingham.

MENTAL DEFICIENCY ACT COMMITTEE.

MONYHULL COLONY.

Applications are invited for the post of SECOND ASSISTANT MEDICAL OFFICER (Lady) in the above Colony Candidates must have held resident appointments in a General Hospital and preference will be given to those with Mental experience

Commencing salary £350 per annum rising by annual increments of £25 to £450 per annum with full residential emoluments, pensionable under Asylums and Certified Institutions (Officers Pensions) Act 1918 Under certain conditions a further £50 per annum is payable for the possession of a Post Graduate qualification in Psychological Medicine

Immediate application should be made to the undersigned

Council House, F H C WILTSHIRE
Birmingham Town Clerk
September 1st, 1931.

County Borough of Southampton

ASSISTANT MEDICAL OFFICER OF HEALTH

Applications are invited for the post of Assistant School Medical Officer at a salary of £500 rising by annual increments of £25 to £750

The applicant appointed will hold office during the pleasure of the Council, and the appointment will be determinable by two months notice on either side The person appointed will be required to carry out duties in connection with the Medical Inspection and Treatment of School Children the Public Health Acts Mental Deficiency Acts 1913 27 Maternity and Child Welfare and Venereal Diseases work of

The successful candidate must devote the whole of his time to the duties of the office and the performance of such other duties as may be required under the direction of the Medical Officer of Health

The appointment will be subject to the approval of the Board of Education and the Minister of Health

The Local Government and Other Officers Superannuation Act 1922 will be applicable to the appointment and contributions to the Superannuation Fund will be deducted from the salary The selected candidate will be required to pass a satisfactory medical examination

Forms of application may be obtained from the Medical Officer of Health Municipal Offices Southampton

Applications on the prescribed form endorsed Assistant Medical Officer of Health stating age qualifications experience etc together with copies of not more than three recent testimonials must be delivered at the Town Clerks Office Municipal Offices Southampton, on or before September 23th

R DONALD H MEGGESON
September 7th 1931 Town Clerk

County Borough of Blackburn.

ASSISTANT SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH

Applications are invited from registered Medical Practitioners for the post of Assistant School Medical Officer and Assistant Medical Officer of Health (male) to act under the supervision of the Medical Officer of Health, who is also the School Medical Officer

The person appointed must devote the whole of his time to the service of the Corporation

The duties of the office will consist largely but not exclusively, of work in the School Medical Department and a knowledge of such duties is essential Preference will be given to candidates with a Diploma in Public Health and having experience in Infectious Disease

The salary will be £600 per annum to be increased by annual increments of £50 to a maximum of £700 per annum

Forms of application and further particulars of the duties and conditions of the appointment may be obtained from the Medical Officer of Health Victoria Street Blackburn

Completed forms accompanied by copies of three recent testimonials, must reach me by Wednesday September 23rd and should be endorsed on the envelope Assistant School Medical Officer

Canvassing will disqualify

Town Hall BRIGGS H MARSDEN,
Blackburn Town Clerk
August 25th 1931

City of Aberdeen.

WOODEND MUNICIPAL HOSPITAL

JUNIOR RESIDENT MEDICAL OFFICER

Applications are invited for the post of Junior Resident Medical Officer (male) at Woodend Municipal (General) Hospital Aberdeen Salary £100 per annum, with apartments, board and laundry free

The appointment is limited to one year, and is not renewable

Applications with copies of recent testimonials, should be forwarded to the undersigned on or before Friday 18th instant The successful candidate will be required to take up duties as soon as possible

4, Alban Place, HARRY J RAE
Aberdeen Medical Officer of Health

County Borough of Brighton.

SANATORIUM & INFECTIOUS DISEASE HOSPITAL

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER Salary £150 per annum, with board and lodging The appointment is for a period of six months

Particulars and forms of application can be had from the undersigned

Latest date for application September 21st

JAS H ROTHWELL
Town Clerk, Brighton

September 2nd, 1931

Borough of Acton.

EDUCATION COMMITTEE

APPOINTMENT OF ASSISTANT SCHOOL MEDICAL OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH (Woman)

Applications are invited from fully qualified candidates for the position of full time Assistant School Medical Officer and Assistant Medical Officer of Health (woman)

The salary will commence at £550 and, subject to satisfactory service will rise by annual increments of £25 to a maximum of £700 per annum

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 and the successful candidate will be required to pass a medical examination

Full particulars relating to the post and list of duties may be obtained from the undersigned on receipt of a stamped addressed foolscap envelope

Applications stating age qualifications training and experience accompanied by copies of three recent testimonials must reach me not later than September 29th

Canvassing members of the Committee or Council either directly or indirectly will be considered a disqualification

Municipal Offices J EWART SMART
Acton W 3 Director of Education
September 3rd 1931

Staffordshire County Council.

COUNTY BACTERIOLOGICAL LABORATORY

Applications are invited from registered Medical Practitioner for the post of ASSISTANT BACTERIOLOGIST and PATHOLOGIST

Candidates must be under 35 years of age, and previous experience in bacteriology and morbid histology is essential

The laboratory is a new building and has all the usual up to date equipment Reasonable opportunity will be given for research in connection with the work

Commencing salary £700 per annum, rising by annual increments of £50 to a maximum of £850 subject to the usual deductions under the Local Government and Other Officers Superannuation Act 1922 and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary The appointment will be determinable by three months notice on either side

Application with copies of three recent testimonials should be received by me not later than September 29th

County Buildings, ELSTACE JOY, M.A.,
Stafford Clerk of the County Council

Wood Green Urban District COUNCIL

ASSISTANT MEDICAL OFFICER

The Council invite applications from qualified Medical Women for the position of Assistant Medical Officer at a salary of £550, rising by annual increment of £25 to a maximum of £700 per annum

The lady appointed will be required to devote her whole time to the duties of the office, which will be mainly in connection with Maternity and Child Welfare and School Medical work and the appointment will be subject to a satisfactory medical examination, to the provisions of the Local Government and Other Officers Superannuation Act 1922, and to the approval of the Board of Education

Candidates must have had special experience in Midwifery and Ante natal work since qualification and subject to this preference will be given to candidates who possess the Diploma in Public Health

Applications which must be made on forms obtainable (with list of duties) from the undersigned accompanied by copies of three recent testimonials must be received by me not later than Monday September 28th

Canvassing will disqualify

Town Hall H CHIBB
Wood Green N 22 Clerk of the
September 8th 1931 Council

Cheshire County Council

WRENBURY HALL TUBERCULOSIS TRAINING COLONY

Applications are invited for the appointment of RESIDENT HOUSE PHYSICIAN at the above Institution The appointment is for one year only at a salary of £250 per annum, together with board and residence etc

Form of application and particulars of appointment may be obtained from the undersigned

County Offices REGINALD POTTS,
Northgate Street Clerk of the County Council
Chester

September 2nd, 1931.

Jessop Hospital (Firth AUXILIARY), NORTON, SHEFFIELD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female), and should be addressed at once to the undersigned, at the Jessop Hospital for Women, Sheffield.

The appointment will be for one year, commencing October 1st, with a salary at the rate of £150 per annum, plus board, residence, and laundry. Previous obstetrical experience is desirable.

This Hospital contains 46 beds for the treatment of puerperal sepsis, and for ante-natal and *gynaecological cases. 23 beds are set apart* for puerperal sepsis.

H. B. SHILLSWELL, Secretary.

The Jessop Hospital for Women, SHEFFIELD. (146 Beds)

(Gynaecological and Maternity Departments)

The Board of Management invite applications for the following posts:

A SENIOR RESIDENT OFFICER (male) for one year from October 1st. Salary £200 per annum, plus board, residence, and laundry.

TWO ASSISTANT HOUSE SURGEONS (male) for a period of six months from October 1st Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be received by the undersigned on or before September 22nd.

H. B. SHILLSWELL, Secretary.

Royal Hospital, Richmond, SURREY.

JUNIOR HOUSE SURGEON (male) required to take up duties on October 1st Salary at the rate of £100 per annum, with board, furnished apartments, and washing. Candidates must be fully qualified, registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the senior post Applications, stating age, experience, together with copies of three recent testimonials, must be forwarded to me as soon as possible.

RICHARD ALLEN, Secretary.

The Loughborough and District GENERAL HOSPITAL.

Wanted, to commence duties on October 1st or earlier by arrangement, RESIDENT HOUSE SURGEON (male or female and unmarried), possessing a medical and surgical registered qualification. Practical experience in the administration of anaesthetics is required. Salary £175, with apartments, board, and laundry. All applications, stating age, etc., with copies of testimonials, to be sent to me at once

9, Leicester Rd., Loughborough FRANK TOONE, Secretary.

Peace Memorial Hospital, WATFORD, HERTS.

A RESIDENT MEDICAL OFFICER (female); duties commence on October 30th. Also a RESIDENT SURGICAL OFFICER (female), duties to commence on October 9th. Salary £150 per annum Appointments for six months, eligible for re election

Applications, stating age and qualifications, with at least three recent testimonials, should be received by the Secretary not later than September 21st No canvassing permitted

Great Yarmouth General HOSPITAL (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned

FRANK JENNINGS, Secretary.

Jewish Maternity Hospital, Underwood Street, E 1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER. Duties commence on October 1st for the period of six months Salary at the rate of £50 per annum. Applications, together with copies of three recent testimonials, to be sent to the undersigned not later than the first post on Monday, September 14th.

ALICE MODEL, Secretary.

Longton Hospital, Staffordshire.

Lady HOUSE SURGEON required immediately.

Applications, with copies of three recent testimonials, and stating salary required (there is also free board, residence, and laundry, and certain fees), to be sent at once to the Chairman of Directors, Longton Hospital, Stoke-on-Trent.

Royal Sea Bathing Hospital for SURGICAL TUBERCULOSIS, MARGATE.

A Male HOUSE SURGEON is required. The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered.

The appointment is for six months, but may be extended for a further period of six months.

There are 308 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis.

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, London, W.C.2.

Kettering & District General HOSPITAL, KETTERING. (80 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). Salary £200 per annum, with board, residence, and washing. Candidates must be fully qualified, and registered. Knowledge of Anaesthetics desirable.

The appointment is for six months, with eligibility for a further six months.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

G. W. JACKSON, Secretary Superintendent.

East Ham Memorial Hospital, Shrewsbury Road, London, E.7. (100 Beds.)

Applications are invited for the post of HOUSE SURGEON to Special Departments, and CASUALTY OFFICER, for six months, commencing October 1st. Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of testimonials, should reach the undersigned by first post on September 14th.

REGINALD PERRY, Secretary.

East Ham Memorial Hospital, Shrewsbury Road, London, E.7. (100 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN for six months commencing October 1st. Salary at the rate of £150 per annum, with board, residence, and laundry. Applications, stating age, experience, and full particulars, together with copies of testimonials, should reach the undersigned by first post on September 14th.

REGINALD PERRY, Secretary

The Children's Hospital, SUNDERLAND. (70 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female) Candidates must possess a double qualifications (registered). Salary £140 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S. C. FRYERS, House Governor and Secretary.

Altrincham General Hospital, CHESHIRE. (100 Beds.)

Applications are invited for the position of JUNIOR HOUSE SURGEON. Salary at the rate of £120 per annum, with board, residence, and laundry. The appointment is for six months in the first instance, commencing at once.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

The Liverpool Eye and Ear INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. Salary £120 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in immediately to— CHARLES W. WRIGHT, Esq., 9, Harrington Street, Liverpool.

The Sheffield Royal Hospital. (340 Beds.)

There are two vacancies for Residents:

OPHTHALMIC HOUSE SURGEON. £120 per annum;

ANAESTHETIST. £80 per annum, rising to £100 in six months.

Applications to— W. H BOOTH, Superintendent & Secretary.

The Royal Infirmary, Sheffield. (500 Beds)

The Weekly Board of Management invite applications for the two undermentioned posts

ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON, and HOUSE SURGEON AND SECOND ASSISTANT CASUALTY OFFICER.

The salary attached to each appointment is £80 per annum, with board and residence

The Resident Staff numbers 14, and after six months' service, salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO. W. BARNES, F.C.I.S., Gen. Supt & Secretary.

Board Room. July 24th, 1931.

Royal National Orthopaedic HOSPITAL (Country Branch, Brockley Hill, Stanmore, Middlesex) (280 Beds.)

75 per cent. for the Treatment of Surgical Tuberculosis.

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, quarters, and laundry The appointment is for six months from October 1st, renewable for a period of six months on the recommendation of the Medical Board

Applications, with copies of testimonials, should reach the Secretary not later than September 16th

Royal National Orthopaedic HOSPITAL, 234, Gt. Portland Street, W.1.

Applications are invited for the post of HOUSE SURGEON (two). Salary £150 per annum, with board, quarters, and laundry The appointment is for six months from October 1st, renewable for a period of six months on the recommendation of the Medical Board Applications, with copies of testimonials, should reach the Secretary not later than September 16th.

Royal Eye Hospital, St George's Circus, S E 1

Applications are invited for the following appointments at the above Hospital for a period of one year from October 1st

12 SALARIED REFRACTIONISTS

12 CLINICAL ASSISTANTS.

1 PATHOLOGIST.

Applications, with copies of testimonials, to be sent to the Secretary at the above Hospital on or before September 25th

F. E. D'ALTON, Secretary.

Cossham Memorial Hospital, KINGSWOOD, BRISTOL

Applications are invited for the post of HOUSE SURGEON, to commence duties at the end of September. Applicants must be British subjects, fully qualified, and registered Salary £150 per annum, with board, apartments, and laundry.

Applications, stating age, qualifications, and previous experience, accompanied by three recent testimonials, should be sent to the Secretary.

Queen's Hospital for Children, Hackney Road, London, E 2

HOUSE PHYSICIAN required on October 1st. Six months' appointment Salary at the rate of £100 a year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before September 21st

CHARLES H. BESSELL, Secretary

September 1st, 1931.

Birmingham and Midland Eye HOSPITAL Church Street, BIRMINGHAM (115 Beds)

HOUSE SURGEON required at the above Hospital. Salary £110 per annum; and £10 laundry allowance

Applications, together with copies of not more than three testimonials, should be addressed to the undersigned, from whom further particulars can be obtained

C. A. MASON, General Superintendent.

Lingfield Epileptic Colony, SURREY.

Wanted, ASSISTANT MEDICAL OFFICER (lady preferred). Commencing salary £275 per annum, resident. Apply to the Medical Superintendent.

Salford Royal Hospital.
(263 Beds)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on the 30th instant

HOUSE SURGEON (Who will also be in charge of the Orthopædic Department)
Salary at the rate of £125 per annum

HOUSE SURGEON (Who will also be in charge of the Genito-Urinary Department)
Salary at the rate of £125 per annum

HOUSE SURGEON (Who will also be in charge of the Neurological Department)
Salary at the rate of £125 per annum

HOUSE SURGEON (Attached to the Aural Skin and Gynæcological Departments)
Salary at the rate of £125 per annum

CASUALTY HOUSE SURGEON Salary at the rate of £125 per annum

The appointments are for a period of six months with board and residence

Candidates must be registered under the Medical Acts

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognised for the English Fellowship (Final)

Forms of application, which may be obtained from the undersigned, must be delivered on or before the 15th instant

By Order of the Board
GEORGE LUDDLE
General Superintendent & Secretary
Salford Royal Hospital
September 5th 1931

Hull Royal Infirmary.

The Appointing Committee invite applications for the office of HONORARY ASSISTANT PHYSICIAN to the Infirmary

Candidates must be fully qualified Medical Practitioners and be registered

The appointment will be for five years in the first instance, during which period the successful candidate will be required to obtain the Membership of the Royal College of Physicians, otherwise he will not be eligible for re-election

Applications, together with copies of testimonials, should be addressed to "The Chairman, Board of Management, Hull Royal Infirmary," and should be forwarded on or before September 30th

Candidates are prohibited from canvassing, but copies of their applications and testimonials may be sent to the members of the Appointing Committee

R. J. CARLESS
September 2nd, 1931. House Governor

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER

Applications are invited for the post of Resident Surgical Officer, which becomes vacant on October 1st next

Appointment for twelve months. Salary £200 per annum, with board, apartments etc.

Candidates holding an F.R.C.S. degree will be preferred

Applications, stating age, qualifications previous experience etc., together with copies of three recent testimonials, to be forwarded to the undersigned on or before September 23rd next

By Order of the Board
HERBERT J. DAFFORNE
September 7th 1931 Gen. Supt. & Sec.

District Infirmary,
ASHTON-UNDER-LYNE (200 Beds)

FORTHCOMING VACANCY

RESIDENT SURGICAL OFFICER (male), November 1st next

Applications are invited for the above post from those who have held a resident Surgical appointment for at least one year

The candidate appointed will be required to supervise the work of three House Surgeons and to perform such operations as may be deputed to him

Salary £200 per annum, with board, residence, and laundry

FRANK OLIVER
September 4th, 1931 Gen. Supt. & Sec.

The Guest Hospital, Dudley.
(General Hospital—107 Beds)

Applications are invited for the post of a HOUSE SURGEON. Salary £170—£200 per annum according to experience, with furnished apartments, board, and laundry. Duties to commence *immediately*. Candidates must be fully qualified and registered.

Applications stating age, qualifications and experience, and accompanied by copies of testimonials, to be sent to the undersigned

H. RAYMOND HURST,
House Governor and Secretary.
The Guest Hospital, Dudley.
September 5th, 1931.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on October 14th

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, October 5th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment

The appointments are made for six months. Salary at the rate of £100 per annum, together with all wants, £5, board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practise

All candidates must be in attendance to appear before the Joint Committee, if required at their Meeting on Wednesday, October 14th, at 3 p.m. precisely

Forms of application and copies of the Rules may be obtained from the Secretary

By Order of the Board of Management,
JAMES McKAY
September, 1931 Secretary

Manchester Royal Infirmary.

JUNIOR ASSISTANT MEDICAL OFFICER IN RADIOLOGICAL DEPARTMENT

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification

The appointment (non-resident) is for twelve months renewable for a further period of twelve months subject to the provisions of the by-laws as to notice. Salary is at the rate of £400 per annum. Applicants must state age and send twelve copies of the application and testimonials to the undersigned by 9 a.m. on Thursday, September 24th

By Order,
FRANK G. HAZELL
Sept. 2nd 1931 Gen. Supt. & Secretary

The Mental Hospital, Wells,
SOMERSET

ASSISTANT MEDICAL OFFICER required (male) single must be legally qualified and registered, previous experience not essential a knowledge of Laboratory work a recommendation. Salary commencing £350 per annum rising to £450 by annual increments of £25 with board lodging laundry, and attendance subject to statutory deductions for Superannuation purposes.

Applications to be sent not later than September 22nd next, to the Medical Superintendent stating age, qualifications, and previous experience (if any), marked in top left hand corner "A.M.O."

Putney Hospital,
Lower Common, Putney, S.W.15

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male), to commence duties on October 1st next

The appointment is for a period of six months, renewable on the recommendation of the Medical Board. Salary £150 a year, with rooms and board and certain emoluments

Applications stating age with copies of testimonials, to the Secretary not later than September 24th

National Hospital, Queen Sq.,
W.C.1

ASSISTANT REGISTRAR

Applications are invited for the post of Assistant Registrar, who will be required to attend the Hospital each afternoon in the Out-patient Department. The salary is £200 a year. Applications with recent testimonials, should reach the undersigned, from whom any further particulars may be obtained, on or before Thursday, October 1st

GODFREY H. HAMILTON, Secretary.

Liverpool & Samaritan Hospital
FOR WOMEN

Wanted, a HOUSE SURGEON for six months commencing October 1st. Salary at rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned by September 22nd

J. ST. G. WILSON
13 Rodney Street, Liverpool

Lowestoft and North Suffolk
HOSPITAL

JUNIOR HOUSE SURGEON (man or woman) required September 10th. Salary £120 per annum with board residence and laundry.

Applications together with copies of three recent testimonials to be sent to the Honorary Medical Superintendent

Royal Victoria Infirmary,
NEWCASTLE-UPON-TYNE (662 Beds)

The House Committee declare vacant the office of HONORARY PHYSICIAN in charge of the Skin Department

According to statutory provision no candidate must be a registered Graduate in Medicine of any University recognised by the General Council of Medical Education and Registration of the United Kingdom or a registered Fellow or Member of one of the Colleges of Physicians of the United Kingdom provided that he is practising as a Physician and not as a General Practitioner

Applications stating age qualifications and previous experience must be sent to the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, not later than Saturday, September 26th

The appointment will be made on Thursday, October 1st

Canvassing of the Committee directly or indirectly will disqualify. Each member of the House Committee has been supplied with a copy of this regulation and testimonials

Personal canvassing will be held to disqualify

Personal qualification for office

S. DUNSTAN
September 7th 1931 House Committee Secretary

Royal Samaritan Hospital for
WOMEN, GLASGOW

The Governors invite applications for Three RESIDENT MEDICAL APPOINTMENTS to Graduates of either sex to become vacant on October 8th

Applications with copies of testimonials to be lodged not later than 15th instant with the Subscriber from whom all information can be obtained

T. MASON MACQUAKER
Secretary & Treasurer
200 St. Vincent Street, Glasgow
September 4th 1931

Royal Southern Hospital,
LIVERPOOL.

Wanted, One HOUSE PHYSICIAN and one MEDICAL OFFICER to the Special Department and RESIDENT ANÆSTHETIST. The salary for the above appointments is £60 per annum, including board and residence

The appointments will be for six months. Duties commence from October 1st

Applications and copies of testimonials to be sent to the undersigned immediately

ALLEN VALLETT
Superintendent & Secretary

Evelina Hospital for Children,
Southwark, S.E.1

Applications are invited for the post of HOUSE PHYSICIAN (male) for six months from October 12th (first two months in Casualty and Out-patient Departments). Salary at the rate of £120 per annum with board and residence

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials to be sent to the undersigned not later than September 22nd, from whom rules and other particulars can be obtained

By Order of the Committee of Management,
W. H. SIDNELL
Sept. 1st, 1931. Secretary Supt.

Bristol Royal Infirmary

Applications are invited for the following two vacancies:

HOUSE PHYSICIAN to Dr. A. T. TODD

ASSISTANT HOUSE SURGEON, who shall act as Ophthalmic House Surgeon

Salary in each case at the rate of £60 per annum, with board, apartments and laundry. Candidates, who must be duly qualified and registered, to send in their applications together with copies of not more than three testimonials, to the undersigned

ELLIS C. SMITH, F.C.I.S.
Secretary & House Governor

A[illegible] Assistant House Surgeon

A [illegible] is invited [illegible] TAL (243 beds) at the [illegible] qualified and registered. Appointment for [illegible] month. Salary at the rate of £120 per annum, with board residence and laundry.

Application with copies of testimonials, to be addressed to the undersigned

F. A. LY[illegible]

Reading

Royal Surrey County Hospital,
GUILDFORD (232 Beds)

Wanted October 1st HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications stating essential particulars with copies of testimonials, to be sent to Secretary Superintendent

City of Birmingham.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified Medical Practitioners for the whole-time appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynæcological, Obstetrical, and Children's Disease sections. There are completely equipped [illegible] Laboratories, and [illegible] Massage, Ultra [illegible] graphic Departments. Over 5,000 operations are performed annually.

The appointment will be for a period of six months, in the first instance, but may be extended at the end of that time for a further period of not exceeding six months.

The person appointed will be required to assist at operations, to administer anæsthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance). The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing), received by him.

Further particulars of the appointment may be obtained from the Medical Superintendent, R. P. STANLEY KELMAN, Esq., M.B., Ch.B., F.R.C.S. (Eng. and Edin.), at Selly Oak Hospital, to whom applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, and endorsed "Casualty Officer," should be forwarded not later than Wednesday, September 30th.

F. H. C. WILTSHIRE,
Town Clerk.

The Council House,
Birmingham. September, 1931.

St. Mary's Hospital, W.2.

OBSTETRIC REGISTRAR.

The Board of Management invite applications for the above post.

Candidates for the appointment must be Fellows or Members of the Royal College of Surgeons of England, or Graduates in Surgery of a British University. An honorarium of £50 per annum will be paid, with luncheon and tea provided. Copies of the regulations for the Obstetric Registrar may be obtained on application to the Secretary's Office.

Applications, with copies of not more than three testimonials, should reach the undersigned on or before September 25th.

W. PARKES, Secretary.

City of London Maternity Hospital, City Road, E.C.1.

Applications invited for fully qualified male candidates for the post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant October 1st. Three months' appointment at £80 per annum. If satisfactory, appointee fills Senior post for three months at £100 per annum (with board, quarters, and laundry).

Twenty copies of application and testimonials should reach the undersigned by Sept. 23rd.

RALPH B. CANNINGS, Secretary.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, as soon as possible.

FRANK INCH,
Sept. 10th, 1931. House Gov. & Secretary.

Aberdeen Royal Infirmary.

The Board of Directors invites applications for the post of JUNIOR ASSISTANT SURGEON, to be attached to the Wards of the Third Surgeon. Three copies of applications and testimonials should be lodged with the Subscriber, not later than September 26th.

JOHN A. McCONACHIE,
Clerk and Treasurer.

230, Union Street, Aberdeen.

The Kidderminster and District General Hospital (120 Beds.)

HOUSE SURGEON Required.

Salary £150 per annum, with residence, board and laundry. Applications, with not more than three testimonials, to be sent to the Assistant Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered. Number of beds, 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies (only) of testimonials, should be sent on or before September 22nd.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Royal East Sussex Hospital, HASTINGS. (120 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). The appointment is for a period of six months from October 1st.

Salary at the rate of £150 per annum, with board and residence.

Candidates must be duly registered Medical Practitioners, and should send their applications, with copies of recent testimonials, to me not later than September 14th.

WILFRED G. KEMSLEY,
Secretary.

Hertfordshire County Council.

WATFORD MATERNITY AND NURSING HOME.

Applications are invited from qualified Medical Practitioners for the post of VISITING MEDICAL OFFICER to the above Home, which has accommodation for 22 patients.

Applications should be sent, with copies of three testimonials, not later than September 26th to the Clerk of the County Council, Clerk of the Peace Office, Hertford, from whom particulars as to the duties can be obtained.

Salary £120 per annum.

ELTON LONGMORE,
Clerk of the County Council.

Clerk of the Peace Office, Hertford, Herts.
September, 1931.

Swansea County Borough.

INFECTIOUS DISEASES HOSPITAL.

RESIDENT MEDICAL OFFICER.

The Council invite applications for the above appointment from duly qualified unmarried Medical Practitioners. The salary will be at the rate of £350 per annum, together with emoluments. Previous experience in an Infectious Disease Hospital is desirable. The appointment is for one year and not renewable.

Applications (on special forms with particulars of duties), can be obtained from the Medical Officer of Health, Public Health Offices, Swansea), to be sent in not later than September 26th.

Rochdale Infirmary and DISPENSARY. (110 Beds.)

The Board of Management invites applications for the appointment of JUNIOR HOUSE SURGEON. The salary attached to the appointment is at the rate of £200 per annum, including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment and particulars of duties may be had on application.

Infirmary Office, Rochdale. W. WYNNE, Secretary.

September 7th, 1931.

Sutton and Cheam New Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at this Hospital, which will be vacant on October 1st. The appointment is for six months, and the salary is £150 per annum, with full board, suite of apartments, and laundry. Applications, giving full particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned. Applicants must have held a House appointment previously.

E. COTTERILL COWIE, for Secretary.

Miller General Hospital, Greenwich Road, S.E.10. (151 Beds.)

Applications are invited for the following posts:

CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

There are six Resident Officers. Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from October 1st next. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

August 24th, 1931.

County Borough of Oldham.

BOUNDARY PARK MUNICIPAL HOSPITAL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the post of a Male Resident Assistant Medical Officer.

Salary £200 per annum, with board, residence, and laundry.

Candidates should be unmarried.

The appointment will, in the first instance, be for a period of six months. The successful applicant, however, will be eligible for re-appointment for a further period of six months.

The Hospital comprises 355 beds, with facilities for gaining experience in medicine, surgery, midwifery, and diseases of children.

Applications, on forms to be obtained from the undersigned, endorsed "Resident Assistant Medical Officer," should be sent to the Medical Officer of Health, Town Hall, Oldham, and should be received not later than September 16th.

JAMES B. WILKINSON,
Medical Officer of Health.

Town Hall, Oldham. August 25th, 1931.

Miller General Hospital, Greenwich Road, S.E.10 (151 Beds.)

Applications are invited for the post of HONORARY GYNÆCOLOGIST. The Assistant Gynæcologist is an applicant for the post.

Candidates must be Fellows of the Royal College of Surgeons of England and not engaged in general practice, and they are expected to call upon the Members of the Honorary Medical and Surgical Staff, a list of whom can be obtained from the Secretary.

An honorarium of 20 guineas per annum is allowed towards travelling expenses.

Applications (which must be printed or type-written), together with copies of not more than three recent testimonials, should be sent to the Secretary of the Hospital as soon as possible.

September 7th, 1931.

The Royal Portsmouth Hospital, PORTSMOUTH (Five Resident Medical Officers.)

CASUALTY OFFICER, male, qualified, required to commence on October 1st. Salary at the rate of £100 per annum, with board, etc. Six months' appointment. Eligible on completion of term, for appointment to other resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned not later than September 18th, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Derbyshire Hospital for Women, Friar Gate, DERBY. (54 Beds.)

Applications are invited for the post of HOUSE SURGEON (male or female). Salary £150 per annum, with apartments, board, etc. The appointment is tenable for six months, with a possibility of extension for a further period of six months.

Applications, with copies of not more than three testimonials, to be sent to the undersigned not later than September 16th. Duties commence October 1st.

W. T. COCKER, Secretary.

The Stamford, Rutland and GENERAL INFIRMARY, STAMFORD.

HOUSE SURGEON (British, male or female) wanted at once, for a period of six months. Salary at the rate of £150 per annum, with board, residence, and laundry in the Infirmary. Candidates to forward three recent testimonials, with particulars as to age, qualifications, and experience, to us.

STAPLETON & SON,
Secretaries.

Stamford.

Bedford County Hospital. (124 Beds.)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, now vacant. The appointment is for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, giving age, qualifications, and experience, with copies of three testimonials, to be sent to the Secretary at once.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE. *(Assistant Medical Officer—Women)*	**CONTRACT PRACTICE** *(contd)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE *(Workmen's Medical Scheme)*	STEWARTRY OF KIRKCUDBRIGHT *(Assistant Medical Officer and Assistant School Medical Officer)*
EBBW VALE MON *(Workmen's Medical Society)*	NEATH AND DISTRICT *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE *(Assistant School Medical Officer)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OGMORE VALLEY GLAMORGAN *(Blaendare Colliery Medical Aid Society) (Workmen's Medical Scheme)*	
LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without first communicating with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. *(Life Appointments)*	Secretary South Australian Branch B M A House 206 North Terrace, Adelaide	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch) British Medical Association P O Box 196 Wellington New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon Sec, Queensland Branch British Medical Association B M A Building Adelaide St Brisbane	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association Medical Society Hall East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec Western Australian Branch British Medical Association No 6 Bankol N S W Chambers St Georges Terr Perth Western Australia

September 9th 1931 By Order of the Council ALFRED COX Medical Secretary

West London Hospital,
Hammersmith Road W 6
(234 Beds)

Applications are invited for the post of PESIDENT ASSISTANT SURGEON The present holder of the post is not re applying and the appointment is an open one Salary at the rate of £200 per annum (plus £25 for services in connection with the Venereal Diseases Department) with board residence and laundry allowance (Four weeks holiday a year) The appointment is for one year terminable by one month's notice on either side and subject to annual re-election may be extended to not more than three years

Candidates must be duly qualified Medical Practitioners and it is desirable that they should hold the F P C S (England) Diploma As Senior Resident Officer the Resident Assistant Surgeon will also be responsible for certain administrative duties

Applications with copies of testimonials must reach me not later than first post on Thursday September 17th Candidates must attend a Meeting of the Medical Council on Friday September 18 h at 4 30 p m and, prior to that date call upon and see I copies of application and testimonials to each member thereof They must not canvass Member of the Board but if so notified must attend a Meeting of the Board at 5 p m on Tuesday September 22nd when the election will be made

H V MADGE Secretary

Victoria Central Hospital,
WALLASEY

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) Salary at the rate of £100 per annum with board residence and laundry, with prospects of appointment to Senior House Surgeon in six months time at a salary of £150

Candidates chosen would be appointed for six months

Applications with copies of testimonials to be sent to the Secretary

West London Hospital,
Hammersmith Road W 6 (234 Beds)

Required one HOUSE PHYSICIAN one HOUSE SURGEON (General and Gynaecology) one HOUSE SURGEON (General and some Deep X Ray Therapy) and one RESIDENT ANÆSTHETIST (males) for six months from October 1st next subject to one month's notice on either side Salary at the rate of £100 per annum with board lodging and laundry allowance

Candidates must be registered under the Medical Act Application (which must be on printed forms obtained from me) must reach me not later than first post on Thursday September 17th Selected candidates will be required to call upon such members of the Medical Staff as directed to be in attendance at a meeting of the Medical Council on Friday September 25th at 4 p m, and the House Committee meeting at 4 45 p m the same day when the appointments will be made

H V MADGE Secretary

King Edward VII Hospital,
WINDSOR (181 Beds)

HOUSE SURGEON required for six months from date of appointment Applicants must be fully qualified women and registered and have had experience in Ear Nose and Throat work Salary at the rate of £100 per annum together with board residence and laundry

Applications stating age qualifications and experience accompanied by testimonials should be sent to the undersigned not later than September 17th

ARTHUR E CHURCHER Secretary

Manchester Royal Eye Hospital

JUNIOR HOUSE SURGEON required Salary £120 per annum with residence board etc Applications with copies of testimonials endorsed House Surgeon to be addressed to the Chairman of the Board of Management Post now vacant

Woolwich and District War Memorial Hospital
Shooters Hill London S E 18

GENERAL HOSPITAL—112 Beds

PESIDENT MEDICAL OFFICER

The Board of Management invite applications from suitably qualified male candidates with special knowledge of surgery, for the post of Resident Medical Officer at a salary of £150 per annum with board residence laundry for one year from the date of appointment with renewal of appointment for one year at a salary of £200, if approved by the Board of Management

Applications (accompanied by copies of not more than three recent testimonials) stating age qualifications experience and present should be addressed to the Secretary (at the Hospital) to reach him not later than first post on Monday Sept 14th Candidates should also state when they would be free to commence duty

The Princess Beatrice Hospital

PESIDENT MEDICAL OFFICER

Applications are invited from fully qualified Medical Practitioners for the post of Resident Medical Officer Duties to include Surgical Gynaecological and Obstetrical In patient Department of the Hospital no entrebu but all have been will open shortly with approximately 60 Casualty and Out patient Departments

Application accompanied by the names of three recent testimonials from whom full particulars may be obtained) not later than Tuesday Sept 15th signed from

S BAKER Secretary

194 Finborough Road S W 10

(Appointments continued on p 50)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,

TAVISTOCK SQ., LONDON, W.C.1.

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Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES

South of France.—English Physician, large property on hillside, near sea, suitable health and convalescent sanatorium, requires ASSISTANTS with capital. Splendid opening and pleasant life.—Reply, ANDREW, Barclay's Bank, Cannes.

Wanted October 1st, Male ASSISTANT, single, English or Scotch, ex H.S. or H.P., or gentleman with experience in G.P. Cyclist or motor cyclist. Mixed Practice, near Manchester. Dispenser kept. £300 *per annum, or more according to experience.* Partnership considered later if suitable. Usual bond. Recent testimonials and photo.—Address, No. 5562, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with early definite view, Southern England. M.B., Ch.B. Edin.; aged 28; five years' experience hospital and general; own car; share £1,000 up; capital available; married.—Add., No 5631, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, male, for general and panel Practice, Yorkshire. One recently qualified and desiring experience preferred. Able to drive car. Usual bond. Salary £250. — *Address, No.* 5608, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant in a general practice; nice locality. Excellent opportunity for young man, prospects to a suitable person, abstainer, state essential particulars, photo returnable. — *Address, No* 5738, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Married Assistant, or single, experienced panel practice. Salary £400 p.a. and house and substantial commission. Partnership, if desired, to right man. Full particulars. — Address, No. 5633, B.M.A. House, Tavistock Square, W.C.1.

Wanted October 1st, Assistant, [illegible] (£280), outdoor £380), English [illegible] 25 to 30, ex H.S. and some [illegible] Scotch. Semi-rural panel and priv., near [illegible] exp. desired. Dispenser and car. Photo, tests.—Manchester, B.M.A. House, Tavistock Sq., W.C.1. No. 5515.

Wanted.—Permanent Assistant, outdoor, for Branch, Glamorgan Colliery Practice, pan., single and abstainer. £400 p.a., with free furnished rooms. Usual bond. Prospects if suitable.—Address, No. 5613, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor, by M.R.C.S., L.R.C.P., St. Bart's. Ex H.P. Aged 28. English. Married. 10 yrs.' experience G.P. Own car. Free now.—Address, No 5735, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Scots Graduate, aged 30, single. Ex H.S. London area preferred, not essential. Experienced G.P.—Address, No 5634, B.M.A. House, Tavistock Square, W.C.1.

Wanted, early October, Assistant for Colliery Practice, South Wales Branch Surgery. Salary £400 per annum, free house. Married man preferred.—Address, No 5618, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately, Assistant, indoor, panel and private Practice, near London. Work light. — Address, with testimonials, copies only, No 5625, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Oct. 1st, indoor, male ASSISTANT. Salary £325. Possible with view. Full recent testimonials and particulars. South-West Lancs.—Address, No. 5730, B.M.A. House, Tavistock Square, W.C.1.

Wanted, male indoor Assistant for Industrial Practice near Newcastle-upon-Tyne. Salary £300 p.a. State age, nationality, and any other particulars.—Address, No 5610, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Outdoor Assistant in Country Town Practice (with small Hospital), North Wales. Work light. Able to drive car. Usual bond.—Address, No 5512, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant. Mixed Practice. Light work. Bristol. Must recently qualified man. £250 p.a. Usual bond.—Address, No 5621, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, male ASSISTANT, *single, near Manchester.* Send recent photo, age, etc. — Address, No 5517, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Doctor as Outdoor ASSISTANT, in London, S.E.—Address, stating age and essential particulars, No 5638, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, with view Partnership or Succession, sought by L.A.H., married. 12 yrs.' experience; hospital, tropical, and G.P., priv. and panel, anæsthetics. Good personality and references. Own car.—Address, No 5626, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (indoor) wanted. Salary £250, commission on mids and fees collected. All found, except washing. Recently qualified, unmarried, Protestant preferred. — Address, No 5525, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted. — Salary £300 (indoor) and commission. Prospects to right man. Scotsman or Jew preferred. Full particulars.—Address, No. 5630, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with prospects, by M.B., Ch.B. (Glasg.), aet. 27, ex H.S., experienced private, panel. Own car.—Address, *No 5616, B.M.A. House, Tavistock Sq., W.C.1.*

Edin. man, young, wants outdoor ASSISTANTSHIP or salaried PARTNERSHIP, with or without view share. Hospital work an attraction. Advertiser exp. hosps., G.P., Anæsthetics, and Midwifery. — Address, No 5736, B.M.A. House, Tavistock Square, W.C.1.

M.D., F.R.C.S., seeks Assistant (preferably married) for branch, West London suburb, modern house, good scope. Salary according to results, free partnership to successful man.—Address, No 5639, B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Wanted, Welsh-speaking outdoor ASSISTANT, with or without view, for General Practice, private and panel. Salary £435, with car allowance. Usual bond. References required.—Address, No 5624, B.M.A. House, Tavistock Square, W.C.1.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIA- [illegible] and Bact riologists requir [illegible] D LABORATORY [illegible] communicate with [illegible] lfre," 10, Holbeck Glove, Victoria Park, Manchester. No fees.

Woman (R.C.), M.B.Glas., 1927, 3½ yrs.' experience panel and private in Scotland, England, and Italy. Keen and capable, good at midwifery, wishes ASSISTANTSHIP with view, Glasgow or district.—Address, No 5744, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS.

Wanted. — Partnership, North Wales or near district, by M.B., Ch.B., Liverpool, aged 26; 4 years' G.P.—Address, No. 5539, B.M.A. *House*, Tavistock Sq., W.C.1.

For Disposal at end of year.—ONE THIRD and later ONE HALF of old established PRACTICE in delightful country district, easy reach of London and near popular South Coast Resort. Receipts average £3,700. Premium 2 years' purchase. House available on easy terms. Incoming partner should be abt 30, married, public school boy, and have held resident appointments. — Address, No 5669, B.M.A. House, Tavistock Square, W.C.1.

Fourth Partner required in a good class Practice, situated in a country town (with hospital) in the South Midlands. Share worth £1,000 for disposal. Applicant should possess a University degree and have held previous House appointments. Six months' preliminary Assistantship essential.—Address, No 5617, B.M.A. *House*, Tavistock Square, W.C.1.

Partner wanted (man) about November, to replace one going over as Country district near Coventry. No resident opposition in parish. Good sport, golf course near by. Hunting district. Remaining Partner is a woman. Receipts last year £2,146. Very few bad debts. Good cash Practice. Half share for sale for £1,900. Good furnished house, with 1/4 acre garden, for sale, part can be mortgaged.—Address, No 5518, B.M.A. House, Tavistock Square, W.C.1.

Partnership wanted by experienced G.P., in good class priv. prac. in Lond. W. or N.W. Expert Accouch., Anæst., Refractionist. Hold hosp. appt. in Town. Abst. well rec., mar. Gd. hse. on lse essen. Terms.—No 5732, B.M.A. *House*, Tavistock Sq., W.C.1.

Partnership or Assistantship, with view, wanted, preferably in Scotland, by M.B., Ch.B., Scot., aged 34, married. 7 years' experience private and panel practice. — Address, No 5737, B.M.A. House, Tavistock Square, W.C.1.

Physician wanted as a Fourth PARTNER in a large and exceptional Practice in a county town with a Hospital. Must be well qualified, and have held a variety of Medical appointments, and, if possible, specialized in some particular branch of Medicine.—No 5606, B.M.A. House, Tavistock Sq., W.C.1.

Radiology. — Partnership or ASSISTANTSHIP, with view, wanted by experienced man, aged 28. M.B., B.S. Lond., etc. South Coast preferred. Reading Cambridge diploma.—Address, No 5734, B.M.A. House, Tavistock Square, W.C.1.

South Coast.—Half Share of old-established PRACTICE, senior partner retiring. Gross receipts average £3,480. Part £900. Life insurance exams. £230. Large house, large garden. Good educational facilities.—Address, No 5607, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Evening Surgery, with or without night work, by Casualty House Physician, big London Hospital, with free evenings and week-ends. Small remuneration only required. Experienced panel work.—Add., No 5636, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Dispenser-Bookkeeper, general Country Practice.—*Address*, stating age, qualifications, salary required, experience, No. 5731, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and [illegible] experienced in private and panel practice. Per[illegible] Dispensers, [illegible] and [illegible] 'phone [illegible] 1071 [illegible] C.1.

DISPENSERS, 12, HOLBORN [illegible]

Doctor highly recommends TRAINED NURSE with business experience and domestic ability to take charge of Medical Manse or Establishment — Address No 5735 B M A House Tavistock Square W C 1

Doctors requiring qualified Dispensers Nurse-Dispensers Secretary Dispensers or Chauffeuse Dispensers, are invited to write wire or phone Temple Bar 5858 THE DISPENSERS BUREAU, 15 Lindsay House, 171, Shaftesbury Avenue London W C 2

Lady Dispenser (Hall), book- keeper Secretary wants permanent POST Live out Thorough knowledge private and panel work Help minor oper dressings, ex V A D Typing keen efficient, tactful cheery 11 yrs exp Ex refs Per letter Thursdays only — Address No 2613 B M A House, Tavistock Square W C 1

M B, Ch B Edin, D T M & H Lond aged 28 wife M B both had 5 years Hospital and general experience home and tropics require APPOINTMENT or PARTNERSHIP home or abroad own car Cap avail —No 5632 B M A House, Tavistock Sq, W C 1

Medical Officer, 35, M.B, Ch B, L R C P with slight Parkinsonism symptoms (first mark) would be glad to hear of SUITABLE WORK — Address No 5745 B M A House Tavistock Square W C 1

Part-time Afternoon work wanted in London district, by Barts man aged 29 experienced in general practice and hospital work Own car available Moderate remuneration — Address, No 5619, B M A House Tavistock Square, W C 1

Psychiatrist, who has had 12 yrs' experience in Mental Hospital and Consultative work wishes enter a full or part time APPOINTMENT in a Public or Private Hospital — Address No 5739, B M A House Tavistock Square, W C 1

The Royal Army Medical Corps ASSOCIATION 85 Eccleston Square, S W 1 (Telephone Victoria 2722) supplies qualified Dispensers Bookkeepers Laboratory Assistants Sanitary Assistants Male Nurses Mental and Special Treatment Orderlies Dental Clerk Orderlies Porters Caretakers etc, without charge to prospective employers

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University Graduate, ex H S. and H P willing to give 50 per cent of his time to ANAESTHETICS would be glad to hear of an opening —Address No 5501, B M A House Tavistock Square W C 1

Well-educated young Lady desires SECRETARIAL POST to West End Surgeon or Physician Shorthand, typing Thorough knowledge of Medical Term Several years Secretarial experience Excellent testimonials — Box 34 ALDRIDGE'S ADVERTISING SERVICE, 34 Paternoster Row, E C 4

Young Lady, Doctor's daughter, requires post as SECRETARY or SECRETARY RECEPTIONIST in or near London Trained shorthand typist and bookkeeping First post —Address No 5602, B M A House Tavistock Square, W C 1

LOCUMS

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Wanted, a Locum (lady or gent) for the first 2 or 3 weeks in October Lancashire Town —Address No 5605, B M A House Tavistock Square, W C 1

HOLIDAY LOCUMS

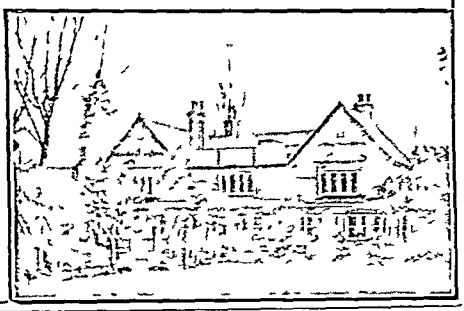
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PRACTICES

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Wanted, North or Midlands, mixed dispensing PRACTICE doing £1 000 or over gross in county town or growing residential district Must have possibilities of increase —Address No 5629 B M A House Tavistock Square W C 1

Wanted. — Ophthalmic Practice or PARTNERSHIP, by a well qualified experienced man free to negotiate now Capital available —Address in first instance to PERCIVAL TURNER, 4, Adam St, Strand W C 2

Wanted.—Practice or Partner- SHIP Succession in London about £2 000 or more p a including substantial panel Ample capital (cash) available —Address No 5740, B M A House Tavistock Sq W C 1

Wanted —Scotland, near Coast, preferably on or near Firth of Clyde panel and private PRACTICE Cash available Consider Assistantship with view — Address No 5524 B M A House Tavistock Square, W C 1

Wanted — Good-class Practice in London N W area or West End Capital available —Address No 5611 B M A House Tavistock Square W C 1

Wanted immediately, Practice, London or vicinity Income from £1 000 p a Cash and panel Capital available —Address No 5614 B M A House Tavistock Square W C 1

Advertiser would pay cash for good mixed PRACTICE of £2 000 p a or over large panel essential in London or Bournemouth Strictest confidence No agents —Address No 5503 B M A House, Tavistock Square W C 1

Beds — Country Practice in very pretty district Nice house garden garage £70 Receipts over £350 Excellent scope Panel 70 Price £350 or house and Practice £1 050, part deferred —MANCHESTER MED & SCHOL ASSOCIATION, 6, Brown St

Cash and Credit Practice, near London for sale Cash takings (average 3 years) £680 increasing Convenient house £1 500 Mortgage £900 can remain Premium £830 —Address No 5627, B M A House, Tavistock Square W C 1

For Sale —London, S W —Small Cash and Panel PRACTICE £300 p a including panel of 330 Small house to lease at £60 Expenses light Premium £400 including drugs etc —Address No 5630 B M A House Tavistock Square W C 1

General Country Medical Prac- TICE for Sale in East Anglia with exceptionally delightful country residence and grounds Income £3 000 per annum Would sell outright or two thirds share —Full details of WOODCOCK & SON Ipswich

Liverpool —Old-established mid- dle and working-class Panel 600 and appointments Good house with garage to rent at 26/ weekly Premium £500 cash —Address No 5604, B M A House Tavistock Sq, W C 1

Kent — Within easy reach of London and Coast Country PRACTICE £1 500 p a (£600 from panel) Freehold house containing 2 rec 4 bed consulting and waiting rooms with separate entrance electric light gas garden and garage Premium—Practice and house—£2 750 part on mortgage —No 5125 B M A House Tavistock Sq W C 1

Manchester — Old-established Pleasant district Nice house good garden garage £65 Receipts over £1 100 Panel about 60 great scope for increase Price £1 250 part deferred —MANCHESTER MEDICAL SCHOLASTIC ASSOCIATION 6 Brown Street

Medical Practice in Edinburgh (residential district), good class with nice house and garden suitable I M S (retired) —Apply Box 299, ROBERTSON & SCOTT Edinburgh

Medical Woman's old-estab- lished PRACTICE in Court Town Sale about £900 unusual opportunity should do own surgery £2 500 in lucrative furniture money must be available — Address No 5527 B M A House Tavistock Sq W C 1

Nose, Ear, and Throat Nucleus in Cathedral City West of England Hospital appointments excellent Present receipts £530 accounts audited Premium £900 — Address No 5560 B M A House, Tavistock Square W C 1

Nucleus for Medical Woman Easy terms for immediate sale Industrial town 30 mile from London Panel 200 House available —Address No 5522 B M A House Tavistock Square W C 1

Old-established middle-class PRACTICE in neighbourhood of Dulwich College Three years average £1 200 (panel) Midwifery refused Owner retiring for health reasons Suitable house on main thoroughfare for sale (leasehold) or might be let —Address No 5317, B M A House, Tavistock Square W C 1

Practice wanted, in South- Eastern or Middle Counties over £2 000 Ample cash for Practice and House Details in strict confidence —Address No 5532 B M A House, Tavistock Square W C 1

Scotland — Private and Panel PRACTICE in beautiful Holiday Resort Firth of Clyde Excellent house electric light garage, good garden golf boating fishing etc —Address No 5620 B M A House Tavistock Square W C 1

To Purchasers — Do not buy without expert advice Wide experience Mr PERCIVAL TURNER can advise in all cases Terms free on application to —Advert St Strand W C 2 Telephone Temple Bar 9011 Telegrams Epsomian London

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(ESTABLISHED BY J. A. REASIDE IN 1893)

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LONDON, E.—*Suburban middle-class G.P. Medium-sized house to rent* on lease at the low rental of £30 p.a. Fees 2/-. Average receipts £516. Panel 350. Excellent scope for young man. Premium for Practice and lease, £1,050, cash or near offer.

LONDON, S.W.—DEATH VACANCY.—Old-established middle class G.P., situated in residential district. Suitable house to rent, garden, garage, part sub-let. Receipts between £1,500 and £2,000 (subject to confirmation). Panel 1,200/1,300. Premium 1½ years' purchase or near offer.

CHESHIRE.—Near Coast.—Small G.P., with excellent scope for expansion, situated in working class and residential district. Receipts £600. Panel 900. Suitable house available. Premium 1½ years' purchase. Excellent scope for keen and energetic man.

MIDDLESEX, WEST (on borders of Bucks.)—PARTNERSHIP in middle and better working class residential locality, with excellent scope for further development. Suitable house available. Receipts approx. £2,200. Panel 1,530. Fees 2/6 up. Premium (for share worth £1,100) £1,500.

LONDON, E.—NUCLEUS working class PRACTICE in thickly populated locality. Rooms to let on agreement. Receipts over £300. Panel 260. Premium £400. Suitable for Lady Doctor. Very little visiting.

LONDON, W.—PARTNERSHIP in suburban middle class G.P., situated in rapidly developing locality. Suitable modern house to rent. Receipts £2,750—£3,000. Panel approx. 2,000. Fees 2/6 up. Premium for 1/3 share, 2 years purchase. Excellent scope for young and energetic man.

KENT.—Well established Country PRACTICE, situated in growing locality. Medium-sized house to rent (4 beds). Receipts just over £900 p.a. Panel 331. Fees 3/6 up. Cottage Hospital. Excellent scope. Premium £1,300.

NORTHANTS.—Old established Rural PRACTICE, situated in charming locality. Splendid house in own grounds to rent or purchase. Receipts £500. Panel 400. Premium £550. Suitable to semi-retired Practitioner.

YORKS.—PARTNERSHIP in busy rapidly increasing Town Practice. Receipts £2,300. Panel 1,500. Suitable house available. One third share, with view to succession, 2 years' purchase.

SURREY.—PARTNERSHIP in rapidly developing residential locality with splendid scope. Receipts approx. £1,000 p.a. Panel nearly 300. Fees 2/6 up. Premium for 2/5 share, 2 years' purchase. Excellent opportunity for young and energetic man.

NORTH-WEST COAST.—PARTNERSHIP in old established, good class non-panel and *non dispensing Practice*. Suitable house available. Receipts approx. £3,600. Fees 10/6 up. 1/3 share, with view to half and possible succession, 1½ years' purchase. Excellent scope for Physician.

MIDDLESEX.—PARTNERSHIP in rapidly developing district, situated within 12 miles of London. Receipts about £1,600 p.a. Panel nearly 1,900. *Suitable small house available.* Cottage Hospital. Excellent scope. Premium for 2/5 share, with view to 1/2, 2 years' purchase.

LONDON, S.W.—Middle class PRACTICE in residential locality within easy access of the West End. Medium sized house, detached; large garden, garage, etc. Receipts £950. Panel 270. Premium for Practice £1,200.

LONDON, N.—Middle and working class PRACTICE. Medium sized house to rent or purchase. Average receipts approx. £575. Panel 385. Fees 2/6 up. *Premium £750 cash.*

MIDDLESEX, WEST.—PARTNERSHIP in rapidly developing residential country district. Receipts approx. £1,500, increasing. Panel 1,282, increasing. Fees 2/6 up. Suitable accommodation available. Premium for 1/3 share 2 years' purchase. Suitable to young and experienced man, preferably one having held Hospital appointments.

CORNWALL (Coast).—Well established PRACTICE in charming locality. Receipts nearly £800. Panel 180. Suitable house to rent on lease. *Premium for quick sale £600.*

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5. LONDON, S.W.—Half Share of cash and panel PRACTICE. Total receipts £2,500, including panel 2,075. Flat or house available. Premium for share 2 years' purchase, or near offer.
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7. LONDON, S.W. (Suburb) — Lady Doctor's PRACTICE. Receipts over £500 p.a., including panel 250. Lock-up Surgery, rent 30/- per week. *Premium £600. Scope* for increase.
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4. YORKSHIRE.—Well-estab. mainly working class PRACTICE. Receipts almost £1,300 p.a. Panel 1,430. Nice house, on lease or for sale, 3 reception, 4 beds., etc. Garden and garage.
5. BIRMINGHAM (Suburb).—Panel and Private PRACTICE. Established 4 years. Receipts about £725 and progressing. Panel about 1,200. *Good house* on lease or for sale. Four beds. Garden and garage.
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DEATH VACANCY.—LAKE DISTRICT.—Cash receipts last year £851 Panel 539 Great scope, especially for married Surgeon Charming house with ample accommodation and attractive garden.—No 290

LANCS TOWN, near MANCHESTER. — PARTNERSHIP in good Practice Cash receipts 1930 £2 452 Panel nearly 2 000 House available 3 reception, 5 bedrooms garage Rent £63 p a Premium—Half share — £1 500 (to include drugs, fitting, and debts).—No 286

SOUTH WEST YORKSHIRE.—Excellent Country PRACTICE Cash receipts last year £1 421 Panel 880 Good freehold detached house to rent with nice garden 4 bedrooms 2 reception rooms Premium—Practice—£1 000.—No 271

LANCS TOWN.—MEDICAL WOMAN'S PRACTICE.—Cash receipts last year £451 Panel 303 House, 4 bedrooms 2 reception, to rent at £35 p a, or would sell for £550 Premium £500, or near offer.—No 289

SEASIDE TOWN — MEDICAL WOMAN'S PRACTICE Cash receipts last year £632 Panel 465 Excellent rooms at £36 p a Premium £850 or near offer.—No 274

MANCHESTER.—INDUSTRIAL PRACTICE Cash receipts 1930 £889 Panel 721 Great scope House 2 reception, 5 bedrooms Rent £50 p a Premium, best offer.—No 190

SOUTH COAST.—SEASIDE RESORT.—PRACTICE Cash receipts £683 p a Panel 660 Excellent house 3 reception 5 bedrooms garage and garden, to rent Premium 1½ years purchase.—No 197

MANCHESTER.—RESIDENTIAL SUBURB.—PRACTICE Cash receipts last year £1 245 Panel 550 Plenty of scope Charming modern house recently built for Practice 5 bedrooms 2 reception rooms Garage and garden For sale or may be rented on lease Premium—Practice—1½ years purchase.—No 288

BIRMINGHAM SUBURB.—Middle-class PRACTICE with great scope Receipts last year £700 Small select panel Excellent house 2 reception 6 bedrooms Garage and large garden Price £750 Premium—Practice—£750 or near offer No 283

NEAR MANCHESTER.—PLEASANT TOWN largely residential — Old established PRACTICE Average cash receipts £985 p a Panel 902 Appointment not included £100 p a Great scope Excellent detached house (freehold) 3 reception 5 bedrooms Garage and garden and tennis court Premium—Practice—1½ years purchase.—No 254

SOUTH YORKSHIRE — Old-established PRACTICE Cash receipts 1931 £1,273 Panel 1 430 Excellent house 3 reception 4 bedrooms Garage and good garden Premium 1½ year purchase.—No 253

MANCHESTER.—RESIDENTIAL SUBURB Middle-class PRACTICE Suitable for two in Partnership (one a good surgeon) Cash receipts 1931, £4 578 Panel 1 400 Two excellent houses with ample accommodation to rent Premium 1½ years purchase, part by arrangement.—No 277

BIRKENHEAD.—PRACTICE with great scope Cash receipts about £700 p a Panel 900 Good house 3 bedrooms garden Premium—Practice—£800 or near offer.—No 285

LARGE LANCS TOWN.—Old-established PRACTICE Average cash receipts £1 546 p a Panel 1 052 Excellent detached house, 3 reception 4 bedrooms Garage and garden Rent £74 10s p a Premium 1½ years purchase Vendor retiring.—No 267

EAST COAST.—PARTNERSHIP in large Town Practice Income over £10 000 p a Panel over 5 000 Good house available, 2 reception 4 bedrooms Garden Premium—1/6 or 1/4 share—1½ years purchase.—No 258

LANCS TOWN near MANCHESTER.—Old-established PRACTICE Cash receipts last year £1,406 Panel nearly 1 000 Excellent house 2 reception, 6 bedrooms garage, and garden Rent £90 p a Good local hospital Premium £2 050.—No 260

MANCHESTER — PLEASANT RESIDENTIAL SUBURB.—Old-established PRACTICE Average cash receipts £685 p a Panel over 600 Much scope Excellent house, 2 reception 4 bedrooms garage and good garden to be sold or may be rented for a period on lease Premium 1 years purchase Vendor retiring.—No 246

LANCS TOWN.—Old-established PRACTICE Average cash receipts £1 175 p a Panel 1,460 Excellent house 3 reception 5 bedrooms Garage and garden For sale or rent for a period Premium £1,600, payable by arrangement.—No 232

NEAR LIVERPOOL.—Cheshire Coast Town.—Old established PRACTICE Cash receipts last year £1 134 Excellent house to rent 3 reception 6 bedroom garage and garden Premium 1½ years purchase.—Vendor retiring.—No 189

NEAR LIVERPOOL.—Small PRACTICE with much scope Cash receipts last year £348 Panel 312 Good house 2 reception 4 bedrooms Garage and garden Premium 1 years purchase.—No 284

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1 DEATH VACANCY. — S.W. COAST.—PRACTICE about £500 p.a. in Health Resort. Panel 470. Choice of large or small house. Mild climate. Good scope for increase.

2 S. DEVON.—Partnership (after preliminary Assistantship) in good-class Practice of over £2,000 p.a. in small Seaside Resort. Small panel. Very little midwifery. Nice house (4 5 bedrooms) for sale. Cottage Hospital, and scope for Surgery. Share up to one-half at 2 years' purchase.

3 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. Premium one third share £2,000.

4 LONDON, W.—Partnership in sound non-dispensing Practice of nearly £2,300 p.a., close to West End. No panel and very little night work. Partner should be aged about 35 and used to good class Practice. One-third share 2 years' purchase.

5 HOME COUNTIES. — Partner required in steadily increasing Practice of between £1,500 and £2,000 p.a. in rapidly growing neighbourhood within 15 miles of London. House, with 5 bedrooms, etc., garage and garden, to rent. Good scope. Premium two fifths share 2 years' purchase.

6 BIRMINGHAM.—Practice about £600 p.a. in residential suburb. Small panel. Well situated house (7 bed and dressing rooms), garage and charming garden for sale Good scope. Premium £750.

7 S. WALES.—Partnership in steadily increasing Practice of about £3,000 (appts. over £1,000) p.a. in growing district, easy distance of important Seaport. Panel 1,750. One third to two fifths at once, with succession to whole Practice after 5 years. Premium 1½ years' purchase

8 SOUTH AFRICA. — Country Practice in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well-built house for sale or rent. Easily worked. Premium £550.

9 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first-rate town. Panel 1,344. Good house (6/7 bedrooms) to rent. Premium one-third share 2 years' purchase.

10 HOME COUNTIES.—Practice in desirable country district, within 35 miles of London. Cash receipts about £800 p.a. (*including* £300 from panel and appointments). Centrally situated detached house (7 bedrooms), garage, and acre of garden, to rent. Premium 2 years' purchase.

11 LONDON, N. — Practice in thickly populated area. Receipts past year over £650 p.a., including about £100 from appointment and panel of 570. Accommodation consists of bedroom, surgery, waiting room, to rent on lease. Great scope Premium 1 year's purchase.

12 DEATH VACANCY.—LONDON, S.W.—PRACTICE of £2,350 p.a. (over £600 from panel), in pleasant suburb. Suitable accommodation to rent.

13 FAR EAST.—For Immediate Sale.—Good-class PRACTICE among foreign residents. Several valuable appointments. Cash receipts last year £2,000. Chartered Account ant's report Scope Premium £1,200, to include car, etc. Might consider preliminary Manager-Partnership.

14 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight roomed house for sale or rent. Excellent educational facilities. Sea fishing, etc Premium £1,500.

15 W. MIDLANDS. — Country Practice of about £1,000 p.a. in beautiful part. Panel 532. Very good house (5/6 bedrooms) Good garden. orchard, etc., for sale or rent Premium £1,500.

16 S. COAST.—Partnership after Preliminary Assistantship in Practice in seaside resort. Share worth about £1,000 p.a. to suitable man, who for preference should be single. Premium £1,600 and considerable scope.

17 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc, for sale. Sport. Premium 1½ years' purchase.

18 LONDON, E.—Cash and Panel Practice of £1,285 p.a. in populous area. Panel 1,700. House (*5 bedrooms*) for sale. Premium 1½ years' purchase.

19 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,500 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one half share 1½ years' purchase.

20 ESSEX.—Practice doing about £1,200 p.a. in outlying suburban district. Panel 658. Detached house (6/7 bedrooms), with garage and lovely garden, for sale. Premium—Practice—£1,500.

21 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230. Private residence contains 4 bedrooms, etc, and is for sale. Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase.

22 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock-up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

23 MIDLANDS.—Practice over £800 p.a. in first-rate town. Panel 500. Large or small house available. Premium only £300.

24 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £6,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent. Partner must hold the F.R.C.S., and be aged about 30. Appointment on Hospital Staff Premium for one sixth to one-fourth share 2 years' purchase. Preliminary Assistantship.

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Practices and Partnerships for Disposal (continued).

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26 S. of ENGLAND.—Partnership in increasing Practice of over £1,400 p.a. in flourishing Seaport Town Panel 1,000 Plenty of scope for young and energetic man Premium one half share 1½ years purchase Preliminary Assistantship entertained

27 S. AFRICA.—CAPE PROVINCE.—Practice of over £1,450 in small Town (4,000 ft. above sea level) in healthy pastoral district. Well built house (2 bedrooms) to rent Premium £500

28 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.), easy access of West End Premium for one half share £2,300

29 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in beautifully situated Country Town Panel about 650 House (5 bedrooms) to rent Good schools Excellent sport. First class Hospital One third to one half share at 1½ years' purchase Welsh and necessary

30 W. MIDLANDS.—Practice £800 p.a. in market town Panel 170 House (5 bedrooms) garage and garden to be sold or let Premium 1½ years' purchase

31 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600 Nice house (4 bedrooms) to rent Premium for one half share 1½ years Purchase

32 W. OF ENGLAND. — Country Practice over £500 p.a. in beautiful district Small panel House with lovely garden and paddock, for sale Scope Prem. 1 yr's pur.

33 YORKSHIRE (N.R.).—Partnership in old-established Practice of £3,000 p.a. in an important town Panel 4,000 Premium for one-fifth share 2 years purchase

34 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb Panel £100 Modern house (5 bedrooms) Premium £1,100

35 CORNWALL.—Practice of £1,200 p.a. in a favourite seaside resort Panel 520 Hospital Good house and garden Premium 1½ years Purchase

36 KENT. — Country Practice of about £850 p.a. Panel 550 Good house and garden for sale Prem. £1,100

37 HOME COUNTIES.—Practice of £1,750 p.a. in small attractive Country Town within 25 miles of London Panel about 1,000 House (6 bedrooms) with small garden for sale Educational facilities and sport Prem. 1½ years purchase

38 EAST ANGLIA.—Partnership in Practice about £3,000 p.a., in first-rate town Panel about 3,000 Suitable house obtainable Scope for increase Premium one-third share 1½ years purchase.

39 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district Panel over 700 Large house in splendid condition with central heating and electric light, beautiful garden with greenhouse, for sale All kinds of sport Premium £1,350

40 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district Panel 2,525 Scope for increase Premium one half share 2 years purchase

41 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district Panel 1,500 Detached house with garage and small garden, to rent Sport of all kinds Premium one third share 2 years' purchase Preliminary Assistantship

42 LEEDS. — Very compact mixed Practice over £1,200 p.a. Panel 1,300 Large well situated detached house (4 bed and dressing rooms), with large garden, to rent on lease Premium 1½ years' purchase.

43 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district Panel 250 Convenient semi-detached house (4 bedrooms) with good garage and secluded garden, for sale Great scope Premium £850

44 CO. DURHAM.—Partnership in Country Practice easy distance of coast In one about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms) in quarter acre of garden, for sale Premium for one half share only £1,000

45 OPHTHALMIC Practice in flourishing town within easy distance of London Receipts over £450 (one day's attendance per week) Fees maintained £1 1s. Rent £60 Good Hospital Premium £800

46 MIDLANDS. — Partnership in first-rate country town Practice of £4,200 p.a. in beautiful hunting centre Applicant should be aged about 30 (Varsity man preferred) Cottage Hospital Scope for Surgery One fourth share at 2 years' purchase Preliminary Assistantship

47 SOMERSET. — Practice averaging £870 p.a. in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase Scope for increase. Premium £1,300

48 GLAMORGANSHIRE — Assistantship, with view to Partnership in Practice about £2,700 p.a. in small town Panel about 2,400 One-third share at 2 years purchase, payable by arrangement if desired

49 DORSET —Country Practice of £1,000 p.a. in beautiful part near the coast Panel 660 Detached House (6 bedrooms) with garage and beautiful garden to rent Hunting shooting fishing etc Premium 1½ years Purchase. Suitable for retired Service man

50 S. DEVON. — Practice over £1,800 p.a. (£800 from panel) in beautiful country district near the borders of Dartmoor Suitable house available Hunting shooting, fishing Premium 1½ years purchase

51 EASTERN COUNTIES —Small Practice in town of 20,000 population near the coast Receipts average £500 p.a. (including £100 from panel) Large convenient house, with good Surgery and nice garden, to rent Premium 1 years pur.

52 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel House, with 4 bedrooms and fair-sized garden, to rent. Good scope Premium £700 cash

53 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p.a., in beautifully situated county town Panel about 1,600 Hospital in town, and incoming Partner must be a good Surgeon. One fifth share at first at 2 years' purchase.

54 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town Panel 785 Share up to one half 2 years' purchase Up to date Cottage Hospital

55 S. OF ENGLAND. — Partnership in good middle class non panel Town Practice over £5,500 p.a. Suitable house to purchase. Premium one-fourth share £2,000 Preliminary Assistant-ship

56 LONDON, W.—Steadily increasing Practice, doing about £750 p.a., mostly from Lock up Surgery Panel about 500 Well situated corner residence (5 bedrooms) to rent Premium £900

57 LONDON, S.W.—Practice about £500 p.a. in suburban district Panel 650 No midwifery Semi-detached corner house (6 bedrooms) for sale. Scope Premium 1½ years' purchase

58 WEST HAM — Practice (carried on by Medical Woman) in populous area Receipts last year £560 p.a. Small panel No midwife Six roomed house to rent Prem. £700

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1. DEATH VACANCY.—SOUTH CORNISH COAST.—Very favourite town. Small PRACTICE, offering very good scope as late Incumbent never "pushed" work owing to ill health, and averaging about £500 p.a., including panel of 470. Excellent house can be purchased for £2,500, or smaller one for £750, part on mortgage. Winter and summer seasons. Premium £750, or near offer.
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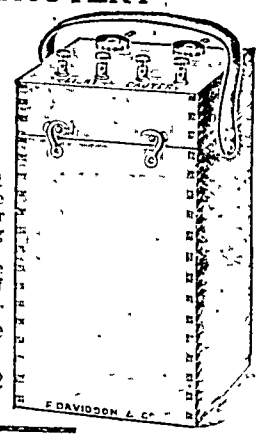
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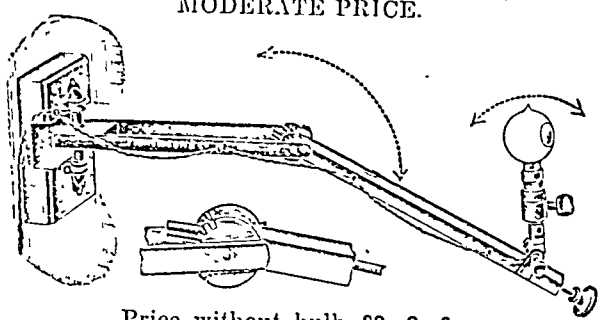


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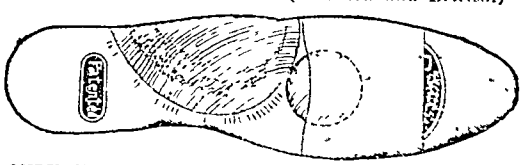
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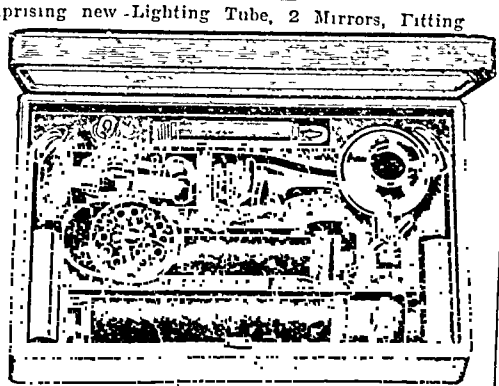


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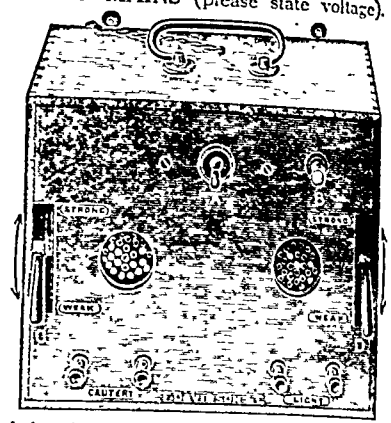
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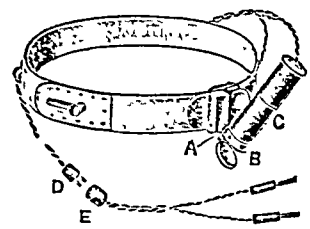
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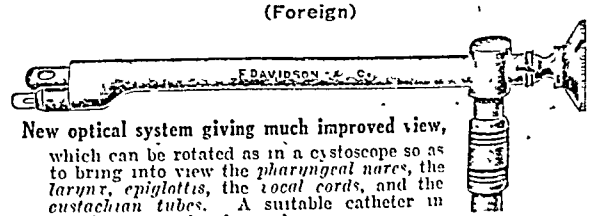
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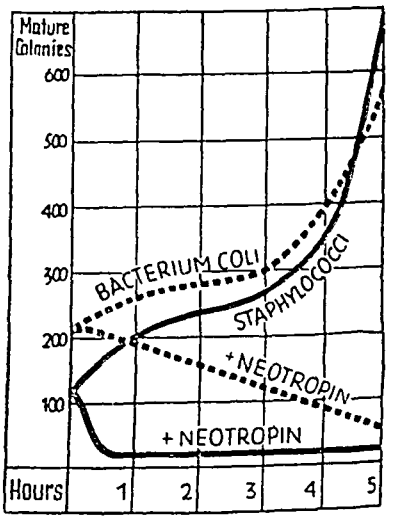
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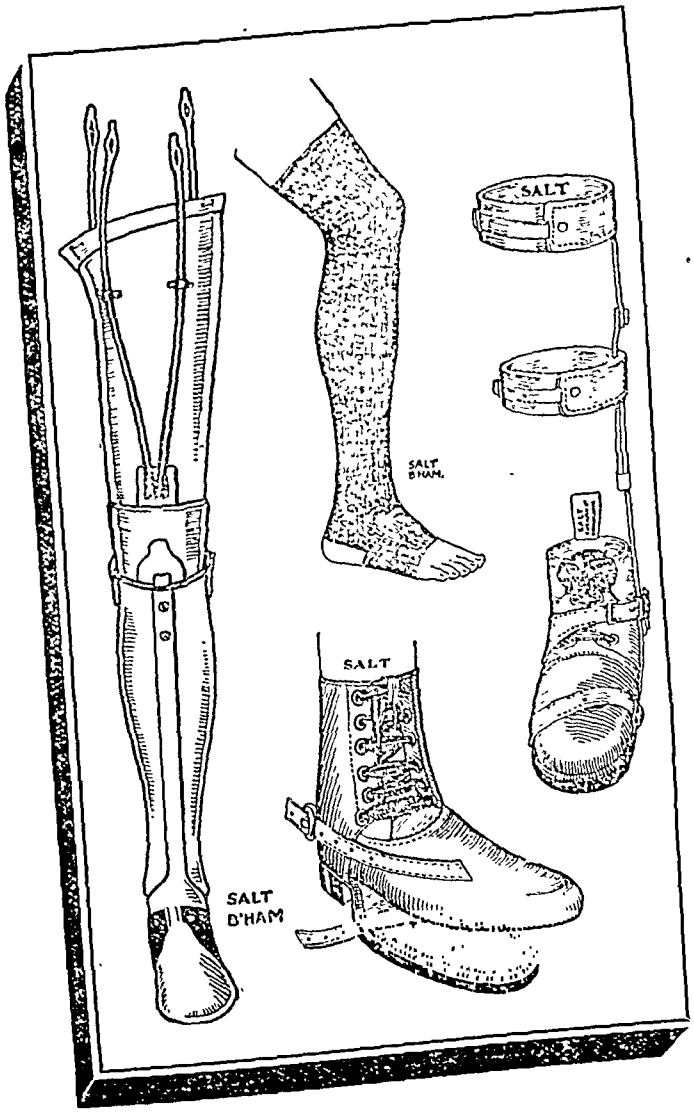
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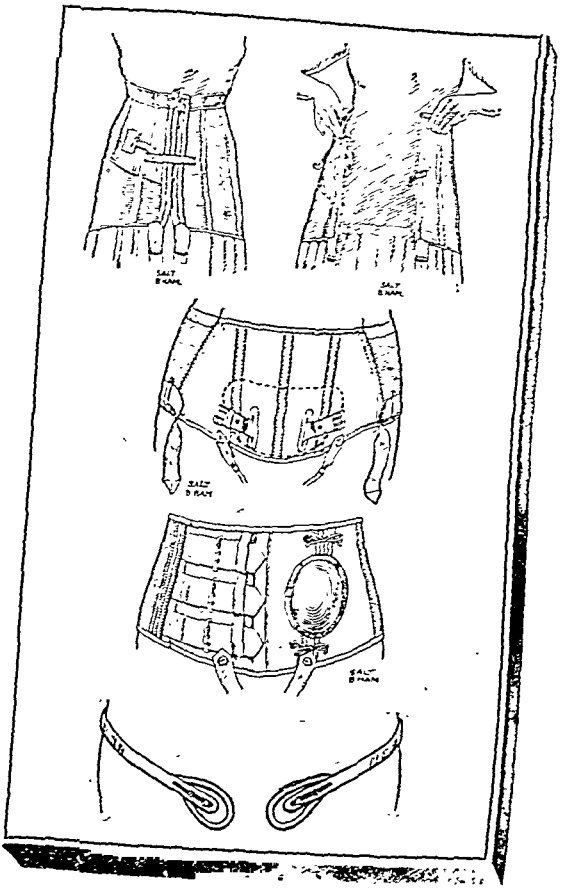
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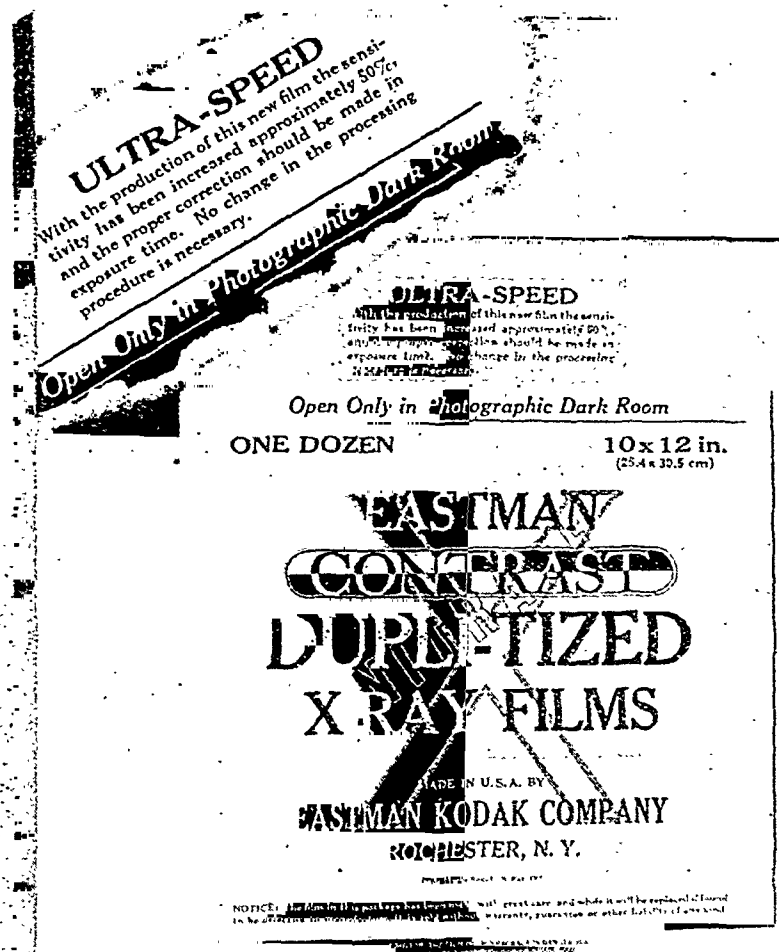
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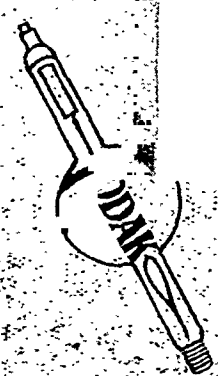
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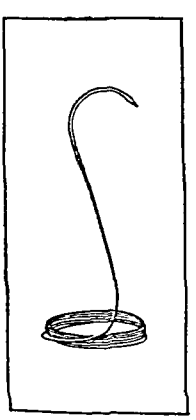
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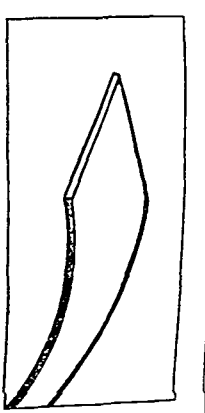
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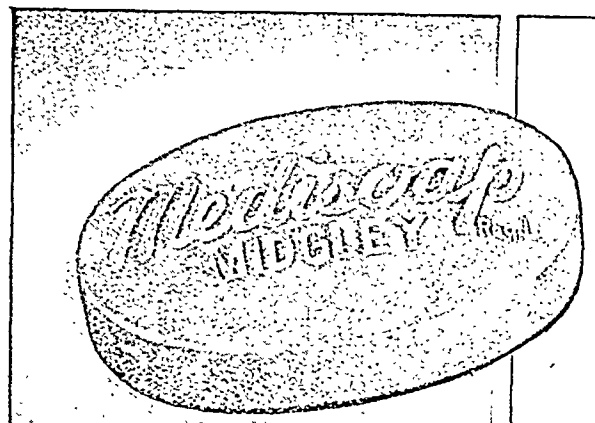
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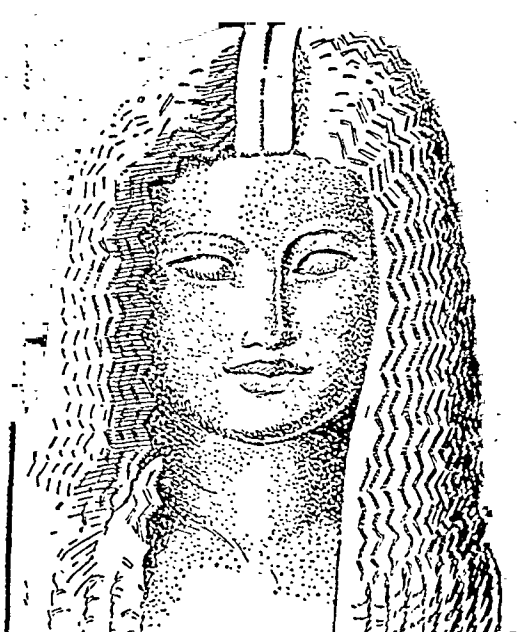
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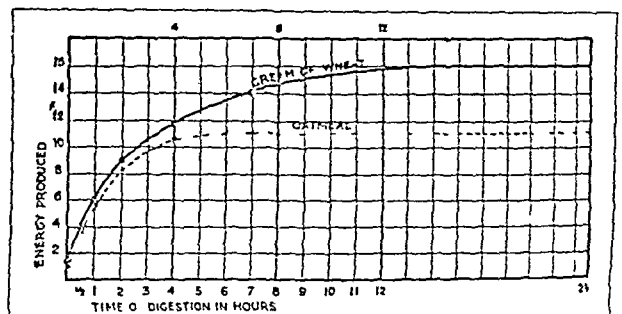
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>
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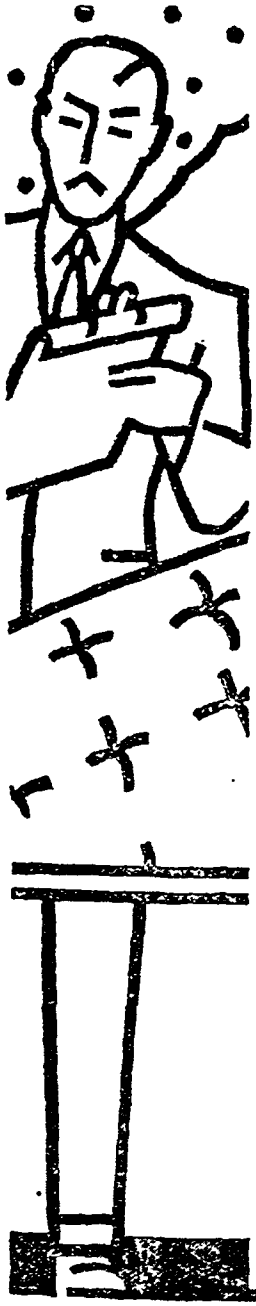
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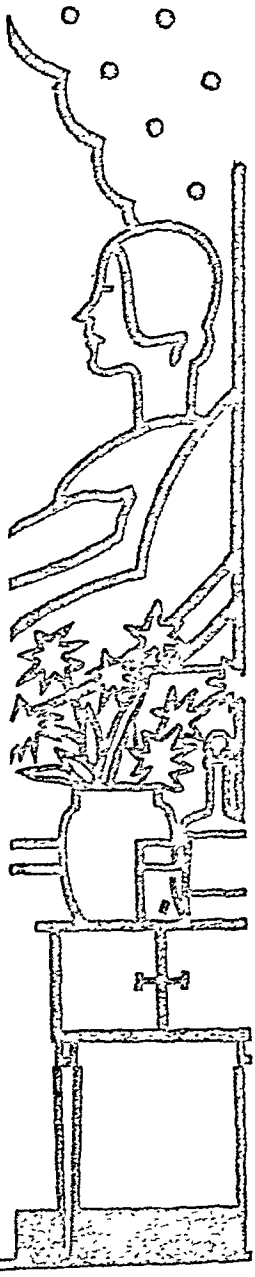
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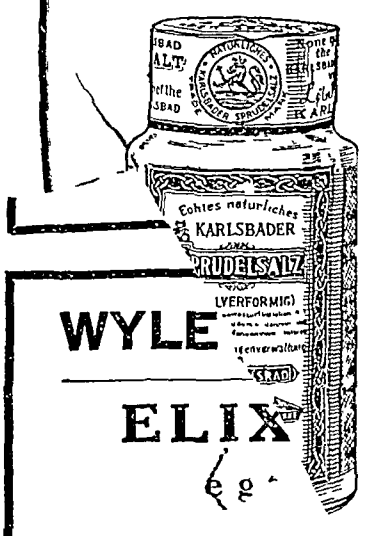
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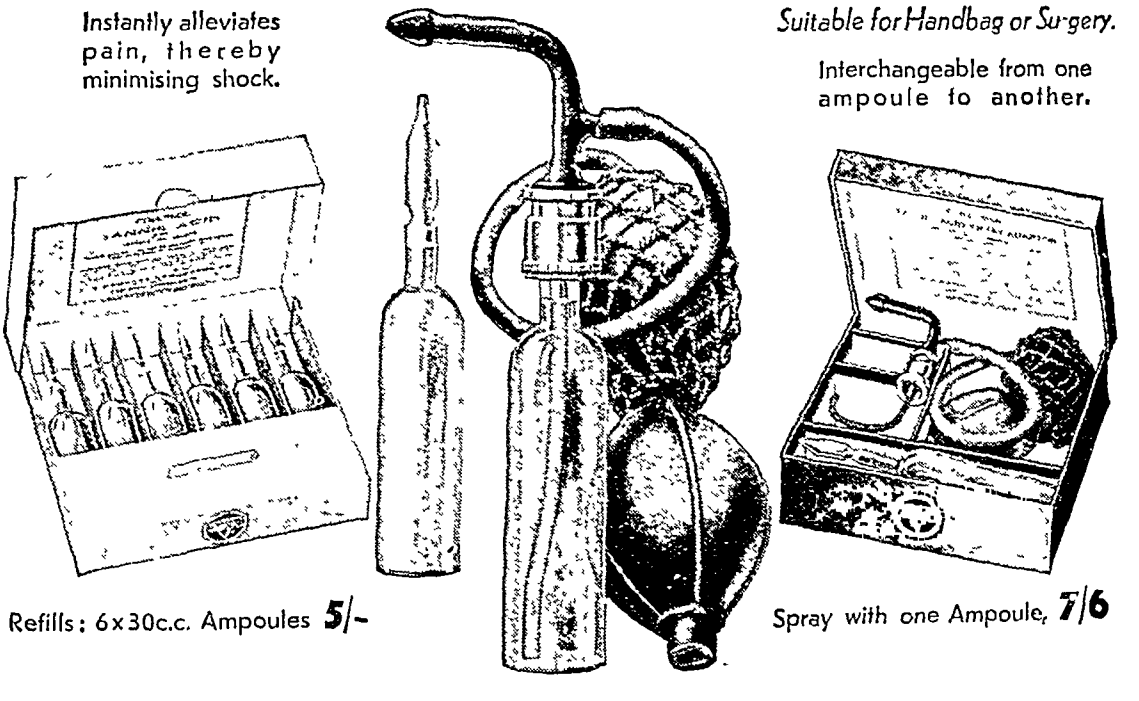
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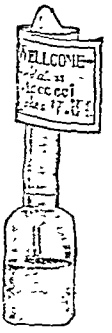
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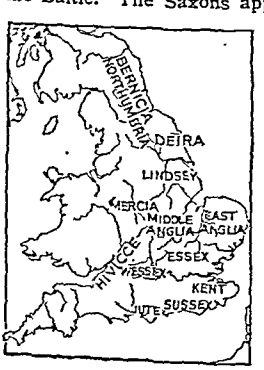
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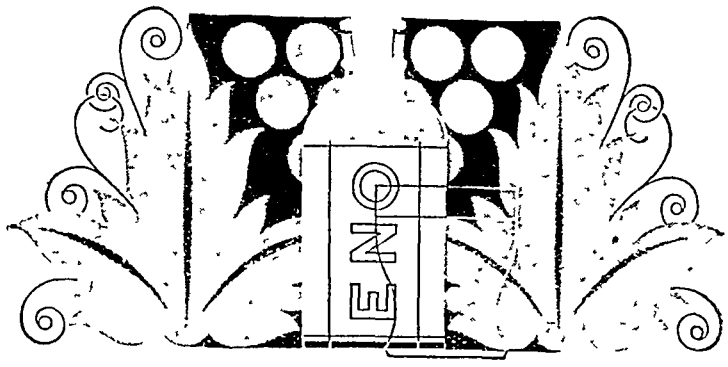
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Observations
ON

CEREBRAL HAEMORRHAGE DUE TO CAUSES OTHER THAN ARTERIOSCLEROSIS*

BY

JAMES COLLIER, M.D., F.R.C.P.

CONSULTING PHYSICIAN AND EMERITUS LECTURER ON NEUROLOGY, ST. GEORGE'S HOSPITAL

The subject of cerebral haemorrhage due to causes other than arteriosclerosis, which I am introducing for your discussion, has caused very much interest and investigation, and our knowledge of its causation and successful treatment has been greatly increased during recent years, chiefly owing to Quincke's "lumbar puncture" and its almost universal use in the treatment of patients who present a picture of meningitis, of coma, of apoplexy or even of unexplained headache, and in the routine examination of the cerebro-spinal fluid in cases of disease of the nervous system. The result has been that at the moment a whole series of clinical states are well known to result from cerebral haemorrhage, some of which closely resemble meningitis, lethargic encephalitis, uraemia, diabetic coma, migraine and even simple headache with or without pyrexia, while others present as curious recurring and rapidly transient attacks of unconsciousness, hemiplegia, aphasia, or any combination of these. Some are dominated by the involvement of one or more cranial nerves, while the variety which is called haemorrhagic pachymeningitis seems to have a peculiar syndrome of its own which we are only just beginning to recognize.

Practically none of these features are mentioned in the descriptions of cerebral haemorrhage of twenty years ago and they are only now coming slowly into our modern textbooks of medicine. I take it that the arteriosclerosis which we are excluding from this discussion will comprise atherosclerosis, the mesial arterial degeneration of high blood pressure, syphilitic arteritis, and the calcareous arteritis of diabetes. It is remarkable that these common causes of cerebral haemorrhage hardly come into causal relation with the conditions we are to discuss to-day, with the exception of atherosclerosis. So that we have new pathological findings and ideas for the new clinical manifestations.

CAUSES OF CEREBRAL HAEMORRHAGE

The following list comprises the definitely known and the hypothetical causes of cerebral haemorrhage:

Injury during birth, or following trivial concussion—haemorrhagic pachymeningitis; oozing from blood vessels; increased permeability of walls; diapedesis; encephalitis; poliomyelitis; *lethargic encephalitis; tuberculous meningitis;* sinus thrombosis; venous bleeding; abnormal blood states; leukaemia; purpura; anthrax infection; insolation; neoplasms, from the rupture of poorly developed vessels in a soft growth; aneurysm—infective in ulcerative endocarditis, puerperal infection, gonorrhoea, etc., and occurring in coarctation of the aorta and also in polyarteritis acuta nodosa of Kussmaul and Dickson; the berry-like and often multiple aneurysms which have been termed congenital aneurysms. (Syphilitic aneurysms of the cerebral vessels seem not to give rise to haemorrhage, but berry-like aneurysms leading to haemorrhage are not uncommon in atherosclerosis.)

Haemorrhage, both meningeal and intracerebral, from the moulding of the head in parturition, seems to be an event of common occurrence. Many years ago Mraczek examined a very large number of infants stillborn or dying within three months of birth, and found that some haemorrhage had occurred in one-fifth of all the cases. In its minor degrees this haemorrhage seems easily recovered from. When severe it may be the cause of still-birth and of convulsions occurring soon after birth, but it is certainly never a cause of cerebral diplegia. The oozing of blood from vessels due to increased permeability of the walls which has been put forward by Osler and many others to account for slowly oncoming subarachnoid and subdural haemorrhage, is a pathology which will have little appeal to those of us who know well how slowly blood may escape from a leaking aneurysm, and how minute and difficult to find such aneurysms may be.

Encephalitis

Encephalitis is important in connexion with our subject. Poliomyelitis, though characteristically a microscopically haemorrhagic disease, does not seem often to cause major haemorrhage, either meningeal or cerebral. It is likely that the "plum pudding" brains with multiple large lacunar haemorrhages which were formerly claimed for this form of encephalitis would not pass the present-day histological tests. Lethargic encephalitis is of great interest in connexion with our subject, for from the early years of the nineteenth century onwards very many cases of subdural, subarachnoid, and cerebral haemorrhage from ruptured aneurysm have been recorded in which the clinical picture was hardly distinguishable from that of lethargic encephalitis. On the other hand many cases which have been proved histologically to be examples of this disease have been complicated by subarachnoid and cerebral haemorrhage. The only means of correct diagnosis is the histological test for lethargic encephalitis, or the discovery of another definite cause for the haemorrhage. I have myself made a mistake in the diagnosis of these conditions, for during the epidemic of 1919 a case came under my observation which from the influenza-like onset, the pyrexia, diplopia, rousable coma, and normal cerebro-spinal fluid seemed typical of lethargic encephalitis. At the necropsy I found an aneurysm of the posterior communicating artery which had become adherent at the edge of the left middle fossa and had caused a very large subdural haemorrhage filling the middle fossa as with a mould of currant jelly. The cerebro-spinal fluid was not even stained at the time of necropsy.

Neoplasms

Neoplasms of soft texture are important causes of cerebral haemorrhage, for such a growth may bring on a haemorrhage before the appearance of any local or general signs, and I have several times seen a fatal apoplexy in a young subject resulting from a haemorrhage into an otherwise symptomless glioma. We should bear in mind too that minor haemorrhages are of common occurrence in the substance of cerebral tumours and may produce a rapid increase in the severity of the symptoms.

Cerebral Aneurysm

Aneurysm of the cerebral arteries is at the present time attracting much attention as a very common cause of every variety of intracranial haemorrhage and as giving rise to the most varied clinical syndromes. Such aneurysms are held to be of common occurrence, and often give rise to no trouble during life, for at least one-fifth of the numerous specimens in our museums have been chance discoveries at necropsy; some of these have been very large aneurysms. They are never of syphilitic origin. The etiology of a minority is well known in the bacterial infections of the blood of infective endocarditis, of gonococcal, and of puerperal infections. In coarctation

* Made in opening a discussion in the Section of Neurology and Psychological Medicine at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

of the aorta, where the arterial tension above the constricted area in the aorta becomes extremely high when adult life is reached, the tunica media splits locally under the pressure with the formation of aneurysms which are often multiple. They are a feature of the curious malady first described by Kussmaul—"polyarteritis acuta nodosa"; and, further, they may occur in atherosclerosis.

But the cause of the majority of the cerebral aneurysms has not yet been determined with any certainty. Eppinger, from the absence of signs of any inflammatory process in the aneurysms and the negative etiology, termed them congenital aneurysms, implying that they were due to a local congenital defect in the arterial wall which at any time during life might bulge under the strain of the blood pressure with subsequent aneurysm formation. This view has been taken by Froin and by many others. Harvey found an aneurysm in a rabbit 14 days old; Turnbull recorded one in a child of 19 months; and they have been repeatedly found in children, though they do not as a rule give rise to symptoms until after puberty.

Murray Drennan found that these aneurysms often occurred at the branching of vessels and believed that a rupture of the muscular and elastic coats occurred at the acute angles formed by the union of cerebral vessels. He suggested that the eddy of the blood stream at such points might allow organisms to settle down in these regions especially, and so cause aneurysm. Wiley Forbus has recently shown that the muscular and elastic coats are normally absent at the angles of junction of all the smaller arteries; and, while he supports the theory of a natural weak spot at these sites, he necessarily invokes some other unknown factor which determines the appearance of an aneurysm only in some subjects and in a few places, although the "congenital fault" is common to all arteries and to all people.

I have called these aneurysms "berry" aneurysms because of their shining coats and rounded outlines; they hang like berries on the arterial stalks and are often multiple. I think that it is highly probable that many of them are really of infective origin from some low-grade blood infection which is otherwise symptomless. They are similar in location and appearance to the infective aneurysms, and like them are also found on the splenic, mesenteric, and other arteries of the body. There is yet another suggestion—namely, that the so-called congenital aneurysms may be caused by a local form of atheroma occurring in young subjects which often heals leaving linear scars upon the vessels. It is an interesting point that berry aneurysms have appeared in more than one member of the same family. Gowers records an example in two brothers, and Dr. Greenfield has met with two other instances.

SYMPTOMATOLOGY

Aneurysms seem to give rise to no symptoms at all, however large they may be, unless they clot up, calcify, become adherent to surrounding structures—generally some of the cranial nerves—or unless they burst. They may rupture frankly in any situation within or upon the brain, and then, whatever the position, they produce the syndrome of a severe rapidly fatal apoplexy with blood in the cerebro-spinal fluid. When the haemorrhage is less rapid and the aneurysm is buried in the brain substance, or has become adherent and bursts into it, the resulting picture is in no way distinguishable from that produced by cerebral haemorrhage from other causes. But these aneurysms have a tendency to rupture slightly and to leak slowly, after which they often heal, to leak again later on—often in another situation. They may leak into the subdural space and there form an organizing haematoma, liver-like in appearance and with a clinical picture, sometimes closely resembling lethargic encephalitis, and at other times peculiar to this condition, as Dr. Martin will describe to us later. There is no blood staining of the cerebro-spinal fluid in this type.

They often leak into the subarachnoid space and then most commonly produce a syndrome precisely resembling meningitis, with headache, pyrexia, head retraction and stiff neck, and frequently with diplopia, vomiting, and convulsion: the distinction from meningitis is the presence of blood in the cerebro-spinal fluid and the relief produced by draining. There is one modification of this syndrome to which I wish especially to call your attention, and that is when no other signs of meningitis, except the headache alone, are present.

A lady who was touring in the country developed so severe a headache that she decided to return home, and drove her car from Liverpool to London without a break. I saw her immediately after arrival and could not determine the cause of her complaint; and though I had my needles with me and discussed the question of lumbar puncture with her husband, who was a doctor, I decided that there was no indication for it because she had no physical signs whatsoever except the headache. Some eight hours later and without the development of any further signs or symptoms she dropped dead when walking round her room. A lumbar puncture made after death showed copious blood under high pressure in the subarachnoid space.

The transient phenomena which may follow upon a not too rapid and not too copious haemorrhage upon or within the brain are very remarkable; some of them are difficult of explanation and all are likely to give difficulty in diagnosis, as they may occur without headache or signs of meningeal irritation. The more common of these transient signs are attacks of unconsciousness lasting from a few hours to many days, of headache resembling migraine, of hemiplegia, of aphasia, of convulsions local or general, of delirium with headache, of pyrexia with headache, of headache or of unconsciousness with albuminuria or with glycosuria of high concentration. I have myself seen all of these events, and doubtless there are many others. Here is a very good example:

A commercial traveller aged 30 suddenly fell unconscious at his work in a shop at Leeds and is said to have remained unconscious for sixteen days. A lumbar puncture revealed copious blood in the cerebro-spinal fluid. Thereafter he recovered rapidly and resumed work. A few months later he again fell unconscious for a short time, and on recovering was convulsed in the right hand and vomited. He showed marked slurring of speech and an extensor response on the right side. A lumbar puncture again revealed copious blood. He recovered in four days and returned to work. Two months later he was suddenly seized with mental confusion, weakness on the right side and aphasia. Blood was again found in the cerebro-spinal fluid and he once more made a rapid and complete recovery. Some time later he had sudden severe headache followed by delirium and convulsion; he recovered in a few days. Some weeks after this he came into the National Hospital under my care where I could find nothing abnormal about him except the bright yellow cerebro-spinal fluid.

Very many cases of this order have been reported, and notably one by the late Dr. Fearnsides in which a series of severe but rapidly transient cerebral events including unconsciousness, convulsion, hemiplegia, and aphasia occurred one after the other. Each lasted but a day or two, and between these events the patient carried on with work. Eventually a third nerve paralysis from adherence of an aneurysm led to admission into hospital, where the frank rupture of an aneurysm into the cerebral hemisphere proved immediately fatal. Previously to the final haemorrhage there had been only slow leaking of blood into the subarachnoid space which must have caused the varied and isolated transient symptoms.

The lethargic picture so closely resembling that of lethargic encephalitis has been associated with slow cerebral haemorrhage ever since it was first reported in 1824 in connexion with a leaking aneurysm I have seen it in subdural haemorrhage, in subarachnoid haemorrhage, and in slow intracerebral haemorrhage where there has been much ploughing up of the convolutions at the base of the brain The distinction between these two conditions during life may be exceedingly difficult

Delirium, convulsion, pyrexia, albuminuria, glycosuria, and the retinal haemorrhages (both subhyaloid and flame shaped) give wide scope for discussion of their cerebral origin Delirium and convulsion may be the result of the extravasation of blood on the surface of the brain both may occur when there is no gross lesion of the brain Pyrexia albuminuria, and glycosuria suggest interference with that thin slice of the mid brain which is known to be concerned with heat regulation, and with that region of the medulla in which the punctures of Claude Bernard produced albuminuria and glycosuria, but this cannot be the explanation, for I have seen all of these events in cases where these parts were entirely free even from surface haemorrhage The flame shaped haemorrhages and the papilloedema are obviously due to the increased intracranial pressure, and the subhyaloid haemorrhages must have a like origin in a very rapidly rising intracranial pressure The latter cannot be due to the direct seepage of blood from the subarachnoid space into the retina, as has been maintained, for I have seen them when there has been no subarachnoid haemorrhage and again when the subarachnoid or the primary ventricular haemorrhage has never reached the anterior aspect of the base

SITES OF RUPTURE OF ANEURYSM

My especial interest in cerebral aneurysm urges me to put before you a short list of the situations in which an aneurysm may burst or leak I have seen examples of the following

(1) Tran dural Rupture the case observed was one of aneurysm of the left posterior communicating artery in a young woman It became adherent to the dura and ruptured into the outer wall of the cavernous sinus producing great pain and loss of sensibility in the distribution of the first and second divisions of the fifth nerve and paralysis of the third fourth and sixth nerves The pool of blood thus formed in the middle fossa of the skull ruptured later on into the subarachnoid space with immediately fatal results (2) Subdural rupture (3) Subarachnoid rupture (4) Intracerebral rupture (a) from a surface aneurysm which becomes adherent to the brain tissue (b) from an aneurysm buried in the brain tissue (5) Primary rupture into the ventricle In this condition the wall of the aneurysm encroaches upon the wall of the ventricle and ruptures thereinto with little or no tearing of cerebral tissue The interesting clinical aspect of this rupture when it is not too rapid exactly, resembles that of the much more common subarachnoid haemorrhage (6) Rupture of an internal carotid aneurysm into the cavernous sinus The clinical picture is that of a unilateral pulsating exophthalmos

In those aneurysms which rupture slowly and leak rather than burst there is a great tendency for the rupture to heal locally and for another to occur later in another part of the sac—perhaps after this has become adherent to surrounding structure, especially the brain substance

This is the common explanation of subarachnoid haemorrhages repeated at considerable intervals of time and followed not infrequently by a fatal rupture into the brain substance Many of the aneurysms never rupture nor give rise to any symptoms, and many which leak heal permanently and become obsolete Though we are discussing cerebral haemorrhage it is necessary for me to point out that when an aneurysm clots up in part or when its wall calcifies, then and then only does it give rise to local pressure symptoms And it does so most commonly in the region of the optic chiasma causing a syndrome indistinguishable from that of a pituitary tumour Such a picture followed by sign of cerebral haemorrhage can be due to nothing else but aneurysm Another common clinical antecedent to the leaking or rupture of an aneurysm of the posterior communicating artery is adherence of the aneurysm to the third or the sixth nerve, causing paralysis of these nerves

The treatment of subarachnoid haemorrhage where the escape of blood into the thecal space is free is an interesting matter for discussion, since it has been held that repeated draining away of the effused blood by lumbar puncture increases the tendency to bleeding though it undoubtedly relieves the symptoms greatly for the time being My own practice is always to drain freely and repeatedly so long as the symptoms of increased intracranial pressure persist and I have never had cause to regret this practice The cases that you cannot drain generally die and these are the cases where an extensive subarachnoid effusion of the convexity clots at its edges and so prevents the escape of the blood into the general subarachnoid reservoir while the collection constantly increases at its centre Such cases usually end with extension of the blood sac into the cerebral substance—the meningo cerebral haemorrhage of From Other undrainable cases are those in which the haemorrhage is largely or altogether subdural The cause of death in cases of cerebral haemorrhage is always the increase of intracranial pressure and surely it is wise to keep this within bounds by draining whenever it is possible to do so

ACUTE TONSILLITIS AND SOME OF ITS SEQUELS:

EPIDEMIOLOGICAL AND BACTERIOLOGICAL OBSERVATIONS*

BY

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In the following paper tonsillitis is considered as the local *manifestation* of infection with haemolytic streptococci The subsequent course of this infection is dependent on two factors, the pathogenic quantities of the infecting strain and the state of immunity of the individual attacked The size of the infecting dose is a contributory factor, it is difficult to estimate, but is probably proportional to the level of infection in the community and to conditions, such as overcrowding, which favour transmission

We have described scarlatina as one of the sequels of this *form* of tonsillitis This is a convenient way of differentiating the two clinical conditions, acute tonsillitis and scarlatina, which apart from the presence of a rash and the greater risk of nephritis in the latter appear to us to be almost identical, both epidemiologically and bacteriologically The data which we put forward have been largely derived from inquiries into outbreaks at school and we are greatly indebted to the school medical officers who have assisted by supplying us with material and statistical information We are unable to give their names owing to the confidential nature of these inquiries made in outbreaks in which the help of the Ministry of Health had been sought by the school authorities and

* Read in opening a discussion in the Section of Public Health (including Tuberculosis and Occupational Diseases) at the Annual Meeting of the British Medical Association Edinburgh, 1931

others conducted under the aegis of the Committee of the Medical Research Council for the investigation of epidemics in schools. We wish to thank the Council and the Committee for permission to use their records for this purpose, and the secretary of the Committee, Dr. Joyce Wilson, for her valuable help.

CLINICAL FEATURES OF TONSILLITIS

Tonsillitis is an endemic and epidemic infectious disease with an incubation period which ranges as a rule from two to four days. It is uncommon at ages below five and above forty years, and its greatest incidence is about the age of puberty; adults, however, often suffer severely in epidemics associated with infected milk. Infection is conveyed in three principal ways: (1) by milk or cream, (2) by such vehicles as tableware, pencils, handkerchiefs, and possibly by impure swimming-bath water, and (3) by droplet infection. The first method, transmission by milk, has resulted in many severe outbreaks in different parts of the world, but in most of the epidemics in schools, with which this paper deals, milk can be definitely excluded as a source of infection.

Tonsillitis is an important cause of sickness in all the three fighting services,*[2] and as an endemic disease its diapason runs through all out-patient, school and industrial invalidity statistics. Close[4] records that out of 382,272 patients attending the Casualty Department at Guy's Hospital for the first time for all disorders, 25,629 (6.7 per cent.) were suffering from acute tonsillitis. Dudley[7] found that the average attack rate per term of tonsillitis at the Royal Naval School was 4.6 per cent. Reports to the committee of investigation into epidemics in schools show that just under 4 per cent. was the average term attack rate among 8,500 boys in great public boarding schools during 1930, a particularly healthy year; in the same year 3,000 girls in well-to-do boarding schools had an attack rate of 4 per cent. per term. But in epidemics the attack rate may be ten times as high. Haig-Brown,[12] for example, in 1886 recorded an attack rate of 63 per cent. in one autumn term in one house of Charterhouse School, 34 out of 54 boys being attacked, though the housemaster, his family, and 11 servants all escaped. We shall see that an attack rate of from twenty to thirty per cent. in one term is by no means uncommon.

The organism most commonly associated with inflammatory conditions of the throat, apart from diphtheria, is the haemolytic streptococcus or *Streptococcus pyogenes*, and there is strong evidence that it is the active pathogenic agent. The haemolytic streptococcus is also found in the throats of a proportion of healthy persons, its incidence varying with the locality, the season, and the hygienic circumstances of the community examined. Topley[22] showed the monthly percentages of healthy persons, living under different housing conditions in Manchester in 1925-26, who were carrying haemolytic streptococci. The incidence ranged from 36 per cent. in November, 1925, corresponding with a period of high incidence of scarlet fever in the city, to zero in October, 1926. Topley and Wilson[23a] say:

> "Our knowledge of the carrier-rate of *Streptococcus haemolyticus* among various samples of the population is as yet far less extensive than in the case of the diphtheria bacillus, though it seems fairly certain that the average rate is higher in the former case than in the latter."

In plate cultures of throat swabs taken from patients with acute tonsillitis, haemolytic streptococci are almost invariably found in profuse or even in pure culture. In the earliest stages of scarlet fever they can be grown from throat swabs in from 90 to 100 per cent. of cases. They often multiply in the throat in measles, and are obtained from the ear discharge in at least 75 per cent. of cases of otitis media. Moreover, it will be shown that some of the common ailments among schoolboys, such as febricula, feverish cold, nasopharyngeal catarrh, and influenza, especially when these occur during outbreaks of tonsillitis or scarlet fever, are associated with the presence of haemolytic streptococci in the throat, although the sore-throat symptom is often absent.

SEQUELS OF TONSILLITIS

Following upon tonsillitis due to infection with haemolytic streptococci there are three sequels of major importance. These are scarlet fever, otitis media, and acute rheumatism. Other diseases in schools which appear to have some relationship to tonsillitis are epidemic catarrhal jaundice[10] and appendicitis, but it is not possible to discuss these in this paper. To refer to scarlet fever as a sequel of tonsillitis has a justification beyond the mere sequence in time expressed in Trousseau's phrase: "Sore throat is an essential part of scarlet fever; it precedes the eruption." From the epidemiological standpoint, too, scarlatina may be regarded to some extent as a sequel of tonsillitis, though perhaps it would be more correct to say that the occurrence of scarlatinal cases in a community is often a consequence of a high level of infection, that is, as shown by a high carrier-rate, of haemolytic streptococcus. The first clinical indication of this high level of infection is the occurrence of cases of tonsillitis which often precede the appearance of typical scarlet fever cases. The above considerations are applicable in particular to those outbreaks of scarlet fever in which the incidence of the disease is of a more or less sporadic nature; that is to say, when single cases occur at intervals of a week or more. On the other hand, there are instances where the introduction of scarlatinal infection into a school or other institution results in an explosive outbreak. The distinction between these two varieties of scarlatinal outbreaks will be discussed later; in the main it depends, we believe, upon the type of streptococcus concerned as determined by serological methods.

CARRIER-RATE

While observations upon the carrier-rate of the haemolytic streptococcus in non-epidemic times are unfortunately very few, there is ample evidence that if a sample swabbing be taken of a community in which cases of scarlet fever are occurring, a high carrier-rate of haemolytic streptococcus will generally be found. In five consecutive instances where such sample swabbings were made in schools and school-houses in which cases of scarlet fever were occurring, the carrier-rates of haemolytic streptococcus found were 33, 26, 26, 36 and 33 per cent. respectively. On the other hand, carrier-rates of this height may be encountered without the occurrence of cases of scarlet fever. Thus, one of us (F. G.) found a carrier-rate of 27 per cent. in a large sample from a public school during a healthy Christmas term in which no cases of scarlet fever occurred. There had been much tonsillitis in previous terms at this school, but a notable absence of scarlet fever. Only three of the 26 strains of haemolytic streptococci were identified with one or other of the four chief scarlatinal types, a result which is consistent with the absence of scarlet fever in the school.

It has been known for many years that cases of tonsillitis without rash ("scarlatina sine eruptione") occur during epidemics of scarlatina side by side with cases in which a fully developed rash appears; and in 1887 Mantle[16] pointed out that epidemics of sore throat were closely allied to those of scarlatina. Moreover, as mentioned above, it appears that other forms of pharyngitis

* Annual admission rates per cent.: Navy average 1924-28, 3; Army (Home) 1929, 4; R.A.F. (Home), 4.2.

and febricula besides tonsillitis may be due to infection with haemolytic streptococci; these conditions may occur side by side with cases of scarlet fever as alternative clinical results of the same infection. In addition, we must recognize the existence of many entirely symptomless carriers.

"It is almost certain that scarlet fever must be placed in the category of infections in which the ratio of carriers to typical cases is high." (Topley and Wilson.[23b])

The existence of carriers, as Parsons[25] has pointed out, makes the preventive control of scarlet fever a very difficult matter.

BACTERIOLOGY OF SCARLET FEVER

Bacteriological observations have provided confirmation of the view that scarlet fever is one of the manifestations of infection with haemolytic streptococci, and that certain types of these are specially equipped to set up the complete scarlatinal syndrome. Of the strains derived from 375 cases of scarlet fever admitted during the four years 1926-29 to Park Hospital,[11] 68 per cent. fell into one or other of four types (Type 1, 10 per cent.; Type 2, 25 per cent.; Type 3, 22 per cent.; Type 4, 11 per cent.); the remaining 32 per cent. were markedly heterogeneous in their serological relationships. Since four types are accountable for the majority of scarlatinal cases, it might be assumed that the toxigenic capacities of these "chief" types are sufficiently high to override the antitoxic immunity of a considerable proportion of a population exposed to infection. On the other hand, the inability of certain strains to produce more than isolated cases would seem to indicate that in the same population there were relatively few individuals whose antitoxic immunity was so low that infection with these types, which form a heterogeneous group, resulted in the development of a scarlatinal rash.

To support the theory of a superior toxigenic power inherent in the "chief" types compared with that of the heterogeneous types may be cited the following contrasts between two schools of boys, 9-14 years of age, both of which had been free from scarlet fever for a long time.

A is a separate preparatory school of 52 boys,[9] and B with 66 boys is the junior house of a large public school. In each case, the infection was introduced in the Christmas term,[11] and was carried on to the next (Lent) term by return cases; in A the infecting haemolytic streptococcus was Type 2 (scarlatinal), the most frequent of the "chief" types, whilst in B the infecting strain belonged to the heterogeneous group. In the preceding Christmas term A had 7 boys out of 52 attacked by scarlet fever, two boys had tonsillitis, and seven pyrexia; similarly, B had one certain case of scarlet fever and two doubtful cases, but no information as to tonsillitis and pyrexia cases in B is available for the preceding Christmas term. In this term there were 8 cases in the other houses of the big school of which B was the junior house, but in the next (Lent) term, scarlet fever cases occurred only in B. Fig. 1 contrasts the incidence of the three diseases in each school in the Lent term. In the Lent term the cases began 5 days after the beginning of term at B and 11 days after at A. A had 21 cases of scarlet fever (out of 42 boys unprotected by previous attack), 11 cases of tonsillitis, 7 of pyrexia. The carrier-rate of haemolytic streptococci in boys in school on March 14th was 26 per cent. In the corresponding term B had 5 cases of scarlet fever together with one patient who peeled subsequently, one case of tonsillitis and 32 cases of pyrexia. On March 5th the carrier-rate of haemolytic streptococci of boys in B (apart from scarlet fever patients but including the boys who had had pyrexia) was 30 per cent. It seems possible that their pyrexia had been due rather to streptococcal nasopharyngitis than to influenza. At A the disease was carried on by a chronic carrier (immune by attack in infancy but reinfected in the Lent term as regards the throat) into the summer term, when 4 cases of scarlet fever, 3 of tonsillitis and 6 cases of pyrexia occurred. In addition, the Type 2 infection at A caused at least 8 return cases of scarlatina, whereas with the exception of the carry over from the Christmas to the Lent term, no return cases were known to have occurred with the heterogeneous strain infection at B, though during the same 6 weeks strict hospital isolation was enforced at both schools.

Thus, the Type 2 streptococcus seems definitely more infective, and far more toxigenic, while its tendency to persist is shown by the fact that some of the patients yielded Type 2 positive swabs for long periods (in one case 155 days). This contrast certainly supports the view that the toxigenic power of a haemolytic streptococcus, as shown by its ability to produce a scarlatinal rash, is linked up with its serological type characters. On the other hand, as the following experience shows, one of the chief scarlatinal types, in this instance Type 1, may cause an extensive outbreak of disease without producing definite scarlatina. The details of the outbreak, which occurred in the Lent term, 1931, are as follows:

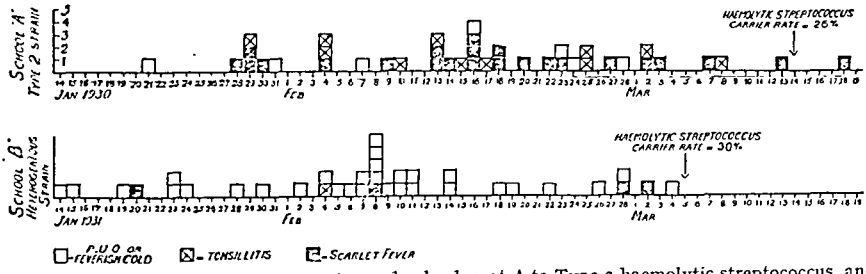


Fig. 1.—Contrast between outbreaks at two preparatory schools, due at A to Type 2 haemolytic streptococcus, and at school B to a haemolytic streptococcus of the heterogeneous group. A has 52 boys; B has 66 boys.

At a public school, C, of nearly 500 boys, for several years there had been severe outbreaks of tonsillitis shown to be caused by several of the heterogeneous types of haemolytic streptococci; in the Christmas term of 1929 a large sample swabbing of 96 boys showed a carrier-rate of haemolytic streptococcus of 27 per cent. In September, 1930, there was a case of pharyngitis in a member of the staff, a pantry maid, from whom a strain, subsequently identified as Type 1, was obtained; no cases of scarlet fever occurred during this term. The Lent term of 1931 began with 46 cases of feverish cold in the first five weeks, after which the clinical picture changed, and a severe epidemic of tonsillitis set in, 101 cases occurring, an attack rate for tonsillitis of 20 per cent., or, if the initial cases of feverish cold be included, of 30 per cent. Both the clinical types of disease gave rise to complications, especially adenitis and also otitis media (16 cases of the latter, including 3 mastoids). There were also 5 cases of sinusitis, one of pneumonia, and one death from septicaemia. The number of cases of otitis media is very significant in view of the type of streptococcus concerned in the epidemic. The proportion of cases of fully developed scarlet fever in which otitis media supervenes varies considerably in different epidemics, but 12 per cent.[11] seems to be the usual average. Thus, from 133 cases

of scarlet fever, 16 cases of otitis media might be expected. In the outbreak under consideration this number followed 101 cases of tonsillitis and 46 cases of pyrexia, pharyngitis, etc. After two months of epidemic prevalence there occurred almost simultaneously, though in four different houses, four cases (in one of which fatal septicaemia developed) of tonsillitis with rashes, but these rashes, though carefully considered, were not regarded as sufficiently characteristic to justify the diagnosis of scarlatina. It is of some interest that one of these four boys had a history of scarlet fever. There was no opportunity of examining bacteriologically all the cases of infection at this school and it is impossible to state definitely how many were due to the Type 1 strain, but swabs were sent at intervals during the term from cases both of tonsillitis and of feverish cold, and from most of these, Type 1 scarlatinal streptococci were isolated. It seems highly probable that much of the tonsillitis was due to Type 1 infection, and it is not unlikely that many of the initial 46 pharyngitis cases were of similar origin. Yet although this infecting strain produced one fatal case of what might be called *scarlatina maligna* and many cases with serious complications, it had in relation to this community hardly any toxigenic power. After the rapid transference inevitable in such a tonsillitis epidemic, it is likely that it became somewhat exalted in virulence and perhaps also in toxigenicity, since it was able to give rise to rashes in four cases, though these rashes were not typical of scarlet fever. Probably they resembled rashes which are described by J. D. Rolleston[9] as associated with tonsillitis.

Dick toxin than the younger boys of A, 9 to 14 years, highly "protected," and with but 4 per cent. with a history of previous scarlet fever. Moreover, the Type 1 from C does not appear to have produced return cases of scarlet fever elsewhere, whilst the Type 2 from A produced them in 23 per cent. of the cases. Although this particular Type 1 strain from C, whether owing to feeble toxigenicity or to the antitoxic immunity of the boys, failed to produce the scarlatinal syndrome usually associated with Type 1 infections, from the point of view of serious complications, with the possible exception of nephritis, there was nothing to choose between this epidemic and one of an equal number of cases of the ordinary mild scarlet fever of the present day. As regards nephritis, it may be mentioned that Gunn and Griffith[11] found this sequel most commonly in Type 2 infections, while Type 1 more frequently produced otitis media. The absence of rashes in this Type 1 infection was perhaps a misfortune. If this danger signal had been present in the earliest cases of the outbreak the period of isolation applicable to scarlatina would have been necessary and the spread of infection might have been checked. As it was, the patients were detained in the school sanatorium for an average period of perhaps a week, when they were allowed to return to school in some cases probably still in an infective condition.

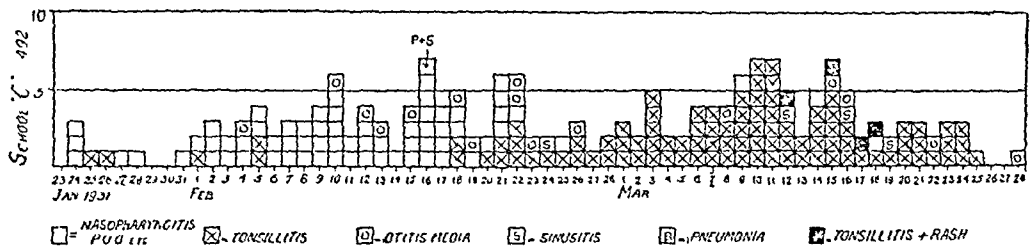


Fig. 2.—School C. Lent term, 1931. Population, 498 boys. Epidemic of tonsillitis due to Type 1 scarlatinal streptococcus. The daily incidence of sickness includes 46 cases of feverish cold, and 101 cases of tonsillitis are shown. Complications are shown including 16 cases of otitis media (3 mastoid operations), 4 of sinusitis, 1 of pneumonia and sinusitis, 1 of septicaemia (with rash). Four cases of tonsillitis with rash are included, but none was considered to be scarlatina.

The experience at this school raises two questions, neither of which on the information available can be answered. In the first place, do the strains of haemolytic streptococci commonly associated with scarlet fever, such as strains of Types 1 and 2, differ among themselves in their capacity to produce Dick toxin, while retaining their infective power and their distinctive serological type characters? (It may be remarked here that the other two types, Types 3 and 4, which have been frequently found in scarlatinal cases admitted to hospital, have not yet been identified in any school outbreak, and all our inferences have been derived from experience with Types 1 and 2.) Secondly, was this Type 1 strain fully toxic, the absence of rashes being attributable to an antitoxic immunity acquired by the school population as a result of the epidemics of tonsillitis in the previous terms? Since the Dick test was not applied there are no experimental data as to the antitoxic immunity of the boys, and it has not yet been possible to test the toxigenic capacity of any of these Type 1 strains in culture.

It seems difficult to avoid the inference that there must be wide differences between the toxigenicity of the Type 2 strain at A school and the Type 1 strain at C school,* even after due allowance has been made for the probability that the older population of C, ranging from 13½ to 18½ years, "salted" by previous epidemics of tonsillitis, and with 7.9 per cent. of its number with a history of scarlet fever, is more likely to have a high proportion of immunes to

A further question which may be considered in connexion with the outbreak at school C is whether antitoxic immunity, indicated by a negative Dick reaction, confers any protection against either local invasion of the throat or systemic infection by haemolytic streptococci. If it is assumed that the absence of scarlatinal rashes in the cases of tonsillitis which occurred at the school may be attributed to an antitoxic immunity acquired as a result of previous streptococcal infections, the answer to the above question would certainly be in the negative. Since, however, direct evidence as to the state of antitoxic immunity in the boys is not available it can only be said that such opinion would be in agreement with observations already recorded. (Kinloch *et alii*[10].) Further work on immunity to haemolytic streptococcus and its toxins is required, particularly in regard to the degree of protection conferred against the faucial and other manifestations of infection by the Dick method of active immunization.

Unfortunately, little work has been done on the Dick reactions of the pupils in our great boarding public schools, but it seems unlikely that the disproportion between the recent great prevalence of tonsillitis in these public schools, and the comparatively small incidence of scarlet fever, of a type which shows little tendency to spread, is due to a high percentage of Dick-negatives (immunes) in the schools. We have only had experience of one large-scale testing. Here 7 "dropping" cases of scarlet fever occurred in a school of 425 boys, 5 cases being in one dormitory. 338 boys (80 per cent.) were Dick-tested after the occurrence of the cases, and 64 per cent. of those tested were found

* This possibility is strengthened by the fact that toxigenicity tests showed the toxigenicity of this Type 1 strain to be very low.

Dick positive and only 36 per cent immune Of 22 boys who had had scarlet fever some years before, 6 (27 per cent) still gave positive reactions These are high proportions of positives compared with the experience of Zingher, who found 22 8 per cent Dick positive between 10 15 years and 16 8 per cent between 15 20 years, and Heller, who found 23 per cent positive between 14 19 years of age (Quoted by Topley and Wilson [3c])

An interesting example of an extensive epidemic, due to a single type of haemolytic streptococcus and continuing throughout two terms, occurred at school D In this school there had been an outbreak of tonsillitis in the previous Christmas term Throat swabs from 28 cases, including a nurse were examined during the Christmas term and all yielded abundant haemolytic streptococci Serological examination of the strains showed that 27 agglutinated with a serum prepared from one of them, only one strain, which gave a granular growth could not be identified serologically In the next term there was a recurrence of infections with haemolytic streptococci Many of these were diagnosed as influenza, but material from 31 cases, including tonsillitis (22), adenitis, otitis media, erythema nodosum, and one solitary scarlet fever, yielded profuse cultures of haemolytic streptococci Of these strains no fewer than 29 belonged to the same type of haemolytic streptococcus which was found in the previous term The culture from the case of scarlet fever could not be identified with the prevalent strain or with any one of the chief types In addition to the influenza and tonsillitis there had been a small epidemic of measles, which, no doubt, had helped to increase the carrier rate of haemolytic streptococci Unfortunately, no information is available as to the general carrier rate in this school

Bed charting of dormitories sometimes gives strong presumptive evidence that cases of so called influenza are in reality often due to haemolytic streptococci, as, for example when such cases occur at the same time as cases of tonsillitis and scarlet fever, and in adjacent beds

OTITIS MEDIA

Otitis media probably causes more anxiety to school doctors than any other disease (with the possible exception of appendicitis) It most often follows tonsillitis, influenza scarlet fever or measles, and at least three quarters of the cases in schools are due to haemolytic streptococci It is said (Yearsley quoted by Rolleston[17b]) that 29 per cent of acquired deafness is due to otitis after measles, and 34 per cent to otitis after scarlet fever, but in public schools tonsillitis appears to be a more frequent cause than either measles or scarlet fever Instances have been reported to us where the incidence of otitis media in an institution has assumed epidemic proportions It has been known to spread from patient to patient along one side of a school sanatorium ward, and in two instances 9 per cent of a school population has been attacked by it in one term

Gunn and Griffith[11] gave an interesting instance of bed to bed infection in a ward of a fever hospital Three children occupying adjacent beds developed otitis media within a few days of each other The first child to show a purulent discharge was suffering from scarlatina due to Type 1, this type was obtained subsequently from the ear discharges of the other two children It was inferred that the first child infected the other two, since it was shown that the latter on admission to hospital were infected not with Type 1 but with Types 2 and 4 respectively

In a mean population of 12,071, including 9 029 boys and 3,042 girls, in large public boarding schools, during four school terms (1930 31), 190 cases of otitis media occurred, 160 in boys and 30 in girls The seasonal variation is as follows —

	Lent 1930	Summer	Christmas	Lent 1931
Boys	40	26	11	83*
Girls	8	0	3	19

* Includes 20 cases in which acupuncture was performed for diagnostic purposes

The greater prevalence (roughly double) in the Lent term, 1931, compared with the Lent term, 1930, is associated in the case of the boys almost entirely with increase in tonsillitis, but in the case of the girls the increase is largely due to epidemics of measles in two schools The cases of otitis media occurring during the period of observation have been twice as numerous as the cases of scarlet fever, but there is an epidemiological similarity between these two sequels of tonsillitis since the highest incidence of both diseases coincides with the peak of the wave of tonsillitis Several interesting points emerge from a study of the statistical data

(1) The attack rate for the boys is considerably higher than for the girls

(2) By far the greatest incidence was in the winter terms In these there was no swimming thus one of the possible sources of infection—namely, the swimming bath—can be excluded

(3) The figures so far recorded show that previous tonsillectomy was without influence on the incidence of otitis media, out of 160 boys who suffered from otitis media 94 (58 8 per cent) had previously had their tonsils enucleated and their adenoids removed, of 30 girls, 16 (53 per cent) had been similarly treated prior to the onset of the otitis Moreover, of 23 boys who required mastoid operations, 14 (61 per cent), and of 13 girls, 8 (62 per cent) had previously had tonsillectomy

The above observations are in apparent agreement with those of Paton (1928),[17] who says The removal of adenoids results in an increased incidence of otorrhoea' and those of Bradley[3] who states There is ample evidence that tonsillectomy has not protected against otitis media' It must however, be pointed out that in half the cases some remnants are left and according to the opinion of the present day tonsillar remnants are more dangerous in providing a nidus of infection than the intact tonsil

There is no doubt that tonsillectomy in suitable cases greatly improves the general health, it is said also to increase the immunity to diphtheria, but it appears so far as our data go, to have little effect in diminishing the liability to other infections In view of the facts which we have established and their agreement with the records of other observers, it is at least doubtful whether there is justification for the operation of tonsillectomy on the scale shown by the records of the committee's investigation, which relate to the best nurtured portion of our youthful population They show that 49 per cent of the whole school population under review had undergone the operation Paton (1926)[17b] remarks, 'It is difficult to believe that there is justification for so widespread an attack upon a normal structure of the body

There was a very general prevalence of otitis media in schools in the Lent term of 1931 and the following outbreaks have furnished data of bacteriological and epidemiological interest

In F, a school of 463 girls where the attack rate for measles was 12 5 per cent the attack rate for tonsillitis was low—1 5 per cent for the term this low figure probably being an index of excellent hygienic conditions Material from 12 patients was examined and in 11 cases infection was found to be due to the same type of haemolytic streptococcus Type II in one of the types separated from the heterogeneous group Three of the swabs came from patients with otitis media (2 of during

as complications of measles), one from the throat of a patient with scarlet fever, six from patients with tonsillitis without rash, and the remaining two were specimens of sputum from patients with pneumonia complicating measles. This small outbreak illustrates the course of events which may result from the spread of infection in a community by one of the strains of the heterogeneous group. This group, as we have stated earlier, comprises a large number of types of haemolytic streptococci which, as contrasted with the four chief types, are rarely found in scarlatinal cases admitted to a fever hospital. Some at least of these heterogeneous types are highly infectious and set up the clinical conditions mentioned above, but they produce scarlatinal rashes only occasionally, probably in individuals who are particularly susceptible to the streptococcal toxin.

At another girls' school, with about 250 girls, where the hygienic conditions were also extremely good, there was an attack rate for influenzâ of 55 per cent., together with a measles attack rate of 17.5 per cent., but no case of scarlatina occurred. Eight cases of otitis media occurred, all complicating measles. Swabs from six of these were examined, and all yielded Type 9 haemolytic streptococcus, which is another type belonging to the heterogeneous group.

At a boys' school with an extremely high attack rate of influenza, the attack rate of otitis media on the whole school was 9 per cent.

One of us (J. A. G.) has recently shown elsewhere[9] the relationship between epidemics of tonsillitis and epidemics of acute rheumatism, and it will be noted that the peak of the rheumatism wave follows the peak of the tonsillitis wave after an interval of some two or three weeks. This "lag period" between the onset of tonsillitis and the development of acute rheumatism was also noted by Haig-Brown, who observed that it might be as long as five to six weeks but was usually from ten to fourteen days. Assuming that acute rheumatism is an allergic phenomenon, this "lag period" corresponds to the time which must elapse between the therapeutic or experimental injection of anaphylactic antigen—for example, horse serum—and the establishment of the anaphylactic state.

An outbreak occurred in the winter of 1926-27 in an institution of some 2,000 boys, entering at 16 years of age, after medical examination, to undergo a nine months' course of training. There was a rapid continuous flow of new entrants. The boys slept in long dormitories, designed to accommodate 42 boys, and at the period shown there was overcrowding. There had previously been a good deal of acute rheumatism in the establishment. All the factors favouring a droplet infection were present at the appropriate season of epidemic prevalence. These included a community of susceptible age, rendered the more susceptible by sudden change from home conditions to a strenuous regime, a rapid continuous influx of new entrants, overcrowded sleeping quarters each containing many boys, facilitating that massive dosage and rapid transference of infection from person to person which seems to exalt the virulence of droplet infection, and convalescents or carriers remaining to carry over the infection from the last epidemic season. The epidemic season of late autumn arrived some three weeks after the most severe overcrowding, and the epidemic potential, which had gradually developed, reached a critical value, with the result that there was a sharp epidemic of tonsillitis, followed by an outbreak of acute rheumatism. The maximum overcrowding preceded by some two or three weeks the peak of the tonsillitis epidemic, which was followed at a similar interval by the peak of the acute rheumatism epidemic.

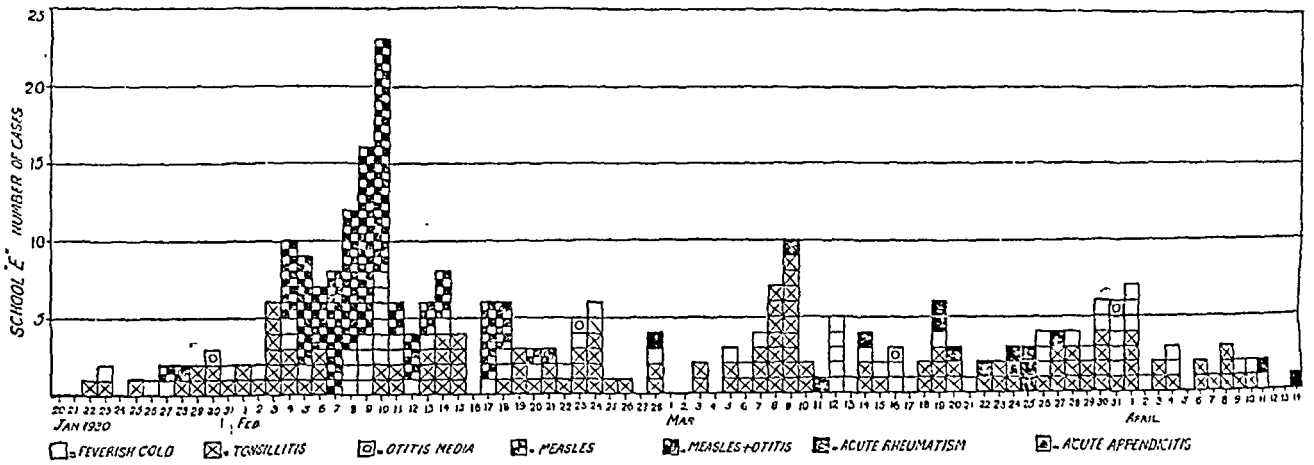


Fig. 3.—School E. Lent term, 1930. Population about 300. Epidemic of measles and tonsillitis followed by 15 cases of acute rheumatism.

ACUTE RHEUMATISM

Forty-six years ago, in a paper read in this Section at the Annual Meeting, on "Infectious Sore Throat in which Rheumatism plays a Prominent Part," Dr. Alfred Mantle[10] said:

"Infectious sore throat is by no means an uncommon disease, yet it is remarkable how little is said about it in medical literature . . . . One striking feature of the disease has been the presence of rheumatic symptoms in most of the cases, so much so that I believe rheumatism is a much more common complication of infectious sore throat than of sore throat of a non-infectious character."

After giving instances of multiple infection in houses—in one instance he attended 10 cases of rheumatism in two houses—he continued:

"These cases (i.e., of infectious sore throat) no doubt are some of those which help to supply the want of rheumatic history in many cases of valvular disease that we find in young persons. The cause I believe to be influenced by bad sanitary arrangements—crowded houses, with deficient ventilation and bad drainage."

About the same time, Haig-Brown described an epidemic of follicular tonsillitis at Charterhouse School. In the Christmas term of 1884 he treated 127 cases of acute tonsillitis. Among a total of 345 cases of sore throat there occurred 8 cases of endocarditis followed by chronic valvular disease, 3 cases of pericarditis, and 10 of mitral disease the patients suffering from which apparently recovered.

Two small epidemics of acute rheumatism have occurred in public schools since our inquiry began. One of these was in the Lent term of 1930 in a school with a population of about 300 boys, and is shown in Fig. 3. The term opened with an epidemic of 84 cases of measles; this reached its maximum on the 10th February, and, ending abruptly, had subsided by the 21st February. Preceding it and during its course, a good many cases of tonsillitis had occurred, and in the first fortnight of March there was a second wave of tonsillitis. In all, 136 cases of sore throat (122 with pyrexia) occurred, and

with these were associated 15 cases of acute rheumatism the proportion of acute rheumatism to tonsillitis being rather more than one to ten. There were also seven cases of otitis media, four cases of sinusitis and one of pneumonia. Four of the cases of otitis media followed tonsillitis while three followed measles. One case of otitis was followed by haemolytic streptococcal meningitis. The dormitory charts gave some evidence of bed to bed infection of tonsillitis and in one instance two of the patients who developed rheumatism within three days of each other slept in adjacent beds. The rheumatic cases did not occur until the bulk of the measles convalescents had returned to school, the crest of the measles wave preceded the tonsillitis crest by four weeks and the rheumatism by five.

Tonsillar and pharyngeal swabs were examined from eight cases in all of which definite rheumatic arthritis and carditis had followed tonsillitis. Five of these cases yielded cultures of haemolytic streptococci, all of which were of the same serological type. At the same school in the Lent term a year later (1931) there was again a considerable prevalence of tonsillitis, the attack rate for the term being 27 per cent. Swabs from 77 cases showed the presence of haemolytic streptococci, the majority of which were of one serological type and were different from the type found the previous year. In six of the patients rheumatic symptoms, four of which were described as acute and two as subacute, supervened. No scarlet fever cases occurred at this school although only 4·7 per cent. of the boys were protected by previous attack.

The other small outbreak followed the epidemic of tonsillitis which has already been described at school D. Four cases (three in the same dormitory*) occurred in the Christmas term and three in the Lent term. In five of the six cases the haemolytic streptococcus causing the tonsillitis was of the same type. In the sixth case haemolytic streptococci of an unidentified strain were present in abundance. In two cases (one with previous rheumatic arthritis) tonsillitis caused by the prevailing type of streptococcus was followed by erythema nodosum.

Epidemics of tonsillitis followed by severe relapses of acute rheumatism in child patients in special rheumatic wards and convalescent homes for rheumatic children have been described by various authors in this country (e.g., Raven[19] and Schlesinger[20]) and in America (e.g., Hiller[1] and, especially, A. F. Coburn[3]), and the recent work of Collis[6] on the bacteriological side and Sheldon[21] and Schlesinger[20] on the clinical side has demonstrated the great practical importance of this relationship. "There can be no doubt," says Schlesinger, "that rheumatic relapses are largely brought about by acute and often extremely mild throat infections."

Special precautions should be taken to exclude infection by haemolytic streptococci in such wards or homes, precautions which should include the widest possible spacing of beds, small wards to limit possibilities of spread, and ample accommodation for the isolation of any child or member of the staff who shows any sign or symptom of nasopharyngeal infection. In view of the great danger of infection, the question may be raised whether a rheumatic child should ever be admitted to the scarlet fever ward of a hospital for infectious diseases.

The following *tentative suggestions* seem to us to be justified in view of all the available evidence, much of which we have been unable to include for want of space.

(1) Epidemic tonsillitis is one of the most common causes of invalidity in boarding schools and is due to infection with haemolytic streptococci of the *Streptococcus pyogenes* group.

(2) Infection of the throat with haemolytic streptococci produces varying clinical pictures in different persons. These include first, a symptomless infection, or healthy carrier state, secondly, tonsillitis, thirdly, febricula, feverish catarrh or pharyngitis, without noticeable sore throat, fourthly, scarlet fever. Any of the latter three conditions may be followed by otitis media or by acute rheumatism.

(3) Many serological types of haemolytic streptococci may cause scarlet fever, but certain types, the four chief types, predominate. Types 1, 2, 3 and 4 are together responsible for 70 per cent. of the cases of scarlet fever admitted to fever hospitals in this country, the remaining 30 per cent. being caused by strains forming a group of heterogeneous types.

(4) Epidemic tonsillitis without rash is generally attributable to strains belonging to the heterogeneous group. These strains cause scarlatina when their toxigenic powers are sufficiently high to overcome the antitoxic immunity of the person attacked.

(5) Observations made on two outbreaks of tonsillitis (only one of which has been described) attended with severe complications but without typical scarlatinal rashes suggest that the two chief types concerned, Types 1 and 2, may not invariably be of high toxigenicity.

(6) In any epidemic of scarlet fever cases of tonsillitis and mild pharyngitis occur side by side with the cases of scarlet fever, and, if bacteriological examination be made, numbers of healthy carriers will also be detected all yielding the same type of haemolytic streptococcus as the scarlatinal cases. These unsuspected sources of infection constitute one of the most difficult problems in the control of scarlet fever.

(7) Epidemics of tonsillitis or the occurrence of "dropping" cases of scarlet fever, and perhaps of otitis media, in schools are generally associated with a high carrier rate of haemolytic streptococci.

(8) Epidemics of measles and influenza, even in good hygienic conditions, increase the spread of haemolytic streptococci which are the chief cause of serious complications in these diseases.

(9) Often, however, epidemics of tonsillitis and high carrier rates of haemolytic streptococci are signs of the existence of environmental conditions which favour a rapid and easy transmission of infection. Chief of such conditions are the following—too great proximity of beds, deficient floor area and deficient ventilation in dormitories.

(10) Adequate spacing and ventilation of dormitories and classrooms and proper intervals* between beds in dormitories and school sanatoria are important factors in the prevention of the spread of infection.

* It is an interesting fact that of the 45 boys in the dormitory there were only four with a history of scarlet fever all at least seven years previously and three of them developed rheumatism after the tonsillitis the fourth boy escaped both tonsillitis and rheumatism.

WORK OF A CHILD GUIDANCE CLINIC*

BY

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The child guidance clinic is an essay in the field of mental hygiene, and its aim is to deal with the "difficult" or "problem" child. This term covers a range of cases whose essential feature is a disorder in the sphere of behaviour and, while it does not of course correspond to any precise clinical entity, it denotes a fairly well marked group of patients which will be familiar to every practitioner. We may roughly define the difficult child as one who, as a result of the operation of either endogenous or exogenous causes, is maladjusted to the environment in which it has to live and manifests this maladjustment in disturbances in behaviour.

The variety of conditions covered by this definition will be apparent from the following list of disorders accepted for treatment at the New York Institute for Child Guidance.

1. Children who present problems because of their socially unacceptable behaviour (whether legally delinquent or not), such as: temper tantrums, fighting, teasing, bullying, disobedience, "show off" behaviour, truancy, lying, stealing, rebellion against authority, cruelty, sex difficulties, etc., shown at home, school, or elsewhere.

2. Children who present problems manifested chiefly in personality reactions, such as: seclusiveness, timidity, sensitiveness, fears, cowardliness, excessive imagination and fanciful lying, "nervousness," excessive unhappiness and crying, stubbornness, selfishness, restlessness and overactivity, unpopularity with other children, and the like.

3. Children who present problems in habit-formation, such as: sleeping and eating difficulties, speech disturbances (such as stammering, thumb-sucking, nail-biting, masturbation, prolonged bed-wetting, etc.

All these disturbances have long been familiar to the physician, but their effective treatment has been beset by serious difficulties. In former days the difficulties arose because the nature of the disturbances was very inadequately understood, and their causation was explained by concepts which were narrow and inaccurate. On the one hand, a number of the phenomena were not recognized as belonging to the sphere of disorder, but were thought to be manifestations of "naughtiness" and original sin. On the other hand, a too exclusive emphasis was laid upon physical factors, and the causes of the evil were sought only in disease or disordered functioning of one or other organic system. So long as conceptions of this kind held the field therapeutic effort was necessarily limited to the remedying of whatever organic factors could be found, and the use of reprimand and discipline.

The results achieved by this method of approach were disappointing, and the advance of knowledge gradually brought about a radical change of orientation with regard to the whole problem. The change which has occurred may be said to have involved a progression from an ethical to a physical conception, and thence to one predominantly psychological and biological. It began to be appreciated that the causation was by no means so simple as had been supposed, and that in most cases a multiplicity of converging causal threads had to be disentangled before the mechanism of production could be understood. These threads led in various directions, to the parents, the home conditions, the school, as well as to the patient's constitutional make-up, and the habits of functioning of his body and mind. Only when all such factors had been investigated and appraised, both in themselves and in their interrelationships, could the nature of the child's condition be grasped, and appropriate therapeutic measures instituted.

With the increasing recognition of the complexity of factors involved, the task confronting the physician became correspondingly more formidable. The nature of this task will be apparent if we consider rather more in detail the character of the problem. The child is manifesting its disordered behaviour because of a failure of adaptation to its environment, due either to endogenous or exogenous factors and to their interaction. These factors may be of either a physical or mental order, and we must begin with the conception of the child as a psycho-physical organism reacting to an environment composed of material, mental, and social constituents, and disturbed in its reactions by faults involving an uncertain number of these various components. Hence the investigation which must precede treatment will require to ascertain something about all these things, and perhaps a great deal about some of them. We must know the child's physical and mental make-up, and appreciate the possible bearing which factors of either of these two groups may have upon the problem at issue. In particular we must be able to appraise the child's intellectual capacity, and temperament peculiarities, so as to understand the machinery with which he has to make his adaptation to life and environment. We must know the circumstances of his home and school life, and something of the sort of people with whom he comes in contact in both these environments. Finally, if our investigation is to lead to adequate treatment, we must have some machinery available whereby a modification of environmental factors, either in the home or in the school, can be attempted.

If we inquire why the treatment of the difficult child necessitates so elaborate an attack and one directed along so wide a front, the answer is that in behaviour problems we are concerned, not with disease of some particular organ or system, but with the reactions of a patient as a whole individual. With whole individual reactions all kinds of intrinsic and extrinsic factors and relations may have to be taken into account.

If the problem facing the physician who deals with the difficult child is so complex and accompanied by so many ramifications, it obviously cannot be easily solved by his individual efforts. Apart from the time involved, adequate investigation of the child's intellectual and other capacities cannot be made without special training and constant experience, and a satisfactory estimation of the home, school, and other environmental factors can only be carried out by a doctor who is able personally to visit these environments, and who has the necessary leisure to explore them. These requirements can obviously not be met under the conditions usually holding in a hospital out-patient department, and, if the problem is to be successfully attacked, some kind of team work must be organized.

CHILD GUIDANCE MOVEMENT IN AMERICA

It was the recognition of these essential facts which led to the foundation of the child guidance movement in America. This movement may be said to have commenced with the pioneer work of Dr. William Healy in the sphere of juvenile delinquency, and it has rapidly developed during the past ten years. The development has been largely dependent upon the generous assistance provided by the Commonwealth Fund, which has not only established demonstration clinics in various cities in the United States, but has in New York founded and maintained an Institute for Child Guidance in which there is

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

every possible facility for the development and extension of child mental hygiene The Commonwealth Fund has further extended its assistance to this country, and has completely financed for a limited period a child guidance clinic in London, which was opened in 1930 This is now in full activity, and it is hoped that, when the aid of the Commonwealth Fund is no longer available it will have so proved its value that other means of support and maintenance will be found for it In addition to this clinic others have been established both in London and the provinces whose methods and general aims are closely similar, and it may be said that the child guidance clinic now promises to become an integral part of our medical armoury

CONSTITUTION OF THE CLINIC

The essential feature of a child guidance clinic consists in the employment of a team of three persons, a psychiatrist, a psychologist, and a social worker These three persons investigate the patient and his environment from their respective standpoints, discuss and collate their results at a joint conference, and decide upon an appropriate line of treatment in the light of the causal factors which have been elicited During the progress of the treatment special work may be assigned to each of the three persons constituting the team, according to the particular directions in which action is indicated, and further conferences are held to guide and co ordinate the treatment required

The psychiatrist is the head of the organization and is ultimately responsible for the entire direction of the case In addition to his function as a general supervisor and director he has to undertake those aspects of the case which fall within his special province These include not only the investigation of the child s mental state, but also a physical examination in which all possible factors capable of producing an effect upon behaviour and adaptation have to be given their due weight These latter factors are often of fundamental importance, particularly the metabolic disturbances so frequent in difficult children, and unless appropriate measures are instituted to deal with them the problem cannot be adequately solved The psychiatrist must therefore be something more than a psychiatrist He must combine in himself the functions of a medical psychologist and of a paediatrician, and although it may perhaps be maintained that in the sphere of behaviour problems the medical psychologist must play the dominant part, there must be no possible risk of the purely paediatric aspects failing to receive their proper consideration In some clinics a paediatrician is added to the team and relieves the psychiatrist of his responsibilities on the physical side, but considerations of expense generally make this scheme impracticable It is clearly desirable, however, that a paediatrician should be available in a consultative capacity, to whom exceptional cases could be submitted for an opinion

The most important duty of the psychologist is to estimate the child s intellectual equipment, so as to determine the capacities of the weapon whereby adaptation has largely to be achieved This estimate is made by the employment of the various standardized tests which now enable us to measure in a fairly satisfactory manner the intelligence and educational acquirements of the patient The intellectual capacity thus determined is expressed as a proportion of that to be expected in an average child of the same age the so called "intelligence quotient" or I Q It is extremely important that these tests should not be carried out in a mechanical manner, and they are indeed likely to produce absolutely fallacious and misleading results except in the hands of a trained and experienced investigator In addition to this task the psychologist may be able to throw most helpful light on the case by observation of the child s attitude and behaviour during the testing, and may be able to assist materially in the subsequent treatment by steering the patient through difficulties of various kinds which may exist in educational activities, for example a specialized inability to learn some one subject

The function of the social worker is to obtain full information with regard to the environmental conditions and past history of the child, and to take whatever action is decided upon in the way of attempting to modify environmental factors It will be necessary for her to visit the home, to get into touch with teachers at the school and to act as a liaison officer between the clinic and the various social and charitable agencies whose aid may be required in carrying out plans for the child s welfare To fulfil such multifarious and responsible duties as these the social worker must not only possess exceptional ability and tact, but must have undergone a thorough and specialized training

CRITICISMS

I have made no attempt to do more than to set out in general terms the principles upon which the methods of the child guidance clinic are based The details of the work carried out and the description of illustrative cases I am leaving to Dr William Moodie, who follows me in this discussion, and who, as the director of the London Child Guidance Clinic has a far more intimate practical acquaintance with the actual work than has fallen to my lot I shall try to evaluate, however the contribution to practical medicine which the child guidance clinic is able to make, and particularly to enumerate the criticisms which may be levelled against it in the hope that they will be dealt with in the ensuing discussion

It is beyond question that the clinic is an efficient weapon for dealing with the difficult child and a better weapon than any hitherto devised A doctor with a liking for this sort of case, a great deal of special experience and ample time, may obtain excellent results by his individual effort, and may gain more by having all the threads in his own hand than he loses by not having at his disposal the organized team of the clinic But these requirements are rarely fulfilled, and in general the assistance of the clinic will be invaluable to the harassed practitioner, who has neither the time nor the opportunity to deal adequately with a class of case which, though apparently so trifling, involves nevertheless a great expenditure of effort

It may be pointed out that, in spite of the fact that these troubles often appear to possess only minor importance, they may be fraught with most serious consequences if they are left uninvestigated and untreated, and that therefore the clinic, in addition to the services it is able to offer to the individual patient, has a considerable value to the community because of what it is able to effect in the sphere of prophylaxis It will be remembered that the child guidance movement had its roots in the study of juvenile delinquency and the endeavour to modify those factors upon which it was believed that the development of delinquency depended Further investigation has certainly tended to confirm the view that asocial conduct can in many cases be traced back to the operation of various endogenous and environmental causes, which are capable of being elicited and removed by the machinery of a child guidance clinic The work of the clinic can therefore claim to be of considerable assistance in the prevention of delinquency and a close association between clinic and children s court has produced practical results of very great value

A further prophylactic function of the clinic concerns the psychoneuroses the conditions formerly known as functional nervous disorders In the investigation of developed adult cases of these disorders it is customary

to find a web of remote causes extending back into the childhood of the patient, and it is reasonable to suppose that, if these causes had been disentangled and remedied during the actual period of childhood, the later psychoneurosis could not have subsequently developed. The great importance of the early years of childhood as the phase in which the ultimate fortunes of the individual are rigidly determined has been emphasized by many otherwise completely divergent schools of thought. The Fathers of Port Royal are reported to have said that if they had a child for the first six years of its life they did not care who taught him later. The psycho-analytical school believe that the essential structure of the mind is fashioned in the first few years of life, and that later psychoneuroses can only grow in soil which has been specially prepared in that early period. The behaviourists, again, with their view of the infantile mind as something like a *tabula rasa* except for a limited number of reflexes capable of endless variations by the "conditioning" which occurs in early life, must necessarily attach fundamental importance to the management of childhood. It would appear, therefore, that the child guidance clinic can play a great part in remedying minor disturbances in childhood which may, if left untreated, pave the way for all kinds of more serious conditions in later years, and particularly for the whole range of the psychoneuroses.

We do not know how far a similar prophylactic function may apply to the later development of actual psychoses. Even here, however, there are indications of a possible line of attack. Considerable evidence has accumulated in recent years for the view that certain psychoses, manic-depresssive and schizophrenic, are only likely to develop in certain types of individual, and that the recognition of the type in the normal person will enable us to predict the variety of psychosis which is liable to develop, though this development is of course by no means inevitable. If this relationship can be established there would appear to be ground for hoping that careful and adapted management of a child in whom the characters of a particular type were prominent might lessen the chance of the corresponding psychosis developing in later life. For example, the boy of marked "introvert" type—seclusive, tending to live in himself, and unable to adapt easily to social relationships—might be trained to modify these reactions in some measure, and hence to avert the risk of a later schizophrenic development.

So much for the services which the child guidance clinic may perform, some of them solid and of unquestionable value, others much more hypothetical and only to be regarded as hopeful avenues for exploration. Let us now consider the criticisms which may be levelled against the clinic as a part of our practical medical armoury. The first obvious objection is that the employment of a team of workers, each investigating the patient from a particular angle, involves the loss of that close clinical and personal touch which characterizes the work of every good physician. It is true that the method of holding frequent conferences between the members of the team goes some way to obviate this criticism, but it is nevertheless valid enough, and the physician with time and opportunity will probably prefer to dispense with a social worker, if not with a psychologist, and to do their share of the work himself. This is indeed likely to be necessary when dealing with patients of certain classes, because the employment of a social worker would be impracticable except in very limited ways. For great numbers of patients, however, and particularly for those whose only alternative centre of treatment would be a hospital out-patient department, the objection is irrelevant, because no other adequate scheme is possible. Whether or not the individual is better than the team method is not of great moment when only an absolutely ineffective individual attack is feasible. We may admit the disadvantages of the team approach, but clearly these are outweighed by the advantages.

The second and most formidable criticism concerns the costliness of the child guidance clinic. In view of the amount of time and labour involved in each case the cost per patient is undoubtedly very high, and unless the expenses can be cut down it is difficult to see how a wide extension of child guidance work will be possible. By skilful organization, however, particularly the classification of cases by the psychiatrist, so that the whole machinery of the clinic is only brought into play where it is needed, considerable economies in time and effort can be effected, and hence the total cost of working greatly reduced. At the best, however, the method will remain an expensive one, and there are some who believe that the chief value of the clinic will ultimately be, not the services it renders to the individual child, but the training of workers and investigators who will carry a trained understanding to schools, courts, and other places where it will prove capable of fertile employment.

Other criticisms are levelled at the method of treatment in itself, mainly on the ground that it does not conform to the method which the objector believes to be the only valid approach. Criticisms of this kind may come from several quarters, and are clearly mutually destructive. The principle firmly maintained by most of the child guidance clinics in America and in this country, and which I believe to be fundamentally sound, is that in this work a catholic point of view, with the avoidance of a narrow adherence to the doctrine of any particular school, is absolutely necessary. We must be prepared to view each case from the widest possible angle, to consider that all kinds of factors may be playing a part, and to do our best to modify those factors which seem to be contributing to the undesirable situation by any and every means which presents itself to our hand. This is the attitude of the child guidance clinic, and it would appear to offer a line of attack which cannot fail to be fruitful.

THE DIABETIC ACUTE ABDOMEN

A TYPICAL CASE

BY

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It is well recognized that severe ketosis and acidosis in the diabetic may be associated with digestive disturbances, such as nausea, vomiting, constipation, and colic; but little attention, if any, has been drawn in this country to the violent and puzzling abdominal pains that may occur, although a few cases have been recorded in America[1 2 3]. In such a case the signs and symptoms in the abdomen may simulate so closely those of an acute abdominal catastrophe that surgical intervention has been needlessly undertaken. The differential diagnosis was especially difficult in the case we are recording, in which a high polymorphonuclear leucocytosis was present.

HISTORY OF THE CASE

The patient, a robust man of 31, was known to have had fairly severe diabetes since 1924. He was investigated in this hospital in 1928, and went home taking 40 units of insulin twice a day and a liberal qualitative diet. He kept

quite well until March 14th, 1931, when he was brought up to the casualty department in a marked hypoglycaemic attack (produced by an unusual amount of exercise) in which he almost lost consciousness. He responded quickly to glucose treatment, and, feeling fit, discharged himself on Monday, March 16th. His bowels, which were usually quite regular, were not opened on Monday or Tuesday. On Monday afternoon he felt rather drowsy and went to bed, and took no food or insulin for the rest of the day. He had a poor night and vomited four times. On Tuesday morning he again felt drowsy and had some nausea, so he stayed in bed and took no insulin. At 1 p.m. he had a sudden attack of very severe generalized abdominal pain, which was especially severe round the umbilicus. The pain was very intense and quite continuous. At 4 p.m. the patient was seen in the casualty department. He was rolling in agony on the couch, clasping his knees and calling out for morphine. His temperature was 97.6°, pulse rate 136, and respiration rate 36. All his abdominal muscles were absolutely rigid, and the abdomen was if anything, retracted. Pressure made the pain worse, and it seemed to be aggravated on inspiration. The lower intercostal muscles on both sides were in spasm. The urine contained a fair amount of sugar (about 1 per cent.) and a large amount of acetone bodies, although the ferric chloride test was negative. The patient was not drowsy and had no signs of approaching coma. Both knee-jerks and ankle-jerks were absent.

DIFFERENTIAL DIAGNOSIS

Four possible diagnoses were suggested. First, severe and acute diaphragmatic pleurisy; secondly, a tabetic gastric crisis; thirdly, an acute abdominal catastrophe such as a perforated gastric ulcer; and, later, the rare condition of severe diabetic "colic." The character of the pain, the spasm of the intercostals, and the rather rapid respirations were in favour of pleurisy; but there was no cough, no friction was heard, and the temperature was subnormal. The absence of knee and ankle jerks and the severity of the pain naturally made one think of tabetic crisis, but there were no other signs of syphilis; the Wassermann was found later to be negative. Two alternatives remained—the true acute abdomen and the diabetic acute abdomen; the differential diagnosis between the two seemed impossible. There was no history of previous indigestion, and the patient was not in the least drowsy; in fact, there were no signs of approaching coma.

FURTHER HISTORY OF THE CASE

At 5 p.m. on Tuesday, March 17th, the patient was given 1/4 grain of morphine, and at 6.45 p.m. 60 units of insulin; it was decided to await further developments. At 7 p.m. the picture had completely changed. The patient was rapidly becoming collapsed, the pulse rate was 150, there was marked drowsiness and air-hunger. The eye tension was much lower, the tongue was raw and dry, the urine contained more acetone—a remarkably quick change in two hours. The abdomen was as before, and it was noticed that there was more tenderness on the right side than on the left. An enema was given with a fair result.

At 9.30 p.m. the blood sugar was found to be 0.644 per cent. At 10.30 p.m. it was 0.580 per cent. A leucocyte count at 10.30 p.m. showed 51,000 total leucocytes; 93.6 per cent. were polymorphonuclears, including many metamyelocytes; 6.4 per cent. were lymphocytes. The pulse rate was still 150, and the abdomen as before. It was then decided to operate if the pulse became any worse.

More insulin (60 units) and glucose (20 grams) were given at midnight, when the pulse rate was 130 and the patient a little more comfortable. At 6 a.m. the following morning the pulse was 118 and much stronger. The abdomen was still tender (although the pain had gone), and still a little rigid. A blood count at 10 a.m. showed 26,600 leucocytes, 91.2 per cent. of which were polymorphonuclears. The blood sugar was 0.184 per cent. and the patient was better in every way. The diagnosis of uncomplicated diabetic acute abdomen was then assured; the patient rapidly improved and was discharged fit three days later.

The subsequent behaviour of the blood cells is shown in the following table:

Date	Time	Red blood cells in millions	Haemoglobin. Per cent.	Total leucocytes	Polymorphonuclears. Per cent.
March 17th	10 p.m.	6.0	112	51,000	93.6*
,, 18th	10 a.m.	6.3	112	25,000	91.2
,, 18th	10 p.m.	6.1	120	18,400	87.6
,, 19th	10 a.m.	5.9	120	10,200	79.5
,, 20th	10 p.m.	6.3	122	9,000	71.6
May 14th	8 weeks later	5.7	124	9,000	81.0

* Including many metamyelocytes.

DISCUSSION

At one time the diagnosis and the advisability of operation were matters of extreme doubt. Even later, when the increasing ketosis and impending coma made the diabetic condition the probable cause, it was difficult to be sure that some acute surgical condition was not also present. Had we not known that a high leucocytosis may be present without any septic focus, the high count would have demanded immediate operation. The decision was made to operate if the pulse became worse, and if the diminution of the ketosis by the insulin did not relieve the pain and abolish the rigidity. Both pain and rigidity, however, rapidly diminished as the insulin took effect, and the man's general condition at once improved.

It should be stated that this clinical syndrome of intense abdominal pain, tenderness, and rigidity is very rare in severe ketosis and even in impending coma, although some sickness and moderate colic is common enough. We can make no serious suggestion as to the cause of the syndrome or of the accompanying leucocytosis.

SUMMARY

An extreme case of the acute abdominal condition occasionally associated with severe diabetic ketosis is reported. Intense abdominal pain, tenderness, and rigidity, and a high leucocytosis were present, simulating an acute abdominal condition. All the acute symptoms disappeared within twelve hours of adequate insulin treatment.

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ELECTRICAL TREATMENT OF NEURITIS AND WRITER'S CRAMP*

BY

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The treatment of neuritis by electricity was advocated by the late Dr. Naunton Davies some thirty years ago. He published his results in the *Bristol Medico-Chirurgical Journal* in June, 1915, stating that the method was applicable only to interstitial neuritis in which there is hyperaemia and exudation in the nerve sheath. The diseased areas are limited in extent, the spots are often the size of a split pea, or smaller, the nerve between them being free from trouble. If a spot is overlooked, pain may remain in that spot, and radiate over a wide field.

* A paper read before the Cardiff Medical Society, April 14th, 1931.

DAVIES'S METHOD

The method adopted by Davies consisted, first, of testing for the affected spot; the negative pole of a faradic current is connected with a conical-shaped electrode covered with wash-leather, the positive being a large pad, which is connected to the arm or leg. Both electrodes are moistened with saline solution. The faradic current is so regulated that it will excite pain in the diseased spot, but will not cause pain in a healthy nerve. When the spot is touched with the electrode and pain is felt, the position is marked. The second stage is that of treatment, and for this purpose the galvanic current is employed. An insulated needle is connected with the negative pole, the large pad remaining positive. A local anaesthetic is next injected under the dermis, the needle is inserted, and the current is turned on; the needle is directed to the point where the pain is most acute. The current should not exceed 6 milliamperes; the needle is withdrawn after ten minutes.

A NEW TECHNIQUE

Having had an experience of nearly one hundred cases, I have modified the above technique slightly. The current used generally does not exceed 1 mA, frequently it is 0.2 mA. It is found that five minutes' duration is sufficient for the treatment; frequently after four minutes the patient states that the pain is diminishing. Two spots are often treated at one sitting. As to the apparatus, a pantostat may be used, but for some years I have used four dry cells, which can be carried in a portable case. The weak secondary circuit of an induction coil gives the faradic current. Frequently only two or three of the cells are used; more would cause unnecessary pain. The general results of the treatment show that where one or two spots occur on a particular nerve the action of the current gives immediate and permanent relief. If the faradic current is again applied to the spot after an interval of a few days, and no pain is felt, it is concluded that the spot is cured. Thus when a spot has been treated no second treatment is necessary. Occasionally when a spot is found there may be felt under the skin a small nodule; this disappears with the application of the galvanic current; the nodule may be a deposit of uric acid. On the other hand, when the number of spots is multiple, and when they are close together, the results are not so satisfactory and the relief is often only partial, or it may be some time before a moderate amount of success is obtained; this is assisted by the internal administration of iodine.

Neuritis occurs usually in superficial nerves, when those near a joint are affected, movement is limited, and the joint becomes more or less crippled. In rheumatoid arthritis the pain is sometimes due to neuritis surrounding the joint; the above method gives much relief. Neuritis of the forehead and scalp is often very painful, and does not easily respond to medicinal treatment. Frequently one spot alone is responsible for all the trouble; in such cases the treatment gives immediate relief. In the forehead, the nerve which is chiefly affected is the supratrochlear branch of the frontal nerve; this emerges from the orbit and supplies the lower and mesial part of the forehead. Of twenty-eight cases of neuritis of the forehead and scalp, this nerve was involved in twenty-three cases; in sixteen cases it was the only nerve affected.

ILLUSTRATIVE CASES

I now propose to give a few cases illustrating the treatment and the results.

In April, 1923, a man came to me and stated that he had had an attack of influenza five weeks previously, with acute pain in the forehead since then. I found two spots on the left supratrochlear nerve; these were treated, and complete relief was afforded. In September, 1926, he returned, complaining of pain on the right side of the forehead. A spot on the corresponding nerve on that side was successfully treated.

In August, 1924, a lady was sent to me. She had suffered for two years from frequent and acute attacks of pain in the forehead. Often she was confined to bed for two or three days at a time; medicinal treatment afforded little relief. I found one spot on the left supratrochlear nerve, and treated it; the relief has been permanent. Her doctor informed me in September last that she had had no recurrence of pain since the treatment.

Neuritis is common in the region of the shoulder-joint and is occasionally mistaken for some kind of rheumatism. It limits movement of the joint, and may render the patient more or less unfit for his occupation. A frequent site of pain is over the deltoid muscle, the circumflex nerve being affected. Other sites of the lesions occur below the clavicle and over the scapula, occasionally also at the inner border of the latter bone.

A woman, aged 62, complained of pain for four years in the left shoulder, with inability to carry out many of her household duties. Two spots were found over the left deltoid, and were treated. Immediately afterwards she was able to raise her left hand to the top of her head, which she had been unable to do for four years. A few days afterwards another spot was found over the right deltoid; application of the faradic current to the old spots on the left side caused no pain. She was soon able to resume her household work without difficulty.

Neuritis of the deep nerves of the forearm appears to be one of the causes of writer's cramp. Three cases have come under my notice; two were slight, and easily responded to treatment. The most marked case was that of myself. For several years my handwriting had become steadily worse and very cramped; some wasting of the thenar muscles was present. I placed myself under the care of Dr. E. A. Goulden of Llandrindod Wells, who treated eleven points on the right forearm, seven on the anterior aspect and four on the posterior. Improvement was at first very slow; tincture of iodine was administered, and massage was applied. In a few weeks movement improved; later on, the whole trouble gradually cleared up and there has been no return of the disease.

Neuritic pain in the region of the hip is often associated with neuritis of the small sciatic nerve or its branches; frequently one or two spots are affected.

A woman, aged 54, who complained of pain in the region of the sciatic nerve, came to me in September, 1925. I found two spots, one on each of two branches of the small sciatic nerve; both were treated and the pain was relieved.

Another woman, aged 48, had suffered from sciatica for two years. I saw her in August, 1926, and found one spot on the small sciatic nerve on the left side, two spots on the similar nerve of the right side, and a spot on the ilio-hypogastric nerve. I heard from her in July, 1929, when she reported she was quite well.

Of thirteen cases of neuritis in the neighbourhood of the hip, in all but one the small sciatic nerve was affected. I have not treated a case where the great sciatic nerve was involved. Several cases have been treated in which pain is situated near the knee-joint.

In August, 1926, a woman was brought to me in a bath chair; her history was that for nine weeks she had been unable to do any household work, and had to be assisted in walking about the room. Examination showed a spot on the upper border of the right patella. This was treated, and in a few minutes she was able to walk more easily, and within a week was able to walk two miles. A spot on the right clavicle and another on the right deltoid muscle were also treated. She wrote to me in July, 1927, that she had remained well, and had had no return of her trouble.

The above cases show that the galvanic treatment of neuritis affords great hope for the relief of a disease which causes much pain and discomfort.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

CEREBELLAR HAEMANGIOMA

The following recent case is of interest in association with Dr. W. T. Collier's article on Lindau's disease (*British Medical Journal*, July 25th, p. 144).

A man, aged 63, was found unconscious. At 6 a.m. I was called out to see him. I learned that he had always been in perfect health hitherto, and had never complained of anything. At 10 o'clock on the previous evening he complained of giddiness. He left the house to post a letter, and vomited on returning. He went to bed complaining of giddiness. At 6 a.m. he was found unconscious.

On examination the patient was comatose, respiration regular and deep, 24 per minute; no stertor. All tendon reflexes absent. No rigidity of limbs. Babinski's extensor response in both legs. Pupils pin-point, not reacting to light. Pulse 120, good volume. Blood pressure, 120/90. Retinae could not be examined, the pupils were too contracted. No incontinence of urine or faeces. Catheter specimen of urine contained an enormous amount of sugar. No acetone or aceto-acetic acid. The patient died at 5 p.m. on the same day.

A post-mortem examination revealed the presence of a cerebellar haemangioma in a lateral lobe. The wall was thickened, and it contained a lot of fresh blood. The pancreas and kidneys showed no cystic degeneration. The retinae were not examined.

This case is interesting in view of the absence of all previous history in spite of the presence of a thick-walled large cerebellar haemangioma. The presence of glycosuria led one to think of diabetic coma, but the absence of acetone and diacetic acid excluded that possibility.

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ACUTE OSTEOMYELITIS OF THE ILIUM

The article on this condition by Mr. A. Rendle Short, in the *Journal* of July 18th, prompts me to mention a case that passed through my hands. In view of the apparent rarity of the condition I think an account of the case is justifiable.

A boy, aged 19, was admitted to the Llwynypia Hospital on December 17th, 1930, as a case of septic arthritis of the left hip-joint. He had been ill at home for one month, complaining of constant pain in the hip. His doctor had thought the condition one of tuberculosis, and this was confirmed by the tuberculosis medical officer of the district. Treatment by rest and weight extension failed, however, to relieve the pain or reduce his temperature. Two days prior to admission haematuria developed, and the boy's condition changed for the worse.

On admission the patient was in a very toxic state, with immobility of the left leg and pain on active movements. There was no deformity, and rotary movements of the femur were painless. There was acute tenderness on pressure all along the crest of the ilium, with swelling and dilatation of the surface veins around. On exploration of the swollen area around the iliac crest with a 5 c.cm. syringe, yellow pus was found, examination of which showed staphylococci. Apart from the confirmation of the presence of blood in the urine, nothing else of importance was discovered on clinical examination.

The same evening an operation was performed. Through an inverted anchor-shaped incision the iliac crest was exposed and the gluteal muscles turned down. A large sub-periosteal abscess was opened while this was being done, and it was observed that the periosteum was thickened and showed evidence of new bone formation. The ilium was trephined and necrotic bone removed all round. The bone was very friable and came away easily. The wound was bipped and freely drained, and the leg was fixed on a double abduction frame with extension. The boy was in a very shocked condition at first, but after two days his temperature fell to normal, and he made an uninterrupted recovery.

In June, 1931, an *x*-ray was taken and showed the hip-joint to be quite free from disease. A small superficial sinus still remains, but the patient is able to walk normally and has good movements in the left hip. It is noteworthy that the haematuria disappeared spontaneously twenty-four hours after the operation.

Commentary

The length of time before the diagnosis of osteomyelitis was made is to be noticed. The value of the "anvil" and the "rotation of the extended leg" tests in distinguishing between an intra-articular and an extra-articular lesion of the hip-joint was well exemplified in this case. The success of a somewhat radical operation in the presence of grave toxaemia is interesting in connexion with the question of treatment.

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British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

CALCUTTA BRANCH

SYPHILITIC DISEASES OF THE EYE

At a clinical meeting of the Calcutta Branch on July 10th, with Dr. KENDARNATH DAS in the chair, Lieut.-Colonel E. O'G. KIRWAN, I.M.S., read a paper on syphilitic diseases of the eye, in which he presented an analysis of cases treated at the Eye Infirmary of the Calcutta Medical College during 1930.

Lieut.-Colonel Kirwan said that of the total of 26,067 cases, 788 (3.02 per cent.) were syphilitic. The Wassermann reaction was positive in 740 cases; of the 318 negative cases 169 patients gave a history of previous syphilitic disease and treatment, and 131 showed the stigmata of congenital syphilis. In order of frequency came iritis, optic atrophy, interstitial keratitis, iridocyclitis, optic neuritis, cataract, choroiditis, chronic conjunctivitis, and ophthalmoplegia. Less frequent were primary glaucoma, gummata, vitreous opacities, primary sore on the conjunctiva, and retrobulbar neuritis. Primary syphilitic conditions of the eye were very rare, only two cases occurring in the figures. Interstitial keratitis was extremely important, since it caused so much unnecessary blindness, and its recognition should always be possible by the general practitioner. It involved the deep layers of the cornea, which were rendered opaque from the inflammation. Infiltration began at the centre or periphery; the corneal surface became like ground glass, but there was no break in the epithelium. Vascularization was effected by the scleral branches of the anterior ciliary arteries, the new vessels being arranged in tufts without the branching seen in pannus. The attack was often precipitated by injury, and this had an important medico-legal bearing in workmen's compensation cases. Both eyes were likely to be attacked, sometimes simultaneously, sometimes at different times; early and energetic treatment would avert the otherwise inevitable involvement of the other eye. Cavill and Darby had reported such success in 18 per cent. of cases, and it was now held that such treatment would ameliorate and hasten the treatment of involvement of the second eye while dealing with the first. In India the cases were usually seen late, and therefore both eyes were involved. This observation should disprove the commonly held

opinion that anti-syphilitic treatment was of little use in interstitial keratitis.

Iritis and irido-cyclitis were common complications of syphilis; Colonel Maynard had stated that 1 to 4 per cent. of syphilitic patients in India had iritis. The nodules seen on the iris were not gummatous, and were not tertiary manifestations. Iritis associated with a positive Wassermann reaction was not necessarily syphilitic; septic teeth infections were very common sources of focal affections of the eye. Cyclitis often accompanied syphilitic iritis. Optic atrophy due to syphilis was a frequent occurrence; treatment, if early and energetic, might prevent blindness, which was otherwise the end-result of optic atrophy. Cataract due to syphilis was common in juvenile cases; no operative intervention was justifiable when the Wassermann reaction was positive. Iritis was almost certain to occur. An exception might be made in secondary glaucoma. Pseudoplasmata were commonly due to the chronic inflammation of syphilis. Chronic conjunctivitis, one of the most interesting of syphilitic complications, was usually, however, a tarsitis, and was commonly diagnosed as trachoma; trachoma occurred very rarely in Bengal. The routine treatment of all syphilitic ocular conditions in the Eye Infirmary consisted of weekly intramuscular injections of metallic bismuth and sulfarsenol. Syphilitic optic neuritis might apparently get worse with treatment, and in such cases the arsenic should be stopped. The course of treatment was twelve weekly injections of bismuth and sulfarsenol, followed by a course of potassium iodide. The Wassermann test was performed three months from the day of the last injection. If the reaction was positive, another course of injections was commenced. Early and energetic treatment in all ocular manifestations of syphilis was essential, though the prognosis in optic atrophy and interstitial keratitis in the adult was bad.

Lieut.-Colonel HARNETT, I.M.S., emphasized the necessity of considering syphilis as a possible causal agent in eye conditions; the Wassermann test should be performed in every case where syphilis might be the cause. As regards interstitial keratitis there were still some who held that general treatment was of little avail. With regard to treatment he himself found it necessary to intermit the injections every three weeks, especially in the case of arsenic. Dr. S. K. MUKHERJEE stated that in his experience arsenic and bismuth injections had proved superior to mercury treatment in interstitial keratitis. The time required for treatment was much shorter, and there was less likelihood of the other eye becoming affected. In India, however, the latter complication was unfortunately common. This disease was common in girls about puberty, and in males about 6 years of age and after the "teens." He advised intravenous injections in acute cases of eye syphilis, although as a hospital routine it was difficult to carry out.

Lieut.-Colonel KIRWAN, in reply, stated that the newer school of ophthalmologists were all practically agreed that the treatment of interstitial keratitis on general lines was beneficial; some cases, however, were undoubtedly refractory. Mercury, he considered, had a place in the treatment of ocular syphilis, but in hospital practice it had been given up, mainly owing to the large amount of dental defects in the patients. He agreed that intravenous injections were useful in certain cases—iritis, for instance. Examinations of the cerebro-spinal fluid might be made more frequently, but experience had shown that in eye cases the reactions did not differ much in the great majority of cases from those of the blood.

EARLY USE OF FORCEPS IN ENGLAND

Dr. KEDARNATH DAS read a paper on the use of midwifery forceps in England two hundred years ago, and showed copies of two books published in London in 1710 and 1735 by Drs. Giffard and Chapman respectively. He read numerous extracts from these books. It was evident, he said, that the forceps or extractors were in fairly frequent use in England at this period. Giffard's book contained a description of 225 deliveries, in thirty-five of which forceps were used. Chapman stated that he "could produce many other instances in which forceps were used in this town." Their application was restricted to "low" cases, and they were employed in malpresentations of the head mainly, and in delay or obstruction of the head in the passage. Fairly sound descriptions of how to apply the instrument were given in these books; apparently they were inserted in the antero-posterior and not the lateral plane. Chapman advised loose forceps, the handle being left unscrewed. He had realized the benefit of this method from having lost the screw on one occasion, and being unable to find it. Giffard described how in one case, having failed with forceps, he completed delivery by version. The use of forceps was by no means generally approved by the profession of those times, and Chapman in his preface submitted a vigorous defence of the instrument against its detractors, whose adverse opinion was based on ignorance or misuse. He predicted that in a short time they would be extensively used by every country practitioner, and that the crotchet and blunt hook would disappear.

Dr. J. M. DAS said that at the present time Caesarean section held the field, and it appeared that shortly there would be no need for forceps, for the child would never pass through the ordinary passages. It would be interesting to speculate on the midwifery of 200 years hence.

Lieut.-Colonel HARNETT, from the chair, thanked Dr. Kedarnath Das for his very interesting historical paper, and congratulated him on having been able to amass such a valuable collection of books and instruments. The paper was specially noteworthy when it was remembered that in those early days it was considered hardly respectable to practise midwifery; hence the debt that the science of medicine owed to men like Giffard and Chapman.

MEDICAL CONGRESSES, 1931

The following congresses and conferences on medical and allied subjects have been announced for the remainder of the year. Particulars are given below in the following order: date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

September 21.—Royal Institution (Faraday Centenary). London. Secretary of Royal Institution, 21, Albemarle Street, W.1.

September 21–23.—German Pharmaceutical Society. Vienna.

September 21–23.—German Association for Occupational Hygiene. Nuremberg. Secretary of Association, Platz der Republik 49, Frankfort.

September 23–25.—Society for the Study of Metabolism and Diseases of Digestion. Vienna. Professor von den Velden, Bambergerstrasse 49, Berlin, W.30.

September 23–30.—British Association's Centenary Meeting. London. Secretary of Association, Burlington House, Piccadilly, W.1.

September.—Pan-Russian Congress of Gynaecologists and Obstetricians. Moscow.

October 1–3.—German Society for Urology. Vienna.

October 14–18.—International Congress of Comparative Pathology. Paris. Dr. Grollet, 7, Rue Gustave Nadaud, Paris, XXVIe.

Reviews

HUMAN HEREDITY

For the first time the well known work *Human Heredity*,[1] by BAUR, FISCHER, and LENZ, is available in English The plan of the book is designed to provide a theoretical demonstration of the facts upon which individual human heredity depends, and it is stated that the volume will thus form the scientific groundwork for a later treatise, to be entitled " Human selection and racial hygiene," in which will be discussed the practical inferences to be drawn from the theoretical knowledge acquired up to the present time In the opening section Professor Baur gives an outline of the general theory of heredity This outline is compact and lucid, as is to be expected from one who has a high reputation not only for his original researches, but also for the exposition of his subject Professor Fischer contributes a section on racial differences in mankind This follows accepted lines, and the subject matter takes its place very appropriately in this volume There are the usual photographs illustrating different racial types and crosses—a considerable number of them The English are represented by a single illustration, which, curiously enough, is one of that distinguished Irishman, the great Duke of Wellington, and we are urged not to fail to notice the strongly arched nose

The physician will probably be especially interested in the third section of the book, written by Professor Lenz, which deals with defects and deficiencies conditioned by Mendelian factors To those unfamiliar with this subject the great number of such conditions will doubtless come as a surprise The treatment is very clear, the pedigrees are well chosen, and an attempt has been made to group the various conditions according to their clinical relationships The author specifically states that he has not attempted to make the list complete This is perhaps unfortunate, but those who are familiar with the vast and scattered literature will certainly sympathize with him A list of inherited conditions may serve a very useful purpose if it is complete If it is not complete, it serves to illustrate the subject and this, we read, was the author's intention To fulfil this purpose the list is unnecessarily long, but in fact, although the author does not claim it, it is remarkably complete The great majority of conditions known to be inherited are described and this section of the volume will serve as a very useful work of reference Its usefulness would, however, be greater if the index were more sensible Surely the first and most obvious classification is under the names of the various conditions The reader will find that this is not a primary classification in the index He will have to look through the text in order to discover the author's classification of conditions under various bodily systems, and he will then find the various conditions listed under these headings As a contrast to this regrettable economy, the reader will be surprised to find more than four columns of references all commencing with the word " Über " and a column and a half commencing with the word " Zur," these, of course, referring to original papers quoted in the text

A short but very important section, written by Professor Lenz, deals with the methodology of the interpretation of statistical results It is of the utmost importance to recognize that the theory of heredity takes a mathematical form, and that statistical checks should be applied to every problem and to the fitting of every ratio Professor Lenz's treatment forms an admirable introduction to this development of the subject The concluding chapters on the inheritance of mental endowments, including a section on racial psychology, are marked by a welcome sanity and restraint

There is, however, one feature of the book that appears to us frankly regrettable This is the firm conviction that various toxic substances may directly produce changes in the germ cells Alcohol, quinine, mercury, iodine, arsenic, and lead are all mentioned In particular, the evidence for a directly injurious effect of alcohol upon the germ cells is summarily treated, those results that would appear to deny the reality of any such effect being mentioned only to be rejected It would be absurd to claim that any final answer can be pronounced at the present time, but it is undoubtedly the case that the consensus of scientific opinion is that radium and x rays are the only agencies that have been proved to cause direct germinal change

The sense of the original seems to be well rendered, but it could not be claimed that the translation is graceful One wonders whether Professor Lenz actually intended to say that he " really must warn my Jewish fellow-citizens that they should not get the wind up " We cannot conclude without expressing our opinion that the English translation of this work is very welcome, that it is an inspiring and useful volume, and should be widely read

[1] *Human Heredity* By Erwin Baur, Eugen Fischer and Fritz Lenz Translated by Eden and Cedar Paul London G Allen and Unwin Ltd , New York The Macmillan Company 1931 (Pp 734 , 172 figures 9 plates 30s net)

LETULLE'S PATHOLOGICAL ANATOMY

A few weeks before his death Professor MAURICE LETULLE completed the manuscript of his great work on pathological anatomy and confided it to his son, M Raymond Letulle, and Dr Normand, the conservator of the museum, for publication This duty has now been performed under the editorship of Professor Nattan Larrier Two additional articles, on the blood and the eye, by Drs Jacquelin and Duclos respectively, are included, but otherwise no alteration has been made in the original text

The issue of the three handsome volumes[2] must be considered an important event in the literature of pathological anatomy Not only is the book original in design in some important particulars but it embodies conclusions reached at the close of a period of fifty years of study and experience in teaching It is in no sense a compilation, but a record of prolonged personal observation From the first Professor Letulle collected and preserved innumerable macroscopical and microscopical preparations for study and comparison, and his book, based on these, is to be regarded less as a mere textbook than as the record of a prolonged research in pathological anatomy, and on that account it will be of enduring value The general plan of the work does not differ from that usually adopted , a consideration of the processes included under general pathological anatomy is followed by that of the special anatomy of the organs But originality of treatment and the personal element are manifest on every page It was the author's opinion that the teaching of pathological anatomy should consist of something more than a string of formal statements, as is often the case it should on the contrary, aim at building up in the minds of students distinct mental pictures of the various pathological changes in organs and tissues and be made as far as possible pictorial His extensive pathological collection rendered this possible in the case of his teaching but the same feature is met with in his writing His descriptions always skilfully drawn and abounding in detail, give the impression of being direct transfers from the specimens described and they appear, therefore to have much of the value of direct observation It would be difficult to name

[2] *Anatomie Pathologique* Par Maurice Letulle Avec la collaboration de L Nattan Larrier et de MM Jacquelin L Duclos et E Pinard Normand Tomes I II et III Paris Masson et Cie 1931 Pp 2 346 843 figures Paper cover 525 fr boards 600 fr , the three volumes not sold separately)

another work on pathological anatomy in which this valuable quality is so distinctly in evidence.

The descriptions are aided and enforced by a large number of very beautiful illustrations, such as one is accustomed to find in medical works issued from the French press. These, taken from specimens in Professor Letulle's extensive collections, may be safely accepted as being especially typical of the points illustrated. More particularly the large series of microscopical illustrations will be found to be of unusual value. No bibliography is included in the work. In these days bibliography has almost become a separate science, and, in fact, has itself given birth to a subsidiary science—that of indexing. These subjects are therefore to be looked for elsewhere; but in the present instance a bibliography seems hardly called for, considering the preponderatingly personal quality of Professor Letulle's work. Letulle's *Anatomie Pathologique* will be an ornament in every medical library and a valued "stand-by" to all those interested or engaged in that study.

POLIOMYELITIS

The little work on Poliomyelitis,[3] by Dr. PAUL DUHEM, is based on his ten years' experience of the disease at the Hôpital des Enfants-Malades in Paris, where he occupies the position of electro-radiologist. After short introductory chapters dealing with the history and etiology of the disease, he discusses in detail the clinical aspects, which he divides into the six stages of incubation, febrile period, post-febrile stage, period of paralysis, period of regression, and period of permanent paralysis. Then follows a chapter on the study of the electrical reactions of the muscles and nerves, the importance of which, from the prognostic and therapeutic as well as from the diagnostic standpoint, is especially emphasized. The morbid anatomy and clinical varieties of the disease are then considered, and after a short chapter on prognosis a detailed description is given of the treatment of the disease according to its various stages, special stress being laid on the necessity of a systematic method in carrying it out.

The first three issues of *Immunität, Allergie und Infektionskrankheiten*,[4] which are devoted to infantile paralysis, contain nine essays by German, British, and American authors, which give a useful summary of our present knowledge of the disease. Professor CLAUS W. JUNGEBLUT and Dr. RICHARD THOMPSON of Columbia University, New York, contribute an essay on recent investigation which is chiefly concerned with etiology, active immunization, and serum therapy. The statistical aspects are dealt with by Dr. E. ROESLE of Berlin, who provides tables of the incidence and mortality of poliomyelitis in Prussia, England, the United States, Scandinavia, and Switzerland, as well as the age and mortality distribution of cases. A report of the 1930 epidemic in Alsace is contributed by Drs. C. LEVADITI, E. SCHMUTZ, and L. WILLEMIN, based on that given last December to the Académie de Médecine of Paris. Dr. DE RUDDER of Würzburg writes on the early diagnosis, Dr. A. LICHTENSTEIN of Stockholm on abortive attacks, Dr. P. BAMBERGER of the Greifswald University Children's Clinic on the clinical aspects and general treatment, Dr. R. W. FAIRBROTHER of the department of bacteriology and preventive medicine of Manchester University on serum therapy, Professor HANS SCHLOSSBERGER of the Berlin Health Office on treatment by convalescent serum in Canada, and Dr. P. PITZEN of Giessen on the indications and results of orthopaedic treatment.

[3] *La Poliomyélite* (Paralysie spinale infantile ou maladie de Heine-Medin). Par Dr. Paul Duhem. Préface de M. le Dr. Nobécourt. Monographies de Pédiatrie et de Puériculture. Paris: Gauthier-Villars et Cie. 1931. (Pp. xi + 137; 15 figures. 25 fr.)

[4] *Die epidemische Kinderlahmung*. Von Professor C. W. Jungeblut, Dr. E. Roesle, Professor Leveditti, Privatdoz. de Rudder, Privatdoz. A. Lichtenstein, Dr. P. Bamberger, Dr. R. W. Fairbrother, Professor H. Schlossberger, Professor P. Pitzen. Munchen: Artzliche Rundschau Otto Gmelin. 1931. (Pp. 132; 9 figures. M.8; bound, M.10.)

THE PHILOSOPHY OF TREATMENT

In his *Modern Therapeutics of Internal Diseases: an Introduction to Medical Practice*,[5] Dr. CAWADIAS makes an earnest and eloquent appeal for the adoption of scientific principles in medicine. Thus at the outset he discusses at some length the fundamental concepts of medical science on which the treatment of internal diseases is based; internal diseases must be regarded not as limited to one organ, but as manifestations of a profound disturbance of the whole body, and hence specialties, such as cardiology, neurology, and gastro-enterology, based on the erroneous dogmas of the last century, especially that of localization of disease, can no longer be accepted. Young physicians who propose to specialize in one group of diseases are warned that they are on a false route. This change of view is due to the labours of synthetic physicians, including Sir James Mackenzie, "probably the greatest clinical leader of neo-Hippocratism in England," of physiologists who showed that man is an integrated whole, of constitutionalists with their insistence on the influence of heredity, and of modern psychologists. Diseases are artificial categories, the term being employed for convenience, for in truth the only reality is the patient. As treatment depends on diagnosis, the first phase of treatment is diagnosis, and this must be efficiently carried out before that of therapeutics, the second phase. Effective diagnosis is incompatible with the narrow specialist outlook, and must first be made on clinical examination, and then confirmed, corrected, and controlled by laboratory methods.

The various stages of diagnosis are described, and then the author comes to the use of therapeutical agents in internal diseases; in doing so, insistence is laid on general principles, which are illustrated by examples. But the reader must understand that this philosophically written book is not on the lines of an index of treatment which provides in the briefest compass a list of remedies, ancient and modern, for a given disease. In a special chapter on "the modern internist" the properties that go to make up "the ideal physician" are set out, and the value of classical education is illustrated by a reference to Osler and Allbutt. It is a book for the thoughtful rather than the hurried practitioner.

MUSCLE INDURATIONS

In his book on muscle indurations (muskelhärten or myogelosen)[6] Dr. MAX LANGE is treading on unfrequented ground. The hybrid term "myogelosis" is of recent origin. It does not appear under its German pseudo-Greek form in Guttman's *Medizinische Terminologie* of 1927, but Dorland's *American Illustrated Medical Dictionary* of 1929 contains the following: "Myogelosis, μυς muscle + gelare, to freeze. An area of hardening in a muscle." Dr. Max Lange says that nobody doubts the existence of pains in the muscles which are attributed to so-called rheumatism, but their cause and mode of production are in most cases unknown to the doctor. In

[5] *The Modern Therapeutics of Internal Diseases: an Introduction to Medical Practice*. By A. P. Cawadias, O.B.E., M.D., M.R.C.P. London: Baillière, Tindall and Cox. 1931. (Pp. xii + 148; 3 figures. 10s. 6d. net.)

[6] *Die Muskelhärten (Myogelosen)*. Von Privatdozent Dr. Max Lange. Lehmanns medizinische Lehrbucher, Band xii. Munchen: J. F. Lehmann. 1931. (Pp. 194; 86 figures; 4 plates. M.12.)

Germany the popular opinion is expressed in the rhyme: "Und was er nicht erklären kann, Sieht er als Rheumatismus an!" which may be rendered, "The pains they can't explain at all, The doctors rheumatism call!"

The problem of the causation of so much suffering as is represented by the terms myositis, muscular rheumatism, fibrositis, lumbago, sciatica, etc., calls for solution. The most important question connected with it is: Are there in the affected muscles any objective changes demonstrable as a probable cause? The kind of treatment depends very much on the answer. It is a question that has been long answered negatively in the medical schools and only positively by a few practitioners who have been occupied in the study and practice of massage. Muller of Gladbach, Schade, Fritz Lange, and Everbusch have of recent years brought forward evidence of changes in the muscles. These changes are called by Schade and F. Lange muscular indurations (muskelhärten or myogeloses). Masseurs and physiotherapeutists have long been familiar with painful indurated spots in muscles, and have with justice claimed to relieve pain by dispersing or at least softening such indurations. In our issue of May 2nd we noticed Dr. Meynell's book on *Backache*, in which sensitive deposits of this kind are referred to, and their importance and their successful dispersal by manipulation described. Such indurations, according to Dr. Lange, are to be found most often in certain specified spots, which he represents in a number of illustrations, in various parts of the body. In the absence of histological evidence of the exact nature of these indurations, attempts have been made to measure and record the surface resistance and degree of elasticity of muscles by means of the sclerometer of Dr. Mangold, for which constant results are claimed to be recorded. Myogelosis is not only present in so-called muscular rheumatism, but it also follows overstrain and overuse of muscle, and may be the result of disturbances of metabolism.

Professor Fritz Lange, who contributes a preface, looks forward to great gains from the further study of myogelosis. He attributes to the orthopaedic clinic in Munich the attainment of much progress in gelotripsy or dispersal by rubbing during the last ten years, but thinks that it will take another ten years to familiarize practitioners with the method of treatment, and to bring it into general use. By that time the conditions in question will no longer be treated with anti-neuralgic and anti-rheumatic drugs, but cured by searching out and dispersing myogelotic deposits. This book is suggestive and the subject well worth further examination.

NOTES ON BOOKS

Interest in the intestinal protozoa of man has been greatly stimulated in the last fifteen years, and a considerable body of information has accumulated. It is with the object of making this information available to the general medical practitioner and diagnostician that *Protozoan Parasitism of the Alimentary Tract*,[1] by K. M. LYNCH, has been prepared. It opens with a general introduction to the subject in which the author insists on the need for careful diagnosis of forms found in the faeces, and for evaluation of the pathogenic effect of such species as are found. Only a relatively small number of the intestinal protozoa are known to be harmful to man; a few others may possibly be so regarded when we know more about them; many are definitely harmless. In the following pages the author considers the protozoa which have been reported from the human intestine, species by species, and discusses their relationship to disease, bionomics, and treatment. The book, which is somewhat expensive for its size, will be of more interest to those who live in warm climates than to practitioners in this country.

An English translation of the second edition of Dr. PLACZEK'S *Sexual Life of Man*[2] has recently appeared. The aim of the work is to supply the medical student, practitioner, and jurist with an up-to-date description of human sexual life in its normal and pathological aspects. The first part, therefore, is an anatomical and physiological introduction which includes an account of the external and internal sexual organs in both sexes, with their muscle and nerve supply, the sexual life of the child, and the outward manifestations of puberty. Genital gland deficiency in both sexes and the relations between the genital apparatus and the endocrine glands are then considered. Succeeding chapters deal with the sexual impulse and its various quantitative and qualitative anomalies. A bibliography of almost exclusively German works is appended.

The little work on *The Alcohol Habit*,[3] by Dr. WALTER E. MASTERS, is written mainly from the voluntary home treatment point of view, the writer having been closely associated with the late Dr. Francis Hare. It is divided into eight chapters. The first three deal with the historical aspects, reaction of the body to alcohol, and the predisposing causes of alcoholism, and are followed by chapters devoted to a discussion of the various types of alcoholism according to Hare's classification, their symptomatology, treatment, and prognosis. As Dr. Masters is a barrister-at-law, special importance attaches to Chapter VII, which deals with legal considerations relating to drunkards and drunkenness. There are two appendices, the first on alcohol and longevity, and the second giving the percentage of proof spirit and of absolute alcohol in various beverages.

[1] *Protozoan Parasitism of the Alimentary Tract.* By Kenneth M. Lynch, M.D. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1931. (Pp. xvii + 238; 37 figures. 16s. net.)

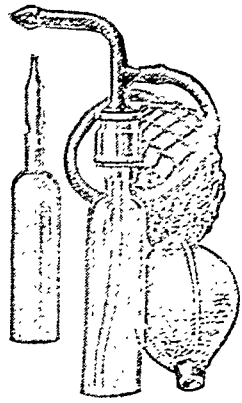
[2] *The Sexual Life of Man.* By Dr Placzek. Second edition, considerably changed and enlarged. Translated by Leslie Stuart Morgan, M.R.C.S., L.R.C.P. London: J. Bale, Sons and Danielsson, Ltd. (Pp. xx + 314. 12s. 6d. net.)

[3] *The Alcohol Habit and its Treatment.* By Walter E. Masters, M.D., M.R.C.S., D.P.H. London: H. K. Lewis and Co., Ltd. 1931. (Pp. xvi + 190. 6s. net.)

PREPARATIONS AND APPLIANCES

SPRAY ADAPTOR FOR TANNIC ACID

The Crookes Laboratories (Park Royal, N.W.10) have devised a simple apparatus for the immediate application of tannic acid to burns, thereby preventing the absorption of toxic substances, alleviating the pain, and thus minimizing the shock. The objection that freshly prepared solutions of tannic acid must always be used has been surmounted, it is stated,



by the employment of a stable 2.5 per cent. solution which is stored in sealed ampoules, ready for attachment to the bellows and spray. When this treatment is required for burns, of the face, the eyes must be protected. The spray adaptor is supplied complete in box with bellows and one ampoule containing an ounce of the colloid tannic acid solution for 7s. 6d.; a box of six ampoules costs 5s.

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EPIDEMIC SORE THROATS

If an illustration were wanted of the advance of medicine step by step by the process of analysis, differentiation, and definition, it would be very natural to take that of the acute infectious anginas. There is a fascinating story of scientific endeavour at every one of the stages which in this case led to the nomenclature which we have now made our current coin and use daily for working purposes: for example, in the history of the separation of diphtheria, first clinically and then bacteriologically ; in the dissociation of scarlet fever from other forms of acute tonsillitis ; and in the subdivisions which we now habitually make of the latter. Familiar terms such as diphtheria, scarlet fever, acute tonsillitis, follicular tonsillitis, and Vincent's angina have long been stabilized, and it is in reliance on their stability that we habitually base many inferences derived from notification returns and statistics of sickness, as well as the action taken in individual cases and outbreaks. It is, however, useful occasionally to put a nomenclature to the test of its correspondence with present-day facts, and guard against too great a dependence on tradition. One may, for example, inquire with advantage how far the clinical pictures and syndromes which were formerly implied by the term scarlet fever are recognizable to-day, whether recent developments of pathological and bacteriological knowledge give support to the former clinical differentiations, or the reverse, and whether the different anginas which we so conveniently label do habitually breed true?

Some useful material for such inquiries was furnished at the Eastbourne Meeting of the British Medical Association by the communication made by Dr. J. A. Glover and Dr. Fred. Griffith to the Section of Public Health, which appears elsewhere in our present issue. The data they presented are of a kind which cannot often be obtained, and for which grateful acknowledgement should be made, not only to the investigators themselves, but to the committee of the Medical Research Council, and to the authorities of the public schools, who made the inquiries possible. The outbreaks investigated show an almost inextricable dovetailing between scarlet fever and other infectious sore throats and febriculas in these communities. Their interdependence has been tested school by school and term after term, and checked by the evidence of immunity gained with the progress of time. In some instances the existence of the preceding infection, whether "scarlatinal" or not, was hardly observable until it was followed by what appeared to be epidemic otitis media, and the authors associate the occurrence of outbreaks of rheumatic fever in schools with similar preceding sore throat epidemics. Starting from the hypothesis that all the initial throat infection can be attributed to haemolytic streptococci, they envisage the subsequent cropping up of scarlet fever, otitis media, or rheumatic fever in greater or less proportion as all being possible results of that infection. The particular factors which determine the occurrence or preponderance of one or the other must necessarily be complex, but the bacteriological studies made of the cases and carriers point to the consequences in the particular instance being in large measure determined by the particular serological types of haemolytic streptococcus which were dominant in the original outbreak or which became dominant as it progressed.

The actual number of cases in the communities studied is not great, but the thoroughness and intensive nature of the observations recorded will convince the reader that it is very desirable that they should be repeated and extended as far as possible. The investigation is of more than academic interest. Work on such lines may well point the way to simplification and economy in the management of epidemics in schools. It should also do something to help in the establishment of scientific principles of selection of cases for hospital isolation. And, in the field of immunization, it encourages a hope in the possibility of producing active immunity, not merely against uncomplicated scarlet fever, but at the same time against a group of other affections creating still more extensive morbidity.

THE EMERGENCY BUDGET

The great war left a legacy of many problems and difficulties, and those which were slowest in achieving recognition are likely to prove the most difficult to solve. Prominent among such questions are those of international finance. Where long-term loans are concerned this country has been in a fairly strong position, and has adopted a very reasonable, if not actually generous, attitude to its debtor nations ; the position with regard to short-term loans, on the other hand, has never been free from risk of difficulty, and at last has proved to be fraught with real danger. It is a commonplace that we have to buy largely from other countries, and in the long run must somehow provide foreign credits to meet our foreign debts. In pre-war years such debts were incurred almost entirely for food and raw materials, such as cotton, rubber, metal ores, etc. During recent years our foreign monetary liabilities have been increased by payments for interest due by our Government, and our imports have expanded rapidly, overlapping the former field and covering heavy purchases of foreign goods of luxury or pleasure-giving utility and the artificially stimulated exports of debtor countries which have a lower level of manufacturing costs and, in some cases, a depreciated international exchange. Such causes have contributed to an aggravation of the difficulty of effecting a settlement of foreign debts in foreign currencies. The ordinary method of facilitating such settlements is by means of foreign short-term loans, which enable a foreign trade debt to be discharged at the due date, the ultimate liability

being in suspense until the creation of trade credits abroad—for example, by exports or by shipping or banking services—allows it to be finally cancelled. As a fact, such means of cancellation have been decreasing, so that there has been a tendency for the foreign short-term loan liability of this country to increase.

One fact which has been abundantly proved during the past few years is that if a nation's exchequer spends more than it receives in revenue, foreign investors, including holders of short-term debts, become nervous of a depreciated exchange, with a resulting difficulty on the part of the borrowers in meeting obligations in a foreign currency. If such nervousness becomes general with regard to the liabilities of a particular country, no more is needed to create a sudden demand for repayment of the loans, and failure to meet such a demand would precipitate a financial crisis, foreign exchange rates would become onerous in the extreme, and in the case of a country which *must* import from abroad, every member of the community would be very seriously affected. It seems clear that we have for some time been drifting towards that position, and that the publication of the May Report, by its candid statement that the national exchequer was spending more than it was receiving, sounded the alarm among the financial concerns which hold our short-term liabilities. Immediate and drastic steps were necessary if a general calling in of that financial accommodation was to be avoided. On previous occasions when this country has taken part in an effort to save another nation from a similar calamity, a primary condition has been laid down that the national expenditure and revenue should be balanced as quickly as possible. Now it is our own turn to meet that condition.

That is the genesis of the new emergency Budget; how is the equilibrium to be restored? Our political leaders have pooled their influence and ability to meet the emergency, and we may confidently look for a statesmanlike and courageous solution, but the nature of the governing body excludes solutions which would be held by some of its members to be a contradiction of the principles which they regard as essential to the proper development of this country. Hence tariff reform and some other possible and widely supported solutions would seem, at the moment, to be impracticable, perhaps the more so as time would be required to develop the appropriate machinery, and promptitude is essential. In the main, therefore, Mr. Snowden has proceeded along the line of stiffening existing taxes and cutting down existing expenditure. But though the new Budget contains no novel taxes it is by no means devoid of dramatic announcements, such as that our total national and local taxation is very near one-third of the total national income, or that the contemplated deficit on next year's Budget is £170,000,000 as compared with the figure of £120,000,000, which has been the basis of recent discussions in the press and elsewhere. Faced with figures of such magnitude the new Government has cast its fiscal net far and wide. Income tax is to be increased, not merely in rate, but also by a reduction in the amounts of income which are exempted and are relieved of half the rate of tax, and as a further turn of the screw the allowances in respect of children are to be somewhat reduced. The existing surtax is increased by 10 per cent., but the lowering of the exemption limit, which was freely foretold in the press, is not, in fact, proposed. Two minor modifications of the increased burden are to be given. The relief to earned incomes is increased from one-sixth to one-fifth, and existing rates of depreciation are to be subject to an additional one-tenth. On the latter part of the proposals we would have liked a little further light. Under present rules medical practitioners receive, say, 15 per cent. depreciation allowance in respect of their cars; apparently in future they will receive 15 per cent. + 10 per cent. of 15 per cent. = 16½ per cent. in all—a small advantage, but helpful as far as it goes. But when a car is replaced a claim for obsolescence allowance is normally made, and a deduction is given equivalent to the unexhausted value of the car less the sale price. In future—that is, in 1932–33 and onwards—rather more will be given year by year, and therefore rather less will constitute the unexhausted value, so that the extra depreciation will be compensated for by a reduced obsolescence allowance, and in the long run the taxpayer gains no advantage. A manufacturer who uses expensive plant may perhaps feel some gratitude for this rather diminutive bird in hand, but it seems almost valueless to the medical practitioner. An additional income tax is by no means the only burden laid on him; the increase in the petrol tax will be a real burden in most cases, especially in the case of those carrying on rural practices; while behind the scene now staged preparations are actively going on for the second scene, in which he will again appear, as the victim of a cut on his panel fees, so that the drama as a whole will leave him with a reduced income, and an increased fiscal contribution to make therefrom.

The Budget was intended, apparently, to touch everyone who could possibly bear increased taxation without altogether unreasonable hardships, but we doubt whether any section of the community will be called upon to make heavier sacrifices than the members of the medical profession, and in particular those whose income is mainly or largely derived from practice under the National Health Insurance Acts.

INTERNATIONAL LIST OF THE CAUSES OF DEATH

Nosology, including the nomenclature and classification of diseases, attracts little attention now as compared with the eighteenth century and the early years of the nineteenth, when, under the influence of Linnaeus, a number of elaborate classifications of diseases were brought out by Linnaeus (1735 and 1763), Vögel of Göttingen (1764), William Cullen (1769 and 1785), MacBride of Dublin (1772), Pinel (1798), Thomas Young (1813), John Mason Good (1817), and others. The classification and nomenclature of diseases, which mainly interest those in charge of vital statistics, are

usually brought to the notice of medical practitioners by the authorities in connexion with certificates of death. Writers of textbooks also find some difficulty with the problems of nosology and classification, for the constant advance of knowledge and changing opinion render alteration in the arrangement of their subject-matter a recurring duty. It must in fact be frankly admitted that an ideal and final classification of diseases will not be possible for a long time, and much the same holds good with regard to nomenclature. Many attempts have been made to obtain such a degree of uniformity in these respects that the statistics of mortality and morbidity in various parts of the world can be intelligibly compared. Though in 1855 William Farr, our greatest medical statistician, and Marc d'Espine of Geneva tried to make this possible, it was such a thorny proposition that as late as 1893 no two countries in the world employed precisely the same forms and methods for the statistical classification of mortality. In that year, however, this want was supplied, largely as the result of the energy and perseverance of the late Jacques Bertillon (1851–1922), Chef des Travaux statistiques de la Ville de Paris, the son of Louis Bertillon, the statistician, and brother of Alphonse, the French pioneer in anthropometry. The French Government convened international conferences in 1900, 1909, 1920, and 1929 for the decennial revision of the International Nomenclature of Diseases (Causes of Death and Incapacity) in order to facilitate the procedure in nosological statistics. It is a well-deserved tribute to Bertillon that on the title-page of the 1930 edition of the international list the words " Classification Bertillon " come in brackets after "statistiques nosologiques." A *Manual of the International List of the Causes of Death*, as adapted for use in England and Wales, was brought out by the Registrar-General in 1912, and in 1926 a second edition for use not only in England and Wales, but also in Scotland and Northern Ireland, appeared. The present and third edition of this manual[1] is based on the fourth decennial revision (1930) resulting from the conference held in Paris on October 16th to 19th, 1929, under the presidency of Professor G. H. Roger, dean of the Paris Faculty of Medicine. As compared with the second edition it contains ten pages more of introductory matter, including, among other subjects, " Suggestions to medical practitioners respecting certificates of causes of death and form of medical certificate," issued by the Registrars-General of England and Wales, Scotland, and Northern Ireland. The form of death certificate in use in England and Wales was remodelled and came into operation on July 1st, 1927 ; it is almost identical with that subsequently recommended by the Commission Mixte de Statistique Sanitaire of the International Statistical Institute, and adopted by the Institute at its session at Cairo in 1928. It has not, however, been adopted in Scotland or Northern Ireland; attention is also drawn to other differences in the official procedures in the various parts of the United Kingdom. It may be noted that this manual is concerned with the causes of *death*, and is quite distinct from the *Nomenclature of Diseases* brought out by a joint committee of the Royal College of Physicians of London in 1869, 1884, 1896, 1906, 1918, and now again in the press, Drs. Robert Hutchison and W. C. Bosanquet being the chairman and secretary of the committee.

[1] *Manual of the International List of the Causes of Death*, as adapted for use in England and Wales, Scotland, and Northern Ireland. London. H.M. Stationery Office. 1931. (3s.)

MAGGOTS AND OSTEOMYELITIS

In the July number of the *Journal of Bone and Joint Surgery* there appeared a posthumous article by Dr. William S. Baer of the Johns Hopkins University, Baltimore, Maryland, under the rather arresting title of " The treatment of chronic osteomyelitis with the maggot (larvae) of the blow-fly." Dr. Baer's original paper was read before the annual meeting of the American Orthopaedic Association in June, 1930, but his illness and untimely death on April 7th of this year prevented his preparing it for publication ; this has been done by his associate, Dr. George Bennett. Since the days of Ambroise Paré, and very likely before then, observations have been recorded of the healthiness of wounds infested with maggots, and in the American War of Secession one Southern surgeon seems—according to Dr. Baer—to have used larvae therapeutically. Dr. Baer's attention was drawn to the subject by the discovery in France during the late war of two soldiers who had been missing for days, whose wounds were crawling with maggots. Although these two men had compound fractures of the femur and large wounds of the scrotum and abdomen, and although they had lain on the ground with their wounds undressed for seven days, their condition—so far as infection was concerned—was excellent. This experience set Dr. Baer thinking, and when he was once more able to carry on investigations at Baltimore, he set to work to study the question, and, as far as possible, to reproduce the conditions experimentally. It was found that the naturally grown larvae of the blue- and green-bottle flies could not safely be employed, as they might have contained pathogenic micro-organisms or spores. Careful and repeated experiments showed that their eggs could be cultured and obtained free from all infection, and that such larvae could be kept alive and active in wounds for at least five days before they pupated. The paper contains reports of eighty-nine cases thus treated, and Dr. Baer's conclusions were as follows: " (1) Maggots have been found to be a tremendously useful adjunct to thorough surgical treatment of chronic osteomyelitis, and, in our opinion, are *far more successful in securing permanent healing of these extensive wounds than any other method tried by us.* [The italics are ours] (2) Maggots, by their digestive action, clear away the minute fragments of bone and tissue sloughs caused by operative trauma in a way not accomplished by any other means. This is a tremendously valuable asset in the healing of a wound. (3) Maggots cause wounds to become alkaline, and in this way diminish growth of pathogenic bacteria. (4) Maggots seem to have other more subtle biochemical effects within the wound itself, and perhaps cause also a constitutional reaction inimical to bacterial growth. This is under investigation. (5) Maggots as raised and sterilized in the manner described may be used in any wound without risk to the patient. (6) The post-traumatic or post-operative general condition of the patient is better in maggot treatment than in the older forms of treatment where infection was combated by chemicals or other types of dressing. There is less absorption and less toxic

reaction (7) In open tubercular abscesses, with or without secondary infection, wide exposure followed by maggot treatment has proved surprisingly effective in a number of cases, and will be given further trial" This paper, coming from such an authority, and supported by such an amount of carefully stated evidence, must attract attention, and further reports will be awaited with interest Meanwhile, another innovation in the treatment of osteomyelitis has been tried in the United States and appears to be gaining in popularity In *Osteomyelitis and Compound Fractures and other Infected Wounds* (reviewed in the *Journal* of September 21st, 1929, p 540), Dr Winnett Orr of Lincoln, Nebraska, strongly recommended free exposure, fixation in gypsum, and very infrequent dressings, paying no heed to any fetor of discharge A report by Dr Jacob Kulowski on this treatment of the disease and of allied suppurative processes, published in the issue of the *Journal of Bone and Joint Surgery* referred to above, deals with 155 cases, and the conclusions arrived at are very favourable Osteomyelitis is doubtless more common in the United States than in this country, and these attempts to find new, safer, and shorter methods of treatment indicate that surgeons are not satisfied with routine measures Neither of those described will be readily welcomed by surgeons brought up to abhor fetid discharges, and larvae of all kinds, but if further experience reveals that they offer real advantages to the patient, they are bound to be adopted at all aesthetic costs

LIMITATION OF TRAFFIC IN NARCOTIC DRUGS

The new Convention dealing with the traffic in narcotic drugs, drafted by the international conference which sat from May 27th to July 18th, has now been published, if it is ratified and put into force, it will modify, in several important details, the Hague Opium Convention of 1912 and that of Geneva of 1925 As intimated in the *Journal* of July 18th the proposal favoured by the London Conference of 1930 and by the Opium Advisory Committee of the League of Nations, to allocate to manufacturing nations quotas of the ascertained world requirements of morphine and cocaine and their derivatives was rejected An alternative plan, advocated by the Japanese and French delegations, was adopted by 27 votes to 3, with 6 abstentions The president of the conference, M de Brouckere of Belgium, felt some anxiety at this decision not because the alternative system which was adopted was bad, but "because it would be very difficult to apply" The alternative adopted provides that each nation shall furnish annually to the Central Opium Board estimates of its medical and scientific requirements for each of the drugs, for internal consumption, for export, for conversion, and for reserve or Government stocks Manufacture is to be limited to such annual estimates The Convention is claimed to cover "all known and possible derivatives of opium and coca leaf" which can give rise to addiction The export of heroin, except to Governments and under specified conditions, is forbidden Codeine and dionin are now to be brought under control The annual national estimates will be published in summary by the Central Board, along with any explanations furnished by any contracting party which is deemed to have failed in its obligations The Central Board will be assisted by a supervisory body composed of representatives of the Opium Advisory Committee, the Central Board, the Health Committee of the League, and the Office International d'Hygiene Publique Each nation is to set up a special administration to give effect to the Convention and is also invited to consider the desirability of establishing a State monopoly for drug manufacture This last suggestion was opposed by the German Government The Convention is not to come into force until it has been ratified by twenty five States, including four of the following France, Great Britain, Germany Japan, Netherlands Switzerland, Turkey, and the United States In the Final Act attached to the Convention estimates are furnished of the present annual world requirements of morphine, heroin, and cocaine, these are given respectively as nine tons, two tons, and five and a half tons

MEASUREMENT OF NOISE

Some time ago reference was made (*Journal*, 1930, ii 920) to the important conclusions reached by the Noise Abatement Commission of the Department of Health, New York They were subsequently confirmed by Dr G W C Kaye, the superintendent of the physics department of the National Physical Laboratory at Teddington, who gave a highly interesting account of his work on noise and its measurement in a Friday evening lecture at the Royal Institution, London, this summer It is encouraging to learn that the Middlesex County Council is seeking powers next session to deal with excessive, unreasonable or unnecessary noise It would require too technical a disquisition to explain how noise is measured and by what processes of experiment and reasoning the unit of noise has been determined It will suffice here to note that New York and London have agreed upon the decibel as the unit thus commemorating that distinguished inventor Alexander Graham Bell the originator of the telephone Experiment shows that one decibel corresponds approximately to the least perceptible change in loudness of a sound of medium loudness under average conditions, and that for pure sounds of medium frequency the range of audibility between the thresholds of hearing and feeling is covered by 130 decibels In the case of sounds of different or mixed frequencies neither the physical intensity level nor the sensation level can be used as a measure of loudness Dr Kaye continues "In the circumstances an arbitrary scale has to be adopted as a practical standard, and a suitable one for the purpose is the sensation scale of a pure note having a frequency in the region of 1 000 cycles per second Then the loudness of any sound, whether pure or a mixture such as a noise is defined as the sensation level (expressed in decibels above the threshold value) of the standard note which appears equally loud to the ear" This explanation will give some intimation of the difficulties of the subject Even in the case of very loud sounds the amount of energy concerned in their emission is small Dr Kaye tells us that the noise of a cup tie crowd at Wembley all the members talking loudly would provide enough energy to boil a cup of tea! The worst noise yet to be found in the cabin of a noisy aeroplane—recorded as 100 decibels At the other end of the scale 10 decibels connotes a quiet whisper five feet off Other values are very busy traffic in New York 75 decibels, in London

70 decibels. A tram on very noisy rails in London registered 90 decibels, while the interior of a London tube train varied between 75 and 80. The New York subway trains seem to make a quantity of noise which is *sui generis*, and to attain almost to the bad eminence, in this respect, of the aeroplane. Masking effects of noise—that is to say, the extinction of one sound by another equally loud or louder—have been used as a means of measurement. In New York, when Lindbergh was being welcomed after his Atlantic flight, a brass band not many yards distant was inaudible. The apparently inoffensive "clicker" used by lecturers to signal to lantern or cinema operators has a terrible power of penetration. Dr. Kaye says that it can be heard a thousand feet away. He has used it for rough experiments on noise measurement. In an aeroplane cabin, or close to a pneumatic road-breaker, its audibility falls to two or three feet. The much harassed railway companies may take some small comfort from the statement that an aeroplane in a cross-Channel flight was found to be a thousand times noisier than an express train. It is, however, discouraging to learn that putting cotton-wool in the ears only reduces aeroplane noise from 100 decibels to 90; but perhaps these 10 decibels may be the most offensive ones. There are still difficulties to be foreseen in the legislative control of noise, and more may be hoped from persuasion than coercion, especially when we reflect that some of its most objectionable features are due more to pitch, intermittency, and suddenness, than to the actual energy employed, or to the amount of the noise. The now happily silent cab whistle was to many people one of the most nerve-racking sounds, yet it was not so very large or loud a noise as some less aggravating ones. The barrel organs, also, which drove John Leech and many another sufferer to desperate protest, were not in themselves so deafening. At least, motor horns, the obvious purpose of which is to make the pedestrian jump, should be sternly suppressed, for by confusing him they are apt to defeat their own ends. It is alarming, however, to learn from Dr. Kaye that amplifiers have been produced which make the human voice clearly audible at a distance of two miles. Thus are the resources of science prostituted to base uses, while those to whom we look for help may add to our sufferings.

FOOD POISONING

The marked advance during recent years in our knowledge of illness ascribed to food infection may be attributed in general to an awakened interest in food and all that concerns it, and in particular to the careful investigations of outbreaks of food-borne disease carried out by observers mainly in this country and in the United States. These valuable researches have solved some problems and shown that others, believed to be solved, still await solution. The facts should be known to those who have to deal with outbreaks of food poisoning but who may not have access at first hand to the sources of information. The whole position as it stands to-day is most usefully summarized in a recent work[1] by Dr. E. O. Jordan of Chicago, which extends and brings up to date his previous book on food poisoning (reviewed in the *Journal* of July 28th, 1917). In the early chapters he discusses allergy and the poisonous plants and animals, including mushrooms and the mussel poison. Under the metallic poisons he largely exonerates tin, zinc, and aluminium. A good account is given of preservatives in food, the English Preservatives in Food Regulations being cited. The milk-borne infections are fully described, and illustrative outbreaks quoted. The section on Salmonella food poisoning is informative, though the terminology is not that usually employed in this country. The metazoan parasites are also considered, and the facts relating to botulism are amply detailed. The whole field is covered without waste of words, adequate references being given in the various sections.

[1] *Food Poisoning and Food-Borne Infection.* By Edwin Oakes Jordan, Chairman of the Department of Hygiene and Bacteriology, the University of Chicago. Chicago: University of Chicago Press; London: Cambridge University Press. 1931. (11s. 6d. net.)

EXPERIMENTS ON ANIMALS

According to the Home Office annual return,[1] 450,822 experiments were performed on living animals during 1930, being 47,681 more than in the previous year. Of this number 8,252 were performed under licence alone, or under Certificate C, and therefore came within the provision of the Act, which says that the animal must be completely under the influence of an anaesthetic throughout the whole of the experiment and be killed if it has suffered any serious injury, or if the pain is likely to continue after the effect of the anaesthetic has ceased. In addition, 1,051 operations were conducted under Certificate B, or under B linked with EE or F. In no case was a certificate dispensing entirely with the use of anaesthetics allowed for an operative proceeding more severe than subcutaneous venesection. Serious operations were always required to be performed under an anaesthetic. The great majority of the experiments (430,063) were conducted under Certificate A, which is granted only for procedures attended by little or no pain—for example, inoculations, hypodermic injections, feeding experiments, administration of various substances by the mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. In a very large number of these experiments the results are negative, and the animals suffer no inconvenience whatever. The returns show that during the year under review 25,259 experiments were made in the course of cancer investigation—1,295 under an anaesthetic and the remainder without. The latter were almost entirely inoculations into mice, or exposure of animals to radiation. A large number of experiments, mostly simple inoculations, were performed either on behalf of official bodies with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. The report is signed by Dr. J. A. Giles, chief inspector. The advisory committee appointed by the Home Secretary to assist him with advice in the administration of the Act now consists of Lord Tomlin (chairman), Dr. H. Morley Fletcher, Sir Archibald Garrod, Sir William Hardy, Sir Arthur Keith, Sir D'Arcy Power, and Sir Charters Symonds.

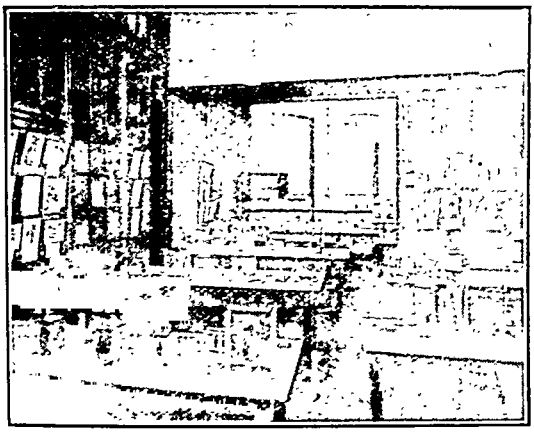
Sir George Newman's report as Chief Medical Officer of the Ministry of Health, for the year 1930, entitled "On the State of the Public Health," is published this week by H.M. Stationery Office (4s., by post 4s. 3d.). Many of the subjects dealt with in this document are of great importance, and reference to them will be made in forthcoming issues.

[1] *Experiments on Living Animals.* London: H.M. Stationery Office. 1931. (1s. 3d. net.)

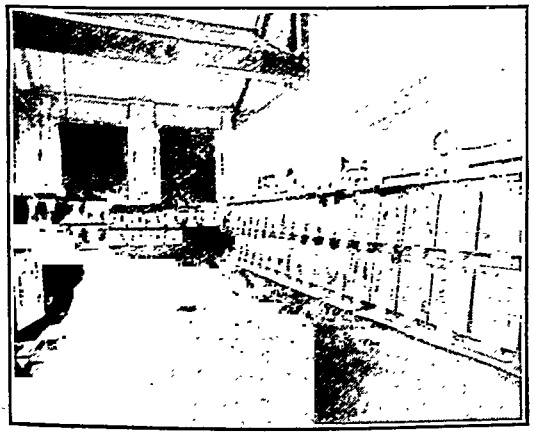
THE PATHOLOGICAL MUSEUM AT EASTBOURNE

We have received from Dr. A. Geoffrey Shera, chairman of the Museum Committee of the Eastbourne Annual Meeting, the following illustrated account of the Pathological Museum, supplementing the article published in our issue of August 8th (p. 255).

The photographs reproduced herewith show four of the eight rooms in the Technical Institute at Eastbourne, where the Pathological Museum was held. It is hoped that these photographs may be of assistance in the future to those who have the task of organizing the British Medical Association museum, from the point of view of general lay-out.



Room I.—Medicine and Surgery.



Room V.—*X*-Ray Negatives.

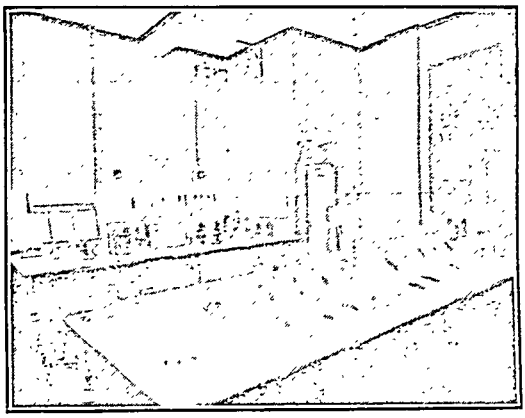
The total number of specimens was 1,200, which total may be regarded as respectable for a non-teaching centre. Naturally, the majority of these came from external sources, and without the collaboration of these sources the museum would have been a fiasco.

Room I.—Medicine and Surgery

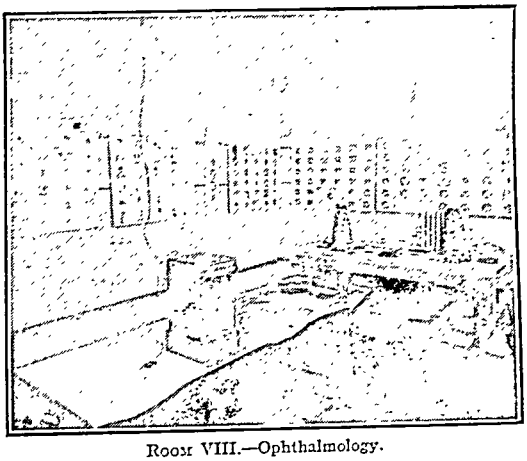
This room incorporated a series of specimens of general interest from the Princess Alice Memorial Hospital, Eastbourne, and from the East Sussex County Mental Hospital, Hellingly. It is of interest to note that in recent years the mental hospitals have tended to come forward and send exhibits to the annual British Medical Association museum, and this connotes an increasing interest in scientific medicine which was formerly limited to a few mental hospitals, but is now much more general. Room I also contained a series of specimens, drawings, photomicrographs, fractional test-meal charts, and *x*-ray prints illustrating various types of carcinoma of the stomach. This exhibit was a remarkably complete exposition of the subject. There was also a composite series illustrating recent advances in the diagnosis of surgical renal diseases.

Room IV.—Pathology

The photograph illustrates a series of skiagrams of the coronary arteries in health and disease (foreground). Owing to lighting difficulties the photograph does not show the excellent series of specimens illustrating infarction of the myocardium. At the far end of the room the exhibit of recent research work on cancer may be seen, and, nearer, cultures of a new organism (Salmonella, Eastbourne). On the right is to be seen an apparatus for keeping the blood warm throughout transfusion. Photographs taken with the "supermicroscope" can be seen, and also the series of specimens of general pathological interest from various sources, both local and metropolitan.



Room IV.—Pathology and Biochemistry.



Room VIII.—Ophthalmology.

Room V.—X-Ray Photographs

One hundred and fifteen *x*-ray negatives, all shown as transparencies, were exhibited in this room, and most of them were in consecutive series. The method of mounting is interesting and effective. The room was, of course, darkened, and the general effect was striking. The series of chest radiograms collected by Professor Arthur Hall of

Sheffield are well seen in the foreground. These illustrated cases of silicosis in various trades, ranging from asbestos workers to gold miners.

In the same room, on the opposite side, there was a set of very fine ventriculograms showing normal and pathological conditions of the brain, including some interesting tumours. At the end of the room can be seen a series of renal specimens, with pyelograms illustrating the excretion and ureter catheter methods.

Room VIII.—Ophthalmology

In recent years the ophthalmological exhibit has been very small. This year we were fortunate in securing a large number (over 200) coloured drawings of abnormal conditions of the eye. The photograph entirely fails to do justice to the wonderful colouring of these valuable drawings. They represented external pathological conditions of the eye, conditions of the media and fundus, slit-lamp drawings, vascular diseases, and, in fact, almost every phase of eye disease.

There was also an interesting collection of antique ophthalmological instruments, and, for comparison, a series of modern eye instruments and, for less serious consideration, a set of stereoscopic transparencies of views of local interest.

Apart from these photographs, there were rooms in which the obstetrical and gynaecological collection was housed (Rooms II and III), the public health exhibit (Room VI), neurology and psychological medicine (Room VI), oto-rhino-laryngology (Room VI), dermatology (Room VII), hydrology and climatology (Room VII), and medical sociology (Room VI).

The commentary which was published in the *British Medical Journal* of August 8th does full justice to these sections, and it would be superfluous to detail them to any further extent. The members of the Museum Committee were particularly gratified by the appreciative tone of this article, and feel, after reading it, that their labours, extending as they did over a period of sixteen months, were well worth while.

Scotland

Royal College of Physicians of Edinburgh

Arrangements have now been further advanced for the celebration of the 250th anniversary of the foundation of the Royal College of Physicians of Edinburgh. A special service, to which representatives of public bodies will be invited, is to be held on the afternoon of Sunday, November 29th, in St. Giles's Cathedral. The service will be conducted by the Very Rev. Charles L. Warr, Dean of the Thistle, and the sermon will be preached by the Very Rev. Professor W. P. Paterson. On the following day (St. Andrew's Day), which is the actual date of the foundation, and on Tuesday, December 1st, the celebrations will be continued by a reception in the College of Art, by the conferment of a number of honorary Fellowships of the College upon distinguished physicians, and by a banquet in the Freemasons' Hall, George Street. In view of the Government's appeal for general economy, there is some doubt whether the College will, at its next meeting, approve the elaborate arrangements that have been made by the officials in regard to this banquet.

Sanitary Congress at Largs

The fifty-seventh annual congress of the Royal Sanitary Association of Scotland, attended by some three hundred delegates, was opened at Largs on September 8th. Dr. J. Parlane Kinloch, Chief Medical Officer of the Department of Health for Scotland, was appointed president. In a paper on seaside resorts in relation to public health, Mr. George Arkieson, burgh surveyor, Largs, suggested that the question of health might be more seriously considered in relation to annual holidays. His conception of a health-giving holiday was one where rest, relaxation, and recuperation were secured, without too many artificial attractions. He proposed that, as the cost of health services in the industrial towns was met from the rates, seaside resorts might receive some form of subsidy, so that holidays at these places might be cheapened. It might be said of the Clyde resorts that for eight months of the year they were small burghs, but for the remaining four months the influx of population entitled them to rank as large burghs. As there was no industry in these burghs, there was no benefit from derating. He thought that some arrangement might be made so that working-class families might be transported to the seaside from industrial centres at much reduced fares. The reorganization of hospital services from the administrative side was dealt with by Provost A. M. Macewen (Inverness), and the medical aspect was discussed by Dr. Harry J. Rae, medical officer of health, Aberdeen. Referring to the burgh and county of Inverness, Provost Macewen said that under the Local Government (Scotland) Act, 1929, the negotiations entered into between the county and town councils for the amalgamation of their hospital services had shown that, in a sparsely populated county with considerable geographical difficulties, centralization could be effectively accomplished. The correlation of hospital services through a joint committee was the only means whereby adequate and economic use could be made of the accommodation available within the area. It would often be unsuitable to limit the area to a county, and it would be necessary in many instances to link up the smaller hospitals with the central hospital by co-operation between various local authorities and the directors of all hospitals within a wider area. It was only by some such measure that the problem of maintaining adequate nursing services and special medical services for the smaller hospitals could be solved. At the same time, he thought that local authorities should interfere as little as possible with the autonomy of institutions which were working well. He also expressed the opinion that care must be taken not to get out of touch with the family doctor. Dr. Harry J. Rae said that in Scotland the hospital organization must be on a regional basis, grouped round the medical schools of Glasgow, Edinburgh, Dundee, and Aberdeen, with an additional centre for the North of Scotland at Inverness. He thought that the following facts had already emerged in regard to hospital development: (1) Municipal general hospitals were developing along lines parallel to the voluntary general hospitals. (2) Local authorities should encourage research in their municipal general hospitals. (3) With the establishment of psychiatric divisions in the general hospitals a great impetus was being given to the development of a modern mental health service. (4) The general medical practitioner must have organic association with the hospitals if an adequate health service was to be provided. (5) United training schools for nurses should be established by co-operation between the statutory and voluntary hospitals, and there should also be some association between the hospitals and the domiciliary nursing services in the community. Dr. A. S. M. Macgregor, medical officer of health for Glasgow, said that an important problem in regard to reorganization was the adequacy of the existing hospital provision. In Glasgow they had to administer a group of hospitals comprising some 6,200 beds. In a recent survey of Glasgow it had been found that about 25 per cent. of the hospital beds were devoted to the care of aged and infirm persons and those who were chronically sick, while at the same time the winter demands for treatment of acute cases led to temporary overcrowding.

cases on the borderline between health and invalidity were numerous, and the solution of the problem of classification was far from easy. He thought that many of the cases requiring permanent treatment could be accommodated in institutions other than up-to-date hospitals.

Inverness Maternity Home

The opening ceremony of the Ida Merry Maternity Home, situated in a new property at Craigmonie, Inverness, was performed on September 3rd by Lady Bertha Dawkins on behalf of Her Majesty the Queen. The home was established by the Hon. Mrs. Merry of Belladrum some years ago, and has now been transferred to more commodious quarters. It is intended for working men's wives of the Inverness district, and occupies a finely appointed building with open surroundings.

Dunoon Convalescent Homes

The annual meeting of the Glasgow and West of Scotland Convalescent Seaside Homes, Dunoon, was held on September 7th in Glasgow. Mr. William Anderson, president of the institution, who presided, stated that during the past year the homes had received 5,827 inmates. These included 1,720 men, 2,213 women, and 912 boys and 982 girls under 12 years of age. The ordinary income for the year amounted to £12,121 and the expenditure to £11,909.

England and Wales

Reduction of Local Expenditure

In view of the national emergency, the Ministry of Health has addressed a circular (No. 1222) to local authorities advising them of the manner in which reductions in general local expenditure should be determined. Special branches of expenditure will be dealt with in other communications. The circular deprecates any hasty or wholesale policy of economy, irrespective of the character or purpose of the service under consideration. It suggests that each local authority, through its finance or other appropriate committee, should subject immediately to careful and detailed scrutiny the whole field of its expenditure, with the object of deciding, for example, whether full value is being obtained for money spent, what savings can be effected in all branches of administration, and whether the contemplated development of any particular service can be safely deferred until more stable conditions prevail. In making this survey, committees are recommended to take into account the nature and probable return of the service under review, and to pay regard to its importance as a source of employment to local workers, so as to avoid the throwing of charges on national or local funds. It is also suggested that careful consideration should be given to the propriety of rationing spending committees. In regard to the remuneration of their employees, local authorities are reminded that reductions are being made " in the emoluments of classes of local officers of services which are the subject of percentage grants from the Exchequer, and in the remuneration of doctors and chemists under the national health insurance scheme." While the Government considers that the conditions of the local government service and the range of salaries vary so materially that it does not seem practicable to impose any hard-and-fast rule on local authorities in this matter, it is confident that officers of the local government service not affected by the reductions referred to will be prepared to make their contribution in the present emergency. Authorities are advised to discuss the situation with their officers in order to ensure that all may have an opportunity of sharing equitably in the sacrifices demanded by the national need. Copies of the circular can be obtained from H.M. Stationery Office (1d. net).

A Post-Graduate Tuberculosis Course in Lancashire

As in previous years, a post-graduate course in tuberculosis is being arranged in Manchester and its neighbourhood, from October 19th to 24th, under the auspices of the Joint Tuberculosis Council. On the first afternoon Dr. G. Lissant Cox will open a discussion on central administration in the county, and Dr. D. P. Sutherland will deal similarly with the city. At the Eccles Tuberculosis Dispensary, next morning, the value of electrotherapy in tuberculosis will be considered, and also radiology in the diagnosis of the pulmonary form. The meeting will then adjourn to Baguley Sanatorium, Altrincham, where, after lunch, the pathology of tuberculous lesions will be reviewed, and certain problems in the hospital treatment of advanced and chronic pulmonary cases will be debated. On the following morning, at a tuberculosis dispensary in Manchester, pneumonoconiosis in stonemasons, miners, and cotton operatives will be dealt with. After lunch, at Peel Hall Pulmonary Hospital, near Bolton, the diagnosis and treatment at a county pulmonary hospital will be surveyed, with special reference to lipiodol, artificial pneumothorax, sanocrysin, and blood sedimentation. In Manchester, on Thursday, the subjects for discussion will be artificial pneumothorax and allied therapy, and malignant disease of the chest. At the Eccles Tuberculosis Dispensary, in the afternoon, a lecture will be given on chronic inflammatory conditions of the lungs, particularly in children ; this will be followed by a discussion on skiagrams brought by members of the course. After a visit, on Friday, to the East Lancashire Sanatorium and Village Settlement, Barrowmore Hall, there will be a round-table conference, on Saturday, covering the work of care committees, home visiting, and the examination of contacts. Further information may be obtained from Dr. W. Brand, 8, Highway Court, Beaconsfield, Bucks.

The London Light and Electrical Clinic

The London Light and Electrical Clinic, which was founded by the late Mr. Campbell-Johnston, is now under the control of the Order of St John of Jerusalem, with the Earl of Scarbrough as chairman of the lay board, and an honorary medical advisory board consisting of Sir William Willcox, Sir J. Purves-Stewart, Sir John W. Thomson-Walker, Dr. F. Howard Humphris, Dr. L. Knuthsen, and Mr. Frank Romer. Sir Leonard Hill has undertaken the general supervision of the clinic. In addition to the medical officers who control treatment in special departments, a staff of honorary consultant physicians has been appointed. A large number of fully qualified and trained hospital nurses and masseuses are employed under a matron. The clinic is open from 9 a.m. to 8 p.m., except on Saturdays, when it closes at noon ; at the evening sessions workers can receive treatment. A lady almoner determines the fee (if any) in accordance with the circumstances of each patient, the clinic being run on the same lines as the out-patient department of a hospital. As at the British Red Cross Clinic for Rheumatism, so at this clinic of the Order of St. John there is a department for private patients who wish, on the recommendation of their doctor, to consult the physicians and receive the treatment which the clinic affords. A bacteriological laboratory has been established, and there are facilities for x-ray examination. There is also a physical laboratory provided with instruments of precision ; a physicist co-operates in teaching and research. There are departments for treatment by diathermy, particularly of the pelvic organs ; for electrical treatment, massage, and remedial exercises ; and for treatment by light and the infra-red rays. A playroom has been fitted with arc lights for giving artificial sun baths to children, and an inhalatorium is available for

the treatment of asthma, hay fever, and bronchitis. There are also foam baths for hydrotherapy, and a room for the Plombières treatment. While some 2,500 to 3,000 treatments are now given each week, the equipment suffices to allow this number to be doubled or even trebled. Instruction is given to nurses and to post-graduates. The aim of the Order of St. John is to make the clinic a centre of university rank for treatment, research, and teaching in methods of physical medicine.

Health of Pontypridd

Dr. A. G. M. Severn, the medical officer of health, in his annual report to the urban district council of Pontypridd, points out that, despite continued industrial depression in an area where unemployment is rife, the death rate for 1930 is the lowest on record, while the infantile mortality rate has not been increased as compared with 1929. The report indicates that every step has been taken to make the public health administration as efficient as possible. During the past year many improvements have been carried out, probably the chief of which is the completion of the new central clinic, a building in which facilities are provided for orthopaedic treatment and remedial exercises, ultra-violet light and ionization, and for dental, ophthalmic, and school clinics. Under the same roof are ante-natal, maternity, and child welfare departments, and also the offices of the health visitors, school nurses, and sanitary inspectors. It can surely be claimed that this scheme of centralization of public health activity is one of the best of its kind. Under the supervision of a female medical officer and a nurse, a local birth control clinic has been in operation for about a year. It is especially for patients referred by the maternity and child welfare clinics as persons requiring instruction in contraception on medical grounds. With regard to housing, Dr. Severn states that there is still need of small dwellings at a rent within the means of the artisan class; several groups of houses have been condemned to demolition during the next five years. Infectious diseases proved rather troublesome during the latter half of the year. Mild cases of scarlet fever and of diphtheria kept the isolation hospital full; only one case of small-pox was reported. Maternal mortality, as in other places, is still a serious problem; in Pontypridd, however, the incidence is steadily decreasing. In the part of the report dealing with schools, the medical officer states that much advantage has been gained by the purchase of Taff Vale Park as a playing field for children. A new school, accommodating 280 pupils, was opened in 1930 at Hawthorn, Rhydfelen. The feeding of school children has also been successfully carried out; milk and biscuits are usually issued free twice daily to all who are definitely suffering from malnutrition. The milk used is Grade A (tuberculin-tested).

Royal Mineral Water Hospital, Bath

Last year there were admitted to the Royal Mineral Water Hospital at Bath 1,353 patients, being 100 more than in 1929, and 163 more than in 1928. The increase in 1930 is attributed to the cessation of building operations and to the increased number of beds which have been made available. More than 500 patients admitted in 1930 were suffering from rheumatoid arthritis, and the medical report draws attention to the large number of sufferers from this condition who seek treatment too late for much benefit to result. In the early stages of this disease, if the joints are protected alike from undue strain and from too little movement, reasonable hope can be entertained that there will be not much interference with function when the acute process subsides. Delay in obtaining treatment almost always leads to irremediable limitation of function. Dr. R. G. Gordon resigned the post of physician during the year under review, and reference is made to his appreciation of the way in which the hospital committee has met the requests of the medical staff for further opportunities in investigating rheumatic diseases. It is noted in the report that co-operation with orthopaedic hospitals has helped to eliminate bedridden and chronic cases, thus enabling the Royal Mineral Water Hospital to be more fully used by patients likely to receive permanent advantage; this change has been brought about with the full approval of the medical board. Although it was not found possible during 1930 to issue any effective appeal for financial support, successful economies kept the deficit on the year's accounts down to £216.

Correspondence

DRAINAGE IN PURULENT PERITONITIS

SIR,—In the *Epitome of Current Medical Literature*, published with your issue of June 27th (p. 121), there is an abstract of an article by F. Manchini on "Abolition of drainage in purulent peritonitis." The publication of such an epitome indicates that there is something fresh and interesting to your readers in its subject-matter.

The slowness with which this treatment is being adopted by surgeons is impressive. After experience of it for nearly twenty-five years, I consider that it should be routine treatment. Nine years ago, during a visit of the Chirurgical Club of Great Britain to Aberdeen, I demonstrated half a score of such cases lying in my wards, recently operated on and convalescing smoothly. I enclose a reprint of a paper, published in August, 1924, in *Surgery, Gynecology and Obstetrics*, entitled "Some problems of drainage," which deals fully with this matter as well as with considerations concerning drainage of other parts.

We are apt to forget that the formation of pus is a "laudable thing," without which the vast majority of living people would have been dead long ago. Why, then, should we dread "pus forming"? It is a sign of salvation, but there is every reason to try to prevent its formation. Remove the cause which necessitated its formation, and which we should dread. Do not hinder natural defensive and curative processes by introducing foreign bodies. Experience has shown that there are few exceptions to the rule that drainage is unnecessary when other essential procedures have been attended to.

I believe that I was responsible for the slogan regarding drainage which arose during the war—"Down to but not into." This applied, and applies, equally and especially to the brain and to the potential cavities, whether of the chest, of the abdomen, or of the joints. A principle of treatment which can be applied to various parts under varying conditions with greater success than any previously tried must be sound. Routine use of drainage by a surgeon of sound technique denotes an ultra-conservative and rather craven frame of mind, and a preference for his own instead of for nature's methods, or, to put it otherwise, implies an unfair disregard of the patient's resisting and healing powers, which thereby are subjected to greater strain.

Avoidance of drainage in severe cases of peritonitis reduced mortality in my experience from 9 per cent. to under 5 per cent. (1924).—I am, etc.,

Montreal, Aug. 31st. HENRY M. W. GRAY.

HUNGER PAIN AND PRESERVATIVES

SIR,—As a member of the Departmental Committee on the Use of Preservatives and Colouring Matters in Food (1923-24), I am much interested in Mr. James Forrest's letter on this subject in your issue of September 12th. It would add to the value of his communication if he

could state whether he was able to connect his gastric or duodenal troubles with any particular preservative At the Departmental Committee I advanced the view that certain gastric and intestinal disturbances might be caused by boric acid as a preservative in articles of food, but a peculiar interest in Mr Forrest's communication is that he still experiences his old symptoms if taking food containing preservatives

The Departmental Committee reported in 1924, and since that date the employment of boric acid as a preservative in any article of food has been strictly forbidden The only preservatives allowed in a few specified articles of food, and in certain beverages, are sulphur dioxide introduced as sulphurous acid or as a sulphite, and benzoic acid introduced as such or as a benzoate Sulphur dioxide in small quantities is permitted in sausages, jams, dried and preserved fruits, beer, cider, certain wines, cordials, and fruit juices Benzoic acid in small quantities is permitted in coffee extract, non alcoholic wines and cordials, unsweetened fruit juices, sweetened mineral waters, and brewed ginger-beer With the exception of beer, the presence of either of these preservatives must be declared

If Mr Forrest's symptoms are still due to a preservative I am anxious to know what that preservative is —I am, etc ,

Lumpsfield, Sept 12th ARTHUR P LUFF.

INTRACRANIAL HAEMORRHAGE OF THE NEWBORN

SIR,—I was interested to read in the *Journal* of September 12th (p 512) Dr James Cook's letter in which he states that intracranial injuries to a great extent are due to uterine pressure acting on a difficult outlet I can recall a most unusual case of a baby weighing 6 lb 9 oz , which was delivered by elective Caesarean section, and which subsequently died The post mortem examination revealed definite intracranial haemorrhage The operation was performed with due care and caution before labour commenced It did not deviate technically from previous operations in which the babies had survived

Again, Dr G B Fleming, in an admirable article in the same issue of the *Journal*, records (at page 483) a case of facial paralysis in an infant delivered by Caesarean section after labour had been in progress for two hours

We have here two most illustrative cases of foetal injury in which manipulative trauma by the accoucheur was reduced to an absolute minimum It seems logical to assume that there must have been some other causative factor present in these two cases —I am, etc ,

The Hospital for Women, Soho Square, W 1, Sept 14th W C W NIXON, F R C S

THE CAUSE OF TORTICOLLIS

SIR,—The communications of Dr G B Fleming and Mr P B Roth in your issue of September 12th have an interest for me Dr Fleming, writing on injuries in the newborn, does not refer to my paper on visceral haemorrhages in stillborn children,[1] though he gives a list of thirty one authors, the first of whom, Dr J N Cruickshank,[2] makes complimentary references to it Dr Fleming thinks that torticollis is probably due to venous obstruction and ischaemic contracture I believe it is due to fibrosis at the site of a haematoma of the sterno mastoid muscle, which, occurring at birth, I have known to be followed by torticollis, requiring operation at the age of 16 years

[1] *Obstet Soc Trans* 1891, xxxiii
[2] Neo-natal Death Medical Research Council Report, 1930, No 16 and *Lancet*, 1923, i, 836

In a paper in the *Journal of Pathology and Bacteriology* (vol i, p 113), I showed that the haematoma is due to bruising, stretching, and rupture at the time of birth The paper is illustrated, and is based on the post mortem examination of fifteen newborn children, of whom three were delivered by the vertex and eleven by the breech or feet , in one the mode of delivery was doubtful If, as is probable, this case was also a breech or footling delivery, the proportion of breech or footling deliveries to vertex (12 out of 15) in these cases of haematoma is the same as that found by Mr Roth in his cases of torticollis (8 out of 10)

I do not think that ordinarily there is anything wrong with the muscle before delivery , it is the treatment which is wrong, especially the so called "Prague" method of delivering the after coming head, which is better delivered with forceps The asymmetry of the face in babies a few days old suffering from haematoma of the sterno mastoid (of which I have quoted two cases in my paper) must be very exceptional —I am, etc ,

London, W 1, Sept 12th HERBERT R SPENCER

BREECH PRESENTATION

SIR —The authors of the three articles on breech presentation published in the *Journal* of August 29th do not agree as to the foetal mortality rate Mr Gibberd says that "the gross mortality rate for uncomplicated cases is about 30 per cent for primiparae and about 20 per cent for multiparae, and after making all possible allowances foetal death rates of 28 and 15 per cent respectively can be taken as the minimum estimate of the dangers associated with the breech labour itself " According to Mr Bourne, 'the results at Queen Charlotte's Hospital show a foetal mortality of 11 per cent for primiparae and 8 per cent for multiparae Even allowing for the different methods of classification adopted, the difference between the percentages stated by the two authors is glaring and requires explanation

All authors are agreed that turning should be attempted some time during the thirty fifth week This line of procedure is of course, not free from risk to an elderly primipara, with possibly some fibroids embedded in the uterine wall, or even a multipara whose uterine muscle is flabby from successive pregnancies, complicated occasionally by sepsis The maternal mortality is not stated, but it must of necessity be very high, as the line of treatment to be adopted in cases in which turning fails is undoubtedly very dangerous for the mother, to say nothing about the foetus The vaginal canal has to be stretched, the cervix has to be crudely dilated to admit the hand freely (how tiresome it is for the fingers!) the whole length of the arm has to be introduced into the uterus, past the impacted body of the foetus to bring down first one extended leg and then the other after the legs are born up to the hips the hand has to be introduced again to bring the two arms down and finally one has to face the problem of delivering the head "If done too quickly from a primigravida, especially if the head is not well flexed, there will be too sudden moulding of the cranial bones, with the serious risk of tears of the dural septa and intracranial haemorrhage, while if too much time is allowed, the child will die of asphyxia" If the head is at all large delivery by either the Prague manœuvre or the jaw traction method with the too frequent injury to foetal face floor of mouth and mandible) is a difficult affair I have seen a mother brought to hospital with the foetus hanging down from the vagina by its neck, another with a loose foetal head inside the uterus, and still another with complete rupture of the uterine wall and prolapse of intestine into the vagina The only thing to do in these cases is to perform

craniotomy on the after-coming head, and it is a very difficult operation to perform, especially if the body of the foetus is fat and plump. There is serious risk of injuring the uterus, vagina, and the bladder by the attempted introduction of sharp perforators and craniocasts. And when at last the foetus has been removed and the placenta delivered the unfortunate mother and the not less unfortunate practitioner have to face the onset of post-partum haemorrhage—to say nothing of puerperal septicaemia, which is so frequent after these intrauterine manipulations.

What are the objections to the performance of Caesarean section in all cases in which version has failed? The maternal mortality is stated to be 1 per cent. after this operation, and the foetal mortality rate ought to be no higher. This compares more than favourably with even Mr. Bourne's figures of 11 per cent. There is no risk of breaking any foetal bones, causing Erb's paralysis or spastic paraplegia after this operation; the convalescence is more pleasant than even after a normal but severe confinement, as there is so little shock, so little loss of blood, and so little damage done to the maternal passages; and finally, it is an operation that any practitioner who is used to major surgery can perform.

Another question arises: Should midwives be allowed to take sole charge of breech cases, as is the practice at present?—I am, etc.,

M. R. SONI, B.A., M.B., Ch.B.Ed.

Withington, Manchester, Sept. 3rd.

SIR,—I have read with great interest, in your issue of August 29th, the three papers on breech presentation—foetal mortality, ante-natal treatment, and management of breech labour—all written from a hospital and statistical point of view. I should like to make a few remarks from a private practitioner's point of view after forty-five years' practice.

As to foetal injuries and death in breech births, I consider that both are produced by want of judgement—either too much force or too much haste—and the deaths by too much delay. Keep cool, and keep moving after the breech is through the cervix, and all ought to be well. In hospital cases it seems to me that time is no object. We do not hear how many hours the woman is left in labour. This, in private practice, is a large factor: the woman stands first and the child second. A happy medium has to be struck within reason, and I have not found this consideration cause any more risk to either. Up to a few years ago delivery by complete version was my favourite method of coping with persistent occipito-posterior positions, and I consider extended legs are much more in need of adjustment than extended arms. It surprises me to read that so many foetal deaths are caused by cranial injuries, but Mr. Gibberd confirms his statements by post-mortem examination, which is not available in private practice.

Turning to the management of breech labour, I very much admire Mr. Bourne's view, only I should be more emphatic. The left leg should always be brought down as Rule No. 1. After that there is no hurry. When the breech is through the cervix I consider the latter is fully dilated, and, if the head is larger, the cervix cannot be more than fully dilated from an obstetrical point of view. When the breech is born is the essential time to keep moving, but slowly. If the arms are folded, slow traction is essential. If the arms are extended the body should be carried hard against the woman's rectum, with the child's back pointing towards the woman's pubes and the right hand passed up the side of the foetus; the shoulder will be found presenting; passing the finger over this, and sweeping down it, will carry the arm down into the vagina. The whole foetus should now be rotated, and the child's body, as before, brought against the woman's rectum. The child's back will be facing the woman's spine. This will bring the remaining shoulder into view, and the arm can be released as before. The child's body is once more rotated and carried forward between the woman's thighs. This will bring the foetal chin into view. Gentle traction applied to the child's shoulders and a finger passed up into the mouth help to depress the chin. If delay occurs axis-traction forceps should be applied.

When the head is presenting, and can be held by a finger pressed in the ischio-rectal fossa, the forceps should be removed and the rest attained by manipulation, the patient being still under complete anaesthesia. In all presentations, as the head is coming through the outlet, much easement of the perineum can be attained by intermittently pressing on the soft structures in front of the head.

Ante-natally one point is not mentioned, and that is the bi-parietal measurement of both parents' heads. How many times have I seen the cause of a difficult forceps case on coming downstairs and seeing the anxious father's head for the first time. I think the size of the parents' head should be a very deciding factor as to the advisability of Caesarean section in such cases.—I am, etc.,

Wallington, Surrey, Sept. 8th. A. Z. C. CRESSY.

DR. BRIGGS OF LIVERPOOL

SIR,—I wish to correct an error which appeared in a paper written by me, and published in your columns, in which I referred to "the *late* Dr. Briggs of Liverpool." It was due to a momentary mental aberration at the time of writing, for I realize, quite well, that happily Dr. Briggs is fit and well. I hope he will accept my apologies for this absurd mistake, which would have been tendered before had I not been out of touch with my correspondence.—I am, etc.,

London, W.1, Sept. 14th. ALECK W. BOURNE.

THE BLOOD PRESSURE IN THE PSYCHONEUROSES

SIR,—In his admirable address on the significance of a raised blood pressure Professor John Hay (*Journal*, July 11th, p. 43) has emphasized the importance of accurate estimation of both systolic and diastolic blood pressures. The necessity for this insistence is shown by a remark made a few years ago by a distinguished physician and teacher of medicine: "I don't know if you have ever learned anything from the estimation of the diastolic pressure, but it conveys *nothing to me*." V. Pachon and R. Fabre[1] recently directed attention to the common error of assuming the presence or absence of hypertension from the estimation of the systolic pressure alone; they insist, indeed, that a normal or slightly raised systolic pressure, when associated with a diastolic pressure of over 100 mm. Hg, may indicate a serious degree of cardiac dilatation.

Professor Hay's reference to the effect of psychological states on the blood pressure is of great importance. Most writers on neurology and psychiatry refer but briefly to the hypertension of melancholia, and do not emphasize its association (in many cases) with serious digestive derangement—a thickly coated tongue, constipation, oliguria with excess of urea, uric acid, indican, and phosphates, all of which indicate defective metabolism and elimination of waste products. On the other hand, neurasthenia, psychasthenia, "anxiety states," and hyp-

[1] *Journ. de Méd. de Bordeaux et du Sud-Ouest*, May 30th, 1931, p. 493.

chondriasis are usually accompanied by hypotension. The following cases illustrate this.

1. A man, aged 69, suffering from severe melancholia, with insomnia and great agitation, had a pulse rate of 72, while his blood pressure was *164/78 mm. Hg.* The tongue was thickly coated, and the urine highly concentrated, with a heavy precipitate of phosphates and calcium oxalate; its specific gravity was 1020, and there was present a minute trace of albumin, but no sugar. In three days the blood pressure fell to 130/70 mm., with a definite improvement in his mental and physical condition.

2. A man, aged 69, with an "anxiety state," insomnia, and extreme agitation, had a blood pressure of 112/70 mm. only.

3. A male psychasthenic, aged 40, had a blood pressure of 105/52 mm. He complained of vertigo, loss of power of concentration and of memory, coldness of the extremities, and a constant sense of abdominal distension. The heart and urine were normal, and there was no ascites. On the assumption that he suffered from cerebral anaemia, his medical attendant had prescribed tablets of suprarenal substance for several weeks. When ephedrine hydrochloride (in 1/2-grain doses night and morning) was substituted, his blood pressure rose to 126/70 mm., with definite relief of his circulatory and psychological symptoms.

The characteristic hypertension of melancholia, as compared with the hypotension of neurasthenia, psychasthenia, and hypochondriasis, is of great importance in differential diagnosis and prognosis.—I am, etc.,

C. W. J. BRASHER, M.D.

Great Missenden, Bucks, Aug. 25th.

SHORTENING AN ELONGATED UVULA FOR THE CURE OF COUGH

SIR,—Mr. Bedford Russell, in his interesting and instructive paper on "Sore throats of other than tonsillar origin," condemns (*British Medical Journal*, September 12th, p. 487) the "erstwhile fashionable operation of cutting off a piece of a lengthened uvula with a view to curing a cough," and states that "it was utterly unsuccessful in achieving its purpose." I beg most humbly to demur from this opinion and to assert that in many appropriate cases I have found it absolutely successful. I hope in the near future to offer a description of what I consider suitable cases with reports of a consecutive series in support of my contention.—I am, etc.,

London, Sept. 15th. JAMES DUNDAS-GRANT.

THE SINO-AURICULAR NODE

SIR,—In my obituary notice of the late Group Captain Martin Flack, which was written hurriedly, I did not express fully enough the debt which Flack owed to Sir Arthur Keith, who had been looking for the sino-auricular node in human hearts sent to him by Sir James Mackenzie, and who put Flack on to examine the mole's heart, where evidence of the node was clearly found. The anatomical discovery was then verified experimentally on the living animal by Flack.—I am, etc.,

Chalfont St. Peter, Bucks, Sept. 11th. LEONARD HILL.

MORTUARY INSCRIPTIONS

SIR,—To one whose Latinity has kept enough of third-form quality, the inspection of ancient mortuary inscriptions in church and cathedral lends an added interest as, with pocket dictionary in hand, he scans the stony memorials of post-mortem virtue or recognizes that common causes of premature mortality were as much in evidence then as now. One such cause, however, has ceased to be noted on funerary marble, for variola has come under control, and Jenner's work has put an end to much stone-mason's labour. As most of the Latin is *in oratio directa*, the interpretation is not difficult, and its quality is what Dr. Parr called "good English Latin" when listening to a lecture at the College of Physicians. So, Sir, an it please you, I will put down a few instances gathered in holiday rambles.

In Canterbury Cathedral, the south transept, on a large flat black marble or slate ledger stone, is an inscription to the son of the Rev. Thomas Ralph Blomer, S.T.P., who died in 1719, at the age of 10, from "Morbo Ambiguo et inclementi"; and it goes on to add: "Et Heu! Necquicquam invocatâ Medicinâ." Do you know of a neater or more concentrated translation of "Physicians were in vain"? So, in Bath Abbey, Eliza Peirce "ended a sickly life by sudden death caused by an inward imposthume" in 1671—possibly the bursting of a pulmonary abscess or some other form of tuberculous accumulation. In the same way, in the chancel of Thurnham Church, Kent, there is a really beautiful marble tablet, and on it is an inscription to Mary Dering, *daughter of the vicar, who died in 1725*, aged 43:

"M.S. Mariae Dering faeminae tam Naturae quam Gratiae dotibus ornatissimae vix intra duos annos post abscissam cancri causâ sinistrâ mammam (animo nec chirurgi cruciatu *nec morbi languore, nec mortis accessu, fracto,*) Phthisi, placidissima periit."

Now, did she perish from a tuberculous breast with secondary pulmonary infection, or was it a case of cancer with lung deposits?

In Rochester Cathedral is a little bit of praise for a physician: "Memoriae Sacrum Augustini Caesaris M.D. qui A.D. 1688 Augusti die 7mo mortalitate valedixit"; and later on it proceeds:

"Morborum enim turmas aliis inexpugnabiles, Veniens, Videns, Vicit, Victor Medicus. Nunc Durobrovis Luge! Luge Cantium! Nunc exultate febres et dira malorum cohors Agite triumphos qui vos cohibere potuit Captivus duxit. Ex humanis cum *Ευθανασια* demigravit. Jam adscriptus Divorum numero ipse Caesar. Anno aetatis LXXV.

and so on for many more lines. Apparently a very successful practitioner, but it should be noted that the monument was erected by his wife.

It is interesting to remember how successful treatment of fevers was the great aim of physicians in those times, and the Latin poems in praise of "*fever doctors*" are full of their praises, and give almost divine attributes to them, as is seen in the lines on Dr. Alexander Russell, F.R.S.:

> "Innocuas placide corpus jubet urere Flammas
> Et justo rapidos temperat *igne Focos*
> Extorsit Lachesi cultros pestique venenum
> Abstulit et tantos non sinit esse metus."

Of small-pox mortality there are innumerable inscriptions, and especially was it fatal to the lying-in woman. Again, childbed fever is noted, as in Thaxted Church, Essex. "Anna uxor Roberti Barnard, A.M. Adhuc virenti Juventa. Dira mox a Partu febri correpta obiit 1684 anno aetatis suae 30." Her son-in-law, Thomas Swallow, M.B.Cantab., fell a victim to his work: "Ineluctabili variolarum impetu oppressus occubuit 1701 aet. 26." Catherine Upcott is noted in Rochester Cathedral as dying in 1727, "Correpta febre populari." Whether this should be translated "epidemic" or "common" I know not.

Here and there a little touch of description (rem acu tetigisti) shows that personal interest in the case which it is no longer the custom to advertise on tombstones. Frances Barrell, aged 17: "Morbo tandem minutatim confectus" (1745). The Rev. Samuel *Warren, vicar of* Ashford, Kent, 1720, aged 84: "Senectâ potius quam morbo confectus." This sounds better than the "*senile* decay" of a modern death certificate. His wife, Sara, 1687, aged 40: "Quae statim post decimum partum variolis oppressa in Xto obdormivit."

I have a good many more of these memorials of "end-results," but I think, Sir, that this small selection will do for the present. To a man retired from, but still interested in, his profession, this side-line of remembrance affords a pleasant if *grave* occupation when on holiday bent.—I am, etc.,

F. WILLIAM COCK, M.D., F.S.A.

Appledore, Kent, Sept. 1st.

PROSTATECTOMY OR DRAINAGE

SIR,—It would be helpful if Sir James Barr (June 27th, p. 1138) would advise as to how progressive enlargement of the prostate gland can be avoided by suitable treatment. Unfortunately, most of us are confronted with *un fait accompli*. We are then faced with the grave responsibilty, especially in the case of the aged, of deciding whether prostatectomy or catheter life should be recommended—the former entailing real immediate risk to life, the latter deferred risk attended by much additional discomfort or even misery. It would be interesting to know the experience of surgeons who have in such cases resorted to suprapubic drainage. Is it possible with a suprapubic catheter in permanent use, with or without a waterproof receptacle, to obviate leakage?—I am, etc.,

Bromley, Sept. 3rd. ERNEST F. NEVE, M.D., F.R.C.S.Ed.

Obituary

By the death of Mr. HERBERT JOHN ROBSON, Leeds loses one of its oldest practitioners, and his passing will leave a gap in professional and in family circles. Mr. Robson was a student of the Leeds School of Medicine before its union with the Yorkshire College, and took his first qualification, that of Licentiate of the Royal College of Physicians of Edinburgh, in 1883. He at once entered on general practice, and soon became partner with his distinguished brother, Sir Arthur Mayo Robson, whose partnership with the late Mr. William Hall had about that time come to an end. When Sir Arthur, then Mr. Mayo Robson, gave up his general practice and devoted himself with such conspicuous success to surgery, adding thereby to the lustre of the Leeds School, Mr. Robson was for a good many years associated with Dr. McGregor Young. Some two years after he obtained his first qualification Mr. Robson became a Member of the Royal College of Surgeons of England. In 1904 he joined the Volunteer Medical Staff Corps, of which Professor de Burgh Birch, ably assisted by Mr. Matthew J. Oliver, the demonstrator of anatomy, was the originator and for many years the life and soul. He soon got his commission as lieutenant, and held the rank of captain in the R.A.M.C. at the outbreak of the great war. He served throughout the war in various capacities, being medical officer in No. 2 and No. 30 General Hospitals in France and senior medical officer to No. 1 Camp at Calais, as well as doing duty in different field hospitals. As a family practitioner Mr. Robson's reputation was deservedly a high one. The writer of these lines can call to mind many occasions on which he met him in consultation, and he was always struck by the meticulous care with which he marshalled the points in the case under discussion, by his kindness of heart, and by his conscientious desire to do the best for his patient.

Dr. ALBERT EDWARD BRINDLEY, who died recently at Nottingham at the age of 68, had been medical officer of health for Derby for twenty-two years. He received his medical education at Owens College, Manchester, where he graduated M.B., Ch.B. in 1889. Three years later he graduated M.B.London, proceeding M.D. in 1894. In 1898 he obtained the D.P.H. Among the numerous posts he had held were those of examiner and joint lecturer in public health in the University of Manchester, Fellow of the Society of Medical Officers of Health, and member of the Manchester Pathological Society. His work in Derby was on pioneer lines. When he assumed office there the death rate was 11.1 per cent. With only one assistant in a town of 100,000 inhabitants he set to work energetically, and such activities as the treatment of tuberculosis were actually being organized in Derby long before regulations in this respect were drafted elsewhere. His previous experience as medical officer of health for the county borough of Bury, and as medical superintendent of the Nightingale Hospital and the Ainsworth Small-pox Hospital, had given him progressive and practical ideas which he was able to put into effect at Derby. He retired less than a year ago under the age-limit scheme, and soon afterwards his health, which had been impaired for some time, broke down. He was a member of the British Medical Association and of the local Rotary Club, and was very popular in Derby and its vicinity.

Dr. WILLIAM CHARLES FREDERICK HARLAND, who died on August 29th, was born in 1876, and received his medical education at St. Bartholomew's Hospital. He obtained the diplomas of M.R.C.S., L.R.C.P. in 1903, and graduated M.B., B.S.Lond. three years later. After holding resident posts at the Metropolitan Hospital and the Evelina Hospital for Children he was appointed house-physician to the Royal Infirmary, Hull. He was elected assistant physician to that institution in 1919; and had been physician to the Victoria Hospital for Children, Hull, for the last twenty years. Dr. Harland held a commission during the war in the R.A.M.C., and was subsequently medical referee to the Ministry of Health and the Ministry of Pensions. His great popularity in the city generally was manifested at his funeral; Hull city policemen acted as bearers. He was a member of the British Medical Association.

The following well-known medical men have recently died: Dr. MAURICE DE FLEURY, a Paris psychiatrist, member of the Académie de Médecine and Commander of the Legion of Honour, aged 71; Dr. VEDEL, professor of clinical medicine at the Montpellier Faculty of Medicine and Officer of the Legion of Honour; Dr. EUGÈNE DERRIEN, professor of biological chemistry at Montpellier, corresponding member of the Académie de Médecine, aged 52; Dr. BRODISLAS SEWICKI, honorary professor of the Warsaw Faculty of Medicine; Professor HEINRICH FRENKEL-HEIDEN, a Berlin neurologist and author of a work on treatment of tabetic ataxia by exercises, aged 72; Dr. ERICH EBSTEIN of Leipzig, a writer on the history of medicine, aged 51; Dr. PAUL SCHIEFFERDECKER, honorary professor of anatomy and anthropology at Bonn University, aged 83; Dr. EDMOND CHAUMIER of Tours, director of the vaccine institute at Plessy-les-Tours, corresponding member of the Académie de Médecine, and an eminent archaeologist; Dr. EDWARD CAMPBELL DAVIS, emeritus professor of obstetrics and gynaecology at Emory University School of Medicine, Atlanta, Georgia, aged 63; and Dr. RALPH WALDO LOBENSTINE, a New York gynaecologist, aged 56.

Universities and Colleges

UNIVERSITY OF LONDON

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

The following lectures in pathology will be given on Tuesdays, at 5.15 p.m., in No. 1 Lecture Theatre of the Medical School, University Street, Gower Street, W.C.1:—October 13th and 20th: Professor J. C. G. Ledingham, F.R.S., Resistance to infection, natural and induced; October 27th and November 3rd: Professor C. R. Harington, F.R.S., The chemistry and functions of the thyroid gland; November 10th and 17th: Dr. Harriette Chick, Vitamins and disease; November 24th, December 1st and 8th: Dr. R. T. Grant, The pathology of endocarditis. Admission free to medical students and graduates.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL

As a result of the annual examination, the following have been awarded entrance scholarships and exhibitions: J. A. Lewis, the William Brown Senior Exhibition of £120; Morwa Williams, the William Brown Junior Exhibition of £80; F. R. Berridge, an Anne Selina Fernee Scholarship of £80; R. D. Holloway, an Anne Selina Fernee Scholarship of £80; A. N. F. Critchley, an Anne Selina Fernee Exhibition of £60; R. A. Binning, an Anne Selina Fernee Exhibition of £60; C. E. Elliott, the Devitt-Pendlebury Scholarship of £50; and S. Ginsburg, an Entrance Exhibition of £40.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons this week read the National Economy Bill a second time, and continued the debate on the Budget resolutions. During the discussions Mr. Snowden said that he expected an early General Election.

In consequence of the decision of the Government to take the whole of the time this session, a number of private members' Bills have been dropped. These include the Hospitals (Relief from Rating) Bill, introduced by Mr. F. L. Jones; the Advertisements Regulation (Amendment) Bill, presented by Dr. Vernon Davies; Industrial and Provident Societies (Amendment) Bill, introduced by Dr. Morgan; the Leasehold Enfranchisement Bill, introduced by Mr. Hopkin; the Nursing Profession (Wages and Hours) Bill, presented by Mr. Brockway; the Proprietary Medicines Bill, presented by Mr. Somerville Hastings; and the Vaccination Bill, introduced by Mr. Groves.

The Therapeutic Substances Regulations, 1931, dated July 25th, were laid on the table of the House of Commons on September 14th.

National Economy Bill

The second reading of the National Economy Bill was moved in the House of Commons on September 11th by the Prime Minister (Mr. RAMSAY MACDONALD). He said that the savings to be made in national health insurance, set out in a White Paper already presented to the House of Commons, would be transferred fom one fund to another, with the object of maintaining the health service in its present efficiency.

Mr. CLYNES moved the rejection of the Bill, and the debate was adjourned till September 14th.

The debate was continued on September 14th, and the second reading was carried by 310 to 253. Mr. GREENWOOD asked whether there would, under the Bill, be a restriction of the school medical service. How far were the restrictions to go in regard to the Ministry of Health?

Sir HERBERT SAMUEL (Home Secretary) read out figures of departmental economies, which the party leaders were informed the late Cabinet had approved. These included £700,000 in respect of the Ministry of Health, for doctors, and £1,000,000 for other economies in that department.

Mr. GREENWOOD said that there must be some misapprehension. Could the Chancellor of the Exchequer tell him of any occasion when he ever accepted that figure?

Mr. SNOWDEN said that there were certain definite economies under the Ministry of Health vote which were accepted by Mr. Greenwood. There was an additional sum, but it was to be left to the Department to arrange how that additional sum should be arrived at. It was quite true that Mr. Greenwood never committed himself, beyond £750,000, to any definite item of economy, but he did take the instruction from the Cabinet to try to find other economies.

The Emergency Budget

On September 10th Mr. SNOWDEN introduced a special Budget. He said it included sacrifices and burdens which were necessary to avert far greater evils. The national income was falling rapidly, and to restore solvency in the national finances the country must face up to the provision. The estimated deficit on this year's Budget, on the basis of existing taxation, was £74,700,000. Next year the deficit would be £170,000,000. Economies over the whole field of Government expenditure would be made to save £22,000,000 this year and £74,000,000 in a full year. He proposed to increase the standard rate of income tax for the current year by 6d., making it 5s. in the £. Personal and other allowances would be amended to bring within the range of the tax a large number of persons with incomes rising to £500 a year who at present paid no income tax. He proposed to put 10 per cent. on the surtax. He further proposed increases in the beer and tobacco duties, and a further 2d. a gallon on petrol, making a total duty of 8d.

The House agreed to resolutions imposing taxes at the new rates

Statistics of Insurance Medical Practice

Mr. RHYS DAVIES asked the Minister of Health to show in tabular form, annually in each case, the number of medical practitioners acting as panel doctors under the national health insurance scheme since it came into operation; the total amount paid to such panel doctors; the number of doctors receiving payment in this connexion; the number of insured persons; and the capita grant per insured person paid.

Mr. Chamberlain circulated the following reply on September 14th:

Year	No. of Insurance Doctors	Total Payments to Insurance Doctors	No. of Insured Persons	Capitation Fee
		£		
1913	12,674	3,858,000	11,521,772	1913-19 7s 6d. (on average)
1914	12,858	3,673,000	12,425,421	
1915	12,675	3,470,000	10,116,920	
1916	12,321	3,353,000	10,333,003	
1917	11,931	3,845,000	10,622,562	
1918	11,675	3,641,000	10,679,501	
1919	11,346	4,052,000	11,454,616	
1920	11,620	7,403,000	12,931,763	1920-1 11s.
1921	12,216	7,824,000	13,225,030	
1922	12,531	6,773,000	13,275,000	1922-23 9s 6d
1923	12,852	6,670,000	13,295,000	
1924	13,211	6,476,000	13,672,000	1924-30 9s.
1925	13,823	6,518,000	13,695,000	
1926	14,432	6,651,000	14,102,000	
1927	14,952	6,831,000	14,363,000	
1928	15,269	7 037,000	14 814,000	
1929	15,563	7,109 000	14 959,000	
1930	15,750	7,300,000	15,393,000	

Town and Country Planning.—Mr. RAMSAY MACDONALD told the House of Commons, on September 10th, that he could not then make a definite statement about further stages of the Town and Country Planning Bill. The Government was trying to rescue non-controversial measures.

Proprietary Remedies.—On September 14th Mr. MILLS asked the Chancellor of the Exchequer if he was aware that thermogene, antiphlogistine, and many other patent medicines were now sent to qualified chemists without revenue stamps of 3d. and 6d. attached, and whether he would consider taking steps to protect the revenue. Mr. SNOWDEN replied that the law provided for exemption from medicine stamp duty in favour of "known, admitted, and approved" remedies when sold under certain conditions by duly qualified chemists or druggists. He was aware that certain manufacturers had taken steps to bring their preparations within the scope of that exemption, but this was not a matter in which he could interfere.

Limitation of Narcotic Drugs.—Captain EDEN, replying to Dr. Fremantle on September 14th, said he was informed that legislation amending the Dangerous Drugs Acts in certain respects would be necessary before the Convention for the Limitation of the Manufacture of Narcotic Drugs could be ratified. The matter was under consideration.

Housing.—Mr. CHAMBERLAIN, Minister of Health, states that between June 1st, 1929, and July 31st, 1931, 32 houses were completed with State aid under the Addison Housing Act, 1919, 44,289 under the Chamberlain Act 1923, and 124,514 under the Wheatley Act, 1924. Between the same dates there were completed, without State assistance, 220,419 houses of a rateable value not exceeding £78 (in Metropolitan Police district, £105).

Movement of Ambulances in Ireland.—Mr. Malcolm MacDonald states that no restrictions are imposed upon ambulances entering the Irish Free State from Northern Ireland when the need arises.

The Services

DEATHS IN THE SERVICES

Surgeon Captain Robert Francis MacMahon, R.N. (ret.), died at Sherborne on June 27th. He was educated in Dublin, in the school of the Irish College of Surgeons, and after taking the L.R.C.P. and S.I. in 1901, served as a civil surgeon in the South African war. He entered the Navy as surgeon in November, 1902, became staff surgeon in 1910, and fleet surgeon in March, 1918, retiring, with a step of honorary rank, on July 30th, 1928. He served afloat throughout the late war. In March, 1914, he was appointed to a battleship, H.M.S. *Hindustan*; in August, 1915, to H.M.S. *Vindex*, a seaplane carrier attached to the Harwich force; and in March, 1918, to H.M.S. *St. George*, a destroyer depot ship. Since the war he had served in the cruisers *Antrim*, *Yarmouth*, and *Castor*, and in the battleships *Revenge* and *Malaya*, and from October, 1926, till his retirement, was in charge of the Royal Marine Infirmary at Chatham.

Lieut.-Colonel Rustomjee Hormusjee Cama, Madras Medical Service (ret.), died in India on June 25th, aged 74. He was born on April 15th, 1857, and was educated at the Grant Medical College, Bombay, where he took the diploma of L.M.S. in 1879, and later in the same year took the M.R.C.S. and the L.R.C.P.Ed. Entering the I.M.S. as surgeon on March 31st, 1880, he became lieutenant-colonel after twenty years' service, and retired on July 13th, 1910. He served in the Burma campaign in 1885, when he took part in the occupation of Mandalai and Bhamo, and received the frontier medal with a clasp; and in the Chin-Lushai campaign on the North-East Frontier of India in 1889-90, receiving a clasp.

Medical News

Lord Ponsonby will present the prizes and deliver the inaugural address, at 3 p.m. on Thursday, October 1st, in the board room of St. George's Hospital. The annual dinner of St. George's Hospital Medical School will take place at the Hyde Park Hotel, Knightsbridge, at 7.15 for 7.45 p.m. on the same day.

The ninety-seventh winter session of the Middlesex Hospital Medical School will open on Thursday, October 1st. Professor James McIntosh, M.D., director of the Bland-Sutton Institute of Pathology, will deliver the introductory address in the Queen's Hall, Langham Place, at 3 p.m., and Sir John Bland-Sutton, Bt., consulting surgeon to the hospital, will distribute the prizes. The wards of the new west wing, the new nurses' home, and the medical school and research departments, will be open for inspection. The annual dinner will be held at the Savoy Hotel on the same evening at 7.30 o'clock.

The Society for the Study of Inebriety announces that the fourteenth Norman Kerr Memorial Lecture will be delivered by Viscount Brentford on Tuesday, October 13th, at 4 p.m., in the Friends House, Euston Road, N.W. His subject is "How the alcohol question concerns the duties of the Home Office."

The Harben Lectures will be delivered at the Royal Institute of Public Health (37, Russell Square, W.C.) by Dame Louise McIlroy, on "Recent researches in the prevention of maternal, foetal, and neo-natal mortality." The first, on October 5th, will deal with the ante-natal period, the second, on October 6th, with the intra-natal period; and the third, on October 7th, with the post-natal period. The lecturer will describe the methods employed, and the results of the research work carried out, in the Obstetrical Unit of the Royal Free Hospital, during the last ten years. The lectures begin at 4 p.m.; no ticket of admission is needed.

A course of nine lectures in tropical hygiene nursing arranged by the County of London Branch of the British Red Cross Society will be given on Monday, Wednesday, and Friday afternoons at 9, Chesham Street, S.W.1, commencing on Monday, September 28th, at 5.30 o'clock. The fees for the course are 5s. to members of Red Cross and Voluntary Aid Detachments and 7s. 6d. for non-members, or 1s per lecture.

The opening meeting of the new session of the West London Medico-Chirurgical Society will be held on Friday, October 2nd.

A programme of post-graduate demonstrations has been drawn up by University College Hospital Medical School for the benefit of old students. On Thursday and Friday, October 15th and 16th, there will be demonstrations from 10 a.m. to 3 p.m. On Friday at 4.15 p.m., the annual general meeting of the Old Students' Club will be held in the Medical Society's Rooms in the Medical School followed at 7.30 p.m. by the annual dinner at the Hotel Victoria. The annual general meeting of the U.C.H. Women's Medical Association will be held on Friday, at 4.15 p.m., in the Women Students' Common Room at the Medical School, and the annual dinner at the Piccadilly Hotel at 7.45. The laboratories of the Institute of Medical Sciences, University College, will be open throughout these two days for inspection by old students.

The Fellowship of Medicine and Post-Graduate Medical Association announces the following courses: medicine, surgery, and specialties at the Metropolitan Hospital, Kingsland Road, E., from September 28th to October 10th, occupying the whole of each day; fee £3 3s., or £2 2s. for one week only. A similar course at the Prince of Wales's Hospital, Tottenham, from October 12th to 24th; fee £5 5s., or £3 3s. for one week. A course of lectures for the M.R.C.P. in the evenings, at 8.30, at the Medical Society of London, 11, Chandos Street, Cavendish Square, on Mondays and Wednesdays, beginning October 5th; fee £6 6s. for eighteen lectures, or 10s. 6d. per lecture, payable at the lecture room. Two special eye demonstrations will also be given, fee 10s. 6d. each; early application for these is essential. Diseases of the throat, nose, and ear at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, occupying the whole of each day, from October 5th to October 31st, and including a clinical course, fee £5 5s.; a pathology class, fee £5 5s. (limited); a peroral endoscopy class, fee £6 6s. (limited); and an operative class, fee £7 7s. (limited). Tropical medicine at the Hospital for Tropical Diseases, 25, Gordon Street, from October 5th to 24th, occupying the whole of each day; fee £8 8s. A course in diseases of the skin will be given at St. John's Hospital, Leicester Square, from October 12th to November 7th. Gynaecology will be the subject of a course at the Chelsea Hospital for Women, October 12th to 24th, fee £5 5s., and paediatrics at the Hospital for Sick Children from October 19th to 31st, fee £5 5s. As the latter course will not be held unless ten post-graduates enter for it, early application is desirable. A course in cardiology will be held at the National Heart Hospital from October 12th to 24th, fee £7 7s. Copies of syllabuses of all courses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1, also syllabuses of the series of free lectures and demonstrations for October, November, and December.

An illustrated talk on recent discoveries at Westminster Abbey will be given in aid of the King Edward's Hospital Fund for London on Tuesday, October 27th, at 5.30 p.m., in the Great Hall of Westminster School, by Mr. Lawrence E. Tanner, Assistant Keeper of the Muniments of Westminster Abbey. He will describe, with the aid of lantern slides, recent discoveries made at the Abbey. Tickets (5s. reserved, and 2s. 6d. unreserved) may be obtained from the secretary, King Edward's Hospital Fund for London, 7, Walbrook, London, E.C.4.

The new radiological pavilion and nurses' home extension at the North Middlesex County Hospital, Edmonton, will be opened on the afternoon of Tuesday, September 29th, by Alderman and Mrs. G. Marlow Reed.

The second centenary of the French Academy of Surgery will be celebrated at the Académie de Médecine on October 7th in the presence of the President of the Republic.

Owing to the economic crisis, the International Psycho-analytic Union has postponed to next year its congress, which was to have been held from September 7th to the 11th.

he second year in succession the Library Asso- at its annual conference, gave a session to the on of patients' libraries. The large hall in the ham Town Hall was filled with a keen audience of ons. The chairman, Lieut.-Colonel J. M. Mitchell, zed the very great potential importance of hospital to hospitals and to public libraries. In the past tish Red Cross and Order of St. John Hospital had rendered—and continued to render—a great but he considered that public libraries had not their part. To-day, with co-operation between and library authorities, it would be possible to go ay towards giving hospital patients the privileges s. Dean Inge then addressed the audience, and to this age as "a reading age." Those, therefore, nd themselves in hospitals were even more likely for books and to be benefited by them than in years. Moreover, he laid stress on the need for a hetic choice of books, both with regard to the al and to his disease. It was decided that the oss Hospital Library should continue, for the , to supply a library service for the London hos- voluntary and council), for mental hospitals, in- institutions, and sanatoriums, and for ex-service institutions; and it is hoped that as soon as , public and county libraries will, where the co- on of the hospital authorities is secured, provide vice for their respective non-infectious hospitals. ondence on the subject from doctors and public officers will be welcomed by the organizing ry, British Red Cross and Order of St. John l Library, 48, Queen's Gardens, Lancaster Gate,

he close of the second International Hospital Con- Vienna in June, representatives of the forty-one es participating agreed to organize an International al Association, with a view to the exchange of s on all sides of hospital work, and co-operation in ing necessary improvements. Membership com- national hospital associations and individuals or indirectly interested in their work; it will them to receive *Nosokomeion*, the official organ of ociation, and to participate in international hospital sses. Ten permanent committees have been set up ablish standards of different kinds for hospitals hout the world. Further information may be d from the general secretary of the International als Association, Dr. E. H. L. Corwin (2 E. 103rd New York), or from the British representative executive committee, Dr. J. Parlane Kinloch, rgh.

the sixth International Medical Congress on rial Accidents and Diseases, held in Geneva in ast, the council approved the request of repre- ves of sixteen countries for the formation of a section for life assurance medicine. The countries nted were Austria, Belgium, Czechoslovakia, rk, France, Germany, Great Britain, Holland, ry, Italy, Luxembourg, Norway, Poland, Spain, n, and Switzerland. A sectional executive com- consisting of Dr. Hörnen (Berlin), Dr. Otto May on), Dr. Goffin (Brussels), Dr. Coert (The Hague), sor Romanelli (Rome), Professor Bergstrand (Stock- and Dr. Kaufman (Zürich) was elected, with ornig as chairman and Dr. Kaufman as honorary ary.

srs. J. and A. Churchill announce for early publica- *Recent Advances in Materia Medica*, by Dr. J. H. director of the Pharmaceutical Society's pharmaco- laboratory; *Medical Emergencies*, by Dr. C. E. an; *Clinical Lectures in Psychological Medicine*, by Henry Yellowlees, *Diseases of the Kidney*, by Mr. irling Ball and Dr. Geoffrey Evans; and *Surgical logy*, by Messrs. C. F. W. Illingworth and B. M.

srs. Longmans announce for publication this month edition of Sir Frank Colyer's *Dental Surgery and logy*, revised and partly rewritten by Dr. Evelyn son.

The issue of *Deutsche medizinische Wochenschrift* for September 4th contains a sympathetic obituary notice of the late Professor W. E. Dixon by the co-editor and well-known pharmacologist, Dr. P. Wolff, who emphasizes the loss to the British Medical Association caused by his death.

An International Federation of Societies of Tropical Medicine and Hygiene has been constituted, under the presidency of Professor C. Achard, by the association of leading authorities on tropical medicine from twenty countries. At the invitation of the editorial committee of the *Revue pratique des Maladies des Pays Chauds*, various societies will exchange views on different subjects in order to bring into being a legal constitution for the International Federation.

The third Rumanian medical congress was held at Costanza from June 13th to 15th, when the following subjects were discussed: inoculation against tuberculosis, introduced by Dr. Cantacuzène; endemo-epidemic malaria, by Dr. Zotta; health legislation, by Dr. Gane; tuberculosis of the hip, by Dr. Balacesco.

The Minister of Health has appointed Captain D. W. Gunston, *M.C.*, M.P., to be his parliamentary private secretary (unpaid).

A cholera epidemic has recently broken out in Mesopotamia and has caused the loss of thirty lives.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9961, 9962, 9963, and 9964 (four lines).

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MEDICAL SECRETARY, *Medisecre Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams, *Bacillus, Dublin*, telephone 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams, *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Tonsils and Adenoid Operations

"DENTAL SURGEON" inquires for statistics showing the need for operation for tonsils and adenoids in children at the period between their third and fourth birthday anniversaries and also between their fourth and fifth.

Recurring Bruises

"X Y Z" asks for suggestions for treatment of the following case A girl, aged 22, fell down on March 11th, bruising and discoloration appearing on her left clavicle, left pectoral region, and the whole of the left arm No fracture revealed by x rays This cleared up completely On June 12th the discoloration reappeared in the same positions without further injury Again this disappeared, and later, on July 13th reappeared on the clavicle only, at about the middle of the clavicle there was also a small discharge of pus On July 17th the left eyelids were ecchymosed for the first time This latter feature has not reappeared, but there has been discoloration of the pectoral region and arm and forearm [illegible] vals since There is always definite pain [illegible] Coagulation time of blood is normal The patient had infantile paralysis affecting the left leg only, but uses it well, though underdeveloped.

Disturbed Sleep

Dr D J DRAKE (Rainham, Kent) writes in reply to "C M's" inquiry (September 12th, p 517) The patient surely has some error of refraction, probably myopic astigmatism, causing irritation of the nerve I should be interested to know the result of acting upon this suggestion

Dr H N HARNESS (East Finchley) writes In reply to "C M," with reference to the case of a young woman troubled with weeping and moaning in her sleep, I would suggest a careful palpation of the abdomen with a view to ascertaining if there is present any tonic hardening of the colon and if detected treat with liq hydrarg perchlor, tinct ferri perchlor, and tinct hyoscyam, 15 minims of each in an ounce of water three times daily, fifteen minutes before food In addition, I would insist on the patient reading for ten minutes to half an hour in bed some studious book on a subject devoid of emotional content, and one designed for instruction for preference The mysteries of space and time and the square root of minus one are wonderful promoters of dreamless slumber Reference to *Tonic Hardening of the Colon*, by Stacey Wilson (1927), will yield much food for thought

Income Tax

Expenses of "Study Leave"

"C H," who is an officer in the Indian Medical Service, and is on study leave (with allowance), inquires whether he is entitled to an allowance for income tax in respect of (1) purchase of books, (2) class fees, (3) examination fees and (4) use of a car during the work done

*** To be allowable, the expenses must be incurred wholly exclusively and necessarily in the performance of the duties of the office It seems to us that the particular expenses were incurred partly, if not entirely, in the improvement of C H's" knowledge and professional ability—that is in order that his duties in future might be extended or more efficiently performed From that aspect there is a substantial element of capital outlay included in the expenditure and we do not think that he would be successful in a claim to treat them as expenses of his office for tax purposes

Cash Basis

"L" writes A and B were in partnership up to July 31st, 1931 when A sold his one half share to C For 1930-31, A and B have been assessed on one third of the 1929 cash profits and B and C on two thirds The cash basis is to continue A's share of the former partnership's cash profits being brought into the calculation The inspector of taxes has required B and C to give an undertaking that when their partnership ends the outstanding debts will be brought into the calculation of their final liability

*** Clearly B and C have the worst of the bargain, in that they will ultimately pay on more than the amount of their income from the practice A is not liable in respect of any cash received after 1929-30 such receipts representing to him the gathering in of past taxed profits The correct legal course would be for the cash basis to be discarded after July 31st 1930 and for B and C's liability after that date to be computed by reference to the amount of *their* cash receipts in the period plus the increase in the amount of *their* outstanding book debts The undertaking which they have given seems to us a high price to pay for the convenience of the cash basis method of calculation.

Sickness and Accident Insurance

"A B S" points out, in connexion with a recent reply that of a total amount of £20 per annum paid by him as premium on a sickness and accident policy, £6 has been allowed for income tax purposes as representing life assurance

*** This is a point which should certainly be borne in mind Although no allowance is due for "sickness" premiums, that portion of the total payment which refers to the death risk benefit ranks as a life assurance premium for income tax purposes The proportion of the whole payment so allowable naturally varies with the terms of the policy, but the company concerned will, on request give a certificate of the allowable amount

LETTERS, NOTES, ETC.

Infantile Diarrhoea

Dr W C CHAFFEY (Hove) writes I venture to make a few additions to the treatment suggested by Dr A V Neale (August 29th, p 382) During many years of hospital and private practice I have found that most cases are benefited by the administration in the first instance of small (1/12 grain) doses of calomel, repeated at two hourly intervals for six doses, and followed by tannigen (1 grain) in an emulsion of castor oil (5 minims), with a little syrup and aqua anethi All milk should be stopped and not be given again for several days I have been accustomed to administer meanwhile barley water with a little mint juice, or Benger's food made with water, also, it may be necessary to administer a few drops of brandy occasionally

Phimosis and Circumcision

Dr J B JESSIMAN (Malvern Link) writes Recently my time has been so much occupied in doing circumcisions that I have had no leisure in which to reply to Mr Snudden's article in the *Journal* of July 4th I do hope and believe that most practitioners do not agree with his opinions regarding the undesirability of circumcision Indeed I imagine most of us nowadays advise circumcision practically without exception, primarily because the foreskin is a dirty useless, harmful, unhygienic rag, which was doubtless a very necessary protection to our hairy ancestors with their tree climbing propensities One advises circumcision in practically every male child, no matter what age even if easy retraction of the prepuce is possible Why should one wait for balanitis, phimosis, etc? These indications are due to accumulation of smegma, a tight prepuce, or adhesions one or all, are trivial matters in themselves but the end results are far from being so—for example enuresis convulsions ruptures, and, above all masturbation In my less enlightened days I used the dilating process exactly as described, but it was such a crude, cruel, and unsatisfactory proceeding that I promptly gave it up Most prepuces are rather inelastic, and no matter how gently one manipulates there is on subsequent treatments Circumcision means sixty seconds of pain at most, and the job is finished, not simply tinkered with If done six from three to fourteen days after birth no anæsthetic is necessary —in practice one finds it so Apparently the sensory nerves in the prepuce at that time are not very receptive The child suffers far less shock and pain with one snip of the scissors than from repeated stretchings, which are simply periods of prolonged agony

Dr Bendien's Work on Cancer

Mr ROY R KERR, I HCS (Manchester), writes As great misconceptions have arisen as the result of the sensational writing up of a few minutes' telephone conversation by one of the Sunday papers, I should be very much obliged if you will let me make it perfectly clear that I have arranged with Dr Bendien to carry out certain clinical tests of his [illegible] in my hospital practice This work on my part is purely experimental, and I have no intention whatsoever of using it generally or in private cases unless or until I am completely satisfied as to its value

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 42, 43, 44, 45, 46, 47 and 50 of our advertisement columns, and advertisements of partnerships, assistantships, and locumtenencies at pages 48 and 49

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 183

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

226 Delayed Symptoms in Pneumoconiosis

J. A. BRITTON and J. R. HEAD (*Journ. Amer. Med. Assoc.*, June 6th, 1931, p. 1938) report four cases of silicosis, or silicosis and tuberculosis, which developed many years after relatively short exposures. One patient showed symptoms of silicosis twenty-three years after an exposure of only four months; in the second they developed ten years after an exposure lasting for two years; in the third an interval of fourteen years elapsed before an exposure of four years caused any manifest effect; and in the fourth case there was a free period of ten years before an exposure to infection of ten years gave rise to extensive pneumoconiosis associated with tuberculosis. The authors remark that these instances suggest the necessity of revising the conception of the length of exposure required to produce the disease. They think it probable that after relatively short exposures sufficient dust is deposited in the lungs to set up a progressive fibrosis; only after several years does this condition become sufficiently extensive to cause symptoms. Alternatively, it may be that the dust alone does little harm until it becomes associated with some kind of additional infection. In either case it is obvious, they urge, that statistics compiled from groups of men still engaged in the industry cannot indicate the length of exposure necessary to produce the disease. This complicates seriously the question of insurance compensation, and the authors doubt whether claims in such cases would be met. In their patients there was a rapid onset of the symptoms following pulmonary infections, but they maintain that the disease itself takes as a rule a long time to develop. It is therefore unwise to assume that a lengthy period of exposure is necessary before real harm can result. In all the authors' cases the intervening period between the exposure and the appearance of symptoms was entirely healthy, and it was clear that cessation from the work in dusty atmospheres had done nothing to arrest the process which had then begun.

227 Multiple Etiology of Hay Fever Attacks

Though information concerning hay fever has greatly increased during recent years, the results of treatment are at times disappointing. H. H. GELFAND (*Amer. Journ. Med. Sci.*, July, 1931, p. 81) suggests that some other sensitivity than that to pollen may be the cause of a certain percentage of failures. Reports of four cases are presented that tend to show that this multiple hypersensitivity is a most important factor, and should seriously be considered in the treatment of seasonal hay fever. In one case the patient suffered from hay fever whenever she ate beef or pork. All such patients who resist desensitization to the specific pollen should be tested also for other inhalant irritants and food allergens. When found sensitive to inhalant proteins, desensitization before as well as during the hay fever season is necessary. If one special food is indicated, this should be eliminated from the diet during the hay fever season.

228 Cerebral Symptoms in Typhoid Fever

J. STÉHELIN (*Thèse de Paris*, 1931, No. 247), who records ten illustrative cases, four of which are original, in patients aged from 10 to 36, states that numerous and varied symptoms of cerebral origin may occur in typhoid fever, indicating a diffuse involvement of the brain, all the regions of which may be affected separately, together or successively. Two principal forms of typhoid encephalitis may occur—namely, encephalo-typhoid with intestinal symptoms, and typhoid fever with cerebral manifestations. The intensity of the cerebral reaction in typhoid fever ranges from the ordinary nervous typhoid syndrome to the severe ataxo-adynamic nervous forms. Occasionally the morbid process shows a remarkable intensity and unusual symptoms appear. Typhoid encephalitis in such cases shows a predilection for some definite area of the brain, the most characteristic being the bulbar, cerebello-spastic, and mesocephalic forms. The bulbar form, which is particularly severe, is chiefly encountered at the onset, while the mesocephalic form, which is met with at the height of the disease, is ushered in by muscular hypertonus, and accompanied by paralysis of the cranial nerves, often terminating with bulbar symptoms. Hypertonus, therefore, is a very valuable prognostic symptom, and should be systematically investigated in typhoid fever.

229 Post-vaccinal Encephalomyelitis in Australia

L. LOCKWOOD (*Med. Journ. Australia*, May 30th, 1931, p. 662) records the first example of this condition to be reported in Australia. The case, which occurred five years ago, was in a stoker, aged 19, in whom the symptoms developed twelve days after successful primary vaccination. The symptoms were complete loss of all forms of sensation and flaccid paralysis in both legs and lower part of abdomen, delirium, and broncho-pneumonia. Death took place. The diagnosis at the time (1925) was broncho-pneumonia and myelitis, but the condition is now thought to have been post-vaccinal encephalomyelitis.

Surgery

230 Diagnosis of Abdominal Tumours

Until recently the only method of showing up certain abdominal tumours by means of *x* rays has been the introduction of air into the peritoneal cavity by Rautenberg's method. Radt, however, has recently produced a thorium dioxide preparation which is selectively absorbed by the reticulo-endothelial system, and is opaque to *x* rays. By means of the intravenous injection of this substance, the liver and spleen can be shown up in sharp contrast to the other abdominal organs. As an illustration of the use of this method, E. E. BAUKE (*Deut. med. Woch.*, July 3rd, 1931, p. 1148) records the case of a man, aged 62, in whom a sub-diaphragmatic tumour, apparently calcified, was discovered accidentally on radiographical examination. The situation of the tumour was uncertain, but after the injection of 60 c.cm. of thorium dioxide-sol in five doses at intervals of one to two days the liver and spleen were clearly outlined, and the tumour was found to be centrally placed in the latter organ. Since the mass was giving rise to no symptoms, and was not detectable on clinical examination, no operation was performed, and its exact nature was not decided. In all probability it was a calcified hydatid cyst or solitary tubercle.

231 Appendicitis in Children

The problem of appendicitis in children differs from that in the case of adults for various reasons, such as the difficulty in obtaining satisfactory histories, in making physical examinations, and in interpreting the findings. L. W. TASCHE (*Amer. Journ. Med. Sci.*, July, 1931, p. 86) records a study based on 111 appendicectomies performed on children during a period of nine years. Acute appendicitis is rarely seen before the age of 3; its incidence then increases, and it is especially prevalent after 7. In children it occurs slightly more often in males than in females; the peak seasonal incidence is in the autumn. All the children concerned were under the age of 13, the youngest being 2½ years old. There was a history of one or more previous attacks in 31 per cent., and of recent previous infection elsewhere in the body in 13 per cent. A fair degree of direct correlation was noted between the clinical picture and the surgical and pathological findings;

the degree of correlation, however, is occasionally poor. The highest leucocyte counts were found in the cases with abscess formation and with diffuse peritonitis; leucopenia was of grave significance, and usually indicated a fatal termination. Abnormal urinary findings were present in 19 per cent. of the cases; none of these patients was operated upon until urinary disease was eliminated. The mortality percentage was 6.3, the most frequent cause of death being diffuse peritonitis. The interval between the onset and the time of operation is held by the author to be probably the most important factor in determining the prognosis and pathology; consequently, early diagnosis with immediate appendicectomy offers the best hope for recovery.

232 Treatment of Empyema

Drainage of an empyema by suction through an airtight tube is obviously desirable in order to restore the normal relations of pleura, lung, and heart, but the methods at present in use lead to difficulty in dressing the wound, infection of the skin, and development of fistula. Moreover, in changing the dressings renewed air entry into the pleura is liable to occur. For these reasons K. WALZ (*Zentralbl. f. Chir.*, July 11th, 1931, p. 1789) adopts the following technique, which he claims to be very successful. Under local anaesthesia an incision 8 to 10 cm. long is made in the posterior axillary line, and 4 to 5 cm. of rib is removed subperiosteally. Before opening the pleura a tunnel is made with forceps from the wound through the muscle to open on the skin about 8 cm. in front of the wound. A rubber tube is introduced through the tunnel, and its inner end is inserted through a small puncture into the pleura. While the pus is draining through the tube, the wound is stitched up in layers with fine catgut. A rubber sleeve can be fitted round the tube where it leaves the skin, and be secured by pins to strapping on the chest wall. The tube is connected with a suction apparatus until the end of the treatment, and is only removed when no pus has come away for several days. The wound heals readily, and only four or five changes of dressing may be necessary. This makes for the greater comfort of the patient, who is able to move much more freely than is usual after empyema operations.

233 Subcutaneous Emphysema following Aspiration of Foreign Body

P. P. VINSON and H. J. MOERSCH (*Minnesota Med.*, July, 1931, p. 654) report three rare cases of subcutaneous emphysema following the passage of a foreign body into the respiratory tract. In the first case a boy, aged 6, aspirated a metal paper-clip into the right bronchus. An *x*-ray examination revealed partial atelectasis of the right lung; there was a moderate amount of subcutaneous emphysema over the front of the right side of the thorax and neck, the condition completely clearing up after removal of the clip. In the second case there was obstruction of the right main bronchus of a boy, aged 3, and marked subcutaneous emphysema with air in the pericardial cavity ten days after the aspiration of a pea-nut; part of this was removed and the remainder was expelled spontaneously. Upon discharge four days later the subcutaneous air had disappeared, and that in the pericardial cavity had greatly diminished; a fortnight later the child was reported well. In the third case, a girl aged 2½, after aspirating a pea-nut developed subcutaneous emphysema of the upper part of the thorax and neck, which increased with each spell of coughing. An *x*-ray examination revealed the kernel in the right bronchus; after its removal the child was placed in an oxygen chamber, but after twenty-four hours tracheotomy had to be performed. The tube was removed five days later, and a fortnight after admission the child was discharged. In the first case the condition was accounted for by the point of the paper-clip piercing the bronchial wall during coughing; in the second and third cases the foreign body caused an obstructive emphysema with rupture into the mediastinal and subcutaneous tissues, though the presence of air in the pericardial cavity in the second case is difficult to explain.

Therapeutics

234 Protein Therapy in Colitis

H. A. RAFSKY (*Med. Journ. and Record*, July 1st, 1931, p. 35) reports good results in non-specific colitis from the intramuscular injection of "aolan," which is a colloidal lactalbumin solution prepared from milk and freed from toxins and bacteria. The initial dose was 3 c.cm.; this was gradually increased up to 10 c.cm. The injections were given twice a week for two months, and were continued subsequently once a week, once a fortnight, or once a month, according to the clinical progress. The average length of time required by the treatment was six months, but 90 per cent. of the patients showed marked clinical improvement at the end of three weeks. There was, however, little radiographical evidence of healing in under six or seven months. Spastic contractions quickly yielded to the treatment, and the usually low blood pressure was raised. As a preliminary the patients must be tested for protein sensitization by the intradermal route. In making the therapeutic injections care must be taken that the needle does not enter a vein; the gluteal region is the preferable site, and the injections should be given slowly while the patient is fasting, or after a light meal. While Rafsky is not yet certain as to the final permanency of the benefit, he states that 75 per cent. of the patients in his series had remained free from symptoms so far for an average of eighteen months.

235 Insulin in Ulcus Cruris

J. GATÉ and P. BARRAL (*Ann. de Derm. et de Syph.*, June, 1931, p. 665) record some gratifying results in the treatment of chronic non-syphilitic ulcers of the leg by insulin; moreover, in a refractory syphilitic case the alternation of insulin, mercuric cyanide, and neosalvarsan injections proved successful. In several diabetic cases chronic ulcers healed rapidly under insulin treatment; it was also found that insulin cured ulcers in patients who had hyperglycaemia without glycosuria. One ulcer which had existed for fourteen years healed in a few weeks. Some investigators have suggested the application of insulin powder mixed with lactose; others recommend insulin ointment. Neumarck has reported that insulin has a remarkable trophic action when it is injected hypodermically around the margin of the ulcer. Gaté and Barral prefer daily hypodermic injections of 15 units of insulin; if improvement follows, this treatment is maintained until cicatrization is complete. In some cases it is advisable to continue the injections at longer intervals after recovery, rather than to cease treatment abruptly. Insulin is especially useful in ulcers occurring in patients whose carbohydrate metabolism is deranged, and in some cases of syphilitic or varicose ulceration it proved to be a useful adjuvant when ordinary treatment had failed to evoke a cure. Increased oral administration of sugar is advisable in refractory cases. It is not claimed that insulin is a panacea; some ulcers improved temporarily, but insulin then appeared to lose its effect.

236 Salicylate Acidosis

H. BÉNARD and F.-P. MERKLEN (*C. R. Soc. de Biologie*, July 3rd, 1931, p. 973) record a case of rheumatism treated with sodium salicylate in which coma with Kussmaul's respiration, considerable lowering of the alkaline reserve, and the appearance of ketone bodies in the urine occurred. These symptoms subsided on abandoning the salicylate treatment, and administering large doses of sodium bicarbonate. As the result of further study the authors conclude that such cases are relatively rare, and occur only when large, repeated doses of salicylates are employed; such ill-effects can be avoided by the association of equal or double doses of the bicarbonate. A certain individual idiosyncrasy is apparently also present. Distinction must be made between salicylate acidosis and intoxication. The possibility of this acidosis arising should be considered in salicylate treatment, and intensified bicarbonate medication should be administered on its appearance.

Ophthalmology

237 The Calcium Metabolism in Cataract

Contrary to the observations of those who believe that *parathyroid treatment benefits cataractous lenses*, D. B. KIRBY (*Arch. of Ophthalmol.*, May, 1931, p. 754) shows that the calcium metabolism in patients with cataract falls within the normal limits. It was thought in these cases that the blood calcium was increased, that there was a higher calcium content in the aqueous fluid, and that, therefore, the exhibition of parathyroid extract would assist in the elimination of the lenticular calcium. Kirby points out that there is no relation between the cataract of tetany and of senile cataract. As the calcium excretion is increased by parathyroid therapy, so the blood calcium figure is raised; the loss of calcium is at the expense of bone, and this storehouse will be depleted before any removal is effected from the lens. The author used injections of parathormone (which he considers the most potent and reliable form of extract) in fourteen cases, for periods varying from five days to six months, but, with the most careful observation, there was either no change or else an increase in the cataract. That a cataract remains stationary is no evidence of removal of existing opacities or the prevention of the formation of new ones, since this is a normal episode in the history of many cataracts.

238 The Use of Adrenaline in Progressive Myopia

M. WIENER (*Amer. Journ. Ophthalmol.*, June, 1931, p. 520) reports that through further experience he has confirmed his previous impression that the persistent application of adrenaline solution to the eyes tends to inhibit the progressive development of myopia. In his preliminary report on the use of this preparation in progressive myopia he expressed the belief that its exhibition, *if associated with an effort to increase the secretion of* the suprarenals by urging strenuous exercise, tended to check the progress of the condition. With further experience he is now more assured that it exerts a favourable influence on myopia of the progressive type. Since that report Incze has stated that myopia is not a disease *per se*, but is a manifestation of a universal congenital asthenia. This constitutional peculiarity of the sclera, the weakness of an asthenic mesenchymal derivative, especially affecting the elastic elements of the sclera, permits the stretching of the globe, and thus the myopic change of refraction. Incze believes that in this scleral stretching another phenomenon of asthenia plays its part —namely, deficiency of adrenaline in the organism, in addition to an altered condition of the endocrine function in general. He considers that age and occupation play no part. Wiener, contrary to Incze, found from the observation of 159 cases that age was a factor in the development or progress of myopia; with few exceptions, the patients were of school age, also they were all inclined to be of the well-nourished type, rather than the type which he described as "asthenic." Some of the cases showed little or no progress during the whole time of treatment. A few improved, and several developed an increase in visual acuity even though the refraction did not change. Even in the cases that progressed unfavourably, the condition seems to have increased less than before the use of adrenaline. The author concludes that there is a certain type of progressive myopia which is favourably *influenced by exercise and the local institution* of adrenaline. On the other hand, another type definitely suggests the presence of some other factor, the nature of which is not yet clear.

239 Miners' Nystagmus

W. J. ROCHE (*Brit. Journ. Ophthalmol.*, April, 1931, p. 211) suggests that miners' nystagmus is a non-organic disease, in which the co-ordinate movements of the body, and particularly of the eyes, are deprived of their co-ordination in consequence of changes in the afferent impulses received from the eyes and internal ear; altered reflex efferent impulses are therefore transmitted to the musculature. These efferent impulses are changed in frequency and amplitude, and so the normal tone of the muscles is *modified*. In order to adapt the eye to poor illumination the efferent sensations travelling to the iris sphincter and ciliary muscle are inhibited, the sympathetic fibres are stimulated, *the stimuli producing convergence* are augmented, and, as a result, the amount of nervous energy required for inhibition and stimulation is much increased. The peripheral visual apparatus which is being used for form vision becomes fatigued; the oculomotor system tires, and may be disorganized by the abnormal inhibitions and stimulations. As a result of these altered sensations in the visual apparatus, oculomotor system, and internal ears, the co-ordinating function of the posterior longitudinal bundle is very much affected. Roche adds that alteration in sensation occurs in both internal ears in nystagmus, and discusses the way in which this is brought about. He concludes with recommendations *for improving the lighting in mines*, and adds that the sons of nystagmus patients should not be employed underground.

240 Lagleyze-Von Hippel Disease

J. L. PAVIA and M. DUSSELDORP (*Rev. Oto-Neuro-Oftalmol. y de Cir. Neurol.*, May, 1931, p. 189) report a case of this condition, of which only twenty to thirty examples are recorded. Its characteristic features are as follows: (1) a change in the retinal vessels, which become extremely sinuous, increase in size, and anastomose with one another; (2) the presence of small reddish globules varying in number and size, which appear to be superficial haemorrhages or aneurysms, and into which the sinuous vessels enter (these two changes first appear as a rule at the periphery of the fundus); and (3) the formation of white spots disseminated over the posterior pole of the retina, which becomes thickened. The disease begins in early life, vision being preserved for a long time. Blindness ensues after many years owing to extension of the lesions throughout the retina. Histologically there is proliferation of the capillaries and neuroglia, with destruction of the rods and cones, and formation of cystic spaces. The etiology is unknown, and no treatment is of any avail. Many cases have terminated fatally owing to the development of vascular tumours in the cerebellum. Post-mortem tumours or cysts are frequently found in the pancreas, kidneys, and suprarenals. The present case occurred in a man aged 25, and the issue is not recorded.

Obstetrics and Gynaecology

241 The Occipito-Posterior Position

S. M. DODEK (*Journ. Amer. Med. Assoc.*, May 16th, 1931, p. 1660) reports a study of the occipito-posterior presentation, one of the most serious obstetrical complications. It occurred in 514 (29.8 per cent.) of 1,723 cases of vertex presentation during 21 months at the Cleveland Maternity Hospital, and accurate diagnosis is important for its proper management. Abdominal palpation and auscultation with rectal examinations and a close observation of the course of labour are excellent diagnostic aids; vaginal examination is rarely necessary. Only few foetuses in persistent occipito-posterior positions will rotate spontaneously after 2 to 2½ hours of second stage labour, and foetal loss from intracranial haemorrhage after three hours of this stage warrants correction of the *position and* delivery. Internal podalic version is held to be the best method when the greatest diameter of the foetal head is arrested at the pelvic brim. The persistent occipito-posterior foetus which has descended below the pelvic brim should be rotated by the *modified* Scanzoni manœuvre of Bill. Some foetuses after rotating 90 degrees remain in the transverse diameter of the maternal pelvis; completion of rotation with forceps extraction is recommended in these cases. Manual rotation is unwise because of complications due to displacement and manipulation of the head. Delivery in the persistent occipito-posterior

position is dangerous to the child, and unnecessary. In the present series of cases only one was delivered in this position, and eighteen by Caesarean section. The mortality for full-term infants from all causes was 3.9 per cent.; pulmonary emboli caused the only two maternal deaths.

242 Diagnosis of Carcinoma of the Corpus Uteri

TIXIER and POLLOSSON (*La Gynécol.*, May, 1931, p. 298) from a study of thirty-one cases of carcinoma of the body of the uterus draw the following conclusions. A patient with post-menopausal uterine bleeding, if she has not a cervical carcinoma, has almost certainly one of the body of the uterus. The first sign of this consists in bleeding, continuous rather than intermittent, and scanty rather than profuse; pain comes later. The general health remains good for a considerable time, and slight fever, up to about 100.5°, is common. At an early stage bimanual examination is more often deceptive than useful in diagnosis. Both the cervix and body of the uterus usually appear small and mobile; the fornices are supple, and the parametria free. Intrauterine manœuvres, such as dilatation, curetting, sounding, biopsy, and lipiodol injections, are dangerous in old patients whose symptoms point to cancer of the body; the cavity is intensely septic and the wall friable. In younger patients, in whom, however, carcinoma of the body is rarer, exploration of the uterus is invaluable in the differential diagnosis from placental retention, chorion-epithelioma, and intrauterine polypus. If post-menopausal haemorrhage is met with in a patient having a uterine myoma, the existence of the latter is no excuse for taking no action; the haemorrhage points to carcinoma of the artery, if not of the corpus uteri.

243 Urinary Incontinence following Childbirth

H. W. JOHNSTON (*Surg., Gynecol. and Obstet.*, July, 1931, p. 97) describes an operation for the distressing urinary incontinence which so frequently follows childbirth. The condition depends on displacement of the upper part of the urethra—namely, that part held in position by the triangular ligament, and surrounded by the sphincter urethrae. If the latter is torn, sagging of the upper part of the urethra occurs, and the urethra becomes displaced, with consequent incontinence. A few operations, performed for the relief of this condition, are briefly reviewed. Johnston believes that cure can be obtained by bringing into apposition the torn ends of the sphincter urethrae muscle. With the patient in the lithotomy position, a catheter is introduced into the bladder, and gentle traction causes the neck to come into view. The anterior vaginal wall is medially incised, and the flaps are reflected laterally. Below the neck of the bladder the deep layer of the trigone can be seen, and by careful dissection the torn ends of the sphincter can be isolated and freed. The catheter is withdrawn and the torn muscle ends sutured, the deep layer of the trigone being included in the first stitch. The redundant vaginal mucosa is then excised. Haemorrhage, always troublesome, must be controlled and the field left dry. A permanent catheter is introduced and retained for four days. The patient is given 5 grains of urotropine thrice daily, and is kept in a semi-sitting position. Of six cases observed for three to twelve months after having been treated by this method, cure ensued in five; the remaining cases failed owing to separation of the stitches due to an infected haematoma.

244 Diagnosis of Neo-natal Fracture of the Clavicle

Clavicular fracture occurs in 1 per cent. of all births, and H. N. SANFORD (*Amer. Journ. Dis. Child.*, June, 1931, p. 1304) commends the Moro reflex for its diagnosis. On placing an infant on a table, and then forcibly striking the table on either side of the child, a motor reaction is obtained. The arms are suddenly thrown out in an embrace attitude, describing an arc, and tending to approach one another with a slight tremor; the fingers are at first spread and then closed. Sanford tested this reflex on 465 newborn infants during the first ten to fourteen days of life. There were several conditions in which the reflex was absent symmetrically for various periods of time during the first ten days, but there were no cases in which it was asymmetrical for more than the first twenty-four hours, except in fracture of the clavicle. On the side of the fracture there was no response for the first two weeks, until the callus was well formed. There were no cases of unilateral brachial palsy in this series, but other observers have noticed that these cases react in exactly the same way as fractures of the clavicle.

Pathology

245 The Haematology of Certain Leukaemias

M. LABBÉ, R. BOULIN, and M. PETRESCO (*C. R. Soc. de Biologie*, June 19th, 1931, p. 657) have found that the phenomenon of splenic contraction following the administration of adrenaline (the test of Weil and Isch-Wall), though needless in typical cases of acute leukaemia, is of great diagnostic value in certain doubtful ones—for example, those showing a low, practically normal leucocyte count, an intense anaemia, and numerous normoblasts and megaloblasts. The haematological reactions in two cases fifteen minutes after the intramuscular injection of 1 mg. of adrenaline were as follows: a slight hyper-erythrocytosis of about 250,000; a marked hyperleucocytosis, usually double that figure; the appearance of young cells (haemohistioblasts and haemocytoblasts) not seen in earlier examinations; and an increase in those previously found. A rare reaction noted was an increase in the myeloblasts with Auer's bodies after the injection; this diminished if the injection was repeated in twenty-four hours, but again increased on its repetition after some days. The slight erythrocytic reaction must not be considered as an absence of reaction, but as an index of the degree of myelomatous or lymphomatous invasion of the spleen to the detriment of the red pulp. This reaction approaches normal in proportion to the splenic invasion, and is weak or absent as the myelomatosis or lymphomatosis becomes more complete.

246 Cultivation of Vaccinia Virus from Human Lymph

E. G. NAUCK and E. PASCHEN (*Zentralbl. f. Bakt.*, July 13th, 1931, p. 312) report the cultivation *in vitro* of the vaccinia virus from a specimen of human lymph. The lymph, which came from the 62nd arm-to-arm passage, was put up in tissue culture with spleen or testicle, heparinized plasma, and tissue extract. Incubation and subcultivation were performed under the usual conditions. Titrations were made on the third, fourth, and sixth passages, using the rabbit's cornea, and it was found that multiplication of the virus had occurred. This appears to be the first time that direct cultivation from human lymph has been performed.

247 Infectivity for Monkeys of a Typhus-like Disease at Toulon

MARCANDIER, PLAZY, LE CHUITON, and R. PIROT (*Bull. Acad. Méd.*, June 23rd, 1931, p. 1012) have studied an exanthematic fever observed on board certain ships at Toulon. This fever appears to be similar to the exanthematic fever of Marseilles, the close relationship of which to true typhus is now generally recognized. Blood was taken from three patients, each of whom gave a positive Weil-Felix reaction in a titre of 1 in 640, and was inoculated intraperitoneally in 8 to 15 c.cm. doses into *Callithrix* and *Cercocebus* monkeys. Of four monkeys inoculated three developed fever about eight or nine days later; when tested two or three months later for their resistance to the true typhus virus—by intraperitoneal inoculation of one-thirtieth of the brain of a guinea-pig on the third day of illness—they were found to be immune. The fourth monkey did not develop fever, and was later found to be susceptible to the typhus virus, as were also two control monkeys. The disease conferred by the inoculation of the monkeys with the blood of patients was successfully passed on to two further monkeys, each of which developed an immunity to typhus. Judging by the immunity test, therefore, the authors conclude that the exanthematic fever of Toulon is an attenuated form of true typhus.

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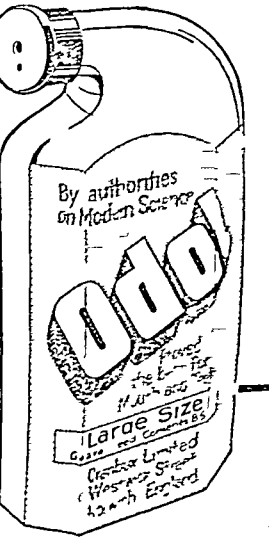
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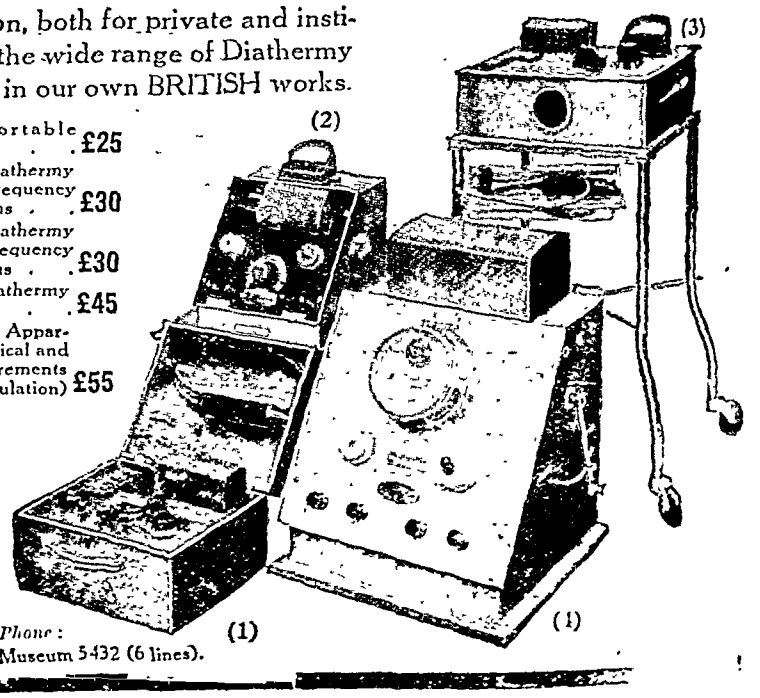
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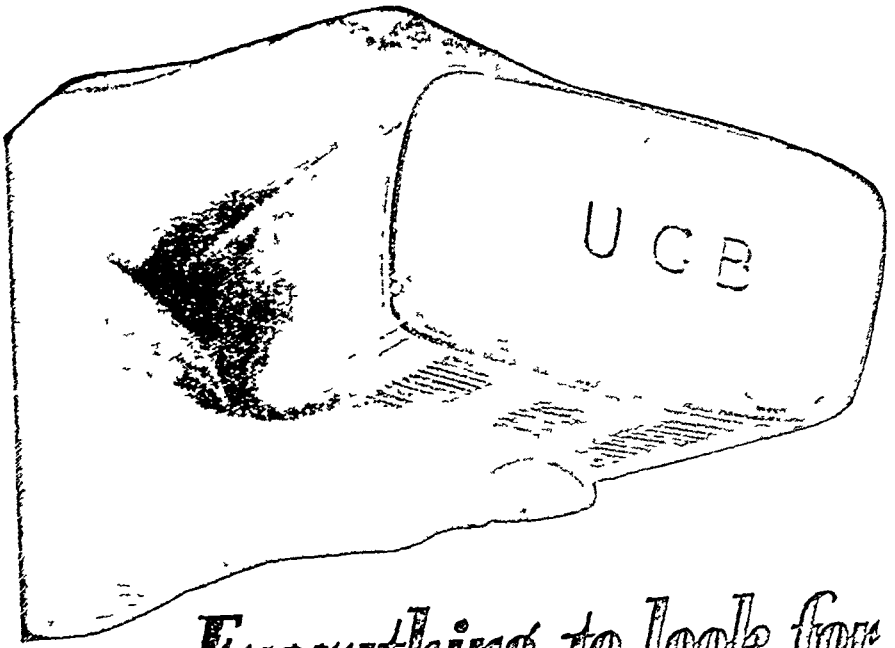
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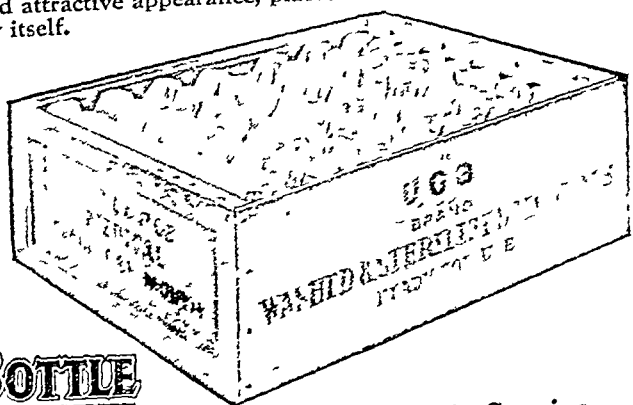
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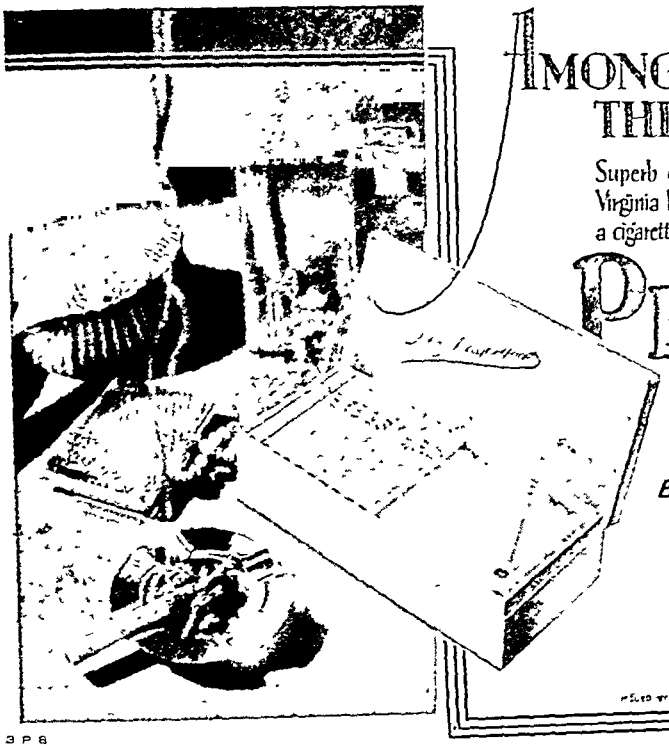
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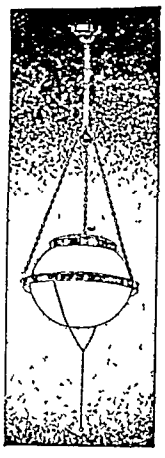
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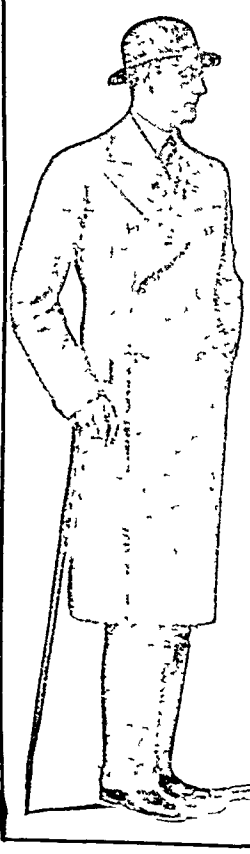
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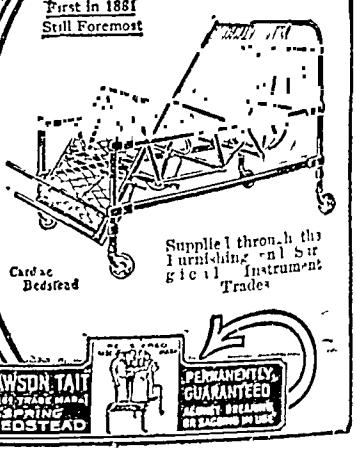
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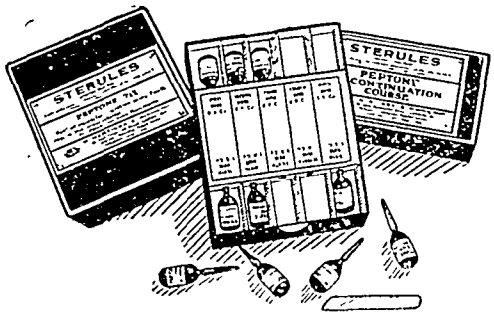
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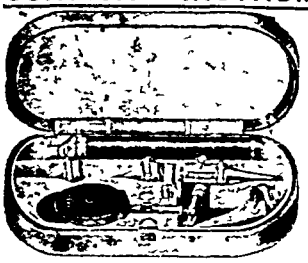


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Situated in park and grounds of 400 acres. Self supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

COURT HALL, KENTON, EXETER,

SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone. Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone Teignmouth 289.

TYKEFORD ABBEY, NEWPORT PAGNELL,

BUCKS.

FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray, and Ultra-violet Light. Diathermy and Foam Baths. Billiards, tennis, etc. Fees from five gns. per week.
Apply, Dr. D. E. M. DOUGLAS MORRIS. *Telephone*: Newport, Pagnell 121.

THE COPPICE, NOTTINGHAM.

HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel. 54117. *For terms, etc., apply to the Medical Superintendent.*

The MAUDSLEY HOSPITAL

DENMARK HILL, S.E.5.

Telephone: RODNEY 4841–2

A CLINIC instituted by the London County Council for Treatment of MINOR CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
IN-PATIENTS: (*a*) 189 beds (both sexes) in wards or separate rooms (*b*) 13 private rooms (for ladies) with special sitting room, garden, and dietary.

TERMS

(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**

(*b*) **£6 6s. a week.**

Terms include (with rare exceptions) all kinds of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the Hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

BARNWOOD HOUSE,

GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,

CHEADLE, CHESHIRE.

This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 2231 GATLEY.

FUNCTIONAL NERVOUS DISORDERS.

CALDECOTE HALL, NUNEATON.

RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Manor. Fees are moderate. *Full particulars from the Resident Medical Superintendent.*
A. E. CARVER, M.D., D.P.M.
Telephone: Nuneaton 241.

THE LAWN, LINCOLN.

This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes [illegible] of Mental and Nervous Disorders, [illegible] chalitic conditions [illegible] ies for Psychotherapy [illegible]

[illegible] be obtained from the [illegible] rintendent,
Dr. MARY R. BALKAS, M.D., D.P.M.

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion in 12 acres of ground. (See *Medical Directory*, p. 2234.) Apply J. H. EARLS, M.D., D.P.M., Physician. Telephone: Streatham 84[illegible]

CITY OF LONDON MENTAL HOSPITAL

DARTFORD, KENT.

Ladies and Gentlemen received for treatment under certificates, and without certification as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

WOODSIDE NERVE HOSPITAL

WOODSIDE AVENUE, MUSWELL HILL, LONDON, N.10

Chairman: THE RIGHT HON. LORD BLANESBURGH, G.B.E. Opened November 5th, 1930.

Fully equipped with every modern appliance for the diagnosis and treatment of

FUNCTIONAL NERVOUS DISORDERS

Private Rooms, Broad Verandahs, Electrotherapy and Hydrotherapy, X-ray and Dental departments, Laboratories for investigation and research. For terms and particulars apply to the Physician in charge at the Hospital. Telephone: Tudor 4211.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON—CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a sea-side branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0288.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the Medical Superintendent.



King Edward VII Convalescent Home for Officers of the Navy, Royal Marines, Army, and Air Force.

Massage
All forms of Electricity.
Ultra Violet Rays
Special Dieting
Golf Course in the Grounds

TERMS: 4/6 to 6/- per day, inclusive.

Hard Tennis Courts
Squash Racquets
Billiards
Bowls
Bathing, etc.

Officers on the Active List are able to travel by rail at Government expense.

...HOUSE GOVERNOR, OSBORNE HOUSE, EAST COWES, ISLE OF WIGHT.

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

(Postal Address)—**WOODBRIDGE, SUFFOLK.**

Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated booklet, giving particulars as to terms, etc., can be had on application to the
RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: Wickham Market 16.
(Toll Call from London.)



RENDLESHAM HALL.

To those desiring to be near London—

The Mansion, Beckenham Park, Beckenham,

as carried on for the last twenty years, is available. Booklets and particulars from the Resident Medical Superintendent.

Telephone: BECKENHAM 1648. *Telegrams:* NOROTORIUM, BECKENHAM.

Proprietors: The Norwood Sanatorium, Limited.

ALCOHOLISM, DRUG HABIT, NEURASTHENIA, etc.

BAY MOUNT, PAIGNTON.

ESTABLISHED 1922. *'Phone:* PAIGNTON 5110.

A comfortable private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The treatment is the outcome of many years' experience, and besides removing all craving for drink or drugs, it has a tonic action on the system, and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

INEBRIETY

DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—
F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

BOREATTON PARK,

BASCHURCH, SALOP.

A first class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres. Voluntary Boarders accepted.

Apply for particulars to Dr. SANKEY.

ST. ALBANS, HERTS.

(20 miles from London.)

Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts County Mental Hospital, Hill End. Convalescent and mild cases can be treated in a delightful country mansion, with extensive grounds, known as **"HIGHFIELD HALL,"** situate about a mile away from the Hospital.

Fees 2 and 3 guineas weekly.

Particulars from the MEDICAL SUPT.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs PELLE. *Telephone:* 2708.

STRETTON HOUSE,

Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. 'Phone: 10 P.O., Church Stretton.

SPRINGFIELD HOUSE,

Near BEDFORD. (Phone 3417.)

For Mental Disorders, with or without certificates.
Resident Physician: CEDRIC W. BOWER.
Ordinary Terms: Five Guineas per week.
(Including Separate Bedrooms where suitable.)
Interviews in London by appointment.

THE MOAT HOUSE,

TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to the Resident Medical Attendant. Telephone: Tamworth 108.

ALCOHOLISM & OTHER DRUG HABITS.

THE HARE NURSING HOME.

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Fees 5—10 guineas. Ample amusements 25 bedrooms. Annexe for mild cases. Quiet and pleasant situation.

Ladies and gentlemen admitted for treatment.

For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Res. Med. Sup.), Author of "The Alcohol Habit."

'Phone: Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

ALCOHOLISM

DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

At this beautifully situated country mansion residential Treatment of the above affections is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. CARVER, M.D., D.P.M. Fees moderate.

Further particulars from the Central Secretary, 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

CLARENCE LODGE,

CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES). Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Medical Specialist Visiting Physician.

Station: Clapham Common Tube. *Telephone:* Brixton 0424. Apply, Miss THEARTY.

HOME FOR DELICATE CHILDREN

"THE LOG HOUSE," KLOSTERS

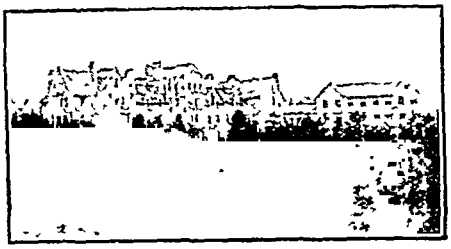
GRISONS, SWITZERLAND. 4,000 ft. above sea-level.

Inclusive terms from five guineas weekly.

No Infectious cases taken. All particulars from Mrs. or Dr. B. HUDSON (above address).

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

LINFORD SANATORIUM,

RINGWOOD, NEW FOREST, HANTS.

Established 1893 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch. (Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch. (Cantab.)

PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Special milk supply from tuberculin tested herd. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4½ hours from London. Resident Physicians: Dennison Pickering, M.D. (Cantab.), J. A. Hennesey, M.B., Ch.B., Matron Miss S. A. Eddy, S.R.N., Late Sister in Charge, Royal Hospital Annexe, Sheffield.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. (Phone, 20.)

THE COTSWOLD SANATORIUM

Specially built in 1893 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, Medicated Inhalations by means of the Apneu Inhalation Installation, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms. Full day and night Nursing Staff.

President Physicians GEOFFREY A. HOFFMAN, B.A., M.B., T.C.Dub. and MARGARET A. HARRISON, M.B., B.S.Lond.

Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Telephone* 41 WITCOMBE. *Telegrams* HOFFMAN, BIRDLIP.

EAST ANGLIAN SANATORIUM

This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff. Nurse on duty all night. Electric lighting throughout, radiators and wireless (headphones) in all rooms.

Dr. Jane Walker, C.H., J.P., LL.D., Medical Superintendent. Dr. Eleanor Soltau, Assistant Medical Supt.

For all information apply The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone NAYLAND 1

NORDRACH-UPON-MENDIP SANATORIUM

FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS

WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

Physicians ROWLAND THURNAM, M.D., CYRIL FRANCIS ASHBY, M.R.C.S., L.R.C.P.

CERTIFICATE OF THE SANATORIUM STEPHANI MONTANI, SWITZERLAND.

For full particulars apply to *The Secretary*, Nordrach upon Mendip, Blagdon, Bristol. *Telegrams* Nordrach, Blagdon. *Telephone* Blagdon 23

"THE VICTORIA," BRITISH SANATORIUM

DAVOS-PLATZ, SWITZERLAND.

ALTERED AND MODERNISED IN SUMMER 1930.

Inclusive terms from £5 to 8 guineas per week according to room.

Medical Supt.:
BERNARD HUDSON, M.D.Cantab., M.R.C.P.Lond., Swiss Federal Diploma.

GRAMPIAN SANATORIUM,

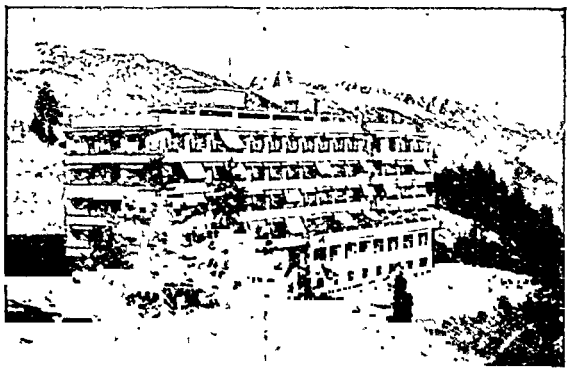
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Specially built for the Open-air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 860 ft. above sea level. Sheltered situation in pine wood. Graduated walks. Electric light throughout. Fully equipped in shelters. Central heating. Fully equipped X-ray Plant. Inoculation Treatment available for patient.—24 beds. Trained Nurse on duty all night. Terms £4 4s. 0d. to £6 6s. Few inclusive. No extras. Med. Supt.—FELIX SMY, M.D. For particulars apply to the Secretary.

MONTANA HALL, MONTANA, Switzerland. *For BRITISH Patients Only.*

Built 1929-1930. Opened, October 1930.

(No connection with any other Sanatorium in Montana.)



For the treatment of Tuberculosis, Diseases of the Chest, Asthma; for patients requiring rest in the Alps under strict medical supervision; and for medical conditions in which sun and air bathing are indicated.

THE ONLY SANATORIUM IN SWITZERLAND UNDER BRITISH OWNERSHIP AND CONTROL, AND WITH A FULL DAY AND NIGHT STAFF OF BRITISH TRAINED NURSING SISTERS.

Large roof Solarium. Private balconies. All rooms have running water, central heating, wireless (headphones), and light signals (instead of bells). A number of rooms with Private Bathrooms. Spacious public rooms. The cooking is adapted to English requirements.

MONTANA (5,000 feet above sea-level) is the sunniest health resort in the Swiss Alps. Many miles of level walking. Twenty hours by train from London.

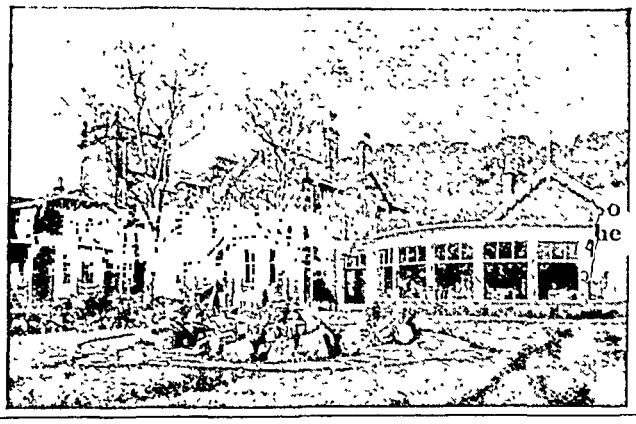
Inclusive terms:—from Seven guineas per week (during the Winter), according to the room. Telegrams: "Montall, Montana-Vermala."

For further particulars kindly apply to the Resident Medical Superintendent HILARY ROCHE, M.D.(Melb.), M.R.C.P.(London), Tuberculous Diseases Diploma (Wales).

New Treatment *at*

BRIDGE OF ALLAN SPA

Stirlingshire



Latest method of Intestinal Lavage now installed. The Mineral Waters are unique in Britain for treatment of Rheumatism, Gastric Complaints, Asthma, Bronchitis, etc.

Covered way to Allan Water and Spa Hotel.

For full particulars apply SPA DIRECTOR.

Member of the British Spas Federation.

TREFRIW CHALYBEATE WELLS

Established over 70 years.

The richest Sulphur-Iron waters kno[illegible] Ferrous-Sulphate, maximum dose only one ounce. for Rheumatoid Arthritis, Rheumatism, Sciatica, Neuritis, Anaemia, and Kindred Ailments.

SPA CURE AT HOME.

The Waters are scientifically bottled in perfectly natural Spa condition, without alteration or manipulation, and may be prescribed to patients at home just as beneficially as at the Spa. The remarkable efficacy of the home treatment, which is a very important feature of this Spa, cannot be too strongly emphasized, and is well attested by eminent medical authority. Full particulars and sample of the Waters post free from MANAGER, Trefriw Wells, Trefriw, N. Wales.

SANATORIUM NEROTAL : WIESBADEN

RHINE (GERMANY)

Special treatment for Rheumatism, Gout, Diabetes, Heart and Nervous Complaints. Each patient specially dieted. Three Resident Doctors. Open all the year round. Best climate in Autumn; mild Winter. English spoken.

Prospectus on application.

BOURNEMOUTH HYDRO,

with Vita glass Sun lounge and Marine Balcony on the South Coast.

Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra-violet Light.
Every kind of Electricity Diathermy.
Every kind of Diet.
High Frequency. Electric Lift.

Prospectus from Secretary. *Tele.* 341.
Resident } W. JOHNSTON SMYTH, M.D.
Physicians } L. T. ROSE-HUTCHINSON, M.D.

A vacancy for invalid, with or without Nurse, in Doctor's house, 10 miles outside London (Kent), nice garden. Good staff, including Masseuse. Terms moderate.—Address, No. 5850, B.M.A. House, Tavistock Sq., W.C.1.

PEEBLES

In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Dancing, winter garden, swimming bath, tennis, bad minton, golf, fishing. Fully licensed. Modern baths installation. Physio therapeutic, massage, electrical treatment, ultra-violet radiation. Physician in attendance. Write for prospectus.

Among the Pine-clad Border Hills.

PEEBLES HYDRO. PEEBLES. SCOTLAND

Elderly Ladies received, full charge. Highly recommended by Doctors. —Mrs. J. BURROWS, 19, Avington Grove, Penge, S.E.20.

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DUCHY HOUSE
INVESTIGATION CLINIC.

Specially adapted for the investigation of Chronic Rheumatic Disease; Diabetes; Pernicious and other Anaemias; Hepatic and Gastro-intestinal derangements; Endocrine disturbances; Chest and Renal Diseases; Weight reducing. If necessary, arrangements for Spa treatment under a Spa Physician can be made. Particulars from the Secretary, 9, Queen's Road, Harrogate. Telephone 3872.

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REGENT STREET, W.1.
SCHOOL OF CHEMISTRY.

Head of the School:
H. LAMBOURNE, M.A., M.Sc., F.I.C.

DAY COURSE in CHEMISTRY, PHYSICS, and BIOLOGY, and EVENING COURSE in CHEMISTRY and PHYSICS for the FIRST MEDICAL EXAMINATION of the CONJOINT BOARD.

New term commences:
Day - - September 15th, 1931
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Fee to London Students:
Day - - £8 8s. per term
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Early application should be made to the Director of Education.

The Queen Alexandra Sanatorium FUND.

A limited number of GRANTS will be made during the Autumn from this Fund to British patients of small means suffering from Pulmonary Tuberculosis to obtain Treatment at Davos, Switzerland. Applications should be made before the end of September. Further particulars may be obtained from Mr. W. G. LOCKETT, Davos Platz, Switzerland.

Debilitated, old, or middle-aged man RECEIVED for new cure—dietetic, medical, and physical cultural treatment to restore and re-develop the whole of muscles. Golf, shooting. Mild [illegible] —No. 5851, B.M.A. House, Tavistock Sq., W.C.1.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

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NORTH-EAST LONDON POST-GRADUATE COLLEGE

The Prince of Wales's General Hospital, Tottenham, N.15.

Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

NEXT INTENSIVE FORTNIGHTLY COURSE, DEALING WITH SPECIAL & GENERAL SUBJECTS, COMMENCES ON OCTOBER 12th, 1931.

Prospectus and Syllabuses on application to the Dean.

DIPLOMA IN PUBLIC HEALTH

London School of Hygiene and Tropical Medicine

(University of London)

The 1931-32 course of study, which qualifies students to sit for the University of London Diploma, covers a period of nine calendar months in the case of those who devote the whole of their time to the work.

The course will commence on September 28th, 1931.

The inclusive fee of 54 guineas will cover the cost, not only of the ordinary lectures and demonstrations, but also of the necessary practical work in public health departments and instructions in infectious diseases, etc.

Enquiries should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel St., Gower St., London, W.C.1.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

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Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admissions being primiparous cases). Over 2,400 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 18,000 attendances per annum.

Certificates awarded as required by the various Examining Bodies.

For rules, fees, etc., apply ARTHUR WATTS, Secretary.

DEFECTIVE SPEECH.

Remedial Tuition on modern lines for Stammer, Aphonia, Cleft Palate, Tracheotomy, and Disturbed Co-ordination, by ERIC MIALL, A.L.C.M., who is Speech Instructor at the Middlesex Hospital.

Short courses in elocution, accent, clarity, and public speaking.

39, WELBECK STREET, W.1.

Welbeck 3233.

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"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."

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of Miss PEARSE, 39, Earl's Court Sq., S.W.5.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes with DEMONSTRATIONS will commence shortly. CORRESPONDENCE COURSE for Jan. and later Exams. should begin now.—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

M.D. THESIS.

Advice and legitimate assistance by an expert in preparation of Theses.—Address, No. 1001, B.M.A. House, Tavistock Square, W.C.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

SOCIETY OF APOTHECARIES OF LONDON

MASTERY OF MIDWIFERY.

Examinations will be held beginning Monday, November 16th, 1931, and Tuesday, May 17th, 1932.

For regulations, apply to the Registrar, Water Lane, E.C.4.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE.

Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN*.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

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Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities, also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

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MEDICAL PROSPECTUS (48pp.)

CONTENTS.—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*. Postal Courses and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the Surgical Examination. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing Theses. Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6315.)

F.R.C.S.(Edin.).

CLASSES with Museum and Anatomical Demonstrations for next Exam. will commence shortly. Correspondence work at all times. Particulars from CHAS. WHITAKER, F.F.S., Surgeons' Hall, Edinburgh.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. in Chemistry, Physics, and Biology. Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

THE WINTER SESSION will open on THURSDAY, OCTOBER 1st.

THE HOSPITAL is the largest in England. There are 839 beds in constant use. Last year, In-patients, 14,256; Out-patients, 86,554 (attendances, 529,543); Dental Patients, 6,063; Major operations, 7401.

THE MEDICAL COLLEGE AND DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and most approved appliances.

SCHOLARSHIPS AND PRIZES to the value of £1,158 are awarded annually, including four Open Entrance Scholarships to the value of £350, and two Entrance Scholarships open to students of the Universities of Oxford and Cambridge to the value of £200.

RESEARCH FUNDS of approximately £113,000 give unrivalled facilities for medical research.

APPOINTMENTS.—Over 160 appointments are made annually from Students of the College recently qualified

SPECIAL COURSES are held for all the University Examinations for the Primary and Final Fellowship Examinations of the Royal College of Surgeons, and for the Membership Examinations of the Royal College of Physicians.

HOSPITAL PRACTICE.—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

Club's Union, Athletic Ground of 13 acres, Students' Hostel, etc.

For prospectus and particulars, apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School Mile End, E.1.

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Resident } W. JOHNSTON SMYTH, M.D.
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A vacancy for invalid, with or without Nurse, in Doctor's house, 10 miles outside London (Kent), nice garden. Good staff, including Masseuse. Terms moderate.—Address, No. 5880, B.M.A. House, Tavistock Sq., W.C.1.

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Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

ST. BARTHOLOMEW'S MEDICAL COLLEGE.

M.R.C.P. CLASS.

A course of Instruction, suitable to the requirements of candidates for the M.R.C.P. Examination in January, will begin on November 2nd, 1931.

For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

Royal London Ophthalmic HOSPITAL (MOORFIELDS EYE HOSPITAL), City Road, E.C.1

Applications are invited for the office of SENIOR RESIDENT OFFICER.

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on November 1st.

Salary at the rate of £150 a year, with board and residence in the Hospital. Additional income will accrue to this post, the care of private patients being included in the duties

In the event of the First House Surgeon being appointed, other candidates are requested to state whether they would accept the office of First House Surgeon at the rate of £150 a year, Second House Surgeon at the rate of £125 a year, or Third House Surgeon at the rate of £92 a year.

—appointments are for a period of six

Elde[illegible]ons, with testimonials, stating age cha[illegible]ations, must be received not later —Mrs. J. B[illegible] 3rd.

S.E.20. A. J. M. TARRANT, Secretary.

Administrative County of LONDON.

HOSPITAL SERVICE.

The LONDON COUNTY COUNCIL invites applications from duly qualified Medical Practitioners, with special experience of Radiology, for temporary appointment as part-time RADIOLOGIST at ST. GILES' HOSPITAL, Brunswick Square, Camberwell, S.E.5. The remuneration is at the rate of £236 5s. a year to cover attendances of two sessions a week of two and a half hours each. The appointment will be for six months, in the first instance, and the conditions will be subject to review by the Council. The person appointed will be required to commence duty on November 1st, to carry out such duties appertaining to his office as shall be assigned by the Medical Superintendent and, should occasion arise, to assist at any of the other establishments or medical districts under the control of the Council. In addition, he will be required to provide at his own expense a qualified deputy during absence for any cause.

Forms of application may be obtained (stamped addressed envelope necessary) from the Medical Officer of Health, Staff Division, 4a, The County Hall, Westminster Bridge, S.E.1, and must be returned by October 2nd. Canvassing disqualifies. Enquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendent at the Hospital.

MONTAGU H. COX,
Clerk of the London County Council

Administrative County of LONDON.

HOSPITAL SERVICE

The LONDON COUNTY COUNCIL invites applications for appointment to the undermentioned position. The person appointed will be required to carry out such duties as may be assigned by the Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the London County Council. The successful candidate will be required to live in the Hospital

HAMMERSMITH HOSPITAL, Ducane Road, W.12. — ASSISTANT MEDICAL OFFICER. Salary £350 a year, rising by annual increments of £25 to £425 a year, with board, lodging, and washing.

Candidates must be qualified Medical Practitioners of at least one year's standing, and must have held a resident appointment in a General Hospital for at least six months.

There is no accommodation for a married man.

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division 4a), The County Hall, Westminster Bridge, S.E.1, and must be returned by October 2nd. Canvassing disqualifies. Inquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendent at the Hospital

MONTAGU H. COX,
Clerk of the London County Council

County Borough of Southampton.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the position of Assistant School Medical Officer, at a salary of £500, rising by annual increments of £25 to £750.

The applicant appointed will hold office during the pleasure of the Council, and the appointment will be determinable by two months' notice on either side. The person appointed will be required to carry out duties in connection with the Medical Inspection and Treatment of School Children, the Public Health Acts, Mental Deficiency Acts, 1913-27, Maternity and Child Welfare, and Venereal Disease work, etc.

The successful candidate must devote the whole of the time to the duties of the office, and the performance of such other duties as may be required under the direction of the Medical Officer of Health.

The appointment will be subject to the approval of the Board of Education and the Minister of Health.

The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

Forms of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.

Applications, on the prescribed form, endorsed "Assistant Medical Officer of Health," stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office, Municipal Offices, Southampton, not later before September 25th

R. RONALD H. MEGGESON,
Town Clerk.

September 7th, 1931.

County Borough of Burnley

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners (male or female) for the post of Assistant Medical Officer of Health

The officer appointed should either have held a previous appointment as Medical Officer of an Ante-natal Clinic with the approval of the Ministry of Health or have had at least three years experience in the practice of his or her profession and special experience of practical Midwifery and Ante-natal work. The holding of a Diploma in Public Health will be deemed an additional qualification for the post

The successful candidate will be required to act as Resident Medical Officer at the Council's Maternity and Children's Hospital (45 beds) and perform duties in connection with the Maternity and Child Welfare Scheme including infant welfare and ante-natal clinics, duties in connection with the School Medical Service, and, in addition such other duties as may be required from time to time by the Medical Officer of Health

The salary will be at the rate of £500 per annum rising by annual increments of £25 to a maximum of £700 per annum subject to a deduction of £125 per annum for board lodgings and laundry

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 and the selected candidate will be required to pass a medical examination

Application forms together with conditions of service may be obtained from the Medical Officer of Health Public Health Department St James's Street Burnley to whom applications accompanied by copies of three recent testimonials should be forwarded not later than Wednesday, September 30th

Canvassing either directly or indirectly, will be a disqualification

Town Hall, Burnley. COLIN CAMPBELL Town Clerk

September 4th 1931

County Borough of Blackburn.

ASSISTANT SCHOOL MEDICAL OFFICER and ASSISTANT MEDICAL OFFICER OF HEALTH

Applications are invited from registered Medical Practitioners for the post of Assistant School Medical Officer and Assistant Medical Officer of Health (male) to act under the supervision of the Medical Officer of Health who is also the School Medical Officer

The person appointed must devote the whole of his time to the service of the Corporation

The duties of the office will consist largely, but not exclusively, of work in the School Medical Department, and a knowledge of such duties is essential Preference will be given to candidates with a Diploma in Public Health and having experience in Infectious Disease

The salary will be £600 per annum to be increased by annual increments of £50 to a maximum of £700 per annum

Forms of application and further particulars of the duties and conditions of the appointment may be obtained from the Medical Officer of Health Victoria Street, Blackburn

Completed forms accompanied by copies of three recent testimonials, must reach me by Wednesday Sept 30th 23rd and should be endorsed on the envelope "Assistant School Medical Officer"

Canvassing will disqualify

Town Hall, Blackburn. BRIGGS H MARSDEN, Town Clerk

August 25th, 1931

Staffordshire County Council.

COUNTY BACTERIOLOGICAL LABORATORY

Applications are invited from registered Medical Practitioners for the post of ASSISTANT BACTERIOLOGIST and PATHOLOGIST

Candidates must be under 35 years of age and previous experience in bacteriology and morbid histology is essential

The laboratory is a new building and has all the usual up-to-date equipment Reasonable opportunity will be given for research in connection with the work

Commencing salary £700 per annum rising by annual increments of £50 to a maximum of £850 subject to the usual deductions under the Local Government and Other Officers Superannuation Act 1922 and to a medical examination as required by the Council for the purposes of that Act and the statutory contributions to the Superannuation Fund under the Act will be deducted from the salary The appointment will be terminable by three months notice on either side

Applications with copies of three recent testimonials should be received by me not later than September 25th

County Buildings, Stafford. ELSTAGE JOY MA Clerk of the County Council

City of Birmingham.

SELLY OAK HOSPITAL

CASUALTY OFFICER. (Male)

Applications are invited from fully qualified Medical Practitioners for the whole-time appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham

The present Hospital accommodation is 550 beds divided into General Medical General Surgical Gynaecological, Obstetrical and Children's Diseases sections There are completely equipped Pathological and Biochemical Laboratories and X-ray, Electrotherapeutic Massage Ultra-violet Ray, and Electro-cardiographic Departments Over 3 000 operations are performed annually

The appointment will be for a period of six months in the first instance but may be extended at the end of that time for a further period of not exceeding six months

The person appointed will be required to assist at operations to administer anaesthetics and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent

The salary attached to the appointment is at the rate of £200 per annum together with full residential emoluments (rations apartments laundry and uniforms) The officer appointed will be required to refund to the Council all fees allowances and emoluments (other than the following) received by him

Further particulars of the appointment may be obtained from the Medical Superintendent J P STANLEY BRUCE, L R C P, M B, Ch B, F R C S (Eng. and Edin.) at Selly Oak Hospital to whom applications stating age, experience and qualifications accompanied by copies of recent testimonials and endorsed "Casualty Officer" should be forwarded not later than Wednesday, September 30th

The Council House, Birmingham Sept 8th, 1931. F H C WILTSHIRE, Town Clerk

Wood Green Urban District Council

ASSISTANT MEDICAL OFFICER

The Council invite applications from qualified Medical Women for the position of Assistant Medical Officer at a salary of £550 rising by annual increments of £25 to a maximum of £700 per annum

The lady appointed will be required to devote her whole time to the duties of the office which will be mainly in connection with Maternity and Child Welfare and School Medical work and the appointment will be subject to a satisfactory medical examination to the provisions of the Local Government and Other Officers Superannuation Act, 1922 and to the approval of the Board of Education

Candidates must have had special experience in Midwifery and Ante-natal work and a qualification and subject to this preference will be given to candidates who possess the Diploma in Public Health

Applications which must be made on forms obtainable (with list of duties) from the undersigned accompanied by copies of three recent testimonials must be received by me not later than Monday Sept 28th

Canvassing will disqualify

Town Hall, Wood Green N 22 H CHUBB Clerk of the Council

September 8th 1931

City of Nottingham Education Committee

Applications are invited from registered Medical Practitioners for the post of whole time JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER

Applicants must have had at least two years experience since qualification Special consideration will be given to the applications of candidates who have had experience in diseases of children and in the correction of errors of refraction

Salary £500 per annum rising subject to satisfactory service, by annual increments of £25 to £700 The appointment will be subject to (1) the provisions of the Local Government and Other Officers Superannuation Act 1922 and (2) the terms of appointment set out in the Committee's Form of application for the post

The officer appointed will be required to carry out all duties pertaining to the medical inspection and treatment of secondary and elementary school children in the area

Applications which should be made on the special forms obtainable from the undersigned must be sent in not later than October 3rd

Canvassing, directly or indirectly will disqualify

School Medical Service, 28 Chancer Street, Nottingham. A H WHIPPLE Director of Education

Birmingham Public Health Department

TUBERCULOSIS SECTION

Applications are invited from single male Medical Practitioners for the post of ASSISTANT MEDICAL OFFICER in the Tuberculosis Section of the Public Health Department The successful candidate will be expected to be in a Sanatorium and a Dispensary

Candidates should have held a resident General Hospital appointment or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis Experience in Surgical Tuberculosis an advantage

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450 per annum, with emoluments valued at £150 per annum

The officer appointed will be required to refund to the Council all fees allowances and emoluments (other than the foregoing) received by him

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to 3 months notice on either side

Forms of application may be obtained from, and should be returned with three testimonials to the Chief Clinical Tuberculosis Officer, 42 Broad Street Birmingham by 9 o'clock on October 3rd

Council House, Birmingham. F H C WILTSHIRE Town Clerk

City of Birmingham Education Committee

APPOINTMENT OF ASSISTANT SCHOOL MEDICAL OFFICERS (Women)

Applications are invited for the appointment of Two Women Assistant School Medical Officers Candidates must have had at least three years experience in the practice of their profession subsequent to obtaining a registrable qualification Salary £500, rising by annual increments of £25 to a maximum of £700 £10 per annum travelling expenses Forms of application which should be returned not later than first post on October 1st together with further particulars may be obtained on the undersigned Canvassing will disqualify Applicants should be endorsed Assistant School Medical Officer

Canvassing will disqualify

Education Office, Margaret Street, Birmingham. J D INNES Chief Education Officer

September 12th 1931

Swansea County Borough.

INFECTIOUS DISEASES HOSPITAL

RESIDENT MEDICAL OFFICER

The Council invite applications for the above appointment from duly qualified unmarried Medical Practitioners The salary will be at the rate of £300 per annum together with emoluments Previous experience in an Infectious Diseases Hospital is desirable The appointments is for one year and not renewable

Applications (on special forms with particulars of duties, can be obtained from the Medical Officer of Health Public Health Offices, Swansea) to be sent in not later than Sept 26th

Cheshire County Council.

WRENBURY HALL TUBERCULOSIS TRAINING COLONY

Applications are invited for the appointment of RESIDENT HOUSE PHYSICIAN at the above Institution The appointment is for one year only at a salary of £250 per annum together with board and residence etc

Form of application and particulars of appointment to be obtained from the undersigned

County Office, Northgate Street, Chester. REGINALD TOTTY Clerk of the County Council

September 2nd, 1931

Lowestoft and North Suffolk Hospital

JUNIOR HOUSE SURGEON (man or woman) required September 10th Salary £120 per annum with board residence and laundry Applications together with copies of three recent testimonials to be sent to the Hon Medical Superintendent

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum with residence board etc Applications with copies of testimonials, and recent House Surgeon to be addressed to the Chairman of the Board of Management Post now vacant

Jessop Hospital (Firth AUXILIARY), NORTON, SHEFFIELD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female), and should be addressed at once to the undersigned, at the Jessop Hospital for Women, Sheffield.

The appointment will be for one year, commencing October 1st, with a salary at the rate of £150 per annum, plus board, residence, and laundry. Previous obstetrical experience is desirable.

This Hospital contains 46 beds for the treatment of puerperal sepsis, and for ante natal and gynaecological cases 23 beds are set apart for puerperal sepsis

H. B. SHELSWELL, Secretary.

The Jessop Hospital for Women, SHEFFIELD (146 Beds)

(Gynaecological and Maternity Departments)

The Board of Management invite applications for the following posts.

A SENIOR RESIDENT OFFICER (male) for one year from October 1st. Salary £200 per annum, plus board, residence, and laundry.

TWO ASSISTANT HOUSE SURGEONS (male) for a period of six months from October 1st Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be received by the undersigned on or before September 22nd

H. B. SHELSWELL, Secretary.

The Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.1.

There will be a vacancy on October 1st for a HOUSE SURGEON (male) at the above Hospital. The appointment is, in the first instance, for a period of six months Salary at the rate of £100 per annum, with board and residence Applications, with copies of testimonials, should be forwarded not later than Tuesday morning, September 22nd, to the Secretary at the above address, from whom further particulars can be obtained.

The Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.1.

Applications are invited from qualified male Practitioners for the post of CASUALTY OFFICER, vacant on October 1st, to work in the Out patient Department on week days, at £200 per annum, lunch and tea provided Applications, with copies of testimonials, should be forwarded not later than Tuesday morning, Sept 22nd, to the Secretary at the Hospital, from whom further particulars can be obtained

Bradford City Sanatorium, GRASSINGTON, YORKSHIRE

HOUSE PHYSICIAN required, October 1st, for one year for the above Institution (152 beds, adults and children, both sexes, mainly pulmonary tuberculosis) Facilities for research Salary £225

Applications, stating age, qualifications, etc., together with copies of recent testimonials, must be received at the above address not later than the 25th instant, by the Medical Superintendent, who will furnish further particulars if desired

N. L. FLEMING, Town Clerk

The Loughborough and District GENERAL HOSPITAL

Wanted, to commence duties on October 1st or earlier by arrangement, RESIDENT HOUSE SURGEON (male or female and unmarried), possessing a medical and surgical registered qualification Practical experience in the administration of anaesthetics is required Salary £175, with apartments, board, and laundry. All applications, stating age, etc., with copies of testimonials, to be sent to me at once

9, Leicester Rd., Loughborough FRANK TOONE, Secretary.

The Liverpool Eye and Ear INFIRMARY, Myrtle Street.

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution Salary £120 per annum, with board and lodging

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in immediately to— CHARLES W. WRIGHT, Esq., 9, Harrington Street, Liverpool.

Preston and County of Lancaster ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen, doubly qualified and registered, for the post of HOUSE SURGEON. Duties in Male, Female, and Children's Wards under Consulting Surgeon. Total Resident staff—six.

Salary at the rate of £150 per annum, together with board, residence, and laundry. Six months' appointment

Applications, stating age, nationality, qualifications, and experience, together with copies of testimonials, to be forwarded to the undersigned.

JOHN GIBSON, Sept 14th, 1931. Supt & Secretary.

The Royal Portsmouth Hospital, PORTSMOUTH (Five Resident Medical Officers)

Applications are invited for the posts of: HOUSE PHYSICIAN (male) Salary at the rate of £130 per annum, with board, etc CASUALTY OFFICER (male) Salary at the rate of £100 per annum, with board, etc

Both officers must be qualified, and will be required to commence on October 1st (six months appointments, and eligible on completion of term for extension or other resident posts)

Applications, stating age, nationality, and full details, with copies of three testimonials, to be sent to the undersigned as soon as possible, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Royal Devon & Exeter Hospital, EXETER. (225 Beds)

APPOINTMENT OF CASUALTY OFFICER AND HOUSE SURGEON to Special Departments.

Applications invited from qualified and registered candidates for this appointment now vacant

Engagement for six months, candidates being eligible for subsequent appointments

Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, with copy testimonials, should be sent to the undersigned as soon as possible

S. S. COLE, Secretary & Manager

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE SURGEON to the Special Departments (Ear, Nose and Throat, and Ophthalmic) Salary £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than first post on Tuesday, September 29th

FRANK INCH, September 18th, 1931. House Gov. & Sec

General Hospital, Nottingham (397 Beds)

A HOUSE PHYSICIAN is required at the above Institution The appointment is for six months Salary at the rate of £150 a year, with board, residence, and laundry. Candidates are desired to send applications, and full particulars as to age, qualifications, and experience, to the undersigned not later than Wednesday, October 7th

Duties to commence Friday, October 23rd.

PETER McCOLL, House Governor & Secretary.

Victoria Hospital for Sick CHILDREN, HULL (Incorporated)

The Board of Management invite applications for the post of HONORARY PHYSICIAN to out patients department of this Institution (with beds)

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned not later than Wednesday, September 30th

F. J. PALETHORPE, Gen. Secretary.

Victoria Central Hospital, WALLASEY.

Applications are invited for the position of SENIOR HOUSE SURGEON (male); salary at the rate of £150 per annum: also JUNIOR HOUSE SURGEON; salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, to be sent to the Secretary.

Kettering & District General HOSPITAL, KETTERING (80 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) Salary £200 per annum, with board, residence, and washing. Candidates must be fully qualified, and registered. Knowledge of Anaesthetics desirable.

The appointment is for six months, with eligibility for a further six months

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be sent to the undersigned as early as possible

G. W. JACKSON, Secretary Superintendent.

The Mental Hospital, Wells, SOMERSET.

ASSISTANT MEDICAL OFFICER required (male), single, must be legally qualified and registered, previous experience not essential a knowledge of Laboratory work a recommendation. Salary commencing £350 per annum, rising to £450 by annual increments of £25 with board, lodging, laundry, and attendance, subject to statutory deductions for Superannuation purposes.

Applications to be sent not later than September 22nd next, to the Medical Superintendent, stating age, qualifications, and practical experience (if any), marked in top left hand corner "A.M.O."

Rochdale Infirmary and DISPENSARY. (110 Beds)

The Board of Management invites applications for the appointment of JUNIOR HOUSE SURGEON The salary attached to the appointment is at the rate of £200 per annum, including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of the appointment and particulars of duties may be had on application

Infirmary Office, Rochdale W. WYNNE, Secretary

September 7th, 1931.

St. John's Hospital for Diseases OF THE SKIN (Incd.), 49, Leicester Square, London, W.C.2

Applications for the post of JUNIOR HONORARY MEDICAL REGISTRAR (male or female) are invited to be sent to the undersigned on or before Friday, October 2nd

Honorarium £50 per annum

Applicants must be duly qualified and registered Medical Practitioners

Particulars of the duties can be obtained on application.

LEONARD G. R. TURPIN Secretary

Royal Southern Hospital, LIVERPOOL.

Wanted, One HOUSE PHYSICIAN, and One MEDICAL OFFICER to the Special Department and RESIDENT ANAESTHETIST. The salary for the above appointments is £60 per annum including board and residence

The appointments will be for six months Duties commencing from October 1st

Applications, and copies of testimonials, to be sent to the undersigned immediately.

ALLEN NALDRETT, Superintendent & Secretary.

Altrincham General Hospital, CHESHIRE (100 Beds)

Applications are invited for the position of JUNIOR HOUSE SURGEON Salary at the rate of £120 per annum, with board, residence and laundry. The appointment is for six months in the first instance, commencing at once.

Applications, stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

Chester Royal Infirmary. (211 Beds)

Wanted, HOUSE SURGEON (male) to commence duties October 27th

Salary £150 per annum, with board, lodging and washing.

Application list closes October 3rd

Application forms may be obtained from the undersigned

W. H. GRACE, M.D., M.R.C.P., Hon. Supt of the Resident Medical Staff

September 8th, 1931.

London Homœopathic Hospital

(Incorporated by Royal Charter),
Great Ormond Street and Queen Square,
Bloomsbury, W.C.1.
(A General Hospital—172 Beds.)

POST OF RESIDENT MEDICAL OFFICER.

The periodical vacancies for the Three Resident Medical Officers, male or female, occur on February 1st, June 1st, and October 1st in each year, the appointment being for twelve months. Four months as Medical and Casualty Officer, four months as House Surgeon, and four months as Medical and Gynæcological Officer, with salary at the rate of £100 per annum, and board, apartments, and laundry.

Candidates must be legally qualified and registered.

Candidates will be required to attend a Meeting of the Medical Committee.

Applications, stating age, with 35 copies of application and 35 copies of each testimonial, may be sent for the October 1st vacancy as soon as possible to the Secretary.

Successful candidates are required to take the Hospital course of instructions in the principles and practice of Homœopathy.

EDWARD A. ATTWOOD, Secretary.

Metropolitan Hospital,

Kingsland Road, E.8.

There are vacancies for the following:
(a) SENIOR HOUSE PHYSICIAN (male);
(b) SENIOR HOUSE SURGEON (male);
(c) JUNIOR HOUSE PHYSICIAN (male);
(d) JUNIOR HOUSE SURGEON (male);
(e) TWO CASUALTY OFFICERS (male);
salary £100 per annum.

Appointments in the first place will be for a period of six months dating from Nov. 1st.

Candidates must possess a registered Medical and Surgical qualification of the United Kingdom.

Applications, with copies of three recent testimonials, and a certificate of ability to administer anæsthetics, should be sent to the undermentioned not later than first post on Monday, October 5th.

Two members of the Resident Staff are candidates for the two Senior appointments.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

The Royal Hospital,

WOLVERHAMPTON.
(Incorporated under Charter.)
(300 Beds.)

Owing to the sudden and lamented death of Mr. ANTHONY BLACKSTOCK, F.R.C.S.Eng., there is a vacancy on the Honorary Staff for a FRACTURE AND ORTHOPÆDIC SURGEON.

Applicants should possess special qualifications and experience in the treatment of fractures as well as orthopædic surgery. The Surgeon appointed will be expected to devote considerable time daily to his hospital work, and he will be paid a substantial annual honorarium for doing so. He will be at liberty to practise privately as an Orthopædic Surgeon, for which there is a good opening in the large and populous district served by the Hospital.

Further particulars may be obtained from the undersigned.

Wolverhampton, September, 1931. W. H. HARPER, House Governor.

Winsley Sanatorium,

near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Forms of application and particulars of duties can be obtained from the undersigned, to whom all applications should be addressed, accompanied by not more than three recent testimonials, not later than first post, October 6th.

T. A. W. CARLISLE,
Winsley Sanatorium, Near Bath. Sept. 12th, 1931. Secretary.

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER.

Applications are invited for the post of Resident Surgical Officer, which becomes vacant on October 1st next.

Appointment for twelve months. Salary £200 per annum, with board, apartments, etc.

Candidates holding an F.R.C.S. degree will be preferred.

Applications, stating age, qualifications, previous experience, etc., together with copies of three recent testimonials, to be forwarded to the undersigned on or before September 23rd next.

By Order of the Board,
HERBERT J. DAFFORNE,
September 7th, 1931. Gen. Supt. & Sec.

Royal Westminster Ophthalmic

HOSPITAL,
(Incorporated by Royal Charter),
Broad Street, Holborn, W.C.2.

Appointment of HOUSE SURGEONS required for November 1st.

FIRST HOUSE SURGEON. Salary at the rate of £100 per annum, with share of fees for Private Room cases.

SECOND HOUSE SURGEON. Salary at the rate of £80 per annum.

With board, residence, and laundry.

NOTE.—Candidates must be duly qualified Medical Practitioners, registered in this country, and must have had experience in Ophthalmology. Applications (in which should be stated whether the candidate is prepared to accept the Second House Surgeon appointment), accompanied by copies of testimonials, are to be sent to the Secretary on or before Saturday, October 3rd.

Intending candidates are requested to call upon the Staff of the Hospital, a list of whom can be obtained from the General Office.

Manchester Royal Infirmary.

BARNES CONVALESCENT HOSPITAL,
CHEADLE, CHESHIRE.

RESIDENT MEDICAL OFFICER.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is tenable for twelve months, subject to the provision of the By-laws as to notice.

Remuneration is at the rate of £250 per annum, with board and residence.

Applicants must state age, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 1st.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.
September 9th, 1931.

Manchester Royal Infirmary.

JUNIOR ASSISTANT MEDICAL OFFICER IN RADIOLOGICAL DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification.

The appointment (non-resident) is for twelve months, renewable for a further period of twelve months, subject to the provisions of the by-laws as to notice. Salary is at the rate of £400 per annum. Applicants must state age, and send twelve copies of the application and testimonials to the undersigned by 9 a.m. on Thursday, September 24th.

By Order,
FRANK G. HAZELL,
Sept. 2nd, 1931. Gen. Supt. & Secretary.

The General Hospital,

BIRMINGHAM.

MEDICAL REGISTRAR AND RESIDENT MEDICAL OFFICER.

Applications are invited for the above post from Graduates in Medicine of a University of the United Kingdom. Salary £155 per annum, with residence, board, and laundry.

The appointment will be made for one year in the first instance, and will date from November 1st next.

Applications, with certificates of registration and copies of testimonials, should be sent by September 28th, to the undersigned, from whom a list of duties should be obtained.

A. H. LEANEY, House Gov.

Queen Mary's Hospital for the EAST END, E.15.

Applications are invited for the undermentioned posts to the above Hospital.

Applications, accompanied by copies of testimonials, from male candidates only, should reach the undersigned not later than Wednesday, October 7th.

ANÆSTHETIST (Surgical)—Thursday mornings. Honorarium 50 guineas p.a.

ANÆSTHETIST (Dental)—Monday mornings. Honorarium £25 p.a.

RAPHAEL JACKSON (Major),
Secretary.

St. Albans and Mid Herts

HOSPITAL AND DISPENSARY,
Church Crescent, ST. ALBANS.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications to be sent to the Secretary, St. Albans and Mid Herts Hospital, No. 38, St. Peter's Street, St. Albans.

September 10th, 1931.

Leicester Royal Infirmary.

(472 Beds.)

ASSISTANT PATHOLOGIST.

Applications are invited at a commencing salary of £400 per annum. The successful applicant will work under the direction of the Pathologist, confine himself strictly to pathological practice, and co-operate with the Medical Officers to the Venereal Diseases Clinics at the Royal Infirmary. The post is a full time one, but private consulting practice in pathology only is allowed. Preference will be given to candidates with special Biochemical experience.

Applications to the House Governor and Secretary, accompanied by copies of testimonials, by Monday, November 2nd.

Duties to commence December 1st, or as arranged.

September 10th, 1931.

Leicester Royal Infirmary.

(472 Beds.)

RESIDENT ASSISTANT ANÆSTHETIST.

Applications are invited for the post. Appointment for six months with possibility of renewal. Salary £250 per annum, with board and residence. Qualified women will be considered. Particulars of special experience in the administration of anæsthetics supported by testimonials, with particular reference to anæsthetic work, to the House Governor and Secretary by first post on Monday, November 2nd. Duties to commence November 30th.

September 10th, 1931.

St. Chad's Hospital, Birmingham

(FOR PAYING PATIENTS.) (160 Beds.)

RESIDENT MEDICAL OFFICER required (male or female). This post offers exceptional educational advantages. The Medical Staff consists of thirty Consulting Specialists in all branches of Medicine. Salary £100 per annum, with furnished apartments, board (excepting stimulants), and laundry.

Candidates must be fully qualified and registered, and have previously held Resident posts.

Applications (marked R.M.O.) with full particulars of experience, age, etc., together with copies of recent testimonials, should be sent to the undersigned immediately.

DAVID J. RICHARDS,
House Governor.

Central London Throat, Nose, AND EAR HOSPITAL

Gray's Inn Road, W.C.1.

ASSISTANTS in the Out-patient Department.

There are vacancies for a Second Assistant for attendance on Mondays and for a Third Assistant for attendance on Saturdays—both days at 2 p.m.

The duties are to assist the Surgeons in seeing the patients, and the posts are honorary ones.

Applications, which may be for a period of three, six, or twelve months, should be sent to the undersigned on or before October 10th.

JOHN H. YOUNG,
Secretary-Superintendent.

Royal National Orthopædic HOSPITAL

HONORARY ASSISTANT SURGEON.

The Committee proposes to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out-Patient Department on Tuesday and Friday afternoons and charge of beds. Applicants must be F.R.C.S.(Eng.), and applications, with copies of three recent testimonials, should be received by the Secretary, 234, Gt. Portland Street, W.1, on or before October 8th.

Leicester Royal Infirmary.

(472 Beds.)

There will be vacancies for TWO SURGICAL DRESSERS (Final Year Students preferred) on October 1st.

Honorarium 10 6 per week for approved service. Board, etc., provided. Three months' appointment.

Applications to the House Governor and Secretary of the Hospital.

September 11th, 1931.

Taunton and Somerset Hospital,

TAUNTON. (164 Beds.)

Lady ASSISTANT HOUSE SURGEON required at end of September. Period of appointment not exceeding six months in the first instance. Salary at the rate of £100 per annum, with board, residence, and laundry.

Application with testimonials, to F. J. J. STACEY, Secretary.

County Council of Middlesex.

THE COUNTY (TUBERCULOSIS) SANATORIUM, CLARE HALL, SOUTH MIMMS, MIDDLESEX.

ASSISTANT RESIDENT MEDICAL OFFICER.

The County Council invite applications for the post of Assistant Resident Medical Officer (male) at the above Institution, at a salary of £400 per annum, rising by annual increments of £50 to £600 per annum, with board, lodging, and laundry, valued at £100 per annum.

Candidates must be registered Medical Practitioners, not over thirty-five years of age, unmarried, and of British nationality. They must have held resident Hospital appointments. Practical experience in the diagnosis and treatment of Tuberculosis will be an additional qualification

The officer appointed will be required to devote his whole time to the duties of the post, and to contribute to the County Council's Superannuation Fund. For the latter purpose he will be required to pass such medical examination as the County Council may direct

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, stating (1) name, (2) age, (3) experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd. No special application forms are provided. Envelopes must be endorsed "Assistant Medical Officer, Clare Hall"

Canvassing, directly or indirectly, will be a disqualification.

ERNEST S. W. HART,
Clerk of the County Council.

Guildhall, Westminster, S.W 1.
September 15th, 1931

Hertfordshire County Council.

WARE PARK SANATORIUM.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of Assistant Medical Officer of the County Sanatorium, Ware Park, near Ware.

Age not less than 25 or more than 40 years

Applicants must not be married men, and should be qualified Medical Practitioners, with hospital experience, and preference will be given to those who have had experience of the institutional treatment of tuberculosis.

The appointment is for one year.

Salary £300 per annum, with furnished rooms rent free, together with board, washing, light, fuel, and service.

Forms of application, with particulars, can be obtained from the Clerk of the County Council, Clerk of the Peace Office, Hertford, Herts, and must be returned duly completed before October 3rd.

ELTON LONGMORE,
Clerk of the County Council.

Clerk of the Peace Office,
Hertford Sept, 1931.

Bedford County Hospital.
(124 Beds)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon Secretary, Hon. Medical Staff Committee, as soon as possible.

Liverpool & Samaritan Hospital
FOR WOMEN.

Wanted, a HOUSE SURGEON for six months, commencing October 1st Salary at rate of £100 per annum Applications, with testimonials, to be addressed to the undersigned by September 22nd.

J. ST G. WILSON.

13, Rodney Street, Liverpool

Liverpool Heart Hospital.

HONORARY ASSISTANT PHYSICIAN.

Applications are invited for the post of Honorary Assistant Physician Candidates must not be engaged in general practice. Applications should be sent to Miss LEWIS, 14, Cook Street, Liverpool, not later than October 5th.

Nuneaton General Hospital.
(80 Beds)

HOUSE SURGEON required December 1st (male or female) The appointment is for six months in the first instance Salary £120 per annum, with board and lodgings, and certain other emoluments amounting roughly to £60 per annum Apply to Secretary of Medical Staff before September 26th.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners for the posts of AREA TUBERCULOSIS PHYSICIANS (two) Salary £750 per annum, rising biennially by increments of £50 to £937 10s per annum, together with travelling and subsistence allowances when away from base.

Applicants must have had three years' experience in the practice of their profession, viz., general Clinical work, for a period of not less than eighteen months, of which not less than six months must have been spent in a Hospital as a resident officer in charge of beds occupied by general, medical, and surgical cases They must have received special training for a period of not less than six months in the diagnosis and treatment of Tuberculosis

The posts are subject to the provisions of the Superannuation Scheme of the Association, for which purpose it will be necessary for the successful applicants to pass a medical examination

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should reach the undersigned not later than October 1st.

D. A. POWELL,
Principal Medical Officer.

Westgate Street, Memorial Offices, Cardiff.

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine)

Number of available Beds—490.

Applications are invited for the undermentioned posts:

ONE HOUSE PHYSICIAN.
ONE HOUSE SURGEON.

Salary at the rate of £50 per annum, with board and lodging. Appointments are for six months, commencing immediately, as the posts are now vacant.

Graduates of other Medical Schools, as well as the Welsh National School of Medicine, are eligible for these posts

Applications, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

R. ARMSTRONG,
September 15th, 1931. Medical Supt.

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine.)

Number of available Beds—490.

Applications are invited for the following posts:

ONE HOUSE SURGEON—Surgical Unit
ONE HOUSE SURGEON—Gynæcological Department

Salary at the rate of £50 per annum, with board and lodging. Appointments are for six months, commencing October 20th.

Forms of application can be obtained from the undersigned, and should be returned, with copies of three recent testimonials, on or before October 5th.

R. ARMSTRONG,
September 15th, 1931. Medical Supt.

Batley and District Hospital.
(General Hospital—84 Beds)

Applications are invited for the position of RESIDENT HOUSE SURGEON (male). Salary £175 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, with copies of testimonials, should be sent to the undersigned.

A. W. WESTERN,
Batley, Yorks. Secretary.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, now vacant. The appointment is for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, giving age, qualifications, and experience, with copies of three testimonials, to be sent to the Secretary at once.

Golden Square Throat, Nose, and
EAR HOSPITAL, London, W.1.

Applications are invited for the post of HONORARY SURGEON.

Candidates must be Fellows of the Royal College of Surgeons of England Applications, stating age, qualifications, and experience, accompanied by copies of three testimonials, should be received by the undersigned on or before Wednesday, October 7th

F. P. CARROLL,
Sept. 15th, 1931. Secretary Supt.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on October 14th

Gentlemen are invited to send in their applications, addressed to the Secretary, by 12 o'clock, on Monday, October 5th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at the Meeting on Wednesday, October 7th, at 3 p.m. precisely.

Forms of application and copies of the duties may be obtained from the Secretary

By Order of the Board of Management,
JAMES McKAY,
September, 1931. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1

There is a vacancy for a CLINICAL ASSISTANT in the Out-patient Medical Department

The appointment is made for six months but may be held, subject to re-election, for a further period

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up duties when appointed.

The selected candidate will be required to attend on two mornings each week at 9 a.m.

Forms of application and copies of the duties for, and details of the duties of the appointment, will be supplied on application to the Secretary

By Order of the Board of Management
JAMES McKAY,
September, 1931. Secretary

South London Hospital for
WOMEN, Clapham Common, S.W.4

A General Hospital for Women and Children (120 beds), including Medical, Surgical, Ear, Nose and Throat, Ophthalmic, Skin, Orthopædical, and other Special Departments

Applications are invited from fully qualified Medical Women for the undermentioned appointments:

HOUSE PHYSICIAN;
TWO HOUSE SURGEONS,
each for a period of six months from 1st November 1st.

Salary at the rate of £100 per annum, with board, residence, and laundry Candidates are requested to call on members of the Honorary Medical Staff before October 3rd, by which date applications and copies of testimonials must reach the Secretary at the Hospital

Gateshead Dispensary.

GATESHEAD COUNTY OF DURHAM

Applications are invited for the post of ASSISTANT MEDICAL OFFICER (non-resident) to take up duties early in October. Salary £300 to £350, according to experience. Candidates must be duly registered Medical Practitioners, and should send their applications, with copies of recent testimonials, to me not later than September 30th. The successful applicant will be required to reside in Gateshead

J. PENWICK, Secretary.

City of London Hospital for
DISEASES OF THE HEART & LUNGS,
Victoria Park, E.2
('Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway)

A vacancy for a HOUSE PHYSICIAN (male) will occur on November 1st. Six months' appointment Salary at the rate of £100 per annum. Board, residence, and laundry free.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Friday, October 16th

GEORGE WATTS, Secretary.

Nottingham General Dispensary,
Broad Street, NOTTINGHAM.

Wanted, RESIDENT SURGEON (male), unmarried Must have Medical and Surgical qualifications Salary £250, with attendance, lights, and fuel (not board) This Institution is a non-provident one. No beds. No midwifery.

Applications, stating age and qualifications, to be sent by copies of recent testimonials, to me not later than Sept mber 25th, to—

R. J. WHEATT,
5, Thurland St., Secretary.
Nottingham.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE (*Assistant Medical Officer—Bi-annual*)	**CONTRACT PRACTICE** (*contd*)	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MALDY, GLAMORGAN (*Workmen's Medical Scheme*)	DEVON COUNTY COUNCIL (*School Medical Inspector—Male*)
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION (*Medical Practitioner*)	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE (*Workmen's Medical Scheme*)	STEWARTRY OF KIRCUDBRIGHT (*Assistant Medical Officer and Assistant School Medical Officer*)
EBBW VALE, MON (*Workmen's Medical Society*)	NEATH AND DISTRICT (*Medical Aid Association*)	SOMERSET COUNTY COUNCIL (*Assistant Medical Officer*)
GILFACH GOCH, GLAMORGAN (*Workmen's Medical Scheme*)	OAKDALE, MON (*Medical Officer for Medical Aid Association*)	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE (*Assistant School Medical Officer*)
LOWESTOFT MEDICAL INSTITUTE (*Medical Officer*)	OGMORE VALLEY, GLAMORGAN (*Wyndham Colliery Medical Aid Society*) (*Workmen's Medical Scheme*)	
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN (*Workmen's Medical Scheme*)		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District.	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES. (*All Friendly Society Appointments*)	Dr J G HUNTER (Medical Secretary New South Wales Branch), 135 Macquarie St, Sydney N S W.	**SOUTH AUSTRALIA.** (*Lodge Appointments*)	Secretary, South Australian Branch, B M A House, 206 North Terrace, Adelaide	**WELLINGTON, NEW ZEALAND.** (*Contract Practice Appointments*)	Dr G F [illegible]
QUEENSLAND. (*Brisbane Associated Friendly Societies Institute*)	The Hon Sec, Queensland Branch, British Medical Association B M A Building Adelaide St, Brisbane	**VICTORIA.** (*All Institute or Medical Dispensaries*)	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association Medical Society Hall East Melbourne, Victoria	**WESTERN AUSTRALIA.** (*Contract and Lodge Practice*)	Hon Sec, Western Australian Branch B M A Perth, Western Australia

September 16th, 1931. By Order of the Council ALFRED COX, Medical Secretary

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Royal Sea Bathing Hospital for SURGICAL TUBERCULOSIS, MARGATE

A Male HOUSE SURGEON is required The salary is at the rate of £200 per annum, with board, residence, attendance, and laundry.

Candidates for the post must be legally qualified and registered

The appointment is for six months, but may be extended for a further period of six months

There are 302 beds for adults and children, which afford special opportunities for the study of Surgical Tuberculosis

Applications, stating age, previous appointments, with copies of three recent testimonials, should be sent to the Secretary, R S B H Offices, 15 York Buildings, Adelphi, London, W C 2

Royal Hospital, Richmond, SURREY

JUNIOR HOUSE SURGEON (male) required to take up duties on October 1st Salary at the rate of £100 per annum, with board furnished apartments and washing Candidates must be fully qualified registered, and single The appointment will be for six months, after which the successful candidate will be eligible for the senior post Applications, stating age, experience together with copies of three recent testimonials, must be forwarded to me as soon as possible.

RICHARD ALLEN, Secretary

Great Yarmouth General HOSPITAL (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments)

Applicants must be male and unmarried Salary at the rate of £110 per annum, with board, residence, and laundry

Applications, stating age and qualifications, together with copies of three recent testimonials to be forwarded to the undersigned

FRANK JENNINGS, Secretary.

The London Female Lock HOSPITAL, 283, Harrow Road London, W 9

The Board of Management invite applications for the post of HOUSE SURGEON (female) Salary at the rate of £150 per annum, with furnished rooms full board and washing Candidates must be doubly qualified and duly registered, should send in their applications by the first post on September 28th (accompanied by copies of three recent testimonials) to the undersigned, from whom further particulars can be obtained The appointment is for six months commencing October 9th Preference will be given to candidates having previous Obstetric experience

By Order of the Board
H J EASON, Secretary

September 11th, 1931

Cossham Memorial Hospital, KINGSWOOD, BRISTOL

Applications are invited for the post of HOUSE SURGEON, to commence duties at the end of September [illegible] salary £150 per annum and laundry

Applications stating age, qualifications, and previous experience, accompanied by three recent testimonials, should be sent to the Secretary

---

Queen's Hospital for Children, Hackney Road, London, E 2

HOUSE PHYSICIAN required on October 1st Six months appointment Salary at the rate of £100 a year, with board, lodging, and washing

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before September 21st

CHARLES H BESSELL, Secretary.

September 1st, 1931.

St. Mary's Hospital, W.2.

OBSTETRIC REGISTRAR

The Board of Management invite applications for the above post

Candidates for the appointment must be Fellows or Members of the Royal College of Surgeons of England or Graduates in Surgery of a British University An Honorarium of £50 per annum will be paid with lunch and tea provided Copies of the regulations for the Obstetric Registrar may be obtained upon application to the Secretary's Office

Applications, with copies of not more than three testimonials, should reach the undersigned on or before September 25th

W PARKES, Secretary

National Hospital, Queen Sq, W C 1

ASSISTANT REGISTRAR

Applications are invited for the post of Assistant Registrar who will be required to attend the Hospital each afternoon in the Out-patient Department with regard to [illegible] year Applications, with testimonials from [illegible] should reach the undersigned not later than October 1st

Further particulars may be obtained upon application before That date

GODFREY H HAMILTON, Secretary

Aberdeen Royal Infirmary

The Board of Directors require [illegible] for the post of JUNIOR ASSISTANT [illegible] to be attached to the Medical [illegible] from [illegible] Three copies of [illegible] should be sent to the Secretary, not later than [illegible]

JOHN A WOODSACHIE, Clerk and Treasurer

250 Union Street, Aberdeen

(*Appointments continued on p 50*)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,

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Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

TO VIENNA BY CAR.

Two doctors leaving about October 8th. Two seats vacant at less than railway rates. Via Berlin.—"G W M.," St. Mary Abbots Hospital, London, W 8

ASSISTANCIES.

Wanted, a male qualified ASSISTANT, with a view to Partnership if suitable, in a lucrative Practice.—Address, stating age, qualifications, when qualified, and nationality (Welshman preferred, but not essential), No. 5765, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — October (early).— Married ASSISTANT, or single; Eng. or Scotch, ex H.S., some exp. gen. practice. Nice unfurnished house. Car and dispenser. Good prospects. Near Manchester. £430. Full particulars and photo.—Address, No. 5767, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, young, unmarried, in pleasant semi-rural Practice. Work light. Knowledge of panel work an advantage. Salary £300 to £350, according to qualifications, with rooms and attendance.—Apply, DOCTOR, Murray House, Chesterfield.

Wanted. — Assistantship, with definite early view, in country or country town Practice, South or West, by M.B., B.Ch., ex H.S., experienced G.P. Own car. Free October.—Address, No. 5764, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship (outdoor), whole or part time, in or near town, by Medical Woman. L.R.C.P.S., L.M., D.P.H., 5 years' exper., good midwy., accus. sole charge, free early October.—Address, No. 5778, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.R.C.S., L.R.C.P., woman, aged 30. Four years' experience of general practice, private and panel. Used to sole charge. Free October. Interview London. — Address, No. 5855, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, indoor or outdoor, by woman M.B., B.Ch., D.P.H., aged 32. Good experience panel and private. Excellent testimonials. Disengaged in London now.—Address, No. 5783, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for general and panel Practice, Yorkshire. One recently qualified and desiring experience preferred. Able to drive car. Usual bond. Salary £250. — Address, No. 5608, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant, single, British. Panel and private Practice, near Newcastle-upon-Tyne. Car provided. Very little night work. Salary £276. State age and essential particulars.—Address, No. 5733, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, male, indoor Assistant, mixed Country Practice, S.W. England. Work easy, suit newly qualified man. Scotch or English Graduate and Protestant preferred. Salary £250 with prospects. — Address, No. 5777, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — October.—Male Indoor ASSISTANT, single, mixed Practice, South Wales. Car, dispenser kept. Recently qualified preferred. Usual bond. £280, all found. State essential particulars.—Address, No. 5868, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, in London suburb. Young, single; able to drive car; sober and reliable. Recently qualified not objected to. English or Scotch. Salary £400 per annum.—Address, No. 5858, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, in small industrial town in the North. State age, experience, and other essential particulars. — Address, No. 5787, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant. Mixed Practice. Light work. Bristol. Suit recently qualified man. £250 p.a. Usual bond.—Address, No. 5872, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view or succession, married, English, M.R.C.S. South of England—Dorset or Hants preferred. Ex H.P., H.S. Exp. G.P.—Address, No. 5756, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or LOCUMS by Woman Doctor. 5½ years' experience in private and panel practice. Accustomed to sole charge. Can drive car.—Address, No. 5785, B.M.A. House, Tavistock Sq., W.C.1.

Wanted for panel Practice in Midlands, work light, a male, indoor, ASSISTANT. Salary £300 per annum. Able to drive car is desirable. — Address, No. 5863, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, male indoor Assistant for Industrial Practice near Newcastle-upon-Tyne. Salary £300 p.a. State age, nationality, and any other particulars.—Address, No. 5610, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, with view Partnership or Succession, sought by L.A.H., married. 12 yrs.' experience; hospital, tropical, and G.P., priv. and panel, anaesthetics. Good personality and references. Own car.—Address, No. 5779, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship by M.B., B.Ch. Cambridge, preferably with view; ex H.S., H.P., and C.O.; aet. 25, English, single, keen. Free in month. — Address, No. 5761, B.M.A. House, Tavistock Square, W.C.1.

Assistant, young, wanted at once, outdoor, single, Cheshire. Mixed Practice in pleasant town. Dispenser kept. Usual bond. Coupé provided. Salary £400.—Address, No. 5781, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with prospects, by M.B., Ch.B. (Glasg.), aet. 27, ex H.S., experienced private, panel. Own car.—Address, No. 5616, B.M.A. House, Tavistock Sq., W.C.1.

L.R.C.P. and S.Ed. (lady), desires ASSISTANTSHIP. Experienced in G.P., private, panel dispensing. Drive car. Moderate salary. Excellent testimonials.—Add., No. 5864, B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Wanted, outdoor ASSISTANT, General Practice (private and panel). Salary £435, with car allowance. Welsh desirable. Usual bond. References required. — Address, No. 5859, B.M.A. House, Tavistock Square, W.C.1.

Required by M.R.C.S., L.R.C.P., age 31, qualifying for diploma, ASSISTANTSHIP with view, with Radiologist, London or South preferred.—Address, No. 5788, B.M.A. House, Tavistock Square, W.C.1.

Yorkshire. — Wanted at once, outdoor, male ASSISTANT (British or Irish), £400 p.a., rising. Single. Some experience. Usual bond. Full particulars, photo. —Address, No. 5763, B.M.A. House, Tavistock Square, W.C.1.

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Medical Journalism. — Applications invited from well qualified Men (age preferably under 35) for whom post as SUB-EDITOR of Medical Journal. probation. Commencing salary £750. particulars of professional and literary qualifications, age, education, and knowledge languages, to be addressed, No. 5771, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, a Skilled MICROSCOPIST, one with experience in Neuropathology and in staining Peripheral Nerves preferred.—Apply, by letter, to Dr. CHARLES BALLANCE, Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.2.

Wanted, young Medical, 4 or 5 EVENING SURGERIES during week. Panel Practice. Who could, if required, do Mornings occasionally. Preferably one at least higher degrees. District easily accessible.—No. 5865, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part time. Bookkeeper Dispensers, Secretary-Dispensers, Nurse Dispensers, and wire, or 'phone ICE BUREAU, 168 raduct, E.C.1.

Doctor's Dispenser-Bookkeeper (male), fully experienced surgery work, desires POST, middle-aged; unqualified. West or East London preferred. — "R.I.M.," 140, Becontree Avenue, Chadwell Heath, Essex.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary-Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5659, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Lady Dispenser requires Post in or near London. Six years' experience. Miss WARMINGTON, 27, Spencer Road, Putney, S.W.15.

Lady Secretary desires employment two/three evenings a week. Address, No. 5770, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B., British, 28, attending P.G. Classes, London, for 6—9 months, desires to take EVENING SURGERIES or Night Calls in return for board, lodging. Highest references. — Address, No. 5870, B.M.A. House, Tavistock Square, W.C.1.

Nucleus, 2 years, suitably situated, Hampstead; panel 190; total £1,[illegible] inerg. Good scope. Intend going back to [illegible]. Quick offer accepted, full scrutiny, no [illegible] sibility. 'Phone bet. 7—8.30 p.m. Gulliver 14[illegible] or No. 5776, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Work wanted by Woman Doctor, preferably London or seaside. — Address, No. 5856, B.M.A. House, Tavistock Square, W.C.1.

Secretary. — Lady desires Post with Medical Gentleman, thoroughly [illegible] edge bookkeeping, shorthand, typewriting, correspondence, etc.; also good experience all household duties. — Address, No. 57[illegible], B.M.A. House, Tavistock Square, W.C.1.

Secretary or Receptionist, gentlewoman (23), qualified secretarial [illegible] POST with Doctor. Exp. medical [illegible] duties, some laboratory work, care and [illegible] ing instruments. Doctors' excellent testimonials.—CAPON, 57, Kensington Garden Square, [illegible].

Testimonials Duplicated [illegible] return of post. Prices [illegible] 12 copies 1/6; 50, 2/6; 100, 4/-.—Miss [illegible] McFARLANE (B.M.J.), 44, Elderton [illegible], Westcliffe-on-Sea.

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For Disposal at end of year.— ONE THIRD and later ONE HALF of old established PRACTICE in delightful country district easy reach of London and near popular South Coast Resort Receipts average £3 700 Premium 2 years purchase House available on easy terms Incoming partner should be about 30 married public school boy and have held resident appointments —Address No 5609, B M A House, Tavistock Square, W C 1

London, S W. — Half share of each and panel PRACTICE Total receipts £2 500 including panel £2 070 Flat or house available Premium for share 2 years' increase or near offer — Apply PEACOCK & HADLEY LTD, 19, Craven St, Strand, W C 2

M B, Ch.B, aet 40, wishes to hear of prospective PARTNERSHIP in pleasant district near London or other large City Own Practice eleven years, with special experience in anaesthetics and electro therapeutics Opportunity to practise the same desirable Full particulars —Address No 5857, B M A House, Tavistock Square, W C 1

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Near South Coast Resort, a One-SIXTH SHARE with increase to one fourth later in old-established Practice in Market Town Receipts £6 000 approx Panel 3,000 All appts 2 yrs purch, cap essen House on lease —No 5780, B M A House, Tavistock Sq W C 1

Norfolk — Third share worth £700/£800 p a of an old established PRACTICE Total receipts average £2 400 p a good panel Offers considered easy terms agreed to —Apply PEACOCK & HADLEY, LTD, 19 Craven Street Strand, W C 2

Physician wanted as a Fourth PARTNER in a large and exceptional Practice in a county town with a Hospital Must be well qualified, and have held a variety of Medical appointments and if possible, specialized in some particular branch of Medicine —No 5606, B M A House, Tavistock Sq, W C 1

Yorkshire City.—Partnership in old-established easily worked Practice Average receipts £3 000 p a, audited Panel 3 600 Good house with small garden, garage, separate entrance to professional rooms Price £1 600 with large part on mortgage Premium for half share 1½ years purchase —Address, No 5775, B M A House Tavistock Sq, W C 1

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Wanted in a few months, PRACTICE or PARTNERSHIP Income 1 500 —£2 000 Good panel Cash available Strict confidence Country preferred, but not essential — Address, No 5867, B M A House Tavistock Square, W C 1

Wanted to purchase in near future small PRACTICE, with available house, in country, preferably moderately near London Must be scope for development for doctor and wife to form Partnership later — No 5762 B M A House, Tavistock Sq, W C 1

Wanted —Ophthalmic Practice or PARTNERSHIP Advertiser prepared to wait 6—9 months but would like to open negotiations now Minimum income £1 000 —Address No 5764, B M A House, Tavistock Square W C 1

Wanted immediately, small PRACTICE or PARTNERSHIP in South of England or vicinity Experienced man —Address No 5773, B M A House, Tavistock Square, W C 1

Wanted by M.B., Ch B, aged 30 experienced a PRACTICE of about £1 000, with good panel or Partnership offer —Address No 5757, B M A House, Tavistock Square W C 1

Wanted.—Middle and working-class PRACTICE in large town Substantial panel Income £1,200 upwards Cash available —Address No 5862, B M A House, Tavistock Square W C 1

Wanted — Panel and Private PRACTICE Southern Counties In come £1 000 to £1 500 House, preferably to rent Strict confidence —Address No 5782 B M A House Tavistock Square W C 1

Wanted — Good-class Practice in London N W area or West End Capital available —Address No 5611, B M A House, Tavistock Square W C 1

Advertiser, with monopoly of new estate of 1 400 houses in busy area, 10 miles London, wishes to meet gentleman with view to developing this on Partnership basis Share of existing Practice might be given — No 5865, B M A House, Tavistock Sq W C 1

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East Lancs Town — For Sale, old-established PRACTICE with Branch Surgery Industrial and middle class Receipts about £800 p a Panel 950 Price £1 200 (debts optional) Residence and Branch Surgery at a reasonable figure Good introduction Vendor retiring — Apply, ROBT FERGUSON, Solicitor 9, Tacketts Street Blackburn (Tel No 5918)

Experienced General Practitioner, age 31 yrs desiring to move into or near Edinburgh for family reasons would like to hear of mixed PRACTICE likely to be for sale in the near future Income £700 to £1,000 Partnership, with early succession, would be considered — Address No 5750 B M A House, Tavistock Square, W C 1

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Cricklewood. — To Let, part of the CORNER RESIDENCE in select locality Splendid opportunity to establish good Practice Or would make ideal Branch Practice Every convenience telephone, etc — Write W., 74, Anson Road, N W 2

British Medical Journal,

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(Lines average 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

TO VIENNA BY CAR.

Two doctors leaving about October 8th. Two seats vacant at less than railway rates. Via Brünn.—G.W.M., St Mary Abbots Hospital, London, W.8.

ASSISTANCIES.

Wanted, a male qualified ASSISTANT, with a view to Partnership if suitable, in a lucrative Practice.—Address, salary, qualifications, when qualified, and references (Welshman preferred, but not essential), No. 5765, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — October (early).— Married ASSISTANT, or single, Eng. or Scotch ex H.S., some exp. gen. practice. Nice unfurnished house. Car and dispenser. Good prospects. Near Manchester. £430. Full particulars and photo.—Address, No. 5767, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, young, unmarried, in pleasant semi-rural Practice. Work light. Knowledge of panel work an advantage. Salary £300 to £350, according to qualifications, with rooms and attendance.—Apply, Doctor, Murray House, Chesterfield.

Wanted. — Assistantship, with definite early view, in country or country town Practice, South or West, by M.B., B.Ch., ex H.S., experienced G.P. Own car. Free October.—Address, No. 5764, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship (outdoor), whole or part time, in or near town, by Medical Woman L.R.C.P.S., L.M., D.P.H., 5 years' exper., good midwife; accustomed charge; free early October.—Address, No. 5766, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.R.C.S., L.R.C.P., woman, aged 30. Has two years' experience of general practice, panel and private. Used to sole charge. Free October. Interview London.—Address, No. 5769, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, indoor or residential, by woman M.B., B.Ch., D.P.H., aet. 32. Good experience panel and private. Ex H.S. Excellent testimonials. Disengaged in October.—Address, No. 5785, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for general and panel Practice, Yorkshire. One recently qualified and desiring experience preferred. Able to drive car. Panel list small. Salary £250.—Address, No. 5608, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant, single, British. Panel and private practice near Newcastle-upon-Tyne. Car provided. Little night work. Salary £276. Full particulars and testimonials.—Address, No. 5775, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, male, indoor Assistant, for Country Practice, S.W. England. Must be single, prefer Irish, Scotch or Welsh graduate. Roman Catholic preferred. Salary £300 per year to start.—Address, No. 5774, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — October.—Male Indoor ASSISTANT, single, mixed Practice, South Wales. Car, dispenser kept. Recently qualified preferred. Usual bond. £280, all found. State essential particulars.—Address, No. 5868, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, in London suburb. Young, single; able to drive car; sober and reliable. Recently qualified not objected to. English or Scotch. Salary £400 per annum.—Address, No. 5858, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, in small industrial town in the North. State age, experience, and other essential particulars. — Address, No. 5787, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Assistant. Mixed Practice. Light work. Bristol. Suit recently qualified man. £250 p.a. Usual bond.—Address, No. 5872, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Assistantship or LOCUMS by Woman Doctor. 5½ years' experience in private and panel practice. Accustomed to sole charge. Can drive car.—Address, No. 5785, B.M.A. House, Tavistock Sq., W.C.1.

Wanted for panel Practice in Midlands, work light, a male, indoor, ASSISTANT. Salary £300 per annum. Able to drive car is desirable. — Address, No. 5863, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, male indoor Assistant for Industrial Practice near Newcastle-upon-Tyne. Salary £300 p.a. State age, nationality, and any other particulars.—Address, No. 5610, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, with view Partnership or Succession, sought by L.A.H., married, 12 yrs.' experience; hospital, tropical, and G.P., priv. and panel, anaesthetics. Good personality and references. Own car.—Address, No. 5779, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship by M.B., B.Ch. Cambridge, preferably with view; ex H.S., H.P., and C.O.; act. 25, English, single, keen. Free in month. — Address, No. 5761, B.M.A. House, Tavistock Square, W.C.1.

Assistant, young, wanted at once, outdoor, single, Cheshire. Mixed Practice in pleasant town. Dispenser kept. Usual bond. Coupé provided. Salary £400.—Address, No. 5781, B.M.A. House, Tavistock Square, W.C.1.

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L.R.C.P. and S.Ed. (lady), desires ASSISTANTSHIP. Experienced in G.P., private, panel [illegible]. Drive car. Moderate salary. [illegible].—Address, No. 5864, B.M.A. House, Tavistock Square, W.C.1.

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Required by M.R.C.S., L.R.C.P., age 31, qualifying for diploma, ASSISTANTSHIP with view, with Radiologist, London or South preferred.—Address, No. 5788, B.M.A. House, Tavistock Square, W.C.1.

Yorkshire. — Wanted at once, outdoor, male ASSISTANT (British or Irish), £400 p.a., rising. Single. Some experience. Usual bond. Full particulars, photo.—Address, No. 5763, B.M.A. House, Tavistock Square, W.C.1.

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Wanted immediately, small PRACTICE or PARTNERSHIP in Scotland or England or Ireland Experienced man—Address No 5863 B M A House Tavistock Square W C 1

Wanted by M B, Ch B, aged 30 experienced PRACTICE or PARTNERSHIP £1 000 with Panel or Partnership preferred Address No 5865 B M A House Tavistock Square W C 1

Wanted—Middle and working-class PRACTICE in large town South Midland preferred Income £1 200 upwards Cash available—Address No 5862 B M A House Tavistock Square W C 1

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APPOINTMENTS.—Contd.

City of Sheffield King Edward VII HOSPITAL, RIVELIN VALLEY, SHEFFIELD.

RESIDENT HOUSE SURGEON required immediately for above Hospital, which is for the treatment of surgical forms of Tuberculosis and of Rickets. 150 beds.

Experience in Anaesthetics desirable.

The officer appointed may be required to attend the out-patient department for Surgical Tuberculosis, and also the Rickets Clinic of the Maternity and Child Welfare Centre.

Salary at the rate of £150 per annum, with board and laundry.

Appointment for six months, with possible extension for further six months.

Applications, with testimonials, should be addressed to the Medical Superintendent.

Horton General Hospital, BANBURY, OXON. (60 Beds)

RESIDENT MEDICAL OFFICER (Male or Female.)

The Committee invite applications for the post of Resident Medical Officer at the above Hospital for a period of six months at a salary at the rate of £150 per annum, with quarters, board, attendance, and laundry.

Applications, stating age, sex, nationality, qualifications, with copies of testimonials, to be forwarded to the undersigned not later than Monday, September 28th.

RICHARD H. PRESCOTT,
Secretary & House Governor.
September 15th, 1931.

St. Bartholomew's Hospital.

APPOINTMENT OF DENTAL HOUSE SURGEON.

Applications are invited for the office of House Surgeon to the Dental Department.

Candidates must hold a registrable Dental qualification.

A medical qualification in addition is desirable, but not essential.

Appointment will be made for six or twelve months from November 1st.

The salary attached to the office is £80 per annum (non-resident).

Applications must be left with the undersigned on or before Saturday, *October 10th.*

THOMAS HAYES,
Sept. 9th, 1931. Clerk to the Governors.

A vacancy has occurred in the

office of HONORARY SURGEON in charge of the Ear, Nose, and Throat Department of the ROYAL HOSPITAL, RICHMOND, SURREY.

Applications are invited from gentlemen exclusively *engaged in the* practice of this speciality, and should reach the undersigned, from whom further particulars can be obtained, not later than September 30th.

RICHARD ALLEN, *Secretary.*

Royal Surrey County Hospital, GUILDFORD (182 Beds.)

Wanted, October 1st, HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating essential particulars, with copies of testimonials, to be sent to Secretary Superintendent.

The Sheffield Royal Hospital. (340 Beds.)

There are two vacancies for Residents:
OPHTHALMIC HOUSE SURGEON. £120 per annum;
ANAESTHETIST. £80 per annum, rising to £100 in six months.
Applications to—
W. H. BOOTH,
Superintendent & Secretary.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as DEPUTY MEDICAL SUPERINTENDENT at the MAUDSLEY HOSPITAL, Denmark Hill, S.E.5 (for treatment of *Incipient Mental Disorder*). Candidates, who must not be more than 40 years of age (unless already in the Council's Mental Hospital Service), must be registered to practise both in Medicine and Surgery in England. Appointment pensionable under the Asylums Officers Superannuation Act, 1909. Salary £850 a year, rising by annual increments of £50 to £950 a year. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. Application form (which gives full particulars) obtainable from Chief Officer (Ref. D.M.S.) L.C.C. Mental Hospital Dept., Artillery House, Artillery Row, S.W.1. Canvassing disqualifies. Applications must be received by October 3rd.

MONTAGU H. COX,
Clerk of the London County Council.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as ASSISTANT MEDICAL OFFICER in the Mental Hospital Service. Candidates must be under 35 years of age. They must be registered to practise both in Medicine and Surgery in England, must have of at least one year's professional standing, and must have held a residential position in a General Hospital for six months, or have had comparable general experience. Salary £475 a year, rising to £550 a year (additional allowance of £50 a year to holders of D.P.M.). Emoluments. Charge for board, lodging, etc. (at present £2 9s. a week) if required to be resident. Pensionable under Asylums Officers Superannuation Act, 1909. Application form, giving full particulars, obtainable from Chief Officer (Ref. B), L.C.C. Mental Hospitals Dept., Artillery House, Artillery Row, S.W.1. Applications must be received by October 3rd. Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

City of Liverpool.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of Resident Assistant Medical Officer at the SMITHDOWN ROAD HOSPITAL (1,100 beds), Liverpool, for a period of one year. Salary at the rate of £200 per annum, together with the usual residential allowances. All fees received in connection with the appointment to be handed over to the City Council.

The appointment will be made in accordance with the Standing Orders of the City Council and canvassing will be deemed a disqualification.

Candidates must be single, fully qualified and registered.

Applications, stating age, qualifications, etc., with copies of three recent testimonials, to be received by the undersigned not later than September 29th.

Brougham Terrace, WALTER MOON,
Liverpool. Town Clerk.
September 15th, 1931.

Macclesfield General Infirmary. (100 Beds.)

Wanted, SECOND HOUSE SURGEON. Salary £150 per annum, with board and residence.

Candidates must be legally qualified and have had experience in the administration of Anæsthetics. Appointment for six months.

Applications, stating qualifications and enclosing copies of three testimonials, should be sent to the undersigned.

A. E. HANRAHAN, *Secretary.*

Scarborough Hospital and DISPENSARY. (70 Beds)

Wanted, November 1st, Two HOUSE SURGEONS (male or female). Duties include Out-Visiting. Salary £175 per annum, with board, residence, etc. Appointment for six months.

Applications, stating age, with copies of testimonials and essential particulars, to be sent to the undersigned by September 26th, from whom further particulars may be obtained.

J. DOUGLAS MUNBY, *Hon. Secretary.*

Aberdeen Royal Mental Hospital.

The office of SECOND ASSISTANT PHYSICIAN in the Aberdeen Royal Mental Hospital is vacant, and applications for it are invited. Previous Mental Hospital experience essential.

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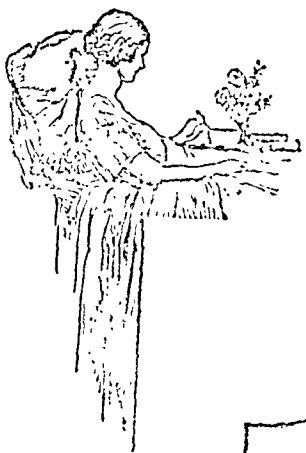
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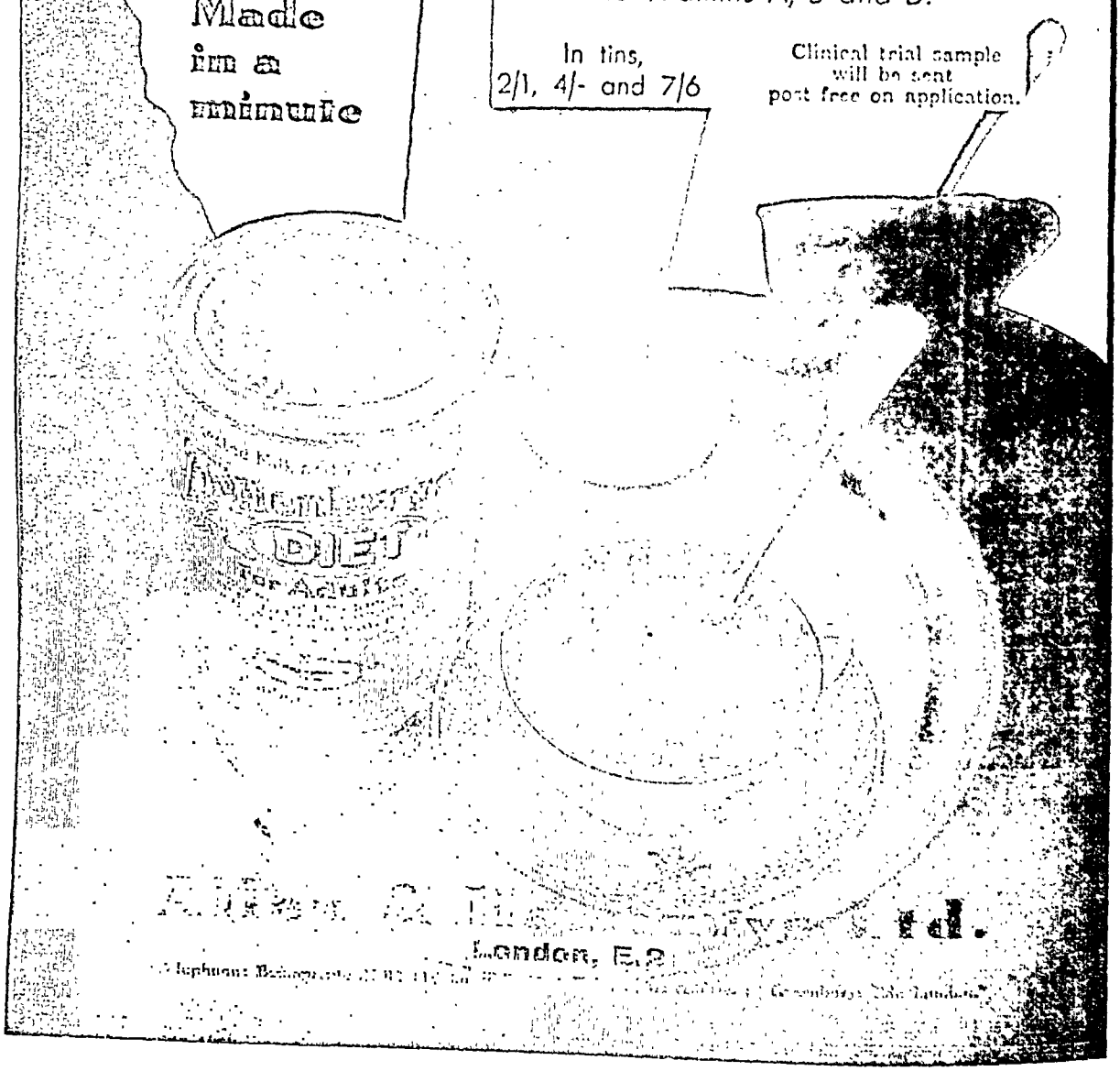


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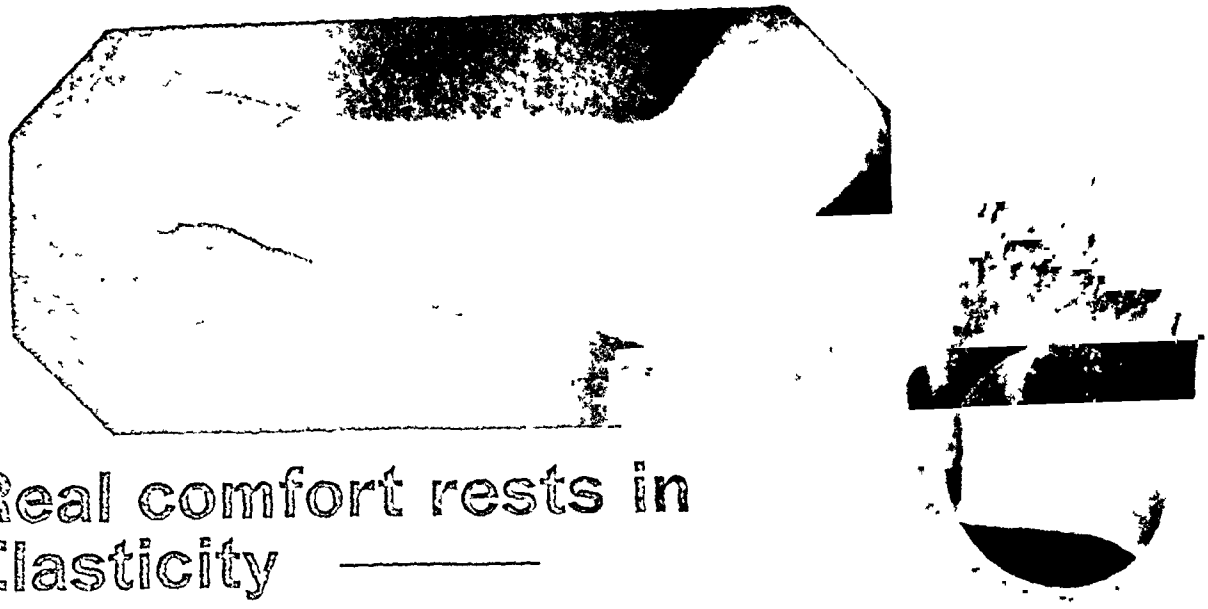
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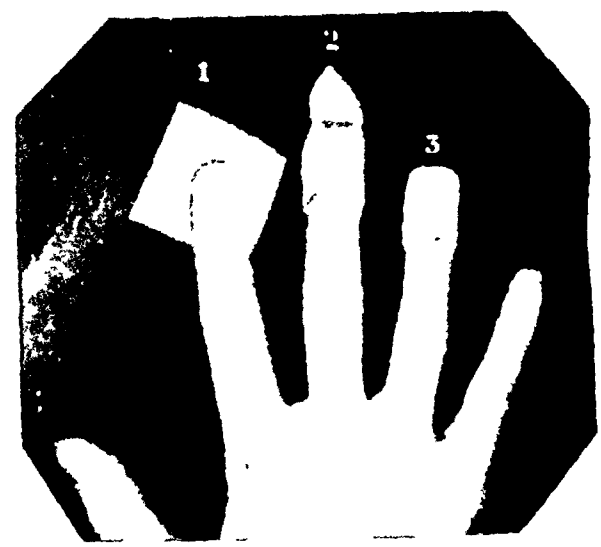


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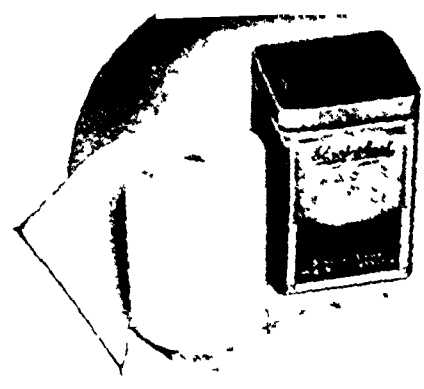
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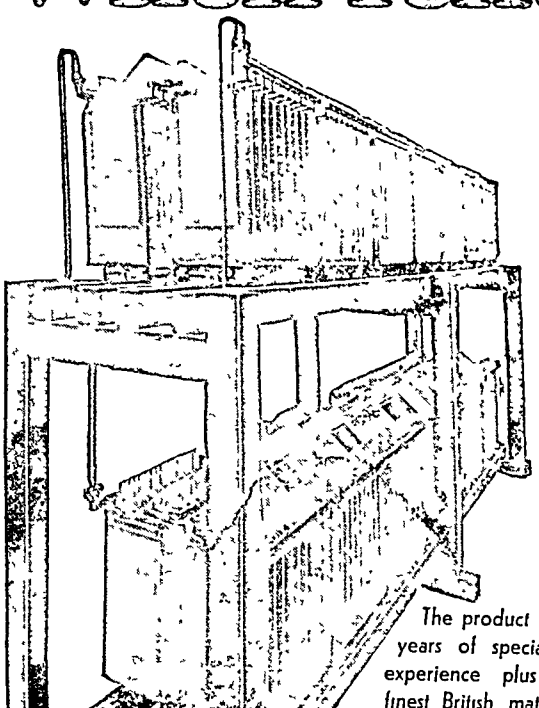
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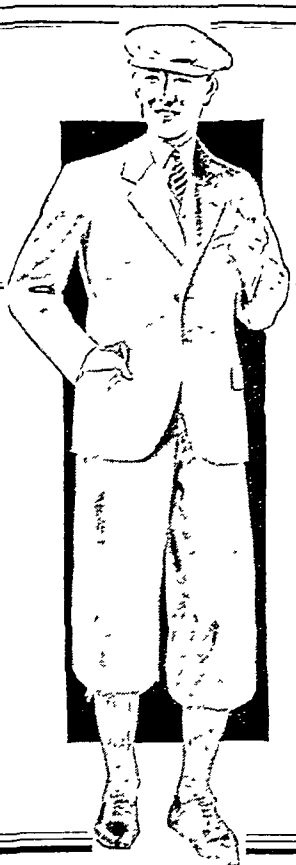
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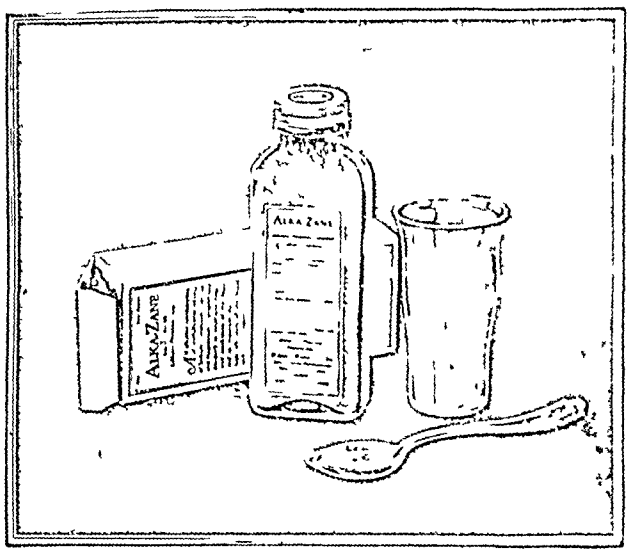
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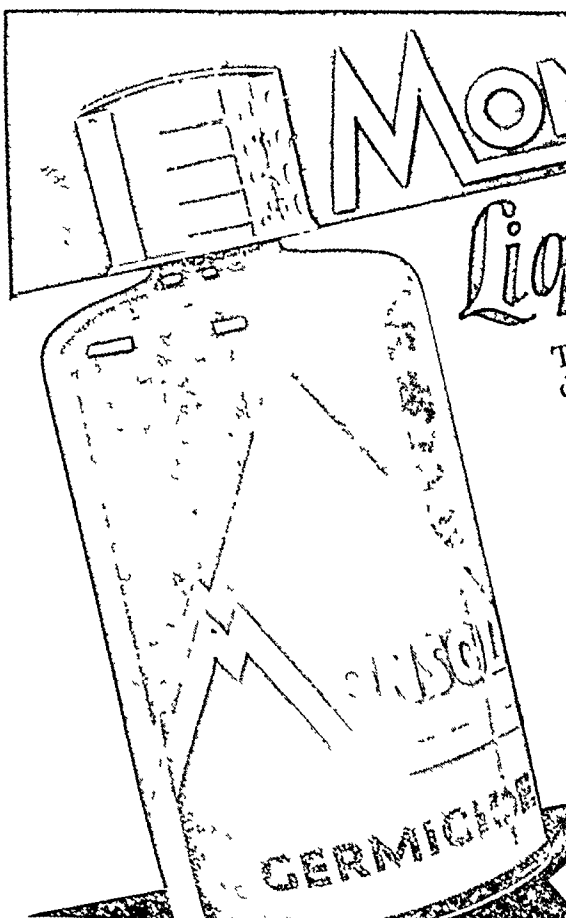
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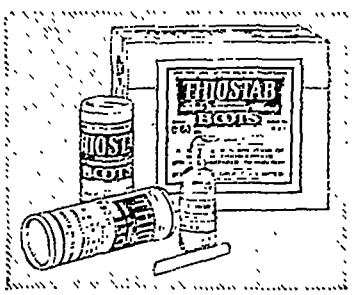
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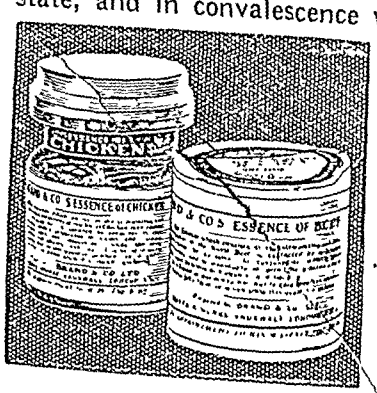
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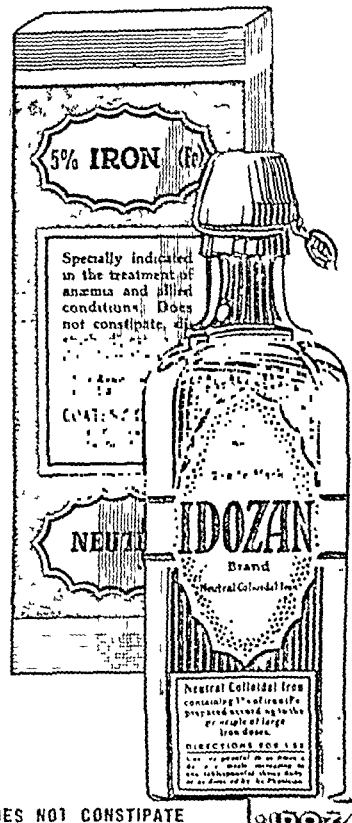
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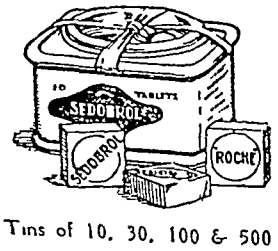
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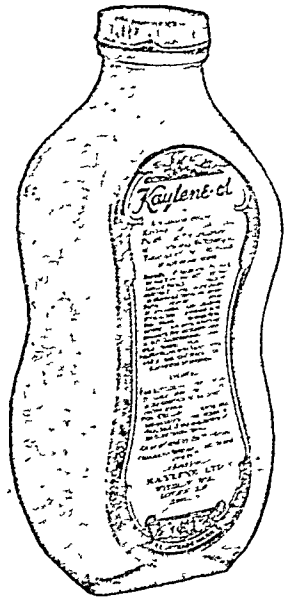
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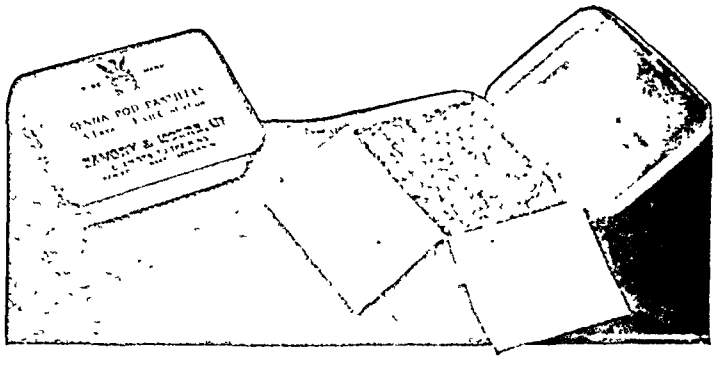
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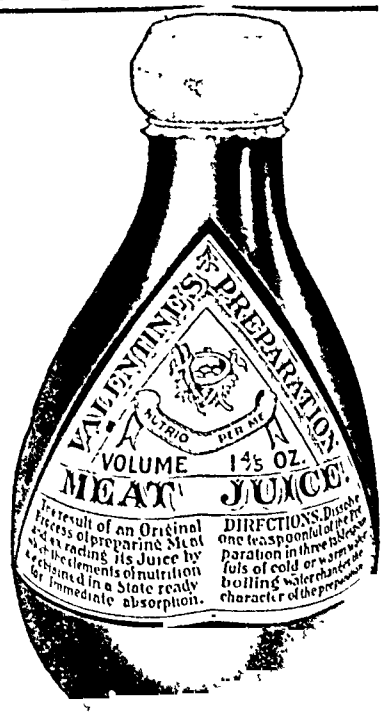
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Name:
ESME HILDA TAYLOR
Born
27th August, 1928
Photo Taken
10th May, 1931
Age
2 years 8¼ months
Weight
33 lbs.
Height
3 ft. 1 inch

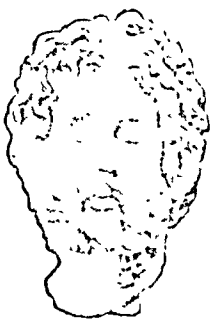


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(*Æsculapius*).

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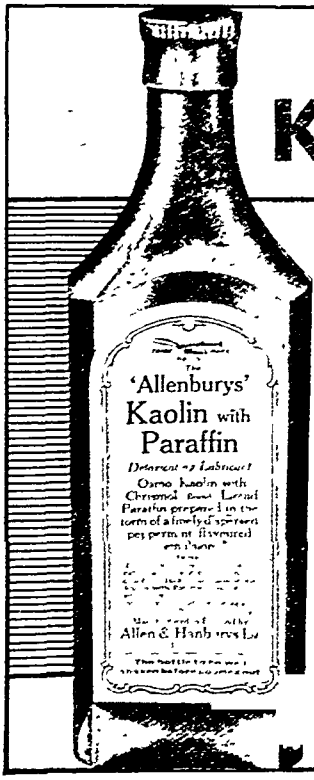
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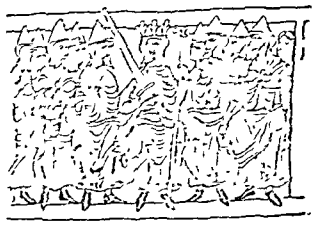
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Remarks
ON
A CASE OF INTRACRANIAL TUMOUR

BY

A. F. TREDGOLD, M.D., F.R.C.P., F.R.S.ED.

ASSOCIATE PHYSICIAN IN PSYCHOLOGICAL MEDICINE, UNIVERSITY COLLEGE HOSPITAL, LONDON; PHYSICIAN IN NEUROLOGY, ROYAL SURREY COUNTY HOSPITAL

WITH A PATHOLOGICAL ACCOUNT

BY

E. T. RUSTON, M.B., CH.B.

ASSISTANT PATHOLOGIST, ROYAL SURREY COUNTY HOSPITAL

(With Special Plate)

It is thought that the following somewhat unusual case is of sufficient clinical and pathological interest to justify its publication. When the patient first came under observation the clinical signs and symptoms had been present for two years, and were chiefly referable to the naso-pharynx, in which situation a hard swelling was present. There were, however, at this time some indications that the cranial cavity was also involved. When the patient was seen again three years later it was clear that the growth was causing marked pressure upon all the cranial nerves of one side, below and including the eighth. It is interesting to note that, although there was no actual involvement of the brain by the tumour, the man nevertheless presented marked and progressive dulling of perception, loss of memory, and general intellectual deterioration.

From the pathological point of view the chief interest lies in the nature of the growth, as to whether its origin was or was not in a "rest" of the notochord. It may be recalled that the chorda dorsalis is a specific embryonal tissue about which the spinal column develops. Portions of it commonly persist in the coccyx and in the junction of the sphenoid and occipital bones at the base of the skull. These portions occasionally give rise to small tumours, which in some instances increase considerably in size and assume malignant characteristics. The situation and naked-eye appearance of this particular growth, causing as it did marked absorption of the basi-sphenoid with extensions into the nasopharynx and posterior fossa of the skull, are highly suggestive of a chordoma. On the other hand, the histological appearance of stained sections is, on the whole, more closely akin to that of an endothelioma. While there is, perhaps, a certain amount of doubt as to the actual pathology, the probability is that it was a primary malignant growth of the naso-pharynx which, after involving the basi-sphenoid, extended into the posterior cranial fossa.

CLINICAL ACCOUNT

A cowman, aged 59 years, was sent to the out-patient department of the Royal Surrey County Hospital on June 2nd, 1927. He had complained of pain in the left temporal region and left side of the throat, deafness in the left ear, epistaxis from the left nostril, occasional vomiting, and loss of weight for the previous two years, and he was gradually getting worse. On examination he was generally wasted, sallow, and looked ill. There was ptosis of the left eye, and a hard swelling on the left side of the posterior wall of the pharynx, but no other abnormality. Wassermann reaction of the blood was negative. He was seen by Dr. T. B. Jobson, surgeon in charge of the ear, nose, and throat department, and by myself, and we were of the opinion that the condition was one of malignant and inoperable growth of the naso-pharynx. He was put upon local *x*-ray treatment, but after a short time discontinued attendance, and was not seen again for over three years.

On October 29th, 1930, I was asked by his medical attendant, Dr. Simpson of Farnham, to whom I am indebted for further notes, to take him into hospital, as he had become much worse, and marked cerebral symptoms had now appeared. It was stated that, in addition to his former complaints, for the past three months or so his voice had been husky, there had been difficulty in swallowing, and he had become dull and depressed mentally. On one or more occasions he had threatened suicide. On admission into hospital his condition was as follows.

Mental Condition.—He was correctly orientated, but there was marked intellectual deterioration with slow cerebration, dull perception, and loss of memory. It was impossible to elicit from him any accurate account of his illness, or to get him to co-operate satisfactorily in several tests.

Cranial Nerves.—I: So far as could be ascertained, olfactory sensation was not abnormal. II: There appeared to be a general impairment of vision, but the exact degree of this could not be determined. The edges of the disks were ill defined, and both disks were pale on the nasal sides, but there was no definite papilloedema. III, IV, and VI: The left pupil was smaller than the right; both reacted to light. There was marked ptosis of the left eyelid. It is considered that these signs were due to pressure on the ascending branch of the cervical sympathetic. The eye movements were normal, and there was no strabismus or nystagmus. V and VII: The muscles of the face and jaws appeared to be feeble, but there was no definite paralysis. VIII: Hearing on the right side was normal; a considerable degree of deafness was present on the left side, and the left drum was thickened and perforated, with projecting granulations. IX and X: There was paralysis of the left half of the palate and of the left side of the larynx, with extremely husky voice and difficulty in swallowing. Involvement of the vagus was further indicated by a rather rapid and irregular pulse, varying between 80 and 120, without any rise of temperature. XI: There was paralysis and marked atrophy of the left sterno-mastoid and upper part of the left trapezius muscles. XII: The left half of the tongue was paralysed, atrophied, and marked by deep furrows; the tongue deviated to the left on protrusion.

Spinal Nerves.—There was general wasting of all the muscles of limbs and trunk, but no localized paralysis. Sensation appeared to be normal all over the body. Knee, ankle, plantar, and abdominal reflexes were normal. There was no Rombergism, but the gait was ataxic and reeling, with a definite tendency to fall backwards and to the left.

General Condition.—The cerebro-spinal fluid, removed by lumbar puncture, was under slight pressure, but showed no pathological change on examination. Both the fluid and the blood gave negative Wassermann reactions. The systolic blood pressure was 190, but otherwise the circulatory, respiratory, alimentary, and excretory systems were normal. *X*-ray examination of the skull showed destruction of the body of the sphenoid bone from the posterior clinoid process to the level of the temporal bone (see Plate, Figs. 1 and 2).

Course of Illness

From the time of his admission the patient steadily deteriorated. The mental dullness became more marked; he suffered from frequent and severe headache in the left temporal and parietal regions; he had several attacks of profuse epistaxis from the left nostril; he vomited frequently; his voice became much more husky; and swallowing became increasingly difficult. Seven weeks after admission he developed pneumonia, from which he died five days later. Until its onset his temperature and respiration had remained practically normal during the time he was in hospital.

Diagnosis

It was considered that the patient had a tumour situated in the posterior fossa, chiefly on the left side, but the nature of this was uncertain.

Post-mortem Examination

A post-mortem examination made by Dr. J. Mark, my house-physician, and by Dr. Ruston, assistant pathologist to the hospital, revealed a growth about the size of a large but flattened egg between the dura and the bone in the posterior fossa of the skull, in front and mostly to the left of the foramen magnum. The position of the growth was such as to cause pressure upon the 8th, 9th, 10th, 11th, and 12th nerves of the left side, but the encephalon itself was not involved.

Dr. Mark and Dr. Ruston were at great pains to remove the whole of the bone to which the growth was attached, and Dr. Ruston has been good enough to write the following account of it.

PATHOLOGICAL ACCOUNT

It was only possible to make a limited examination of the skull. Upon removal of the brain in the usual way, there was exposed a soft, white, extradural tumour, compressing considerably the left half of the cerebellum and the medulla. This tumour appeared to be arising from the basi-sphenoid, spreading more to the left of the middle line than to the right, and extending down to the foramen magnum, where its lower border was turned under. Irregular in shape, it measured 1½ inches in its greatest length and 1¼ inches in its greatest breadth (less than 1 inch from the posterior clinoid processes). Its surface was lobulated, more so on the left side, where parts of it were raised half an inch above the neighbouring bone; its edge was similarly indented. No alteration in its consistency was made out, and nowhere was there any suggestion of bony or cartilaginous tissue. The dura was continuous over its surface, and no connexion was made out with any of the cranial nerves. A large vein issued from its surface about three-quarters of an inch from the lower pole; the lumen was free from growth.

The tumour was removed intact, together with the greater part of the basi-sphenoid, the anterior three-quarters of the foramen magnum, and the body of the first cervical vertebra. The pharyngeal aspect showed a small soft area of growth, which had penetrated right through the bone, but there was no other suggestion of pharyngeal origin, and a more complete examination was impossible. The specimen was decalcified and subsequently cut in the laboratory of University College, and then showed considerable absorption of the basi-sphenoid bone.

The naked-eye appearance of the tumour and its situation suggested the possibility of its being a chordoma; but the histological features were, on the whole, more like those of an endothelioma. Under the microscope there were masses of deeply staining endothelial cells within a fibrous stroma. These cell masses showed variations in the size and staining of the nuclei, in the packing together of the cells, and in the granularity of the cytoplasm. There were numerous large and multinucleate (giant) cells (3 to 6) with a paler cytoplasm. No cell nests or "epithelial pearls" were seen, and the fibrocellular stroma showed no inflammatory cells clustered together in defensive reaction.

MacCallum (*Textbook of Pathology*) gives a short note on chordomata, and speaks of their "lobules of groups and strands of large and small cells" which are rich in glycogen. The microscopical appearances of the present case closely resembled this description, and sections stained with iodine showed up the cell masses a deep brown. Ewing (*Neoplastic Diseases*), commenting on the difficulty of a positive histological diagnosis of chordomata, describes them as consisting of large, rounded, vacuolated, and hyperchromatic cells, and mentions a tumour described by Hassner measuring 5.5 by 6.5 cm., which produced symptoms over a period of four years. The clinical evidence in the present case points to a duration of over five years.

Professor M. J. Stewart of Leeds (*Journ. Path. and Bact.*, January, 1922) describes the chordomata as possessing an alveolar structure within a fibrous stroma, and stresses the importance of demonstrating mucin production in the multinucleate and vacuolated syncytial cells; he says, "the fully developed physaliphorous cell of Virchow is one ballooned with mucin." This condition I was not able to demonstrate satisfactorily in the present case, although with polychrome methylene blue the giant cells do take on a faint pink, and with orange G the granularity is more evident in the cytoplasm, and in places appears to stream out from the cells. It may be remarked, however, that in his article Stewart mentions a case described by Eitel in which mucin was absent and the cells were rich in glycogen. While, therefore, there are many features of this case which are suggestive of its being a notochordal tumour, the signs are not conclusive, and on the whole the evidence is in favour of its being an extending pharyngeal carcinoma. It well illustrates the difficulties of making a diagnosis between these two conditions.

I am indebted to Dr. Tredgold for the opportunity to examine this case, and at his request have written this note.

MENORRHAGIAS NOT DUE TO UTERINE DISEASE:

CAUSATION, CLINICAL FEATURES, AND TREATMENT *

BY

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(*With Special Plate*)

Cases of irregular and excessive uterine haemorrhage are divided into two main classes:—(1) Those in which the uterus is the seat of tumours (fibromyoma, mucous polypi and malignant disease) or retained fragments of placenta, and (2) those in which such a gross uterine pathology is absent and where instead there is nothing more than changes in the endometrium, usually of a proliferative nature, with commonly, in addition, some general and uniform overgrowth of the fibro-muscular wall of the uterus.

It is with the second of these two groups that this discussion is concerned. It embraces the majority of cases of bleeding uteri, and it includes the bulk of those cases which in the past have been described by such terms as chronic endometritis, chronic metritis, fibrosis uteri, and subinvolution.

ETIOLOGY

It is now some twenty years since Schroeder,[1] Beckwith Whitehouse,[2] the present writer[3] and others directed attention to evidence suggesting that many such cases owe their origin to disturbed ovarian function. In a paper published in 1913 and entitled "Uterine haemorrhage of ovarian origin" I gave reasons for the view that "where there is found on examination nothing abnormal except some uterine enlargement, and where the mucosa is found to exhibit the appearances of so-called 'glandular endometritis,' an ovarian source should be suspected."

It was Schroeder who, from the chaos of clinical and pathological data, first succeeded in building up a condition with some semblance to a separate entity which he has termed "metropathia haemorrhagica." Its main symptom is *metrorrhagia or irregular continued bleeding*, and, though occurring at any age from the menarche onwards, it is found characteristically between 40 and 50. Its pathology consists of a diffuse, often polypoidal proliferation of the endometrium with a hyperplasia and cystic dilatation of the glands, marked congestion of the vessels, free extravasation into the stroma and extensive endometrial necrosis. In a considerable number the muscular wall is increased as the result of a myohyperplasia. The ovaries exhibit characteristic changes in the shape of a cystic degeneration of the follicles and a failure of formation of corpora lutea and, according to Schroeder, the uterine changes and the consequent bleeding arise from this ovarian pathology. The views of Schroeder are supported in their general lines by Wilfred Shaw,[4] Graves,[5] and others. Shaw, for example, in 200 consecutive hospital cases of "dysfunctional" irregular bleeding found

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

53, or approximately 25 per cent., to fall into this category. On the other hand, Novak[4] has found hyperplasia and cystic glands in the presence of a fresh corpus luteum, and, moreover, in his cases exhibiting these changes, menorrhagia was more common than metrorrhagia or continued bleeding.

One of the most common types of dysfunctional bleeding is *polymenorrhoea* or too frequent menstruation, the periods becoming more or less stabilized to a shortened rhythm, often of 14 to 21 days. Prolongation and a quantitative increase of the flow are common accompaniments. Wilfred Shaw found this condition in 72, or 36 per cent., of his 200 consecutive cases of irregular bleeding, and where the ovaries were available for study found that the shortened menstrual rhythm was associated with a corresponding shortening of the follicular cycle in the ovary. In the endometrium no cystic or other characteristic change in the glands was present, but hyperaemia and oedema of the stroma were common. Other workers have described proliferative changes in the glands, and Novak and Graves have found the so-called "Swiss-cheese" cystic gland in this condition.

With regard to dysfunctional *menorrhagia*—an excessive or prolonged flow at normal intervals—Schroeder[1] believes the most potent factors to be hyperaemic states in the pelvis and inadequate contractility of the uterine muscle. On the other hand, many observers have postulated an ovarian aberration, and, although here there is no such direct evidence as is available in polymenorrhoea and the irregular haemorrhages, a number of workers have ascribed to ovarian dysfunction the abnormal endometrial changes frequently found in this condition (Novak, Graves).

Post-menopausal bleeding in a not inconsiderable number of cases is found in the absence of any gross uterine pathology, and to explain such cases as occur within a reasonably short interval after the menopause some observers have invoked an ovarian cause, either in the nature of a temporary "rejuvenescence" of the organ, or, where the bleeding is excessive, of structural degeneration in dormant follicles. A well-recognized though rare cause of post-menopausal haemorrhage is found in the interesting tumours which develop from the granulosa cells in the ovary and which induce active proliferative changes in the glandular and stroma elements of the endometrium. Such tumours are occasionally malignant. The possible relative frequency of ovarian causes of post-menopausal bleeding may be judged from the fact that in a consecutive series of 72 hospital cases we have found 11 instances in which all other factors have been excluded.

One of the most remarkable facts in connexion with the subject of dysfunctional bleeding is the infrequency with which in the literature we now find any reference to such conditions as chronic endometritis, chronic metritis, subinvolution, fibrosis uteri, etc., terms which, with their implication of an inflammatory and infective etiology, were in common use twenty years ago. Thus, Wilfred Shaw in his 200 consecutive cases found no pathology justifying the use of such terms as chronic metritis or subinvolution, and found only 13 cases of chronic interstitial endometritis. In all except one of these the symptoms, bleeding and leucorrhoea, were of recent duration. Graves in 257 cases of dysfunctional bleeding finds no place for a purely uterine pathology, and ascribes the various clinical conditions embraced under this heading to ovarian factors similar to those postulated by Schroeder, Shaw and others.

For the purpose of this communication we have studied 86 consecutive hospital cases, in whom the well-recognized causes of uterine bleeding—tumours, malignancy, placental fragments, tubo-ovarian inflammation, etc.—have been excluded. In all the cases the endometrium has been obtained for examination either by curettage or after hysterectomy (4 instances), whilst in two of the latter the ovaries were available.

It has been found convenient to arrange the cases in the following clinical groups (Table II):—

(1) *Menorrhagia*—13 cases, ranging between the ages of 20 and 50, with the maximum incidence falling between 35 and 50.

(2) *Polymenorrhoea*—28 cases, the maximum age being 52, the minimum 19, with the chief incidence falling between 30 and 50.

(3) *Arrhythmic and Continuous Bleeding*—39 cases. The bleeding corresponds to a metrorrhagia or to a continued loss extending beyond the confines of a menstrual cycle. The youngest patient was 21, the oldest 53, whilst 23 out of 39 cases were in women over 40 years. Clinically these cases may be subdivided into those where the metrorrhagia or continued loss was preceded by a history of (a) menorrhagia—2 cases; (b) polymenorrhoea—14 cases; (c) amenorrhoea—12 cases; or where (d) there was no previous menstrual abnormality—11 cases.

(4) *Post-menopausal Bleeding*—6 cases, the oldest patient being 70, the youngest 48.

With the object of elucidating etiology (1) the endometrium has been studied in all the cases and, as the relation of (2) childbirth and of (3) incidental organic disease is so prominent in the histories as seemed to warrant a closer study, these questions have also been brought under special survey.

THE ENDOMETRIUM

It has been claimed by some observers that there is a correlation between clinical features and endometrial pathology and that on this basis we can construct certain entities with a more or less constant symptomatology and ovario-uterine pathology.

TABLE I

SHOWING RELATIONSHIP BETWEEN THE CLINICAL TYPE OF BLEEDING AND THE CHANGES IN THE GLANDS OF THE ENDOMETRIUM

	No Abnormality	Hyperplasia	Hyperplasia with Cystic Change	Total
Menorrhagia	4	4	5	13
Polymenorrhoea	10	4	14	28
	—14	—8	—19	—41
Continuous Bleeding (and metrorrhagia):				
1. Preceded by menorrhagia	1	1	0	2
2. Preceded by polymenorrhoea	2	0	12	14
3. Preceded by amenorrhoea	1	0	11	12
4. With no previous menstrual abnormality	2	1	8	11
	—6	—2	—31	—39
Postmenopausal bleeding	2	1	3	6
	22	11	53	86

The investigation of the present material does not accord with this view, and in Table I, where the gland changes in the endometrium are grouped according to clinical type, it will be seen that there is a considerable overlapping within the several groups. One of the most interesting features revealed is the very high frequency of cystic hyperplasia in the cases of metrorrhagia and continuous bleeding (31 in 39 or nearly 80 per cent.). On the other hand this feature is present in no less than 19 out of 41, or over 46 per cent. of the cases where the menstrual function is more or less regular. It is true that the most excessive changes of this kind have been found in the former group, but the findings indicate that some of the characters of the Schroeder complex are shared by cases in which a more or less regular ovarian rhythm is present (Plate, Figs. 1 to 4). As it has been my routine practice for a considerable number of years to treat dysfunctional bleeding by conservative measures this series contains only 2 cases in which the ovaries are available for examination. In one, a case of 14 weeks' continuous

bleeding in a woman, there was bilateral cystic follicular disease and no active corpora lutea. The uterus, removed at the same time, had the Schroeder pathology in a marked degree (Fig. 5) In the other case, there was a blood cyst of the corpus luteum in a woman, aged 39, in whom the uterus was removed for excessive polymenorrhoeic bleeding. In only 1 out of the 86 cases did the endometrium exhibit the appearances of chronic interstitial endometritis.

RELATION TO CHILDBIRTH OR ABORTION

In the second column of Table II there are stated opposite the various clinical types the numbers in which the symptoms were directly dated back to a childbirth or abortion.

TABLE II.

SHOWING CORRELATION BETWEEN IRREGULAR AND EXCESSIVE UTERINE BLEEDING AND (*a*) CHILDBIRTH AND ABORTION, AND (*b*) GENERAL ORGANIC DISEASE.

	Total	Dating from Childbirth or Abortion	General Organic Disease in Remaining Cases
Menorrhagia	13 } 41	6 } 26 (63.4%)	2 } 8 (19.5%)
Polymenorrhoea	28 }	20 }	6 }
Continuous Bleeding (and Metrorrhagia):			
1. Preceded by menorrhagia	2 } 39	0 } 7 (17.9%)	2 } 21 (53.8%)
2. Preceded by polymenorrhoea	14 }	5 }	5 }
3 Preceded by amenorrhoea	12 }	0 }	10 }
4. With no previous menstrual abnormality ..	11 }	2 }	4 }
Post menopausal Bleeding ..	6	0	0
	86	33	29

It will be noted that out of 41 cases of menorrhagia or polymenorrhoea this correlation is present in 26 or 63.4 per cent., whereas it exists in only 7 out of 39 or 17.9 per cent. in metrorrhagia and continued bleeding. The figures though small are suggestive. In the present state of our knowledge any interpretation of this discrepancy must be largely conjectural, but the first factor to thrust itself forward in this connexion must naturally be infection. That there is such a background is supported by the correlation of chronic cervicitis, a lesion which is known to be one of the commonest infective sequelae of childbirth and which is, at the same time, one of the easiest to recognize.

Chronic Cervicitis.—In previous papers I have referred to the frequency with which this lesion is associated with menstrual irregularity and excess. Masson and Parsons,[8] Jeff Miller[9] and Behney[10] have referred to the same fact. In a consecutive series of 177 cases, in which chronic cervicitis was the sole recognizable lesion in the pelvis, we have found menorrhagia in 53 and polymenorrhoea in 58, a total of 111 or 62.7 per cent. Further, in such cases the endometrial changes are similar to those present throughout the dysfunctional haemorrhages and, moreover, as I[11] have elsewhere shown, the menstrual excess is often cured by treatment directed solely to the cervix. These findings are in keeping with the view that the cervical disease provokes the bleeding through the medium of an ovarian dysfunction.

GENERAL ORGANIC DISEASE

The correlation of this factor is shown in Table II, where it is seen to fall most markedly in those cases of graver blood loss, in which the factor of childbirth is less apparent, just as if we were being brought face to face with two main competing and alternative influences in etiology. In the milder group general organic disease is found in a ratio of 19.5 per cent., whereas with severe dysfunction the ratio rises to 53.8 per cent. The significance of this finding is revealed, for example, by an enumeration of the organic diseases present in that group in which there is continued bleeding preceded by a period of amenorrhoea. Here the ratio was 10 out of 12. Seven suffered from one each of the following: severe hypertension, recent pleurisy, severe pyuria, bronchitis, tuberculosis of the lung, gonorrhoeal infection, and rheumatism; 2 had severe gastro-intestinal disturbances, whilst 1 had rheumatism and recurring haematemesis. In Table II it should be noted that for purposes of clearer demonstration column three refers only to those cases which remained over after the childbirth relation had been extracted. For this purpose this relation was considered as primary. The figures as so given leave undecided, of course, the question as to how far the childbirth relation may in its turn be affected by coexisting organic disease.

Our etiological survey has shown the need for discarding the older view which sought to explain excessive and irregular dysfunctional bleeding on the basis of a purely uterine pathology. It is true that there still remains an ill-defined group in which infection of the endometrium plays a direct part, but it would seem that in such the bleeding is of short duration and is prone to spontaneous cure, for these cases constitute a strikingly small proportion of the more severe cases which enter hospital for treatment and which comprise the material used for purposes of investigation.

At the same time, whilst there is clear evidence on which to begin to erect a new etiology based upon a reciprocal interplay between ovary and uterus, we do not yet possess a sufficiently sound foundation in physiology to justify more than tentative views. The primacy of the ovulation and corpus luteum cycle, for example, to which in the past supreme importance has been attached, has been undermined by the discovery by Corner,[12] Van Herwerden,[13] Hartman,[14] and others, that in monkeys, and occasionally also in man, menstruation can occur normally in the absence of ovulation. These observations are in keeping with the demonstration by Parkes,[15] that in the mouse, after ablation of the follicular apparatus in the ovary by means of *x* rays, the oestrous cycle can continue. I[16] have discussed the significance of these facts in a recent paper, and have indicated that the oestrous cycle and the periodic function of menstruation must depend upon some rhythmic ovarian activity which is separate from the follicular cycle. From this standpoint we may conjecture that the various diseased states of the follicular cycle and of the endometrium associated with irregular bleeding are in the nature of secondary phenomena that merely accompany some more basic ovarian aberration that itself is primarily responsible for provoking the bleeding.

The cause and nature of the ovarian disturbances are still obscure. It would seem clear that childbirth and organic disease are prominent factors. It is legitimate to conclude that direct damage of the ovary by inflammation or tumour growth may sometimes operate. In this way we may explain the bleeding associated with tubo-ovarian infection and granulosa cell and other tumours of the ovary. In view of the primary part played by the anterior pituitary in the activation and periodicity of the ovary it is possible that disturbance of this endocrinal balance may sometimes be operating. In this connexion Hofbauer[17] claims to have induced changes in the ovary and endometrium of guinea-pigs similar to those present in the Schroeder syndrome by administering anterior pituitary experimentally.

DIFFERENTIAL DIAGNOSIS IN IRREGULAR AND EXCESSIVE UTERINE HAEMORRHAGE

In a large number of cases the history of bleeding with the absence of any gross recognizable lesion allows of a diagnosis being made with approximate accuracy. The irregular bleeding of young girls is generally due to ovarian

dysfunction, but, with increasing age, the frequency with which other factors operate may make the diagnostic diagnosis more difficult As the bulk of the cases fall between the ages of 30 and 50, when cancer and fibroids compete so largely, the need for an immediate and complete investigation in such patients is specially urgent, and the same applies to bleeding beginning for the first time after the menopause when malignancy, usually in the cervix, more rarely in the uterine body or ovary, is the most frequent single factor present

Where physical examination fails to reveal the presence of an adequate explanation of the bleeding, such as fibromyoma, cervical cancer, a polypus projecting from the cervix, or an inflammatory mass in the tubo-ovarian region, it may be laid down as a rule that curettage is the first step in the diagnosis Bleeding in the teens is the only exception to this rule, and in such cases treatment may usually be commenced forthwith on a clinical diagnosis

We have seen that a considerable number of cases of ovarian dysfunctional bleeding may have a preceding period of amenorrhoea, and in such the exclusion of the pregnancy factor is often possible only after curettage and the discovery of the cystic endometrial changes so characteristically found in this class of case

TREATMENT

Until we have arrived at a more precise understanding of the ovarian factors, it is inevitable that our treatment of such dysfunctional bleeding must be largely symptomatic It is true that therapeutic claims are advanced on behalf of many of the commercial ovarian preparations, but these claims have little foundation in science and, for the most part, equally little sanction in practice In 23 intractable cases of excessive and irregular bleeding in my department the effect of a concentrated dosage of some of the commercial ovarian products of proved activity—and of these sistomensin has been chiefly employed—has been carefully studied by Dr W P Kennedy Cure of the symptoms is reported in 3 and marked improvement in 5—a total positive result of 10 in 23—and it is interesting to note that in 7 of these cases an associated dysmenorrhoea for which in fact, the treatment was initiated has simultaneously responded to the measure

There is a steadily increasing literature in regard to the results of the treatment of dysfunctional uterine bleeding with ovarian or placental extracts Thus, Campbell and Collip[10] have recently recorded success in the treatment of metrorrhagia with the anterior pituitary like principle of the placenta Many however, of these records deal with the use of experimental material prepared in the worker's own laboratory

A finding of considerable moment in regard to the treatment of these cases is the relief, both immediate and permanent, which may follow the diagnostic curettage Thus, out of the 86 cases specially studied for this paper, in all of which curettage was done the notes record "cure" of the bleeding in 11 (menorrhagia 3, polymenorrhoea 5 and continuous bleeding and metrorrhagia 2) It is true that cauterization of a chronically infected cervix was carried out at the same time in 4 of the cases

In the case of intractable bleeding which fails to respond to the above conservative measures, we are constrained to adopt more drastic methods, and, of these, the choice lies between hysterectomy and radium or *x* rays sterilization These measures are frequently called for, especially in the intractable dysfunctional bleeding of women between 40 and 50 It is now my practice in such cases to induce an artificial menopause by introducing radium into the uterus or by exposing the ovarian region to three successive doses of *x* rays In the present series hysterectomy was carried out 4 times, radium was employed 14, and *x* rays 5 times

SUMMARY

1 Except after a recent childbed infection or gonorrhoea inflammation of the endometrium or myometrium is a rare cause of irregular and excessive uterine bleeding

2 There is evidence that in a large majority of such cases the uterine pathology—the endometrial proliferation and congestion and the myohyperplasia—and the symptoms are dependent upon aberration in the ovarian function The most common recognizable causes of this aberration are childbirth and general organic disease

3 The terms chronic endometritis, chronic metritis, fibrosis uteri and subinvolution applied to the pathology found in irregular and excessive uterine bleeding are, therefore, inappropriate

4 The diagnosis in such cases rests upon an absence of a gross pathology—tumours placental remains tubo-ovarian inflammatory masses etc and the appearances found in the endometrium after curettage

5 The treatment consists of curettage ovarian therapy or in intractable cases of the use of sterilizing doses of radium or *x* rays

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PHYSIOLOGICAL ASPECTS OF MENSTRUATION*

BY

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In opening this discussion on menorrhagias not due to uterine disease I am very conscious of the fact that my own knowledge does not extend to the clinical aspect of the problems involved I would wish, therefore, to take up the standpoint of the experimental physiologist, and to discuss some facts which may be of assistance in analysing the human menstrual cycle, and therefore of assistance in considering disorders caused by physiological deficiency or excess

In an endeavour to homologize the menstrual cycle of primates with the oestrous cycle of lower mammals we may first consider certain of the fundamental processes involved in the latter In lower mammals the ovarian cycle consists essentially of two phases—first the phase in which the Graafian follicle undergoes maturation and finally ovulates, and secondly the phase in which the corpus luteum develops from the shell of the ruptured follicle In most species only minor changes take place in the uterus during the first of these ovarian phases the so-called oestrous phase more obvious changes occur in the vagina changes that facilitate copulation which is restricted to this period In the second ovarian phase—the so-called luteal phase—marked changes take place in the uterus These changes vary in degree and kind in

* Read in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association Eastbourne, 1931

different species, but the end-result is the same—namely, the uterus is prepared by an increase in its physiological sensitivity, with or without proliferation of the endometrium, for the reception of the fertilized ovum. In the mouse and rat the development of the corpus luteum required to produce the characteristic pre-gestational changes in the uterus is only attained after copulation, while in such animals as the rabbit and ferret copulation is necessary to cause ovulation.

From our present point of view the most interesting feature of this pre-gestational development of the endometrium is its behaviour when the animal fails to become pregnant—in other words, when the prepared endometrium is found to be unnecessary. In all animals so far known, retrogressive changes take place in the prepared endometrium when pregnancy fails to supervene, and the degenerate mucosa returns after a period of time to normal. The severity of the process of destruction of the developed endometrium varies in different species, and does not appear to depend upon the extent of the previous endometrial development.

In the rat and mouse, following sterile copulation, the morphological changes in the uterus are slight compared with those found in some other species, and the subsequent process of destruction is comparatively mild. In extreme cases a certain amount of intercellular haemorrhage is found which may lead to the appearance of small haematomata under the epithelium, but haemorrhage into the lumen rarely occurs. In the guinea-pig during the luteal phase the morphological change in the uterus is again slight. In the rabbit a very considerable degree of pre-gestational proliferation occurs after ovulation. In this species the development consists very largely of glandular proliferation, and at the end of ten days after ovulation the uterine endometrium is honeycombed with large glands opening out into the lumen. The destruction of this development in the rabbit is carried out by a process of retrogression of the glands and sloughing of the epithelium. Thus, 18-20 days after ovulation, the lumen is found to contain large multi-nucleate giant cells formed by the conglomeration of debris from the epithelium. In the rabbit, however, this extensive process of destruction is associated with little or no haemorrhage, and red blood corpuscles are rarely found in the lumen. A similar, though more prolonged, period of pseudopregnancy is also found in the ferret. In the dog, pseudopregnancy lasts 6-7 weeks, and is followed by uterine retrogression resulting in a variable degree of haemorrhage into the stroma. In various other animals, post-ovulation development and retrogression of the uterus have also been studied.

It may be said, therefore, that in known species of lower mammals the uterus exhibits a tendency to undergo breakdown of the endometrium at a certain definite phase of the cycle, namely, at the end of the phase of development carried out in preparation for the reception of the fertilized ovum. There is, however, one other phase of the cycle in which certain animals, at any rate, appear to undergo some destruction of the endometrium. In the dog haemorrhage into the uterine lumen is found in the immediate pre-ovulation phase, and in this case the actual haemorrhage is more pronounced than that found at the end of the subsequent pseudopregnant period. Thus, external bleeding may continue for as much as ten days in the pro-oestrous dog. A similar, though less extensive pre-ovulation destruction of the uterus may also occur in such animals as the cow.

In attempting to interpret the human menstrual cycle in the light of these facts relating to lower mammals, it is necessary to consider the one salient point which occurs in the human, namely, the period of menstruation. Taken in conjunction with what is known of lower mammals, two alternative theories could be evolved: (a) that menstruation is a pre-ovulation phenomenon similar to that occurring in the dog but more intense, or (b) that human menstruation is an exaggerated homologue of the pseudopregnant breakdown found in many of the lower mammals.

Regarding menstruation as a pro-oestrous phenomenon, the haemorrhage would precede the ovulation of the same cycle, and therefore at puberty the first menstruation would precede the first ovulation. Regarding it as an end-of-pseudopregnancy phenomenon, menstruation would follow ovulation of the same cycle, and therefore the first ovulation would precede the first menstruation. The time of ovulation in the human cycle is now generally agreed to be some 13-17 days after the beginning of the previous menstruation, and therefore to fall about midway between two menstrual periods. On this evidence, therefore, the pseudopregnancy theory of menstruation would appear more probable. On such an interpretation ovulation takes place, the corpus luteum develops in the ovary, and pre-gestational changes take place in the uterus. Then, when pregnancy fails to supervene, retrogressive changes occur in the corpus luteum, the endometrium breaks down and menstruation occurs. In other words, menstruation is the removal of an unwanted proliferation of the uterus, and occurs, therefore, because conception has not taken place. On this view, alone, however, menstruation would be dependent upon the preliminary development of the corpus luteum in the ovary, and it is now well known that menstruation will occur in the absence of ovulation. Since it is known that the oestrous changes of the accessory organs of lower mammals may occur without a morphological cycle in the ovary, this fact, of course, favours the view that the breakdown involved is pro-oestrous in nature.

Fortunately, however, it has been possible to turn to the lower primates for investigation of this problem. All Old World monkeys appear to menstruate and to have a cycle essentially comparable to that occurring in the human. On the other hand, many of them also have an obvious external sign of the time of ovulation, and to this extent more closely resemble the lower mammals. Such monkeys, therefore, are extremely valuable in any attempt to homologize the sexual cycle of man with that of the lower mammals. In the baboon, for instance, the follicular phase, during which the development of the Graafian follicle takes place, is characterized by the appearance of an enormous swelling of the vulva and pudendal region. At the end of the follicular phase, when ovulation takes place, this external swelling undergoes a sudden subsidence and is reabsorbed within about two days. About 10 days later, a period of menstruation of the usual type appears.

The start of the cycle in the baboon, either at puberty or following a period of lactation, is characterized by the appearance of the external swelling, and there can be no doubt whatever, therefore, that in this animal the *follicular phase occurs and passes away some* time before the onset of the corresponding menstruation. It is thus possible to say that the latter is not a straightforward *pre-ovulation phenomenon. On the other* hand, when the monkey fails to ovulate, the same external sign of the follicular phase appears, followed by menstruation as usual, and the total length of the cycle, as well as the time relations of the phases, is the same as in the normal ovulating animal. There is, however, one important difference between the uterine cycle in the ovulating and in the non-ovulating monkey, namely, that the typical pre-menstrual development of the uterus only occurs when

the corpus luteum is present in the ovary. Where ovulation has not taken place menstruation though occurring at the normal time, takes place from an undeveloped resting endometrium. It is thus necessary to suppose that where as the pre-menstrual development of the uterus is dependent, as would be expected, upon the presence of the corpus luteum, the actual factor causing necrosis and breakdown of the epithelium is not set in action by the atrophy of the corpus luteum although operating at the same time, and is independent of any morphological ovarian cycle.

Evidence has lately become available as to the site of origin of the substance concerned. Some years ago it was shown by Allen that menstruation could occur in *ovariectomized monkeys after a series of injections of oestrin*. Since the hormone is associated with the follicular phase of the cycle in the normal animal these experiments appeared to simulate the condition of affairs found in the non-ovulating monkey. Very recently, however, Hartman has shown that this effect of injection of the ovariectomized monkey is completely lacking if the animal is hypophysectomized. It is thus necessary to suppose that Allen's results were due to activation of the pituitary body by the injection of oestrin, and that the substance causing necrosis of the endometrium is probably hypophyseal in origin.

The importance of studying the nature of this factor causing necrosis has been emphasized for some years by Shaw, and it seems probable that further progress with the study of the *mechanism of the human menstrual cycle* will be dependent upon some working hypothesis of the factor involved in the necrosis of the endometrium. From the point of view of the subject under discussion, namely, *the factors concerned in menorrhagia* unaccompanied by uterine disease, it is quite evident that this necrosis factor is of prime importance. In cases of menorrhagia, the morphological cycle in the ovary may be abnormal or *even entirely suppressed, and a condition may be found* analogous with that in the non-ovulating monkey except that the period of destruction of the endometrium is prolonged indefinitely. This would appear to point to the possibility that the factor causing necrosis loses its normal cyclic activity and functions persistently. If such an explanation can be substantiated an important basis will have been found for the experimental attack upon the problems of menorrhagia.

VARICOSE ULCER*

BY

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(With Special Plate)

The femoral artery delivers a very large quantity of blood to the leg every twenty four hours, probably more than a thousand pints. The arterial blood is delivered with all the force of the heart and gravity behind it, but when this force is dissipated in the capillary bed there comes into play a *wonderfully complicated mechanism* whereby this large volume of blood is returned to the heart against gravity. Let there be a drop in efficiency of one part in *two hundred* in this return mechanism, and serious changes will occur in the leg.

Many factors assist in the return of the venous blood, such as the elasticity of the skin, the contraction of the leg muscles, abdominal and thoracic aspiration, *vis a tergo* of capillary pressure, *muscular tone and contractions of* the vein walls, and the elaborate valving of the veins.

Of this group it is fairly certain that the last two factors are the most important. Should the veins become incompetent to return the blood to the heart from blockage, atony of their muscular coats or failure of the valves, serious stagnation phenomena will result, and that naturally in the region most remote from the heart, because here the effect of gravity is at its maximum. The support of shoes and boots and the pressure on the soles prevent oedema and stagnation in the feet. Figures 1, 2 and 3 show the regions in which ulcers develop according to the type of footwear worn. The upper confine of this ulcerative region is constant, and the lower corresponds to the limits of foot support. By a simple consideration of this area which carries probably 99 per cent. of the indolent ulcers affecting mankind, we see *both the cause* and the proper line of treatment. The final cause in all cases is gravity, which is too much for the legs of erect standing mankind and the best treatment is *constant support*.

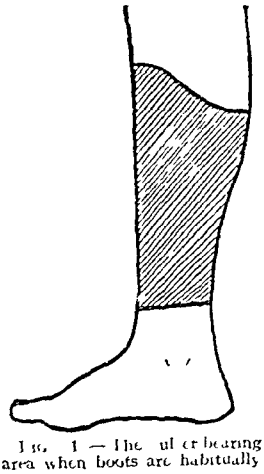


FIG. 1.—The ulcer bearing area when boots are habitually worn.

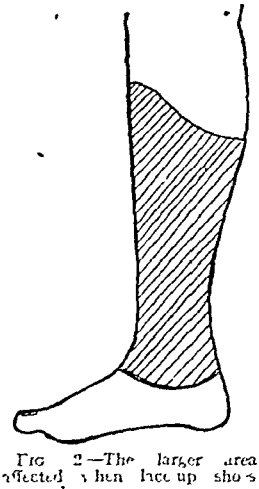


FIG. 2.—The larger area affected when lace-up shoes are used.

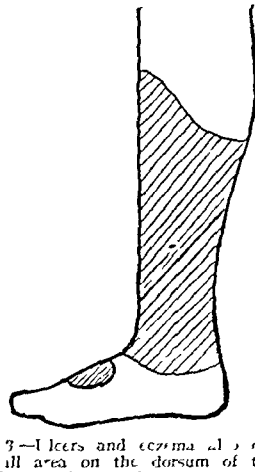


FIG. 3.—Ulcers and eczema also occur in the small area on the dorsum of the foot when shoes with a single strap are worn.

The name varicose ulcer is an oxymoron and is not comprehensive enough because *many of these ulcers have* other causes such as venous thrombosis, ankylosis of joints, paralysis of the leg muscles, lymphatic blockage, etc. *More comprehensive* descriptions are ulcus cruris, indolent ulcer of the leg, chronic leg ulcer, stasis ulcer,

*Read in opening a discussion in the Section of Dermatology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

static ulcer, and the term that I have suggested, namely, gravitational ulcer.

The necessity for support for swollen legs was probably discovered many hundreds of years ago, and it is impossible to trace the originator of this very obvious principle, which, nevertheless, seems to be forgotten by so many. A study of the vast literature on this subject reveals literally hundreds of methods of treatment advocated, which neglect this one vital essential to every line of treatment. All efforts seem to have been concentrated on finding a magical salve, powder, or even gas, which would stimulate waterlogged tissues into healing. Nearly every chronic disease, and many acute ones, have some mechanical obstacle, which hinders Nature in her powers of overcoming infection, and the removal of this obstacle should be the first consideration in every such disease whether it is the muscle spasm of gonorrhoeal ophthalmia or anal fissure, or the faulty hydraulics of a "milk leg."

TREATMENT OF CHRONIC ULCER OF THE LEG

Chronic ulcer of the leg has certain features which impose limitations to the type of the treatment employed. First, its most common complications are poverty and fecundity, so the treatment must be such as not to involve hospitalization, as the mother of a poor-class family must look after her children; and, moreover, it must not be too expensive. Secondly, the disease is very common, and it requires many doctors to treat all the cases in existence, so that the treatment must be simple and within the reach of all medical practitioners, and not too laborious and time-consuming. It is of the utmost importance that the treatment of varicose ulcer should not be left to district and out-patient nurses. Thirdly, the treatment must not be too tiresome or painful, or the patient will prefer the disease to the treatment; and if the treatment is bravely borne, only for the ulcer to relapse, the recurrence assumes the dimensions of a calamity in the mind of the patient, who then becomes sceptical of all kinds of treatment.

The treatment I adopt for this difficult disease is simplified as far as possible. It is ambulant, and the patient's employment is not interrupted. The visits to hospital are at intervals, on the average, of three weeks. The ulcer is dressed with nothing but its own discharge, so that unnecessary labour and expense are avoided; more important, the efficacy of the support is not interfered with by the repeated necessity of dressing the ulcer. The bandage used to support the leg is of elastic sticking plaster, so that it cannot move when once applied, and it adjusts itself to the shrinkage of the leg. Another advantage of this adhesive plaster is that it is, to a certain extent, waterproof, allowing restricted bathing, and, more important, keeping the discharge in, and thus saving changes of dressing. Owing to the elastic nature of the bandage, it can be wound on smoothly in a continuous spiral; this takes much less time than the method of applying separate strips of ordinary adhesive. In large ulcers, skin grafts are buried in the granulations by insinuation of small implants, by darning in threads of skin, or by injecting suspension of skin in saline, but this makes no difference to the method of dressing. The sticking plaster is used just the same, and the skin grafts seem to be invariably successful.

All through it is remembered that the ulcer is not the condition being treated, but an underlying stagnation of the venous blood, lymph, and tissue fluid. If this is due to varicosity of the veins, these are treated by injections of sodium morrhuate.

Ligations of large penetrating veins and venous cysts are done in severe cases, because the cure of these cases by injection is very difficult, and recurrence of the varicosity common. These ligations are performed in the out-patient department, as the whole treatment must be ambulatory, no beds being available in hospital for these cases. In the other cases, where there is venous obliteration, or other cause of indolent ulcer, steps must be taken to ensure that the patient will have continuous support over a long period of time.

Here arises the very important question of the treatment of the varicose veins which develop after deep thrombosis of the puerperium, typhoid fever, etc. It is customary to abstain from injections in these cases, but I have gradually ignored this contraindication, and have now treated 56 cases of ulcer associated with old "white leg"; in 42 of these, large varicosities were injected, and in the remaining 14 there were not present any varicose veins. In addition to these, a large number of similar cases have been injected suffering from periphlebitis or swelling, but I have never seen any damage result in the shape of increased swelling, cyanosis of the limb, etc. In cases of damage to the deep circulation, I regard these superficial varicose veins as an added embarrassment to the sound veins which are transmitting blood in the upward direction.

Contraindications

As regards contraindications to this method of treatment, there are only two—namely, associated arterial disease and diabetes. I have observed (and this is a most important point) in legs which have been damaged by long-standing venous stagnation that, if gangrene supervenes as a result of senile or diabetic arteritis, it is not the toes which are affected first, but the area of skin outlined in Figures 1, 2, and 3. Treatment by compression would in these cases be disastrous, and one must always be on the look out for them. The other complications of varicose veins—eczema, phlebitis, periphlebitis, pedal deformity, periostitis, arthritis, etc.—are nearly all benefited by this treatment, and their presence should not dissuade one from practising any part of the treatment—compression, injection, or skin grafting.

Disadvantages

The disadvantages of this method of treatment are:

Failure.—Many cases are referred to me because the treatment has been ineffectual, but I have never failed to bring about rapid healing in these cases. The almost invariable cause of failure is the looseness of the bandage; the patient is always astonished at the force I employ, and delighted with the relief afforded. Another cause of failure is the delegating of the bandaging to those who do not understand the principle of the treatment. In one case referred to me of a very severe ulcer, following a badly placed incision for cellulitis of the leg, in which I was informed that my type of treatment had done more harm than good, I learned that the adhesive plaster had been applied on the leg *above* the ulcer by the out-patient sister, the ulcer and foot being left out to swell, in order that hot fomentations could be applied four times daily to the ulcer. Other cases of failure I have seen have been due to syphilis or malignant disease, and I have come to regard the lack of response of an ulcer in the former case to be more certain than the Wassermann reaction in making a diagnosis. In malignant disease, of which I have seen two cases, failure to react to the treatment made the diagnosis clear.

Eczema develops under the adhesive in about 5 per cent. of cases, and seems to be an idiosyncrasy. In about 1 per cent. of cases the eczema becomes generalized, affecting chiefly the face and arms. The idiosyncrasy may be to rubber, zinc, or to the morrhuate injections. It is a serious disadvantage when it occurs, especially when it is of the exudative type, and causes great dismay to the patient. I have only once stopped treatment on this

account, and in that case the patient was in a lunatic asylum. In many cases I have persevered in the face of distressing eczema, with the most gratifying results. *Per contra*, I have found the most severe "stocking" eczemas, which had been treated by other methods for a long time, immediately improve with elastic compression. I have had adhesive bandages made, impregnated with rivanol 1/1,000, ichthyol 5 per cent., aluminium acetate 5 per cent., for these cases, and a change to one or other often checks the development of an eczema.

Blisters develop under the bandage, and burst and ooze quantities of fluid. They are often on the sole of the foot, and cause a fair amount of pain and discharge, and the base looks as if it would form a new ulcer, but I have not found that this occurs. I never stop the treatment because of the development of blisters.

Cutting of the bandage into the skin produces linear ulceration, and is due to faulty bandaging in very oedematous legs. It is avoidable by placing longitudinal strips up the leg as splints, and by overlapping each turn of the bandage two-thirds of its width by the ensuing turn.

Pain is sometimes increased at first by the pressure. I find this in only 10 per cent. of cases, the remaining 90 per cent. of the patients being very much gratified by the comfort afforded. The pain may be due to blisters or faulty application of the bandage, or to the injections. In certain cases it is in the bones or joints adjoining the ulcer, and in some cases in the ulcer itself; to avoid this latter pain I increase the pressure over the ulcer by sorbo rubber pads, with adhesive on one side, stuck on over the ulcer on the bandage and then pressed into the ulcer bed with another turn of the bandage. These pads are especially valuable in treating ulcers lying in the sulcus under the malleoli where the bandage does not grip very tightly. The sprinkling of aspirin powder on the floor of the ulcer I have found an excellent analgesic, lasting from four to seven days. Finally, a night powder of a barbiturate and aspirin is a great and justifiable help at the start of the treatment. It saves the patient from worrying during the long night hours over an ulcer, the constant companion for many years, now cut off by sticking-plaster. She has fed the ulcer with salves, antiseptics, lint and gauze for so long that she thinks that terrible things are happening under the bandage.

The Mental Attitude of the Patient

The mental attitude of the patient is sometimes difficult, and in nearly all cases has a financial background. In these days of humane government, chronic bronchitis in the husband and a varicose ulcer in the wife will maintain a family in certain parishes, and these valuable diseases will not be parted with too easily. Again, pensions are awarded for ulcers acquired in the Army, and there is a certain type of man who will on no account give up this premium on ill-health. In Central Europe large ulcers of the leg are exposed in the streets for begging purposes, but this is only a degree more degrading than other ways of using ulcers as a source of income. Fortunately, I have found this type of thing very rarely, and then nearly always in men; as a rule, every patient is desperately anxious to get the ulcer healed.

Expense and Difficulty of Treatment

Expense of treatment should be a very minor consideration in this disease, which is of great economic importance. I have scores of cases of men—mechanics, painters, and so on—who have lost in wages hundreds of pounds, and have cost the Government, health clubs, and hospitals equally large sums of money; these men were all very anxious to get to work and maintain their families. The bandages are fairly expensive, and the 75 pints of sodium morrhuate which I inject annually cost a certain amount, but it is found that the patients' contributions more than cover the costs. A great argument against too cheap a treatment is that it will fall into the hands of nurses, and we shall have a repetition of Unna's bandages applied year after year to the same quota of patients, without any effect at all.

Difficulty of the treatment is used as an argument, but if good bandaging and injection technique are once learned, it is very easy, and the knowledge so acquired is useful in many other ways. I have found that those who have mastered the method by attending the clinic have always succeeded in getting the same excellent results themselves.

Relapse is a most irritating argument against any treatment. It is better to be without a disease for even a short time than to have it all the time, moreover, in this disease it is easy to prevent the recurrence, if it is anticipated. In 525 cases of cured ulcer, I have only had 18 relapses (3·4 per cent.) in the last three years. *None* of these was difficult to treat.

The following cases illustrate the method of treatment of two typical difficult cases:

Case I

For eight years Mrs. R. suffered from ulcer below the internal malleolus of the left foot. It was small and deep, the size of a shilling, but intensely painful, the type of ulcer known as Corlette's irritable ulcer. Owing to the pain the patient walked on the outer border of the front part of the foot, and had a fixed talipes equino-cavo-varus deformity as a result. She was sent to me because the practitioner could make no headway with elasto-plastic bandaging, or any other treatment. There had been a tendency not to persist with any single line of treatment long enough for it to do good, and I felt that it was the patient, a strong-minded woman, who was ordering the treatment. No varicose veins could be seen or felt, and the leg did not seem greatly swollen. A bandage was wound on with a pressure that exasperated the patient, and a small rubber adhesive pad laid over the ulcer and bound tightly on to it, a sleeping powder was prescribed, and the patient returned in a week. She had been much more comfortable, and the ulcer was now flush with the surrounding skin, and definitely healing. The pressure had pushed a lot of oedema out of the leg, and a varicose saphenous vein was now injected easily. The bandage was re-applied as tightly as before, and the sleeping powder omitted. The next time a small deep vein was injected above the ulcer, and in four weeks the ulcer was healed firmly, the total cost of materials being twelve shillings. The support is being kept up by a bandage for six weeks; an elastic stocking will follow, to consolidate the cure, and finally the question of operation for the deformity will have to be discussed with the patient.



Fig. 4.—The ulcer facies.

Case II

Mrs. C., aged 51, and mother of nine children, had for five years suffered from swelling and ulceration of the right leg. She could not recall having either "white leg" or varicose veins. The ulcer, starting from an abrasion, had gradually grown to an immense size. The area was 67 square inches, and the girth of the leg 15 inches at the upper margin of the ulcer (*Plate, Fig. 1*).

Her suffering had been terrible, and she appeared worn out with constant pain and sleeplessness. The exhaustion showed itself in her face, giving her what I have called the "ulcer facies" (Fig. 4). The discharge from the ulcer was most profuse, and this constant albuminous drain had led to a profound secondary anaemia, with a haemoglobin percentage

of 35. The Wassermann reaction was negative. The ulcer showed an almost pure culture of *B. pyocyaneus*, and the discharge from the ulcer had no inhibitory effect upon the growth of the organisms. A test with milk showed the presence of trypsin in the discharge. The margins of the ulcer were stony hard, and there was only a narrow strip of skin connecting the skin of the foot with that of the upper part of the leg.

Without any delay, although the ulcer was so foul, it was bound tightly with adhesive plaster. Strips were laid first as shown in Figure 5, to stop the spiral bandage cutting furrows

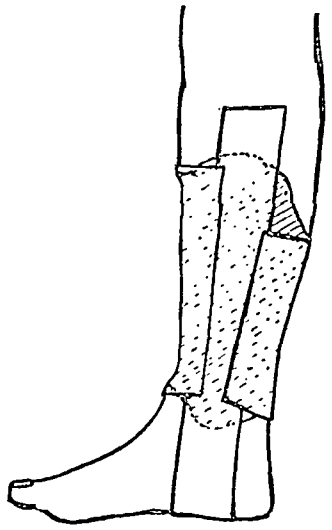


Fig. 5.—Longitudinal strips put on before the spiral compressing bandage: 1. To prevent the cutting of grooves in the oedematous leg. 2. To prevent the bandage from slipping out of position on the surface of the ulcer which is too moist for the bandage to adhere. This precaution is not necessary when the ulcer is small or the oedema moderate.

in the oedema. A great pressure was used, and, as usual, the patient complained that "she could never stand it." At weekly intervals the bandage was removed (by the patient) and renewed; on four occasions skin was removed from the forearm and slipped under the granulations, once by darning, and three times by implantation.

Although this ulcer was so large, it continued to heal steadily and smoothly, and at the end of thirteen weeks was com-

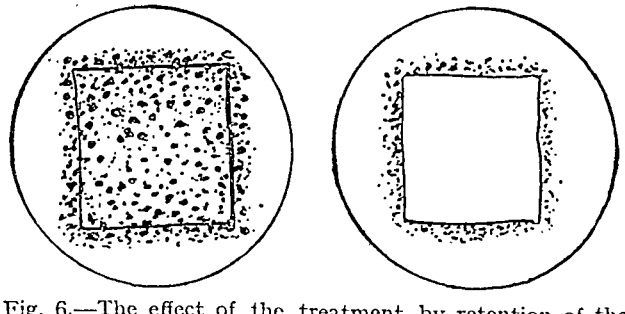


Fig. 6.—The effect of the treatment by retention of the discharge and compression of the whole leg upon the bactericidal power of the pus. On the left, before treatment an abundant growth occurs both in the dried discharge round as well as in the moist discharge *under* the cover slip. On the right, after two weeks of treatment the moist discharge under the slip inhibits the bacterial growth.

pletely epithelialized after the application of ten bandages, and the girth of the leg was reduced to twelve inches where it had been fifteen inches (Plate, Fig. 2). With the healing of the ulcer, the discharge diminished, and from the start of the treatment the pain ceased, sleep came, and the lines of pain disappeared from the face; the weight increased by 28 pounds, and the haemoglobin rose to 85 per cent. (Dare).

Sir Almroth Wright investigated the discharge under the adhesive dressing, and found that it now inhibited the growth of the organisms and contained no trypsin. Fig. 6 shows diagrammatically the effect of culture on the discharge. The culture was made by placing a drop of the discharge on a cover slip, and placing it on the surface of medium in a Petri dish. The discharge which *oozes out* at the edges inspissates, and so its contained leucocytes die, whereas the discharge under the slide remains moist and its leucocytes active. At the edges one has necro-pyo-culture, and under the slide bio-pyo-culture.

The remarkable point about this case is that at no time were any varicose veins discovered, and there was no definite history of femoral thrombosis. One can only infer that some change occurred in the venous return of the leg, resulting from the repeated pregnancies, and a vicious circle was inaugurated, resulting in the advanced ulceration.

The value of the term "gravitational ulcer" is illustrated by a case of this kind. A point of interest is that this patient had refused many requests for amputation.

CONCLUSION

Loss of circulatory equilibrium in the leg inaugurates a train of pathological changes in a certain well-defined area, where the effect of gravity is at its maximum in the unsupported lower extremity. These changes are numerous, and can be summarized as follows:

Oedema.—(*a*) Occurring towards the end of the day and pitting on pressure; (*b*) permanent oedema which still pits on pressure; (*c*) elastic oedema when the skin is tightly stretched, and there is no pitting on pressure; (*d*) indurated oedema which is the final stage, and is frequently associated with ulcer.

Changes in the Blood.—(*a*) Increase of lactic acid and carbon dioxide; (*b*) decrease in oxygen content.

Changes in the Skin Structures.—(*a*) Loss of hair on the leg; (*b*) drying up of secretions of sweat and sebaceous glands.

Inflammatory Changes in the Skin.—(*a*) Eczema of dry, scaly, or exudative type; (*b*) septic blisters of skin; (*c*) pruritus; (*d*) dermatitis artefacta from the scratching; (*e*) erysipelas.

Ulceration involving (*a*) skin; (*b*) subcutaneous tissue; (*c*) tendons and muscle very rarely; (*d*) bone, even more rarely.

Changes in Subcutaneous Tissues.—(*a*) Inflammation in the neighbourhood of the veins—periphlebitis—which is very common, and often miscalled phlebitis; (*b*) fibrosis, which is always present in ulcer cases; (*c*) suppuration; (*d*) ossification, which may take place in the bed of the ulcer, but more usually throughout the whole of the devitalized area in patches; (*e*) calcification.

Gangrene in the ulcer-bearing area when arterial supervenes upon venous disease.

Changes in the Muscles.—(*a*) Brown degeneration and atrophy; (*b*) ossification and calcification; (*c*) contractures from fibrosis.

Changes in the Bones.—(*a*) Periostitis, which more commonly affects the fibula for some unknown reason; (*b*) osteitis, with rarefaction and cystic areas in the bone.

Changes in Joints.—(*a*) Atrophic arthritis; (*b*) osteo-arthritis; (*c*) ankylosis.

Changes in the Veins.—(*a*) Rupture; (*b*) phlebitis, which is occasionally suppurative.

Changes in Fascia.—Usually ossification of interosseous membrane and other intermuscular septa.

Changes Secondary to Ulceration.—(*a*) Malignant (Marjolin's) disease, which seems to be much more common in men; (*b*) tetanus; (*c*) deformities of the foot and knee, resulting from faulty posture in walking in an endeavour to relieve pain, producing pes cavus, equinus, valgus or varus, alone or combined. This deformity is at first spastic, and disappears when the pain goes, but later on the muscles become permanently contracted. I have

twice done tendon lengthening operations for this type of deformity Deformity resulting from fibrosis of the ulcer bed generally produces talipes equinus and calcaneus, (d) mental changes, chiefly melancholia, neurasthenia, and lebetude

COMMENTARY

This is a very formidable list of complications to which varities can still be added They all result from loss of balance between arterial and venous systems of the leg This balance can be restored in two ways—by lying down and by reinforcing the skin with an elastic support In the cases due to varicose veins a great improvement can be made by obliterating, and in bad cases also ligating, the varices, so that 75 per cent of ulcer cases can be cured and remain cured, without any support but the elasticity of the patient's own skin

Ulcers of the leg will always be with us till we find a way of preventing femoral thrombosis after operations, fractures and childbirth, but they will diminish in number because of the simplicity of the injection treatment for early varicose veins By this method of treatment we have a certain way of curing all gravitational ulcers The treatment of small ulcers, up to 4 square inches is a very simple matter, quickly accomplished with a minimum of trouble These ulcers can be cured by other methods I admit, but generally at the expense of much trouble and time to patient and surgeon The larger ulcers are generally acknowledged to be incurable but they can be readily cleared up by this method, even when of the gigantic dimensions of 180 square inches (1¼ square feet!), the largest ulcer I have yet treated since I have kept statistics I have now 525 cases of cured ulcer of a total area of a little over 25 square feet

One of the most wonderful things in nature is surely to see the ulcer which started a quarter to half a century ago (my longest case is fifty four years) begin to throw up its granulations flatten out its margins pull in its edges and epithelialize in the way described so well by the "Father of Surgery"—John Hunter—many years ago

A CASE OF ACHALASIA OF THE CARDIA

BY

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(*With Special Plate*)

The following is the history of a male B K, aged 35, who was sent to the *x* ray department of the Royal Surrey County Hospital with a probable diagnosis of pyloric obstruction

There was a history of difficulty in "swallowing" for the past two years much worse during the last four months He had lost about a stone during the latter period but though rather emaciated his physical condition was fairly good He was of the opinion that all his food returned after having been retained for some hours it gradually worked up but he did not actually vomit He got a feeling of tightness and great discomfort in the chest until the food was regurgitated He had been given a barium meal at home six hours before being seen at hospital and when he was examined on the screen it was seen that this meal was still in the greatly distended oesophagus none being seen in the stomach or else where The obstruction was at the cardia

The oesophagus was evacuated and then a soft mercury tube was passed into the stomach without any obstruction being encountered Immediately after the passage of the tube he was given half a pint of beaten egg and milk which he swallowed with ease and evident pleasure saying that it was the first food he had felt entering his stomach for months He was admitted to hospital to be taught to pass the tube himself which he soon accomplished, passing it before every feed and he was discharged in about a week able to take all soft food and doing well

On June 14th 1929 he came again and complained of difficulty in swallowing but as the tube was seen to pass easily into his stomach he was told to persevere (see Plate, Fig 1) On July 27th he was readmitted his condition then being nearly as bad as when first seen Fig 2 shows an immediate meal distending the oesophagus (July 27th) Fig 3 taken on July 31st shows a mercury tube which he was able himself to pass into his stomach Fig 4 shows a bread and milk barium meal the consistency of cream taken immediately after the successful passage of the tube and demonstrates the fact that the achalasia was immediately present even directly after dilatation with a large sized tube

No obvious cause for the condition could be discovered and the patient begged for an operation and be done with it I had had no experience of dilatation with an inflatable bag and felt that operation offered the best chance of success Operation was performed on August 1st No cancer or ulcer of the stomach or duodenum was found nor any lesion of the gall bladder A transverse incision in the anterior wall allowed three fingers to be introduced into the stomach but to my surprise I had great difficulty in locating the cardia (In this connexion I was afterwards interested to read in a paper published by the Mayo Clinic The silk thread is just as valuable a guide to manual dilatation from below as it is to dilatation from above by means of the hydrostatic dilator[1]) When the cardia was found one finger was introduced then a second and then a third before there was any sensation that further dilatation would be dangerous There was no palpable hypertrophy The stomach and the abdominal wound were then closed The patient made an uninterrupted recovery and left the hospital within three weeks

As I had no report about this patient I wrote to him and received a reply dated April 17th 1931 I am pleased to inform you that I am still going strong and can eat anything that comes along from beef steaks eggs and bacon to meat pies in fact I have not found anything yet that I cannot swallow Twelve months ago I secured light employment and have continued to work regular ever since and have had no need to visit my doctor

There seems to be little doubt that, in the large majority of cases a cure can be obtained by forced dilatation In approximately 700 cases at the Mayo Clinic dilatation has been carried out readily and satisfactorily from above, by means of the bag, only three requiring dilatation from below[1] On the other hand, Hurst[2] finds that the far simpler treatment, by means of the mercury tube, is effective in the majority of cases, and only reports one case in which no lasting improvement occurred In this case forcible dilatation by the bag proved equally unsuccessful, and the patient was operated on by Rowlands, who divided the cardiac sphincter in exactly the same way as the pyloric sphincter is divided in Rammstedt's operation for the hypertrophic pyloric stenosis of infants, the operation curing the condition, which had been present for seven years If treatment is undertaken by means of a bag, it would obviously be an advantage if the bag were opaque to *x* rays so that dilatation could be carried out under direct observation and its correct position verified

A M J Wright in the *Medical Annual* 1930 extracting from H P Mosher's Semon Lecture says The author employs dilatation with an inflatable bag under manometer control the bag having barium implanted in four strips in its wall so that the dilatation can be carried out under direct observation with the *x* ray screen

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AN INVESTIGATION OF DIPHTHERIA CARRIERS

BY

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Routine swabbing of young domestic contacts of diphtheria cases has been followed in this borough for many years. As the disease remained of sporadic incidence until 1928, the few contact carriers were easily dealt with by isolation in the borough isolation hospital. In 1928, however, not only did diphtheria increase in prevalence, but so also did the ratio of carriers, these conditions enduring to the latter end of 1930, when there was simultaneous prevalence of both scarlet fever and diphtheria. The following table shows the number of cases of diphtheria notified from 1927 to April, 1931, and the number of contacts dealt with.

	Diphtheria Cases Notified	Contacts Dealt With	Contacts with Positive Swabs
1927	63	72	3
1928	173	167	19
1929	230	275	29
1930	295	212	23
1931 (to April 1st)	22	38	2

In addition, nine contacts were found to be suffering from clinical diphtheria of the fauces at the time of inspection and swabbing, and many other cases of multiple infection in the family were dealt with by the practitioner in attendance. With the progress of the epidemic, one became familiar with the appearance of the nose likely to harbour diphtheria bacilli, and inspections of school children in infected classes yielded many other supposed carriers. The children deemed to be carriers were supervised by their own doctors or at the school clinic. Some 53 children, made up of 33 contacts (22 throat and 11 nasal carriers), 19 nasal carriers found in school, and 1 contact with diphtheria bacilli in both throat and nose, were treated at the school clinic. All of these at first yielded practically pure cultures of Klebs-Loeffler bacilli, and were excluded from school under daily supervision until negative swabs were obtained. I have little doubt that nearly all these carriers harboured virulent bacilli, as they were intimate contacts of diphtheria cases.

TREATMENT OF CARRIERS AND RESULTS

Treatment of these children did not impose any arduous duties on the school staff. Throat carriers had their tonsils painted daily with tinct. iodi mitis, and nasal carriers had the anterior nares swabbed with hydrogen peroxide to remove crusts, white precipitate ointment then being applied to the site. Wooden applicators were extremely useful in performing this toilet. These measures were as effective as any of the various antiseptics tried simultaneously in dealing with convalescent carriers in the borough hospital. Antitoxin had no effect on the carrier condition in my experience, although used in three cases. The conditions observed locally were interesting. Throat carriers seldom had normal fauces, and the duration of infectivity varied directly with the unhealthy state of the tonsillar tissue. Nasal carriers practically always had a sore or small excoriation of one or both nostrils, frequently with an acrid nasal discharge; in one instance there was a septic enlargement of the glands in the neck. They often yielded positive swabs long after the local condition became normal. In most instances positive swabs were obtained for about three weeks only, but a few continued to harbour diphtheria bacilli for periods of two to three months. Three chronic throat carriers (not included above) of the convalescent type came under notice, and here tonsillectomy effected a cure.

At the school clinic isolation of the carriers was maintained as far as possible by giving them a waiting room apart from the other children. Only two fresh cases of diphtheria occurred in association with these carriers after detection. One was a domestic infection of faucial diphtheria derived from a nasal carrier detected in school. The other was in a boy who attended the school clinic for three days with a minor ailment, and contracted diphtheria on the fourth day. Virulence tests were performed only in ten instances, as laboratory animals were not kept in the small laboratory of the public health department. Such tests were carried out in a public health laboratory elsewhere, and, where isolation of the bacillus was possible, one never had a negative result. This isolation was facilitated by sending primary cultures inoculated within an hour of taking the swab and incubated overnight. There was evidence, in two cases where this was not done, that the bacilli in the swab failed to survive a postal journey.

REMARKS ON IMMUNITY

There seem to be two kinds of possible immunity to diphtheria. One might be styled anti-bacterial immunity and the other antitoxic immunity. The latter by no means confers the first, and the first seems to me to depend on phagocytosis, and to be evanescent. Antitoxin proved of little help to the carrier, nor did an attack of diphtheria a year or two before protect against the carrier state—as observed in two instances in this series. Further, it may be stated that antitoxin given prophylactically does not give passive immunity to the carrier state. Despite every precaution, on three occasions during the period of the epidemic, the scarlet fever wards, when filled to capacity, were infected by cases of diphtheria complicating scarlet fever. Passive immunity methods were thereupon freely used, and certainly prevented the appearance of clinical diphtheria. Yet the carrier condition spread through the throats and noses of the immunized children without any symptoms beyond a few "sore noses." Two of these cases proved very persistent carriers of virulent diphtheria bacilli, and yielded pure cultures for three months. Clinical diphtheria occurred among other members of the household in one or two instances where these carriers were discharged from the scarlet fever ward before detection.

CONCLUSION

Many scoff at the procedure of swabbing diphtheria contacts. The discovery of clinical diphtheria among them is sufficient warranty for the continuance of the practice, however cumbersome it may be. A further merit is that many valuable days of school attendance are saved by allowing contacts with negative swabs to return to school at once. Attendance at a centre such as the school clinic solves the problem of what to do with the carriers, and maintains touch with infectious individuals and their families. I would suggest, however, that a routine virulence test be carried out on diphtheria bacilli persisting longer than four weeks in contact carriers. Finally, it is evident that further research is required into the immunology of the diphtheria bacillus as opposed to its toxin.

I am indebted to Dr. J. M. Cowie, medical officer of health, for permission to publish these observations.

EPIDEMIC MENINGITIS MINOR

BY

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During the period from February 21st to April 8th of this year thirteen children suffering from symptoms of meningitis were admitted into the Children's Hospital of the Leicester Royal Infirmary. They presented a clinical picture similar to that described by Quincke[1] in 1893 under the name "serous meningitis," although the affection from which they suffered differed from this disease in several important particulars.

Sporadic cases of meningitis of the Quincke type are not uncommon. During the four years from 1927 to 1930, 35 were admitted into the Leicester Royal Infirmary. The age of the patients varied from 8 months to 64 years, although children were mostly affected, only two being over the age of 13 years. There were 24 males and 11 females; 4 died apparently from the condition itself, 13 from other concomitant diseases, chiefly broncho-pneumonia. But although this sporadic type is well recognized, there is no record of the affection assuming an epidemic character in this country. Recently Schneider[2] has reported an epidemic of serous meningitis, and he refers to several similar outbreaks in Germany. But here again the present series of cases do not present features entirely similar to those of the German epidemics, or to those admitted into this hospital during the previous four years.

SYMPTOMS AND PHYSICAL SIGNS

Eight of the cases now under consideration were secondary to broncho-pneumonia, usually of a mild type, the other five being apparently primary. The onset was sudden in seven, insidious in six. Vomiting, headache, and drowsiness were the most constant symptoms. Vomiting occurred in seven cases. Headache and drowsiness were complained of six times each, as five of the patients were under the age of 1 year, and abnormal crying was a symptom of these. Headache is probably a constant complaint. Convulsions were reported in five cases. Diarrhoea was present in five patients, constipation in three. Two were delirious. Increased thirst was noticed twice. There was grinding of the teeth in one case. One patient complained of abdominal pain.

Nuchal rigidity was present in all thirteen patients, while eleven of them exhibited a positive Kernig sign. In all but one case the temperature was raised to a varying degree, in three cases it reached 104° F. There was bulging of the fontanelle when this was patent. Strabismus was strikingly absent. In the older children in whom the fundi oculorum were examined there was no papilloedema. In no case was there any evidence of disease of the middle ear.

CLINICAL COURSE

All the patients but one recovered. In the fatal case the patient recovered from the meningeal symptoms, but he had broncho-pneumonia and contracted diphtheria, he was apparently doing well when there was a recurrence of the broncho-pneumonia, from which he died.

In this and one other case lumbar puncture was not performed—the one was transferred to the isolation hospital and in the other the symptoms disappeared spontaneously within twenty-four hours of admission. The primary cases cleared up very shortly after lumbar puncture, usually within twenty-four hours. As a rule there was a history of illness lasting from two days to one week before admission. In the secondary cases, the meningeal signs cleared up on lumbar puncture, while the broncho-pneumonia ran a short course of seven to sixteen days. In one case, however, the broncho-pneumonia persisted for six weeks.

THE CEREBRO-SPINAL FLUID

Cerebro-spinal fluid was obtained from eleven patients. In all cases it was under increased pressure, clear, and sterile. It did not form a coagulum on standing.

The protein was usually slightly increased. The average amount was 0·057 per cent.; three specimens had only 0·02 per cent. while one specimen showed a greatly increased protein content—0·2 per cent.

The cells in ten cases were under 5 per c.mm. In one case—that with the very high protein—they were increased to 40 per c.mm. and these were mostly lymphocytes.

The chlorides were estimated in nine cases and the results were always within normal limits. The average was 712 mg. per 100 c.cm., the limits being 690 and 750 mg. per 100 c.cm.

Sugar was always present. The actual amount was only estimated in one case, when it was found to be 0·062 per cent.

TREATMENT

The only treatment given was lumbar or cisternal puncture. This resulted in a complete disappearance of all meningeal symptoms, usually after one operation. In two cases two punctures were necessary before resolution occurred.

ETIOLOGY

As has already been stated, five cases were primary and eight secondary to broncho-pneumonia. But while these last are termed 'secondary' the meningeal symptoms all occurred at the onset of the disease, so that the two affections appeared concomitantly. The patients were usually sent in by outside doctors about the fourth or fifth day from the onset with the diagnosis broncho-pneumonia and meningitis.

Sex.—There was a marked preponderance of males in this small series—ten males to three females. With such a small number of cases this may or may not be of significance. It will be remembered that in the sporadic cases that have occurred in Leicester in the four previous years there were twenty-four males to eleven females.

Age.—The two youngest of our patients were 9 weeks old, the eldest 6 years. The ages of the other patients were 10 weeks, 6 months, 10 months, 14 months, 15 months (2), 3 years, 4 years (2), and 5 years.

Concomitant Epidemics.—The cases all occurred during or near March, 1931. During this time two mild epidemics were prevalent locally—cerebro-spinal meningitis and influenza. In no case was there a history of one of our patients having been exposed to these infections knowingly. No case had been admitted in 1931 before February 21st, and up to the time of writing (June) no case has been admitted since April 8th.

DISCUSSION

Undoubtedly this series of cases bears a strong resemblance to Quincke's serous meningitis. In his original description that author groups the cases as follows:

I. Those with acute onset
   - (*a*) With acute course
   - (*b*) With chronic course

II. Chronic cases
   - (*a*) With chronic progressive course
   - (*b*) Chronic cases with acute exacerbations

The cases described by us resemble most clearly those included in I (*a*)—cases with acute onset and acute course. This agrees well with Quincke's observation that

the younger the age at onset the more likely is the condition to be acute, as all our cases occurred in early childhood Indeed, this constitutes one of the most striking points about this epidemic. Quincke stated that serous meningitis is mainly a disease of young adults, but that cases do occur in childhood. Of his six acute cases reported, three patients were 20 or more, one was 14, one $3\frac{1}{2}$, and one $1\frac{3}{4}$ years old. Another striking point of difference between the cases now under discussion and those described by Quincke is the shortness of the course. In our cases all meningeal symptoms cleared up in a few days after lumbar puncture Quincke's acute cases lasted from four weeks to five months Fever was marked in all but one of our patients, whereas it was absent or slight in Quincke's. Only one of the latter's—the youngest—suffered from broncho-pneumonia, whereas it was present in the majority of our patients.

Since Quincke's time the condition has been fairly well recognized, but little new has been added to our knowledge A good modern description of the disease (now translated into English) is given by Ibraham.[3] The most important differences between the affection as described by him and the present series of cases are: (1) the frequency of otitis media as a point of origin; (2) the common occurrence of fatal cases (Ibraham states that the more acute the onset the greater the mortality); (3) the formation of a fibrin clot in the fluid obtained by lumbar puncture, (4) the occasional growth of micro-organisms from the cerebro-spinal fluid (*B influenzae*, *B coli*, pneumococci, streptococci, or staphylococci), (5) the occurrence of tetany as a complication—of evil prognostic import.

The most recent account is that given by Schneider referred to above The affection appears to be more or less endemic in Central Europe, with mild epidemic outbreaks. Although in previous German epidemics children were mostly affected, the youngest of Schneider's patients was 14 years old, the majority were middle-aged adults, and there was no marked preponderance of either sex. The cerebro-spinal fluid was sometimes opalescent, the cell count and protein both being increased. The author believes the disease to be an abortive form of cerebro-spinal meningitis.

It is interesting to note in this connexion that there was a mild epidemic of cerebro-spinal fever at the same time as the occurrence of our cases. However, in our opinion, the very frequent coincident broncho-pneumonia points rather to an influenzal infection being the cause—especially when it is remembered that there was also an influenza epidemic at the time. Lafora[4] in 1922 expressed the opinion that influenza was a frequent cause of serous meningitis, and he reported a chronic case following influenza in a woman of 35, who was cured by repeated lumbar puncture. Indeed, it does not appear unreasonable to suppose that this form of meningitis may result from mild infections of various natures, influenza perhaps being the commonest; and we suggest that the name "meningitis minor" be applied to them to differentiate them from the infinitely graver suppurative or tuberculous forms. The name "serous meningitis," while it distinguishes them from the former, does not denote the profound way in which these mild cases differ from tuberculous meningitis Dr C. P. Symonds, in conversation with one of us (J. V. C. B), pointed out the inaccuracy of the term "serous meningitis."

SUMMARY

1 Thirteen patients with symptoms of meningitis were admitted into hospital in six and a half weeks during the early spring of this year.

2 Eight of the thirteen had coincident broncho-pneumonia.

3. All the patients were young children, ten were boys.

4. The cerebro-spinal fluid was under pressure, clear, and sterile. The protein tended to be increased slightly, but usually there was no other abnormality

5. Lumbar or cisternal puncture caused rapid and complete disappearance of the symptoms.

6 The condition may be an abortive form either of influenzal or cerebro-spinal meningitis. In the present cases it was probably the former.

7. The disease, while resembling that described by Quincke as serous meningitis, shows several important differences, particularly in its benign course It is suggested that the name "meningitis minor" is preferable.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

POISONING FROM MOTOR CAR EXHAUST FUMES

In the last year two cases of poisoning from exhaust fumes have been observed. The cases were so very similar that a description of one only is thought necessary

A removal agent came to see me one day in December He had seen two doctors in a month, and neither could help him I was equally stumped by his symptoms, but hit upon the diagnosis by chance.

Since 1919, when he left the Army, in which he was a transport officer, this man had been employed by a firm of removal contractors, and worked twelve to fifteen hours a day He had never had a holiday His job is to go from Leeds to any town in England to arrange a removal This he does by car.

Till the early part of last year he had no complaint and enjoyed his work In February he found himself much more easily tired than usual. His eyesight worried him a little He gave the following example, which shows at the same time what a strenuous day's work he was in the habit of doing One day he went to the office at 9 a.m. read his letters, and dictated replies At 11 o'clock he motored to Manchester, arranged for a removal, and motored back, arriving at 5 p.m After two hours in the office he had tea, a meal, and set out by road for Newcastle-on-Tyne He was sleepy, and his eyes were heavy as he drove—"a most unusual state of affairs"—but he arrived there at 11 P.M. completed his business, and set off for home In the next few hours he noticed that the lights of approaching traffic seemed to flicker and flash A little later he caught himself on the verge of falling asleep—a feeling he had never experienced before. He wisely pulled up, and slept for half an hour He started again, but had great difficulty in driving because he could not place lights correctly on the road He could see the light of a house, but it would be so unsteady that he could not determine on which side of the road the house was. Several times he stopped, overpowered with sleep, but eventually he reached home A few hours in bed restored him to a feeling of comparative freshness, but when he got into the car the feeling of helplessness overcame him The climax arrived one day when he stopped at a robot light. For minutes he tried to decide when the light was green and when red He could see the change in colour, but could not remember which colour stood for safety and which for danger. He thereupon hired a chauffeur, but he got worse He was under medical treatment, and was having more than usual.

When I saw him he had a pulse rate of 54, a blood pressure of 108/92. His tendon jerks were scarcely perceptible. His eye light reflex was almost absent, the pupil being small. There was no colour blindness. His speech was staccato and rapid, the words falling over one another. His hair was falling rapidly. He sweated easily. His tongue was dirty, but he had no symptoms of digestive trouble. He was very nervous, and could not sit still a moment. There was no apparent loss in weight.

After three days in bed, on thyroid and injections of Trasse's neurosthenic ampoules (he had gone to bed with a diagnosis of neurasthenia due to overwork), he was much better. He insisted on returning to work on the fourth day. On the fifth day his symptoms began to recur. I happened to meet him in the street, and in a conversation about his car he mentioned how long he had had it. This period coincided with the length of time his symptoms had been observed. On inquiry, it was discovered that fumes from the engine were noticed in the car on long runs, and that he always had the windows shut, or nearly so. He was advised to have the floor boards sealed against gases and a new exhaust washer put in place. His symptoms disappeared in about ten days, and he has had no recurrence.

The similarity of the second case was so marked that it seems worth while publishing these symptoms in the hope that they may prove of help to others. The other man was a motor salesman. The inability to focus and place lights at night, the fatigue, and the inability to recognize colours were described in the same order. His car had leaking floor boards, and was of the same make as the first car mentioned. The new models of this type have improved floor boards and improved design for removing exhaust gases.

Leeds R. A. MURRAY SCOTT, M.A., M.B., B.Chir.

DEATH FOLLOWING SODIUM TETRA-IODOPHENOLPHTHALEIN

Sodium tetraiodophenolphthalein for cholecystography only occasionally gives rise to untoward symptoms, and rarely has fatal results, provided its contraindications are observed. Among these is heart disease, but the difficulty is, with the means ordinarily at the physician's disposal, to detect unsuspected myocardial degeneration such as fatty infiltration.

I was asked, on August 11th, by the East Middlesex coroner (Dr. George Cohen) to do a post-mortem examination—soon after death—in the case of a woman, aged 60, who collapsed and died after the fifth of a series of capsules, each of 0.5 gram, of sodium tetraiodophenolphthalein, taken at half-hourly intervals for cholecystography. Externally the whole surface of the body (moderately well nourished) had an icteric tinge, but especially the conjunctivae. Internally, there were evidences of fairly grave anaemia; greenish discoloration of the liver, chronic cholecystitis, no bile; six stones, the colour, size, and appearance of peppercorns, in the gall-bladder, one in the cystic duct, and two in the common duct, and chronic pancreatitis.

On lifting the heart, without undue force, from the pericardium, the dissector's thumb penetrated the wall, so advanced was its degeneration: a fatty infiltration involving even the chordae tendineae. Kidneys, pale, showed fairly advanced interstitial changes. The stomach (which had been washed out) was undamaged, but the first six feet of small intestine showed a well-defined hyperaemia of varying degrees of severity, and its mucosa was smeared with the drug. The hyperaemia is of interest in view of the griping complained of in the severe reactions occasionally seen and yielding to adrenaline.

London W. TEMPLE GREY, M.B., Ch.M.

Reviews

BRIGHT'S DISEASE

The beautifully illustrated monograph by Professor THOMAS ADDIS and Dr. JEAN OLIVER on *The Renal Lesion in Bright's Disease*[1] is the result of ten years' work, and, like Bright's original account in 1827 and Volhard and Fahr's volume in 1914, it is designed to correlate the clinical manifestations with the morbid changes in the kidneys. The attractions of functional tests of renal efficiency have recently tended to concentrate attention somewhat too exclusively in one direction, and Professor Addis out of his full clinical experience submits this attitude to a critical and penetrating analysis. The bearing of efficiency tests on prognosis is disappointing, for the same abnormalities of function are present in transient lesions as in those that are lasting, progressive, and fatal; the tests do not indicate the nature of the morbid change which has affected the functioning tissue, and it is the nature of the lesion, not its extent, that determines the patient's fate. The warning is thrown out that the clinical tests now in vogue have no more lasting value than the quite provisional hypotheses on which they are based, and that the hopes entertained as to their value "were from the first unwarranted because our conceptions as to the physiology of the kidney are quite naturally as childish and incomplete as is our knowledge of its structure." But it must not be supposed that Professor Addis neglects in the least their use and any information that can be obtained from laboratory investigation, for the clinical notes on seventy-two patients with various forms of Bright's disease, on whom necropsies were eventually obtained, show that the blood urea concentration, the volume of urine, rate of protein excretion, specific gravity, and a full examination of the sediment were regularly investigated. Their limitations, however, are insisted on, thus the diagnosis of renal disease by urinary examination depends on a quantitative, not on a qualitative, basis. Formerly it was generally supposed that casts and red blood corpuscles were evidence of definite morbid change in the kidneys; but examination of the urine of seventy-four healthy medical students gave the quite unexpected information that the twelve hours' urine contained on an average 1,040 casts, 65,750 red blood cells, 322,500 white cells and epithelial cells, and protein between 10 and 30 mg. A protein excretion of more than 30 mg. and a rate of cast excretion above 5,000 per twelve hours were regarded as pathological.

The clinical and pathological records of the seventy-two cases, each with plates of the microscopical appearances, are contributed jointly by the two authors, who otherwise are separately responsible for the remaining ten chapters on the clinical and pathological aspects of the subject. The authors write from their own points of view, but they reach the same conclusions. The confusing nomenclature of renal disease has much to answer for; instead of the use of the term "nephritis," which connotes inflammation of some sort, the *non-committal* eponymic Bright's disease is employed, and is divided into three main groups—haemorrhagic, *degenerative*, and arterio-sclerotic. Every student of Bright's disease is tempted to construct a classification, thus Miss Dorothy S. Russell suggested a new one in 1929. There is a great virtue in simplicity, and in this and other respects Addis and Oliver's groups closely resemble those of Volhard and Fahr, whose nephrosis corresponds to the degenerative

[1] *The Renal Lesion in Bright's Disease*. By Thomas Addis and Jean Oliver. New York: P. B. Hoeber, Inc. 1931. (Pp. xi + 628, 170 plates, 2 in colour, 21 figures, 1 folding table. 16 dollars.)

Bright's disease of the American authors. This is a heterogeneous category, and includes patients with unrelated diseases united in the occurrence of a renal lesion distinct from haemorrhagic and arterio-sclerotic Bright's disease. The two last forms are irreversible, whereas the degenerative is reversible; thus in the late toxaemia of pregnancy there is clinical evidence of a most intense degeneration; but within twenty-four hours of delivery everything has quieted down, and in a few weeks there may not be any trace of a renal lesion. This feature is a clinical justification for the recognition of the group. On the use of the words "nephritis" and "nephrosis" Professor Oliver remarks that they are evidently "all things to all men," "and if the ablest have used them to apply to the same thing with meanings exactly the converse, this fact alone would seem to prejudice their usefulness if any scientific accuracy is desired in nomenclature."

This work is not on the lines of a dogmatic textbook, but is the philosophic critique of a difficult subject based on a laborious research conducted and correlated on clinical and pathological lines.

ABDOMINAL PAIN

We believe that few practitioners who commence Mr. JOHN MORLEY'S modest volume, entitled *Abdominal Pain*,[2] will put it aside until they have completed the final page. It is eminently readable. Its argument is based on personal experience and careful thought. And though a controversial contribution, it never fails in courtesy or in generosity. Mr. Morley starts from the experience that the current doctrines of referred pain, and the clinical conclusions founded on them, do not in fact work; the student is confused by them and the practitioner discards them. Hence the claim for a review of the situation. It is not inappropriate that this review should be undertaken by a teacher in the Manchester School, for the theory so energetically advocated in recent years by the late Sir James Mackenzie took origin in the work of Dr. James Ross, whose classical textbook on *Diseases of the Nervous System*, published in 1881, carried his fame far beyond the western city where he practised. While Mr. Morley holds in the greatest respect the personalities and work of his predecessors, he is quite firm in his contention that the theory of referred pain for which they are responsible cannot be sustained, and he is not less confident in his presentation of an alternative view. Briefly, his claim is that the deep and superficial tenderness and muscular rigidity of the abdominal wall, so commonly observed in association with inflammatory disorders in the abdomen, are not reflex phenomena originated by stimulation of the afferent autonomic nerves of the viscera, but that, on the contrary, the starting-point of the reflex activity of which they are the expression is in the highly sensitive cerebro-spinal nerves of the parietal peritoneum. His thesis is tested by applying it to pain as this results from all forms of organic disease within the abdomen, and the examination is not less candid than it is thorough. Particular attention may be directed to the chapters dealing with shoulder-tip pain and with pain in appendicitis, and to the full clinical experience on which the argument is based. Even for those to whom doctrine and theory make little appeal the practical teaching of the book relative to the diagnostic significance of pain in the abdomen makes Mr. Morley's study a valuable contribution. And it is not without interest to note that surgery, with its ability to study the "pathology of the living," may offer some significant experiences both to the academic physiologist and to the clinical student of the nervous system. Alike in its theoretical discussion and in its bedside teaching, Mr. Morley's book will, we are sure, commend itself to many readers.

[2] *Abdominal Pain*. By John Morley, Ch.M., F.R.C.S. With an introduction by J. S. B. Stopford, M.D., F.R.S. Edinburgh: E. and S. Livingstone. 1931. (Pp. xv + 191; 22 figures. 10s. 6d. net.)

TREATMENT OF EPILEPSY BY KETOSIS

The treatment of epilepsy by means of ketosis induced by a diet rich in fat has now been tried for a number of years. The time is therefore ripe for a critical review of the results obtained by this method of treatment. Dr. FRITZ B. TALBOT'S book, *Treatment of Epilepsy*,[3] is mainly concerned with the use of a ketogenic diet. He gives a detailed account of the physiological principles underlying the production of ketosis and of the methods of estimating the dietary requirements of patients. A number of specimen diets are given. Dr. Talbot's book is, however, somewhat disappointing. One-third is devoted to a rather sketchy review of etiology and symptomatology, which compares unfavourably with the recent consideration of these aspects of the subject by Cobb and Lennox. Though the book is called *Treatment of Epilepsy*, very little space is devoted to treatment by drugs. In considering the results of treatment by ketogenic diet Dr. Talbot is able to quote 240 cases, of which only twenty were treated by himself. It appears that in children complete relief was obtained in from 25 to 50 per cent. of cases, and improvement in from 23 to 45 per cent. Roughly speaking, one-third were freed from fits, one-third were improved but not completely relieved, and one-third were unaffected. It is generally agreed that adults respond to a ketogenic diet less satisfactorily than children.

Dr. Talbot discusses briefly the treatment of epilepsy by dehydration. His own limited experience of this method has not been encouraging. There are several serious verbal errors. On page 160 "ketogenic substances, mainly carbohydrate" is clearly incorrect. Elsewhere the author does not always make his meaning clear.

Anyone who wishes to treat an epileptic patient by means of the ketogenic diet will find full instructions in Dr. Talbot's book. Though this method is valuable in some cases and certainly justifiable, the value of dehydration is at present unsettled, and the patient whose intake of water is reduced to 6 oz. a day may perhaps be pardoned for thinking that the cure is worse than the disease.

PRIMITIVE PSYCHOLOGY

An adherent of the Zürich School of Psychology, Mr. C. R. ALDRICH attempts in *The Primitive Mind and Modern Civilization*[4] to harmonize the concept of the racial unconscious, which that school has adopted as the main article of its creed, with the findings of anthropology. His conclusion is that the race progresses from the unconscious towards consciousness by three stages. The first is an "unconscious bio-morality," earlier defined as "the collective unconscious morality inherent in the laws of life"; the second is a period of savagery, in which the group represses egotistic tendencies by forcibly imposing a conventional morality; the third—not yet reached by any society, but recognized by an increasing number of individuals—is a stage in which the members of the group consciously co-operate for the common good.

Mr. Aldrich bases his conclusions on the so-called gregarious instinct in man and on the existence of a

[3] *Treatment of Epilepsy*. By Fritz B. Talbot, M.D. London: Cassell and Co., Ltd. 1931. (Pp. xiii + 308; 11 figures. 18s. net.)

[4] *The Primitive Mind and Modern Civilization*. By C. [illegible] Roberts Aldrich. With an introduction by Bronislaw Malinowski, Ph.D., D.Sc., and a foreword by C. G. Jung, Dr. med. et Jur. The International Library of Psychology, Philosophy and Scientific Method. London: Kegan Paul, Trench, Trübner and Co., Ltd.; New York: Harcourt, Brace and Co. 1931. (Pp. xi + 249. 12s. 6d. net.)

racial unconscious, coming thereby perilously near the concept of a group mind which Professor Levy Bruhl predicated, despite his critical disavowal of the tenets of the French school. We are prepared to recognize that the welfare of the individual is bound up with the welfare of the group to which he belongs, but that does not imply that the group is an entity except as an aggregate of individuals. That there can be a racial unconscious is entirely disputable, and to talk of a collective morality inherent in the laws of life is to attribute to the natural processes of evolution a human rationality of purpose for which biology provides but little justification. We can find indeed, no evidence whatever in modern anthropology for the gregarious instinct on which Mr Aldrich bases his hypothesis of a primitive horde and can find no logical explanation for the development of family life from such a horde if it ever existed. On the other hand all the evidence points to the family as being the original unit extending later to the clan and so into the tribe, with the natural corollary that marriage as an institution regulating the lives of individuals was recognized in the earliest stage of human culture. Theories of group marriage and primitive promiscuity have been long abandoned by our leading anthropologists. It is incorrect, we believe to say with the author that love as moderns know it the passionate preference of one woman to all others or of one man to all other men, is not known to the primitive for whom every woman is about the same as every other woman provided she is not too old. Suicides caused by disappointment or thwarted love are too frequent in primitive societies to allow such an assertion to pass unchallenged.

In our view, then the premisses on which Mr Aldrich builds are unsound, but that does not detract from the great interest and stimulation to be derived from this volume. There are many points of anthropological detail on which we feel bound to disagree like the alleged ignorance of paternity for which both the Australian and Trobriand evidence is not sufficiently convincing. He unduly depreciates the intellectual curiosity of primitives, and his explanation of the reason why sexual and other taboos are relaxed on ritual occasions is far from complete. But despite these and other points of disagreement, we have found the book provocative of thought and it should be of real value to the critical student of primitive psychology. In discussing the difficulties of language and interpretation Mr Aldrich makes a new and excellent point which goes far to explain our frequent misunderstandings of to us, illogical identifications in primitive cultures. He points out that we use the copula 'is,' instead of some word like "acts," which is really more what the primitive means. When he says that *x is y* he is really saying *x* acts like *y* or has the same effect as *y*. Mr Aldrich might have added that in many primitive languages the word for 'is' expresses not the copula (which does not exist), but a state or function.

THE A.A.M.S.

'The Australian Army Medical Services, Vol. I,'* deals with the Gallipoli campaign, the campaign in Sinai and Palestine, and the occupation of German New Guinea. In each case it is more than a description of the Australian Medical Services, it is a study of the medical problems connected with each campaign. Thus, in following the Gallipoli campaign, the author has surveyed the whole sphere of activities from the beaches of Anzac to the base hospitals of Egypt and Malta. The complications caused by the division of executive responsibility between the Navy and Army, according as the evacuation was on sea or land are at once apparent. In these combined naval and military operations new difficulties arose which in many instances were entirely unforeseen and had not previously been studied. Even to-day comparatively little has been written about this intricate subject. The necessity of preserving a clear line of evacuation is at once obvious and in these pages it is now clearly demonstrated how a want of preparation combined with inadequate facilities and congestion in base hospitals, was responsible for slowing down the evacuation from the front line. The portion dealing with the Palestine and Sinai campaign records the work of the medical services with mounted troops with careful attention to detail. As much of the ground covered is new this is certainly not the least interesting part of the present volume.

The experience of the Australian Imperial Force was similar to that of the British Army as a whole. Similar problems were encountered and their solution was determined by the same principles and policy. It may be claimed that the experiences of a self contained homogeneous force of the size of the A.I.F. can be more easily collated than those of the vast armies of Europe and so may be of value in illuminating the obscurities of a larger field. The administrative and regimental officers of the medical services of the Australian military forces were almost without exception civil practitioners with only militia training at most. These suddenly became responsible for the medical side of a great military organization. In many instances their first business was to grasp an understanding of their new duties from such experienced soldiers as were available. Once familiar with their new sphere of activity they became in turn the instructors, bringing fresh minds and methods to consider and solve old questions so that the whole medical services of the Crown regular and irregular benefited by their stimulus. No one doubts that one reason for the high state of efficiency of the medical services of the Crown during the war, was the receptiveness of the regular soldiers to suggestions from the highly efficient temporary medical officers from home and from the oversea Dominions. The object of the book is at once historical and instructional, so that should a similar emergency arise in the future, a new generation may face the fresh crisis with a clearer knowledge of the principles of medical strategy and tactics than did their predecessors in 1914–18.

The authors of this first volume of the *History of the Australian Army Medical Services* are to be congratulated on fulfilling their task in a thoroughly satisfactory and lucid manner. All three parts of the present work are full of valuable information, and are well written in a clear, instructive style. The volume is to be recommended, not only to those interested in the various military problems presented and in the account of their solution, but also to those students of military history who would read again, from another angle, the story of the Australians in the great war.

NOTES ON BOOKS

The fourth edition of *Roentgen Interpretation. A Manual for Students and Practitioners*† by HOLMES and RUGGLES is welcome. The subject matter is brought up to date more particularly in connexion with bone pathology and the recent developments in the examination of the genito-urinary tract. There is no better book for students and practitioners they will find in it accurate information regarding radiological technique and diagnosis. The authors lay great stress on a thorough knowledge of

* *Official History of the Australian Army Medical Services in the War of 1914–1918.* Vol. I. Edited by Colonel A. G. Butler, D.S.O., V.D., B.A., M.B., Ch.B., A.A.M.C. Melbourne: Australian War Memorial. London: Australia House. (Pp. xxvi + 873; 228 illustrations, maps and graphs. 21s. 6d. post free.)

† *Roentgen Interpretation. A Manual for Students and Practitioners.* By George W. Holmes, M.D., and Howard L. Ruggles, M.D. Fourth edition, thoroughly revised. London: H. Kimpton, 1931. (Pp. xii + 333; 237 figures. 21s. net.)

The fee charged for tonsillectomy is 50 dollars, plus hospital expenses, and, owing to the high costs, the correction of physical defects is unsatisfactory. Private nurses charge from 6 dollars a day of twelve hours. The medical relief of poor people is evidently very incomplete, and not satisfactory; but it would appear that recent legislation is likely to result in much improvement in this direction. In certain districts deplorable social conditions, of which examples are quoted, exist, which would not be permitted in Great Britain.

Health education in the schools requires to be developed, but good progress has been made with systematic instruction in food values and in the orthopaedic treatment of school children. The county health demonstration programme has met with considerable opposition from certain medical practitioners, who object to lay control, and have made charges of "ineptitude," "extravagance," "pauperism," etc., against the scheme; but most readers of his review will agree with Dr. Winslow that many of the complaints have no justification.

This survey of rural hygiene can be strongly recommended to public health workers in Great Britain, for it shows what can be done in an area undeveloped so far as essential health services are concerned, and it also sets forth clearly the difficulties that have to be overcome, many of which do not exist in this country or have already been overcome.

T. E. H.

Nova et Vetera

JOHN HUNTER'S BUFFALOES

John Hunter collected, as is well known, animals "of the strangest selection in nature" in the grounds of his country house at Earl's Court; and Jesse Foot, in his scurrilous *Life of Hunter*, describes "those buffaloes which Hunter so lately as in 1792 put into harness and trotted through the streets of London." To insinuate that this was for advertisement, Foot suggests that Hunter can never have judged "that he might have been fairly outrivalled by a showman's dromedary, especially if there were, and probably there would be, the additional effect of a monkey mounted on his back—playing its little antic tricks." This impudent fancy is the subject of one of the most amusingly mischievous of Foot's *Illustrations to the Life of Hunter*, now in the Wellcome Historical Medical Museum. On the left of the drawing is the showman with his monkey riding on the dromedary, and to the right Hunter stands in a low two-wheeled cart drawn by a pair of small dark buffaloes.

William Clift came to Hunter's household in this year (1792), and, as might be expected, he has left a more veracious account of the buffalo cart. In 1816 Clift, being then Conservator of the Museum, drew up a manuscript catalogue of the Hunterian pictures at the Royal College of Surgeons. The first item in this catalogue, which is now in the College library, happening to be "A drawing of three Buffaloes (Zebus) from the East Indies, which were in Mr. Hunter's possession alive," Clift wrote out the following amusing story.

These Zebus were alive in Mr. Hunter's possession at Earl's Court, Kensington, in 1792-3, and used to be driven, or rather led, in a cart to 13 Castle Street Leicester Square with Vegetables for the service of the Family every Wednesday; and in return took back the Stable Dung produced ad interim—and during the Winter Season the off-fall from the dissecting-rooms. The large white Animal was the Leader: the two small ones in the Double Shafts. On one (and only one) occasion, on there being a *new* Carter, a wildish Scotchman, who was known by the Cognomen of Scotch "Wolly" (Tom Barton having been discharged for Drunkenness) he first brought the dissecting room Hampers *into the street* in the Cart *without covering them as usual with the Stable Dung;* and *as usual* went into the Kitchen to get his highland Crop filled with Beef and Beer:—In the meantime, some of the boys of the neighbouring school of St. Martin's parish, opposite the Mews Gate, and other Street Boys, being *aware* that Apples and other fruit were usually brought from Earl's Court, soon mounted the sides of the cart (the Buffaloes being taken during the time into the stables *behind*) to explore the Contents of the Hampers. The first object that struck their *attention*, instead of the Apples they *expected*, was the *Putrid* half dissected arms of a Man, green blue & yellow;—Livers, intestines & other parts,—and the disappointment occasioning some demur and disappointment as well as remark to the street passengers, every one of whom took a peep, and consequently a numerous Audience was soon collected to witness the Prelections and Demonstrations of a Hair-Dresser's assistant who put himself very forward in the Discussion, which being carried on in a very audible manner, presently attracted the notice of the Inmates of the Dissecting rooms (which were the Attics of No. 13, Castle Street): who soon came to the Rescue, on my application, in their dissecting dresses. . . . We soon disturbed the Carter from his dinner, and his first essay was to put his cattle to the cart, but the haloo-balloo was too great to succeed in that attempt—the cart was run into the coach house and the doors attempted to be shut:—the buffalo being held outside with the halter between the two halves of the Door; the before-mentioned hair dresser in his white jacket and apron with pockets and paraphernalia of razors & powder puff attempted to *cut* the Halter and set the buffalo loose: but the noble beast made a dead set at him, and fortunately pinned him to the door *between* his horns instead of *on* them: the Scotch Willy was pushed out and the Door closed;—the Buffalo ran down the street, turned up Green Street, and ran round Leicester Square with the man holding on at the end of the long halter, to the great amusement of the crowd who by degrees dispersed, and in the evening the cart was dispatched minus the Hampers, and *so ended* the affair: the carter never knowing what we had placed in his cart, until long afterwards: as Peter Shields the Head Gardener at Earl's Court always superintended the *return* of the cart and quietly disposed of whatever was transmitted *from* London in *return* for the good things he had *sent* to us.

The before mentioned "Wolly" some time afterwards having returned to Earl's Court with the usual cargo of Hampers and stable-dung, took upon himself the responsibility of shooting the contents of his cart of *Stable Dung* on the Dunghill, in a very retired situation at the back of the Premises, without being aware of what his cart contained, and without having consulted the *Head Gardener*. To his utter amazement on the Capsizement or Capsission of the contents of his cart the Hampers contained *such things* as utterly capsized his wits and his appetite:—The following is a nearly *word for word* description of the Dialogue which occurred between the before-named "Wolley," and excellent, kind-hearted Mrs. Shields the Gardener's Wife:—

——"Why, Wolly, what's the matter wi' ye, the day, my mon?

——Ahé, Missus, woman, Ive had *sic a turn*!

——Why, what the De'el ails ye Man: ye seem a' through other!

——Ahe, Missus—what d'e think? On shooting out my keart, what did I see, but a Man's fut wi' a' the tane tae tall't. Ahe, it gie'd me *sic a Turn* that I went to the *Pub*, and got a glass o' Gin, and a pot o' porter, and a quarter o' cheese, and a twa-penny loaf: I was parfectly horrefeed and astoonded! I was parfectly bewilldert!!

——Weel, weel! Wolly my man, It wonna do that ye should ha' *sic a turn* every day! y'er shilling a day wou'd'nt admit o't!!!"

W. CLIFT

The little comedy of the "hair-dresser's prelections" needs no comment; but it is interesting to note the list which Clift gives (in his MS.) of the "dissecting-room inmates" and pupils of Hunter at this time. "Scotch Willie" is entered among the Earl's Court outdoor servants in Clift's list of Hunter's dependants, which was printed in the *British Medical Journal* (1890, i, 739). In this list he was described as "half-witted" and "employed in the fields"; but this was evidently before his promotion, for the list also includes "Tom Barton, carter." The story, in accounting for the buffaloes' weekly journeys, satisfactorily disproves Foot's insinuation that Hunter in person drove the buffalo cart from Earl's Court to Leicester Square, "trotting through the streets of London."

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THE SCIENTIFIC WORLD-PICTURE

The scientific world-picture of to-day, which formed the theme of General Smuts's presidential address on September 23rd at the centenary meeting of the British Association, is of more than purely scientific interest; the conclusions of science as to the nature of the universe are felt by everyone to be closely connected with our views on human destiny, and a recognition of their import is not confined to scientific circles. A hundred years ago the discussion of this subject could hardly have been approached without arousing considerable heat, and it may be reckoned among the distinctive advances made in the period that all traces of acrimony have disappeared in the reception and discussion of problems of this nature. On all sides our limitations are now more fully appreciated, and we are beginning to realize, what Herbert Spencer endeavoured to teach, that our knowledge is relative, that we only know in part, and that whatever picture of the universe we form must necessarily fall short of the reality. Moreover, the picture itself is subject to change with changing knowledge, and, as General Smuts recognizes, that of to-morrow will not be that of to-day. Our conceptions of the universe are therefore admittedly conventions, yet not mere academical products, since they serve a practical purpose in satisfying human cravings, providing, as they do, passable explanations of the purpose of human life on the one hand, and on the other representing the results of natural, innate efforts to bring observed facts under some consistent generalization. From the former tendency the theological systems have arisen, from the latter the succession of world-pictures which characterize the several phases of scientific history.

Conceptions of the constitution of the universe prevailing a hundred years ago, and (with some protest) accepted in the main almost up to the present time, have recently been revolutionized by additional knowledge acquired about the nature of matter and space. As regards matter, the fact is now familiar to most that it consists of energy or a combination of energies, and its recognition has removed a difficulty felt in the attempts to reconcile our ideas of mind and matter; an apparent distinction in kind seemed to exist, rendering their relationship inscrutable. If, however, mental processes may be regarded as manifestations of energy, the distinction disappears, and it is possible, as General Smuts suggests, that physical and psychological processes may in the future be submitted to similar lines of investigation and be of mutual assistance in the discovery of their underlying laws. However this may be, the old material interpretation of the universe has been abolished.

The recent advances have, further, fundamentally altered our standards in regard to the entities with which physical science is concerned. Mass, for example, which we have always regarded as a constant and unchangeable property of a body, has been experimentally proved to be variable. Similarly with notions of space: we were wont to consider the space between two points as being constant as regards, for example, its property of permitting the transmission of light in a straight line only. But it is now known to be variable in this respect, compelling, it may be, the route traversed to take a curved instead of a rectilinear form. Space can therefore no longer be represented in linear terms merely; the deviations from the straight line, varying at different instants in correspondence with the character of the curve, necessitate the introduction of the notion of time, in addition to that of distance, in our definition. Thus the conception of a new entity—space-time—has arisen, the far-reaching significance of which may be realized from the fact that other physical entities have come to be considered as mere configurations of space-time. It is admitted that the steps by which this transformation has been brought about are beyond the comprehension of the layman, and cannot, according to General Smuts, be understood without the aid of the most abstruse mathematics, and, even so, not without a due regard to "epistemological" considerations. In this particular, therefore, the layman must rest content with mere adumbrations of the truth. As a consequence of this transformation, the flexible and variable continuum called space-time, which takes the place of our old notion of space, must, as stated by General Smuts, be regarded as the only physical reality in the universe, and its curvatures and unevennesses are held to constitute what to our senses appears as the material world.

Space-time, then, remains as the sole medium in which the scientific world-picture has to be delineated, and General Smuts has attempted the delineation in his theory of holism. From the flexible and variable properties of space-time we derive our sense of the distinction of one object or process from another, and of the whole world of phenomena. Observation, however, reveals the fact that phenomena do not present themselves in haphazard fashion, but as associated in definite patterns or configurations, producing the impression that they are under the control of some dominating principle. In other words, they appear to be organized. From this conclusion certain deductions follow, arising from considerations as to the nature of organization. In an organized structure we are apt to regard the individual parts as merely juxtaposed and exercising their influence on the whole merely through this juxtaposition. It would seem, however, that this is in reality merely a conventional mode of thought, adopted through the necessities of language, and that each individual part of an organism would be more correctly regarded, not as a detachable segment, but as having lost its individuality, and become merged in the whole, and in this sense as being co-extensive with

the whole. This conception is evidently applicable not only to an object and its parts, but also to objects and their environment, and consequently to the whole universe. Starting with space-time as the physical basis of the universe, the theory of holism (ὅλος, solidus, whole or entire) apparently depicts the universe as an organic whole in this sense—on the one hand the flexible physical continuum of space-time, on the other hand the dominating and active principle of organization working within it. It is evident that such a theory leaves room for, and indeed facilitates, the conception of evolution and the progressive development of a sense of moral, religious, and aesthetic values foreshadowed in General Smuts's eloquent and illuminating address.

STUDIES ON THE ETIOLOGY OF RICKETS

The Scandinavian periodical *Acta Paediatrica*[1] has recently published as supplements three important papers dealing with the etiology of rickets. In the first supplement Dr. T. Skaar reports the results of an extensive series of experiments on dogs. The animals were fed on a variety of rachitic diets, and estimations were made of the intake, excretion, and serum content of calcium and phosphorus for periods extending over several months. The paper contains a large amount of interesting biochemical data. One of the most noteworthy of the conclusions is that lack of vitamin D and vitamin C causes both the phosphorus and the calcium balances to be negative.

The second supplement contains a report of clinical and experimental studies by Drs. K. U. and G. Toverud upon mineral metabolism during pregnancy and its bearing on the disposition to rickets and dental caries. The paper contains a mass of data on the mineral metabolism of pregnant women, of pregnant bitches, and of puppies. The authors show that the calcium and phosphorus requirements during the last part of pregnancy are much higher than is generally recognized, and they find that negative Ca and P balances often occur at this period owing to the deficient mineral content of the diet. Other factors, and particularly a deficiency in vitamin D, may play a part in producing this negative balance. The authors conclude that a mineral and vitamin deficient diet during pregnancy and lactation predisposes the offspring to rickets and dental caries. They have investigated the effects both of varying the calcium and phosphorus intake, and also of administering cod-liver oil. They conclude that the minimum daily requirements during the last part of pregnancy are 1.6 grams Ca and about 2 grams P. Unless these amounts are available, there is a negative mineral balance. They recognize the value of cod-liver oil, especially during the winter months, but show that this cannot compensate for an absolute deficiency of minerals in the diet. Since about three-quarters of the calcium intake is derived from milk, the problem is very largely one of adequate milk supply. The authors state that the average milk consumption of the cases investigated did not exceed 500 to 600 c.cm. (0.9 pints) per diem, and that nearly a litre ($1\frac{3}{4}$ pints) is needed. These figures for milk consumption are higher than would be obtained in Britain, and similar investigations here would probably show a more acute calcium deficiency in pregnant and lactating women.

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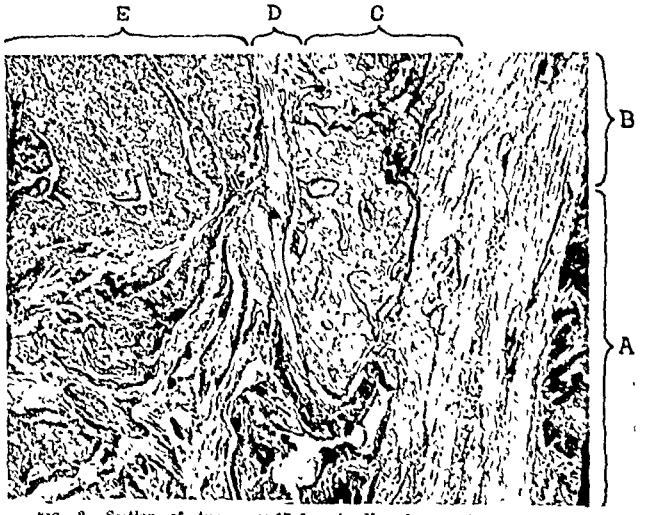


FIG. 3.—Section of tumour × 17·5. *A.* Nasopharyngeal tumour. *B.* Muco-periosteum of nasopharynx. *C.* Basi-sphenoid bone. *D.* Periosteum. *E.* Intracranial tumour.

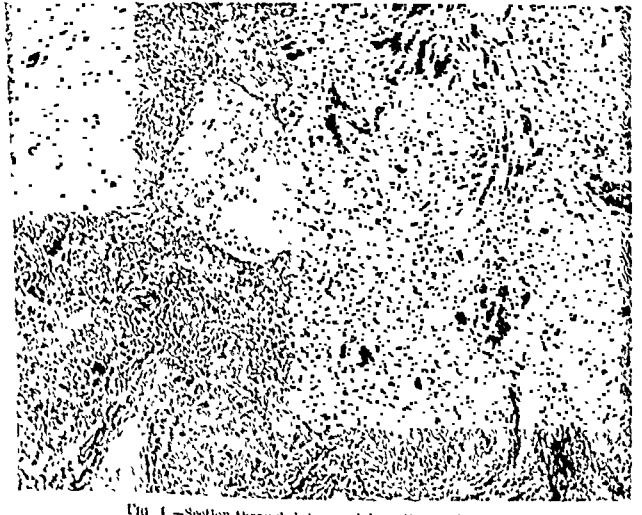


FIG. 4.—Section through intracranial portion of tumour.

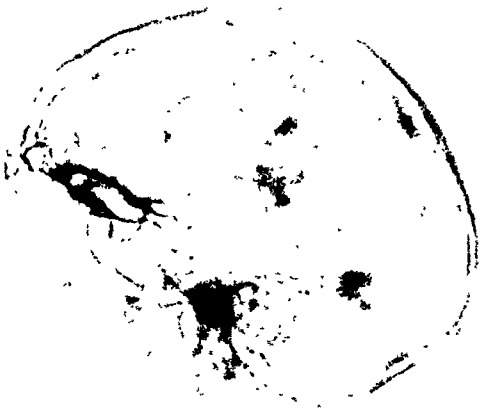


FIG. 1.—Radiograph of skull showing at (A) extensive destruction of basi-sphenoid bone.

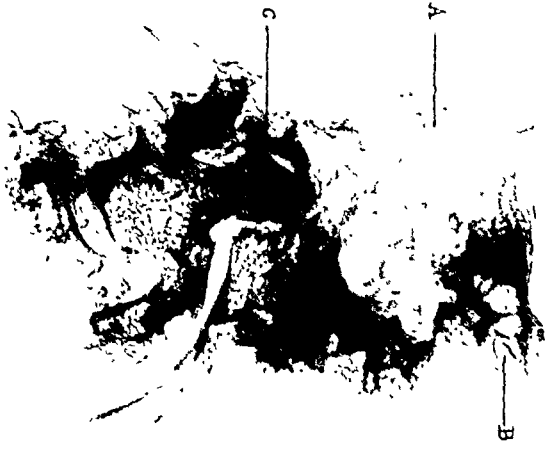


FIG. 2.—Radiograph of basi-sphenoid and adjacent bones. *A.* Basi-sphenoid showing destruction of bone by tumour. *B.* Semicircular canals. *C.* Odontoid process of axis.

the whole. This conception is evidently applicable not only to an object and its parts, but also to objects and their environment, and consequently to the whole universe. Starting with space-time as the physical basis of the universe, the theory of holism (ὅλος, solidus, whole or entire) apparently depicts the universe as an organic whole in this sense—on the one hand the flexible physical continuum of space-time, on the other hand the dominating and active principle of organization working within it. It is evident that such a theory leaves room for, and indeed facilitates, the conception of evolution and the progressive development of a sense of moral, religious, and aesthetic values foreshadowed in General Smuts's eloquent and illuminating address.

STUDIES ON THE ETIOLOGY OF RICKETS

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FIG. 1.—Endometrium in patient, aged 41, 4-para, with history of continuous blood loss. Shows hyperplasia of the glands with marked cystic change.



FIG. 2.—From patient, aged 50, 0 para, with history of menorrhagia. Admitted for continuous bleeding for three weeks. Shows marked proliferative change in glands with well-marked pre-menstrual phase.

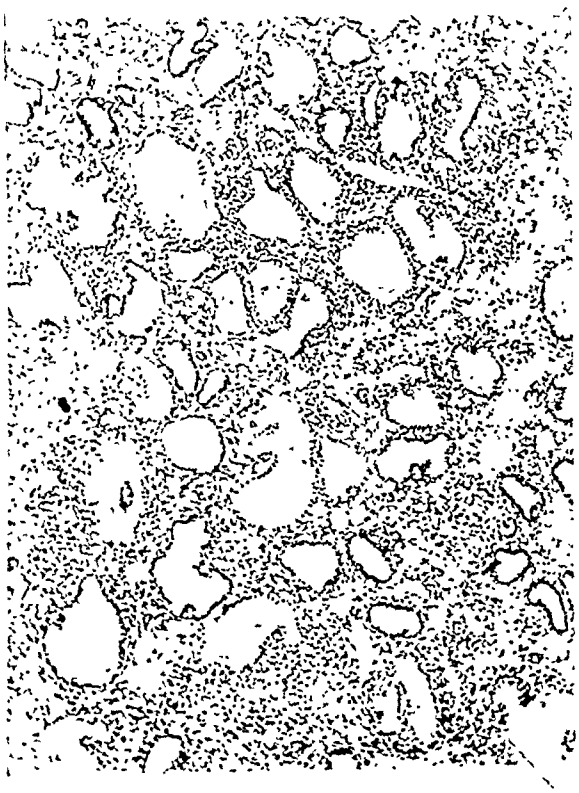


FIG. 3.—From patient, aged 45, 1-para, with very severe menorrhagia requiring treatment with radium. Shows irregular hyperplasia.



FIG. 4.—From patient, aged 27, 3 para, with polymenorrhœa and excessive loss, showing active and irregular hyperplasia with numerous cystic changes.

JAMES YOUNG: MENORRHAGIAS NOT DUE TO UTERINE DISEASE



FIG. 5.—Uterus, tubes, and ovaries from woman, aged 52, 10-para, with a long-standing history of menorrhagia. Admitted for fourteen weeks' continued bleeding. The uterus has been cut out in the coronal plane complete in one microscopic section and shows (*a*) Marked enlargement from myohyperplasia; (*b*) general proliferation with marked cystic glandular change in the endometrium; (*c*) necrosis in the endometrium (the darkly staining area in the lower part); (*d*) invasion of the muscle by endometrium (adenomycosis); (*e*) proliferation and cystic change in cervical glands with polypoidal formation. There are bilateral cystic follicles in the ovaries. No corpora lutea are present. Case of metropathia haemorrhagica (Schroeder.)

A DICKSON WRIGHT VARICOSE ULCER



FIG 1.—Mrs. C. Large painful ulcer of five years' duration.



FIG 2.—Mrs. C. Effect of application of ten weeks' skin grafting.

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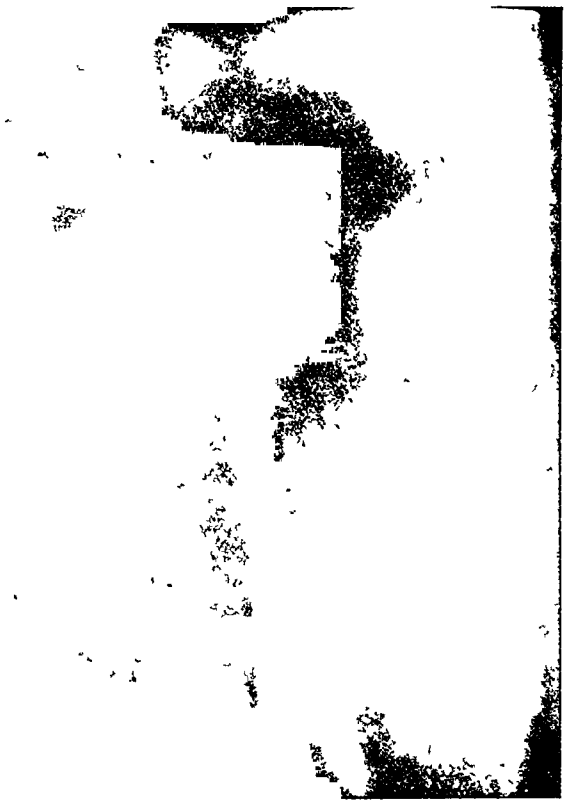


FIG. 1.—Radiograph showing passage of tube, June 14, 1929.



FIG. 2.—Showing an immediate meal distending the œsophagus. July 27, 1929.



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ch, July 31, 1929

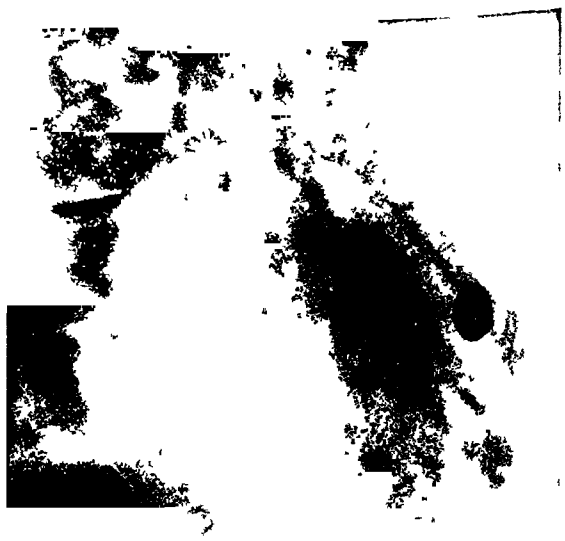


FIG. 4.—Showing a bread-and-milk barium meal
thick cream, taken immediately after the

enough to afford large motor boats, and hence carry their catches during the fishing season direct to larger ports, while in the winter there is scarcely any fishing, because the village faces the open sea ; hence the women and children get very little fresh fish and live for the most part on salt fish. Rickets is lowest in the poorest hamlets at the head of the fiord, for here the inhabitants go out in rowing boats all the year round, and thus obtain a continuous supply of fresh fish. The author holds that the evidence he has collected supports strongly the view that an adequate and regular supply of vitamin D is the most important factor in the prevention of rickets in this district. He suggests that salt fish may tend to produce rickets, and offers no opinion as to whether other parts of fish besides the liver have any antirachitic action. Those interested in the production of cod-liver oil have long known that rickets was prevalent on this coast, but until now it has been unexplained. This careful analysis of the incidence of the disease does much to dispel the mystery.

A CONSPECTUS OF HOSPITALS

That familiar work of reference, *Burdett's Hospitals and Charities*, after forty-two years' useful existence, has been embodied in rearranged form in a new publication, *The Hospitals Year Book*,[1] which incorporates, also, the statistics issued in the annual reports of the King Edward's Hospital Fund for London and the Central Bureau of Hospital Information. The result is the most comprehensive survey of the British hospital system, municipal as well as voluntary, that has yet appeared. The statistical information is conveyed in 139 tables packed with figures, and the directory portion, which includes particulars concerning even the smallest and most local institutions, spreads itself over 370 broad pages. We learn that 60 per cent. of the voluntary hospitals in London, 76 per cent. of those in the provinces, and 86 per cent. of those in thrifty Scotland ended the year 1929 with a credit balance on their maintenance account. The income per available bed in London hospitals having over 100 beds was £245 ; in the hospitals having fewer that 100 beds and more than 30 it was £208, and in the smallest hospitals, with fewer than 30 beds, it was £192. The corresponding figures for the provinces were £155, £138, and £131. Voluntary gifts are still the largest source of maintenance income, patients' contributions coming next (except in Scotland), and interests on investments third. The number of beds for private patients in London hospitals is 1,340, the charges ranging from three to six guineas weekly. In the largest of the hospitals under construction at the present time, Bradford Royal Infirmary, with 406 beds, there is to be a special block for 70 private patients.

The volume of work accomplished under the voluntary system is amazing. At 929 hospitals, with 69,202 beds, the total number of new in-patients during 1929 was over one million, and of new out-patients five and a quarter millions. The normal annual rate of increase under the voluntary system is about 1,500 beds, 40,000 in-patients, and 150,000 out-patients. The figures for out-patients are interesting in view of the discussions recently on the out-patient problem. More than one-third of the total number of out-patients are treated at the 32 hospitals which have medical schools. The comment is made—which we take to express the view of the British Hospitals Association, under whose auspices the annual is issued—that surely the same limitation of admission to the out-patient department should apply as already applies with regard to admission to the wards, where no one upholds the doctrine of the " ever open door " for in-patients. Except in cases of emergency, admission to the ward is definitely limited within well-known boundaries. Why not an equal limitation in the out-patient department? Out-patient clinics for persons suffering from mental illness are the subject of an interesting footnote. The experience of one provincial mental clinic is quoted, in which, apart from patients of the neighbouring mental hospital who had been released on parole, 83 patients were dealt with during the year, 13 of whom were found to be suffering from deficiency in mental development, 10 from organic disease of the nervous system, 27 from functional psychosis, and 33 from psychoneuroses and neurosis.

Figures are barren things without imagination to clothe them, but there is a certain impressiveness in 600,000 operations under a general anaesthetic being done in a year in 600 provincial hospitals alone. The average weekly cost of in-patients seems to vary widely, even among hospitals otherwise comparable. Thus, at Charing Cross it is £3 17s. 3½d., and at Middlesex £5 4s. 7½d. At Hampstead General Hospital the figure is £4 7s. 7¾d., at Bristol Royal Infirmary £2 18s. 9d., and at Radcliffe Infirmary, Oxford, £3 5s. 10½d. The average cost for each out-patient attendance is given as 2s. 2.18d. at St. Bartholomew's, at West London Hospital 1s. 3.46d., at Addenbrooke's Hospital, Cambridge, 1s. 6.25d., and at Plymouth, South Devon, and East Cornwall Hospital it is as low as 4.64d. These wide variations suggest that different methods have been adopted in computing " overheads." The hospital in London which has the largest medical staff is St. Bartholomew's, with 84, followed by St. Thomas's, with 81 ; but in the provinces, Manchester Royal Infirmary has 95, and in Scotland, Glasgow Royal Infirmary has 113. Among municipal and public assistance hospitals, the largest medical staff is at Stobhill, Glasgow, with 17 officers. The London Hospital has the largest nursing staff of a voluntary hospital in the metropolis, numbering 490. In the provinces, Manchester Royal Infirmary heads the list with 228, and in Scotland, Edinburgh Royal Infirmary, with 431. The largest nursing staff at a municipal hospital (as distinct from mental hospitals, where the male and female attendants may reach four or five hundred) is 300 at Belfast General Infirmary, followed

[1] *The Hospitals Year Book, 1931.* Issued under the auspices of the British Hospitals Association and the Joint Council of the Order of St. John and the British Red Cross Society. London. The Nursing Mirror, Ltd. 1931. (15s.)

by 282 at Stobhill, 275 at Crumpsall, Manchester, 268 at Hope, Salford, and 266 at Walton, Liverpool. Another feature of this informative volume is a list of contributory schemes and organized workmen's collections; they number 280, but it is not suggested that this is complete. Wherever one dips into this compilation some interesting point is brought to the surface: the experience of hospitals with rubber flooring, the time at which work commences in the wards, laundry charges in hospitals, working arrangements in *x*-ray departments, salaries and emoluments of dispensary staffs, materials used for the walls of recently constructed operating theatres, ratio of operating theatres to beds for surgical cases, and so on. The information has been painstakingly collected and is clearly set out.

RECENT RESEARCH ON DIPHTHERIA

The recent increase in the death rate of serum-treated diphtheria patients recorded in certain areas, particularly in Central Europe, still remains unexplained. One hospital in Berlin had a death rate of over 20 per cent., yet Bie in Copenhagen reported less than 5 per cent. While most writers state that they cannot reach any easy explanation, some suggest that antitoxin is efficacious if properly used (that is, early and in adequate doses), while others are inclined to throw some blame on antitoxin. Husler[1] in Munich investigated sixty severe attacks with forty-five deaths; only twenty-three of the patients were given serum on the first day on which they were seen by a medical man, and in twenty-five instances serum was delayed more than two days. Pockels[2] also relates that not one of forty-four patients who died had received serum on the first day of illness, and but two on the second day. This delay—at first sight a grave reflection on the practitioner—is attributed, at least in part, to difficulty of diagnosis caused by an unusual appearance of the throat, with such congestion of the tonsils that the throat and the membrane behind could not be seen. Some authors blame the general lowering of social standards and care of infants, carelessness of the parents, objection by parents to giving antitoxin, or the cost of antitoxin. Among those who incriminate antitoxin, a small number affirm that concentrated serum is deficient in certain mysterious natural curative properties; others say that the type of the disease has changed, the clinical picture is different, and that some new antitoxin is called for to combat the increased malignity of the bacilli now prevailing. A new note has been added to the discussion by the investigations of Anderson, Happold, McLeod, and Thomson.[3] They suggest that there are two main groups of diphtheria bacilli causing the disease, *gravis* being responsible for toxic attacks with a high death rate, and *mitis* for mild attacks with a low death rate; while the intermediate group is less often found and of less importance. It is certainly odd that diphtheria bacilli have not previously been divided into two clear-cut groups—those that do, and those that do not ferment starch and glycogen—which these workers describe. But the serologist will not yet be wholly convinced. He will note that the Leeds workers weight their argument by including amongst the *mitis* strains a number that are avirulent; even with this loading—while it is true that in fifteen of the sixteen severe attacks *gravis* was found—the percentage (33) causing "moderately severe" attacks was the same for both types, and 36 per cent. of the *gravis* strains were obtained from carriers or from patients suffering from "slight" attacks or from rhinitis. In testing virulence by the intracutaneous method in guinea-pigs, the severest lesion "very marked" was caused only by *mitis* strains. During the past few years a number of strains from "hypertoxic" attacks in Europe have been examined in various Continental and English laboratories; all were completely neutralized by ordinary concentrated antitoxin, whether culture or toxin was used. No unusually high virulence could be detected. Obviously, final judgement must await further work. There is little evidence to suggest that ordinary concentrated antitoxin has failed to save patients treated during the first day of illness, or that, if given intravenously in full doses early in the disease, it has failed. Until it has been clearly shown that diphtheria bacilli, obtained from instances of suspected failure of serum treatment, resist ordinary commercial antitoxin, the clinician may safely await the result of further research.

[1] *Münch. med. Woch.*, 1931, p. 1247.
[2] *Med. Welt*, 1931, v. 86.
[3] *Journ. Path. and Bact.*, 1931, p. 667.

CENTENARY OF THE BRITISH ASSOCIATION

The British Association for the Advancement of Science was founded on September 26th, 1831, with a view to affording a common meeting-ground for "cultivators of science," to calling the attention of the educated public to the progressive discoveries made by investigators, and to the instituting of annual meetings throughout Great Britain at first, and latterly in the Dominions also. London has always been definitely excluded as a meeting-place until now, because the majority of the British learned societies assemble there annually, but it was felt that this rule should be broken in the centenary year. The British Association owed its origin in great measure to the Yorkshire Philosophical Society, and it was in York that the Association held its first meeting, under the guidance of the principal officers of that society. Reference is made in this issue at page 575 to the presidential address of General Smuts, and we hope next week to publish a report of some of the papers and discussions which have special medical interest. A beginning was made by each of the thirteen Sections on Thursday, and certain of the proceedings in the Sections of Physiology and Psychology deserve mention. In the first of these a discussion on the physiological basis of sensation was opened by Professor E. D. Adrian, F.R.S., who remarked that, although the events in the brain which caused sensation were still uncertain, knowledge was now available as to the kind of messages transcribed by the sensory nerves, for they could be detected electrically. A succession of impulses passed along the nerve fibres, each being a brief surface reaction, which spread down the fibres accompanied by a change of electric potential. Their frequency varied with the intensity and abruptness of the stimulus, but in any one fibre they were all alike, and they were of the same general type in all nerve fibres. In its main outline the working of the sensory apparatus seemed to depend on fairly simple physical and chem-

changes, but many outstanding lines of investigation required to be followed before an explanation could be obtained of the variety of sensations which were experienced. Dr. C. S Myers, F.R.S., thought, however, that relatively little light could be thrown on the physiological basis of sensation by studying the sensory nerve fibres of the sensory end-organs The more important cerebral sensory centres were essential for sensation, though they must not be regarded as its seats. Sensation depended on the relation of their activity to that of the vast integration of central nervous activity on which "self-activity" was dependent; where no "self-activity" was involved there could be no consciousness of sensation. Dr. Myers discussed the differentiations of sensations, and thought they might be fundamentally classified as "clonic" and "tonic." On the future study of the integration of these two (and perhaps other) elementary classes of sensation, and of the central impulses involved, depended the obtaining of further additions to our knowledge of the physiological basis of sensation In the Section of Psychology, Professor C W Valentine discussed the methods of experiment and observation in the psychology of early childhood He gave illustrations of the ways in which artificial experiments should be associated with careful observation of the child's reactions to ordinary daily events in order to deduce general principles as well as individual characteristics. Thus at the age of 2 or 3 years anger and pugnacity were distinguishable from each other, there was a clear difference, also, between self-assertion and self-display. Some mental capacities at their earliest dawn seemed to depend on the energy supplied by spontaneous momentary interest. Dr. Shepherd Dawson, speaking on intelligence and fertility, said that there was a small but significant negative correlation between the intelligence of the child and the size of the family The birth rate was higher in families represented by the dull children, and although the deaths were also higher, the number of survivors was greater He suggested the possibility of there being a slow, progressive, and serious dilution of intellect in the general population, and urged the need for study of the inheritance of mental aptitudes.

RESEARCH WORK IN MENTAL DISEASE

Part II of the annual report of the Board of Control for the year 1930[1] contains an account of the scientific research work which has been prosecuted in the various mental hospitals of England and Wales As in former years, a great deal of research has been carried out with a view to determining the presence of toxic or septic foci in psychotic cases. The clinical report of the Birmingham Joint Board of Research draws attention to the fact that the sources of the responsible toxaemia in cases of mental disorder are outside the scope of investigation of a single department, and that team work is therefore essential for the complete treatment of the case. Seven cases illustrative of the part played by oro-nasopharyngeal sepsis, in relation to the puerperal and post-puerperal psychoses, are quoted; and the interrelationship of appendicitis, oro-nasopharyngeal sepsis, and mental disorder is discussed in reference to these cases. A communication from Cardiff City Mental Hospital denies that there is any relationship between the psychoses and pelvic disorders, except in a very small number of cases. The effect of menstruation on the mental state is regarded as negligible, and a routine pelvic examination, except in such cases as show symptoms pointing to pelvic lesions, is looked on as not only unnecessary, but as often having an adverse effect upon the mental state, even if only temporarily. A case of acute confusional insanity due to a septic focus in the right ear, and cured by the performance of a radical mastoid operation, is reported from the Cheshire County Mental Hospital, Chester. In the ear, nose, and throat department of St Andrew's Hospital, Northampton, search made for the evidence of sinusitis has not shown that it is, as has been stated, a common condition in psychotics Among the contributions from other mental hospitals are those relating to treatment by colloidal sulphur, tryparsamide, and malaria Asylum dysentery and allied infections is again the subject of report from the West Riding Mental Hospital, Wakefield.

[1] Seventeenth Annual Report of the Board of Control for the Year 1930 Part II London. H.M. Stationery Office 1931 (6s 6d net)

ECONOMIES AT GENEVA

The present demand for economy (writes our Geneva correspondent) has not left the League of Nations unaffected Delegates to the Assembly from nearly threescore countries, most of whom are experiencing national difficulties in balancing the budget, have come to Geneva determined that the League shall set an example in retrenchment It is, of course, true that the total expenditure of the League of Nations is comparatively trivial The League budget for 1932 amounts to 35,400,000 Swiss francs, or rather more than a million and a half in English money This includes the cost of the secretariat and its special organizations, the International Labour Office, the Permanent Court of International Justice, the Nansen International Office for Refugees, and all the branches of activity which have developed during the last twelve years No doubt economies could be effected in the League's work The verbosity of some of its delegates means waste of money as well as of time. Of one special committee of the League it is said that its documents have been so numerous that a pavement could be made of them on which the Polish delegates could walk from Geneva all the way back to their capital. But delegates are now pressing for "cuts," not because it will ease their own financial burdens, but because, as they say, if the League sets its house in order, it will be an example to the world The zeal for economy is, of course, admirable, but one sometimes wonders how far it is inspired by suspicion of the idealism for which the League stands It was a very lone voice, that of China, which was raised to point out that a little extra expenditure to-day might effect a great economy to-morrow Such views are not fashionable, and one feels, after listening to the debates in the Fourth Committee, which deals with finance, that there is a very real danger that before this Assembly closes, the work of the Health Organization, and of the organization concerned with the suppression of the drug traffic, together with other League enterprises, may be seriously affected The medical director, Dr Rajchman, has been strongly urged to reduce the figure of the budget of the Health Organization, in

view of the present period of stress, and of the fact that his organization will have at its disposal part of the new credits already provided for establishing a new field of health activity in China. He has agreed to consider the possibility of holding only one session of the Health Committee in 1932 instead of two sessions, but it was reported to the Fourth Committee that he was "adamant" with regard to the maintenance of the general work of the organization, pointing out that any reduction in the activities at headquarters would have an immediate repercussion on the efficacy of the work all over the world. So far a slight reduction in the appropriation for miscellaneous health inquiries has been made, but the scrutiny of the Fourth Committee is still to come. At the same time some very sincere tributes have been paid to the health work of the League. On behalf of India, Sir B. L. Mitter remarked on the considerable value to his country of the recent report of the Malaria Commission, and also said that India was in close touch with the Eastern Bureau at Singapore, where a comparative study of the problems of tropical disease was being effectively pursued. A saving is to be effected by the Permanent Central Opium Board, which will meet for only three sessions in 1932 instead of four. It is likely, also, that intellectual co-operation, another of the League's activities, will be pruned, for in that field the expenditure has largely exceeded the estimates. The League is faced with a very serious difficulty owing to States being in arrears with their contributions. Generally, in the past, the contributions in arrear have amounted to about 300,000 or 400,000 Swiss francs; last year they reached over 1,000,000 francs, and this year they stand at the astonishing figure of 1,700,000 francs, or one-twentieth of the total League budget. Formerly, only about five States were consistently in arrear; the number has now increased to fifteen. The truth is that an international organization, instead of being more or less immune from the privations to which national services are subject, experiences their cumulative effect.

MEDICAL INDUSTRIAL PSYCHOLOGY

The announcement at page 589 of the course of twenty lectures in medical industrial psychology to be given by Professor Millais Culpin and his colleagues at the London School of Hygiene and Tropical Medicine, marks an interesting development on the part of this institution, and brings into prominence a special subject that is regarded very largely as a newcomer to medicine. The whole relation of the work of the school to problems of industry will be watched with close attention. In epidemiology and vital statistics investigators from the Industrial Health Research Board have been co-operating with Professor Greenwood and his colleagues in research into the loss of working time due to minor illness of usually vague and uncertain etiology. Instruction and expert advice have been given on the methods of keeping and analysing records of loss of time, measurement of industrial wastage, etc. The physiological aspects of these problems of industry have already received and are receiving at the school specialist treatment and inquiry. The establishment of a chair of medical industrial psychology, and the placing of a course of lectures in this subject in the forefront of the programme for the coming session show that something substantial is now being done to attract the attention of the younger medical men and women of the day to these vital and largely unexplored industrial questions. A new and fascinating field of inquiry is thus opened up. The first course of lectures should attract large audiences.

THE MEDICAL REGISTER: UNTRACEABLE PRACTITIONERS

We publish in the *Supplement* this week (p. 188), at the request of the Registrar of the General Medical Council, a list of the names of those medical practitioners who have not replied to his inquiries as to the accuracy of their postal addresses. Any practitioner, wherever resident, whose name is included in this list should communicate at once with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, or, in certain specified cases, with the Registrar of the Scottish Branch Council, 12, Queen Street, Edinburgh.

ROYAL SOCIETY OF MEDICINE

The new session of the Royal Society of Medicine opens on October 6th with meetings of the Orthopaedic Section and of the Finance and General Purposes Committee. The officers of the society have decided to continue the holding of special discussions, and the following subjects have been chosen for joint debates between two or more Sections: (1) diagnosis and treatment of abscess of the lung; (2) treatment of acute head injuries; (3) visceral functions of the sympathetic nervous system; (4) dangers of infection in the dormitory; (5) active immunization in virus diseases; (6) mouth-breathing and nasal obstruction; (7) actions and uses of antimony compounds. The dates of these discussions will be settled later, and announced on the weekly diary card. The annual dinner of the Society will be held on Thursday, November 12th, at the May Fair Hotel, with the president, Dr. T. Watts Eden, in the chair.

The Harveian Oration will be delivered before the Royal College of Physicians of London by Dr. Robert Hutchison on Monday, October 19th, at 4 p.m. His subject is "Harvey, the man, his method, and his message for us to-day."

Professor A. H. Burgess has accepted an invitation to deliver the John B. Murphy Oration in Surgery at the Clinical Congress of the American College of Surgeons to be held in New York on October 12th.

We regret to announce the death, on September 20th, of Sir William John Ritchie Simpson, C.M.G., M.D., director of tropical hygiene at the Ross Institute, and emeritus professor of hygiene and public health at King's College, University of London.

We have also to announce with regret the death of Sir Harry Baldwin, C.V.O., M.R.C.S., honorary surgeon dentist to the King; and of Dr. William Francis Dearden, medical officer of health for the city of Manchester, and for many years the leading figure in the Certifying Factory Surgeons' Association.

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT FOR 1930

[FIRST NOTICE]

The annual reports of the Chief Medical Officer of the Ministry of Health will be documents of first importance to those who in later times come to construct the social history of the early twentieth century. They are an assessment of the state of the people, in respect not only of health and disease, but, by inference, of social and economic conditions. They describe the services that are available for protection and succour, and the achievements of medical research and of public health administration. They show how, in the course of years, owing to the application of new knowledge to the raising of the standard of living, to the energetic action of the authorities, or to causes less definitely known or not known at all, diseases which once devastated the community have almost disappeared or have lost their virulence. But the battle has only shifted its ground: new perils have arisen, new resources have to be brought into play, there are perplexing returns of forgotten visitations, and medical science has to be ever on the alert, quick to take up the new duties taught by new occasions and to adapt itself to an ever recurring emergency. In all this Sir George Newman never allows his readers to lose sight of the patient work of general practitioners of medicine. Their labours are to be seen all the time behind the interlacing strands of public health administration. The insurance medical service itself is, in Sir George Newman's view, the logical development of the public health system, and the insurance practitioner is as much the inheritor of the tradition of Simon as is the medical officer of health. Such recognition of general practitioners is well merited, but it is easy to conceive that someone else in Sir George Newman's position might have taken a more official and less liberal view.

BIRTHS AND DEATHS

The fact that this is a census year gives a greater precision to the vital statistics in the present report.[1] The population of England and Wales during the last decennium shows the lowest rate of increase ever recorded since census taking began, with the exception of the previous decennium, which witnessed the most destructive war and pestilence of modern times. The level of population has been maintained—but only just maintained—by the improvement in the rate of mortality. But this compensation cannot continue indefinitely, and by the middle of the century the population will have attained, or passed, its maximum. Not only the rate of growth, but the distribution of the population is altering. Northumberland and Durham are scarcely increasing at all, in Lancashire and Cheshire the rate of increase is very small, but in the south-eastern counties the multiplication continues. The flow of population is back towards that part of the country where the Anglo-Saxon *stock got its first foothold*.

In 1930 the children born numbered 648,811, an increase of 5,138 on the previous year. But the birth rate, 16·3 per thousand living, compares with 35·4, 32·4, and 29·9 respectively, for the last three decades of the nineteenth century. Even the average figure for the years 1926–30—namely 16·7—is well below the figure (19·9) for the previous five years. The death rate in 1930 was 11·4, which compares with 13·4 for the previous year, a year marked by a heavy death-roll from influenza, and with 11·7 for 1928. The infant mortality, 60 per thousand births, is the lowest yet reached, the figure was round about 150 in the closing years of the nineteenth century, and about 100 in the second decade of the twentieth.

Of the causes of death, diseases of the heart and circulation took first place, accounting for nearly one-quarter of the total, next came cancer and malignant disease, accounting for one-eighth, and then, in order of number, bronchitis, pneumonia, and other respiratory diseases, diseases of the nervous system, and all forms of tuberculosis. Invalidity, unlike death, cannot be statistically defined, but there is food for reflection in the statement that in 1930, among the insured population of England and Wales alone, a total of 26½ million weeks' work was lost as a result of sickness and disablement. Put more pictorially, it means that a population equal to that of Norfolk was immobilized for the whole twelve months.

MATERNAL MORTALITY

The maternal mortality returns continue to be disappointing. In 1930 the rate (4·4 per thousand births registered) showed a slight increase on 1929 (4·33). As many as 2,854 deaths of women were classed to pregnancy and child-bearing. If to these we add 774 others not so classed but returned as associated with pregnancy and child-bearing, it means that for every 179 infants brought into the world one mother's life was sacrificed. The total puerperal mortality stands at the highest figure, with the exception of that for 1928, ever recorded since the classification was introduced twenty years ago. The mortality due to puerperal sepsis (1·92 per thousand births) is greater than it ever was.

The variation of the puerperal mortality rate in different parts of the country is significant. For seven years eighteen county boroughs have had an average mortality rate of over 5 per thousand births, in eight of them the rate has been over 6 per thousand. All these boroughs, with the exception of Plymouth, are in Lancashire, Yorkshire, and Durham. The blackest spots are Rochdale (6·96), Bury (6·8), and Oldham (6·79). Sir George Newman urges the authorities of those areas in which an exceptionally high mortality has become the rule, to devote definite and special attention to the problem. He thinks that just as the differential causes of infant mortality have been ascertained and the fundamental differences established between the particular causes of death during the neo-natal period and during subsequent months, so it may be possible to classify to some extent the causes of maternal death and to consider what local action may be effective in reducing the incidence where the rate is excessively high. He adds that it is probable that public and professional opinion in the areas of excessive rate is not even yet sufficiently alive to the fact of the continued excess, and apparent apathy may be due to lack of information.

Praise is given to the local authorities, however, for making such provision under the Maternity and Child Welfare Act, 1918, as to lay the foundations of a maternity service to an extent which most readers of the interim report of the Departmental Committee would hardly appreciate. The scope and organization of the services provided vary greatly, in some areas preventive work is still backward, and in very few can the provision be regarded as practically complete, but in many a good and comprehensive system is in existence and the needs of maternal welfare are increasingly met in one direction or another.

Speaking of ante-natal clinics Sir George Newman points out that many of these have two initial defects. They do not fully secure the direct co-operation of the person, whether doctor or midwife who is to be responsible for the care of the mother at the time of delivery, and there is a difficulty in the proper staffing of the clinics. General practitioners chosen for their special experience

[1] *On the State of the Public Health*. Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1930. London: H.M. Stationery Office. (4s. net.)

have been unacceptable because there are obvious drawbacks to a system whereby such practitioners would be examining and advising the patients of their colleagues; on the other hand, whole-time medical officers of public health departments suffer as a rule under the disadvantage of being unable to keep in touch with obstetric practice. Efforts, in part successful, to diminish these difficulties have been made by a system of exchange of information with the prospective medical attendant.

The number of ante-natal centres or clinics provided by local authorities is about 860, to which must be added 189 clinics under voluntary associations. Sir George Newman thinks it possible that the ante-natal clinic, as known to-day, especially in the larger towns, may to some extent disappear, thus leaving the ante-natal supervision of maternity patients to be carried out by private practitioners, with the assistance of a relatively small number of consultative clinics, staffed by specialists. But whatever the ultimate arrangement, there will remain a need for ante-natal clinics, particularly in industrial and urban areas, for some time to come.

"The full development of pre-natal supervision will depend very greatly upon the efficiency of these clinics, not only in the quality and value of the advice given day by day to the women in attendance, but in the training and experience they are able to provide for medical practitioners, and upon the influence which they exercise upon public education in maternal welfare."

THE INSURANCE MEDICAL SERVICE

The fifteen pages of the report devoted to the working of the National Health Insurance Medical Service ought to be detached and distributed as a leaflet to the critics of that service, insured persons themselves, and others. Sir George Newman patiently reiterates what the service is and is not, the scheme of administration, and the rights of the insured person. Fifteen million insured persons are cared for by 15,714 general medical practitioners, and the astonishing thing, when one considers the wide extent of the front open for attack, is that complaints should be so few, and justified complaints almost negligible. Last year the various medical service subcommittees had occasion to investigate 234 complaints against practitioners, and only 65 of these were found to be justified. Out of ten appeals by practitioners against the decision of the insurance committee, three were successful; out of five appeals by the insured person or the approved society against the exoneration of the practitioner, none were successful. In seven cases it was reported by Insurance Committees that the continuance of a practitioner's name on the list would, in their opinion, be prejudicial to the efficiency of the service. After inquiry by a special tribunal, the Minister decided in two cases not to proceed to removal; in four he obtained an undertaking from the medical man to resign from the list; and one other case was still under consideration. What other service worked by nearly 16,000 people can exhibit a like efficiency, if efficiency is to be judged by the absence of complaint on the part of the recipients?

The disquieting increase in the number of claims for sickness and disablement benefit and the possibility of insufficient care in the issue of certificates of incapacity is again reviewed. All insurance practitioners have received a memorandum giving the results of certain investigations undertaken on the recommendation of the National Health Insurance Joint Committee, and the conclusions to which, in the view of the Department, these results point. Sir George Newman considers it quite clear that laxity of certification, though widespread, is by no means general—that there are, in fact, a very large number of practitioners to whose standard of certification exception could not reasonably be taken.

"What is necessary is that representative professional opinion should be brought to bear on those whose standard is defective, with a view to the removal of misconceptions and the development of a stronger sense of professional responsibility in this important matter."

The report adds that it is satisfactory to observe substantial signs of increased vigilance and care in the certification of incapacity.

As to the investigation of insurance prescribing, the steady decline of recent years in the average cost per prescription is taken as evidence of growing appreciation by insurance medical practitioners of the fact that it is the duty of the practitioner to refrain from ordering what is not reasonably necessary. During the year, although 1,185 practitioners were interviewed by medical officers of the Ministry, only 15 cases were referred for investigation by Panel Committees, in 13 of which it was found that unnecessary cost had been incurred. The *National Formulary* prepared by the Insurance Acts Committee appears to be finding general acceptance; only a comparatively small number of insurance areas now remain in which it has not been adopted.

The system of medical records has now obtained for ten years. The policy of the Department has been to secure compliance with the obligation rather by persuasion and steady pressure than by punitive action, and more than 70 per cent. of practitioners are keeping records satisfactorily. In 51 cases it was considered necessary for a warning letter on the subject to be sent by the Minister, and in 12 the defects were so marked as to necessitate withholding of remuneration.

"Apart from the fact that records are now very much better kept than in earlier years, it is worth mention that reports have repeatedly been received from the regional staff as to the increasing proportion of practitioners who are satisfied by experience of the value of the records, and state that they would be disposed to continue them, even though they were under no obligation to do so."

Other points of interest in this section are as follows: During 1930 the number of practitioners attending post-graduate courses under the facilities provided was 122, and the cost £3,542. There were 531,941 references to the regional medical staff, an increase of some 65,000 on the figure for 1929. Almost all were references by approved societies on the question of incapacity. The regional medical staff now consists of 5 divisional officers, 35 regional officers, and 43 deputies. The list, prepared and revised by the British Medical Association, of practitioners willing to advise on ophthalmic cases and prescribe spectacles where necessary (at a fee of one guinea) now includes 837 names in England and Wales. The sum of £400,000 was again allocated by approved societies and branches to ophthalmic benefit in 1930.

Reference will be made in a later issue to the parts of the report which deal with epidemiology, and with cancer and tuberculosis.

The Minister of Health and the Secretary of State for Scotland have jointly appointed a committee, with Lord Marley as chairman, "to examine the experience already gained in regard to the establishment of garden cities, and villages, and satellite towns, and to make recommendations as to (*a*) the steps, if any, which should be taken by the Government or local authorities to extend the provision of such garden cities, and villages, and satellite towns; (*b*) in particular how the location of industries in them can be stimulated; (*c*) the questions of finance and land government connected with their establishment; and (*d*) what further measures, if any, can and should be taken for securing that in the extension of existing towns industrial, residential, and other developments are properly correlated."

PSYCHIATRIC OUT-PATIENT CLINICS AT LONDON COUNTY COUNCIL GENERAL HOSPITALS

The facilities which exist at the Maudsley Hospital for diagnosis of neurotic and mental illnesses, and for the continued treatment of these conditions in its wards and out-patient department, have hitherto been less readily available to patients living in the northern districts of London than to those from parts south of the Thames. Initial attendance in the out-patient department has been essential, except in the case of patients recommended for admission by recognized consultants in nervous and mental disorders, and records of the source of patients show that the hospital is thought too remote for some. In order to increase accessibility of psychiatric diagnosis and treatment, the London County Council has recently decided to establish psychiatric out-patient clinics at each of three municipal general hospitals north of the river.

In view of the special relations of these clinics to the Maudsley Hospital (which are discussed below) the general supervision of the clinics has been assigned to the medical superintendent of that hospital, to whom all correspondence should be addressed. The physician in charge of each clinic will also be drawn from the Maudsley Hospital staff. With the latter, however, will be associated members of the staff of the London County mental hospitals. This medical staff will have the assistance for investigation and disposal of specially trained psychiatric social workers recently appointed by the Council.

While the Maudsley Hospital will continue to exercise unchanged all its previous functions in respect of patients living south of the Thames, the three other psychiatric clinics will serve as centres for consultation and selection more easily accessible to patients sent by practitioners in the northern areas. A short report and recommendation as to disposal will be sent to every doctor referring a patient to one of these clinics.

The essential condition of suitability for reference to one of these psychiatric clinics is likelihood of fitness for further treatment on a voluntary basis at the Maudsley Hospital or elsewhere. Among specially suitable conditions may be mentioned: (1) neurotic disturbances—for example, neurasthenia, hysteria, obsessional states and anxiety states; (2) mental or neurotic symptoms associated with well-defined physical disease. There are special facilities for treatment at the Maudsley Hospital of conditions belonging to both the above classes.

In determining suitability, severity of symptoms is perhaps of less importance than prognosis. But no useful purpose will be served by sending to the clinics patients of the following types:

1. Mentally defective patients of any grade.

2. Patients clearly requiring certification under the Lunacy Acts. These cases should as hitherto be referred to the relieving officer for admission to the observation ward.

3. Non-volitional patients suitable for being dealt with under the temporary treatment clauses of the Mental Treatment Act. These should also be referred to the observation wards.

While all facilities are available at the Maudsley Hospital for study and treatment of the abnormal child, they will not be available at the psychiatric out-patient clinics, and children should not be sent to these.

Patients should be accompanied by a relative or friend capable of furnishing a history and taking all necessary responsibilities.

It will greatly facilitate investigation if notice of the forthcoming attendance of any patient is sent in advance to the medical superintendent, Maudsley Hospital, Denmark Hill, S.E.5.

Mile End Hospital (Dr. Aubrey Lewis).—Monday, 2.30 p.m.; Thursday, 2.30 p.m. Stepney, Poplar, City of London, Bethnal Green, Hackney, Stoke Newington.

St. Mary Islington Hospital (Dr. Louis Minski).—Tuesday, 2.30 p.m.; Friday, 2.30 p.m. Hampstead, St. Pancras, St. Marylebone, Holborn, Islington, Finsbury, Shoreditch.

St. Charles's Hospital (Dr. E. W. Anderson).—Wednesday, 2.30 p.m.; Friday, 10 a.m. Hammersmith, Kensington, Paddington, Fulham, Chelsea, Westminster.

As indicated above, treatment (after the initial interviews necessary for complete diagnosis) will usually, owing to local exigencies of time and space, have to be carried out at the Maudsley Hospital, either in its wards or its out-patient department. Plans are under consideration for the expansion of the accommodation of the hospital to the extent likely to be necessary in order to meet increase of demand by the psychiatric clinics mentioned above.

The arrangements for continued out-patient treatment at the Maudsley Hospital have been much improved since the Mental Treatment Act legalized the necessary expenditure. By addition of special out-patient staff, not only has increase in frequency and in length of interviews been rendered feasible, but also continuity of treatment of a given patient by one psychotherapist has been more definitely ensured. All interviews after the preliminary ones are now by appointment at a definite time, and in the case of those in employment such appointments are made after working hours up to 10 p.m.

Ireland

Obstetrics and Gynaecology in Dublin

As in previous years the August issue of the *Irish Journal of Medical Science* is devoted mainly to the publication of reports of the three Dublin hospitals—namely, the Rotunda Hospital, the Coombe Lying-in Hospital, and the National Maternity Hospital. Previous reference has been made in these columns (August 8th, p. 270) to the satisfactory account which the Rotunda Hospital has again been able to render with regard to its progress in the twelve months ending October 31st, 1930. Dr. T. M. Healy, Master of the Coombe Lying-in Hospital, reports an increase of work in this institution during 1930, but observes that although the number of cases attending the pre-natal clinic has shown an increase of 80 per cent. over the 1929 figure, less than 25 per cent. of the deliveries conducted in the hospital relate to patients who have received pre-natal treatment. With a view to reducing puerperal morbidity a 2 per cent. solution of mercurochrome is injected into the vagina of all patients in labour in the hospital at intervals of six hours, and the Master concludes that fewer cases of minor infection have resulted since the introduction of this routine. In the treatment of established infection reliance is placed more upon general nursing principles than upon drugs, but good effects have been observed to follow the injection of anti-scarlatinal serum and the intravenous administration of quinine in association with anti-streptococcal serum. Results obtained in the treatment of septicaemia by the intravenous injection of serums have been disappointing. Moulding of the foetal head, good uterine pains, and the use of the Walcher position led to spontaneous birth in disproportion cases three times as often as operative intervention was necessitated. In all except one instance difficulty in delivery was most marked [illegible]

delivered in the wards of the National Maternity Hospital, and in the extern service 569 women were delivered. No death from puerperal sepsis was recorded in the hospital, and the morbidity rate was 3.2 per cent. Dr. P. T. McArdle, the Master, states that the number of cases of eclampsia continues to decrease steadily from year to year. He thinks that this is due possibly to better education of the expectant mother at the ante-natal dispensary of this institution. As regards placenta praevia, of which nine cases were recorded during the year, with no maternal deaths, he urges that immediate operation should follow the definite diagnosis of this condition, even though the initial haemorrhage is slight. Accidental haemorrhage is treated along conservative lines, shock being dealt with first, and care being taken not to rupture the membranes unless the patient is in strong labour with the os well dilated. Only six patients required the lower uterine Caesarean section, the condition present being disproportion due to contracted pelvis. Gratification is expressed that the indications for this operation continue to diminish each year, in consequence of the more prevalent induction of premature labour, and the employment of the Kielland forceps.

Vital Statistics for the Irish Free State

During the quarter ended June 30th, 15,175 births were registered in the Irish Free State, this number representing an annual birth rate of 20.5 per 1,000 of the estimated population. The equivalent figure for Northern Ireland was 22.5, for England and Wales 16.5, and for Scotland 20.0. The rate in the Irish Free State is 0.9 below the average (21.4) for the second quarters of the ten years 1921–30. Deaths registered during the quarter numbered 11,284, or an annual rate of 15.3 per 1,000. This rate is 0.1 below the average (15.4) for the second quarters of the preceding ten years. Of the deaths registered, 1,031, or 9.1 per cent., were those of infants under 1 year, the number of deaths of infants being equivalent to 68 per 1,000 births, compared with 52, 71, and 89 for the three previous quarters. Deaths from tuberculosis numbered 1,158, or a rate of 1.6 per 1,000, and deaths from cancer 753, or a rate of 1.02. The number of deaths from the principal epidemic diseases was higher by 20 than that for the second quarter of 1930, the mortality from measles being more than five times as high as the corresponding figure for last year, and 50 per cent. greater than the average for the period 1926 30. While the mortality from diphtheria also showed an increase as compared with the average figure for the five years, there was a considerable decrease in the number of deaths compared with 1930. Deaths from influenza represented a rate of 0.7 per 1,000, and deaths from puerperal conditions were equivalent to a rate of 3 9 per 1,000 registered births.

A New List of Dublin Hospitals for the Sweepstakes

Mercer's Hospital, Dublin, has made a formal application to the Hospitals' Committee to be allowed to participate in the proceeds of future sweepstakes. The Rotunda Hospital, Dublin, made a similar formal application some weeks ago. The Hospitals' Committee at its next meeting will consider these applications. In addition to the thirty-eight hospitals already accepted for the Manchester November Handicap sweepstakes as the hospitals among which the proceeds of the sweepstakes are to be distributed, the following six hospitals have been added to this list under the Public Charitable Hospitals (Amendment) Act, 1931: Our Lady of Lourdes Hospital, Kingstown; Peamount Sanatorium, county Dublin; Royal Victoria Eye and Ear Hospital, Dublin; St. Anne's Hospital, Rathmines, Dublin; St. Mary's Open Air Hospital, Finglas, county Dublin; and St. Joseph's Orthopaedic Hospital, Coole, county Westmeath. The Irish Hospital Trust states, in regard to reports in some English newspapers that sweepstakes tickets were being forged in England, that there is no foundation for the report.

Belfast Mental Hospital

The medical superintendent of the Belfast Mental Hospital draws attention in his report to the necessity for providing additional accommodation for the increase in the number of patients. He states that in the present economic circumstances it is very difficult to obtain money for public works not of a remunerative description; but the present overcrowded condition of the institution is most serious, and unless further accommodation is supplied there is grave danger that overcrowding may lead to unhygienic conditions of some of the buildings, as the number resident on December 31st, 1930, was some three hundred in excess of the normal. The care and treatment of recent cases is also hampered by this overcrowding. The statistical tables reveal that the patients admitted during the year numbered 393 (198 males and 195 females); discharged, 233 (113 males and 120 females); died, 165 (82 males and 83 females); number remaining on December 31st, 1,335 (689 males and 646 females). Compared with the previous year the admissions had decreased by 61, the discharges by 6, and the deaths by 37.

England and Wales

St. Thomas's Babies' Hostel

Not far from Lambeth Palace, and hidden among the somewhat decrepit masonry of the Kennington area, is an institution which is probably unknown to most. Described as "a dietetic hospital for sick babies and mothers," the St. Thomas's Babies' Hostel was, in pre-war days, a model day-nursery. During the war it served as a maxillo-facial hospital under the British Red Cross Society. Since then it has fulfilled many functions, and now it is a fully equipped institution primarily for the treatment of dietetic disturbances in mothers and babies. There is also a resident training school for nursery nurses, with a period of training which lasts a year. Arrangements are made for the treatment of infants up to the age of 3 years who may be suffering from nutritional disorders. The medical direction is from St. Thomas's Hospital. In the report for 1930 it is stated that very good results are obtained in cases in which both mother and baby are admitted for the purpose of restoration of breast milk; there are many other examples quoted, such as that of serious dietetic disturbances in a child who is already weaned, and who is admitted alone. It is emphasized that many of the children treated are of the "C3" class, but nearly all on discharge are strong and healthy, with every chance of growing up into useful citizens. One important point is that, on discharge, the diet for each child is chosen in accordance with the family purse. In many cases it is possible for the almoner to make some temporary arrangement for financial assistance until the child's gastric condition is more satisfactory. After discharge, the children are examined from time to time as out-patients. The report acknowledges with gratitude the gift of a new out-patient department where mothers can be examined, and where also lectures are given. It is hoped to extend this department in the future. There is nearly always a full complement of mothers and babies, 3 and 19 respectively. The out-patient attendances have reached a total of nearly

hundred, while the in-patient records show that during the year 33 mothers and 97 children were treated. The chief diseases were malnutrition, dyspepsia, and prematurity; there were 22 admissions for the re-establishment of breast feeding. Like most other institutions, St. Thomas's Babies' Hostel is in need of financial support. There is, roughly, a 33 per cent. deficiency every year, which can be made good only by charitable methods. This institution is one which contains both medical and social components, and there is great scope for voluntary social workers to act as assistants in the wards or to perform the "follow-up" part of the work which is so necessary for its success.

Street Lighting: A Leicester Experiment

A report issued by the Department of Scientific and Industrial Research (H.M. Stationery Office, 6d.) describes an experiment organized at Leicester in which the opinions of experts on a series of systems of street lighting are analysed and compared. This inquiry was a corollary to previous experiments at Sheffield. In the Sheffield investigation ten different street lighting installations were set up and a team of observers were asked to assess the glare effect of each; they were also asked to find the position at which glare was most noticeable, and to assess the visibility of objects on the roadway; and they were also given a test for visibility. The results at Sheffield appeared to indicate that there was a tendency to assess the degree of glare by the amount of discomfort experienced rather than by the reduction of visual sensitivity. The experiments at Leicester were directed to discovering whether the observers could form separate opinions regarding these two types of glare. Eight installations were set up of identical height and spacing, and arranged to give the same average illumination on the roadway. They were compared in pairs, two installations of any given pair being switched on alternately. The results show that the order in which the eight installations were placed by various observers was identical as regards estimates of the visibility of objects on the roadway, the reduction of ocular sensitivity, and discomfort glare. This common order was not, however, in good agreement with the reduction of ocular sensitivity calculated from laboratory investigations. It appears, therefore, that in estimating glare in street lighting observers are mainly influenced by the discomfort experienced. An installation in which all light was cut off at angles making less than about 10 degrees with the horizontal, so that only the nearest light source could be seen by an observer, was estimated by a large majority of the observers to have the highest visibility and to be least glaring. It was also judged to be, with one exception (an installation in which bare lamps were used), the least attractive. The opinion was expressed that the absence of distant light sources produced a depressing effect. The great majority of observers also found that the most attractive installation consisted simply of a large diffusing bowl. Freedom from glare was estimated to be high with this, but as regards visibility it was placed fifth among the eight installations compared.

The Leasowe Hospital for Children

During the twelve months ending December, 1930, 82.8 per cent. of all cases treated at the Liverpool Open-Air Hospital for Children, Leasowe, were discharged with the disease quiescent. These figures compare favourably with those for the previous years, which have ranged from 78.5 to 86.8 per cent. Dr. T. Hartley Martin, the senior medical officer, in his annual report remarks that tuberculous adenitis continues to respond satisfactorily to artificial light treatment, whether sinuses are present or not; similar good results have been obtained in tuberculous peritonitis, when intestinal tuberculosis is absent. No evidence was obtained that this treatment hastened recalcification in bone disease. Researches were also conducted into calcium metabolism, amyloid disease, and the excretion of tubercle bacilli from the kidneys. The average number of beds occupied continuously throughout the year by non-tuberculous cases was fourteen, the diseases being rickets, congenital and acquired deformities, and infantile and spastic paralysis. The work of the hospital as the central institution in connexion with the orthopaedic schemes in the locality continues to develop, and the associated clinics are increasing their activities. The orthopaedic workshops of the hospital provide the necessary splints, appliances, and boots.

Correspondence

RADIOLOGY AND THE RADIOLOGIST

SIR,—Your enlightened article in the *Journal* of August 29th contains the question, "Is the *x*-ray apparatus in future to be used, for example . . . as the stethoscope is used?" The answer of the future only the future can give. The answer of the present time is that, by some, the *x*-ray apparatus is now so used—that is, as a routine procedure by the clinician himself in all chest cases, whether pulmonary or cardiac.

X rays have many uses, including their use in the diagnosis of thoracic disease, in which it is one of the most important clinical methods available. The clinician, especially if a consultant as well, must surely feel obliged then to make constant use of such an important method of examination. Whether he produces and interprets his own radiograms, after acquiring the requisite skill, or sends his patient on to a radiologist to produce and interpret them, is of minor importance. Each clinician or consultant is free to decide this matter for himself. Some clinicians and consultants have found it a great advantage to their patients, and an added interest to themselves, to make radiography of the chest a routine method.

The alternative role prescribed for the consultant "behind the radiologist acting as a corrective" is not an indispensable role. The skilled radiologist so seldom needs a corrective, and the consultant may even "correct" the accurate and make it incorrect.

Whether the chest consultant should do his own radiology or not, will in the future be decided neither by the consultant nor by the radiologist, but by the practitioner who chooses one, or both, and then advises his patient, who pays one, or both.

The technical and other knowledge required by the radiologist is very great. Moreover, it has to be applied in such innumerable and complicated ways that there can only be one answer to the further question in your article, "Will a specialist branch still be required?" in radiology, and that answer is by universal agreement most assuredly in the affirmative. There must, however, be no monopoly.—I am, etc.,

London, W.1, Sept. 14th. A. HOPE GOSSE.

SIR,—May I, another who has followed the growth of radiology since its earliest days, support the views expressed by Dr. Stanley Melville in his letter in the *Journal* of September 12th. It is right that the clinician should use *x*-ray diagnosis in his practice; a moderate amount of training should enable him to do so successfully in a variety of conditions. But when it comes to diseases of the chest, long and constant experience is needed to

avoid mistakes in interpretation ; and this applies even more forcibly to the gastro-intestinal system. I am strongly of opinion (having witnessed many instances) that none but a specialist in radiology is competent to interpret correctly the infinite variety of appearances presented on the screen—and on films—during the passage of bismuth through the alimentary canal, and of a barium enema through the large intestine.—I am, etc.,

ALFRED C. JORDAN, M.D.,
M.R.C.P., D.M.R.E.

London, W.1, Sept. 18th.

STOMATITIS OF DENTAL ORIGIN

SIR,—May I point out what I think is a serious fallacy in Mr. Bedford Russell's valuable paper on sore throats of other than tonsillar origin in your issue of September 12th. He says:

"While on the subject of what may be termed this 'watch-dog' function of the fauces, it is illuminating to remark upon the absence of this property in the buccal mucous membrane. This mucosa takes little or no notice of dental sepsis, at a time when the fauces may be responding most actively to this very same insult."

My observations lead me to an exactly opposite conclusion—the buccal mucous membrane quickly and constantly resents the presence of dental sepsis. Most commonly the result is of a "chronic" inflammatory nature, so often generalized to the whole mouth that I have given it the name of "chronic generalized septic stomatitis." Further, this condition is itself so common that what is pathological is currently passed as normal, and what is normal is very seldom to be seen.—I am, etc.,

J. G. TURNER, F.R.C.S., L.D.S.

London, W.1, Sept. 18th.

PROSTATECTOMY OR DRAINAGE

SIR,—In your issue of to-day I accidentally discovered my name under the above heading. I have always advocated prevention in preference to cure, but why Dr. Neve should have saddled me with two alternatives which are neither prevention nor cure, I know not. If elderly men were wise enough not to get large prostates there would be no necessity for either alternative. In an article in the *Practitioner* (June, 1921) on "Hyper- and hypothyroidism: causation, prevention, and treatment," I said that an enlarged prostate is a fertile field for surgeons, who had better make hay while the sun shines, for old gentlemen may become sufficiently enlightened not to have enlarged prostates. In fact, I think the beginning of the slump is in sight. A big prostate is a very troublesome companion, and he who is so ill advised as to get one had better get rid of it if the only alternative be a catheter life.

I have been interested in the prevention of an enlarged prostate since 1893, when Dr. J. W. White of Philadelphia conceived the idea that an enlarged prostate was analogous to fibromyomata of the uterus ; and, as the latter were apt to atrophy, or become quiescent after the menopause, and after oöphorectomy, so he thought that the removal of one or two testicles might have a similar beneficial effect in the male. He had a series of experiments carried out on dogs, and he found, as he anticipated, that after castration the prostate atrophied. He then operated, more or less successfully, on many human subjects. This treatment was introduced to this country by the late Reginald Harrison, but whether he ever performed the operation or not I am not certain. At any rate, it never caught on to any extent. Dr. White's conclusions were logically drawn, but as they were based on false premisses his treatment was not a success, and soon died a natural death.

In 1894 I saw on several occasions, with the late Dr. Joseph Matthews, a gentleman who was suffering from an enlarged prostate and cystitis. He had previously been seen by two surgeons and the late Dr. William Carter. Extirpation of the prostate had not then come to stay. I drew their attention to White's operation, which, apparently, did not meet with the approval of the patient, possibly because he was married to a young lady. At any rate, my services were not further requisitioned. A few months later I met the patient out at dinner. He condescendingly told me that medical men did not know their business, that he had sacked the lot, placed himself under the care of an electrician, and he was now quite well. I congratulated him on the result, but did not inquire as to how it had been attained ; however, I think I profited by the lesson. So far as the prostate was concerned, it gave rise to no further trouble to the end of the chapter. I did not see him again professionally till September, 1904, when he was dying from uraemia.

An enlarged prostate is a sign of degeneracy, and its mere removal will not arrest the degeneracy which is associated with defective action of the thyroid, the gonads, and increased storage of calcium. Many of these old gentlemen have an excellent poker-face, but they lack the intelligence behind to play the game, and when they try to smile or laugh it does not require a cartoonist to depict the derelict. The remedies are iodine, thyroid, and decalcifying agents.

In my address at the Annual Meeting of the Canadian Medical Association at Montreal in 1911, on "Preventive medicine: the medicine of the future" (*British Medical Journal*, June 10th, 1911), I dealt with this subject. A friend who read my manuscript wished me to omit the part dealing with the prostate, as he said my views were not established. I replied that to me they were facts, and "Facts are chiels that winna ding, and downa be disputed." I was not going to wait for anyone else to make the discovery before my publication. However, there seems not to have been any hurry ; prevention lags behind, and operations go on.—I am, etc.,

JAMES BARR.

Hindhead, Sept. 19th.

SIR,—Dr. Ernest Neve's remarks (September 19th, p. 550) indicate in a few words the difficult problem the general practitioner is expected to solve in advising treatment for prostatic obstruction. His responsibilities are made worse because it happens so often that not till the patient is overtaken by the crisis of acute retention will he accept operative treatment. This predicament is usually avoidable, for the reason that during the stage of chronic retention most patients have had the advice of their medical attendant to have something done while the general health was still good.

Suprapubic drainage in those cases of chronic retention which have ended in complete retention will be successful in the great majority, if it is preceded by an *in-dwelling* catheter, which provides at first a slow, regular, and intermittent relief of the retention, and subsequently continuous drainage. In this way the general health can be improved so that operative risk is slight. Mortality from cystotomy is considerable or slight according to the amount of pre-operative preparation and the nature of the operative technique employed. Results amply repay earnest attention to these facts.

It occasionally happens that the renal damage is too severe for the patient to show any improvement from an in-dwelling catheter, and he continues to go downhill. A true appreciation of the course the case is taking will prevent a cystotomy which will only hasten the patient's end. Once through the cystotomy, prostatectomy, which is contemplated, can be delayed until such time as there is little risk from operation. Or the patient may re-

with his suprapubic drain permanently My experience with patients wearing the permanent suprapubic apparatus is that there is no difficulty in preventing leakage round the suprapubic tube provided the Jacques catheter is not fitted before the fistula has a firm wall of fibrous tissue It is better to wait two or three months for this In the meantime, a self-retaining suprapubic tube, if correctly chosen and fitted, will prevent leakage

With proper attention these patients remain in a state of comfort for so long as the bladder can be kept free of signs of excessive irritation But it has been my experience that in spite of every care these signs develop *within one or two years in a certain number of cases*, generally because of calculous deposit in the bladder Fortunately, at this time, the majority of the patients have improved so much that prostatectomy is undertaken and successfully borne, even when in the first instance the patient's general condition gave no hope that this would ever be possible —I am, etc,

H P WINSBURY WHITE F R C S

London, W 1, Sept 20th

BREECH DELIVERY

SIR,—The opinions recently expressed on the subject of foetal mortality in breech delivery do not seem to have made the position any clearer, and no statistical data have been presented to show that there is any decrease in the foetal mortality following slow delivery in order to avoid intracranial haemorrhage, as opposed to more rapid delivery to avoid inhalation asphyxia Is there not a danger of the pendulum swinging too far in favour of slow delivery?

If an intracranial haemorrhage is found in a stillborn child, is there any justification for stating that the haemorrhage was necessarily the cause of the stillbirth? It is agreed that intracranial haemorrhage in the newborn child occurs with comparative frequency, and need not necessarily be fatal If this is so, is the pathologist correct in saying that a small haemorrhage found, often with difficulty, at necropsy is the cause of the death, and that death was not due to de oxygenation from one of the several other causes? It seems that asphyxia as the cause of death is only accepted in those cases in which nothing abnormal is found post mortem In the present state of our knowledge, or rather ignorance, of the physiology of the medulla and of the circulation about the time of birth, the clinical conditions known as "asphyxia pallida" and "asphyxia livida" can have no real diagnostic significance

I certainly must agree with Dr Cook that insufflation of fluid into the upper air passages is more than a possibility, particularly if strings of mucus are included The presence of mucus in the upper air passages can and does cause reflex inhibition of respiration, and the removal of mucus from the throat is by far the most important treatment of asphyxia in the newborn

The following method of delivery reduces the risk of death from asphyxia to a minimum, while, at the same time, it does not increase the risk of intracranial haemorrhage After the birth of the buttocks, delivery is aided by suprapubic pressure and by means of a finger in the mouth As soon as the mouth is judged to be within reach of a full sized Sims speculum, this is inserted by an assistant, and from this time onwards the child can, and frequently does, breathe Delivery is completed with the utmost gentleness Traction is never made through the neck from the shoulders

Mr Bourne has aptly said that the management of a breech delivery is like steering a ship between two rocks—intracranial haemorrhage and asphyxia My object is to present asphyxia as a very dangerous rock. It is at present dwarfed by the magnified crags of intracranial haemorrhage, and is submerged by the tide of high medical opinion, although submerged, let it not be uncharted —I am, etc,

J SHIRLEY CALLCUTT

Maternity Hospital, Kingsbury, N W 9, Sept 14th

THE CAUSE OF TORTICOLLIS

SIR,—In the *Journal* of September 12th there is a surprising letter from Mr Paul Bernard Roth on the cause of torticollis He states that his own view is that "the 'sterno mastoid tumour' is due to a tear, not of a normal muscle, but of a previously contracted one" He apparently assumes that this view is correct, for he inquires whether 'the same cause, whatever it is may produce the breech presentation and the shortened muscle," and later speaks of the child with the ruptured *sterno mastoid muscle*'

It would greatly interest me to know what evidence he has that there is a rupture of muscle at all—shortened or unshortened If a muscle is torn, surely the ends separate, leaving a gap, surely, also, the muscle is subsequently longer or potentially longer with a weak scar tissue intersection at the site of tear There are none of these features in a case of torticollis, either in the early or late stages On the other hand, one finds that often at birth very little abnormality can be detected, and the "tumour" develops in a few days as a hard, round mass fading into the rest of the muscle At this time the muscle is shorter, and the head consequently tilted and turned in the typical manner After a few weeks treatment by stretching and massage the swelling disappears and the deformity is non apparent, though a palpable hardness may remain for some months In four or five years the deformity recurs as the typical wry neck so commonly encountered There is never at any time any suggestion of solution of continuity of the muscle

It has been my view and teaching for many years that the condition is an ischaemia exactly comparable with that of the flexors of the forearm I have thought that during labour the muscle is "pinched" and in a few days becomes swollen Later, fibrosis develops, which is for a time immaterial, but as growth proceeds the muscle does not grow *pari passu* with the bones, and the relative "shortening" becomes apparent

This view was strengthened by the work of D Stewart Middleton, published in the *British Journal of Surgery* (October, 1930, xviii, 188), and anyone interested in the subject would be well advised to read this excellent article, which produces pathological support for clinical observations —I am, etc,

Liverpool, Sept 14th BRYAN MCFARLAND

CONVULSIONS DURING ETHER ANAESTHESIA

SIR,—Dr Bashall, commenting upon the case I reported in your issue of August 29th states that oxygen seems to be the crux of the whole situation If oxygen could be proved to be a constant factor in all the cases reported one might be impressed, but in many cases it appears not to have been employed till after the onset of the convulsions, and in one case it is definitely stated not to have been used at all

As to the use of Shipway's apparatus with oxygen, I have employed this method for about fourteen years upon, I think, a few thousand cases This "careless anaesthesia should surely by now have yielded a much richer crop than the solitary case I have been able to report —I am, etc,

Burnley, Sept 14th JAMES HEWORTH.

INJURY AND SPORT

SIR,—My attention has been called to the fact that Dr. Heald, in a recently published book, in referring to treatment by graduated contraction of muscles, electrically provoked, writes:

"The credit of introducing muscle movements and re-education is chiefly due to Mr. Rowley Bristow, and the apparatus is therefore often called by his name."

As this and similar statements have appeared in various publications, I feel obliged to write and disclaim any responsibility as the introducer or inventor of this method. In a small book, entitled *The Treatment of Muscle and Joint Injuries*, which I wrote in 1917, I stated:

A brief account of this method of treatment was published in a paper entitled "The treatment of muscular and joint injuries by graduated contraction," in the *Lancet* in 1912, by Dr. Morton Smart and myself, and he was the first medical man to systematize and work out the particular method hereinafter described of dealing with both acute and chronic joint injury.

Dr. Morton Smart, in 1923, read a paper at the Electro-Therapeutic Section of the Royal Society of Medicine, and gave a demonstration with the new coil which he was using. In the subsequent discussion I again disclaimed any connexion with the invention of the coil. I explained that it had been my task to introduce it into the special military hospitals and to demonstrate its effect in the treatment of muscle injury and muscle insufficiency, and that my knowledge of the coil and its working came direct from Dr. Smart.—I am, etc.,

London, W., Sept. 18th. W. ROWLEY BRISTOW.

THE DIABETIC ACUTE ABDOMEN

SIR,—In the account of the typical case of this condition recorded in the *Journal* of September 19th by Drs. Lawrence, Millman, and Pilkington, the fact that vomiting preceded the onset of pain is not stressed in the differential diagnosis from the true acute abdomen. In both conditions pain, vomiting, and a high leucocytosis are the rule; but in the true acute abdomen the pain occurs before the vomiting, whereas in the pseudo-acute abdomen of the diabetic the vomiting precedes the pain.—I am, etc.,

London, W.1, Sept. 21st J. A. CAIRNS FORSYTH.

HUNGER PAINS AND PRESERVATIVES

SIR,—The query that Dr. A. P. Luff raises I am unable to answer. A few years ago, desirous of knowing the preservatives that were added to food, I wrote to the Ministry of Health, but apart from an acknowledgement of my letter I received no other communication. But my indigestion is provoked by the articles to which Dr Luff states sulphur dioxide is added, and to find that beer is thus treated is interesting, for, whilst my friends assured me that this beverage was pure, I noticed that a glass of it induced hunger pains. As similar effects result from sweetened mineral drinks I now take water. The preservative that is added to butter brings on the symptoms, for, whilst always buying the best, my indigestion did not cease until butter was obtained direct from a farm. Of it I now eat much, whereas formerly I partook of it sparingly, assuming my stomach could not deal with this form of fat. Not the fat, but what was added was the offender. My unfamiliarity with the measures adopted for preserving perishable food is shared by many medical men, and until the label that describes the article gives the preservatives it contains and its percentage our unenlightenment will continue.—I am, etc.,

London, W., Sept. 10th. J. FORREST.

SHORTENING OF AN ELONGATED UVULA FOR THE CURE OF COUGH

SIR,—I wish to confirm Sir James Dundas-Grant's assertion (*British Medical Journal*, September 19th, p. 549) regarding the success of curing a cough by cutting off a piece of lengthened uvula. The cases calling for this operation are those in which the cough is troublesome when the patient is lying on his back, when there are no symptoms or signs of intrathoracic or laryngeal trouble, and when the uvula is unusually long.—I am, etc.,

W. M. FELDMAN, M.D., M.R.C.P.

London, W.1, Sept. 19th.

Obituary

SIR W. R. CROOKE-LAWLESS, K.C.V.O., M.D.

Surgeon Lieutenant-Colonel (ret).

Surgeon Lieut.-Col. Sir Warren Rowland Crooke-Lawless, K.C.V.O., C.B., C.I.E., C.B.E., died at Folkestone on September 14th, aged 68. He was born at Macroom, County Cork, the son of Dr. W. Crooke of that town, on January 9th, 1863, graduated as M.D. and M.Ch. in the Royal University, Ireland, in 1884, and entered the Army as surgeon on January 30th, 1886. He was transferred to the Scots Guards as surgeon major on April 2nd, 1898, and exchanged into the Coldstream Guards on November 9th of the same year. He was promoted to surgeon lieutenant-colonel for services in the South African war on August 22nd, 1902, and retired on March 15th, 1911. When the war of 1914 broke out he was recalled from the Reserve of Officers to the active list, and served throughout the war. From 1920 to 1924 he was house governor and medical superintendent of the King Edward VII Convalescent Home for Officers at Osborne, Isle of Wight. He served with the Coldstreams throughout the South African war, 1899-1902, when he took part in the advance on Kimberley, including actions at Belmont, Enslin, Modder River, and Magersfontein; in operations in the Orange Free State, including actions at Poplar Grove, Dreifontein, Vet River, and Zand River; and in the Transvaal, with actions at Pretoria, Johannesburg, and Diamond Hill; was mentioned in dispatches in the *London Gazette* of September 10th, 1901, and July 29th, 1902, and received the Queen's medal with six clasps and the King's medal with two clasps, as well as a special promotion.

During the war of 1914–18 he was six times mentioned in dispatches, and received the C.B. and C.B.E. in 1917. He served as surgeon to Lord Minto, Viceroy of India, from 1905 to 1910, and received the C.I.E. in 1907, and a knighthood in 1910; he was made K.C.V.O. on retiring from Osborne in 1924. He was also an LL.D., a D.L., Lieutenant for County Cork, and a Knight of Grace of St. John of Jerusalem. In 1894 he married Emily Anne, daughter of Mr. C. E. Lawless, and took her surname; his wife died in 1927.

SAMUEL RUTHERFORD MACPHAIL, M.D.

The death took place on September 12th, at his residence in Dryden Place, Edinburgh, of Dr. S. R. Macphail, who was for many years medical superintendent of the Saughtonhall Mental Hospital, Polton, Midlothian. He had been in poor health for some time before his death.

Born in 1857 at Isle Ornsay, Skye, Samuel Rutherford Macphail was educated at Daniel Stewart's College, Edinburgh, and graduated M.B., C.M. at the University of Edinburgh in 1878, and took the M.D. degree four years later. Immediately after graduation he decided to devote himself to mental diseases, and he gained the medical prize of the Medico-Psychological Association in the

He acted successively as assistant medical superintendent of the Cumberland and Westmorland Asylum, medical superintendent of Derby Mental Hospital, and medical superintendent of New Saughtonhall Mental Hospital, near Edinburgh. Along with Dr. W. A. Macnaughton, lately M.O.H. Kincardineshire, he founded the Caledonian Medical Society, which recently celebrated its jubilee, and of which he was for a time president and also acted as secretary. He took a deep interest in the work of this society, which exists as a bond of union between medical men of Scottish birth or associations, and he was mainly responsible for making the arrangements in connexion with its annual meetings. The society publishes quarterly the *Caledonian Medical Journal*, and in that periodical Dr. Macphail also took a great interest. Dr Macphail was the author of contributions to medical literature dealing with mental diseases, such as "Clinical observations on the blood of the insane," which was a prize essay of the Medico-Psychological Association, "A case of Addison's disease associated with insanity," in the *Journal of Mental Science* (1885); and "The mental equation in bodily disease," in the *Quarterly Journal of Medicine* (1897).

A funeral service was held in St. Cuthbert's Parish Church, Edinburgh, on September 16th, and the interment took place at Lasswade Churchyard, attended by a large number of members of the medical profession.

Universities and Colleges

UNIVERSITY OF LONDON

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

A course of twenty lectures on the history and practice of medical industrial psychology will be given during October, November, and December by Millais Culpin, M.D., F.R.C.S., professor of medical industrial psychology in the University of London; Eric Farmer, M.A., lecturer on medical industrial psychology, Major Greenwood, D.Sc., F.R.C.P., F.R.S. professor of epidemiology and vital statistics, and May Smith, M.A., D.Sc., lecturer on medical industrial psychology. At the first of the series, on October 1st, which will be Professor Culpin's inaugural lecture, the chair will be taken by Air Vice-Marshal Sir David Munro, K.C.B. This course is designed to meet the requirements of students for the Academic Diploma in Psychology of the University of London, and also of students for the degree of Ph.D. in medicine (non-clinical subjects). The lectures will be given on each occasion at 5 p.m., at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1. The fee for the complete course, in the case of persons not members of the School's D.P.H. class, will be £2 2s. Admission to the introductory lecture will be free.

The Services

HONORARY PHYSICIAN TO THE KING

Colonel L. D. Bailey, *M.C.*, T.D., Assistant Director Medical Services 47th (2nd London) Division, T.A., has been appointed Honorary Physician to the King vice Colonel J. G. Martin, T.D. (*ret.*).

EFFICIENCY DECORATION

The King has conferred the Efficiency Decoration upon Major John Samuel Hudson, R.A.M.C. (T.A.), under the terms of the Royal Warrant dated September 23rd, 1930.

TERRITORIAL DECORATION

The Territorial Decoration has been conferred upon Lieut.-Colonel Josiah Walker, *M.C.*, *R.A.M.C.* (*T.A.*), under the terms of the Royal Warrant of October 13th, 1920.

NORTH PERSIAN FORCES MEMORIAL MEDAL

The North Persian Forces Memorial Medal for 1930 has been awarded to Dr. T. F. Anderson, Colonial Medical Services, for his paper on "A report on an investigation of health conditions on farms in the Trans-Nzoia, with special reference to malaria," published in the *Kenya and East African Medical Journal* for January, 1930. The medal is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding twelve months by a medical officer of under twelve years' service of the Royal Navy, Royal Army Medical Corps, Royal Air Force, Indian Medical Service, or the Colonial Medical Service, *provided that the* Memorial Committee consider that any paper published has attained a standard of merit justifying the award.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

In the House of Commons this week the Chancellor of the Exchequer (Mr SNOWDEN) explained that it was necessary to make sterling currency temporarily inconvertible. A Bill for this purpose was passed forthwith by both Houses and became law. Later in the week the House of Commons discussed the Finance Bill on second reading and the Economy Bill in committee. A proposal that the latter Bill should be withdrawn, owing to the departure from the gold standard, was made from the Opposition side, but was not entertained by the Government. Mr MACDONALD announced however, that the "cuts" in the salaries of teachers, police, and the defence services would be limited to 10 per cent.

National Economy Bill

During a discussion, on September 18th, of a Government resolution authorizing the payment or diversion of money under the National Economy Bill, Mr CHAMBERLAIN (Minister of Health) said that in the case of doctors and chemists the Government proposed to reduce their remuneration by approximately one-ninth. He would like to pay a tribute of admiration and gratitude to the doctors and the chemists for the spirit in which they received this cut. They said at once that, treating this deduction not as a readjustment of their remuneration on its merits but simply as a call made upon them to contribute to the national need, on that basis they would readily pay their share. That was a very fine example, and the Government was grateful to them. The result of that action would be that in a full year there would be forthcoming *£850,000 by way of deduction from the doctors remuneration*, and £120,000 by way of deduction from the chemists' remuneration, *and those sums would be appropriations in-aid* of the Exchequer payments in the cost of administration of national health insurance.

Mr PETHICK LAWRENCE, speaking for the Labour Opposition, said they also should tender to the doctors and chemists their thanks for these sacrifices.

Dr FREMANTLE said there were 15,000 panel practitioners, practically all of whom were represented in the British Medical Association. Their spokesmen had discussed the position frankly with the Minister of Health. They had shown that, in the ordinary course of events, their contract with the State was binding, and any proposed alteration should have been submitted to a court of arbitration. The representatives of the profession took the line that, in accepting a cut of 11½ per cent., they made a contribution to the financial position in the present emergency without prejudice to the necessity of a revision of the rates of pay in the ordinary way. When that time came much would be said about the increased demands made on panel doctors for services for which a capitation rate of 9s. was fixed some few years ago. He went on to point out that, under the new Finance Bill, panel practitioners would also have to pay additional income tax and an extra petrol tax. This had brought no change in their attitude. They recognized they must suffer with the rest of the community. He reminded the House that the panel doctor lived on a very small margin, and that he was not a whole-time employee of the State. The chemists took the same patriotic line.

Mr CAMPBELL STEPHEN said a ballot of medical men would show they were as indignant as any other section of the community.

Mr LLEWELLYN JONES said the cut in the fee to be paid to medical men was more than 11½ per cent., and reduced the fee per panel patient nearly to the figure arrived at by agreement in January, 1913. At least 30 per cent. of the payments received by medical men represented the expenses

of their practices, so the real cut was 18 or even 20 per cent. He trusted it would not mean detriment to the medical service of the country.

The resolution was carried by 219 to 155. Subsequently the House arranged to discuss the economies in national health insurance on September 25th.

Economy by Local Authorities

Mr CHAMBERLAIN, when answering questions by Dr. Marion Phillips and Mr. Thomas Lewis on September 17th, said his circular urging local authorities to seek economies did not supersede the circular of December, 1930, urging them to extend work for saving maternal and infant life. It would be for each local authority to consider whether further development of maternity services was required at present. The maternity scheme which was considered by the Committee on National Expenditure could not in any event come into effect for a considerable period.

Medical News

The annual dinner of past and present students of University College Hospital will be held at the Hotel Victoria, Northumberland Avenue, W.C., on Friday, October 16th, at 7.30 p.m., with Dr. H. J. Shirley in the chair. The annual dinner of past and present women students of the hospital will be held at the Piccadilly Hotel on the same evening at 7.45 o'clock.

The annual prize distribution at Charing Cross Hospital Medical School will be held in the council room of the hospital on Friday, October 2nd. The chair will be taken by Mr. George Verity at 4.15 p.m. and the prizes will be presented by Sir George Newman. On Saturday and Sunday, October 3rd and 4th, a week-end post-graduate course, restricted to past students of the hospital, will be held. On Saturday, October 3rd, the annual dinner of past and present students will be held at the Royal Adelaide Gallery, King William Street, W.C., at 8 p.m., under the presidency of Dr. J. M. H. MacLeod.

The inaugural address at the Westminster Hospital Medical School will be given by Sir Henry Hadow, in the board room of the hospital, on Thursday, October 1st, at 3 p.m., with Lieut.-Colonel H. C. Bulkeley in the chair.

The new session at the London (Royal Free Hospital) School of Medicine for Women will open on Thursday, October 1st, at 3 p.m., when the Right Hon. Sir John Simon will present the prizes and deliver an address.

Lord Dawson of Penn, President of the Royal College of Physicians, will open the new sanatorium at Epsom College on the afternoon of Saturday, October 3rd. Guests will assemble in a marquee at 2.45, and at 3 o'clock Lord Dawson will give an address, which will be followed by inspection of the sanatorium and tea in Big School.

At the meeting of the St Pancras Division to be held in the British Medical Association's House, Tavistock Square, on Tuesday, October 13th, at 9 p.m., Lord Moynihan will give an address entitled "Ancient medicine and surgery."

Professor Arthur Hall will deliver the Schorstein Lecture on "Chronic epidemic encephalitis," at the London Hospital Medical College, on Thursday, October 15th, at 4.15 p.m.

The second winter session of the Hampstead General and North-West London Hospital Post-Graduate School, Haverstock Hill, N.W.3, will open on Wednesday, October 7th, at 4 p.m., when Sir William Willcox will discuss diabetes, its causation and treatment, with special reference to toxic causes. The course will be continued on successive Wednesdays at 4 p.m., terminating on December 16th.

The annual dinner of the Surgical Instrument Manufacturers' Association will be held at the Holborn Restaurant on Friday, October 9th, when the principal guests will be Mr. T. P. Dunhill, Mr. A. R. Melhuish, and Mr. L. Ferris-Scott.

The Fellowship of Medicine and Post-Graduate Medical Association announces the following courses: medicine, surgery, and specialties at the Metropolitan Hospital, Kingsland Road, E., from September 28th to October 10th, occupying the whole of each day; fee £3 3s., or £2 2s. for one week only. A similar course at the Prince of Wales's Hospital, Tottenham, from October 12th to 24th; fee £5 5s., or £3 3s. for one week. A course of lectures for the M.R.C.P. in the evenings, at 8.30, at the Medical Society of London, 11, Chandos Street, Cavendish Square, on Mondays and Wednesdays, beginning October 5th; fee £6 6s. for eighteen lectures, or 10s. 6d. per lecture, payable at the lecture room. Two special eye demonstrations will also be given, fee 10s. 6d. each; early application for these is essential. Diseases of the throat, nose, and ear at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, occupying the whole of each day, from October 5th to October 31st, and including a clinical course, fee £5 5s.; a pathology class, fee £5 5s. (limited); a peroral endoscopy class, fee £6 6s. (limited); and an operative class, fee £7 7s. (limited). Tropical medicine at the Hospital for Tropical Diseases, 25, Gordon Street, from October 5th to 24th, occupying the whole of each day; fee £8 8s. A course in diseases of the skin will be given at St. John's Hospital, Leicester Square, from October 12th to November 7th. Gynaecology will be the subject of a course at the Chelsea Hospital for Women, October 12th to 24th, fee £5 5s., and paediatrics at the Hospital for Sick Children from October 19th to 31st, fee £5 5s. As the latter course will not be held unless ten post-graduates enter for it, early application is desirable. A course in cardiology will be held at the National Heart Hospital from October 12th to 24th, fee £7 7s. Copies of syllabuses of all courses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1, also syllabuses of the series of free lectures and demonstrations for October, November, and December.

A new course of post-graduate lectures and demonstrations by the honorary staff of the Manchester Royal Infirmary will open on September 29th, when Dr. W. R. Douglas will lecture on surgery of the common bile duct. The lectures will be continued on succeeding Tuesdays until December 15th, with the exception of November 10th, when Professor W. Blair Bell (Liverpool) will deliver the Manchester Lloyd Roberts Lecture at St. Mary's Hospitals, Whitworth Street, Manchester, at 4.15 p.m. Demonstrations will be given on Fridays, from October 2nd onwards. The lectures and demonstrations will begin at 4.15 p.m.

A post-graduate course for former students will be held at the London Hospital Medical College from October 14th to 17th inclusive. It includes four morning sessions and three afternoon sessions, and an evening demonstration of methods of anaesthesia. The annual old students' dinner will be held on Thursday, October 15th, at the Trocadero, at 7.30 for 8 p.m. Luncheons can be obtained in the College dining hall, and tea will be provided in the committee room.

Under the auspices of the Tavistock Square Clinic for Functional Nervous Disorders, a course of eight lectures on "'Nerves'—ancient and modern" will be given at the Friends House, Euston Road, N.W. (opposite Euston Station), on Mondays, beginning October 12th, at 6 p.m., by Professor Millais Culpin. Fees for the course, £1 1s. Tickets must be obtained in advance from the honorary lecture secretary, 51, Tavistock Square, W.C.1.

A course in venereal diseases will be held at the municipal clinic of the Salford Public Health Department, consisting of fifteen lectures and demonstrations in modern methods in diagnosis and treatment; fee, £1 1s. The first lecture will take place on October 8th, at 7 p.m. This course of lectures qualifies for the University certificate, for which there is a fee of £2 2s., payable in advance to the bursar at the University. Those who intend to take the course are requested to send their names to the venereal diseases officer not later than October 1st, so that the necessary arrangements can be made.

The fifth Spanish Congress of Paediatrics will be held at Granada from October 19th to 23rd, under the presidency of *Professor Suñer Ordoñez*

Mr. E D Simon, M P, has been appointed Parliamentary Secretary to the Ministry of Health

The Faraday Centenary Number of the *Times*, published on September 21st, contains a series of illustrated articles reviewing Faraday's life and work, and surveying the practical application in industry of his researches and discoveries The story of his career is told by Commander Rollo Appleyard, and a psychological study is contributed by Professor Wilhelm Ostwald Lord Rutherford discusses Faraday's methods under the heading of "Prince of experimenters," while Sir William Bragg recounts the early deductions that led up to the epoch making experiment on August 29th, 1831 In another article Sir William shows how the foundation of the Royal Institution provided Faraday with the means for expressing his genius Sir J J Thomson writes on the link between Faraday and Maxwell, and the achievements of Faraday's successors are outlined by Professor W M Thornton The modern applications of Faraday's researches are dealt with by a distinguished list of authorities, including the Marchese Marconi, who traces the science of wireless communication to its source in Faraday's laboratory

In connexion with the centenary meeting of the British Association and the Faraday celebrations of the Royal Institution, a reception was held at the National Physical Laboratory, Teddington, by the director, Sir Joseph Petavel, on the afternoon of Thursday, September 24th, when the scientific work of the laboratory was demonstrated

The National Council for Mental Hygiene has arranged the following series of lecture-discussions to be held in the Lecture Room of the Medical Society of London, 11, Chandos Street, Cavendish Square, W, on Thursdays at 5 15 p m . October 22nd, prevention and treatment of nervous breakdown, Dr Helen Boyle, October 29th, sex education, Dr Israel Feldman, November 12th, crime and punishment, Dr Letitia Fairfield, November 19th, the mind of a child, Dr William Moodie, November 26th, marriage and parenthood, Dr Doris Odlum, December 10th, psycho analysis, Dr Ernest Jones Tickets price 1s 6d each, or 7s 6d for the course, may be had from the secretary, National Council for Mental Hygiene, 78, Chandos House, Palmer Street, S W 1, or at the doors

Under the auspices of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, a course of post-graduate lectures on maternity and child welfare will be given at the Infants Hospital, Vincent Square, Westminster, on Mondays, from October 5th to December 7th, from 6 30 to 7 30 p m This course, which is arranged for health visitors, nurses, midwives, superintendents of infant welfare centres, and others interested, is part of the preparation for the post-graduate certificate of the National Association, and deals with such subjects as the psychology and education of the expectant mother, nutrition in infants and pre-school children, the teaching of mothercraft, and child guidance The fee for the course is 7s 6d , and further information is obtainable from Miss M E Richards, at the offices of the National Association, 117, Piccadilly, W 1 The National Society of Day Nurseries has arranged for a course of elementary lectures on infant care, to be given at Carnegie House, 117, Piccadilly, on Thursdays, from October 8th to December 10th, from 7 30 to 8 30 p m The course is intended for crèche nurses and probationers, and the fee for it is 10s A detailed syllabus may be obtained from Miss Maddock, at the offices of the National Society, 117, Piccadilly

A vacancy has arisen at Epsom College for a Salomons entrance scholarship of £50 a year Candidates must be sons of legally qualified members of the medical profession either living or deceased, only those may apply who were over 11 years and under 14 years of age on January 1st last The regulations provide that the candidate must show an adequate standard of education for his age, and that his financial condition is such as to make it impossible to obtain an education at the College without the help of the scholarship Applications must be delivered by the morning of September 30th to the secretary of the College, 49, Bedford Square, W C 1, from whom the requisite forms can be obtained.

An outbreak of forty-nine cases of enteric fever has recently occurred in Basel So far only one case has proved fatal

A severe epidemic of dengue has broken out in the island of Skyros in the Aegean

Dr Agnes Blum of the Kaiser Wilhelm Institute for Biology has been awarded the Leibnitz silver medal for her work on alcohol and heredity by the Prussian Academy of Sciences

Dr. Leriche, professor of clinical surgery at Strasbourg University, has been appointed professor of external pathology of the Lyons Medical Faculty

According to a law recently passed in Rumania, houses of prostitution have been abolished and venereal disease has been made notifiable

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated Correspondents who wish notice to be taken of their communication should authenticate them with their names, not necessarily for publication

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QUERIES AND ANSWERS

Glossitis

"T S S" writes A woman of 40 years has suffered for some fourteen months from a burning and tingling sensation in the tip and sides of the tongue Examination reveals redness, and some swelling of the papillae in these areas Teeth are artificial, and no other abnormality can be found. The patient is a non smoker, and by no means neurasthenic. I would be grateful for advice in treatment

Somnambulism

"C L W" asks for suggestions for the treatment of a boy, aged 7, suffering from sleep-walking For the past twelve months the child has got up and walked in his sleep There is no screaming or emotional disturbance There are no threadworms present and the tonsil and adenoids are normal The treatment given has included glucose at bedtime, hot baths, and luminal bromide seemed to have little effect on the attacks The condition has improved, but the child still walks about once a week

Urinaemia in Prostatic Enlargement

"X" writes In an old case of prostatic enlargement not otherwise needing operation) should signs of uraemia urge immediate operation or the utmost delay The signs are profound sleeplessness (hypnotics nicely for a year past), wasting tremor polyuria and high pressure (200 at intervals urine otherwise normal appetite and strength not much affected dims and blood urea normal blood urea 40 (fasting) and 80 (two and a half hours after urea

Income Tax

Assistant—Board and Lodging

"E. J. S." was engaged as an assistant as from January, 1928, at "£250 per annum and all found." His principal found him board and lodging near the surgery, for which he (the principal) paid £91 yearly. For 1928–29 "E. J. S." was assessed at (£250 + £91 =) £341, but that assessment was reduced on appeal to £250. The inspector of taxes now proposes to reinstate the original £341. Since August, 1930, other furnished accommodation has been found, for which the principal pays £91, and "E. J. S." finds his own board.

*** As regards the period prior to August, 1930, at least, we regard £250 as the correct basis of liability under the old leading case of Tennant *v.* Smith, and we suggest that the inspector should be asked to quote any contrary authority. So far as the year for which the appeal was made and accepted, that decision is final, and no additional assessment for that year can be made. The period subsequent to August, 1930, raises the rather difficult question as to whether or not a new service agreement was not made in effect—in this connexion the change with regard to provision of "board" seems important. If the change was made to suit "E. J. S."—for example, because he had married—and the accommodation was substantially selected by him rather than by the principal, the whole arrangement would probably appear to a tribunal as in substance and effect payment of £341 to be expended as the assistant desired, and they might not altogether unreasonably ignore the mere form of the transaction.

Car Replacement and Depreciation

"Junior" bought a second-hand car (price when new £190) in March, 1928, for £115. In March, 1931, he sold it for £45 and bought a new car for £190, a balance of the purchase price being payable over eighteen months. What can he claim for replacement and for depreciation?

*** Our correspondent is correct in thinking that he cannot claim both as for the same financial year. We advise him to claim replacement cost as a professional expense of the year 1930–31—that is, £115 – £45 = £70—and to allow the depreciation claim for the financial year 1931–32—the year affected by his replacement claim—to go by default. That claim would have been 15 per cent. of £190 = £29, but the claim for that amount will not be permanently lost, provided that when he replaces the second car he claims "obsolescence" allowance.

Expenses of Post-graduate Course

"C. H." took a month's post-graduate course in surgery. Many others were having their expenses defrayed by the Government, but "C. H." was bearing his own expenses. Can he not deduct the expenses for income tax purposes?

*** No; it would be held that such expenses were not incurred in carrying on his professional work, but, during an interval in such work, were incurred to widen or improve his professional knowledge.

LETTERS, NOTES, ETC.

Bilateral Herpes Zoster

Dr. J. S. ANDERSON (Leeds) writes: Dr. Burgess's note on a case of bilateral herpes zoster (August 29th, p. 384) has recalled to me an interesting case of a similar nature which I encountered in 1919, and of which I have still a photograph. A mon [illegible]-woman, aged 30, was in a comatose state when W.3, Wor was called in. She had rather a striking appeas, when her face was covered with a well-developed vesicular tion and The photograph shows numerous vesicles on the for The co cheeks, and chin, with the prominent part of the nose unaffected. There was no rash elsewhere on the body. The woman was sent to hospital with a provisional diagnosis of small-pox—a diagnosis not so surprising if examination was confined to the face. Otitis media was then discovered, and other symptoms pointed to brain abscess. At operation, and later at necropsy, an abscess cavity about the size of a tangerine orange was discovered in the right temporo-sphenoidal lobe.

Pruritus Ani

Dr. F. W. ALEXANDER (Teddington) writes: With great interest I have read in the *Journal* of August 22nd the article on pruritus ani by Colonel Macarthur. Some time ago a medical man consulted me as to whether I could cure him by electricity of intolerable pruritus ani, from which he had suffered for years. His life was a misery, and when playing golf the itching was unbearable. I applied to the outside of the anus high-frequency current by means of an ordinary glass vacuum electrode for a period of about five to ten minutes. Immediate relief was obtained, and a complete cure effected after a few applications. Were the parasites—if present—killed by the electricity? Eberhart considers high-frequency currents capable of traversing long distances in the human tissues.

Maggots in Wounds

Dr. W. W. SHRUBSHALL (Burgess Hill) writes: The article, "Maggots and osteomyelitis," in the *Journal* of September 19th (p. 540), calls to mind an unusual experience which fell to my lot soon after arriving in China in 1888. I was being shown some cases in a ward of a hospital in the Chili Province, and the surgeon—a well-qualified man, though he held no British diploma—took me to the bedside of a patient whose right thigh he had amputated in the lower third, about a week previously. Having but recently come from the theatres of Edinburgh Infirmary, where, during operations, it was then customary for surgeon, assistants, and patient to be saturated with the mists of carbolic sprays, my surprise may be imagined as the dressings were removed from the stump, disclosing a mass of "blow-fly" maggots, whose lively movements caused the bandage to bulge! My friend the surgeon expressed no surprise at this state of the wound; in fact, he said it was not uncommon, and of no importance. Certainly the condition of the patient substantiated the latter part of his statement.

A Visit to S.S. "Orontes"

In aid of the King Edward's Hospital Fund a party was taken down the Thames in steam launches, on September 11th, to be shown over s.s. *Orontes*, the recently built cruising boat of the Orient Steam Navigation Company, which was lying in dock at Tilbury preparatory to sailing for Australia. After leaving Westminster Pier, at 9.30, and making a cold but interesting journey, Tilbury was reached, and parties of ten were conducted over the seven passenger decks of s.s. *Orontes*. The lounges and cafe are decorated luxuriously and in good taste. The same may be said of the special suites, which have green and yellow upholstery and are supplied with flowers, a walnut dressing table, and an electric stove, in addition to the conveniences of the admirable ordinary first-class cabins. These have running hot and cold water, and a bathroom and w.c. connecting. At the end of each corridor is a firescreen door, which, when closed, shuts that corridor off from the rest of the ship. Each cabin can be ventilated by forced draught in tropical temperatures. The services of two doctors are employed, and part of the ship may, if necessary, be converted into an isolation hospital. After being shown over the ship, the members of the party were given an agreeable luncheon on board and taken back to Westminster as they had come.

Correction

In our paragraph on a post-graduate tuberculosis course in Lancashire (September 19th, p. 545), the third sentence should have read: "At the Eccles Tuberculosis Dispensary next morning [October 20th] the value of actinotherapy in tuberculosis will be considered, and also radiology in the diagnosis of the pulmonary form."

Messrs. BURROUGHS WELLCOME AND CO. inform us that Sir Alan Cobham, on his recent air survey of Central Africa, carried with him as his sole medical equipment a small "tabloid" case, which was more than adequate to supply first-aid materials and medicaments for the crew of four persons.

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 42, 43, 44, 45, 46, 47, 50, 51 of our advertisement columns, and advertisements of partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page [illegible]

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

248 Etiology and Treatment of Obesity

C. W. NISSLER, EN SHUI TAI, and B. GORDON (*New York State Journ. of Med.*, July 15th, 1931, p. 187), commenting on the lack of constant success in treating obesity by endocrine medication, hold that there is no characteristic disturbance of metabolism in the obese; on the whole their basal metabolism has been found normal, or even slightly above the average. The difference should be sought rather in the manner of their food metabolism. Experiments made in 1928 showed that obese persons on a restricted carbohydrate diet exhibited mild hypoglycaemic symptoms, with sometimes a small drop in blood sugar, easily remedied by sugar administration. A "vicious circle" is suggested, beginning with over-consumption of carbohydrate from greed or example; this is followed by over-production of insulin, and so by a continuation of carbohydrate excess. Observation of 500 obese persons showed that heredity was of less importance than habit and example; there was a general decline in work output and energy, with increase of fat, and increase of hunger and weakness on exertion; tabulation of food intakes showed a normal level of fat and protein intake, but a high level of carbohydrate. Blood-sugar levels were normal in 65 per cent., low in 15 per cent., and high in the remainder; with reduction of carbohydrate, hypoglycaemic symptoms were much more prominent than an actual fall in the blood-sugar levels. Treatment aims at the redistribution of carbohydrate intake, which appears to reduce weight and remove an abnormal desire for food. The plan is to keep patients under observation on their ordinary diet, securing their co-operation in tabulating accurately the daily average intake of food. Later, keeping to the usual meal times, and not altering the protein, fat, or water intake, an attempt is made to reduce the carbohydrate intake by two-thirds. Dextrose, up to a total of 20 to 40 grams daily, is given between meals, at half-hourly intervals in doses of 2 to 4 grams, from 9.30 to 11 a.m., 2.30 to 5 p.m., and 8 to 9 p.m. A satisfactory loss of weight was achieved in 65 per cent. of women treated by this method. The authors insist that increase of carbohydrate intake is the essential factor in the commencement of obesity, and consider that, except in cases of myxoedema and the Froelich syndrome, glandular disturbances in the obese are the effect and not the cause of their condition.

249 Alcohol as a cause of Urethral Discharge

C. M. WHITNEY (*New England Journ. of Med.*, July 2nd, 1931, p. 20) has observed that, during the last ten years in the United States many more cases of non-specific urethral discharge have presented themselves for treatment than previously. Such patients had not been exposed to venereal infection, and bacteriological examinations were negative for gonococci. The type of discharge ranged from the mucoid to the purulent; its quantity varied with the amount of alcohol taken and the varying sensitivity of the urogenital mucous membranes. The most frequent causative agent was found to be synthetic gin. An inquiry addressed to the State Department of Health elicited the reply that repeated experiments had failed to show anything of a toxic nature present in these illicit liquors other than the alcohol itself, the bulk of the fluid being pure ethyl alcohol. Some denatured alcohols, however, contained methyl alcohol. Whitney therefore concluded that the urethral irritation was not due to any chemicals coming over in the distillate, but to the alcohol itself. He suggests that possibly a higher percentage of alcohol is present in synthetic or adulterated liquor. A second factor to be considered is the changed drinking habits of the majority of the people. Since beer is not now obtainable, more whisky and gin are consumed by the people who previously drank it. No case was reported where the drinking had been in moderation. The latent period was usually 24 to 48 hours; there was no dysuria, but a slight prostatic tenderness was detected. The condition usually cleared up quite readily on a mixture of potassium citrate and tincture of hyoscyamus, together with local injections of potassium permanganate or neo-silvol. No complications were observed.

250 Acute Benign Lymphocytic Meningitis

C. BIRET (*Thèse de Paris*, 1931, No. 191), who records nine illustrative cases, one of which is original, in patients aged from 15 to 45, states that acute benign lymphocytic meningitis may be due to a special as yet undetermined virus, an attenuated filterable tuberculous virus, or to the virus of poliomyelitis or epidemic encephalitis. It is characterized clinically by the appearance of the patient, who does not assume the usual hostile attitude, the frequent absence of squint and photophobia, improvement as the result of lumbar puncture, and an invariably favourable course. It is indicated bacteriologically by the absence of tubercle bacilli or any other visible micro-organisms, and cytologically by an abundant lymphocytosis. The increase in albumin is generally moderate compared with the excessive lymphocytosis. The etiology and pathogenesis of acute benign lymphocytic meningitis are still under discussion, but in view of the diplopia and excess of sugar in the spinal fluid in his case Biret is inclined to regard it as a meningeal form of epidemic encephalitis.

251 Multiple Extra-genital Soft Sores

A. CEDERBERG (*Derm. Woch.*, July 4th, 1931, p. 1074), who records an illustrative case, states that an extra-genital soft sore is not a rarity, since Cheinisse collected 99 examples out of 3,536 cases of soft sore. Two kinds of extra-genital soft sore may be described. The first is a heterogeneous form in which the patient contracts an extra-genital soft sore directly from another person, as in a case recently seen by Cederberg of chancroid of the lip resulting from perverse practices; the second and more usual form results from auto-inoculation in a patient with soft sores in the genitals. Cederberg's case was a man, aged 23, who developed multiple soft sores on the prepuce a few days after coitus. About a week later he damaged the middle joint of his left index, which after ten days began to swell. The area surrounding the nail subsequently became affected, and a week afterwards the corresponding area around the nail of the right index was involved. Bacteriological examination of all three lesions showed the presence of Ducrey's bacillus, and also of *T. pallidum*. The Wassermann reaction was also negative. A rapid cure of the adenitis in the axillae was effected by a specific vaccine treatment.

252 Etiology of Coronary Disease

J. B. HERRICK (*Amer. Heart Journ.*, June, 1931, p. 589) believes that the incidence of coronary thrombosis is increasing, possibly owing to the growing frequency of arterio-sclerosis and hypertension, and the greater expectation of life. The role of infection with consequent coronary arteritis is discussed, and it is suggested that some of the patients now suffering from coronary obstruction may date their arterial lesions from the influenza pandemic of 1918. Painless cardiac infarction is mentioned; in these patients a gradual and progressive coronary sclerosis has probably preceded the final occlusion, so that when this occurs the affected region of the heart is already inactive and anaesthetized by ischaemia. Clinical features depend upon the swiftness of the obstruction, and the author suggests that when the failing heart (other than that of rheumatism or syphilis) gives out unusually rapidly, when cardiac asthma and acute pulmonary oedema are

associated with a drop in a previously high blood pressure, and perhaps gallop rhythm and a feeble apex impulse, then probably there has been a coronary occlusion with resulting necrosis. The electrocardiographic abnormalities in infarction are described, and the progressive changes in the curve during the succeeding weeks are stressed. It is believed that further investigations will show the means by which the affected area of muscle and the corresponding vessel may be localized. Reviewing the aortic and coronary hypotheses of the production of pain in angina pectoris, the author mentions among others the following facts in support of the latter theory: the similarity of the pain in angina and that in thrombosis, which is obviously derived from the heart muscle; the rarity of infarction in rheumatic and toxic hearts, in which lesions of the coronaries are very unusual; and the transitory electrocardiographic changes resembling those at the commencement of infarction, which have been observed in some attacks of angina pectoris.

253 Subcutaneous Juxta-articular Nodules

Subcutaneous fibroid nodules of the juxta-articular type were first described by Jeanselme in 1901; syphilis, yaws, and rheumatic and numerous other diseases have been said to be etiological factors. H. H. HOPKINS (*Bull. Johns Hopkins Hosp.*, July, 1931, p. 5) records a study of 14 cases of this condition. In 12 the nodes were syphilitic, and in 2 were associated with chronic infectious arthritis. The former healed completely under anti-syphilitic treatment, the latter did not. The histopathology of the syphilitic nodules was not conclusively characteristic of syphilis, and could not be differentiated from that of the other nodes. Spirochaetes were not found in the syphilitic nodes, and one rabbit inoculation was negative. Hopkins believes that subcutaneous juxta-articular nodules are not pathognomonic of any single disease; they may be simulated by xanthoma.

Surgery

254 The Risk of Embolism from Injected Varicose Veins

O. HORN and J. FOGED (*Ugeskrift for Laeger*, June 11th, 1931, p. 625) note that although the treatment of varicose veins by the injection of chemicals has passed the experimental stage, having proved itself a rational form of treatment for suitably chosen cases, the fear of embolism still deters many from practising it. There are two reasons for this hesitant attitude. In the first place, most of the records of cases of embolism following this treatment are so incomplete that it is difficult to form any definite opinion on the merits of each case, the result being a vague, but general, state of suspicion. In the second place, this treatment is looked at askance by the numerous practitioners who still misunderstand its mechanism, imagining that the injection forthwith promotes a thrombus from the blood present in the vein at the time of the injection. Its action depends, however, on the ability of the injected chemical to injure the intima so that a thrombus is deposited little by little on it, hardening in the process, and finally establishing a firm organic union with the wall of the vein. The ascending venitis (Sicard's "veinite ascendante") may occur as often as once in every hundred injections, however skilfully the injection has been given, and may disturb both the patient and his doctor, but it shows no tendency to provoke embolism. This venitis develops some days after an injection, the vein becoming swollen, tender, and hard, and the skin over it red, oedematous, tense, and shining, for a distance of some 10 to 12 cm.—that is, far beyond the site of the injection. Clinically, this ascending, or chemical, phlebitis differs from the ordinary infectious phlebitis in the absence of severe and persistent pain, in only a slight rise of temperature, and in the disappearance of all the above alarming signs within a few days, whether the patient remains up and about or rests. The authors have neither heard of, nor themselves experienced, a case of ascending venitis ending in embolism, and they trace this immunity to the following facts: the blood stream is usually of low grade in the veins concerned, and the ascending thrombus starts from, and is an organic part of, the thrombus securely established at the site of injection.

255 Treatment of Polyarthritis with Ankylosis

R. LERICHE and A. JUNG (*Lyon Chirurgical*, July–August, 1931, p. 408) describe twenty cases of ankylosis associated with polyarthritis; they conclude that the anatomical morphology of the disease remains constant whatever the causative factor may be. In certain cases the ankylosis is accompanied by an excess of calcium in the blood. In these cases operations on the parathyroids have improved the condition; they should be undertaken as soon as the hypercalcaemia has become established, and before the ankylosis is complete. The progress of the disease is so rapid that this operation is one of urgency. There are three types of polyarthritic ankylosis: cases which have an infectious or gouty origin and in which the calcium content is normal; those in which no infectious cause can be found, but in which hypercalcaemia may be present; and those cases which are accompanied by hypocalcaemia, or normal calcium content, without infection. Of the twenty cases reported, three patients had hypercalcaemia associated with certain clinical signs of hyperparathyroidism. In these cases parathyroidectomy or ligature of the thyroid artery was performed, and was followed by the amelioration of symptoms and the reduction of the calcium contents. In two cases the improvement lasted for four months, and in the third case for six weeks. There were seven cases of unknown etiology in which the calcium was normal or diminished, and ten with definite infectious or gouty origin in which the calcaemia was normal. In these cases operation is of no value.

256 Surgical Treatment of Exophthalmic Goitre

A. LÄWEN (*Zentralbl. f. Chir.*, August 1st, 1931, p. 1938) describes the technique which he finds the most satisfactory in preventing post-operative mortality in Graves's disease. The patient is treated with Lugol's iodine solution for a period ranging from eight days to several weeks, other drugs being used only where there is serious cardiac involvement. During this time the pulse rate and the basal metabolic rate fall, especially during the first few days, as the patient becomes acclimatized to hospital conditions. The weight is considered a better guide to the patient's condition than the metabolic rate; those patients showing a steady loss of weight, in spite of iodine and rest, are always serious surgical risks. The four thyroid arteries are then ligatured in one or two stages. This operation is usually followed by general improvement and increase of weight, though it has little effect on the metabolic rate; occasionally severe and even fatal reactions may ensue. After a period of some weeks thyroidectomy is undertaken. In all operations general ether anaesthesia is used, though in some cases small doses of avertin are given by the rectum. In 100 operations on 48 patients only two deaths have occurred; many had previously received *x*-ray treatment unsuccessfully.

257 Alkaline Incrusted Cystitis

M. ZIGLER (*Urol. and Cut. Rev.*, August, 1931, p. 4[illegible]) who records an illustrative case, states that incrusted cystitis with alkaline urine is caused by the implantation of *B. proteus ammoniae* in a bladder which is already the site of some form of inflammation or tumour. The incrustations are the result of the breaking up of urea into carbon dioxide and ammonia, with the precipitation of *alkaline inorganic salts*. *Trauma* due to catheterization or instrumentation for stricture of the urethra, or to prostatic hypertrophy, or most frequently to childbirth, is the most common predisposing cause. The incrustations may effect either localized areas or the whole of the bladder, but the trigone, internal sphincter, and posterior urethra are areas of predilection. The incrustations may be pointed or flat, or may be associated with calculi. Bleeding surfaces are found when the incrustations are scraped off. Zigler's case was remarkable for the [illegible]

sons. The patient was a man aged 34, whereas most cases occur in older patients; he had injured the right kidney 22 years previously by a fall. *B. proteus ammoniae* was obtained in pure culture from both kidneys by cystoscopy. The case was one of alkaline incrusted cystitis rather than the usual acid incrustation cystitis. The patient was a man, and the number of cases occurring in the female outnumber those in the male by about two to one. There was an associated mild pyelitis, though the great majority of cases have cystitis only. There was no obstruction either in the form of stricture or prostatic hypertrophy. The case was an exception to the rule in alkaline incrusted cystitis in that there was hardly any blood in the urine, whereas in this condition there is usually a large amount of blood and a small amount of pus; this contrasts with ordinary cystitis, in which there is much pus and little or no blood.

258 Syphilitic Synovitis of the Knee

J. S. NEVIASER (*Journ. Bone and Joint Surg.*, July, 1931, p. 566) states that syphilitic synovitis of the knee, especially in children, is very often wrongly diagnosed; a great cause of error is the fact that *x*-ray examinations are always negative. The congenital form occurs as a chronic synovitis, and a persistent hydrops of both knees is not uncommon. Pain and tenderness are less than the swelling and presence of fluid would indicate. In all of the author's cases, the Wassermann reaction of the joint fluid was positive, and also that of the blood in all but one. It is very important to examine both the joint fluid and blood for this reaction, since early diagnosis before bone involvement is most essential; after the bone has been invaded, a resulting good functional joint is doubtful, even though intensive treatment is given. A history of trauma does not eliminate the possibility of syphilis, since association of the two is not infrequent. A relatively painless, chronic hydrops of the knee with a negative *x*-ray examination should arouse a suspicion of syphilis. Early cases respond quickly to specific treatment; in the late second or third stage of the acquired form, treatment is not as beneficial to the joint condition. Abstracts of three illustrative case reports are given.

Therapeutics

259 Treatment of Phlebitis

G. ROSSI (*Il Policlinico*, Sez. Prat., July 13th, 1931, p. 989) records eleven cases of phlebitis in patients aged from 16 to 46, eight of which were post-operative, one puerperal, and two primary, in which Termier's method of application of three or four leeches to the root of the affected limb constantly yielded rapid and brilliant results, as shown by disappearance of the oedema, the rapid disappearance of pain and feeling of heaviness in the limb which is characteristic of phlebitis, the fall of temperature, and the absence of any sequels. The treatment is only suitable for post-operative and puerperal phlebitis, and it is essential for success that the leeches should be applied at the onset of the inflammation.

260 Treatment of Lobar Pneumonia

W. D. SUTLIFF and M. FINLAND (*Journ. Amer. Med. Assoc.*, May 2nd, 1931, p. 1465) comment on the clinical course of Type I lobar pneumonia treated with concentrated pneumococcal antibody (Felton) as observed in 28 patients of a group of 59. In the majority the type of pneumococcus was determined within six hours of obtaining the sputum, and a bivalent antibody, concentrated by Felton's method and potent in mouse protection tests against the pneumococcal Types I and II, was used. The patients treated in this way early in the disease showed a fall in temperature averaging from 20 to 24 hours, as contrasted with a similar fall ranging from 48 to 144 hours in those not so treated; in cases coming under observation after the fourth day from the onset there was no great difference in the average course of the disease between the treated and the untreated patients. The difference in favour of the treated patients was greatest when the injections were given earliest in the disease, and decreased progressively as the treatment was delayed. The specific therapeutic action of the serum was seen in a shortening of the disease, in an immediately striking effect on the bacteriaemia present, in the hindering or preventing of the development of positive blood cultures, and in a diminution in the incidence of spreading areas of consolidation. The authors stress the importance of early diagnosis, rapidity in determining the type of pneumococcus, and the imperative value of specific treatment in lobar pneumonia.

261 Treatment of Pneumonia by Colloid Iodine

Since all cases of pneumonia may be generalized as septicaemic, and markedly beneficial results followed the use of colloidal iodine in a case of pulmonary blastomycosis presenting features of atypical pneumonia, R. V. MURPHY (*Irish Journ. Med. Sci.*, July, 1931, p. 289) has tried this drug in cases of ordinary pneumonias. His results were very encouraging, and he suggests that this treatment may be useful in other conditions also. In the first two cases, 10 c.cm. of a 0.2 per cent. colloidal iodine were injected intravenously; subsequently the strength was increased to 0.4 and 0.8 per cent., and these doses have since been used. There are said to be no contraindications to the use of the drug in pneumonia, and no ill-effects follow its administration; the most striking result is an early abatement of the toxaemia. Primary and recurrent cases respond rapidly and satisfactorily in a few hours, secondary and complicated ones in eight to twelve hours; aged, feeble subjects do not react so well. The earlier that the colloidal iodine is given, the less liability is there to complications and sequels. Though its oral administration is of no effect, the results of intravenous injections can be intensified by introducing the preparation by additional routes. The ordinary routine treatment of pneumonia must be followed, and a favourable environment be maintained. Short, tabulated notes of twenty-seven pneumonic cases treated by this method are appended.

262 Treatment of Secondary Anaemia

K. C. SMITHBURN, J. M. MASTERS, and L. G. ZERFAS (*Journ. Lab. and Clin. Med.*, June, 1931, p. 858) have studied 31 cases of secondary anaemia of various types arising from severe or repeated haemorrhage, infection, cancer, lead poisoning, and one sickle-cell anaemia. As therapeutic agents they employed organic and inorganic iron in solution and in powder; liver; and combinations of liver extract and iron. In the case of sickle-cell anaemia, in two cases of advanced tuberculosis, and in two cases of cancer no response was observed after iron therapy. In some instances there was improvement in the amount of haemoglobin and the red cell count without appreciable reticulosis; in some the colour index was raised; in a few cases the red cells increased in number more than the amount of haemoglobin, and the colour index was lowered. Reticulocytosis began after treatment for four or five days; whereas in pernicious anaemia the reticulocyte response to liver and stomach extracts is not appreciable if the red cells are above 3 million per c.mm., in these secondary anaemias the response was observed when the level of the red cells was above 3 millions. It was concluded that the results of iron therapy are not marked when the amount of iron in the body has been depleted by long-continued anaemia from prolonged loss of blood. The authors consider it reasonable to believe that haemorrhage may cause reticulocytosis, but it does not follow that the patient who has a spontaneous reticulocytosis following haemorrhage, and who continues to bleed, will show an intensified formation of haemoglobin and an increased number of erythrocytes.

263 Cortical Suprarenal Extracts in Addison's Disease

S. L. SIMPSON (*Journ. Physiol.*, June 6th, 1931, p. 4) reports a case of an almost moribund patient with Addison's disease, who was successfully treated with the cortical extract of Swingle and Pfiffner. She received 6 c.cm. of extract intravenously twice a day for four days,

by which time there was obvious clinical improvement. No more extract being available, adrenaline was given hypodermically in 5-minim doses twice a day for two months, since when the patient has maintained good health and gained a stone in weight. The author adds that he has treated five other cases of this disease with the cortical extract made according to the formula of Swingle and Pffifner. The signs of improvement which result are gain in strength and weight, cessation of the nausea and vomiting, and fading of pigmentation ; the symptomatic improvement precedes the rise of blood pressure. Biochemical investigations indicate that the blood urea figure in these cases tends to be high and the blood sugar low. The cortical extract reduces the blood urea content to normal values, but has no immediate effect on the blood sugar ; whether it ultimately causes a rise in blood sugar to normal levels in Addison's disease seems at present to be uncertain. The author suggests that the low sugar figure in this condition may be due to the absence of suprarenal secretion. This is supported by the fact that the figure rises to the normal after hypodermic injections of 10 minims of a 1 in 1,000 solution of adrenaline.

Radiology

264 Radiography of Pulmonary Vessels

E. MONIZ, L. DE CARVALHO, and A. LIMA (*Bull. de l'Acad. de Méd.*, April 14th, 1931, p. 627) have successfully mapped radiographically the network of pulmonary vessels by means of a strong solution of sodium iodide. After several failures when the solution was injected into the subclavian and jugular veins, they heard of Forssmann's success in passing a long sound from the arm into the right auricle. They repeated this manœuvre, and injected 8 c.cm. of an 80 per cent. solution of sodium iodide into the heart, while simultaneously retarding by pressure *the circulation in the thighs, the other arm, and the neck.* Angio-pneumography produces in these circumstances an appearance as if the lungs had been dissected to display the pulmonary vascular tree. Later a stronger solution containing 120 grams of the salt in 100 c.cm. of water was used without ill effect on the patient, save an occasional slight cough. Among possible clinical applications are the diagnosis of vascular and other tumours and the investigation of certain forms of tuberculosis. Further work with this promising new method of investigation is being undertaken.

265 X-Ray Treatment of Agranulocytic Angina

K. NEIDHARDT (*Münch. med. Woch.*, April 24th, 1931, p. 711) reports a typical case of agranulocytic angina, in a female aged 42, who started with the usual severe throat infection. A white cell count of 2,800 per c.mm. was found, 97 per cent. of the cells being lymphocytes. The count sank four days later to 500 per c.mm., and it was decided to try stimulating doses of *x* rays to the bone marrow, according to Friedemann's suggestion ; 5 per cent. of an erythema dose was given over the femora and tibiae through a hard filter. The white cell count rose within a few hours, and reached 3,800 two days later. The treatment was repeated over the arms, and a leucocytosis gradually produced, the polymorphs (and a few myelocytes) returning to the circulation. Although the prognosis in this condition is bad, 90 per cent. of cases being fatal, this patient made a good recovery.

266 Intravenous Urography

K. HERITAGE (*Practitioner*, March, 1931, p. 343) strongly recommends abrodil for intravenous pyelography. This drug is sodium mon-iodo-methane-sulphonate ; it contains 52 per cent. of iodine in contrast with the 42 per cent. content of uroselectan, and is soluble in water up to 70 per cent. Its administration is free from immediate symptoms, such as generalized tingling and feeling of heat, and very often there is no sensory disturbance of any kind following its intravenous administration. When there was slight leakage of the solution from the vein after puncture, or a small perivenous injection had been accidentally made, no ill effects beyond a transient local pain were noticed, and the vein was not thrombosed. The patient is prepared in the usual way for renal radiography, the colon being emptied as far as possible, and the intake of fluids being restricted for some time before the injection. The first film was taken five minutes after the injection ; others were taken at the end of about fifteen and twenty-five minutes, or later if the renal function was deficient. As soon as the last film has been taken the patient is given fluids in order that the elimination of the drug may be hastened. Heritage adds that the only contraindications to this method are acute infections of the urinary tract and latent or manifest uraemia.

267 Radiography of the Chest

H. A. JARRE (*Zentralbl. f. Chir.*, February 28th, 1931, p. 526), using serial photographs (four per second), with or without the previous injection of lipiodol, has studied the movements of the thoracic viscera in health and disease. He states that in children the mediastinum is very mobile, and subject to considerable variations in shape, being influenced by cardiac and respiratory movements, etc. A wide convex upper mediastinal shadow should not be taken as definite evidence of an enlarged thymus, unless it is constantly present and there is also evidence of pressure on other structures such as the trachea. True peristaltic movements in a central direction can be demonstrated in the normal bronchi, especially during expiration. The alveoli do not take part in these movements. The sphincter-like muscles of the atria keep lipiodol out of the alveoli, unless there has been coughing, or emphysema is present. In the latter condition lipiodol readily reaches the alveoli, and by reducing the aerating surface may give rise to unpleasant effects. Infection of the bronchial walls, as in bronchiectasis, interferes with peristalsis, so that a vicious circle is established, the infected bronchus being unable to empty itself of secretion. In bronchial asthma there is spastic narrowing of the bronchial lumen with hyperperistalsis. Alteration of the peristaltic phase has been noted in some cases, the contractions occurring during inspiration.

Obstetrics and Gynaecology

268 Primary Carcinoma of Fallopian Tube

J. RABINOVITCH and J. D. HORTON (*Amer. Journ. Obstet. and Gynecol.*, May, 1931, p. 689), who report an illustrative case, remark that primary growths of the Fallopian tube are not very frequent, and, owing to their great similarity to other pelvic conditions, are seldom recognized before operation and pathological examination of the specimen. The disease usually occurs in persons at or past the menopause, when all other types of malignant tumours are most frequent. The true nature of the primary growth is apt to be overlooked owing to the frequency of secondary inflammatory changes. The commonest symptoms are watery or sero-sanguineous vaginal discharge, with or without abdominal pain. Both the pain and the discharge may vary in character and severity in different individuals, and in the same individual at different times. According to the size and position of the tumour in the pelvis, there may be urinary or intestinal disturbances such as frequent or urgent micturition and constipation. Marked loss of weight and cachexia are seldom observed, but under-nourishment and anaemia are not infrequent. The size of the tumour ranges from that of the little finger to that of a large mass filling the abdomen. The growth is fixed or freely movable according as inflammatory changes with productive adhesions have occurred or not. The middle or distal third of the tube is the commonest site for the tumour, which may be unilateral or bilateral. The most frequent histological varieties are the papillary and the papillary-alveolar, various modifications of these two patterns being encountered in different tumours. The case recorded by the present authors occurred in a woman, aged 55,

had had three full term pregnancies and had reached the menopause five years previously For the last two years she had had a watery vaginal discharge, which had been more profuse and continuous during the five months before admission to hospital, and had become sanguineous during the last three weeks The uterus was small and retroverted, the adnexa were not palpable A diagnosis of malignant discharge of the uterus was made, and laparotomy was performed The uterus, ovaries, and right Fallopian tube appeared normal, but the left Fallopian tube was enlarged in its distal third Although the gross appearance of the tube was indistinguishable from a chronic inflammatory process, the confinement of the lesion to one part of the tube suggested malignancy, and panhysterectomy was performed No histological abnormalities were found in the uterus, ovaries or right Fallopian tube, but section of the left tube showed the appearance of a papillary carcinoma

269 Pregnancy complicated by Systemic Disease

Believing that the pregnant woman can be better studied, diagnosed, and treated if emphasis is placed on any complicating medical condition, P A DALY and S STROUSE (*Journ Amer Med Assoc* May 16th, 1931, p 1655) support this view by discussing pregnancy complicated by diabetes, cardiac disease, and thyroid disturbances, and cite illustrative cases They conclude that, though pregnant diabetics present dangerous difficulties, with care and strict attention to diabetic therapy such patients can be carried through to normal delivery They find no appreciable difference between cardiac patients who have gone through a pregnancy and those with similar heart lesions who have not done so, repeated pregnancies may, however, be inadvisable Treatment should maintain or increase the cardiac reserve in order to provide sufficient muscular efficiency for the maximal work of labour and delivery, this is best attained by a proper balancing of rest and work A diseased heart which has not failed during pregnancy and is not decompensated, should not fail during delivery Hearts decompensated at the time of delivery present a grave prognosis, and the result is usually fatal Spontaneous labour with forceps aiding delivery is the method of choice in most cases, but is inadvisable when early delivery is desired or subsequent pregnancies are deemed unwise, Caesarean section is best in these Pregnancy has an influence on the thyroid gland, and even those thyroids usually called normal are subject to changes during pregnancy Disturbance of the thyroid function may be a factor in producing some of the toxaemias of pregnancy, six cases are cited in support of this view In these patients, the metabolic rate which increases in normal pregnancies, should be increased by appropriate thyroid treatment

270 Ambulant Treatment of Chronic Cervicitis

SUSAN R OFFUTT (*Minnesota Med*, June, 1931, p 507) outlines a method of treating chronic cervicitis without enforcing confinement to bed The chief objectives of such treatment are the relief of annoying leucorrhoea, the removal of a chronic inflammatory lesion which may be pre cancerous, and the elimination of a possible focus of infection Chronic cervicitis is the chief form of leucorrhoea, and is frequently characterized by erosion For mild cases treatment by means of cauterization, with or without anaesthesia, can be undertaken in the surgery The infected glands must be completely destroyed by a number of incisions Few patients complain of pain beyond that comparable to a menstrual cramp In most cases the necessary cauterization can be completed at one session The sloughing is allowed to proceed without interference, and the patient is examined every three to four days The discharge increases at first, but usually stops in ten to fourteen days Complete healing does not occur for about two months After the sloughing period is over douches are used, and the cervix may be treated locally twice a week with mercurochrome until it has healed Possible complications in cauterization of the cervix are haemorrhage, stenosis, and pelvic infection If the cauterization is undertaken near a menstrual period there may be profuse menstrual bleeding afterwards when this occurs the patient is put to bed and given ergot Stenosis is a rare complication, necessitating dilatation of the canal under anaesthesia Pelvic infection does not ensue if precautions are taken not to cauterize a cervix which is the seat of an acute infection, particularly that due to gonorrhoea with or without salpingitis Cauterization of the cervix has proved to be good treatment in mild and moderately severe cases, in extensive disease an operation becomes essential

271 Somnifen in Eclampsia

J LARRIBERE (*Bull Soc d Obstet et de Gynecol de Paris* June, 1931, p 461) discusses the treatment of eclampsia by somnifen, and reports fifteen cases which were completely successful, as regards both mother and infant the crises were controlled instantly and definitely When the fits cease, elimination of the toxins and an appropriate regime can be adopted with the view of preventing recurrence The author employs a dosage of 3 to 5 c cm according to the obesity of the patient An intravenous injection of 3 c cm produces sleep in less than one minute He has found that evacuation of the uterus is not necessary if somnifen is given during the first fit He describes the case of a 2 para aged 21, and with no previous history of eclamptic attacks When seen by Larribere she had had four convulsions during the previous hour She was comatose and stertorous and the lower limbs were oedematous One typical eclamptic convulsion was witnessed, and a sixth began while the injection was being prepared An intravenous injection of 4 c cm of somnifen was given The patient fell asleep in 30 seconds and had no further convulsions

272 Carcinoma of Uterus and Fallopian Tubes

J A FERGUSON (*New England Journ of Med* June 25th 1931, p 1359) records a case of epidermoid carcinoma of the uterus and Fallopian tubes in which there was an unusual sequel to radium treatment The patient aged 40, complained of a vaginal discharge, lower abdominal pain and weakness which had persisted for two years, cervical carcinoma and an adeno-acanthoma in the fundus were found as the result of curetting Improvement followed four heavy radium treatments, the discharge ceasing, but returning two years later when panhysterectomy was performed No extension of the disease or metastases were found, and recovery was uneventful The cervix was fibrosed and showed no trace of the original epidermoid carcinoma the adeno-acanthoma had disappeared, and was replaced by a surface growth of malignant squamous-cell epithelium, without any invasion of the myometrium or pearl formation The uterine cavity was filled with yellowish keratinous debris, and there was no sign of continuity of growth between the fundus and the Fallopian tubes While the condition of the tubes was probably secondary to the disease of the fundus, it was impossible to rule out a primary malignant squamous-cell metaplasia of the tubal epithelium, or a tumour embolus having been forced into the isthmus through the intrauterine part of the tube A similar appearance occurring in the uterus and tubes of guinea pigs fed on a vitamin A deficient diet has been described as having both a gross and to some extent histological, resemblance to that found in this case

273 Treatment of Hyperemesis Gravidarum

J E HOUEL (*Bull Soc d Obstet et de Gynecol de Paris* April, 1931, p 235) regards isolation of the patient or her removal from the usual surroundings, as an indispensable measure in treatment of severe cases of hyperemesis gravidarum He records two such cases in one of which the induction of abortion had almost been decided on the acidosis quickly disappeared, and the vomiting subsequently ceased, after the injection twice daily of 10 units of insulin, and a daily subcutaneous injection of half a litre of glucose saline solution It is advisable before using insulin in these patients to estimate the blood sugar even if the figures are normal, sugar should be administered —orally if retained, in mild cases—at the same time

Pathology

274 The Vitamin Content of Fermented Milks

K. A. FORSTER (*Biochem. Zeit.*, July 6th, 1931, p. 276) has compared the vitamin content of raw milk with that of yoghurt, kefir, and saya. The estimation of vitamin A and D was carried out on rats, of C on guinea-pigs, and of B on pigeons and rats. The results were as follows. Yoghurt is richer in the fat-soluble vitamins A and D, presumably because during its preparation it undergoes a certain amount of evaporation, and is higher, therefore, in its fat content; on the other hand it is poorer in the water-soluble vitamins B and C. Kefir is poorer than raw milk in vitamins A, C, and D, and has about the same content of B. Saya has much the same content as raw milk of vitamins B and D, but its A content is about double that of raw milk, and its C content is about one-third higher. Whereas, therefore, the vitamin content of yoghurt and kefir is on the whole less than that of raw milk, saya apparently maintains its original vitamins intact, and has an increased content of A and C. The vitamin loss with yoghurt and kefir is understandable, since both these products are heated during preparation under aerobic conditions. Saya is prepared by allowing the milk to ferment at a lower temperature for a period of six weeks under anaerobic conditions; the predominant flora apparently consists of lactic acid streptococci, *Strep. citrovorus, Strep. paracitrovorus,* and *Bact. acidi lactici*; the milk becomes highly acid, and there is a very marked breakdown of the casein. The increased content in vitamins A and C which occurs in saya is believed to be the result of bacterial activity during preparation.

275 The Transmission of Trachoma and Cultivation Experiments

P. K. OLITSKY, R. E. KNUTTI, and J. R. TYLER (*Journ. Exper. Med.*, July, 1931, p. 31) have succeeded in transmitting trachoma to *Macacus rhesus* monkeys; some of the methods resembled those probably responsible for the spread of the disease under natural conditions. Infected conjunctival tissue from white patients of various nationalities in New York was ground up in saline solution and inoculated subconjunctivally into the left upper lid of monkeys. The material from 5 out of 8 patients gave rise in these animals to the characteristic infection. Examination of the original material revealed the presence of *Bact. granulosis* in 4 out of the 8 patients, and in 3 out of 4 of the inoculated monkeys in which it was looked for. Successful infection was likewise transmitted by repeated swabbing with the conjunctival secretion of trachomatous patients. Similarly the disease could be transmitted by the swabbing of normal monkeys with conjunctival secretion from experimentally infected animals. Repeated instillation of pure cultures of *Bact. granulosis* into the conjunctival sac proved harmless, but if, after inoculation, the eyelids were rubbed gently for about a minute, granular conjunctivitis ensued. Contact infection was sometimes observed, healthy monkeys developing trachoma when caged with infected monkeys. The authors conclude that these results strengthen the view, first advanced by Noguchi, that *Bacterium granulosis* is closely related to human trachoma.

276 Cyclic Changes in the Glycogen Content of the Liver

G. ÄGREN, O. WILANDER, and E. JORPES (*Biochem. Journ.*, 1931, vol. xxv, No. 3, p. 777) submit evidence that the glycogen content of the liver in rodents is subject to a marked diurnal variation, being considerably higher during the night than the day. This variation was noticed by Forsgren, who, working on histochemical methods, likewise found that there and is some corresponding periodicity in the production of l[illegible]ncentration is free from [illegible]put of this substance occurring d[illegible]ized tingling and [illegible]e glycogen content of the liver w[illegible]s no sensory disturbhors have worked with mice an[illegible]enous administrations, and with rabbits for mea[illegible] the solution from[illegible]n. The general plan of the experiments was to select a batch of 90 or 120 animals, and kill 10 animals every two hours during the day and night, or 15 animals every four hours, commencing at 8 a.m. The glycogen content of the liver was estimated, and the results worked out in milligrams per gram of body weight. Sometimes the animals were well fed; in other experiments they were examined fasting. In some experiments the susceptibility to insulin was determined. The results were very striking. In well-fed mice the average glycogen content of the liver at noon was 0.62 mg. per gram of mouse, while at midnight it was 2.06 mg. The minimum content of 0.56 mg. was observed at 10 a.m., and the maximum of 2.51 mg. at 2 a.m. A similar diurnal variation was observed in fasting animals. The susceptibility to insulin was higher during the day than the night. Thus the percentage of mice developing convulsions after a given dose at noon was 60, whereas at midnight only about 12 per cent. became convulsed. Studies of the urinary nitrogen output in rabbits showed that about 20 per cent. more nitrogen was excreted by the urine during the night than during the day. The authors take this as indicating an increased de-amination of amino-acids during the night, and therefore conclude that the formation of glycogen takes place partly at the expense of the body proteins. The glycogen content of the muscles was found to show a slight nocturnal rise; this is taken to indicate that the muscular glycogen during the night originates from the liver.

277 The Blood Picture in Whooping-cough

L. W. SAUER and L. HAMBRECHT (*Amer. Journ. Dis. Child.*, June, 1931, p. 1326) record their observations on leucocyte counts and differential counts in 70 cases of whooping-cough in patients whose average age was between 4 and 5 years. Since the greatest variations were found in the catarrhal stage and the stage of decline, most of the repeated examinations of the blood were made at the beginning and at the end of the disease. The characteristic leucocytosis and lymphocytosis were always found when the paroxysmal stage was at its height, whereas an initial and a terminal leucopenia were found in almost every instance in which they were sought. During the terminal leucopenia there was a decrease in the number of lymphocytes. Similar results were obtained in experimental pertussis in young monkeys. Five of the seven animals that developed paroxysmal coughs showed an initial leucopenia, and three of the four that were not killed for histological examination showed terminal leucopenia. The authors conclude that while early and late leucopenia are integral parts of the blood picture in pertussis, the blood picture is seldom an aid in early diagnosis of the disease.

278 The Leucocyte Reaction in Syphilis

J. GOUIN, A. BIENVENUE, DAOULAS, and PÉRÈS (*Bull. Soc. Franç. de Derm. et de Syph.*, June, 1931, p. 860) describe the case of a woman, aged 42, with papular syphilides; a preliminary injection of novarsenobenzol was followed two hours later by a leucopenia. Although such a leucopenia has been regarded by some observers as contraindicating a diagnosis of syphilis, arsenical treatment was continued; the patient developed intolerance, and did not improve. Bismuth therapy also was followed by leucopenia, and was not tolerated. Mercurial treatment was finally tried; this was followed by leucocytosis, general clinical improvement, and eventual retrogression of the lesions. They conclude that "leucocyto-reaction" is of diagnostic value only when positive—that is, when the injection of an anti-syphilitic remedy is followed after two hours by a leucocytosis. Unless it is negative with every therapeutic substance, a negative reaction does not *disprove* syphilis, but only indicates a resistant state, as opposed to the allergic state, produced by the drug used. An interesting point with regard to the case described, was that a relapse in the lesions occurred after mercurial treatment, and that a return to bismuth was followed by a positive leucocyte reaction, and improvement. Hence, a negative reaction may be held to indicate a resistant state towards a particular drug present only at one period.

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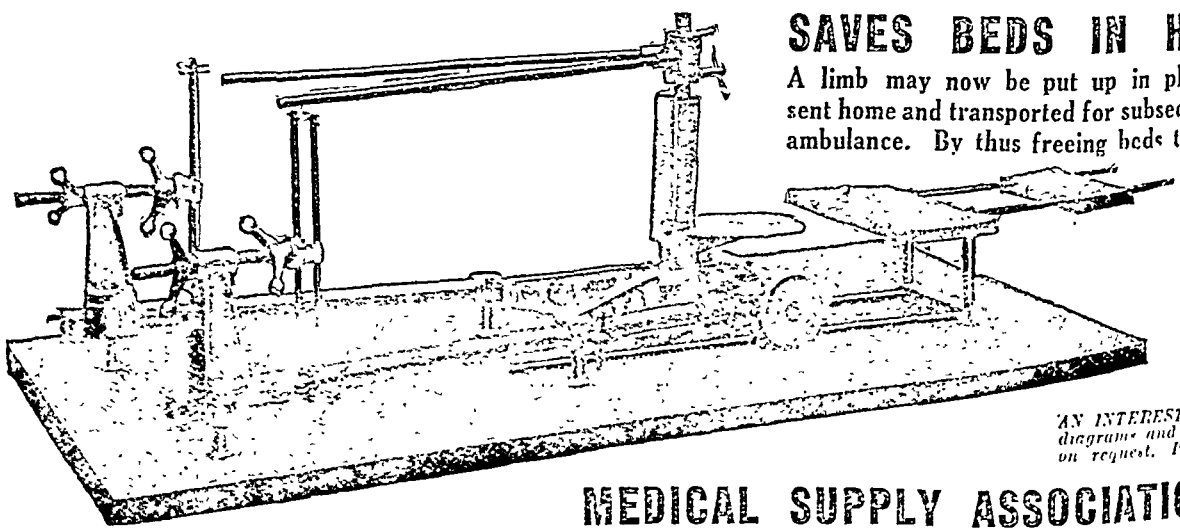
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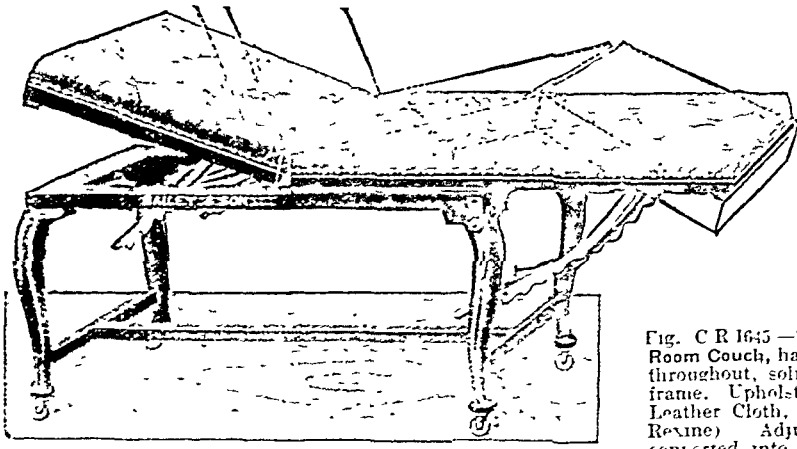
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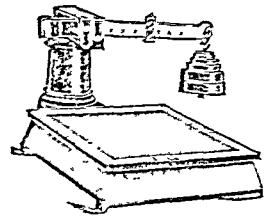
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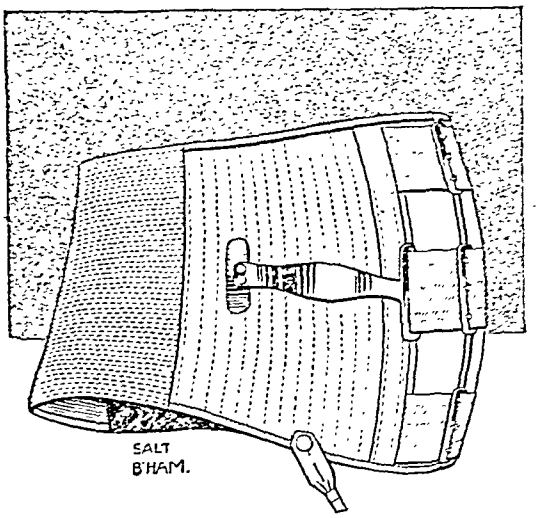
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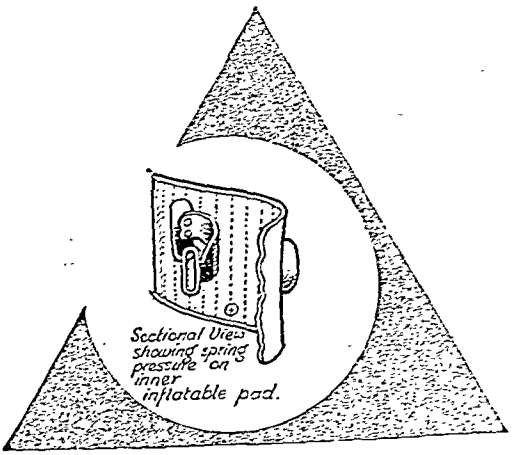
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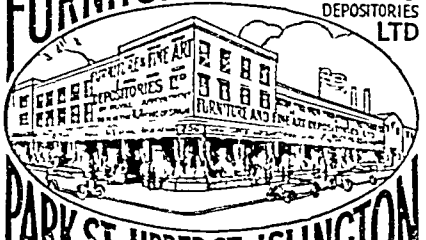
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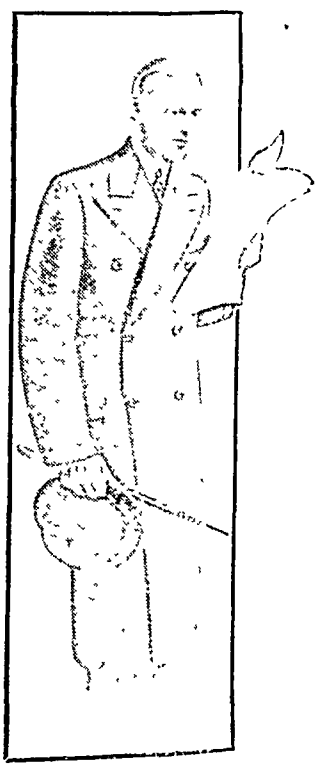
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Established 1815. For the [illegible] suffering from [illegible] apply to the Medical Attendant. Telephone: Tamworth [illegible]

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY

President THE MOST HON THE MARQUESS OF EXETER CMG, ADC

Medical Superintendent DANIEL F RAMSAUT, M A, M D

This registered Hospital is situated in 120 acres of park and pleasure grounds Voluntary patients who are suffering from incipient mental disorder or who wish to prevent recurrent attacks of mental trouble temporary patients and certified patients of both sexes are received for treatment *Complete clinical biochemical bacteriological and pathological examinations* Private rooms with special nurses male or female in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds with a separate entrance to which patients can be admitted It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders It contains special departments for *Electrotherapy* by various methods including Turkish Baths Plunge and Immersion Baths Vichy Douche Scotch Douche Electrical Baths Faradic treatment etc There is an Operating Theatre and Dental Surgery an X-ray Room an Ultra-violet Apparatus and a Department for Diathermy and High Frequency *treatment. It also contains laboratories for biochemical bacteriological and pathological research*

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 600 acres Milk meat fruit and vegetables are supplied to the Hospital from the farm gardens and orchards of Moulton Park *Occupation therapy* is a feature of the branches and patients are given every facility for occupying themselves in farming gardening and fruit growing

BRYN-Y-NEUADD HALL.

The seaside house of St Andrew's Hospital is beautifully situated in a Park of 330 acres at Llanfairfechan amidst the finest scenery in North Wales On the North West side of the Estate a mile of sea frontage is rented by the Hospital for the sole use of patients at a small charge or for longer periods The Hospital has its own private bathing house on the seashore There is trout fishing in the park

At all the branches of the Hospital there are cricket grounds football and hockey grounds lawn tennis courts (grass and hard courts) croquet greens golf courses and bowling greens Ladies and gentlemen have their own gardens and facilities are provided for handicrafts such as carpentry etc

For terms and further particulars apply to the Medical Superintendent (Telephone No 60 Northampton) who can be seen in London by appointment

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangement affords every facility for the relief and cure of those mentally afflicted Voluntary and Temporary Patients received

Tel 6412 *For terms etc apply to the Medical Superintendent*

TYKEFORD ABBEY, NEWPORT PAGNELL,
BUCKS
FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An approved Nursing Home for reception of
Female Cases under the Mental Treatment Act

The Home is a Mansion of Historical interest standing in 9 acres of garden and grounds and is situated 14 mile from Northampton and 12 miles from Bedford on the main London to Northampton Road fifty miles from London Both sexes are accommodated Psycho-Therapeutic Treatment is used extensively in suitable cases Radiant Heat Vapour and Ultra Violet Light Diathermy and Foam Baths Billiards tennis etc Fees from five guineas per week.

Apply Dr D F M DOUGLAS MOPPIS *Telephone* Newport Pagnell 121

COURT HALL, KENTON, EXETER,
SOUTH DEVON

For the care and treatment of Ladies suffering from Mental Disease Limited to eight patients Telephone Starcross 19

CLIFFDE TEIGNMOUTH In connection with Court Hall for early and convalescent cases Cliffden is a large well-appointed house with lovely views of the South Devon Coast It is beautifully situated in grounds of 19 acres The gardens are very attractive, and there is a private road to the beach

Resident Physicians BERTHA MILES MD BS, ANNIE S MILES, MRCS, LRCP *Telephone* Teignmouth 289

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

Phone 11 *Ashton-in-Makerfield*

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND *MIDDLE CLASSES either voluntarily or under Certificate. Patients* are classified in separate buildings according to their mental condition situated in park and grounds of 400 acres with own farm and gardens *in which patients are encouraged to occupy* for indoor and out-door recreation For terms prospectus etc., apply to the RESIDENT

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone PINNER 234

A modern country house 12 miles from Marble Arch, in beautiful and secluded grounds

Fees from 10 guineas per week.

Voluntary Patients received for treatment

Special provision for Temporary patients under the new Mental Treatment Act.

DOUGLAS MACAULAY MD DPM

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL FOR THE CARE and *TREATMENT* of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS Within two miles of the G W Railway and L M & S Railway Stations at *Gloucester the Hospital is easy of access by* rail from London and all parts of the United Kingdom It is beautifully situated in the midst of the Cotswold Hills and stands in its own grounds of over 200 acres Voluntary boarders of both sexes are received for treatment

Special arrangements for Late Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital

For particulars and terms etc apply to— MYRTLE TOWNSEND MD Medical Superintendent Telephone No 7 Barnwood

FENSTANTON,
CHRISTCHURCH ROAD,
STREATHAM HILL S W 2

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders Separate and modern house for Voluntary Patients Large Garden with 12 acres of grass (See *Medical Directory* p 2234) Apply J H EARLE MD Resident Physician Telephone Streatham 8540

THE LAWN, LINCOLN.

This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders including Post Encephalitic conditions in adults Special facilities for Psychotherapy in co-operative cases

All particulars may be obtained from the Resident Medical Superintendent

Dr MARY P BARNES MD DPM

FUNCTIONAL NERVOUS DISORDERS.

CALDECOTE HALL, NUNEATON

RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in the beautiful Country Mansion Fees are moderate *Full particulars from the Resident Medical Superintendent*

A E CALVERT MD DPM

Telephone Nuneaton 241

CHEADLE ROYAL,
CHEADLE, CHESHIRE

This Registered Hospital for MENTAL DISEASES with the special facilities of Cheadle Royal for the treatment and care of Colonic Bacillosis for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES Voluntary Temporary and Certified Patients received

For terms etc apply to the Medical Superintendent J A CAMPBELL BA MB BCh Oxon Patients can be seen in London by appointment

Telephone [illegible]

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

Ladies and Gentlemen suffering from mental affections under certain conditions of age can be received as either VOLUNTARY or TEMPORARY PATIENTS at a weekly fee of TWO GUINEAS and upwards.

BETHLEM ROYAL HOSPITAL, for Nervous and Mental Disorders,

Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg. Tel. Address: Bethlem, Beckenham. *Telephone*: Springpark 1180—1181.

Station: Eden Park (Southern Railway).

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
Physician-Supt.: J. G. PORTER-PHILLIPS, M.D., F.R.C.P.

This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
With a view to early treatment voluntary uncertified patients are admitted.
Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise. *The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free* of charge.
Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
Furthermore, provision is made for Electro-Therapy and Hydro-Therapy to be carried out in all their forms.
In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.
The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms.
For forms and further particulars apply to the Physician-Superintendent at the Hospital.

OXHEY GROVE,

HATCH END, MIDDLESEX.

A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch.
Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.
Full particulars from the MEDICAL SUPERINTENDENT. Telephone: Hatch End 368.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0288.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the Medical Superintendent.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON—CONVALESCENT BRANCH OF THE ABOVE.

DARTMOOR CONVALESCENT HOME. 750 FEET ABOVE SEA-LEVEL

Established 1905 for Treatment of Pulmonary and other forms of Tuberculosis. Sheltered Situation on the slopes of the Haytor Rocks. Radiographic Installation, Electric Light, Central Heating, Separate Bedrooms, Efficient Treatment, combined with individual comfort and minimum restrictions. Illustrated Prospectus on request to the Resident Physician: C. H. BERRY, M.R.C.S., L.R.C.P., Torr House, Devonshire. Telephone: 11 CHAGFORD. Telegrams: TORR, CHAGFORD.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director. David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent. J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Special milk supply from tuberculin-tested herd. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4½ hours from London. Resident Physicians: Dennison Pickering, M.D. (Cantab.), J. A. Hennesey, M.B., Ch.B., Matron Miss S. A. Eddy, S.R.N., Late Sister-in-Charge, Royal Hospital Annexe, Sheffield.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

EAST ANGLIAN SANATORIUM

This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff. Nurse on duty all night. Electric lighting throughout, radiators and wireless (headphones) in all rooms.

Dr. Jane Walker, C.H., J.P., LL.D., Medical Superintendent. Dr. Eleanor Soltau, Assistant Medical Supt.

For all information apply The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone: NAYLAND 1.

THE COTSWOLD SANATORIUM

Specially built in 1893 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 600 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, Medicated Inhalations by means of the Apneu Inhalation Installation, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms. Full day and night Nursing Staff.

Resident Physicians: GEOFFREY A. HOFFMAN, B.A., M.B., T.C.Dub., and MARGARET A. HARRISON, M.B., B.S.Lond.

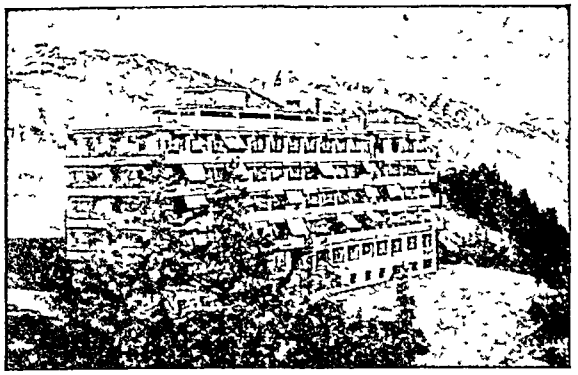
Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Telephone:* 41 WITCOMBE. *Telegrams:* "HOFFMAN, BIRDLIP.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29·57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Medical Superintendent, H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

MONTANA HALL, MONTANA, Switzerland. *For BRITISH Patients Only.*

Built 1929-1930. Opened, October 1930. *(No connection with any other Sanatorium in Montana.)*



For the treatment of Tuberculosis, Diseases of the Chest, Asthma; for patients requiring rest in the Alps under strict medical supervision; and for medical conditions in which sun and air bathing are indicated.

THE ONLY SANATORIUM IN SWITZERLAND UNDER BRITISH OWNERSHIP AND CONTROL, AND WITH A FULL DAY AND NIGHT STAFF OF BRITISH TRAINED NURSING SISTERS.

Large roof Solarium. Private balconies. All rooms have running water, central heating, wireless (headphones), and light signals (instead of bells). A number of rooms with Private Bathrooms. Spacious public rooms. The cooking is adapted to English requirements.

MONTANA (5,000 feet above sea-level) is the sunniest health resort in the Swiss Alps. Many miles of level walking. Twenty hours by train from London.

Inclusive terms:—from Seven guineas per week (during the Winter), according to the room. Telegrams: "Montall, Montana-Vermala."

For further particulars kindly apply to the Resident Medical Superintendent. HILARY ROCHE, M.D.(Melb.), M.R.C.P.(London), Tuberculous Diseases Diploma (Wales).



KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax and Ultra Violet Rays for surgical cases of Tuberculosis. Terms: £4 7s. 6d. to £6 6s. per week inclusive. No extras.

MEDICAL SUPT.: FELIX SAVY, M.D. For particulars apply to the Secretary.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Air and Vichy Douches, Massage and Hombieres Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provisions for invalids. Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

'Grams: "Smedley's Matlock." 'Phone: No. 17. For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

Resident Physicians: G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.), R. MACLELLAND, M.D., C.M. (Edin.).

MATLOCK

PEEBLES

In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Dancing, winter garden, swimming bath, tennis, badminton, golf, fishing. Fully licensed Modern baths installation. Physiotherapeutic, massage, electrical treatment, ultra violet rays. Physician in attendance. Write for prospectus.

Among the Pine-clad Border Hills.

PEEBLES HYDRO, PEEBLES, SCOTLAND

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MONTREUX-CHAMBY
2,500 feet.

First-Class Residential Medical Establishment.

In elevated, sheltered and sunny situation above the Lake Leman; with the latest installations for the treatment of all **Digestive and Nervous Troubles, Diabetes, Obesity, Undernourishment, Asthma, Rheumatism, Convalescences.**

For particulars apply to the Secretary.

"HELIOS" GRASSE NURSING HOME

Suncures. Magnificent Panorama.

Director Medical: Dr. BRODY.

HOSPITAL FOR CONSUMPTION

AND DISEASES OF THE CHEST, BROMPTON, and FRIMLEY SANATORIUM.

PAYING PATIENTS RECEIVED.

BOTH MEDICAL and SURGICAL CASES.

4 to 8 guineas per week at the Hospital. 3 to 4 guineas per week at the Sanatorium.

APPLY TO THE SECRETARY:—BROMPTON HOSPITAL, S.W.3.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S. 14 acres of grounds—For terms apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 15

Tel. & Telegrams: "Haynes, Brentwood 40"

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. Home for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

BOURNEMOUTH HYDRO,

with Vita-glass Sun-lounge and Marine Balcony on the South Coast.

Every kind of Bath. Plombiere Lavage.
Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
High Frequency. Electric Lift.

Prospectus from Secretary. *Tele.* 341.
Resident Physicians: W. JOHNSTON SMYTH, M.D. L. T. ROSE HUTCHINSON, M.D.

Grove House, All Stretton,

Church Stretton, Shropshire.

A Private Home for the care of and treatment of a limited number of Ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

Physician desires semi-invalid as sole PAYING GUEST. Attractive house and garden, residential district. S.W. Coast Town. Terms—8 guineas weekly, inclusive of medical attention.—Address, No. 5774, B.M.A. House, Tavistock Square, W.C.1.

Doctor's widow in North London having large house, garden, car, good staff, would like some PAYING GUESTS. Terms moderate.—Address, No. 571, B.M.A. House, Tavistock Square, W.C.1.

A vacancy for invalid, with or without Nurse, in Doctor's house, 10 miles outside London (Kent), nice garden. Good staff, including Masseuse. Terms mod. rate.—Address, No. 5360, B.M.A. House, Tavistock Sq., W.C.1.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone* 3

Young middle-aged Doctor and wife offer sympathetic HOME; mutual companionship. Residing Wales, near Chester. Private [illegible] and later Golf, etc. Kindly state [illegible] No. 5938, B.M.A. House, Tavistock Sq.

Medical Man (retired) invites picturesque country [illegible] receives one MALE PATIENT. Mild [illegible] convalescent. Moderate terms.—[illegible] Oaks, Beckley, Sussex.

HELOUAN (Egypt)

The Principal Health - Resort in Egypt -

SULPHUR-SALINE SPRINGS.

THERMAL BATH ESTABLISHMENT. SULPHUR BATHS. MASSAGE.
ELECTRO-THERAPEUTICS, Etc.

The best winter health resort. Warm dry, equable climate. Average eight hours daily sunshine in winter. Situated in the desert 16 miles South of Cairo. Baths are suitable for treatment of Rheumatism, Gout, Rheumatoid Arthritis, etc., Albuminuria, Chronic Skin Diseases.

Golf, Tennis, Excursions to Pyramids and other places of interest.

GRAND HOTEL, HELOUAN. First-class Hotel. Special arrangements for visitors taking the cure. Under the same management as the Baths. Open November to April.

For particulars apply to the MANAGER GRAND HOTEL HELOUAN

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

POST-GRADUATE STUDY AT THE
NORTH-EAST LONDON POST-GRADUATE COLLEGE

The Prince of Wales's General Hospital, Tottenham, N.15.

Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

NEXT INTENSIVE FORTNIGHTLY COURSE, DEALING WITH SPECIAL & GENERAL SUBJECTS, COMMENCES ON OCTOBER 12th, 1931.

Prospectus and Syllabuses on application to the Dean.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL
MEDICAL SCHOOL.

(FOUNDED 1816)

Telephone: TEMPLE BAR 1457. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station)

The Hospital has been rebuilt and contains 86 beds, including fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination Part I and II commence in October.

Out patients are seen daily at 1.30 o'clock. Operations are performed at 3 p.m.
The Pathological and Bacteriological departments will be pleased to report on specimens sent in by Ophthalmic Surgeons or Hospitals.
Qualified medical practitioners and registered students may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

CITY OF LONDON MATERNITY HOSPITAL,
CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.
MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly courses.
PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.
PRIVATE WARDS for paying patients.
MATERNITY NURSES sent out to private cases.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39 Earl's Court Square, W.5, and in residence in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9.
Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

University of London.

A Course of Four Lectures on *Blood Plasma and Platelets* will be given by Dr. J. W. McKEOWN at KING'S COLLEGE (Strand, W.C.2) on TUESDAYS, OCTOBER 6th, 13th, 20th and 27th at 5 p.m.
Admission free, without ticket.
S. J. WOOLSLEY,
Academic Registrar.

ST. BARTHOLOMEW'S MEDICAL COLLEGE.

M.R.C.P. CLASS.

A course of Instruction, suitable to the requirements of candidates for the M.R.C.P. Examination in January, will begin on November 2nd, 1931.
For syllabus and full particulars apply to the DEAN, Medical College, St. Bartholomew's Hospital, London, E.C.1.

MARLBOROUGH COLLEGE,
Near MACCLESFIELD, CHESHIRE.

Special classes in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN.*

F.R.C.S.(Edin.).

CLASSES with Museum and Anatomical Demonstrations for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £3 3s. for 10 lessons.—

Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

Westminster Hospital Students'

DINNER to be held at the Grosvenor House Hotel, Park Lane, on Thursday, October 1st. Ticket from the Secretary. The Students' Dinner, Westminster Hospital, S.W.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION. Full preparatory Classes with DEMONSTRATIONS will commence shortly. CORRESPONDENCE COURSE for Jan. and later Exams. should begin now.—H. C. ORPIN, F.R.C.S., Surgeons' Hall, Edinb'h.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

The Queen Alexandra Sanatorium FUND

A limited number of GRANTS will be made during the Autumn from the Fund to help British patients of small means suffering from Pulmonary Tuberculosis to spend a Winter Treatment at Davos, Switzerland. Applications should be made before the end of September. Forms and particulars may be obtained from Mr. W. C. LOCKETT, Davos Platz, Switzerland.

MEDICAL CORRESPONDENCE COLLEGE

19, WELBECK STREET, LONDON, W.1.

PROVIDES HIGHLY SUCCESSFUL ORAL, POSTAL, AND PRACTICAL COACHING FOR ALL MEDICAL EXAMINATIONS.

M.D.Lond., M.R.C.P.Lond., M.D.Thesis (all Universities), F.R.C.S.Eng. and Edinburgh, D.P.H., D.P.M., D.T.M., D.L.O., D.O.M.S., & L.D.S.

COURSES are always in progress for the above; also 1st, 2nd, and FINAL MEDICAL EXAMINATIONS of all Universities and Examining Bodies.

Special Oral and Practical Vacation Courses in Chemistry, Physics, Biology, Anatomy, Physiology, Pathology, and the Final Subjects.

MICROSCOPE AND MUSEUM WORK

CLINICAL INSTRUCTION can be arranged at any time.

VALUABLE BOOK FREE!

Write at once for our "Guide to Medical Examinations," and a copy will be sent post free by return.

MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Sq., LONDON, W.1.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

(University of London).

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.).

The COURSE OF STUDY is now Divided into TWO PARTS: Section A (Clinical and Laboratory Instruction) and Section B (Tropical Hygiene), each of which can be taken independently of the other, Section A being a three months' course and Section B a two months' course.

This Revised Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF COURSES, 1931-32.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION).

1st COURSE: *29th September—18th December*, 1931. 2nd COURSE: *4th January—24th March*, 1932. 3rd COURSE: *11th April—30th June*, 1932.

SECTION B (TROPICAL HYGIENE).

1st COURSE: *18th January—18th March*, 1932. 2nd COURSE: *18th April—17th June*, 1932.

FEES (inclusive):
Sec. A, £25; Sec. B, £15.

Research Studentships vacant, value £250 p.a.

For Prospectus and Synopsis of Lectures, apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET (Gower Street), LONDON, W.C.1.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The WINTER SESSION will begin on Thursday, October 1st, 1931.

The Medical School provides courses in Preliminary, Intermediate, and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research.

NEARLY 1,000 beds available for teaching, additional clinical material being provided by affiliation to an Infirmary and other Institutions.

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually.

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification.

For further particulars and illustrated prospectus, apply to the School Secretary.

C. M. WILSON (*M.C.*), M.D., F.R.C.P., *Dean.*

King's College Hospital Medical SCHOOL (University of London), Denmark Hill, S.E.5.

CENTENARY YEAR 1930-1931.

At the Opening of the Winter Session on Thursday, October 1st, the Introductory Address will be given at 2.15 p.m. by Professor H. R. DEAN, M.D., F.R.C.P., Professor of Pathology and Master of Trinity Hall, in the University of Cambridge.

Mr. A. D. POWER, Vice-Chairman of the Committee of Management of King's College Hospital will preside.

All past Students of the Medical School are cordially invited to attend.

The Past and Present Students' Dinner, at which Mr. L. VERNON CARGILL, F.R.C.S. will preside, will be held the same evening at 7 for 7.30, at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2. (The Secretaries to the Dinner Committee are Dr. G. de Bec Turtle and Dr. J. L. Livingstone.)

H. WILLOUGHBY LYLE, M.D., F.R.C.S., Dean.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.)
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-30 (9 Gold Medallists during 1913-30)	336
M.S.(Lond.),	1901-30 (including 4 Gold Medallists)	22
M.B.,B.S.(Lond.),	*Final* 1906-30 (Completed Exam.)	269
F.R.C.S.(Eng.),	*Primary* 1906-30	162
	Final	161
M.R.C.P.(Lond.),	1914-30	192
D.P.H.	(Various) 1906-30 (Completed Exam.)	300
F.R.C.S.(Edin.),	1918-30	46
M.R.C.S.,L.R.C.P.	Final 1910-30 (Completed Exam.)	467
M.D.(Dur.)	(Practitioners) 1906-30	38
M.D.	Various. By Thesis. Numerous successes.	

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities; also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Second and Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of the Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses of Lectures for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6315.)

Manchester Royal Infirmary.

The Members of the Honorary Staff will give POST-GRADUATE LECTURES on Medical, Surgical, and Special Subjects, on Tuesdays from September 29th to December 15th (except November 10th), and DEMONSTRATIONS of CLINICAL CASES on Fridays, from October 2nd to December 11th. All meetings begin at 4.15 and are free. Details may be obtained from the Secretary of the Post-Graduate Lectures.

The MANCHESTER LLOYD ROBERTS LECTURE will be given by Professor [illegible] BELL of Liverpool, at St. Mary's Hospital, Whitworth Street, on November 10th at 4.15.

County Borough of St. Helens.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the [illegible] Assistant Medical Officer of Health [illegible] the above Authority.

The person appointed will be required [illegible] at the Council's Maternity and Child Welfare Hospital, and will be responsible for the [illegible] of the Council's Maternity and Child Welfare Schemes, together with such other duties as the Medical Officer of Health may direct.

Special experience in midwifery [illegible] and experience in venereal diseases [illegible] possession of a Diploma in Public Health will be regarded as additional qualifications.

Salary £500, rising by annual increments of £25 to £550 per annum, plus [illegible]

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St. Helens, and completed applications accompanied by copies of not more than three testimonials, should reach him not later than Monday, October 12th.

FRANK HALTON, Medical Officer of Health.
Town Hall, St. Helens.
September 18th, 1931.

London Homœopathic Hospital
(Incorporated by Royal Charter)
Great Ormond Street and Queen Square, Bloomsbury, W.C.1 (172 Beds)

The Board of Management are prepared to receive applications for the following appointment

ASSISTANT PHYSICIAN to the Hospital

The successful candidate must possess or obtain registration in Great Britain or Ireland, a Member of the British Homœopathic Society. He is required to attend essential candidates for posts on the Honorary Medical and Surgical Staff of the Hospital and show evidence of knowledge of the Theory and Practice of Homœopathy within one year of his appointment by having attended one or more of the Systematic Courses of Lectures at the Hospital. Any candidate canvassing the Members of the Board, Medical Council or Medical Committee are thereby disqualified.

Candidates will be required to attend a meeting of the Medical Committee.

Applications stating age, qualifications and experience with 3 copies of application and 3 copies of each testimonial should be sent addressed to the Secretary, of whom further particulars may be obtained

EDWARD A. ATTWOOD, Secretary.

Bristol City and County Mental HOSPITAL

Applications are invited for the post of THIRD ASSISTANT MEDICAL OFFICER.

Candidates must be duly registered and single. Preference will be given to those with previous Mental Hospital experience and who possess a Diploma in Psychological Medicine. Salary £450 per annum, rising by annual increments of £50 to £600 together with emoluments of partly furnished house (free of rates and taxes), fring, light, laundry and garden produce, valued for Superannuation purposes at £250 per annum.

Applications to be sent to the Clerk to the Visiting Committee, Mental Hospital, Burgh Hill, Fishponds, Bristol, not later than September 30th, with copies of not more than three recent testimonials. Short-listed candidates will be invited to attend. No canvassing permitted. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Hereford County & City Mental HOSPITAL

MEDICAL SUPERINTENDENT wanted. Must be qualified, registered, have experience in a similar Institution and not over 45 years of age. Salary £650 rising by annual increments of £50 to £800 together with emoluments of partly furnished house (free of rates and taxes), fring, light, laundry and garden produce, valued for Superannuation purposes at £250 per annum.

Applications to be sent to the Clerk to the Visiting Committee, Mental Hospital, Burghill, Hereford, not later than September 30th, with copies of not more than three recent testimonials. Short-listed candidates will be invited to attend. No canvassing permitted. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Bethlem Hospital,
MONKS ORCHARD, EDEN PARK, BECKENHAM, KENT

Wanted, One RESIDENT HOUSE PHYSICIAN (gentleman unmarried) recently qualified in Medicine and Surgery. The terms of residence is for six months, apartments, complete board and laundry being provided and an honorarium at the rate of £150 per annum will be paid for the first three months, rising if commendable service be given to the rate of £200 per annum for the second period of three months.

Written applications with testimonials are to be forwarded to the Physician Superintendent at the Hospital from whom copies of the duties can be obtained.

JOHN L. WORSFOLD, Clerk, &c.
Bethlem Hospital Office,
144 New Bridge Street, E.C.4.

Preston and County of Lancaster ROYAL INFIRMARY

Applications are invited for the following posts:

HOUSE SURGEON. Duties in Male, Female and Children's Wards under Consulting Surgeon.

CASUALTY OFFICER, with charge of Assistant Surgeons' beds.

Total Resident Staff—six. Salary in each case at the rate of £150 per annum, together with board, residence, and laundry. Six months' appointment.

Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be forwarded to the undersigned

JOHN GIBSON,
Sept. 21st, 1931 Supt. & Secretary.

West London Hospital,
Hammersmith, W.6 (234 Beds)

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Genito-Urinary Department. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to his other duties, to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies of testimonials, must reach me not later than Thursday, October 22nd. Candidates must attend the meeting of the Medical Council on Friday, October 23rd, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member of the Board of Management. Nevertheless must send copies of their application and testimonials to each member of the Board and if so notified be in attendance at a meeting of the Board at 5 p.m. on Tuesday, October 27th, when the election will be made.

H. A. MADGE, Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER, (resident). Duties to commence on December 1st next. Also for the post of HOUSE SURGEON (male). Duties to commence on January 1st, 1932.

Salaries at the rate of £130 per annum, with resident board and laundry.

The appointments are for six months and are renewable.

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

Applications accompanied by not more than three testimonials to be sent to the undersigned

September 21st, 1931 ARTHUR H. TIMM, Secretary.

The Royal Hospital,
WOLVERHAMPTON
(Incorporated under Charter)

HOUSE SURGEON required for Orthopædic Department.

The Hospital contains 240 beds, including the usual specialist departments and is reorganized to the various Examining Bodies for a part of the required attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts and unmarried.

The appointment is for six months. Salary at the rate of £100 per annum, board, furnished rooms, and laundry provided.

Applications, with copies of testimonials to be forwarded to the undersigned forthwith.

Wolverhampton, Sept. 22nd, 1931. W. H. HARPER, House Governor.

Borough Mental Hospital,
POWDITCH, DERBY

SENIOR ASSISTANT MEDICAL OFFICER wanted. Commencing salary £400 per annum, rising by £25 per annum to £450 with an additional £50 per annum if in possession of the Diploma in Psychological Medicine, with board, apartments, attendance, and laundry. Candidates must be registered under the Medical Act. The appointment is subject to 3 per cent. deduction on salary and emoluments under the Asylum Officers' Superannuation Act, 1909. Apply not later than September 29th, stating age and full particulars, together with copies of three recent testimonials, to the Medical Superintendent.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE SURGEON (male) required. The appointment is for six months, commencing November 1st. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, should be sent to the undersigned on or before October 6th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Eastern Dispensary, Leman St., E.1

Applications are invited for the post of OPHTHALMIC SURGEON. Candidates must be Fellows or Members of a Royal College of Surgeons in the United Kingdom or Masters in Surgery of a British University. Also for the post of DENTAL ANÆSTHETIST. Previous Hospital experience essential. An honorarium is attached to each post.

GEORGE W. ILSLEY,
Sept. 21st, 1931 Secretary.

Manchester Royal Infirmary
BARNES CONVALESCENT HOSPITAL, CHEADLE, CHESHIRE.

RESIDENT MEDICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which is tenable by a bachelor, subject to the provisions of the Asylum Officers' Superannuation Act, 1909.

Commencing salary at the rate of £200 per annum, with board and lodging.

Applications must state age, and be accompanied by copies of three testimonials, and should be addressed to the undersigned by 9 a.m. on Monday, October 5th.

By Order,
FRANK G. HAZEL,
Secretary.

September 9th, 1931.

Manchester Royal Infirmary
CENTRAL BRANCH, PORTLAND STREET, MANCHESTER.

HOUSE SURGEON (Male).

The Board of Management of the Manchester Royal Infirmary invite applications for the appointment of Assistant House Surgeon, who must be a registered Medical and Surgical qualified practitioner.

The appointment is tenable for six months, commencing from the date of the appointment, at £100 per annum, three months at £100 per annum, and three months at £200 per annum, together with allowances for laundry.

Applicants must state age and qualifications, and send twelve copies of their applications and testimonials to the undersigned by Thursday, October 8th.

By Order,
FRANK G. HAZEL,
General Secretary.

September 21st, 1931.

North Staffordshire INFIRMARY, STOKE-ON-TRENT
(350 Beds.)

ASSISTANT HOUSE PHYSICIAN

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, board, residence and laundry.

The appointment will be made for six months if possible.

Previous Hospital experience necessary.

Application, with copies of two testimonials to be sent to the undersigned not later than

By Order,
W. STEVENSON,
Secretary and House Governor.

September 21st, 1931.

Kent County Ophthalmic AURAL HOSPITAL, MAIDSTONE
(110 Beds.)

Applications are invited for the HOUSE SURGEON (male) to the Eye and Throat Department which is now vacant. Candidates must be duly qualified and registered Medical Practitioners, single, British birth, and nationality. The Hospital is recognized by the Examining Board for D.L.O. The appointment will be for six months, but may be renewed for a second six months. Salary at the rate of £200 per annum, board, residence and washing.

Applications stating age, together with copies of not more than three testimonials, to be sent to the undersigned without delay.

JOHN W. STRICKLAND, Secretary.

Golden Square Throat, Ear and Eye Hospital, London

Applications are invited for the HONORARY ASSISTANT SURGEON. Candidates should be Fellows of the Royal College of Surgeons of England and there are requirements to call upon the present members of the Hospital Staff.

Applications stating age, qualifications, experience, together with copies of three months' testimonials should reach the undersigned before Wednesday, October 7th.

F. P. CAPPELL,
Sept. 21st, 1931. Secretary.

Golden Square Throat, Ear and Eye Hospital, London

Applications are invited for the HONORARY SURGEON.

Candidates must be Fellows of the College of Surgeons of England.

Applications, together with copies of three testimonials, should be received by the undersigned on or before Wednesday, October 7th.

F. P. CAPPELL,
Sept. 21st, 1931. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W C 1

A MEDICAL REGISTRAR is required (for mornings only) in the Out patient's Department, on October 22nd

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, written especially for the purpose, before 12 o'clock, on Monday, October 19th

The appointment is made for one year, but may be held, subject to re election, for three years

Salary £250 per annum, with luncheon when on duty, and an allowance of nine guineas for the purpose of providing a substitute during annual leave

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up the duties on October 22nd

All candidates must be in attendance at the Hospital, to appear before the Joint Committee, if required, on Wednesday October 21st, at 5 p m

Forms of application and copies of Rules for, and details of the duties of the appointment, will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
September, 1931. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on October 14th

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, October 5th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear *before the Joint Committee*, if required, at their Meeting on Wednesday, October 7th, at 5 p m precisely.

Forms of application and copies of the Rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
September, 1931. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W C 1.

There is a vacancy for a CLINICAL ASSISTANT in the Out patient Medical Department

The appointment is made for six months, but may be held, subject to re election, for a further period

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up duties when appointed

The selected candidate will be required to attend on two mornings each week at 9 a m

Forms of application and copies of the Rules for, and details of the duties of the appointment, will be supplied on application to the Secretary

By Order of the Board of Management,
JAMES McKAY,
September, 1931 Secretary.

Central London Throat, Nose,
AND EAR HOSPITAL,
Gray's Inn Road, W C 1

ASSISTANTS in the Out patient Department

There are vacancies for a Second Assistant for attendance on Mondays and for a Third Assistant for attendance on Saturdays—both days at 2 p m

The duties are to assist the Surgeons in seeing the patients, and the posts are honorary ones.

Applications, which may be for a period of three, six, or twelve months, should be sent to the undersigned on or before October 10th

JOHN H YOUNG,
Secretary-Superintendent

The Staffordshire General
INFIRMARY, STAFFORD.

Applications are invited for the post of HOUSE PHYSICIAN (either sex) which will become vacant at the end of October

Candidates must be duly qualified and registered under the Medical Acts Salary at the rate of £150 per annum, with board, residence, and laundry The appointment to be held for at least six months

Applications, stating age, accompanied by copies of three recent testimonials, should be received by the undersigned not later than Thursday, October 1st

Stafford A E COLLINS,
September 25th, 1931. Secretary.

City of Sheffield King Edward VII HOSPITAL,
RIVELIN VALLEY, SHEFFIELD.

RESIDENT HOUSE SURGEON required immediately for above Hospital, which is for the treatment of surgical forms of Tuberculosis and of Rickets 130 beds

Experience in Anaesthetics desirable

The officer appointed may be required to attend the out patient department for Surgical Tuberculosis, and also the Rickets Clinic of the Maternity and Child Welfare Centre

Salary at the rate of £150 per annum, with board and laundry.

Appointment for six months, with possible extension for further six months

Applications, with testimonials, should be addressed to the Medical Superintendent

The London Female Lock HOSPITAL,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the post of HOUSE SURGEON (female) Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by the first post on September 28th (accompanied by copies of three recent testimonials) to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing October 9th Preference will be given to candidates having previous Obstetric experience.

By Order of the Board,
H J EASON,
September 11th, 1931. Secretary.

Horton General Hospital,
BANBURY, OXON. (60 Beds)

RESIDENT MEDICAL OFFICER
(Male or Female)

The Committee invite applications for the post of Resident Medical Officer at the above Hospital for a period of six months at a salary at the rate of £150 per annum, with quarters, board, attendance, and laundry

Applications, stating age, sex, nationality, qualifications, with copies of testimonials, to be forwarded to the undersigned not later than Monday, September 28th.

RICHARD H. PRESCOTT,
Secretary & House Governor.
September 15th, 1931.

The General Infirmary at Leeds.
APPOINTMENT OF HONORARY ASSISTANT ORTHOPAEDIC SURGEON.

A Meeting of the Special Election Committee will be held on Friday, October 16th, at 3 30 p m to elect an Honorary Assistant Orthopaedic Surgeon Candidates, who must be Fellows of the Royal College of Surgeons of England, are required to send 40 copies of their application and testimonials to the undersigned on or before Friday, October 9th

H. KINGSLEY PEARCE,
General Manager.

Chester Royal Infirmary.
(211 Beds)

There are vacancies for a HOUSE PHYSICIAN and TWO HOUSE SURGEONS (male) (staff of five Resident Medical Officers) to commence duties November 1st Salary £150 per annum, with board, lodging, and washing. Application list closes October 10th.

Application forms may be obtained from the undersigned

W H GRACE, M.D., M.R.C.P.,
Hon Supt of the Resident Medical Staff.
Sept ember 17th, 1931

City of London Hospital for DISEASES OF THE HEART & LUNGS,
Victoria Park, E 2
(Bus, Tram, and Rail, Cambridge Heath, L & N E Railway)

A vacancy for a HOUSE PHYSICIAN (male) will occur on November 1st Six months' appointment Salary at the rate of £100 per annum Board residence, and laundry provided

Applications with copies of three testimonials, should be sent to the undersigned on or before Friday, October 16th

GEORGE WATTS, Secretary

Cossham Memorial Hospital,
KINGSWOOD, BRISTOL

Applications are invited for the post of HOUSE SURGEON, to commence duties at the end of September. Applicants must be British subjects, fully qualified, and registered Salary £150 per annum, with board, apartments, and laundry.

Applications, stating age, qualifications, and previous experience, accompanied by three recent testimonials, should be sent to the Secretary.

Metropolitan Hospital,
Kingsland Road, E 8

There are vacancies for the following:
(a) SENIOR HOUSE PHYSICIAN (male),
(b) SENIOR HOUSE SURGEON (male),
(c) JUNIOR HOUSE PHYSICIAN (male),
(d) JUNIOR HOUSE SURGEON (male),
(e) TWO CASUALTY OFFICERS (male),
Salary £100 per annum

Appointments in the first place will be for a period of six months dating from Nov 1st

Candidates must possess a registered Medical and Surgical qualification of the United Kingdom.

Applications, with copies of three recent testimonials, and a certificate of ability to administer anaesthetics, should be sent to the address mentioned not later than first post on Monday, October 5th

Two members of the Resident Staff are eligible dates for the two Senior appointments

HERBERT F RUTHERFORD,
Secretary & House Governor

Winsley Sanatorium,
near BATH.

The Governors invite applications for the appointment of a whole time ASSISTANT RESIDENT MEDICAL OFFICER (male) Salary £250, with apartments, board, laundry, etc

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar months notice on either side)

Forms of application and particulars of duties can be obtained from the undersigned, to whom all applications should be addressed, accompanied by not more than three recent testimonials, not later than first post, October 1st.

T. A. W. CARLISLE
Secretary
Winsley Sanatorium,
Near Bath. Sept 12th, 1931.

Paddington Green Children's HOSPITAL (Incorporated), London, W 2

HOUSE PHYSICIAN
HOUSE SURGEON.

These appointments will become vacant on November 1st Gentlemen (*unmarried*) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than the first post on Friday, October 16th Salary of each at the rate of £150 per annum with board and residence Candidates should have held a responsible Resident Hospital appointment are preferred. The appointments are for a period of six months

JAMES A HAMLIN, Secretary

Royal Free Hospital,
Gray's Inn Road, W C 1

Applications are invited from duly qualified Medical Women for the post of RESIDENT CASUALTY OFFICER Previous experience Hospital resident essential Salary £150 per annum Intending candidates should send in applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before October 5th The appointment is tenable for six months from Nov 1st

REGINALD R GARRATT, Secretary

The Hospital for Women,
Soho Square, W 1

Applications from fully qualified registered women are invited for the post of RESIDENT MEDICAL OFFICER for a period of six months from November 1st next

Salary is at the rate of £100 per annum with board, residence, and laundry Applications and testimonials must reach the undersigned, from whom further information may be obtained, by Friday, October 16th

J P. HUMING, Secretary

Queen Mary's Hospital for the EAST END, E.15

Applications are invited for the above mentioned posts to the above Hospital

Applications, accompanied by copies of testimonials from male candidates only, must reach the undersigned *not later than* Monday, October 7th

ANAESTHETIST (Surgical)—Three mornings Honorarium 50 guineas per annum

ANAESTHETIST (Dental)—Monday Honorarium £25 p.a.

RAPHAEL JACKSON, M.D.

A vacancy has occurred in the office of HONORARY SURGEON of the Ear, Nose, and Throat Department ROYAL HOSPITAL, RICHMOND

Applications are invited from gentlemen exclusively engaged in the practice of the specialty, and should reach the undersigned from whom further particulars can be obtained not later than September 30th

RICHARD ALLEN, Secretary

Royal Hampshire County
HOSPITAL, WINCHESTER (158 Beds)

HOUSE SURGEON (Additional)

Applications are invited from fully qualified men for the above post to take up duties at an early date Six months' appointment Salary £100 per annum, with board residence, and laundry Candidates must be of British nationality, to mail application at once to the undersigned enclosing copies of three testimonials

HERBERT MASLEN Secretary

The Liverpool Eye and Ear
INFIRMARY, Myrtle Street

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution Salary £120 per annum with board and lodging

Applications, stating age and qualifications together with copies of not more than three recent testimonials should be sent in immediately to— CHARLES W WRIGHT, Esq.
9 Harrington Street Liverpool

Gateshead Dispensary
GATESHEAD COUNTY OF DURHAM

Applications are invited for the post of ASSISTANT MEDICAL OFFICER, (non-resident) to take up duties early in October Salary £300 to £350, according to experience Candidates must be duly registered Medical Practitioners, and should send their applications with copies of recent testimonials to me later than September 30th The successful applicant will be required to reside in Gateshead

J FENWICK Secretary

Herefordshire General Hospital

Applications are invited for the post of HOUSE SURGEON (*male*) Twelve months' appointment, renewable Salary £150 per annum, with board residence and laundry

Candidates must be fully qualified and registered

Applications stating age, qualifications and experience together with not more than three copies of recent testimonials should reach the undersigned not later than October 3rd

T W UPTON, Secretary

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON (now vacant) for the period terminating February 1st 1932 Salary at the rate of £140 per annum, with board and lodging Applications to be made on official form to be had from the undersigned, should be sent in as early as possible

The Infirmary, GEO BALLANTYNE
Harrogate Secretary

Harrogate General Hospital

Applications are invited from British subjects (*male*) for the post of HOUSE PHYSICIAN (now vacant) for the period terminating February 1st 1932 Salary at the rate of £150 per annum, with board and lodging Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible

The Infirmary, GEO BALLANTYNE
Harrogate Secretary

Bedford County Hospital.
(124 Beds)

ASSISTANT HOUSE SURGEON (male) fully qualified, unmarried required for a term of not less than six months commencing at once Salary £130, with board lodging and laundry

Applications, stating age nationality, qualifications together with three recent testimonials to be sent to the *Hon Secretary Hon Medical Staff Committee* as soon as possible

Hospital (135 Beds). — House
SURGEON (male) required Experience in Anaesthetics essential Appointment offers opportunity to gain good Surgical experience Suit newly qualified man Appointment is for six months and successful candidate is eligible for re-appointment for a further period of six months Salary £240 per annum, with board residence and laundry Applications, stating age experience and full particulars, together with *copies* of three testimonials to be in by October 3rd—Address No 6029, BMA House, Tavistock Square, W C 1

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE *SURGEON* Salary £150 per annum Twelve months' appointment, vacant November 1st Applications to be received by the Secretary on or before Wednesday, October 14th

St. Mary's Hospital for Women
& CHILDREN, Plaistow, E 13

Applications are invited for the posts of RESIDENT and ASSISTANT RESIDENT MEDICAL OFFICERS (vacant on or about October 12th) male or female The appointments are approximately for six months and will expire on April 30th next Board and residence are provided Salaries at the rate of £175 and £120 respectively, and £5 allowance for laundry The duties of the Resident Medical Officer are mainly Surgical and those of the Assistant Resident Medical Officer mainly medical Personal canvassing not desired Applications with copies of three recent testimonials to be sent to the undersigned not later than October 5th

A ERNEST WILKES, Secretary

Stannington Sanatorium, Clifton,
MORPETH, NORTHUMBERLAND

Applications are invited for the post of JUNIOR MEDICAL OFFICER (Lady) at the above Institution of 310 beds for Children

The successful candidate will be appointed for six months, and will have special opportunities of gaining experience in artificial pneumothorax treatment, and in X-ray work The salary will be at the rate of £100 per annum, with board, residence and laundry

Applications with copies of testimonials should reach the Medical Superintendent not later than October 7th

University College Hospital,
Gower Street, W C 1

Applications are invited for the whole-time post of HOUSE ASSISTANT in the Children's Department of University College Hospital The appointment will be made as from November 1st, and will be tenable for a period of one year, subject to re-appointment for a further period of two years Salary £250 per annum

Applications must be received on or before Monday, October 5th Further information and copies of conditions may be obtained from the Secretary University College Hospital Gower Street W C 1

The Royal Victoria Hospital,
FOLKESTONE

The Committee of Management invite applications for the post of JUNIOR RESIDENT MEDICAL OFFICER (female) to commence duty November 1st The salary attached to the post is £100 per annum, with board and residence

The appointment will be for three months to January 31st, 1932

Applications, with copies of recent testimonials, should be sent to the Secretary Superintendent, Royal Victoria Hospital *Folkestone, Kent, not later than 9 a.m. on* October 19th

Warwick County Mental
HOSPITAL, HATTON Near WARWICK.

There is a vacancy for a JUNIOR ASSISTANT MEDICAL OFFICER Salary £350 per annum, rising by annual increments of £25 to a maximum of £450, with board, attendance, etc

In addition £50 per annum is paid to the holder of a special qualification in Psychological Medicine Candidates need have had no previous experience, and preference will be given to a lady

Applications together with copies of testimonials *should be forwarded to the Medical* Superintendent at the Hospital

Worthing Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER now vacant *The appointment is for six months, renewable* (determinable by three months' notice on either side) Salary at the rate of £150 per annum, with board lodging, and laundry

Applications giving age, qualifications and experience, with copies of three testimonials, to be sent to the Secretary at once.

Woodilee Mental Hospital,
LENZIE GLASGOW

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (*male*) Salary £300, *rising to £350* with board, lodging, and laundry Applicants must have hospital experience Apply Medical *Superintendent*

Essex County Hospital,
COLCHESTER (160 Beds)

Wanted in October ASSISTANT HOUSE SURGEON and REGISTRAR (male) Salary £120 with board washing and residence Medical and Surgical qualifications required

Applications with three recent testimonials to be sent by Saturday October 3rd to— ALFRED G PUCK, Secretary

Royal National Orthopaedic
HOSPITAL

HONORARY ASSISTANT SURGEON

The Committee proposes to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out Patient Department on Wednesday and Friday afternoons and charge of beds Applicant must be FRCS (Eng), and applications with copies of three recent testimonials shall be received by the Secretary, 234, Great Portland Street, W 1, on or before October 8th

National Hospital, Queen Sq.,
W C 1

ASSISTANT REGISTRAR.

Applications are invited for the post of Assistant Registrar who will be required to attend the Hospital on Wednesday afternoon in the Out-patient Department The salary is £200 a year Applicants with recent testimonials from the undersigned from whom further particulars may be obtained on or before Thursday October 1st

GODFREY H HAMILTON Secretary

Glamorgan County Mental
HOSPITAL, BRIDGEND

JUNIOR ASSISTANT MEDICAL OFFICER (male or female) required Salary £250 per annum not rising by annual increments of £25 not to £450 per annum Apartments (*board*) apartments may be had and if not taken valued at £150 per annum not Knowledge of Welsh language desirable Applications stating age qualifications etc to be sent with copies of recent testimonials to the Medical Superintendent not later than Tuesday, October 6th

The Metropolitan Ear, Nose, and
THROAT HOSPITAL (Founded 1838),
2 Fitzroy Square W 1

ANAESTHETIST

Applications are invited for the above appointment, and should be forwarded with no more than three recent testimonials to the undersigned

A small honorarium is paid

L L PHILLIPS Secretary

Taunton and Somerset Hospital,
TAUNTON (104 Beds)

Lady ASSISTANT HOUSE SURGEON required end of September Period of appointment not exceeding six months in the first instance Salary at the rate of £100 per annum, with board residence and laundry

Applications with testimonials, to F J J STACEY Secretary

House Surgeon (male) required
for AYR COUNTY HOSPITAL, for six or twelve months to commence duty on November 1st Salary at the rate of £150 a year, with board and residence Applications, with two copies of testimonials to be lodged with the Secretary, Ayr County Hospital Holmston Road, Ayr, not later than October 5th, at 11 a.m

Leicester Royal Infirmary.
(472 Beds)

There will be vacancies for TWO SURGICAL DRESSERS (Final Year Students preferred) on October 1st

Honorarium 10/6 per week for approved service Board, etc, provided. Three months' appointment

Applications to the House Governor and *Secretary of the Hospital*

Septmber 11th, 1931

National Sanatorium, Benenden,
KENT

RESIDENT ASSISTANT MEDICAL OFFICER (*male*) required at Benenden Sanatorium (147 beds) Salary £300 per annum rising by annual increments of £25 to £350 Preference given to candidates with experience in Tuberculosis and Pneumothorax Treatment

Applications with copies of three recent testimonials should be sent to the Medical Superintendent not later than Thursday October 1st

Batley and District Hospital.
(General Hospital 64 Beds)

Applications are invited for the position of RESIDENT HOUSE SURGEON (male) Salary £175 per annum with board, residence, and laundry

Application stating age and qualifications with copies of testimonials, should be sent to the undersigned.

Batley, A W WESTERN,
Yorks. Secretary

City of Birmingham.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified Medical Practitioners for the whole-time appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynaecological, Obstetrical, and Children's Disease sections There are completely equipped Pathological and Biochemical Laboratories, and X ray, Electro therapeutic, Massage, Ultra violet Ray, and Electro cardiographic Departments Over 3,000 operations are performed annually

The appointment will be for a period of six months, in the first instance, but may be extended at the end of that time for a further period of not exceeding six months

The person appointed will be required to assist at operations, to administer anaesthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance) The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing), received by him

Further particulars of the appointment may be obtained from the Medical Superintendent, R P STANLEY KELMAN, Esq, M B, Ch B, F R C S (Eng and Edin), at Selly Oak Hospital, to whom applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, and endorsed "Casualty Officer," should be forwarded not later than Wednesday, September 30th

F. H. C. WILTSHIRE,
Town Clerk.

The Council House,
Birmingham September, 1931.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners for the posts of AREA TUBERCULOSIS PHYSICIANS (two) Salary £750 per annum, rising biennially by increments of £50 to £937 10s per annum, together with travelling and subsistence allowances when away from base

Applicants must have had three years' experience in the practice of their profession, viz, general Clinical work, for a period of not less than eighteen months, of which not less than six months must have been spent in a Hospital as a resident officer in charge of beds occupied by general, medical, and surgical cases They must have received special training for a period of not less than six months in the diagnosis and treatment of Tuberculosis

The posts are subject to the provisions of the Superannuation Scheme of the Association, for which purpose it will be necessary for the successful applicants to pass a medical examination

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should reach the undersigned not later than October 1st.

D. A. POWELL,
Principal Medical Officer.

Westgate Street, Memorial Offices, Cardiff

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION

Applications are invited from duly registered Medical Practitioners (male) for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER at the NORTH WALES SANATORIUM, LLANGWYFAN, near DENBIGH (236 beds for Pulmonary and Non-Pulmonary cases) Salary £250 per annum, plus maintenance The appointment is limited to a period of one year

Applications stating age, qualifications, and previous experience etc, together with copies of three recent testimonials, should reach the undersigned not later than October 1st.

D. A. POWELL,
Principal Medical Officer.

Memorial Offices,
Westgate Street,
Cardiff

The Institute of Radiology,
152 154, Camden Road, N.W.1.

A RESIDENT MEDICAL OFFICER (male) is required on October 5th The appointment is eminently suitable for a man reading for a higher examination. Honorarium at the rate of £150 for the first six months; for a period longer than six months £250 per annum; with board, residence, and laundry Experience in light treatment is not essential, but applicants must have held a resident appointment at a General Hospital The duties will include assisting in the treatment and in the collection of clinical data for purposes of research

Applications, together with copies of three testimonials, must be sent not later than Saturday, October 3rd, to the Hon. Secretary, the above address

Birmingham Public Health
DEPARTMENT.

TUBERCULOSIS SECTION.

Applications are invited from single male Medical Practitioners for the post of ASSISTANT MEDICAL OFFICER in the Tuberculosis Section of the Public Health Department The successful candidate will be employed both in a Sanatorium and a Dispensary.

Candidates should have held a resident General Hospital appointment, or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis Experience in Surgical Tuberculosis an advantage

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450 per annum, with emoluments valued at £150 per annum.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to one month's notice on either side

Forms of application may be obtained from, and should be returned, with three testimonials to, the Chief Clinical Tuberculosis Officer, 44a, Broad Street Birmingham, by 9 o'clock on October 3rd

F. H. C. WILTSHIRE,
Town Clerk.

Council House,
Birmingham.

County Council of Middlesex.

THE COUNTY (TUBERCULOSIS) SANATORIUM, CLARE HALL, SOUTH MIMMS, MIDDLESEX.

ASSISTANT RESIDENT MEDICAL OFFICER.

The County Council invite applications for the post of Assistant Resident Medical Officer (male) at the above Institution, at a salary of £400 per annum, rising by annual increments of £50 to £600 per annum, with board, lodging, and laundry, valued at £100 per annum

Candidates must be registered Medical Practitioners, not over thirty-five years of age, unmarried, and of British nationality They must have held resident Hospital appointments Practical experience in the diagnosis and treatment of Tuberculosis will be an additional qualification

The officer appointed will be required to devote his whole time to the duties of the post, and to contribute to the County Council's Superannuation Fund. For the latter purpose he will be required to pass such medical examination as the County Council may direct

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, stating (1) name, (2) age, (3) experience, accompanied by copies of not more than three recent testimonials, must be received by the undersigned not later than October 2nd No special application forms are provided Envelopes must be endorsed "Assistant Medical Officer, Clare Hall"

Canvassing, directly or indirectly, will be a disqualification.

ERNEST S W. HART,
Clerk of the County Council.

Guildhall, Westminster, S W 1.
September 15th, 1931

Borough of Leyton.

DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners possessing [illegible] Diploma in Public [illegible] for the appointment of Health and Deputy [illegible]

Age not to exceed 45 years

The salary attaching to the post will be £660 per annum

Preference will be given to candidates possessing previous experience in School Medical Inspection, Maternal and Child Welfare, and in the diagnosis and treatment of Infectious Diseases

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, to the approval of the Board of Education, and to the conditions set out on the form of application

Applications must be made on prescribed forms, which can be obtained by sending a stamped addressed foolscap envelope to the undersigned

Applications, endorsed "Deputy Medical Officer of Health and Deputy School Medical Officer," must reach me as soon as possible, and not later than October 10th

Canvassing, directly or indirectly, will be a disqualification

JNO ATKINSON,
Town Clerk.

Town Hall,
Leyton, E 10

September 26th, 1931.

City of Manchester.

PUBLIC HEALTH DEPARTMENT

BOOTH HALL HOSPITAL

APPOINTMENT OF AN ASSISTANT MEDICAL OFFICER

The Public Health Committee invite applications from qualified Medical Men for the appointment of Assistant Medical Officer at the Booth Hall Hospital for Children (750 beds), Charlestown Road, Blackley, Manchester

Every applicant must be a registered Medical Practitioner, and unmarried

Preference will be given to applicants with previous Hospital experience

The Hospital is a recognised Training School for Nurses, and is equipped with all modern Hospital requirements

Salary £250 per annum, with board residence, and laundry in addition No bonus

The appointment will be made, in the first instance, for a period of six months The successful candidate, however, will be eligible for re appointment for a further period of six months at the end of that period

Every application, stating fully the training, qualifications, and experience of the candidate and his age, with copies of three recent testimonials, and endorsed on the envelope "Assistant Medical Officer, Booth Hall Hospital" must be addressed to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than Tuesday, October 6th

The candidate appointed will be required to commence duty as soon as possible after appointment, to devote the whole of his time to the duties of the position, to pass a medical examination, to contribute to the Corporation Superannuation Fund, and to execute the Bond of Service

Canvassing in any form, oral or written, direct or indirect, is prohibited

F. E WARBRECK HOWELL,
Town Clerk

Town Hall,
Manchester.

September 21st, 1931.

City and County of Kingston-upon-Hull

HULL MATERNITY HOME AND INFANTS' HOSPITAL.

SENIOR RESIDENT MEDICAL OFFICER (Woman)

The Corporation of Hull invite applications from unmarried or widowed registered Medical Practitioners, under the age of 40 years, for the appointment of Senior Resident Medical Officer (woman) at the Maternity Home and Infants' Hospital, Hedon Road, Hull Candidates must be of at least three years standing in the profession

Salary £450 per annum, together with [illegible] washing, and residence at the Maternity Home The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922

Applicants must have had Post graduate experience in Obstetrics, Paediatrics, and the treatment of Venereal Disease in women

The successful candidate will be required to devote the whole of her time to the duties of the appointment, which will also include attendance, when required, at Ante Natal, Post Natal and other clinics

Particulars of the duties and form of application may be obtained from the undersigned

Completed applications (in an envelope endorsed "Senior Resident Medical Officer, Maternity Home"), together with copies of [illegible] recent testimonials, must be received not later than Saturday, October 10th

R BAINES
Acting Medical Officer of Health

Health Department, Guildhall, Hull.
September, 1931.

County Council of the West Riding of Yorkshire

MIDDLETON-IN-WHARFEDALE SANATORIUM

RESIDENT MEDICAL OFFICER

The County Council of the West Riding of Yorkshire invite applications for the appointment of Junior Resident Medical Officer at the Middleton-in-Wharfedale Sanatorium, Ilkley (300 beds) The appointment is for one year. Salary at the rate of £ per annum, with board, residence, and laundry

Hospital experience is an advantage

Applications, together with copies of [illegible] testimonials, should be sent to the Medical Officer, County Hall, Wakefield later than October 5th

J. CHARLES [illegible]
Clerk of the [illegible]

County Hall,
Wakefield

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A. House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MAERDY GLAMORGAN *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MEIRHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE *(Workmen's Medical Scheme)*	STEWARTRY OF KIRCUDBRIGHT *(Assistant Medical Officer and Assistant School Medical Officer)*
EBBW VALE MON *(Workmen's Medical Society)*	NEATH AND DISTRICT *(Medical Aid Association)*	SOMERSET COUNTY COUNCIL *(Assistant Medical Officer)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE *(Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE *(Medical Officer)*	OGMORE VALLEY GLAMORGAN *(Byndlam Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*	
LLWYNYPIA CLYDACH VALE, PENYGRAIG, GLAMORGAN *(Workmen's Medical Scheme)*		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1.

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	**SOUTH AUSTRALIA.** *(Lodge Appointments)*	Secretary, South Australian Branch, B M A House 206 North Terrace, Adelaide	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch) British Medical Association, P O Box 156 Wellington New Zealand
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon Sec Queensland Branch British Medical Association B M A Building Adelaide St, Brisbane	**VICTORIA.** *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association Medical Society Hall East Melbourne, Victoria	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices)*	Hon Sec Western Australian Branch, British Medical Association, No 6 Bank of N S W Chambers, St George's Terr, Perth, Western Australia

September 23rd, 1931 By Order of the Council ALFRED COX, Medical Secretary

The Loughborough and District GENERAL HOSPITAL

Wanted, to commence duties on October 1st or earlier by arrangement RESIDENT HOUSE SURGEON (male or female and unmarried) possessing a medical and surgical registered qualification Practical experience in the administration of anaesthetics is required Salary £175, with apartments board and laundry All applications stating age etc with copies of testimonials to be sent to me at once

9, Leicester Rd FRANK TOONE
Loughborough Secretary

Aberdeen Royal Mental Hospital.

The office of SECOND ASSISTANT PHYSICIAN in the Aberdeen Royal Mental Hospital *is vacant and* applications for it are invited Previous Mental Hospital experience is essential

Salary will commence at £400 per annum, with board rooms and laundry

Applications *stating age and full particulars* of experience with copies of testimonials, should be sent to the Physician Superintendent

Victoria Central Hospital, WALLASEY

Applications are invited for the position of SENIOR HOUSE SURGEON (male), salary at the rate of £150 per annum also JUNIOR HOUSE SURGEON salary at the rate of £100 per annum with board residence, and laundry

Applications with copies of testimonials, to be sent to the Secretary

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum *with residence*, board, etc Applications, with copies of testimonials, endorsed 'House Surgeon,' to be addressed to the Chairman of the Board of Management Post now vacant.

H R NORTH, Secretary

Royal Devon & Exeter Hospital, EXETER (225 Beds)

APPOINTMENT OF CASUALTY OFFICER AND HOUSE SURGEON to Special Departments

Applications invited from qualified and registered candidates for this appointment now vacant

Engagement for six months candidates being eligible for subsequent appointments

Salary at the rate of £150 per annum, with board residence, and laundry

Applications, with copy testimonials should be sent to the undersigned as soon as possible

S S COIF Secretary & Manager

Norfolk and Norwich Hospital, NORWICH

Applications are invited for the post of HOUSE SURGEON to the Special Departments (Ear, Nose and Throat and Ophthalmic) Salary £120 per annum, with board, residence, and laundry

[illegible] must possess registered forward applications, etc, together with the undersigned not later than first post on Tuesday, September 29th

FRANK INCH
September 18th 1931 House Gov & Sec

General Hospital, Nottingham (397 Beds)

A HOUSE PHYSICIAN is required at the above Institution The appointment is for six *months* Salary at the *rate of £150* a year with board residence and laundry Candidates are desired to send applications and full *particulars as to age* qualifications and experience to the undersigned not later than Wednesday, October 7th

Duties to commence Friday October 23rd

PETER McCOLL
House Governor & Secretary.

Rochdale Infirmary and DISPENSARY (110 Beds)

The Board of Management invites applications for the appointment of JUNIOR HOUSE SURGEON The salary attached to the appointment is at the rate of £200 per annum, including board residence, and laundry Applications, stating age, nationality, etc, together *with copies of three recent testimonials*, to be sent to the Secretary, endorsed "House Surgeon" Conditions of the appointment and particulars of duties may be had on application

Infirmary Office, W WYNNE,
Rochdale Secretary
September 7th, 1931

St. John's Hospital for Diseases OF THE SKIN (Incd) 49, Leicester Square, London, W C 2.

Applications for the post of JUNIOR HONORARY MEDICAL REGISTRAR (male or female) are invited to be sent to the undersigned on or before Friday October 2nd

Honorarium £50 per annum

Applicants must be duly qualified and registered Medical Practitioners

Particulars of duties can be obtained on application

LEONARD G P TUPPIN
Secretary

Altrincham General Hospital, CHESHIRE. (100 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON Salary at the rate of £120 per annum with board residence, and laundry The appointment is for 6 months in the first instance, commencing at once

Applications stating age and experience, together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith

(Appointments continued on p 50)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Assistantship, with definite view, Succession or Partnership, London or S. Coast, by Scot, aet. 33, married, M.B. Edin., 1924, H.P., six years' G.P. Keen and well received. Own car. Free month.—No. 6035, B.M.A. House, Tavistock Sq., W.C.1.

Wanted at once, Assistant, to take charge of branch. Experience panel necessary. English or Scotch. Practice working-class. Single, £312, with rooms and attendance. Married, £360, with four unfurnished rooms. Interview. Usual bond.—Address, No. 6027, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a male qualified ASSISTANT, with a view to Partnership if suitable, in a lucrative Practice.—Address, stating age, qualifications, when qualified, and nationality (Welshman preferred, but not essential), No. 5765, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — October (early).— Married ASSISTANT, or single; Eng. or Scotch, ex H.S., some exp. gen. practice. Nice unfurnished house. Car and dispenser. Good prospects. Near Manchester. £430. Full particulars and photo.—Address, No. 5767, B.M.A. House, Tavistock Square, W.C.1.

Wanted, October 1st to 10th, indoor ASSISTANT, male, single, under 30, for private and panel Practice, South Coast town. Salary £300. Recent testimonials and photo if turnable. Usual bond.
Address, No. 5910, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.R.C.S., L.R.C.P., woman, aged 30. Four years' experience of general practice, private and panel. Used to sole charge. Free October. Interview London.—Address, No. 5855, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or Branch Management, with view, by Scot. Aet. 29, Protestant, single. F.R.C.S., L.R.C.P. Edin. Ex H.S. and R.M.O. Maternity Hospital, also G.P. exp. Int'view London if necs.—Add., No. 6026, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with or without view, or LOCUM, by M.B. Glas. (1927). Married. Hospital and G.P. exp. anæsthetics, midwifery, etc. Free one month.—Address, No. 6025, B.M.A. House, Tavistock Square, W.C.1.

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Wanted soon, outdoor Assistant in Glamorgan Colliery Practice. Male, singe, British. Salary £450 p.a., with rooms. State age and essential particulars.—Address, No. 6031, B.M.A. House, Tavistock Sq., W.C.1.

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The Guildhall, F. J. SPARKS,
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September 14th, 1931.

The Queen's Hospital for CHILDREN, Hackney Road, London, E.2

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Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before October 27th, to the undersigned, from whom further particulars may be obtained.

CHARLES H. BESSELL,
September 17th, 1931. *Secretary.*

Caernarvonshire and Anglesey INFIRMARY, BANGOR.

GENERAL HOSPITAL.

Wanted, RESIDENT HOUSE SURGEON (male) and JUNIOR RESIDENT HOUSE SURGEON. Must be fully qualified. Salary £150 and £100 respectively, plus board and laundry. Hospital contains Orthopædic, Ear, Nose, and Throat, X-ray, Radium, and Light Departments. The appointments offer good opportunities for practical surgical work. Applications, addressed to the Secretary, to be sent in by September 29th.

Kent and Canterbury Hospital, CANTERBURY.

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HOUSE SURGEON required. Six months' appointment. Salary payable at the rate of £125 per annum, plus board, residence, and laundry.

Applications, stating age and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned.

W. T. SOUTHWOOD,
Superintendent & Secretary.

Macclesfield General Infirmary, (100 Beds.)

Wanted, SECOND HOUSE SURGEON, at £150 per annum, with board and laundry.

Candidates must be legally qualified, and have had experience in the administration of anæsthetics. Appointment for six months.

Applications, stating qualifications, and enclosing copies of three testimonials, to be sent to the undersigned.

A. E. HANRAHAN, *Secretary.*

The Royal Eye and Ear Hospital, BRADFORD.

Wanted, JUNIOR HOUSE SURGEON. Salary £150, with board, residence, and laundry.

Applications, stating qualifications, and with copies of recent testimonials, to be forwarded to the undersigned not later than October 13th.

F. BRIGGS, *Secretary.*

Cardiff Royal Infirmary.

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Number of available Beds—490.

Applications are invited for the undermentioned posts:—

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Graduates of other Medical Schools, as well as the Welsh National School of Medicine, are eligible for these posts.

Applications, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

R. ARMSTRONG,
September 15th, 1931. *Medical Supt.*

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine)

Number of available Beds—490.

Applications are invited for the following posts:—

ONE HOUSE SURGEON—Surgical Unit.
ONE HOUSE SURGEON—Gynæcological Department.

Salary at the rate of £50 per annum, with board and lodging. Appointments are for six months, commencing 1st October 1931.

Forms of application can be obtained from the undersigned and should be returned, with copies of three recent testimonials, on or before October 5th.

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September 15th, 1931. *Medical Supt.*

The Sheffield Royal Hospital.

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All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880)

12, Stratford Place,

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1 DEATH VACANCY. — SOMERSET. — Country PRACTICE of over £1,100 p.a. Panel about 800. Nice detached house (6 bed and dressing rooms), garage, and nice garden, for sale or rent.

2 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort. Receipts past year £623. *Panel* 500. House (7 bedrooms), garage, and half acre of garden, for sale.

3 LONDON, S.E. — Partnership in sound Practice of £4,500 p.a. in pleasant suburb. No panel. Choice of two houses for sale. Premium, one-third share, 2 years' purchase.

4 HOME COUNTIES. — Non-dispensing PRACTICE in delightfully situated Town under 15 miles from London. Receipts past year over £1,200. No panel. Centrally situated house to rent. Premium £2,100.

5 LONDON, S.W.—Partnership (after Preliminary Assistantship) in rapidly increasing *Practice of over* £2,200 p.a. in growing suburban district. Panel 1,700. House, with 4 bedrooms and garden, to rent. Premium, one third share, 2 years' purchase.

6 NEW ZEALAND.—NORTH ISLAND.—Non dispensing PRACTICE, about £2,000 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,000.

7 MIDLANDS. — Practice of about £1,000 p.a. in one of the best residential suburbs on outskirts of important City. Small panel and very little *midwifery*. Well situated *house* (6 bedrooms), good garden and garage, for sale. Good scope. Premium 1½ years' purchase.

8 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort capable of increase by one practising all the year round. Receipts about £150. No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

9 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town. Panel 1,940. House available. Applicant should be a capable Surgeon. Premium one third share or one fourth share 1½ years' purchase.

10 W. OF ENGLAND. — Practice averaging about £1,100 p.a. in popular Seaside Resort. Panel 1,150. Large house for sale or rent. Scope for considerable increase. Premium 1½ years' purchase.

11 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Good well situated house (7 bedrooms), for sale or rent. Premium one half share 2 years' purchase. Partner should be young and hold F.R.C.S.

12 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres for sale. Sport of most kinds. Good golfing. Ample scope. Premium two-thirds or four-fifths share 2 years' purchase.

13 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwifery. Six-roomed house to rent. Premium £750, most of which may be paid by instalments.

14 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven-roomed house with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

15 S. DEVON.—Partnership (after preliminary Assistantship) in good class Practice of over £2,000 p.a. in small Seaside Resort. Small panel. Very little *midwifery*. Nice house (4-5 bedrooms) for sale. Cottage Hospital, and scope for Surgery. Share up to one half at 2 years' purchase.

16 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. Premium one third share £2,000.

17 HOME COUNTIES. — Partner required in steadily increasing Practice of between £1,500 and £2,000 p.a. in rapidly growing neighbourhood within 15 miles of London. House, with 5 bedrooms, etc., garage and garden, to rent. Good scope. Premium two fifths share 2 years' purchase.

18 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well situated house (7-8 and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

19 S. WALES.—Partnership in steadily increasing Practice of about £3,000 (appts. over £1,000) p.a. in growing district, easy distance of important Seaport. Panel 1,750. One third to two fifths at once, with succession to whole Practice after 5 years. Premium 1½ years' purchase.

20 SOUTH AFRICA. — Country Practice in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well-built house for sale or rent. Easily worked. Premium £500.

21 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first rate town. Panel 1,500. Good house (6/7 bedrooms) to rent. Premium one third share 2 years' purchase.

22 LONDON, N. — Practice in thickly populated area. Receipts past year over £630 p.a., including £100 from appointment and panel of 570. Accommodation consists of bedroom, surgery, waiting room, to rent on lease for. Ample scope. Premium 1 years purchase.

23 DEATH VACANCY.—LONDON, S.W.—PRACTICE of £2,350 p.a. (over £600 from panel), in suburb. Suitable accommodation to rent.

24 FAR EAST. — Good-class Practice with valuable appointments. Cash receipts last year £2,000. Premium £1,200, to include car, etc.

25 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight to nine rooms for sale or rent. Excellent educational facilities. Premium £1,500.

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Practices and Partnerships for Disposal (continued).

26 W. MIDLANDS. — Country Practice of about £1 000 p.a. in beautiful part Panel 532 Very good house (5/6 bedrooms) Good garden orchard, etc, for sale or rent Premium £1 500

27 KENT.—Country Practice of over £800 p.a. in beautiful part Panel nearly 400 Very attractive residence (5 bedrooms), central lighting, grounds of 2½ acres, orchard, etc, for sale Sport Premium 1½ years purchase

28 LONDON, E.—Cash and Panel Practice of £1,265 p.a. in populous area Panel 1,700 House (3 bedrooms) for sale *Premium 1½ years' purchase*

29 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1 300 p.a. in small but delightful resort Considerable scope to one able to operate Premium one half share 1½ years' purchase

30 LONDON, E.—Practice doing about £1,200 p.a. *in outlying suburban district Panel 608 Detached house* (6/7 bedrooms) with garage and lovely garden, for sale Premium—Practice—£1,500

31 LONDON, N.W.—Practice worth between £1,500/£1,600 p.a. Panel about 1,230 Private residence contains 4 bedrooms, etc, and is for sale Rent of Branch Surgery £50 p.a. Premium 1½ years' purchase

32 LONDON, W.—*Panel of 400 for transfer* in suburban district Rent of Look up Surgery £65 p.a. Premium, *to include furniture and drugs*, £500

33 MIDLANDS.—Practice over £800 p.a. in first rate town Panel 500 Large or small house available Premium only £300

34 *HOME COUNTIES.—Partnership in exceptionally* good and rapidly increasing Practice about £6 000 p.a. in delightfully *situated Country Town, easy distance of coast* Attractive house (4 bedrooms) to rent Partner must hold the F.R.C.S., and be aged about 30 Appointment on Hospital Staff Premium for one sixth to one fourth share 2 years purchase Preliminary Assistantship

35 *EAST ANGLIA.—Partnership in good-class* non dispensing Practice in favourite Seaside Resort Partner *must be a bachelor man about 30 years of age, experienced in* Medicine and Anæsthetics Good up to date Hospital Share of £1,000 p.a., 2 years purchase

36 S. of ENGLAND.—Partnership in increasing Practice of about £1,600 p.a., in flourishing Seaport Town Panel 1 000 Plenty of scope for increase Premium, one half share, 1½ years purchase Preliminary Assistantship entertained

37 S. AFRICA.—CAPE PROVINCE.—Practice of over £1,450 in small Town (4,000 ft above sea level), in healthy pastoral district Well built house *(2 bedrooms) to* rent Premium £500

38 LONDON, S.W. — *Partnership in well-established* suburban Practice (about £2,400 p.a.), easy access of West End Premium *for one half share £2 300*

39 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in *non dispensing Practice of £1,800 p.a. (in* beautifully situated Country Town Panel about 650 House (5 *bedrooms) to rent* Good schools Excellent sport. First class Hospital One third to one half share at 1½ years' purchase Welsh not necessary

40 W. MIDLANDS.—*Practice £800 p.a. in* market town Panel 170 House (5 bedrooms), garage and garden, to be *sold or let Premium 1½ years' purchase*

41 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600 Nice house (4 bedrooms) to rent Premium for one half share 1½ years *purchase*

42 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district Small panel House, with lovely garden and paddock, for sale Scope Prem 1 yr's pur

43 *YORKSHIRE (N.R.).—Partnership in old-established* Practice of £5 000 p.a. in an important town Panel *4,000* Premium for one fifth share 2 years purchase

44 LONDON, S.W. — Increasing Practice *about £700 p.a. in outlying suburb Panel £100 Modern house* (3 bedrooms) Premium £1,100

45 CORNWALL.—Practice of £1,260 p.a. in *a favourite seaside resort Panel 520* Hospital Good house and garden Premium 1½ years purchase

46 KENT. — *Country Practice of about £850* p.a. Panel 550 Good house and garden for sale Prem £1,100

47 *HOME COUNTIES.—Practice of £1,750* p.a. in small attractive Country Town within 25 miles of London *Panel about 1,000 House (6 bedrooms) with small garden for* sale Educational facilities and sport Prem 1½ years purchase

48 EAST ANGLIA.—*Partnership in Practice* about £3 000 p.a., in first rate town Panel about 3,000 Suitable house obtainable Scope for increase Premium one-third share 1½ years purchase

49 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district Panel over 700 Large house in splendid condition, with central heating and electric light *beautiful garden with greenhouse, for sale. All kinds of* sport Premium £1,350

50 LONDON, N.W.—Partnership in Practice of £2 290 p.a. in suburban district Panel 2 525 Scope for increase. Premium one half share 2 years purchase

51 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district Panel 1,500 Detached house with garage and small garden to rent. Sport of all kinds Premium one third share 2 years purchase Preliminary *Assistant-ship*

52 LEEDS. — Very compact mixed Practice *over £1 200 p.a. Panel 1,300 Large well situated detached* house (4 bed and dressing rooms) with large garden, to rent on lease Premium 1½ years' purchase.

53 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district Panel 250 Convenient semi detached house (4 bedrooms) with good garage and secluded garden, for sale. Great scope. Premium £860

54 CO. DURHAM.—Partnership in Country Practice easy distance of coast Income about £1,650 p.a. *Panel 1 550 and Club appointments £700 p.a.* Nice house (5 bedrooms) in quarter acre of garden, for sale Premium for one half share only £1,000

55 SOMERSET. — Practice averaging £870 p.a. in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase Scope for increase Premium £1,300

56 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2,700 p.a., in small *town Panel about 2,400 One third share at 2 years' purchase*, payable by arrangement if desired.

57 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast Panel 650 Detached house (6 bedrooms), with garage and beautiful garden, to rent Hunting, shooting, fishing, etc Premium 1½ years' purchase. Suitable for retired Service man

58 EASTERN COUNTIES.—*Small Practice in* town of 20,000 population near the coast Receipts average £300 p.a. *(including £100 from panel) Large convenient house, with* good Surgery and nice garden, to rent. Premium 1 years pur.

59 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel House, with 4 bedrooms and fair sized garden, to rent. Good scope Premium £700 cash.

60 MIDLANDS.—Partnership in easily worked good-class non dispensing Practice over £4,000 p.a., in beautifully situated county town Panel about 1 600 Hospital in town and *incoming Partner must be a good Surgeon. One fifth share at first* at 2 years' purchase.

61 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town Panel 785 Share up to one half 2 years' purchase Up to-date Cottage Hospital.

62 S. OF ENGLAND. — *Partnership in* good middle-class non panel Town Practice over £5,300 p.a. Suitable house to purchase. *Premium one fourth share £2 000* Preliminary Assistant-ship

63 LONDON, W.—*Steadily increasing Prac-*TICE doing about £750 p.a., mostly from "Look up" Surgery Panel about 500 Well situated corner residence (5 bedrooms) to rent Premium £900

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1 PARTNERSHIP.—In a most desirable outlying residential suburb of London, a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1,200 p.a., in an old established good mixed class Practice averaging just over £10,000 p.a. Very good house, with ample accommodation. Rent £150 p.a. Premium 2 years' purchase cash.

2 LONDON, W.—Old established good middle-class PRACTICE averaging over £2,500 p.a. Medium-sized panel Visits mainly 10/6. Midwifery discouraged. Suitable house, with ample accommodation. Vendor's leasehold property. Price £1,650, or will be let on lease at £150 p.a. Premium 1½ years' purchase.

3 PARTNERSHIP.—SOUTH WALES, near a large Town.—A one-third or two fifths share in a well established and good middle and industrial class Practice, producing for last 12 months £3,174. Panel of 1,750. Fees from 3/- Suitable house, with 4 reception and 4 bedrooms, etc Electric light. Garden Can be rented on lease. Premium 1½ years' purchase, part by arrangement

4 MANCHESTER.—Good mixed-class PRACTICE, averaging over £1,200 p.a., but capable of much increase. Vendor having neglected work owing to ill-health Panel of about 550. Fees 3/6 to 7/6 House, with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £2,700. Premium 1½ years' purchase, payable by arrangement.

5 SOUTH WEST OF ENGLAND.—COUNTY TOWN.—PARTNERSHIP.—A third share is offered in a very sound middle-class Practice, averaging approximately £2,000 p.a., with panel of 2,788 Fees 3/6 to 10/6 Increase up to two-thirds at the end of 18 months. Suitable house can be obtained. Premium £1,367, payable part down and balance as arranged.

6 SOUTH AFRICA.—Within 100 miles of East London.—Increasing PRACTICE, in very pretty Township near sea coast, producing last financial year £1,066 Practically all fees cash. Climate excellent. No night work and little or no visiting. Living cheap. Bungalow residence in 3/4 acre of productive garden. Price £750, £400 on mortgage, or rent on lease £72 p.a. Premium £550. Sport of all kinds.

7 DEATH VACANCY.—SOUTH CORNISH COAST.—Very favourite town. Small PRACTICE, offering very good scope as late Incumbent never "pushed" work owing to ill health, and averaging about £500 p.a., including panel of 470. Excellent house can be purchased for £2,500, or smaller one for £750, part on mortgage. Winter and summer seasons Premium £750, or near offer.

8 BORDERS OF SHROPSHIRE. — Old-established good mixed class PRACTICE, situated in attractive district, and averaging over £1,000 p.a., with selected panel of 400. Fees from 3/6 to 30/-. Very good house, in excellent repair, with very fine garden, and containing 2 reception, 6 to 8 bedrooms, etc. Garage. Price for freehold £2,000, £1,000 on mortgage. Premium 1½ years' purchase. Very good sporting and social facilities. Excellent prospects of surgery.

9 LONDON, S.E.—Well established mixed-class PRACTICE, averaging for past three years £3,885. Panel of 3,900, and appt worth £200 p.a. Fees from 2/. Mid 30/- to 2 gns. Suitable house, in very good repair, with 2 reception, 6 bedrooms, ample professional accommodation, garage for 2 cars Good garden. Rent on lease £90 p.a. Premium £7,500, £5,000 down and balance by arrangement.

10 KENT.—NURSING HOME, and small private Practice combined (the latter offering excellent scope if desired as it has not been developed), situated in very pretty district within 15 miles of London. Total receipts last year £1,100. Beautiful house (11 bedrooms, etc.) standing in 2½ acres of garden, tennis lawn, etc. Price for freehold and goodwill £2,100

11 BORDERS OF BERKS AND HANTS.—In a delightful sporting and agricultural district, within reach of market town, an old established mixed class PRACTICE averaging about £850 p.a., including panel over 400. Visits 5/- to 10/6, medicine extra. House containing 2 sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. Rent £50 p.a. on lease Premium £1,100.

12 SURREY.—PARTNERSHIP.—A two fifths share is offered in a rapidly increasing good mixed class PRACTICE, having large scope for increase, and situated in a developing residential district, within easy reach of town Gross cash receipts for past 12 months approximately £1,500 Panel (which can be much increased) 350. Fees from 2/6. Suitable house, with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £1,250, part on mortgage Premium 2 years' purchase.

13 DEVON.—PARTNERSHIP.—Half share of very old-established unopposed Country Practice, offering scope, and situated in pretty village within reach of large town Cash receipts last year £2,220, including appts and panel of 880 Visits 3/6 to 21/-, medicine extra House contains 2 reception, 4 bedrooms, bathroom, etc. Garden Garage. Rent £30 p.a. Premium £2,000. Hunting, shooting, fishing, etc.

14 MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one third share (with increase to one half later) is for disposal in a particularly sound well established mixed class Practice, owing to the retirement of the senior Partner Gross cash receipts average £4,379 p.a. (last year £4,437) Panel of 1,344. Consultations 3/6 upwards Visits 5/- to 21 Very suitable house, with 3 reception, 6 to 7 bedrooms, etc. Garden Garage Rent on lease £100 p.a. First rate schools and sport Premium 2 years' purchase

15 NORTH DEVON & CORNWALL BORDERS.—Very old established unopposed Country PRACTICE, in beautiful district near coast [illegible] receipts average just over £1,100 p.a., including appt. and panel of 330.—Suitable house available. Premium £1,600, to include drugs etc. Hunting, golf, fishing, etc.

16. MIDDLESEX.—OUTLYING SUBURB.—A third share of an old established good middle and working class PRACTICE, offering excellent future prospects, is for disposal. Cash receipts last year amounted to £2,665, including panel of 1,468. Suitable house available, either on rental or by purchase. Premium £2,000.

17. WEST OF ENGLAND.—Near Favourite Town.—Unopposed country PRACTICE in beautiful surroundings, averaging about £600 p.a. [illegible] offering scope Panel worth £150 p.a. Fees 2/6 to 21/- Exceptionally good house, with large garden, containing 3 reception, 7 [illegible] rooms, etc. Price for freehold £2,000, £1,000 on mortgage Premium £600.

18. LANCS.—LARGE TOWN.—Old-established better and middle class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.

19. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper class PRACTICE Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/ Very little midwifery. House, including consulting room, waiting room and dispensary, in well-situated part of town. Price, freehold, £1,500

20. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 400. A fifth share is for disposal, with increase to a third later Suitable accommodation available Premium 2 years' purchase

21. NORTH MIDLANDS.—WITHIN 3 MILES OF FAVOURITE TOWN.—Old-established good middle class PRACTICE, offering large [illegible] Cash receipts for last 12 months £1,332, including panel of over 1,000 Fees from 3/6. Mid from 2 gns Exceptionally nice house in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc, containing 3 reception, 6 bedrooms, etc Freehold for sale. Premium 1½ years' purchase

22. NOTTINGHAM SUBURB.—Well established middle and good working class PRACTICE, in residential district (pop. 20,000 to 30,000), worth last year over £1,000, including panel of about 880 Visits 3/6 to 7/6. Very little midwifery. Attractive house, standing in about 3/4 of an acre of garden, with ample accommodation [illegible] for freehold £1,850 Premium £1,550, to include drugs, etc [illegible] of all kinds, and educational facilities

23. NEAR HUDDERSFIELD.—PARTNERSHIP.—A half share is offered in a very well established good mixed-class Practice, having considerable scope for increase. Average gross cash receipts for the last three years £4,000; last year £4,273 Panel of 3,500 Fees from 3/6 to 7/6. Midwifery 1½ to 7 gns.; about 50 cases Very good house, with 4 reception, 6 bedrooms, etc, and 1½ acres of garden Price freehold, £2,500, or would be let on lease. Prem. 1½ years' purchase

24. NORFOLK.—PARTNERSHIP.—A one third share (with increase later) is for disposal in a very well established Practice in an attractive town near coast. Average gross cash receipts nearly £4,500 Panel of nearly 3,000 Visits 2/6 to 30/-, with medicine extra. Very good house, with large garden. Freehold for sale Premium 2 years' purchase

25. MANCHESTER.—Semi residential Suburb.—Very old established dispensing mainly middle class PRACTICE, averaging £2[illegible] including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 5 gns. Well situated house, with good accommodation [illegible] (freehold) £1,600. Premium £3,750.

26 LINCS. — PLEASANT MARKET TOWN.—PARTNERSHIP.—A [illegible] share, with possible succession in two years' time. Average [illegible] for past three years £1,900, including appointments and [illegible] ducing £500. Advice and medicine 5/- upwards; visits from [illegible] Very few midwiferies from 2 to 3 guineas Large house with [illegible] and garage Price freehold only £1,200 Sport of all kinds [illegible] excellent schools for boys and girls Premium 2 years' purchase payable £1,000 down, remainder by arrangement

27. PARTNERSHIP.—YORKSHIRE.—LARGE CITY.—A [illegible] with succession to the whole Practice in about one year's time offered in a rapidly increasing PRACTICE, producing for [illegible] 12 months approximately £2,500, including panel of [illegible] appt worth £150. A suitable house will be vacant [illegible] mium £1,200. Large scope for further development.

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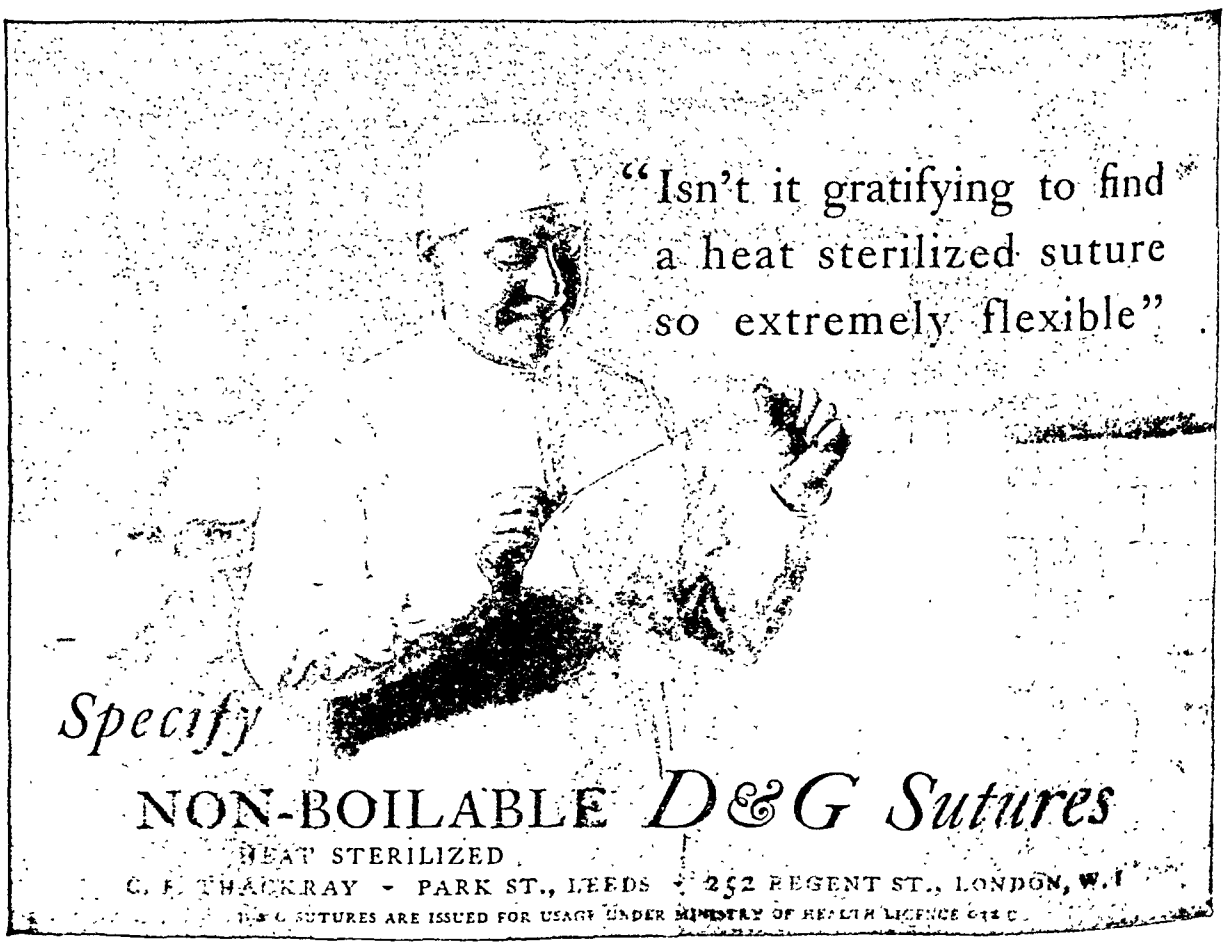
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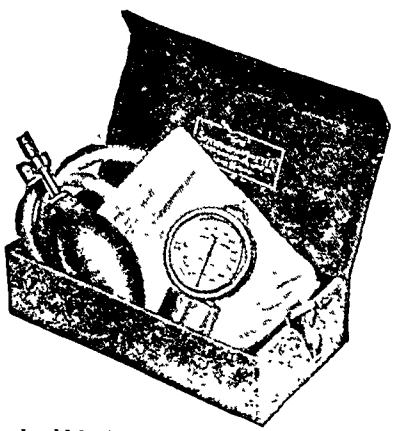
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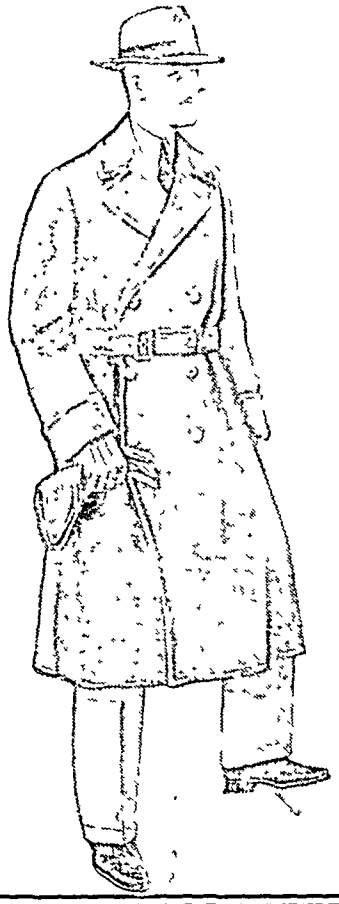
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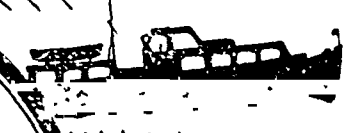


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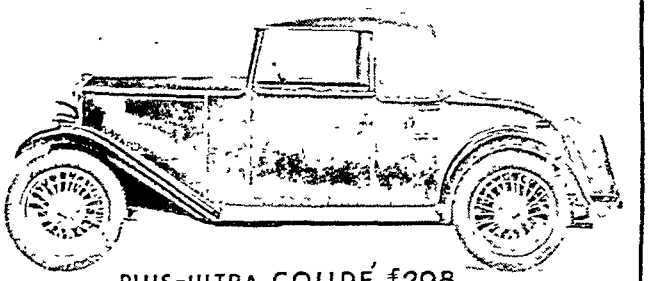
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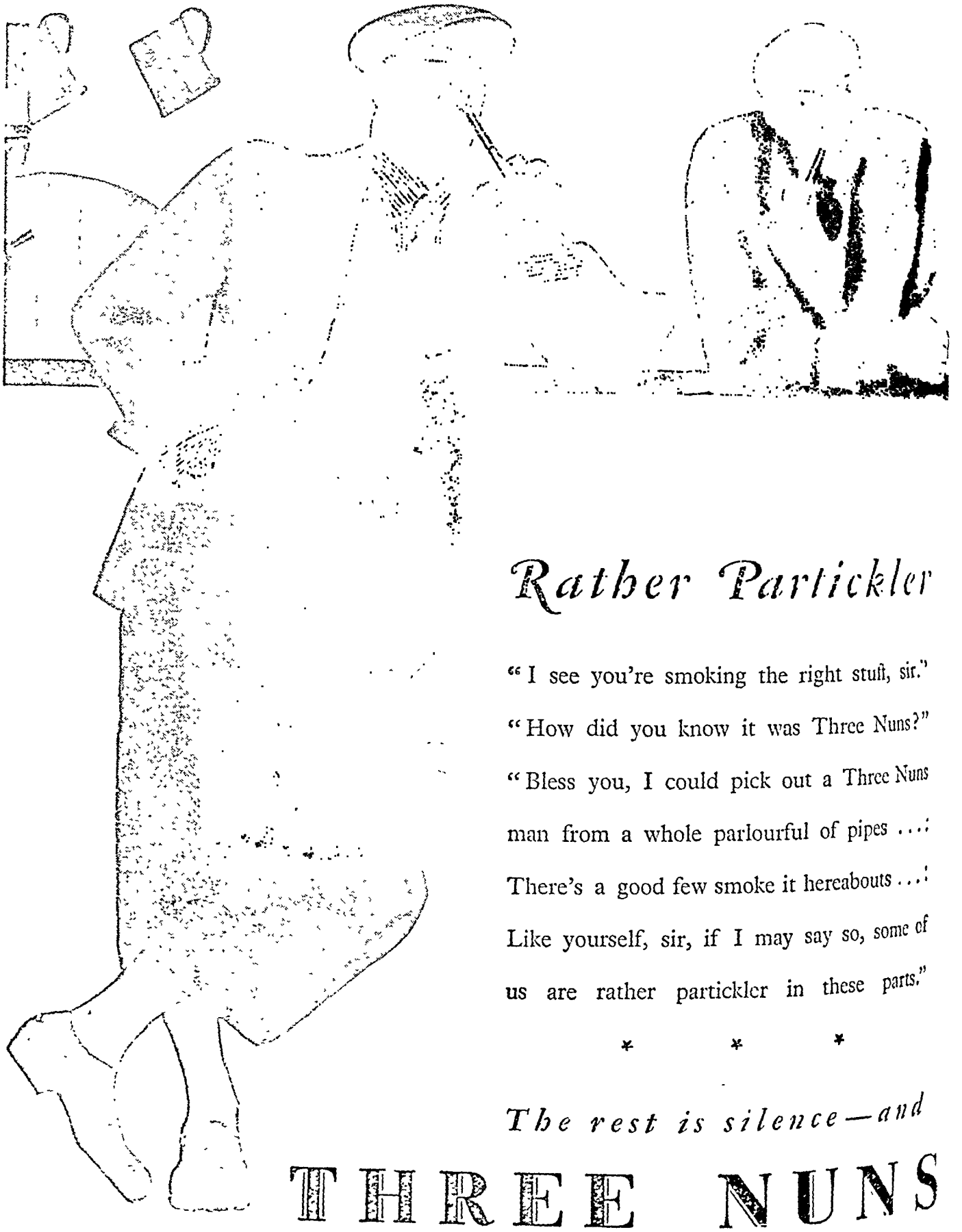
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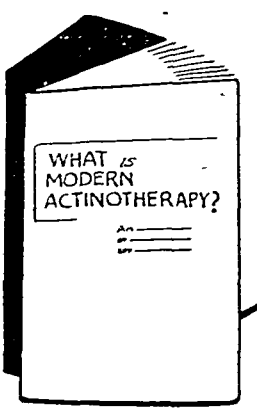
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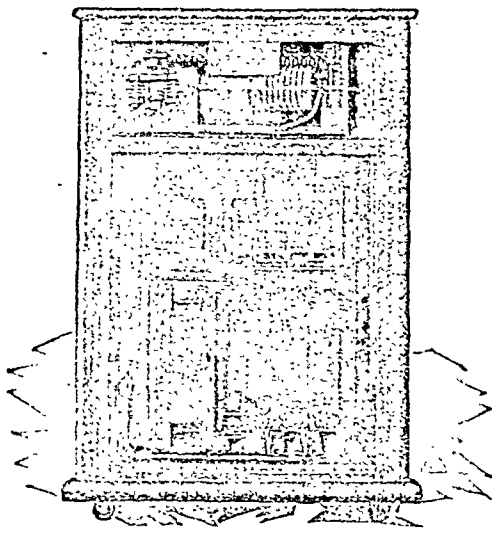
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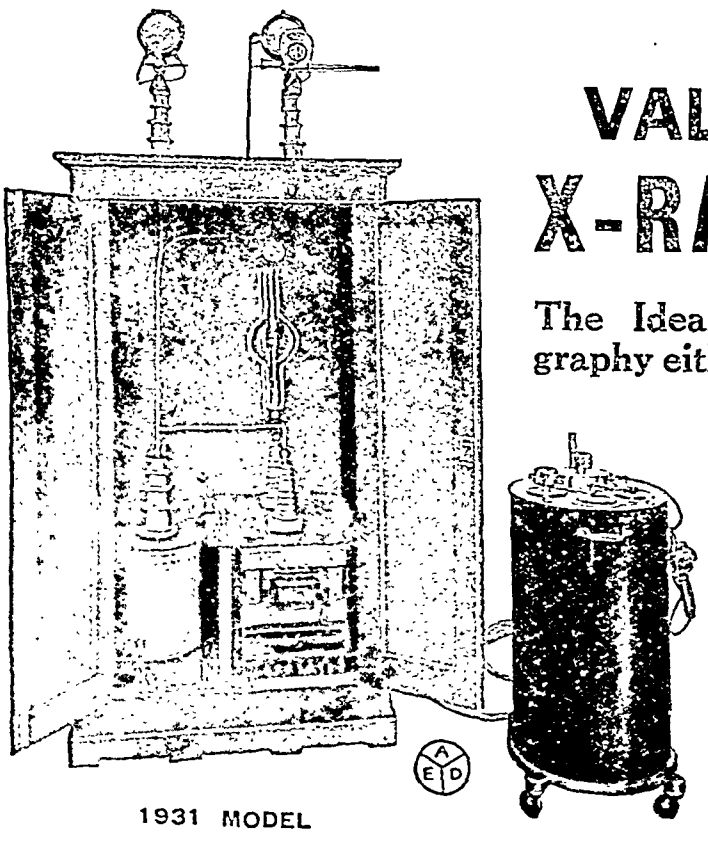


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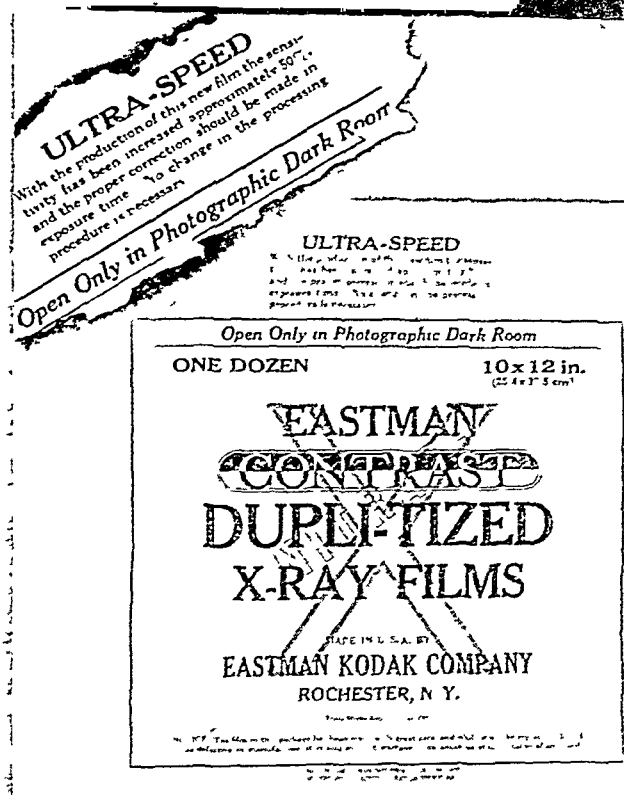
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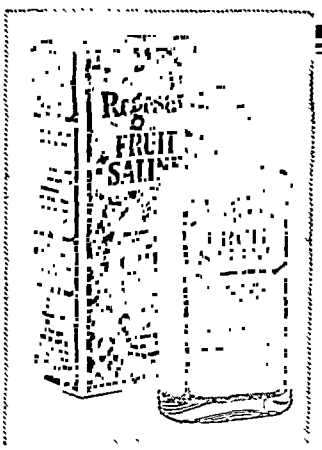
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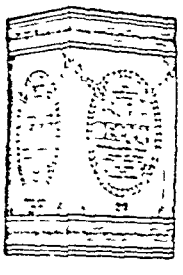
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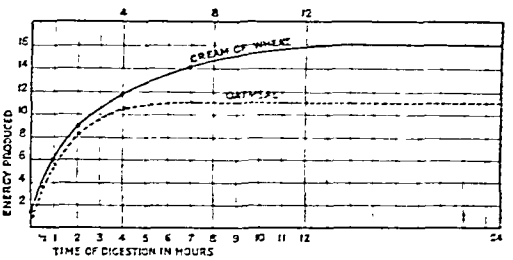
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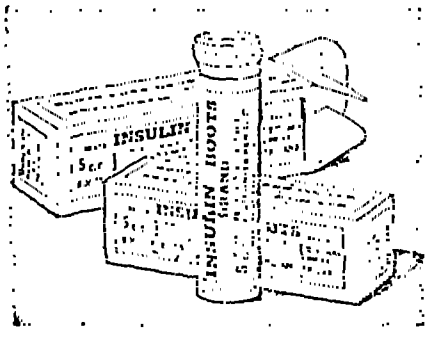
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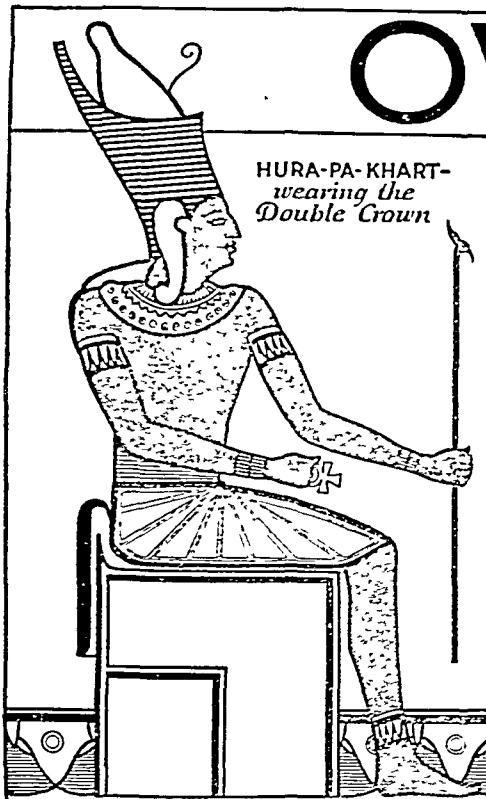
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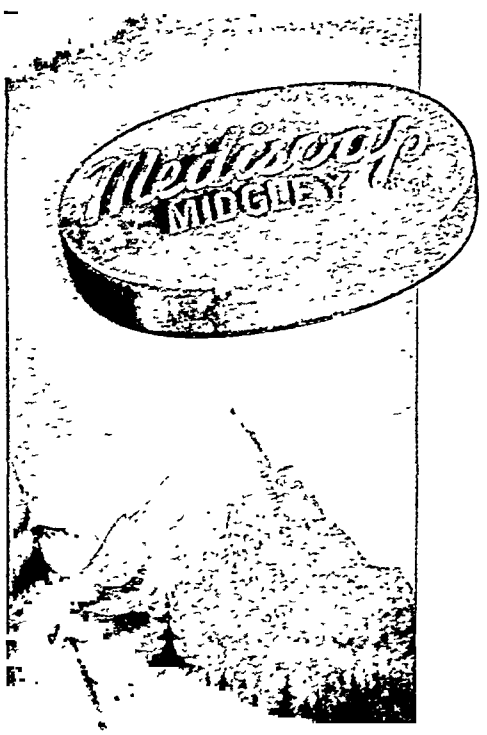
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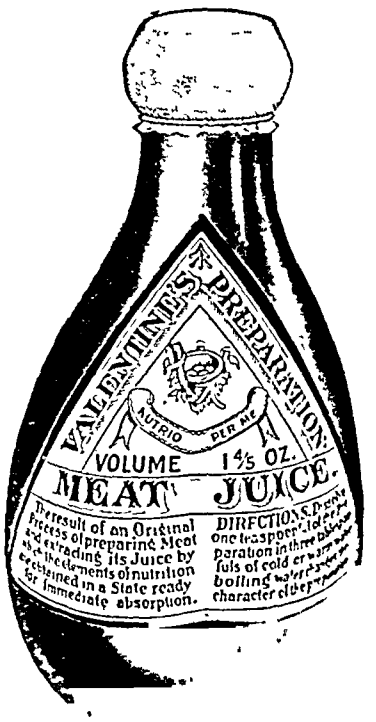
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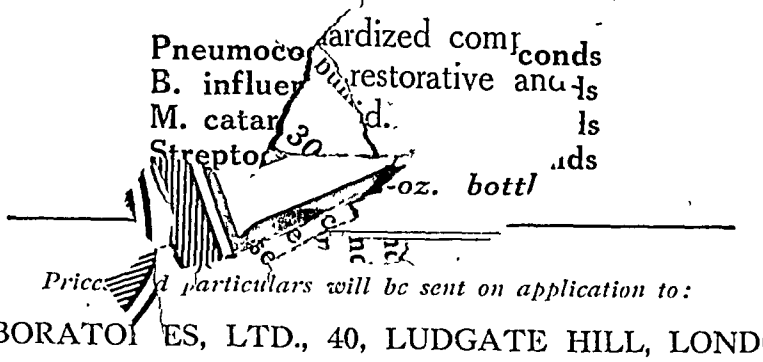
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—*Vide* B.M.J., May 3rd, 1930.

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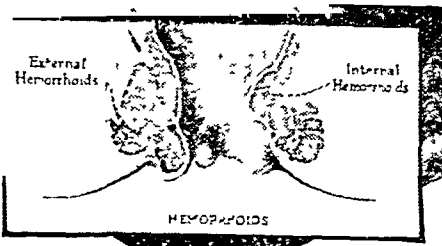
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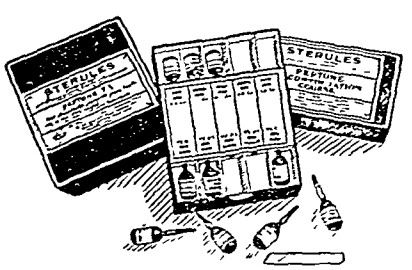
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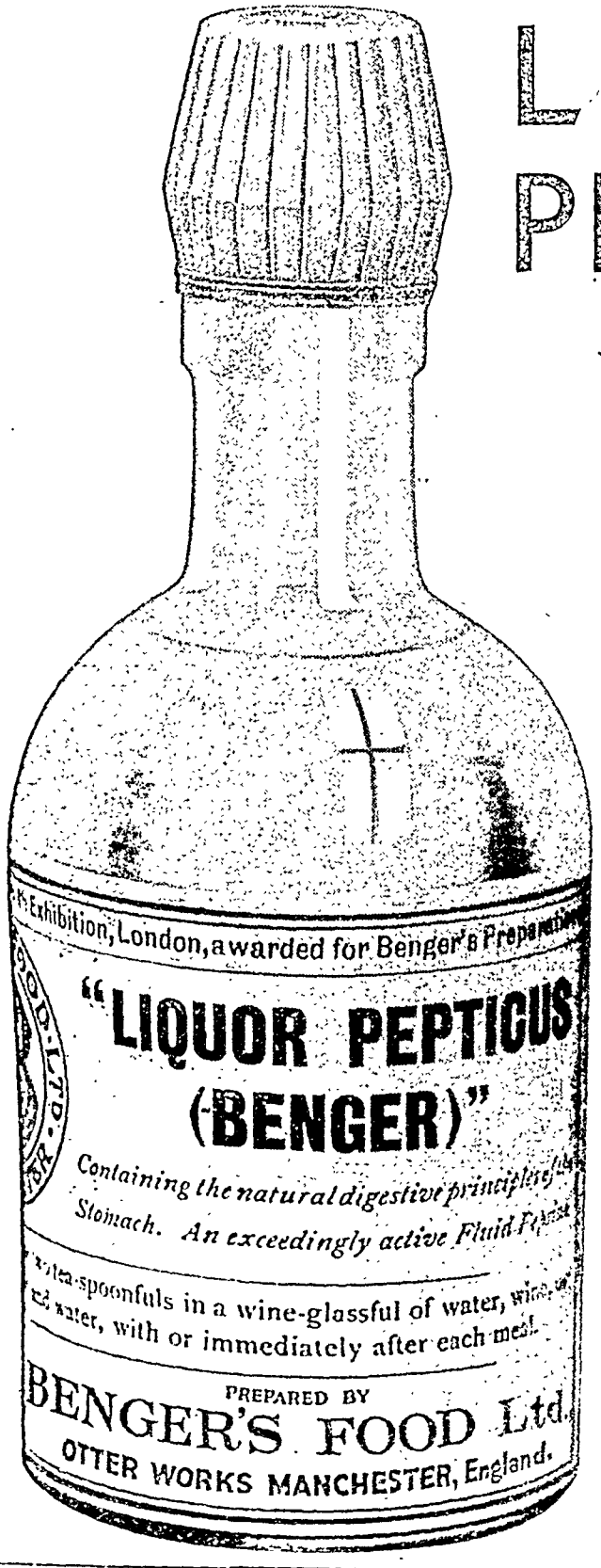
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Lancet, April 11th, 1931, p 805 Leaflet on application

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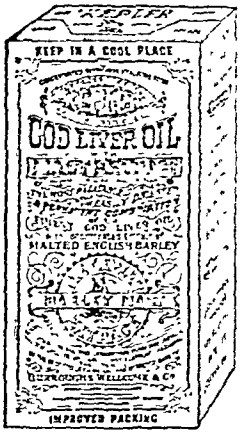
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Other References:
B.M.J., June 15, 1929, p. 1070.
B.M.J., June 28, 1930.

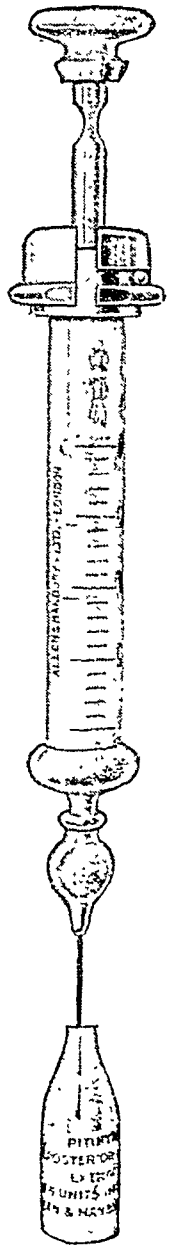
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Observations
ON
THE TREATMENT OF SEPTICAEMIA*
BY

SIR THOMAS HORDER, Bt., M.D.
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL

It is not easy to define the condition known as septicaemia, but the most satisfactory description is: a general infection associated with bacteria in the blood, and their multiplication there. The temporary bacteriaemia which appears in the course of pneumonia, typhoid fever, and other such infections may be excluded from the discussion, together with terminal and agonal conditions, and septic endocarditis, which is a special variety of focal sepsis associated with an overflow of bacteria from the endocardial lesion. On the other hand, bacteria may not be found in the blood for one or more of several reasons, and yet a case may be septicaemic; the concept of septicaemia is therefore essentially clinical rather than bacteriological. To escape some of these difficulties changes in terminology have been suggested. Libman declines to use the term septicaemia, but proposes no substitute; Ryle suggests "streptococcal fever" and "staphylococcal fever," and there is much to be said for this innovation. Since the problem centres round a general infection by the two common pyogenic organisms, *Streptococcus pyogenes* and *Staphylococcus aureus*, I suggest that the discussion may well be limited to these.

With the recognition of the nature of the disease the earliest efforts lay in the direction of expectant measures. Then came efforts at chemotherapy, the use of mercury perchloride intravenously being the chief of these, but such crude chemicals as carbolic acid and formalin were also tried. Failures, some disasters, and the arrival of immunology, led to bacteriotherapy—first serums, then vaccines, then sensitized vaccines, and lastly immunotransfusions. Disappointments followed, and there was a swing back of the pendulum to chemotherapy. In the meantime, measures based on protein and chemical "shock" were introduced, and are still on trial. Finally, expectant treatment has again been emphasized, as being the main standby in the majority of cases. The great lack of uniformity in practice demonstrates the absence of convincing methods of therapy.

EXPECTANT THERAPY

Expectant measures aim at getting control of the disease, rather than "curing" it; even to-day we do not "cure" tuberculosis, we "control" it. The methods of control should be instituted at the earliest possible moment, and should be exploited to the full. It can scarcely be doubted that, taken together, they are of greater service to the patient than any "specific" remedy as yet known. If it is possible to give "institutional" rather than "home" treatment, this should be undertaken. Comprised under this heading are rest and fresh air; the patient should be treated in the open air whenever possible. Food should not be stinted, but be given up to the limit of the digestive capacity, and water should be taken in abundance. Alcohol is of service, particularly in patients who have been accustomed to it previously.

Other factors in the treatment include: sunshine, both natural and artificial; eliminative measures for bowels and skin, such as hydrotherapy; the administration of alkalis and glucose to combat acidosis; haematinic drugs to control anaemia; and nucleic acid with other leucocytic stimulants. A useful formula for intramuscular injection is: sodium cacodylate 1 to 3 grains in 20 minims of a saturated solution of nucleic acid; this may be injected once or twice in the twenty-four hours. Sleep must be secured, and pain relieved. Paget, who suffered from an attack of septicaemia, paid a glowing tribute to morphine. Pyrexia is to be controlled by ample ventilation of the skin and hydrotherapy. Good nursing is imperative, and the personality of the doctor, who should be encouraging, resourceful, and confident, is a great adjunct to success. Although expectant measures lack the dramatic element, and are consequently not popular, they are the only ones which have stood the test of experience.

SPECIFIC TREATMENT

Bacteriotherapy.—Serums have been disappointing, but the theory is so attractive that they are still the most popular remedy on specific lines. "Bactericidal" serums were anti-endotoxic in the main, but their content in antibody has never been such as to satisfy the immunologist. Recently, efforts have been directed towards the production of anti-exotoxic serums; and these "antitoxic" serums appear already to be more helpful, especially in the case of the streptococcus. They should be used early and in adequate doses. "Sensitized" vaccines (Besredka) seem to be successful in some acute streptococcal cases. Antigen therapy is of little or no proved service; "immunogens," which are ecto-antigens, have scarcely yet had a good trial. Immuno-transfusions have been on trial now for ten years, and it is doubtful if any good effects reported are due to a specific increase in the bactericidal powers of the blood so much as to non-specific aid given by the transfusion. So long as the immunological factors in the interaction between the tissues and the infecting organism are still so largely undetermined, there must needs be doubt as to the best type of specific remedy, but in general infections (as compared with local) there is an *a priori* bias in favour of passive, rather than active, methods. Finally, bacteriophages are on trial and have been commercialized.

Chemotherapy.—During and immediately after the war the chlorine group was in favour. More recently mercurial treatment has been revived, and especially in combination with aniline dyes. The favourite at present is mercurochrome, 10 to 15 c.cm. of a 0.5 per cent. solution being given by the intravenous route on alternate, or even on successive, days. The dangers are thrombosis and renal insufficiency, but successes are recorded from time to time, which may be due to "chemical shock." Novarsenobillon and other salvarsan equivalents have been used freely, following their success in syphilis. The ideal blood disinfectant must diffuse rapidly and widely; it must be non-toxic to the tissue cells, and must retain its bactericidal power over a lengthy period. We need not despair of finding something even better than mercurochrome.

Blood Transfusions.—These are definitely useful, but chiefly to combat the anaemia due to haemolysis.

Shock Therapy.—As regards protein shock, the indications are difficult; probably it should be reserved for the later stages of the disease, and, even then, it should be adopted with caution. Chemical shock treatment is best left to those who understand the teaching upon which the practice is based.

Surgery.—In all cases close co-operation between physician and surgeon is essential. Early in the case this applies especially to the focus of primary infection, if this is known; later, and throughout the course of the disease, it is concerned with the formation of metastases—whether in or around joints, bones, serous membranes, or

* A synopsis of the remarks made in opening a discussion at a joint meeting of the Sections of Medicine and Surgery at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

solid organs Thorough survey of the patient, almost daily, for these metastases must be made. Effusions are to be dealt with by aspiration for preference, but if this is unsuccessful, then incision and drainage become necessary. Great exercise of judgement is required at both these stages of the disease. Surgery is indicated more often, and more early, in staphylococcal than in streptococcal infections. The favourite sites for staphylococcal metastases should be passed in review again and again.

General Remarks

The individual case is to be treated on its merits, due consideration being given meanwhile to any general specific remedy offered by the immunologist, and applicable to the particular infection concerned. The physician should work hand in hand with the bacteriologist, but should not take the cue entirely from him in matters of treatment. Close liaison with the surgeon is a *sine qua non* for success. Expectant measures should be mobilized promptly and thoroughly. All the therapeutic "eggs" should never be put into one basket. A plan of campaign appropriate to the case in point should be decided upon and steadily continued, and the patient should not be disturbed by too many treatments. Panic on the part of the friends is a frequent deterrent, but is pardonable; panic on the part of the medical adviser is sometimes fatal and is unforgivable.

SURGICAL ASPECTS OF SEPTICAEMIA *

BY

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The question under discussion to-day, whilst of vital importance and wide interest, is, at the same time, one on which fruitful debate is difficult. Many of us have had considerable experience, of an occasional and isolated nature, of cases of septicaemia; few have had the opportunity of treating a series on truly scientific lines. The features peculiar to the individual case, the intermittent and irregular incidence of cases, our own changing ideas of the value of certain lines of treatment, all tend to render judgement difficult. Further, we are so apt to enthrone in the sunshine of our memory the apparently striking success, and to allow the many failures to slip into the quiet shadows of forgetfulness.

The surgeon may be called on to deal with septicaemia under three sets of circumstances:

(1) Following an infected accidental wound;

(2) Accompanying an idiopathic infection, such as acute osteomyelitis, cellulitis, or phlebitis;

(3) Following operation on an infected area.

In (1) and (2) active surgical intervention may be called for, but nicety of judgement is necessary in determining how much must be done, and when. In many cases it will be found that active surgery must be held in restraint until such time as the indications for intervention have become abundantly clear—in other words, the knife may be a lethal weapon if prematurely or incautiously applied (for example, in the infected puncture wound too hasty incision may induce septicaemia by bursting imperfectly formed natural barriers and throwing open to micro-organisms a pathway into the blood stream). Respect for, and aid to, the formation of such barriers are essential criteria of the successful treatment of such infected wounds.

In the common streptococcal infected wound of the finger or hand, with rapidly developing lymphangitis, the judicious use of passive congestion and administration of antiserum should always precede any treatment by incision. The value of Bier's passive congestion is not sufficiently recognized. Rightly used, I believe that it is a very real help in preventing and limiting blood infection. Bier laid no claim to be the originator of the idea of passive venous congestion as a therapeutic measure. He has, however, fully earned lasting credit for demonstrating how by this means a local infection, which was tending to invade the blood stream, might be hemmed in and held up until such time as local defences had been mobilized, and the general protective mechanism had been stirred to action. Rightly applied, a Bier's bandage will always relieve pain. If the pain persists or is increased, the bandage should be removed and reapplied more lightly. It should be worn for twenty-two hours out of the twenty-four.

Many deaths have resulted from a precipitate use of the bistoury, no time having been allowed for a leucocytic encirclement to develop and a natural localization of the contest to occur. Only when dangerous tension has arisen, or dead or moribund cells have accumulated in the shape of pus, can incision be helpful.

In certain tissues, such as bone and deep cellular planes, where rigid walls prevent the deployment of natural resistant forces, early incision may be of the utmost value in permitting expansion and the entrance of protective elements. Total excision of the focus—for example, in anthrax pustule, in carbuncle, and in the very earliest stages of an infected punctured wound—may sometimes be justified; as a general rule, however, surgery must exercise a watching brief, prepared to step in when, and only when, nature cries for help.

When we consider the various means by which the patient's resistance to the invading germ may be supplemented we turn first to antiserums. Varied opinions will doubtless be expressed as to the value of anti-streptococcal serum. As with anti-tetanic serum, large doses (60 c.cm.) must be given early and repeated daily. My experience has been that it is in the *very earliest stages* of the general infection, before cellular damage to the organs has occurred, that the help from passive immunity is great and real. I have no hesitation in placing it first in importance, just as I believe it should take precedence in time of all other measures.

Copious quantities of fluid must be given, usually by mouth. In exceptional cases where vomiting occurs fluid must be given rectally or subcutaneously. If an abscess develops at the site of subcutaneous injection, it will be a matter for rejoicing. With the fluid, alkalis and glucose must be freely given. As a rule they are both welcomed by the patient, which is significant.

Immuno-transfusion should certainly be considered in the weakly patient, and I have seen it followed by remarkable betterment in a case in which blood infection had supervened in a feeble and anaemic patient. How much of the benefit was due to the introduction of specific antibodies and how much simply to the supply of healthy blood was impossible to determine.

The production of a really efficient anti-staphylococcal serum is a real need, and I trust that the antitoxic serum now on trial may prove to have for the human subject as true and specific a protective action as it has been proved to possess for animals.

The use of vaccines in a fulminating blood infection I have always regarded with scepticism and, along with protein shock therapy, I have left to those who can visualize their action and believe in their efficacy. Specialized vaccines have given favourable results in some hands, and they undoubtedly deserve an extended trial.

* Introductory remarks in a joint discussion in the Sections of Surgery and Pathology at the Annual Meeting of the British Medical Association, Edinburgh, 1931.

The intramuscular injection of nuclein preparations to induce a leucocytosis, and of various colloidal preparations, I have found to be successful only when an abscess has formed at the site of injection. This development of a "fixation abscess," an old time method of treatment, is often the signal of improvement, and is a welcome complication in a critical case

The search for a therapia sterilisans magna—some chemical substance with an affinity for the germ, yet relatively harmless to the host—cannot yet be said to be successful. Intravenous injections of cusol, of mercurochrome, of collosol argentum, and of certain dyes have each given apparently favourable results in isolated cases Personally I cannot claim to have seen a cure by the injection of any of these chemical substances in a case where other factors could be ruled out.

A constant watch must be kept for abscess formation, be it in deep cellular planes, in joints, or in the pleural cavity. In the later stages of a septicaemia purulent collections may develop most insidiously, and their timely evacuation may turn the scale They may very readily be missed if a systematic examination for them be not made repeatedly

In a few cases the question of amputation of a limb may have to be considered I believe that amputation is rarely justified except in protracted cases where the infection involves a bone or joint, where adequate drainage cannot be effected, and where the patient's strength is ebbing

Whilst vaccines, in my experience, have a very doubtful place in the treatment of established septicaemia, they have a real value when used for preliminary and prophylactic immunization in cases where operation for the removal of a large ulcerating growth may permit of a blood infection It has been our practice for over twenty years to give a preliminary course of *B coli* and streptococcus vaccine in operations for removal of growths of the lower bowel, and in particular the rectum In such operations many infected lymph channels must of necessity be divided, large raw areas are usually left, and the risk of generalized infection is obvious Preliminary vaccine treatment, particularly if followed by a pre operative injection of nuclein to stimulate a leucocytosis, was shown experimentally to increase resistance, and in practice it has proved effective

My practice is to give *B coli*, 50 millions, and streptococcus, 10 millions, ten days, and again three days, before operation, and on the night preceding operation to give 5 c cm of 5 per cent sodium nucleinate intramuscularly The patient thus comes on the table with defensive forces warned, and with a slight leucocytosis (10,000–14 000 Since using this preliminary treatment I have lost no case from general sepsis, although local infection of a gross nature has supervened in a number of cases

With a feeling of security against a general infection, local sepsis after an operation for cancer may be regarded almost as a blessing

In the treatment of septicaemia the future lies largely in the hands of the bacteriologist. In the clinical field I should sum up the position by saying that the physician must think surgically, and the surgeon must cultivate the restraint of the physician.

DIET AS A PROPHYLACTIC AGENT AGAINST PUERPERAL SEPSIS

With Special Reference to Vitamin A as an Anti-infective Agent

BY

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In a previous paper (1929) on the treatment of puerperal septicaemia with preparations containing vitamin A we stated that an investigation was also being made into the possible prophylactic effect of such preparations against puerperal sepsis We argued that if vitamin A had even a slight therapeutic effect in such a virulent infection as septicaemia it should be of much greater value as a prophylactic agent It seemed possible that in the administration of vitamin A prior to labour we might have a valuable auxiliary method which would supply a missing factor so apparent in some cases even where every precaution against sepsis has been taken.

Experimental work on young animals suggested that vitamin A and carotene might well be described as "anti-infective" in their action, because when absent from or deficient in the diet, multiple infective foci develop, resulting in death unless the deficiency is made good (Green and Mellanby, 1928, 1930) The preventive and curative actions of vitamin A and carotene in the autogenous sepsis of the animals were equally great. It was obviously desirable to see whether these substances played any similar part in controlling the resistance of the human body to sepsis This seemed possible, for the septic lesions which develop autogenously in animals on a vitamin A deficient diet are also commonly found in human beings These include septic nasal sinuses, a catarrhal condition of nose and throat and respiratory passages, middle ear disease, broncho-pneumonia, pyelitis, and a septic condition of the genito-urinary tract There is also reason to believe that the diet of many individuals in this country is deficient in vitamin A, the main sources of which are found in the more expensive foods—for example, milk, butter, eggs, and certain vegetables, while it is almost completely absent from cereals and cereal products and many other extensively eaten foods

A study of the prophylactic action of vitamin A against puerperal sepsis in women suggested itself as a promising method of testing the clinical significance of the animal experiments The duty of the maternal organism during pregnancy is to supply all the substances necessary for the growth of the embryo These substances she either gets directly from her food, synthesizes them from the ingested foodstuffs, or, when these sources are insufficient, she supplies them from her own body stores as long as they are available. Many substances cannot be synthesized by the body, and must therefore come directly from her food or from her depots replenished by food Now the body has a great capacity for storing vitamin A, especially in the liver. This store has its origin in the vitamin A, and most probably also in the carotene, of the food eaten (Moore). If the diet is deficient in these factors, as is probably the case in many individuals, the liver stores of vitamin A may be small, even at the beginning of pregnancy. The demands of the growing foetus will make these reserves still smaller, for, in addition to the supplies necessary for actual growth and metabolism, the foetus demands a reserve of vitamin A for its own liver (H. N. Green examined eight foetal livers and found that six of them contained vitamin A in varying quantities.) These facts indicate that many women at childbirth will be deprived of most of their reserves of vitamin A and, if the animal experiments have any meaning in terms of the human subject, they will have less resistance to the invasion of pathogenic organisms at the time of parturition.

Apart from this evidence, however, there are other direct indications that women during pregnancy are specially liable to develop gross signs of vitamin A deficiency. Thus Birnbacher noticed that hemeralopia arising from lack of fat-soluble vitamins in the after-war years in Vienna was much more frequent during pregnancy, particularly towards the end of term and in women bearing heavy children.

Two other observations suggested the need for this investigation:

1 The infective foci found in animals following vitamin A deficiency are particularly prominent in relation to squamous, columnar, and ciliated epithelium, and this is of special importance in the present instance, since puerperal sepsis is primarily an invasion of the epithelium of the generative organs by pathogenic bacteria.

2 H N. Green has found that if rats, when pregnant, are given diets complete except for vitamin A, a large proportion of them ultimately develop chronic sepsis of the generative tract, while, on a complete diet at this time, control rats after pregnancy are unaffected in this respect. Nor are virgin rats so liable to develop this form of sepsis, even on a vitamin A deficient diet.

The usually accepted explanation of the frequency with which puerperal sepsis develops is that women during labour are more exposed to external infection. This is undoubtedly true, and might be accepted as a full explanation if all straightforward parturitions without intervention, or even parturitions carried out by the most complete asepsis practicable, escaped this complication. Unfortunately modern obstetrical technique has not had the complete success which would be expected if this were the whole explanation

It seemed to us that the margin of safety as regards sepsis in childbirth must often be very narrow, and it was with the object of attempting to increase this margin and, at the same time, of testing our hypothesis based on the foregoing evidence, that the following inquiry was made. (A brief account of this work at an earlier stage was given by one of us (E M) at the Public Health Congress, 1930)

Method of Investigation

About 600 women were involved in the present investigation All cases not delivered in hospital were rejected from the series, so that a total of 275 women treated with the vitamin preparation and 275 untreated to serve as controls remain for analysis

Pregnant women attending the ante-natal clinic were instructed to take half a teaspoonful of the preparation daily, commencing one month previous to the calculated day of labour A fortnight's supply was given at a time Theoretically, therefore, 1½ oz of the vitamin preparation radiostoleum an amount equivalent in vitamins A and D roughly to 30 oz of a good cod liver oil, should have been taken during the month The investigation began in November, 1928 The first seventy-six cases prior to June, 1929, were given the preparation for only fourteen days before delivery It was, however, continued for the first seven days of the puerperium It was then decided that a more logical procedure would probably be to begin the administration earlier and thus build up a larger reserve at the time of labour. In these cases none was given after admission to hospital. The cases were in no way selected; the first patient was given the preparation and the next due for delivery about the same time was indexed as a control. The vitamin and control groups were thus equally distributed in point of time; seasonal and epidemic or contagious influences predisposing to infection therefore tend to be equal in the two groups. It was considered that this method would give more uniform conditions than treating random groups of ante-natal patients with the preparation and considering all the remaining untreated ante-natal cases as controls.

Of the cases, 440 attended the Jessop Hospital ante natal clinic and were delivered at this hospital, 110 attended the municipal ante-natal clinic and were delivered at the Nether Edge municipal hospital. The two series have been classified together, as the number of cases and the incidence of sepsis in the smaller group is too small to warrant analysis.

Radiostoleum, the vitamin preparation used in this investigation, contains sources of vitamins A and D dissolved in a neutral oil; 1 c.cm. of the preparation contains 150 blue units (Carr and Price) of vitamin A and 5,000 units of vitamin D in the form of irradiated ergosterol. British Drug Houses, Ltd., have kindly supplied the whole amount used in this investigation

Results

In Table I the results are classified on the basis of the B.M.A. standard for puerperal morbidity—that is, all cases with two rises of temperature of 100° F or over between the end of the first and the end of the eighth day after delivery. This standard was adopted since it is the one in use for statistical purposes at the hospitals concerned, and thus allowed of a direct comparison between the figures in the experimental series and those obtained in previous years at the same hospital.

It will be seen from this table that the number of primiparae in each group was almost equal, as was the

Table I.—*Effect of giving Vitamins A and D before Puerperium on Incidence of Puerperal Sepsis*

	Vitamin Group		Control Group	
Number of cases	275		275	
Primiparae	147		145	
Complications of pregnancy or labour				
Perineal tear	37		33	
Contracted outlet	15		15	
Low forceps	19		18	
Breech	7		3	
Twins	3		1	
Internal version	2		0	
External version	1		0	
Craniotomy	1		0	
Manual removal placenta	1		0	
Post partum haemorrhage	1		0	
Precipitate labour	1		3	
Primary uterine inertia	4		4	
Albuminuria of pregnancy	6		2	
Mitral stenosis	2		0	
Pulmonary tuberculosis	1		5	
Caesarean section	0		1	
Accidental haemorrhage	0		1	
Placenta praevia	0		1	
Ante partum eclampsia	0			
Manual or instrumental intervention	26		27	
Cases morbid (B M A standard)	3 (1.1 %)		13 (4.7 %)	
Cystitis (*B coli*)	1	Cystitis: *B coli*	1	
Following manual rotation for posterior position	2		1	
			2	
		Septic endometritis	2	
		Acute bronchitis	1	
		Septicaemia	1	
Puerperal pyrexia*	53 (19.2 %)		85 (30.9 %)	
Cystitis (*B coli*)	5	Cystitis: *B coli*	4	
Endometritis	4	Staphylococcus	1	
Acute mastitis	2	Urinary infection	1	
Gonorrhoea	1	Acute mastitis	3	
Retained clot	1	Endometritis	6	
Septic perineum	2	Cervicitis	1	
		Influenza	1	
		Thrombo phlebitis	1	
		Septic perineum	5	
Maternal mortality	0	Septicaemia (*Streptococcus haemolyticus*)	1	
			9	
Infant morbidity	13		6	
Deaths Stillborn	8	Stillborn	1	
Prematurity	1	Pneumonia	1	
Pneumonia	1	Sepsis	1	
First day, cause unknown	2	Second day, cause unknown		
Third day, cause unknown	1		2	
Illness Pemphigus	1	Pemphigus	1	
Jaundice	1	Melaena		

* Temperature of 99° F or over on ... until discharge—not ... morbidity

which had some form of manual or instrumental intervention The number of complicating factors during labour tends also to be equally distributed in the two groups In the vitamin group there were only three morbid cases on the B M A standard, an incidence of 1 09 per cent In the control group there were thirteen morbid cases, an incidence of 4 73 per cent The difference, 3 64 per cent, is over twice the standard error (1 43) and is therefore statistically significant It is worthy of note that in the five cases of Caesarean section, one of accidental haemorrhage, and one of placenta praevia included in the control group, no morbid case occurred

In Table II it will be seen that the morbidity rate for the two groups combined was much lower than that of previous years for the whole of the ante natal patients

TABLE II—*Morbidity Rate in Ante natal Cases delivered at the Jessop Hospital in the Three Years Prior to which Present Investigation was commenced as compared with that in Cases covered by Present Investigation*

Year	No of Deliveries	B M A Morbid Cases	Maternal Mortality
		Per cent	Per cent
1925	Ante natal 585	5 0	1 0
	Total cases 750	9 6	2 9
1927	Ante natal 553	8 1	1 1
	Total cases ... 812	12 4	2 6
1928	Ante natal 652	7 3	1 5
	Total cases 953	9 9	2 6
Cases included in investigation during period 1 November 1930–June 1931			
Total cases Jessop Hospital	410	3 4	0 3
Vitamin group	294	1 0	0 0
Control group	230	5 8	0 5
Total cases Jessop and Municipal Hospitals	550	2 9	0 2
Vitamin group	275	1 1	0 0
Control group ...	275	4 7	0 4

The control group for the Jessop Hospital shows a morbidity rate of 5 8 per cent, compared with an average morbidity of 6 8 per cent for the three years previous to which this investigation was begun The morbidity rate for ante natal patients was much lower than that of hospital cases in general, and appears to be improving The vitamin group delivered at the Jessop Hospital shows a morbidity rate of 1 per cent, which, compared with those of the control group (5 8 per cent) and of the ante-natal cases over the previous three years (5 per cent, 8 1 per cent, and 7 3 per cent), shows a significant difference

In Table I all cases which have shown any degree of puerperal pyrexia other than those of the B M A standard have also been tabulated Obviously many of these cases were not septic, since a rise of temperature which is not maintained can arise from other causes, but this type of case should tend to be equally distributed in the two groups, as the figures in Table IV indicate The total number of pyrexial cases in the vitamin group was 56, an incidence of 20 4 per cent, and in the control group 98, an incidence of 35 6 per cent The difference of 15 2 per cent is almost four times the standard error (3 83), and is therefore significant It may be noted here that an analysis of the results at various stages of the investigation has shown the same relative difference in the incidence of pyrexia at each analysis

In the total 550 cases there was one maternal death

The classification of morbidity on any arbitrary standard such as that of the B M A, though useful, gives an incomplete summation of the incidence of sepsis, particularly where, as in the B M A classification, no note is taken of septic cases occurring after the eighth day The notifiable standard under the Public Health Regulations overcomes this difficulty to some extent, it includes cases in which, on the bi daily chart, a temperature of 100 4° F or over occurs twice in three successive readings during the twenty one days following delivery Using this standard, as seen in Table III, there were 11 morbid cases in the vitamin group, and 13 in the control group

TABLE III—*Morbid Cases in Two Groups classified on Notifiable Standard*

	No of Cases	No Morbid	Percentage Morbid
Total	550	25	4 7
Vitamin group	275	11	4 0
Control group	275	13	5 0

If we had adopted this standard alone without further analysis, and assessed our conclusion on it, we should have concluded that the vitamin treatment had little or no effect on the incidence of sepsis in the puerperium On the other hand, if we compared the incidence on this standard with that on the B M A standard it might appear that prophylaxis with vitamin A had delayed the onset of sepsis until a later stage in the puerperium

It is possible that the vitamin reserve built up at the time of labour had been exhausted during labour and the first week of lactation, and so the resistance of the vitamin group at this stage fell nearer to that of the control group This, however, is conjecture, and it seemed that a comparison of the clinical severity of the septic cases in the two groups would assist in arriving at some conclusion We have shown that the difference in the number of pyrexial cases is significant If, therefore the number of cases ranged according to a rough standard of clinical severity tend to be distributed in similar proportion in the two groups, this would indicate that the incidence of sepsis of a major type was significantly greater in the control group

Table IV shows that this is so for while there were 10 cases in the control group which had pyrexia lasting from one to three weeks, there were only 4 of this type

TABLE IV—*Cases arranged according to severity, as indicated by Duration of Pyrexia*

	Vitamin Group		Control Group
Number of cases ...	275	... ...	275
Pyrexial cases	56	... ...	98
1 Severe sepsis* ...	4	... ...	13
Cystitis (*B coli*)	2	Cystitis *B coli*	3
Septic endometritis and *B coli* cystitis ...	1	Staphylococcus ...	1
Septic endometritis ...	1	Septic endometritis ...	2
		Suppurative	1
		Mastitis ...	1
		Thrombo-phlebitis ...	1
2 Less severe† ...	8	... ...	16
Cystitis (*B coli*) ...	2	Cystitis *B coli*	3
Mastitis ...	2	Staphylococcus ...	1
Enlarged breast	1	Streptococcus ...	1
Endometritis ...	2	Mastitis ...	4
Retained clot	1	Endometritis ...	5
		Acute bronchitis ...	1
		Pulmonary embolism ...	1
3 Moderate‡	18	... ...	30
B M A morbid cases ...	2	B M A morbid cases ...	1
Septic peritoneum ...	2	Septic peritoneum ...	3
4 Mild§ ...	26	... ...	52
B coli cystitis ...	1	*B coli* cystitis ...	1
		Cervicitis streptococcus	1
		Urinary infection ...	1
		Sapremia ...	1

*Temperature raised to 99° F or above for one to three weeks.
†Temperature raised to 99° F or above for two to six days with definite local infection
‡Temperature raised on more than one occasion to 99° F or above after first day but no local infection definitely diagnosed excluding septic peritoneum
§Temperature raised only once after first day to 99° F or above

in the vitamin group and the distribution according to clinical severity is practically identical throughout All the cases under the first two headings had some definite

local infection There were 12 of this type in the vitamin group and 26 in the control group. It appears, therefore, that the smaller incidence of pyrexial cases in the vitamin group does indicate a smaller incidence of sepsis as compared with the control group.

Effect of Intervention

Table V shows that 26 cases in the vitamin group and 27 in the control group were subjected to some form of manual or instrumental intervention of a major kind.

TABLE V.—*Incidence of Sepsis in Cases submitted to Intervention*

	Vitamins A and D	Controls
Number of cases	26	27
Morbid cases (B.M.A.)	2	3
Pyrexial cases	7	15
Severe	0	3
Less severe	0	3
Moderate	4	5
Mild	3	4

These accounted for 2 morbid cases (B.M.A.) of the 3 in the vitamin group, and 3 morbid of 13 in the control group None of the vitamin group with intervention developed any local infection, while 6 of the control group with intervention had local infection—3 classified as severe and 3 as less severe There were in all 7 pyrexial cases in the vitamin group with intervention, and 15 in the control group with intervention.

Infantile Morbidity

There is nothing significant in the incidence of sepsis in the infants born in the two groups, nor was any difference observed in the progress of the infants during the short period they were in hospital.

Discussion

We believe that these results indicate that the administration of vitamin A during the last month of pregnancy has diminished the liability to a morbid puerperium. It seems that the incidence of sepsis, particularly in the early period of the puerperium, in which the most dangerous types of sepsis are liable to arise, has been lowered by increasing the vitamin A intake. It was not, of course, to be expected that this would cause a complete disappearance of sepsis Probably no measure which increases the systemic or local resistance will prevent the development of pyrexia if the bacterial invasion is sufficiently great An increased resistance should result in a decreased number of cases of puerperal pyrexia, and a decrease in clinical severity and duration of infection in those cases infected This tendency can be observed in the difference between the treated and non treated cases in this series. It must be emphasized also that there was no certainty that all the women ordered to take the vitamin preparation actually took it Some individuals found it unpleasant, and it is probable that at least a small proportion of cases did not take the preparation This possibility makes the positive interpretation of our results more likely.

The preparation given contained a fair amount of vitamin D as well as vitamin A. On experimental grounds we are inclined to believe that vitamin D has little anti-infective action; it was thought, however, that it might prove of significance in connexion with other obstetric difficulties, such as uterine inertia, but on this point we have obtained no evidence. The possibility cannot be denied, however, that the results described may be due, in part at least, to the presence of increased vitamin D in the diet. To ensure a normal calcium metabolism it is essential that the diet of the pregnant woman should contain some source of vitamin D. Now vitamin D is often closely associated with vitamin A in nature, although not so widely distributed, so that whether the ordinary food contains sufficient vitamin D, or whether it is given as a supplement such as cod-liver oil, a good supply of vitamin A is likely to be assured.

Our experimental and clinical results indicate that an adequate supply of vitamin A must be given to the pregnant woman. It should be the aim of all concerned with ante-natal welfare to see that the diet is rich in natural sources of vitamin A. Milk, egg yolk, green vegetables, carrots, and butter should be taken unsparingly, as long as over-eating is avoided by reduction in the cereal and meat content of the diet to a level where a healthy appetite is developed. Mammalian liver is an excellent source of vitamin A, and should be included in the diet at least once weekly unless otherwise contraindicated If a well-varied natural diet of this kind is taken, an adequate supply of the other important nutritional factors is assured. These include the other known accessory food factors—vitamins B (complex), C, and D—together with the inorganic elements—calcium, phosphorus, iron, copper, manganese, and iodine—all essential for the pregnant woman.

Where this complete diet cannot be taken for economic or other reasons, it should be supplemented by some preparation rich in vitamins A and D. Cod-liver oil is the cheapest source, but where a dislike to this oil exists a reliable commercial preparation rich in these vitamins is indicated. The best line of action is undoubtedly to regulate the diet during pregnancy and lactation along the lines indicated, and, if this is done, there may be no need for supplementary rich sources of the fat soluble vitamins. Where social conditions are poor, however, or where the course of labour makes the occurrence of infection probable, some preparations of this kind should be of value as a prophylactic measure. The same course of dietary should also be adopted throughout the puerperium and lactation so as further to increase the resistance

Summary

1. This investigation relates to 550 pregnant women attending the out-patient department of the ante natal clinics of Sheffield, and subsequently delivered in hospital

2. Alternate women were given an extra supply of vitamins A and D during the later weeks of pregnancy (usually for one month, but in some cases for a fortnight before delivery). Thus, 275 women received the vitamin supplement and 275 women acted as controls

3. Of the vitamin-treated cases 1.1 per cent. and of the control cases 4.7 per cent. developed the B.M.A. standard of morbidity.

4. The results classified on the basis of duration of pyrexia also suggest that the vitamin preparation increased the resistance of the puerperal women to infection

We wish to express our thanks for the facilities for carrying out this investigation offered to us by the honorary staff of the Jessop and Nether Edge Hospitals We are also greatly indebted to Dr. M. Walker for assisting us with the cases investigated at the Sheffield Ante-Natal Clinic, and to Dr. Matthew Young for examining the results statistically The expenses of this investigation have been provided by the Medical Research Council, to whom our thanks are due

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PREVENTION AND CONTROL OF MEASLES, SCARLET FEVER, AND DIPHTHERIA IN INSTITUTIONS AND THE HOME *

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We do not intend to include in the present survey any account of the methods of isolation now practised, as these fall rather into the realms of public health We are now concerned with the recent advances in the preventive measures at our disposal for dealing with diphtheria, scarlet fever, and measles

DIPHTHERIA

The greatest advance in our knowledge of this disease came with the introduction of the Schick test This consists of the intradermic inoculation of diphtheria exotoxin so diluted that the 0 2 c cm injected contains 1 50 of a minimum dose lethal to a guinea pig of 250 grams weight (M L D) Heated toxin of similar strength is used as a control As a result of this dose, which was first recommended by Schick and has been adhered to by most workers, the community can be divided into several distinct classes

1 *Negative Reaction* —All negative reactors have been shown to have at least 1 40 of a unit of diphtheria antitoxin per c cm of blood serum This is sufficient protection against a normal infecting dose of diphtheria bacilli

2 *Positive Reaction* —When there is less than 1/40 of a unit per c cm a red, raised erythematous patch appears in about twenty four hours, is best seen at three days, and persists for a week, when a branny desquamation appears with a brown discoloration of the area Occasionally a typical positive reaction is seen within twenty four hours and disappears before three days These are probably border line cases whose blood has about 1/40 of a unit per c cm , and it will later be shown that these do not need to be immunized The control injection in these two reactions is quite negative throughout

3 *Pseudo Negative* —In this type of reaction there is an exactly similar response to the control and to the unheated toxin The reaction disappears within forty eight hours and is probably due to a sensitivity to the protein in the inoculum These are immunes

4 *Pseudo Combined Positive* —Both this and the previous type of reaction occur more commonly in convalescents from diphtheria in carriers, and in people who have been immunized In this type both the control and the test inoculations react positively The test, however, gives a much larger reaction, consisting as it does of a protein reaction, equivalent to the control injection, plus a reaction to the toxin The protein reaction fades rapidly in both injections, leaving a normal positive reading in the test It is chiefly on account of these reactions that it is essential to read the Schick test at least on two separate occasions, that is, after twenty four hours, and three days, and if there remains any doubt, again at the end of the week One is well advised to follow the rule laid down by Dudley[1]—to immunize all those who give doubtful reactions as well as the definitely positive, as diphtheria occurring in an individual who has been told he is immune is apt to cause prejudice against the methods used

About 85 per cent of infants up to 6 months are Schick immune (equivalent to the adult female Schick negative rate) Thereafter, up to 5 years of age comes the ' diphtheria period, when 90 per cent are susceptible The infants have a passive immunity transferred by the placenta and greatly increased by the colostrum (which has a higher concentration of antitoxin than the blood) and later by the milk This passive immunity can be prolonged by continued breast feeding As soon as this passive immunity is lost the children, losing their circulating antitoxin, become Schick positive As they approach the adult stage more and more people react negatively This is out of all proportion to the diphtheria case rate Therefore, it is not due to immunization by a previous attack of diphtheria, but is in all probability due to subminimal repeated infections causing a latent immunization It has been shown that in isolated communities where there has been no diphtheria for many years the Schick positive rate is inordinately high whereas in similar communities where there have been repeated outbreaks of diphtheria the Schick positives form a very low proportion There is no doubt that repeated encounters with the bacillus are sufficient to produce a degree of immunity equivalent to the Schick immune and in all probability we have to be thankful for the 3 per cent of the normal population who are virulent carriers for most of our immunity This immunity may be complete or incomplete In the latter case we have the Schick positive immunes" of Glenny, who has demonstrated the enormous difference between primary and secondary stimulation On the very first meeting with an antigen (in this case we refer to diphtheria toxin either in the form of prophylactic or the Klebs Loeffler bacillus itself) the antibody response of the individual takes a short while to show itself, is never very marked, and rapidly falls On a second meeting, however, the response is almost immediate, is very great, and remains at a permanently high level The practical value of this observation is enormous In the first place, it probably explains why about 50 per cent of diphtheria convalescents are still Schick positive They had probably never been in contact with the K L B before, and were therefore Schick-positive and developed, perhaps, severe diphtheria Their antitoxin rose during the attack, only to fall below 1/40 per c cm afterwards It is significant, however, that very few of them indeed are subject to a second attack , this is readily explained by the fact that the mere coming in contact with the organism a second time is sufficient to shoot their antitoxin titre so high as to give them a good immunity The observation receives its practical application in routine Schick-testing and immunization, as it is claimed to be unnecessary to immunize those convalescents who are Schick positive This is not a safe rule to follow without having the titre of the blood antitoxin estimated, because there is a small group of people who are naturally bad antitoxin producers this tendency appear to be familial, inasmuch as if a child acquires the same blood group as a poor antitoxin producing father he will probably inherit the defect whereas were he to follow the mother's group or be of another group he would follow the ordinary laws of the Schick reaction in the population This hereditary genetic defect of Hirszfeld is not linked to any particular blood group

Active Immunization

Many means of artificial immunization have been recommended and since the introduction of the Schick reaction it has been possible to estimate the relative merits of the methods To do this it is essential to Schick test before commencing immunization and also at intervals

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association Eastbourne, 1931

afterwards. This point must be stressed, because many references are found in the literature where the whole of the child population is regarded as being positive, and consequently not tested before immunization. Also, in several reported cases of failure of the active immunization, there is no mention of a retest after immunization, so that one is left to *assume* that the patient was immune and yet developed diphtheria. There are very few cases of failure on record where the Schick tests, the immunization, and the virulence of the K.L.B. are authentic. The following are the methods in use for obtaining active immunity:

1. Injection of (*a*) toxin, (*b*) toxin and antitoxin, (*c*) toxoid, (*d*) toxoid and antitoxin (T.A.M.), and (*e*) toxoid-antitoxin floccules (Ramon) (T.A.F.).
2. Spraying of throat with toxin and antitoxin.
3. Instilling formol-toxoid into the nose.
4. Percutaneous method of applying toxin-antitoxin.

Toxin itself is very unsafe to use, and it has been found advisable to use toxin modified by the addition of formalin (toxoid), so that it loses its toxicity without losing any of its antigenic properties. Toxoid mixed with antitoxin (T.A.M.) has been very widely used with great success both in this country and in America. Of this mixture 0.1 c.cm. is first injected intramuscularly, and if there is no reaction (sore arm or, rarely, malaise) within three days, three subsequent doses of 1 c.cm. are injected at intervals of one week.

Retests should be done as a routine a month later. About 80 per cent. of children and about 60 per cent. of adults will have become negative one month after the injections. The majority of the remainder become negative more slowly, but most are Schick-negative at the end of six months. If the Schick test has not become negative and is showing no diminution in the reaction, a further course of injections should be given, as the patient is probably a bad antitoxin producer and the type of person who, if infected, would have a severe attack of diphtheria. Even the most refractory case will respond if sufficient prophylactic is given.

More recently the floccules, produced by the addition of toxoid to antitoxin, have been shown to possess great antigenic properties. These are emulsified in saline (T.A.F.) and are injected in doses of $\frac{1}{2}$ to 1 c.cm. intramuscularly. Two injections given at a month's interval are found to raise the blood antitoxin to a higher degree than the T.A.M., and there is even less likelihood of a severe reaction.

Success has been claimed for other methods mentioned, but we have no practical experience of them. They are not claimed to be as efficient as T.A.M. or T.A.F.

When reactions after inoculations occur they are nearly always in the pseudo-combined reactors, and it is advisable when immunizing such patients to increase the doses slowly and allow longer intervals between the injections.

Results

There are two types of negative reactors—namely, natural and acquired. It is found that once a patient has become negative by natural means (clinical diphtheria or repeated subminimal infections) he has developed an antitoxin titre of about 1/20 unit per c.cm., and will probably never lose this immunity. This is borne out by the fact that the majority of the adult population (85 to 90 per cent.) is Schick-negative and remains so. Of 133 cases of natural immunes whom they retested, Parish and Okell[1] found that 1.1 per cent. had a positive reaction, and they explain these as "borderline" cases whose antitoxin fluctuates round about 1/30 to 2d/40 unit per c.cm., and who have not had a secondary antigenic stimulus. In some of these the stimulus necessary to cause a marked increase in antitoxins is so small that the Schick test dose itself is sufficient.

The figures for the acquired active immunity are not yet complete. Cooperstock[3] shows that in positive adults treated with two injections of toxoid

58 per cent. were negative after 3 weeks.
75 " " " " " 9 "
92 " " " " " 22 "

Parish and Okell[4] retested 440 children from 1 to 7 years after immunization and found that 95 per cent. of them were still negative and that the other 5 per cent. were "basally negative," that is, they rapidly became negative with a small stimulus of toxin (Schick-positive immunes of Glenny). It has been shown that a very much higher degree of immunity is acquired if after the preventive inoculation the patient has further experience of the K.L.B.: it is also an accepted fact that it is easier to immunize a Schick-positive from a herd with many immunes than with a small percentage, because this immunity indicates previous experience by the herd. It is inconceivable that even borderline cases, Schick-negative (natural or acquired), could develop an attack of clinical diphtheria, and Dudley[5] in his survey of the recorded cases decided that

"most of the reported failures occurring in Schick-negative reactors (natural) are merely sore throats with K.L.B. in them. No case of typical membrane has been reported, and it has only very rarely been thought advisable on clinical grounds to give serum. Most of these must be classed as K.L.B. carriers with a coincident sore throat probably caused by some other organism."

This is borne out by the fact that these patients usually have a very high antitoxic titre. The ordinary immune has about 1/20 unit of antitoxin, whereas the carrier of virulent bacilli usually has as much as 2 to 3 units per c.cm., and this may be of diagnostic value.

Routine Measures for Prevention of Diphtheria

The following remarks apply to *institutional* cases.

(*a*) Of the greatest importance is the adoption of routine swabbing of admissions. There is no doubt that by detecting the virulent carrier on admission the incidence of diphtheria in institutions has become enormously reduced. All patients with doubtful swab reports should be isolated until a virulence test has been done.

(*b*) All sore throats in hospital should be swabbed as well as *all* nasal discharges, particularly if these be blood-stained. Swabs from the anterior nares are apt to be fallacious and should, if possible, be accompanied by a post-nasal swab for confirmation.

(*c*) As soon as a positive swab is obtained all who have been in contact with the patient should be swabbed (throat and nose) and Schick-tested. All contact carriers can thus be immediately isolated before they cause any spread. The Schick-positives among those tested receive a protective inoculation of 1,000 to 2,000 units of concentrated diphtheria antitoxin, which gives them within one hour a passive immunity lasting about twenty-one days. Under this protection they will not develop clinical diphtheria, but they may, like any other Schick-immune, become the carriers of virulent bacilli. It should be borne in mind that K.L.B. isolated from a Schick-positive reactor, cannot be virulent unless the patient is incubating diphtheria. Harries[6] has pointed out that if a patient is Schick-positive and becomes a carrier he either develops diphtheria or rapidly becomes Schick-negative; the fate hangs in the balance for a few days (this is explained on the ground of secondary stimulus, see above).

(*d*) All permanent staff should be immunized on admission. This reduces the incidence among them to nil (except for carriers) and thus reduces the chances of infection for the patients. It would perhaps be advisable

also to swab the staff at regular intervals, particularly after an outbreak of diphtheria.

In all institutions where a long stay is contemplated the children as well as the staff should be actively immunized. In hospital this is not possible, but we can still admit new patients to an infected ward by Schick-testing and, if necessary, giving a passive immunity.

No immunization measure alone is of value in an epidemic; the only certain method is carrier control, both of convalescent and of contact carriers.

In *private and public health* work we cannot urge too strongly that as many children as possible, after the age of 1 year, should be Schick-tested and actively immunized until they are immune, preferably using T.A.M. or T.A.F.

Scarlet Fever

A specific haemolytic streptococcus is now identified as the causal agent of scarlet fever. It cannot be isolated from the blood in the early stages of the fever (except in fulminating cases), because the symptoms are those of a toxaemia, and it is not till later, when the septic complications occur, that the organisms can be at all readily obtained from lesions. The toxins of the streptococcus when injected in a dose of 0.1 c.cm. *intramuscularly* will produce a typical scarlet fever rash in about 7 per cent. of children; whereas if a dose of 1 or 2 c.cm. is used, all children injected will develop the rash. A similar rash can be obtained with a few other strains of haemolytic streptococci, but much larger doses are required.

The Dick Test

In the Dick test 0.2 c.cm. of a 1/1,000 dilution of the specific toxin is injected intradermally into the skin of the forearm, and a similar amount of toxin, heated to 100° C. for half an hour, is used as a control. A positive reaction is indicated by an erythematous area in the test arm, which appears within twelve hours, reaches its maximum in twenty-four hours, and then rapidly disappears. Pseudo-reactions do not occur in children, and are much rarer in adults than the pseudo-Schick reactions. Care must be taken not to inject too deeply, as the toxin will be readily absorbed and may give a false negative. This Dick test is a toxin-antitoxin reaction in the skin; the injected toxin being neutralized if there is sufficient circulating antitoxin.

It is said that children up to 6 months inherit an immunity from the mothers, but this is now challenged because their blood does not always cause blanching of a scarlet fever rash, and it has been suggested[8] that many of them do not react because of the general non-reactivity of the infantile tissues to streptococci. They lose this passive immunity or non-reactivity at about 6 months, and thereafter the majority are Dick-positive, slowly becoming negative in adult life. This alteration in the reaction, as in diphtheria, is probably due to repeated subinfections with the haemolytic streptococcus which is kept among us by carriers, both contact and convalescent. Treatment of scarlet fever carriers has not yet reached the stage attained in diphtheria, but in any institution with recurrent epidemics of scarlet fever it is advisable to take routine throat swabs, and isolate any persons who have haemolytic streptococci in their throats. It has also been suggested[9] that the complement fixation test is a useful means of isolating carriers, as they react positively, as do also 98 per cent. of scarlet fever cases from the second to the fifth weeks.

In *early cases* of scarlet fever only about 40 per cent. of patients are Dick-positive. This curious state of affairs is explained as follows:

(*a*) The skin has a diminished reactivity to all toxins in the early stages of an acute infectious disease. Both in scarlet fever and measles there is a lessened reactivity to tuberculin, streptococcus toxins, etc.

(*b*) The rash having already appeared as the result of the toxaemia, the skin is not so sensitive to further doses of toxin.

(*c*) It will be recalled that in the Schick test of a carrier it was emphasized that the reaction of a Schick-positive could be readily converted by a few bacilli in the throat acting as a secondary stimulus. In like manner the infection, if only for twenty-four hours, with the streptococcus may readily turn the Dick reaction negative. It can readily be seen that although it is advocated in diagnosis of an early scarlet fever rash, the Dick test is in itself insufficient evidence either way.

In convalescents 10 to 15 per cent. remain Dick-positive. There are various factors concerned in this persistence of the positive reaction.

1. Toyada[10] has split up the streptococcus toxin into exotoxin (heat-labile) and endotoxin (heat-stable). Of this 15 per cent., he found that 13 per cent. reacted *only* to the endotoxin factor and their bloods gave a good blanching reaction (Schultz-Charlton) when injected into a scarlet fever rash. They are immune. The other 2 per cent. gave reactions to both endotoxin and exotoxin and they gave weak blanching reactions. These are only partially immune, but a secondary stimulus would rapidly convert them into negative reactors. He holds that the endotoxic reaction merely indicates previous experience with the streptococcus and a partial immunity. He, therefore, advocates using only the heat-labile exotoxin both in the Dick test and in immunization.

2. Convalescents from scarlet fever who have been treated early in the disease with concentrated antitoxin show a much higher rate of Dick-positives (30 to 40 per cent.) than do other convalescents.[11] This would apparently indicate that the disease is fought "passively" and that the patient has no opportunity to produce his own active immunity which would be permanent.

3. Of the four serological groups of scarlet fever streptococci, it has been demonstrated[12] that many more patients remain Dick-positive after infection with Group 4 than with any other group, and least of all with Group 2. This suggests that Group 2 of the *Streptococcus scarlatinae* is most highly toxigenic and Group 4 least so. Finally, in cases of relapse it has occasionally been observed[13] that the infecting strain in the relapse is different from that in the primary attack. This would indicate that if a patient remains Dick-positive after an attack of scarlet fever with Group 4, he may become infected from another patient in the ward with a different serological strain.

Immunization in Scarlet Fever

Passive Immunity.—In an epidemic of scarlet fever, active immunization is obviously of no avail. We now have available a purified concentrated antitoxin serum which can be used both therapeutically (in severe toxaemic cases) and prophylactically. A small dose, 5 c.cm. intramuscularly, will turn a Dick-positive reactor negative within twenty-four hours, and this passive immunity will last two to three weeks. In hospital and institutional practice this has been a great boon. When a case of scarlet fever is reported in a ward all the inmates should be Dick-tested immediately. The results are read next day and serum is given to all positive and doubtful reactors at once, that is, twenty-four hours after the first rash appeared. The enormous success attendant upon the adoption of this routine can be attributed to the rapidity of the diagnostic reaction, as the whole procedure falls well within the incubation period for scarlet fever.

Active Immunity.—Small doses of toxin are injected at weekly intervals until at least 20,000 skin test doses have been administered. Our practice has been to inject 0.1 c.cm. scarlet fever prophylactic A (Burroughs Wellcome and Co.) intramuscularly. If there is no reaction within

three days the following doses are injected at weekly intervals: 0.4 c.cm.A, 1 c.cm.A, 0.25 c.cm.C, 0.5 c.cm.C, 1.0 c.cm.C, the total being equivalent to 38,500 skin test doses (prophylactic A contains 2,500 skin test doses per c.cm. and prophylactic C 20,000). Reactions, in the form of sore arm and malaise, occur but rarely and are not severe. Occasionally, however, a scarlatiniform reaction occurs. This takes the form of a toxaemia, the patient developing a scarlet fever rash, sore throat, and rise of temperature for twenty-four to forty-eight hours. All this rapidly subsides and none of the complications of scarlet fever ever occur because these are septicaemic and the reaction here is only toxaemic. The patient has now developed a high degree of active immunity and does not need further injections. The reaction is uncommon in adults (2 in 270 nurses immunized) but is said to occur in about 7 per cent. of children.[11] Immunity after the normal course of injections is usually complete within one month after the last injection, and is of many years' duration. If there are any signs of the Dick test again becoming positive another injection is usually all that is necessary.

Institutional Practice.—All staff should be Dick-tested and, if positive, actively immunized on entry. Similar measures should be adopted in public schools and other institutions where the children are resident for long periods. In an epidemic, the whole population should be Dick-tested and serum given immediately. By this means no second case of scarlet fever has occurred in our hospital for three and a half years. The isolation of *carriers* of haemolytic streptococci is a measure which we would urge in cases of repeated epidemics, as they will readily infect the patients as soon as the effects of the prophylactic serum have worn off, in about three weeks. Our wards are now not closed for scarlet fever, as all new admissions for ten days after a notified case are Dick-tested and passively immunized.

We wish here to draw special attention to a measure we have adopted for several years. Streptococcal infections with a rash and sore throat, etc., are fairly common after operations on the throat and nasopharynx. Surgeons are apt to disregard these and not look upon them as true scarlet fever. We have often seen two or three other children in a ward develop typical scarlet fever three days after such a case, and we therefore treat the rest of the ward prophylactically exactly as for a scarlet fever whenever such an infection occurs. Several of the surgeons at Great Ormond Street now have all patients for these operations Dick-tested *beforehand* and serum given where necessary, and have by these means eliminated such scarlatiniform reactions for several years. We would advocate this as a routine measure for all children's wards.

Private and Public Health Practice.—When confronted with contacts of scarlet fever in private practice each case must be treated on its own merits. Obviously if a child is in poor health we should not withhold our prophylaxis, but it is not an ideal state of affairs to have to give a child a dose of horse serum each time it is exposed to scarlet fever. It would be wiser when possible to provide the passive immunity once, and then commence as soon as is practicable a course of injections for active immunization. This would do away with the necessity for repeated serum injections with their attendant risks. In public health work we would advocate that all children who are Schick-tested should at the same time be Dick-tested. Both reactions are read on the first day and the Schick again on the third day. Thereafter the two courses of active immunity can be given concurrently, the two solutions being mixed in the same syringe just before injection. By means of this active immunity the scarlet fever incidence in Dairen has been reduced from 43.3 per 1,000 in 1925, to 1 per 1,000 in 1930.

Measles Serum

With regard to the use of human convalescent serum in the prophylaxis of measles we have not much to add to the paper[13] upon the subject which we read in the Section of Medicine at the Annual Meeting of the Association in Winnipeg last year. Further experience of the method confirms our opinion of the value of the procedure.

Historical

Nicolle and Conseil[16] in 1916 succeeded in protecting children who had been exposed to measles infection by injecting them with convalescent serum. Since then many observers have published similar results, which all agree in establishing the fact that convalescent measles serum is of very great value in prophylaxis when injected in adequate amount shortly after exposure to infection. Debré and Ravina[17] in 1923 suggested the use of convalescent serum to produce a mild attack rather than complete protection, and this would appear to be the more desirable method in many cases, particularly in home as opposed to institutional cases, because the mild attack of measles induced would give the patient an active immunity which is permanent, whereas the immunity produced by a prophylactic dose is passive and lasts only from two to four weeks. Owing to the difficulty in procuring sufficient supplies of human serum for its use on a large scale, it is obvious that as soon as a causal organism for measles is definitely established and an appropriate animal serum prepared, the use of human serum will be suspended. The animal serums at present available are those of Tunnicliff, Degkwitz, and Ferry and Fisher, all of which are prepared from a "green" streptococcus, which is held, though not generally accepted, to be the causal agent of the disease. Gunn,[18] of the Metropolitan Asylums Board, in a comparative survey of these animal serums and human convalescent serum, found that Ferry and Fisher's serum failed to protect, Degkwitz's serum protected 40 per cent., Tunnicliff's serum protected 43 per cent., and human convalescent serum protected 95.7 per cent. of the individuals injected. These results are similar to those obtained by other workers, and show that, at present, human convalescent serum is by far the most reliable. A similar condition obtains in poliomyelitis and encephalitis lethargica, which are virus diseases, and reference may incidentally be made to the observation of Degkwitz[19] on the cultivability of the measles virus, but McCartney[20] states that the prophylactic use of Degkwitz's animal serum, presumably made from the virus cultures, has not furnished any evidence that measles-virus immune bodies are present.

Preparation of the Serum

Children are obviously not suitable donors of adequate quantities of blood, so that we have obtained all our supplies from adults, and we have been fortunate in securing the co-operation of Dr. Massingham, of the London Fever Hospital, where many adult cases of measles are treated. Only normal, uncomplicated cases of measles are utilized for this purpose, and the greatest care is taken to exclude the possibility of any other infection, particularly syphilis or tubercle. From seven to fourteen days after defervescence patients are bled aseptically to the extent of 300 to 400 c.cm. into sterile oxalate solution, this procedure yielding as much as 60 per cent. of serum, after precipitation of the oxalate with calcium chloride. Sterility tests and a Wassermann reaction are done on every serum, and if these are satisfactory, 0.5 per cent. phenol is added, and the serum is pooled with several other serums, to ensure as far as possible a uniform potency of the final product. Before it is stored or bottled for use, the serum is filtered through a Seitz bacterial filter, and a final sterility test done.

Effects of Administration

No ill effects have ever followed the use of a carefully prepared serum, and any untoward results can usually be traced to insufficient care in the preparation The method of preparation which we have outlined above practically eliminates any possibility of conveying a tuberculous infection with the serum, for Kraus has tested many measles convalescent serums made without the double precautions (phenolizing and filtering) which we adopt and has never produced tuberculosis in the inoculated guinea pigs As the serum is of human origin, anaphylaxis or serum reactions do not occur, and it is unlikely that an attack of asthma or other allergic manifestation will be produced by the serum injections Different results can be obtained from the use of the serum, depending on the stage of incubation at which the injection is given

Injected before the fifth or sixth day of incubation, the serum affords complete protection—a passive immunity which lasts from two to four weeks This Copeman [1] calls "sero prevention" Injected on the sixth to the ninth day of incubation, the serum protects only partially, and a very mild attack of measles usually ensues ("sero-attenuation") Injected after the ninth day no benefit is to be hoped for from the serum whereas injection on the tenth day produces Debre's phenomenon—a local blanching at the site of the injection

The attenuated attack gives rise to a permanent active immunity, which is our aim in private practice where the individual himself has alone to be considered, whereas in institutional work it is complete protection which is aimed at Of course, where a very sick child has been exposed to measles, whether at home or in an institution, it must be protected at all costs, and one would inject the serum as soon as possible, and give a slightly larger dose than the normal for a child of that age The attenuated attack is usually a very mild affair a slight bout of fever (100° F) for a day or two at about the fourteenth day of incubation, others may be apyrexial, with a few measles spots on the trunk or face, others, again, may have a typical attack of measles with coryza and bronchitis, which has all subsided in twenty four to forty eight hours We have never seen Koplik's spots in any of these cases arising after the injection of convalescent serum Sometimes after a long incubation period—even as much as twenty six days in some cases—a mild attack of measles may occur which, from a hospital administration point of view, is rather disturbing, as it holds a ward in quarantine for nearly four weeks If, however, serum is given to all the new admissions, the quarantine period need not interfere with the normal working of the ward

Dosage

In order to ensure the production of complete protection, we have recently increased the doses of serum injected to 5 and 7 c.cm intramuscularly for children under 3 years and over 3 respectively Whole blood may be used instead of serum, in which case the blood of a convalescent is injected intramuscularly into the recipient, the amount injected being double the serum dose It has also been suggested that the whole blood or the serum of any healthy adult who has had measles may be used, and this scheme has recently been tried in Birmingham, where 146 children have been treated in this way The results are reported as very satisfactory, 57 children having had attenuated attacks (the result aimed at) and 85 children being fully protected Serum has been tried in the treatment of severe measles, but without success, as the antibody content is not sufficiently high, and enormous doses would be required to produce any effect For the same reason the serum is unable to blanch the rash, although it is sufficiently potent to prevent the appearance of the rash in an area if injected shortly before the general rash appears (Debre's phenomenon) *

Results

Debre Gunn, and many others, have reported complete protection in from 80 to 96 per cent of the cases injected Our own series now amounts to 625 cases, in which the advocated dose of serum was injected within the first five days of exposure to infection, and a further 46 cases in which either too little serum was injected or an adequate dose was injected between the sixth and ninth days of incubation Of this total of 671 cases, 518 were injected by us at the Children's Hospital following ward infections, and 153 cases from practitioners in various parts of the country, following home or hospital infections

Analysis of Cases Injected

It is impossible to say how many children exposed to infection would develop measles but Gunn, working at a fever hospital, and with facilities for studying cross infections, had ample opportunities for controls His series included uninoculated wards, and wards inoculated with

ANALYSIS OF CASES INJECTED WITH CONVALESCENT MEASLES SERUM

1. Cases at the Hospital for Sick Children, Great Ormond Street
2. Cases at other hospitals and of private practitioners

	Injection Made Before 5th Day	Protection	Failures	Injection 6th–9th Day	Protection	Attacks
1	514	507	7 (Attacks mild)	4	0	4 (3 mild, 1 severe)
2	111 / 35	106 / 0	5* / 3†	33	25	8‡

Total 625 appropriately injected with 611 cases = 98·1 per cent protection

* In these cases the rash appeared 8 to 21 days after the serum was given and the attacks were all mild or very mild

† These cases were all mild and the rash appeared in 8 to 10 days after the serum was given In several of these cases erroneous information rather than too little serum was given at

‡ In these three cases too little serum was injected

various animal serums and with convalescent serum His 95·7 per cent, together with our figure of 98·1 per cent, protection affords striking and sufficient proof that, until an efficient animal serum is prepared, convalescent measles serum is the best weapon we have for preventing measles, and it should be more widely used than it is at present

UNDULANT FEVER CONVEYED BY MILK*

BY

SIR WELDON DALRYMPLE-CHAMPNEYS, Bt., M.D.

I have been asked to open this discussion on milk-borne diseases with a consideration of the part played by milk in the spread of undulant fever. Now I am not going to pretend that in this country undulant fever is either the commonest or the most serious disease conveyed by milk, but its significance in this respect is certainly far from negligible even here, and in some foreign countries it has loomed very large in recent years. One indication of this is that in the time at my disposal it will be impossible for me to deal with more than a small fraction of the evidence which has accumulated of the dangers arising from milk containing organisms of the Brucella group.

The first indication of this danger was, as you know, given by Horrocks,[1] who, following up Zammit's discovery[2] of the natural infection of Maltese goats with the *Brucella melitensis*, found this organism in large numbers in the milk of one of these animals. Further investigations by the British Commission on Mediterranean Fever showed that the blood serum of about 40% of the goats in Malta agglutinated the causative organism and that numbers of apparently healthy goats in every herd were excreting *M. melitensis* in their milk and urine. The outcome of these discoveries was of course the famous order to the naval and military forces at Malta forbidding the consumption of unboiled goat's milk, one of the most dramatically successful prophylactic measures ever taken in the history of preventive medicine.

This step, however, did not end the career of caprine crime, and goats are still spreading this serious disease not only in Malta but in all Mediterranean countries, in the southern portion of the United States, and elsewhere, the chief but not the only vehicle of this infection being their milk. That the same role was being played by sheep was unsuspected until Dubois[3] reported in 1910 four groups of cases of *melitensis* infection among sheep on different farms in the department of the Gard (France), with three of which human cases of the disease were associated. Subsequent investigations have clearly established that sheep, so far from being exceptional vectors of the disease, are probably the most important agents of its spread in France. The conditions in that country are, however, exceptional, and in Denmark, Sweden, Germany, Switzerland, Holland, South Africa, Rhodesia, the United States and other countries, among which is our own, the chief agent of spread is not the goat or the sheep but the cow. The story of how the cow came to be suspected and was eventually convicted, starting with Alice Evans's[4] discovery of the very close relationship between the *Micrococcus melitensis* of Bruce and the *Bacillus abortus* of Bang, I have told elsewhere,[5] and there is no time for it here. I would like, however, to draw attention to the fact that the view held at first that bovine infection is nearly always conveyed by infected milk has had to be modified in recent years in consequence of the important part which direct contact with infected cattle has now been shown to play in the transmission of infection to man.

I am only concerned now with undulant fever conveyed by milk, and there is good reason to believe that the consumption of cow's milk containing the *Brucella abortus*, the cause of contagious abortion in cattle, has been and still is the commonest cause of undulant fever in Great Britain. Before considering the situation in this country it is essential that I should give a brief account of the evidence in regard to milk recently obtained in countries where many more cases of the disease have been reported and studied. First of all I must recapitulate a few of the facts with regard to the animal disease known as contagious abortion of cattle and due to infection with the *Brucella abortus*. Bovine animals of both sexes and at all ages are liable to this infection, but the disease is most severe in young heifers. Abortion usually occurs between the fifth and seventh month of pregnancy, but some cows abort about the first or second month. Not only is the disease often unsuspected but even abortion often passes unnoticed. This is largely because, as the British Commission found with the Maltese goats, the animal's general health is usually quite unaffected.

Pathological changes are generally confined to the uterus though the organisms may be widely scattered and the udder usually becomes infected, so that apparently healthy animals may excrete large numbers of Brucellae in their milk, the organisms again making their way to the uterus when pregnancy occurs. An important point to note is that something like 80% of aborting cows only abort once, though they may continue to harbour and excrete the organism for a long time after aborting. (Schroeder and Cotton observed a cow which continued to excrete the organism in her milk for seven years.)

Moreover a large proportion (perhaps 50%) of infected cows never abort, and the *Brucella abortus* has often been found in the milk of cows which have never aborted. About 30% of infected cows excrete the organism in their milk sooner or later.[9] In most countries where cattle raising is of any importance contagious abortion is rife and a serious proportion of the milk supply is infected with the causative organism. In America, for instance, Schroeder and Cotton[6] found the abortion organism in over 10% of 77 samples of market milk which they examined, and in the milk distributed by 6 out of 31 dairies (over 19%). In Pomerania (Germany) Pröscholdt' examined 3,000 samples of whole milk by guinea-pig inoculation (the most reliable method) and found that 27.5% of these samples contained the *Br. abortus*. Even higher proportions have been found by other observers in different countries. Some infected cows, apparently never excrete the organism in their milk, but such excretion is often intermittent.[8]

In Great Britain, unfortunately, very little work has been done to ascertain the extent to which the milk supply is contaminated with the organism of contagious abortion, nor are there any statistics available to show what proportion of our milch cows are infected. Rabagliati[9] believes that at *least* 50% of our herds contain infected cows, and other experienced veterinarians have given similar estimates.

Wilson and Nutt's[10] investigation of the milk supply of Manchester, in which they examined 488 samples and found that 5.7% of single milks and 8.8% of mixed milks contained the *Br. abortus*, is still almost the only observation on record indicating the extent to which the milk supply of this country may be infected; but Cruickshank and Barbour[7] recently found that 4 cows out of a herd of 37 (i.e. 10.8%) supplying a Scottish institution with milk were infected.

Further systematic examinations of milk supplies in Great Britain, if possible by guinea-pig inoculation, are badly needed, but if, as can hardly be doubted, they reveal that a considerable proportion of our unpasteurized milks contain the *Br. abortus*, what is the explanation of the small number of human cases of undulant fever so far discovered? At the time of writing only 34 *definite* cases of endemic origin in England and Wales and 5 in Scotland are known to me, though I have in addition records of a number of unproved cases in some of which the probability of this infection having occurred appears to me to be very strong. In Rhodesia, on the other hand, where conditions

* Read in opening a discussion on Milk-Borne Diseases Other Than Tuberculosis in the section of Pathology and Biochemistry at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

abortion is not so rife as in this island, Bevan[10] reports that more than 200 human cases (in a European population of only 45,000) have been diagnosed serologically within the last ten years. In the United States 1,305 cases were reported during 1929.[11] In Denmark between 300 and 400 cases have been diagnosed every year since Kristensen started his systematic investigations.

I have no time now to discuss the possible explanations of this remarkable contrast between the small number of human cases reported in Great Britain and the wide distribution of bovine contagious abortion, but I venture to predict that further investigations will show that undulant fever is much commoner with us than would appear at present, a large proportion of the infections being so slight that the patients never call in a doctor and perhaps never regard themselves as definitely ill. In that case, you may say, the disease is hardly worth bothering about. Let us beware, however! Undulant fever is a disease full of unexpected tricks, with an epidemiology many parts of which are still shrouded in mystery. Take for instance the unexpected discovery in America of infection of swine with a Brucella highly virulent to man, or the recent finding in the Jura Alps of human cases of bovine origin when infection from this source was supposed to be practically non-existent in France. The English strains of Brucella are, moreover, not all benign, or at any rate some of the population have a susceptibility to them which is far from negligible. It is no joke when you have taken care of your health and always drunk the most expensive graded milk to be incapacitated for five or six months with a disease which, if not dangerous, is at any rate most miserable and depressing.

To return to milk, it should be noted that undulant fever, unlike some of the milk-borne diseases of which we shall hear presently, does not occur in epidemic outbursts among the consumers of an infected supply. It is true that considerable groups of cases have occurred in connexion with a single supply, especially in institutions producing their own milk,[8 12 13 14] but individual susceptibility seems to play such an important part that usually only a small proportion of the consumers are affected. Even when a group of cases appears in one place it is often impossible to trace them to a single milk supply, or to any other common origin, as you will see was the case in the group occurring in this town, of which Dr. Shera is going to tell you presently.

It has only been possible in the short time at my disposal to give a fleeting glimpse of the problem presented by the spread of undulant fever by means of milk; but I hope that I have succeeded in showing that it is an intricate problem and an important one, that it must be taken seriously into account in the consideration of any measures designed to protect the milk consumer from disease, and finally that research in this direction is urgently needed and provides a most fascinating and profitable field for the bacteriologist, the veterinarian and the epidemiologist.

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FOUR CASES OF UNDULANT FEVER*

BY

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The four† cases about to be described occurred here in Eastbourne at the latter end of 1930. The first was a youth, aged 16, who was admitted to the Princess Alice Hospital on September 15th. The second was a member of the visiting surgical staff of this hospital, but not actually in attendance on the first case. The third was a boy at one of the schools here, and the fourth was a former house-surgeon to the hospital above mentioned, who was staying in Eastbourne on holiday. Whether there was any direct infection between the various cases is a point for speculation. The house-surgeon was engaged to be married to the sister in charge of the ward in which the first case occurred, and the practitioner attended the school in which the third case occurred. The last two patients became ill at the same time, so that a simultaneous origin from a common milk supply is much more probable than a direct infection. The public health authorities were, unfortunately, unable to trace the source of infection via milk, but this was almost certainly the mode of origin. It will be as well to sketch the clinical histories and pathological findings first, and then to compare the cases afterwards.

Case 1

G. M., aged 16, was admitted to the Princess Alice Hospital on September 15th, 1930, and was discharged cured on December 10th. There was a history that in August, 1930, he camped on a farm near Pevensey, and drank a good deal of milk at that time. About a month before admission he complained of malaise, tiredness, anorexia, constipation, shivering, headache, and backache. A week later he gave up work and went to bed. For three weeks he had been running a temperature between 100° and 104° F., and was attended by Dr. Percy Vosper of Hailsham. There had been no nausea, no vomiting, and no diarrhoea.

The blood count on October 9th showed the following features: red cells, 5,360,000 per c.mm.; haemoglobin, 63 per cent.; colour index, 0.58; leucocytes, 5,600 per c.mm.—of these, 60 per cent. (3,360) were neutrophils, 30 per cent. (1,680) were lymphocytes, 10 per cent. (560) were monocytes—and 24 per cent. were immature neutrophil cells. Eosinopenia was present, also some microcytosis. The leucocyte count on October 16th was 4,400 cells per c.mm. On October 24th the blood count was as follows: red cells, 5,980,000 per c.mm.; haemoglobin, 76 per cent.; colour-index, 1.06; leucocytes, 4,600 per c.mm.—of these, 55 per cent. (2,530) were neutrophils, with 28 per cent. immature forms, and 45 per cent. (2,070) lymphocytes. An enteric group infection was suggested.

On October 27th, the diagnosis still being obscure, and headache being a prominent symptom, a detailed examination of the spinal fluid was made, including a cell count estimation of chlorides and total protein, Pándy and Nonne-Apelt tests, a gold-sol curve, and a bacteriological examination, with negative results throughout. The blood was also examined for the Wassermann and tubercle complement-fixation tests, and on October 15th and 20th the Widal reactions against *B. typhosus*, *B. paratyphosus* A, B, C, and the Salmonellas were done, with negative results. A throat swab was taken, as there was sore throat (see Case 4), but this was negative to Klebs-Loeffler bacillus. On October 27th the blood was agglutinated against *Brucella abortus*, and was found to be strongly positive up to 1 in 5,000 (2,500 units). On December 9th, the day before the patient was discharged from hospital, the blood was positive up to 1 in 500 (250 units). Blood cultures were negative on two occasions. Partial anaerobiosis was tried by means of pyrogallic acid and soda desiccating jar.

* Read to the Section of Pathology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

† After going to press a fifth case was subsequently traced, which had left the town.

This was deemed to be equally effective as the introduction of 10 per cent. carbon dioxide, as recommended by Wilson. Possibly it was not.

The patient felt remarkably well while in hospital. The pulse rate ranged between 88 and 120, and the respirations remained constant at 20. The bowels, although occasionally constipated, were usually opened once or twice daily. The urine was normal, and sterile on culture. Examination of the chart shows four typical undulations—the first lasting two weeks, with an interval of four days' apyrexia; the second, a smaller rise lasting two weeks, with two days' apyrexia; and a third brisk one, lasting one week, succeeded by a permanent fall.

Case 2

The history in this case was that, about October 5th, the patient, a male aged 45, had a temperature of 102° for one day, from which he recovered. A week later the temperature was 100.6°, and he went to bed with the following symptoms: extreme tiredness, marked anorexia, mental depression, drenching sour-smelling sweats, headache, insomnia, a dirty foul tongue, and constipation. He felt ill when the temperature was up, but felt quite well when it was down. He was at no time prostrated. I saw him after he had been ill for some three weeks, and was asked to investigate this pyrexia of unknown origin.

On November 1st a leucocyte and differential count showed the total leucocytes to be 4,800 per c.mm., with 35 per cent. neutrophils, of which no less than 20 per cent. were immature. The lymphocytes were 59 per cent. and monocytes 6 per cent. Eosinopenia was present. The significance of immature forms is that they indicate an acute infection when raised considerably above the normal 4 per cent. The Widal reaction showed *B. typhosus* to be positive 1 in 25 (R.T.* 3.75), *B. paratyphosus* A positive 1 in 125 (R.T. 31.25), and *B. paratyphosus* B 1 in 25 (R.T. 2.5). Although the patient had been inoculated during the war, I suspected *B. paratyphosus* A infection. The blood was cultured, also the faeces and urine, with negative results for the group. The Widal reaction was repeated on November 8th, with the same result. There being no rise of titre, this was against *B. paratyphosus* infection. Agglutination to *Br. abortus* was tried with two separate strains, and I got a positive result up to 1 in 250, which was very kindly confirmed by Dr. A. D. Gardner of the Standards Laboratory, Oxford University. Undulant fever was then diagnosed; the clinical syndrome was typical.

A leucocyte and differential count on November 12th showed 8,400 leucocytes, with 42 per cent. neutrophils (2 per cent. of which were embryonic forms) and 54 per cent. lymphocytes. The agglutination reaction on this date had fallen to 1 in 125, and the leucocyte count likewise indicated less active infection in the rise in count and drop in embryonic neutrophils. On November 17th the leucocytes had dropped to 4,400, with 55 per cent. lymphocytes. On December 2nd the blood serum agglutinated *Br. abortus* up to 1 in 50. On December 22nd a complete blood count was done in order to see whether there was any anaemia. The result was as follows: red cells, 4,750,000 per c.mm.; haemoglobin, 74 per cent.; colour index, 0.78. The cells were normal in every way except for a trace of undue transparency. Platelets were numerous. The white count was as follows: leucocytes, 3,200 per c.mm.; neutrophils, 40 per cent. (embryonic forms 19 per cent.); basophils, 1 per cent.; eosinophils, 1 per cent.; lymphocytes, 54 per cent.; monocytes, 4 per cent. The count showed slight secondary anaemia, with leucopenia and lymphocytosis and a good many immature neutrophil cells. On December 22nd the serum agglutinated *Br. abortus* up to 1 in 50.

Two injections of nucleinic acid were given, one on November 10th, which coincided with a rise to 101°, and the second on November 15th, which caused a rigor. On November 30th, December 1st, 2nd, 3rd, 4th, and 5th, "edwend" was given in increasing doses, ranging from 1 to 5 c.cm.; thereafter all went well. The patient became convalescent, and went to the South of France; he has resumed work without any further recurrence. One feature which is common to these cases is the drop in agglutination titre which accompanies the subsidence of the complaint.

Case 3

In this patient, a boy aged 10, the illness began acutely on November 8th, simulating influenza, according to the medical attendant. It was treated as such with salicylates for the first ten days. It was diagnosed as undulant fever on November 23rd. The symptoms observed were profuse sweating, obstinate constipation, headache, anorexia, a very dirty tongue, and some loss of weight during the first month.

The pathological tests were as follows: On November 23rd, leucocytes were 4,200 per c.mm., with neutrophils 38 per cent.; lymphocytes, 52 per cent.; monocytes, 10 per cent.; embryonic neutrophils, 10 per cent. (normal 4 per cent.);

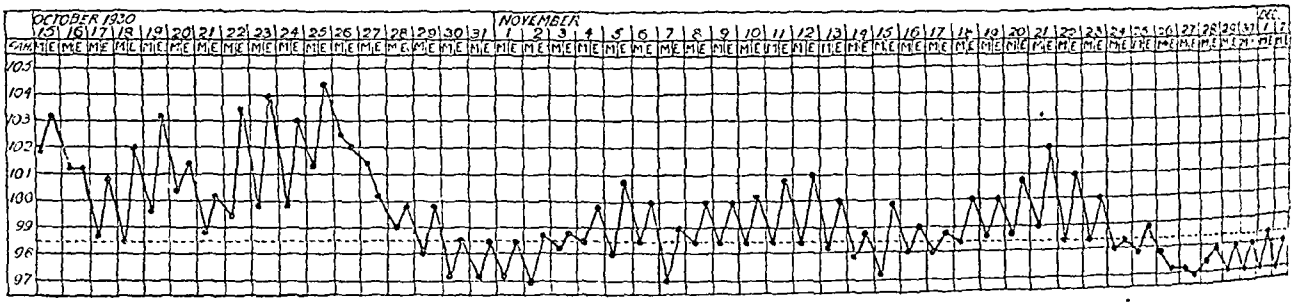


Chart of Case 1.

there were no eosinophils. Agglutination reactions were negative to *B. typhosus*, *B. paratyphosus* A, and C, and positive to *Br. abortus* up to 1 in 2,500.

A stock vaccine of *Br. abortus* was recommended and used with an initial dose of 12.5 millions and a second dose of double that amount on December 10th and 16th, and 37.5 millions on the 23rd. But the result was unfavourable inasmuch as the patient and his temperature seemed upset thereby, and so the vaccine was discontinued. However, he became apyrexial shortly after—with the exception of a single day—and made a slow but successful convalescence.

In this case there was no determined source of infection. The milk supply was suspect, and steps were taken to find out if there was any contagious abortion on the farm whence the supply came, but no positive data were obtained.

The duration of pyrexia was seven weeks, possibly eight.

Case 4

In this case, a male aged 25, the onset was insidious. Prior to November 17th there was increasing lassitude and slight sweating on exertion for a few days. On November 17th he noted loss of appetite and general malaise, with temperature and pulse 100. The temperature was reduced by aspirin. He went out after four days, and relapsed the same evening—temperature was 100° in the evening and 99° in the morning. He was admitted to hospital on November 27th—when the diagnosis was made—with enlarged cervical and inguinal glands as a marked feature. At first leukaemia was suspected, until the blood examination revealed positive agglutination to *Br. abortus*. The symptoms became more typical. There were sweats, constipation, insomnia, and some pains in the small of the back in the first week. Generally speaking, he felt well in health. The appetite after the first three weeks was good. He had an attack of follicular tonsillitis from November 30th to December 5th. The glands began to go down by the beginning of the fourth week. Salol was used during the

* R.T. = reduced titre (standard units of agglutinin).

as an intestinal antiseptic Nucleinic acid was also used in 1 c.cm. doses subcutaneously on four occasions early on

On November 25th leucocytes were 6 600 per c.mm. with neutrophils 22 per cent., eosinophils absent, lymphocytes 74 per cent., monocytes 4 per cent. On November 26th the blood agglutination was positive for *Br. abortus* up to 1 in 250 (trace at 1 in 500)—that is, 125 standard units. On December 9th the red cells were 4 950 000 per c.mm. with an average diameter of 7.17 μ. Haemoglobin was 82 per cent., colour index was 0.82; platelets were unreduced. Leucocytes were 10 000 per c.mm. with neutrophils 9 per cent., lymphocytes 90 per cent., monocytes 1 per cent., embryonic neutrophils 3 per cent. Agglutination was positive up to 1 in 125 for *Br. abortus*. Blood count on January 3rd 1931 was as follows: red cells 6 050 000 per c.mm. (average diameter 7.48 μ.), haemoglobin, 82 per cent., colour index 0.68; leucocytes 7 000 per c.mm.—neutrophils 64 per cent., basophils 1 per cent., eosinophils 1 per cent., lymphocytes 29 per cent., monocytes 4 per cent., Turck cells 1 per cent., embryonic neutrophils 5 per cent. On that date agglutination was 1 in 125 (and also on several subsequent occasions). A throat swab examined on December 1st was negative for Klebs-Loeffler bacillus.

The titre of agglutination was never high but was rather sustained. There was an initial drop in red cells which soon was followed by a rise. Iron was given by the mouth. The initial relative lymphocytosis was very marked but subsided when the glands went down. The adenitis was not met with in the other cases, but may occur in this disease. The patient made a good recovery.

Comment

The source of infection was untraced, despite the inquiries undertaken by the public health authorities. The only thing at all significant is the fact that there was a severe outbreak of contagious abortion within a few miles of the farm where the first patient lived. The disease was active in the neighbourhood, but no direct connexion was found. It is more likely that infection occurred during the August camping incident. The second patient gave a history of eating some rancid butter on a farm quite close to another infected farm. The third patient drank milk from a most reputable local firm which had no history of recent contagious abortion. Case 4 was possibly an indirect contact with Case 1.

Blood cultures were tried in Cases 1, 2, and 4, but with negative results. Glucose broth was used aerobically and partially anaerobically, and subcultures were made daily on human citrated blood veal digest agar.

The dates of commencement were as follows: Case 1, September 15th, 1930; Case 2, October 5th; Case 3, November 8th; and Case 4, November 13th. The duration was as follows in these four cases: Case 1, sixteen weeks; Cases 2 and 3, nine weeks each; Case 4, seven weeks.

All cases were fairly mild. Adenitis was marked in Case 4. Most showed leucopenia and lymphocytosis, the latter being specially well marked in Case 4. The maximum agglutinations were: 1 in 5,000 in Case 1, 1 in 2,500 in Case 3, with 1 in 250 (trace at 1 in 500) in Cases 2 and 4. These titres I think, run parallel with the severity of the cases. The drop in titres was as follows: in the first case, 1 in 5,000 to 1 in 500; in the second, 1 in 500 to 1 in 50; in the third, 1 in 2 500 to ?; and in the fourth, 1 in 500 to 1 in 125 (repeated twice). It would seem therefore, that a drop in titre is a good prognostic sign.

It might perhaps be worth pointing out that a sudden onset with a considerable rise of temperature, such as occurred in Case 3, is apparently no indication that the illness will be particularly severe or prolonged. The typical undulant chart of Case 1 is also interesting as this type of chart, which is so common in *melitensis* infections, is very uncommon in *abortus* infections. Case 4 at first was very obscure, resembling acute leukaemia of the aleukaemic type. Glandular fever was also suspected, but the picture became typical of undulant fever, and was confirmed by agglutination tests. I was not aware, until so informed by Sir Weldon Dalrymple-Champneys, who very kindly came and confirmed these diagnoses for us, that in these cases the organism can be cultured from the tonsillar swabs.

The primary object of this paper is to emphasize the importance of being on the look-out for undulant fever, I also hope to have indicated the chief pathological features calling for investigation.

Sir Weldon Dalrymple-Champneys has dealt with the epidemiology of the disease. It has probably been with us unrecognized for some time past but there should not now be any reason why it should be overlooked in the future.

We must acknowledge our debt to Sir Weldon Dalrymple-Champneys of the Ministry of Health for all the help he has afforded both clinically and in a literary sense. I also gratefully acknowledge the help of Dr. Deane, senior physician to the hospital, Mr. H. G. Estcourt, Dr. A. D. Gardner, and Mr. Patrick Laidlaw.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

APPARENT GONOCOCCAL CROSS-FIXATION

In a recent article by Dr. Orpwood Price on the gonococcal complement fixation test (*British Medical Journal*, April 4th) he refers to the *Micrococcus catarrhalis* as one of the causes of false positive reactions. A case which has recently come under my observation illustrates the cross-fixation with the *Micrococcus flavus* I.

The subject, a male child aged 18 months, was brought to the London County Council (Whitechapel) Clinic by his mother who wished to ascertain if there was any evidence of gonorrhoea about him, as his father had had venereal disease.

The father's history revealed a gonorrhoeal infection in India in 1926. For four months he had been attending St. Thomas's Hospital Clinic and was discharged cured four weeks before admission to the London County Council (Whitechapel) Clinic on April 10th 1931. He complained of twenty-one days' urethral discharge accompanied by marked dysuria following marital coitus twenty-four days previously. On examination the patient showed a slight watery urethral discharge in which no gonococcal or pus cells were detected by microscopy. The right lobe of the prostate showed slight enlargement generally but nodules, cragginess and tenderness were absent. A moderate number of pus and epithelial cells were found in the secretion obtained after prostatic massage, while the urine was clear and contained no threads. On palpation the testicles felt normal. The Wassermann and Kahn reactions and the gonorrhoeal fixation test were all negative.

The mother stated that she was six months pregnant and that for some months she had noticed a slight discharge which was unaccompanied by irritation or dysuria. She had had one child and had had no miscarriage, which as far as she knew she had no history of venereal disease. On recall there was a moderate degree of urethritis and a profuse purulent discharge from the cervical canal. Pregnancy was confirmed. The smears taken from the urethra and cervical canal showed a large number of pus cells and secondary organisms. Staphylococci and streptococci were grown from the urethral culture, that from the cervical canal showed streptoco-

cocci only. The gonococcal fixation test was negative, and also the Wassermann reaction.

The child on examination appeared healthy and well nourished. There was no history of illness, eye trouble, or nasal discharge. Urethritis and balanitis were absent, and the rectum appeared normal.

On the first visit routine blood tests were taken, and the results were reported as follows: Wassermann reaction negative, gonorrhoeal fixation test positive (+). On the second visit the blood tests were repeated, with the same result. As there was no clinical evidence to support these findings, further investigation was necessary. On the next visit cultures were taken (*a*) from the nose, (*b*) from the posterior fauces. Culture from the nose showed: pneumococci, staphylococci, streptococci, diphtheroids, and Gram-negative diplococci resembling *Micrococcus catarrhalis*. Culture from the posterior fauces showed: pneumococci, streptococci, and the above-mentioned Gram-negative diplococci. Subcultures were made and the sugar reactions tested. These proved that the organism was not the gonococcus, meningococcus, or *Micrococcus catarrhalis*, but *Micrococcus flavus* I.

In view of the fixation of the complement when employing a gonococcal antigen, it is probable that this is a case of cross-fixation. No parallel reactions could be performed to establish an end-point by using gonococcal and *flavus* antigens, with decreasing quantities of serum, as no antigen of *M. flavus* I was available.

The report illustrates that in translating the results of the gonococcal fixation test careful consideration must be made of the clinical and other pathological findings if error is to be avoided.

I have to thank Dr Anwyl Davies, director of the Whitechapel Clinic, for permission to publish this case, and Dr I N Orpwood Price for carrying out the pathological investigations

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" MIRROR TRANSPOSITION " OF VISCERA

This striking developmental anomaly is perhaps sufficiently rare to justify putting another case on record. The condition was found at a post-mortem examination on a man, aged 59, who had committed suicide by coal-gas poisoning. A state of " total heterotaxy " was seen.

Heart lay with apex projecting to the right
Aorta arched to the right, with innominate artery on the left
Right lung consisted of one lobe
Left lung consisted of three lobes, with a separate bronchus to its large upper lobe
Oesophagus crossed aorta from left to right
Stomach, which was considerably dilated, lay with its cardiac end on right and pylorus on left.
Duodenum passed from left to right
Caecum and appendix lay in left iliac fossa
Sigmoid colon was in right iliac fossa.
Spleen was in right hypochondrium
Main part of *liver* and the *gall bladder* were in left hypochondrium
Kidneys were joined together at lower poles to form a " horse shoe "

Thus there was practically complete transposition of viscera. Apart from the dilatation of the stomach no evidence of disease was seen. There was a history that he had had three attacks of pneumonia in the course of his life, and, latterly, had suffered from " indigestion " and wheezy breathing. Otherwise he appears to have had pretty normal health, and is stated to have been an exceptionally fine athlete in his youth. Curiously enough, he had some consciousness of his odd construction. He was wont to observe that he was " made different from other people." According to his wife, the beat of his heart on the right side had been noted [illegible] ago.

Rees Phillips, M D., D.P.H.

Reviews

DIABETES

The fifth edition of Dr. Orlando Petty's book on *Diabetes*[1] has been considerably enlarged, and remains a " handbook for the patient." Its introductory section on what diabetes is, on the different kinds of foodstuffs, on calories and scales and weighing, is entirely clear and adequate. The directions about insulin injections, over doses of insulin, and general hygiene are also good, and cannot be misunderstood by the average patient. It seems, however, a useless labour to recommend the insulin syringe to be boiled for five minutes daily as well as to be kept in surgical spirit. Dr. Petty arranges his food tables in the old-fashioned method (old-fashioned in this country) of percentage composition. The carbohydrate food values are also based on old analyses, and it will appear curious to many readers to see beets and radishes classed in the same group as containing 6 per cent. carbohydrate. The calculation of food values in the sample diets is surely carried to an impossible and laborious degree of accuracy when the figures are worked out to hundredths of a gram, as on page 116. Included in the book are some interesting tables of subjects which receive little attention in the treatment of diabetes in this country. For instance, a complete list of the vitamin content of food is given ; another of the salt (NaCl) content of foods, and another of their acid or base content. Whether these subjects are of much importance in the management of the average (or any) case of diabetes seems doubtful, and it must complicate the arrangement of diet for the diabetic, who usually has sufficient to think about in arranging his grams of carbohydrate, protein, and fat. Altogether we do not think that in respect of simplicity Dr. Petty's schemes compare favourably with those in common use in Britain.

Dr. Izod Bennett's book, *The Practical Treatment of Diabetes*,[2] is much more human. It is also shorter and yet covers more ground, and will appeal almost more to the practitioner than to the patient. The diagnosis of diabetes mellitus is first dealt with clearly, and benign glycosuria (renal) is differentiated from true diabetes, emphasis being laid on the importance of blood sugar tests. His statement, however, that carbohydrate food makes little or no difference to the excretion of sugar in renal glycosuria is hardly true, and the test described on page 12 would lead to a certain number of renal glycosurics being classed as diabetics. Dr. Bennett next proceeds to the practical details of treatment, and it is refreshing (and probably true) to hear him state that diabetes is " in theory an incurable disease," though admitting of improvement in tolerance under adequate treatment. His statement of practical procedure in treatment is very clear, and he insists on the use of insulin whenever an adequate diet does not *completely* control glycosuria or even hyperglycaemia. He advocates initial starvation and gradual building up of the final diet, a method which some will think laborious and slow in these days of insulin. When at any stage of building up the diet glycosuria appears, he controls that with insulin and then gradually increases the diet and the insulin to meet it, acting on the assumption that one added unit will burn one additional gramme of carbohydrate. This would seem likely to lead to hyperglycaemia, because it is generally agreed that an average of one unit of insulin usually metabolizes about 5 grm.

[1] *Diabetes*. By Orlando H. Petty, M.D., F.A.C.P. Fifth enlarged edition. Philadelphia: J. A. Davis Company. 1931. (Pp. 231. 2 dollars net.)

[2] *The Practical Treatment of Diabetes*. By J. Izod Bennett, M.D., F.R.C.P. London: Constable and Co., Ltd. 1931. (Pp. 107, 4 figures. 6s. net.)

of carbohydrate. He describes very helpfully the adjustment of diet which may be necessary when one, two, or three daily injections of insulin are necessary. The technique of insulin injections, the symptoms and treatment of hypoglycaemia and coma, and indeed all the essential points, are well dealt with. Probably the inclusion of a section on how to deal with ordinary illnesses complicating diabetes would be most welcome to the average practitioner, who finds this his most difficult problem. Short sections on diabetes in pregnancy and in children and the relation of this disease to life assurance are among the best in the book, and we could wish them longer. In the arrangements of diets Dr. Bennett uses Dr. Lawrence's 5-gram tables from *The Diabetic Life*, and these are reproduced in full. It is unfortunate that the food values in the graduated diets on pages 39-45 do not agree with these food tables, and contain discrepancies which must puzzle the patient. The statement also (p. 47) that the eighth-day diet contains nearly 2,000 calories, whereas it is nearer 1,500, should be corrected.

THE SURGERY OF CHILDHOOD

Although the imprint "third fully remodelled and enlarged edition" on the title-page of The Surgery of Childhood,[3] by Professor DRACHTER and Dr. J. R. GOSSMANN of Munich, tells us that it is by no means a new book, yet this is the first example of the work to come under our notice. In their preface the authors refer to the wealth of material to be found in German and foreign books, on which it is founded in part; but it rests still more on their own observations and experience of many years' work in the surgical section of the Munich University Paediatric Clinic. Naturally it shows in many respects a personal complexion. Only those methods of treatment are discussed of which the authors have had experience, and of which they have proved the value. Consequently those subjects which have most interested them receive the greatest attention. The kidney is discussed much more fully than in other works on the subject, and many anomalies and disorders of the child's urinary tract are given that consideration which is their due, but which they do not always receive, considering their direct diagnostic importance in troubles of the child's abdomen.

Orthopaedic surgery is not included in this work, but readers are referred to the separate volume on that subject by Professors Hans Spitzy of Vienna and Fritz Lange of Munich. Notwithstanding this large omission the volume is a goodly one. To show the scale of the work it is only necessary to mention that 50 pages and 80 figures are devoted to the consideration of hare-lip and cleft palate, and 140 pages and 90 figures to the urogenital tract. Yet there is a certain want of proportion, for, while phimosis is illustrated by 26 coloured figures, tuberculosis of the lymphatic glands is dismissed in 5 pages and 2 figures. It is apparent that the authors are in general more keenly interested in the surgical pathology of childhood, and in developmental and congenital defects, than in the practical surgery of infancy. Nevertheless, although so great a part of the book is devoted to pathology, there is room in these 1,031 pages for much surgical information. Professor Gossmann's large experience has furnished many unusual clinical pictures, which he offers for our instruction.

Osteomyelitis and injuries of the bones and joints are included in this volume, though tuberculosis of the bones and joints is scarcely alluded to. Presumably it is relegated to the volume on orthopaedic surgery. This specialization has its drawbacks, seeing that the differential diagnosis between streptococcal and tuberculous spondylitis is as much a matter for the paediatric as for the orthopaedic surgeon, and many common questions of treatment are involved. On visiting the surgical wards of a children's hospital in this country the visitor cannot fail to notice the share which is taken in treatment by plaster-of-Paris, but in this book its equivalent in German—"gips" or gypsum—does not even appear in the index. Moreover, as far as our search goes, no splints or suchlike appliances are described. This is obviously not a handbook of surgical handicraft, and the reader who looks for that will in most instances be disappointed. But it is a valuable work of reference on the surgical pathology of childhood, and contains an extraordinarily full and valuable bibliography. It is illustrated and printed in that sumptuous style which, despite their poverty, is still available to German men of science.

[3] *Chirurgie des Kindesalters.* Von Professor R. Drachter und Dr. J. R. Gossmann. 3, völlig umgearbeitete und vermehrte Auflage. Leipzig: F. C. W. Vogel. (Pp. xvi + 1031; illustrated. M.125.)

RADIATION THERAPY

Dr. IRA KAPLAN'S volume, entitled *Practical Radiation Therapy*,[4] gives a general outline of what can be accomplished by *x* rays, radium, and endothermy. It commences with a brief historical account of *x* rays and radium, followed by a chapter on the elementary physics of the subject. Chapters on dosage and equipment are followed by details of the application of these methods to cases of every variety.

The cases are well described and profusely illustrated, and within the limits of the book the details given are reliable. The book undoubtedly provides an excellent bird's-eye view of the whole subject, but we feel that the author has really attempted to compress too much into the space at his disposal. There is scarcely a human ailment for which *x* rays are not suggested as a cure, and the headings of "Asthma," "Pertussis," and "Malignancy of the nose," taken at random, will illustrate the extent to which the author's faith has carried him. Those who know nothing about the subject will, however, discover the immense range and power of modern physical methods, while those who are expert will be stimulated by some of the cases which are described. The book, like all Messrs. Saunders's, is magnificently presented, and the illustrations are admirable.

MEDICO-LEGAL ASPECTS OF HAIR

From time to time cases occur in medico-legal practice in which considerable importance is attached to the recognition of hairs and fibres. In charges of criminal assault and in murder, fragments of hair may be found on a weapon or in other circumstances in which the identification of their source may be of vital importance. An example was the famous Crippen case, in which the identification of a few hairs alleged to be those of Belle Elmore was of the utmost value, as was a decision relative to the presence or absence of hair follicles in an alleged scar in a fragment of abdominal skin. More recently, in the trial of Podmore for murder at Southampton, the identification of a hair found on a hammer as an eyebrow hair of the victim had a certain importance, and in the Rouse trial there was a controversy over the origin of certain hairs found on the weapon with which the assault was supposed to have been committed. Many other cases could be quoted to show the importance of a knowledge of the distinguishing characteristics of hairs.

Although there are a number of textbooks or atlases in foreign languages devoted to a study of hairs, there

[4] *Practical Radiation Therapy.* By Ira I. Kaplan, B.S., M.D. With a special chapter on Applied X-Ray Physics by Carl B. Braestrup, B.Sc., P.E. Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 334; 227 figures. 27s. 6d. net.)

has been a singular lack of such books in English. This gap has, to a certain extent, been filled by the publication of a study of hairs in the mammalian group of animals, including a special study of human hair, by Professor John Glaister, jun.[5] The book contains a hundred and ten plates of animal hairs and thirty-four plates of illustrations of human hair, each plate containing a number of photomicrographs. The author has used actual photomicrographs throughout, and numbers of hairs are shown, not only in longitudinal plane, but in cross section. Many of these illustrations are very good indeed, and some of them should help in the recognition of hairs, but, as the author himself points out, no pictorial representation is of much value in actual identification. A very large number of the illustrations show nothing whatever of the structure of a hair—for example, the eight photographs in Plate 2 and others throughout the atlas; many such illustrations could be left out without detracting from the value of the book.

The work is arranged in nine sections. After a brief description of the process of section-cutting and photography, the author discusses the zoological classification of animals, and gives a general description of the coats of animals and the macroscopical appearances of their hairs. This section, which occupies about forty-eight pages, is very sketchy and devoid of scientific interest. The microscopical appearances of hairs in a longitudinal plane are then described, followed by a description of the microscopical appearances in transverse section, each order being dealt with in turn. This section is the best part of the book, some of the illustrations being distinctly valuable. Section V is a dissertation on the value of the described appearances in identification, again dealing with orders, sub-orders, and families. This method of description is most puzzling to the reader, who has to consult three different parts of the work for the description of a certain hair, and then two other parts for the illustrations in longitudinal plane and section. As there is no index or reference of any kind, the task of looking for the description of any particular hair is extremely difficult.

The author says: "In securing a photographic atlas showing the common appearance of the hairs and wools of the mammals, one of the chief objects of this work has been accomplished." If this is his chief aim we have nothing but commendation, but if the object is also to present a work of value in identification of hairs, then considerably more attention must be paid to details. Certain of the claims advanced rather detract from the value of the work; for example, we read that "it is possible to express an accurate opinion regarding the sex from which hairs have been derived only under certain circumstances." We agree only if "certain circumstances" other than the hair prove the sex, for the differences between hairs of different males may be much greater than the differences between male and female hairs. A further claim is made that from the description of the characters of animal hairs in the atlas the identification of the order, sub-order, and family may be made, but we have searched in vain for any systematic scheme of identification of order, sub-order, or family which would render this possible.

A rearrangement of the book to enable the reader readily to find what he seeks, the introduction of an index, and a careful re[illegible] breathing. [illegible]e text, should render this [illegible]work of infi[illegible] has [illegible] a pretty normal health, but even as it is we con[illegible]an exceptionally fine athlete [illegible] production of a volume enough, he had some consciousn[illegible] of an enormous amount tion, as he was wont to observe[illegible]s kind in the English differently from other people." A[illegible] the position of his heart on the right by his doctor many years ago.

[illegible]ndon, S.E. Rees Phillips,

[5] Glaister, jun., D.Sc., [illegible]diome Publication, [illegible]ustrated.)

PHYSIOLOGY OF THE CELL

A Text-Book of Experimental Cytology,[6] by James Gray, is a stimulating production. It is stated in the preface that the book, which represents the substance of a series of lectures, "was planned as a convenient means of introducing to students some conception of the complexity of ideas which arise from the study of the simplest of morphological units." It is largely an attempt to correlate cellular with physico-chemical phenomena, but the author is careful to warn us at the outset "that no single activity of the living cell has yet been analysed in physical terms."

The opening chapter is concerned with the cell as the unit of life. The cell is next considered as a physical unit, and it is shown that great caution must be exercised in applying the statistical laws of physical chemistry to a biological system. A discussion of cell dynamics is followed by an account of the cell as a colloidal system, a conception which "is probably one of the most important landmarks in the history of cytology." The physical nature of protoplasm and the properties of cell membranes and intercellular matrices are dealt with at some length; the author then gallantly but despairingly tackles the problem of the nucleus. The nucleus, he admits, has so far defeated all attempts at physico-chemical interpretation, and he confesses that "it seems impossible to point to any inanimate system (endowed with the known chemical or physical properties of the nucleus) which in any real way possesses the requisite complexity whereby it might reflect even feebly the biological facts." An interesting review is given of the work relating to some of the complex problems associated with the mitosis, division, shape, growth, and individual variability of cells, and with the equilibrium between the living cell and water. The important question of the permeability of the cell surface is discussed, and we find that it is impossible to prepare any inanimate structure which will resemble the cell surface in possessing the same power of allowing the passage of some substances and preventing that of others. "It is the specific nature of the cell surface which enables a living cell to maintain within itself the equilibrium which is essential to life," and it is therefore not surprising to learn that the nature of this surface is very imperfectly understood. The theoretical significance of such phenomena as the motility, respiration, and survival of spermatozoa, fertilization, and artificial parthenogenesis, is considered in a chapter on the germ cells; the final chapter is concerned with a discussion of the mechanism of contractility (muscular, amoeboid, and vibratile) and of phagocytosis.

The volume is to be strongly recommended to everyone interested in the physiology of the cell. From the reader's point of view the value of the data quoted is greatly enhanced by the careful and temperate criticism with which they are set forth. The author has presented his material from the mechanistic standpoint, because he considers that the mechanistic hypothesis has led "to a more orderly conception of biological data" than any other. Nevertheless, his treatment of the subject-matter is delightfully impartial, and the most uncompromising vitalist will surely admit that difficulties in interpretation are never minimized and that analogies are not overstressed. The fact is continually emphasized that our present knowledge of physics and chemistry carries us only a very short way towards a proper understanding of even the simplest cellular phenomena. We cannot but feel, however, that distant as we are from that ultimate goal of the mechanist

[6] *A Text-Book of Experimental Cytology*. By J. Gray, M.A., F.R.S. London: Cambridge University Press. 1931. (Pp. x + 516; 205 figures. 25s. net.)

—the complete interpretation of cell activity in terms of physics and chemistry—yet a considerable body of facts now exists concerning the physico-chemical properties of the living cell.

Mr. Gray's admirable exposition of the complexities and difficulties of the subject makes it clear that, at present, the only rational attitude towards cellular physiology is to be content to accumulate facts, and to formulate general theories only as a basis for further experimentation.

NOTES ON BOOKS

The appearance of a sixth edition of Beaumont and Dodd's *Recent Advances in Medicine*[1] is a sufficient measure of its popularity. Since its publication in 1924, twenty-two new volumes have been added to the Recent Advances Series, fifteen of which have dealt with the new knowledge in the special departments of medicine. In future "Beaumont and Dodds" will stand in much the same relation to these other works as philosophy does to the sciences which have separated from it. Therefore it seems that the volume will have to be planned on broader lines. Its scope will have to be wider. In the chapter on the heart the electrocardiographic changes occurring in coronary occlusion and in angina are not shown, while those that are represented can hardly be called recent. In a book of such general appeal the inclusion of so much biochemical detail, and of such tables, for example, as those for the estimation of basal metabolism, is of doubtful value to the student for whom the information is intended. Anyone performing routine estimations of basal metabolism will have his own special book of reference. Again, while sixty-four pages are devoted to special examinations and analyses of blood and urine, there is no mention of the important modern work on vitamins; the word vitamin does not even appear in the index. In the section on fevers no comment on the serum treatment of measles is made. "Beaumont and Dodds" is still an invaluable guidebook to newer medical knowledge, and is indispensable to the student working for higher medical examinations; but some revision of its plan would seem to be called for in view of its numerous progeny in the Recent Advances Series.

The second volume of the forty-first series of *International Clinics*[2] contains a remarkably large number of interesting papers by well-known writers relating to clinical medicine and surgery, medical ethics, syphilology, and hygiene. From these we may draw attention to the following: The present status of the post-operative pneumopathies, by Rudolph Matas of Tulane University, New Orleans; Widal and his work, by Pasteur Vallery-Radot; Bronchoscopy in the treatment of pulmonary diseases, by Chevalier Jackson of Philadelphia; Eye infections of dental origin, by O. Bjerrum of Copenhagen; The non-heredity of disease, by James J. Walsh of New York; Fever therapy in the treatment of syphilis, by J. F. Schamberg; and Syphilis as a problem in preventive medicine, by J. H. Stokes of Philadelphia.

In his medico-historical study of *The Girdle of Chastity*,[3] Mr. Eric John Dingwall, whose work on male infibulation was reviewed in these columns in 1925, has given a richly documented account of this instrument from its introduction in the twelfth century, when it was frequently applied to their wives by the Crusaders before their departure for the Holy Land, down to the present day, when, according to Mr. Dingwall, inquiries are still occasionally made for it of surgical instrument makers in London. A special chapter is devoted to an account of a Dr. John Moody, who published in 1848 a work entitled *A Medical Treatise with Principles and Observations to Preserve Chastity and Morality*, in which he described a special girdle for the prevention of masturbation and seduction. Chapters are also devoted to the forensic importance of the girdle of chastity and allusions to it in the literature from the fifteenth to the twentieth century. The text is illustrated by various types of girdles, of which the best known is in the Musée de Cluny, Paris.

[1] *Recent Advances in Medicine.* By G. E. Beaumont, D.M., F.R.C.P., D.P.H., and E. C. Dodds, M.D., Ph.D., B.Sc. Sixth edition. London: J. and A. Churchill. 1931. (Pp. xiv + 442; 51 figures. 12s. 6d.)

[2] *International Clinics.* Edited by Henry W. Cattell, M.D. Philadelphia Vol. ii. Forty-first series. London: J. B. Lippincott Company. 1931. (Pp. viii + 397; illustrated. 12s. 6d. net.)

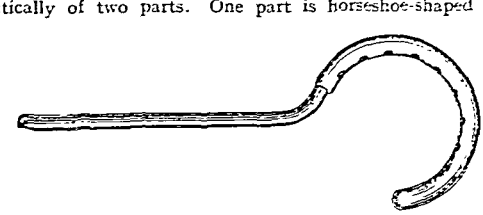
[3] *The Girdle of Chastity.* By Eric John Dingwall. London: G. Routledge and Sons, Ltd. 1931. (Pp. x + 171; 10 illustrations. 10s. 6d. net.)

PREPARATIONS AND APPLIANCES

A Tube for Delivering Oxygen during Anæsthesia

Dr. J. B. H. Holroyd (anæsthetist, Sheffield Royal Infirmary) writes: I think that most anæsthetists will agree that there are a certain number of anæsthesias where a slight deficiency of oxygen makes all the difference between a peaceful and a very stormy passage. Hitherto this deficiency has been made up by simply passing a rubber tube from the oxygen cylinder under the anæsthetic mask. This tube has a habit of slipping about under the mask, and in most cases the oxygen blast has been delivered against the side of the mask, the patient getting the supply of oxygen on the way in a most haphazard manner.

I have devised a tube with a view to the patient getting the full advantage of the oxygen blast. This tube consists practically of two parts. One part is horseshoe-shaped and

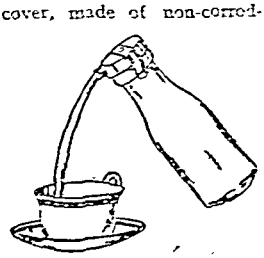


flattened, having on the inner side a series of holes to allow of the delivery of oxygen. The tip is blind, on the same principle as a gas-ring burner. This part rests round the hole for the mouth and nose in the Gamgee tissue. It is obvious that each of the holes delivers a jet of oxygen as near to the mouth and nose as possible. This makes it certain that the patient is getting a substantial amount of oxygen. The other part of the tube is roughly an angular turn of the first part, and is attached to the tube from the oxygen cylinder, and at the same time, by its position, is out of the way of the administrator. The tube may also be used for delivering anæsthetic vapours, either alone or with oxygen.

The tube was made for me by Mr. T. W. Tyler, 65, Scott Road, Sheffield, to whom I am much indebted for carrying out my instructions.

A Milk-bottle Cover

The "tru-por" milk-bottle cover, made of non-corrodable aluminium with a rubber washer, does away with the difficulty of pouring milk from the ordinary milk bottle. It can be clipped in a moment on to the mouth of the bottle after removing the dairyman's cardboard cap, thus converting it into a covered milk jug with a pouring spout. The price is 1s. 6d., and the manufacturers are "Tru-Por," 6, Finsbury Square, London, E.C.2.



An Adhesive Bandage

Messrs. Cuxson, Gerrard and Co., Ltd., surgical dressing makers of Oldbury, Birmingham, have prepared a self-supporting resin bandage ("ceraban") for the after-treatment of varicose veins, and for sprains, dislocations, and contusions. While free from rubber, this adhesive bandage possesses elastic properties, and when carefully applied to a limb it gives substantial support.

HEALTH OF LONDON SCHOOL CHILDREN

REPORT FOR 1930

In his report for 1930 on the health of London school children,* Dr. F. N. Kay Menzies, County Medical Officer of Health and School Medical Officer, states that there has been a continued and progressive development in almost every branch of the School Medical Service. He claims that the physical condition and comfort of the children has never been better, judged by the figures relating to personal hygiene and nutrition.

Entrant Children

On entering school, children are found to present a large number of defects. One-half of them have carious teeth; 10.3 per cent. of entrant boys and 9.2 per cent. of entrant girls are referred for treatment for enlarged tonsils and adenoids, as compared with 5.7 per cent. of the 8-year-old and 3.6 per cent. of the 12-year-old children. Other conditions from which the entrants suffer to a much greater degree than the older children are ear discharge, external eye disease, lung trouble (chiefly bronchitis of rickety origin), and rickety deformities.

A special examination was made of 1,638 unselected children, aged 5, in thirty-three London elementary schools by three medical officers, who confined their examination entirely to the detection of nine bony abnormalities commonly associated with rickets; three or more signs of rickets were found in percentages varying from 25.9 in "fair" schools to 50.2 in "poor" schools. The conclusion drawn is that much improvement is still required in housing conditions and in training in motherhood. In a digital examination of 1,361 of these children, 174 (12.8 per cent.) were found to have been already operated on for the removal of adenoids. Of the remainder, the nasopharynx was normal in only 237 (17.4 per cent.); tonsillar enlargement with or without sepsis was present in 193 (14.3 per cent.), and tonsillar sepsis without enlargement and without adenoids was found in 10 (0.7 per cent.). Adenoids, with or without tonsillar enlargement, were present in 747 (54.9 per cent.). It is noteworthy, in contrast to the distribution of the signs of rickets, that the proportion of children free from adenoids was highest in the poorest group of schools. The importance of digital examination for adenoids was brought out by a subsequent re-examination of 490 of these children by the same observer about a year later, in which he recorded only symptoms related by the parent or teacher and those observed by himself without a digital examination. With digital examination, 30 per cent. of the mouth-breathers showed no signs of adenoids, [illegible]e of those showing extensive adenoids only 29.3 per [illegible] were mouth-breathers.

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from

Examination of Leavers

circum.Council has voluntarily instituted for a 14-year age stances [illegible] examination, which takes place in the differences[illegible]ious to [illegible] that in which the children are due to greater t[illegible]ool. Consi[illegible]erable improvement was found in hairs. A[illegible], as compa[illegible]ed with the 12-year-old group, in of the char[illegible]personal hyg[illegible]ene, visual acuity, tonsillar and tion of the [illegible]owths, otorrhoea, anaemia, and heart defect. [illegible] boys the incidence of spinal and other deformities was also distinctly less, but among the girls these deformities were found in increased ratios. Great care is evidently necessary in the case of girls, aged 12 to 16, who are growing rapidly, to correct faulty postures and give periods of recumbent rest.

Other points of interest are that, for the last three or four years, there has been a greater readiness to have enlarged tonsils and adenoids treated; this has resulted in a smaller number of cases of discharging ears, and an improvement in hearing capacity. In view of the unsatisfactory nature of the tests of hearing in general use, trial has been made of the "audiometer," a gramophone fitted with a magnetic pick-up, which enables the sound to be transmitted to a number of single head-phones; as many as forty children can be tested at the same time. All children requiring operations for tonsils and adenoids are now dealt with as in-patients, being kept at centres or hospitals for two nights after the operation.

With regard to the health of pupils in secondary and trade schools, where deterioration of the teeth and of vision has been found to occur in the children from 12 to 15, principals and parents are advised to ensure the payment of regular visits to the dentist and oculist.

Basement Children

A special inquiry was made into the medical history, physical condition, and school history of 254 children living in basements, two comparable children not living in basements being examined with each basement dweller. A history of diphtheria among children living in basements was twice as frequent (5.1 per cent.) as that among the controls (2.5 per cent.). At most ages the former compared unfavourably with the latter in height and weight. Basement children were not so well nourished, 35.7 per cent. being definitely under-nourished, compared with 19.1 per cent. of the control group. Throat and nose affections were found in 7.4 per cent. of the basement dwellers and in 3.3 per cent. of the controls. Symptoms of rheumatism were found in 2.2 per cent. of the children living in basements and in 0.8 per cent. of the non-basement children. The educational inquiry revealed that fewer children living in basements were making normal progress at school than among the children selected as their controls; the head teachers returned 43.6 per cent. of basement children and 24.8 per cent. of the controls as definitely backward; 11.8 per cent. of the basement dwellers and 5.9 per cent. of the controls were irregular in their attendance at school.

Delinquent Children

During the year 785 children were admitted to the Ponton Road place of detention. In view of the general impression that most of such children are mentally defective, it is interesting to learn that, while serious mental retardation was present in the majority, only 7.5 per cent. of 695 examined were found to be certifiably mentally deficient. For educational levels Professor Burt's standardized reading and calculation tests were used, and the Stanford revision of Binet's scale and Healy's form boards to estimate mental ages. In addition, a careful Porteus maze test was made in most of the cases; it serves as a test of intelligence as expressed in the form of practical ability as distinct from intelligence which requires for its expression the use of verbal imagery. A comparison of the mental, educational, and Porteus levels brought out clearly the failure of achievement; while judged by their mental levels 26.2 per cent. were up to or above their chronological age, only 10.5 per cent. had reached this level as regards their educational attainments, and 8.8 per cent. as judged by the Porteus maze test.

The physical condition of the delinquents was very inferior to that of the average London school child; this inferiority is in some degree inherent, but much of it is acquired and capable of being remedied. A careful examination for congenital syphilis, often held responsible for delinquency, failed to give evidence of this condition in more than 0.9 per cent. of the children. The very indifferent physical make-up of the delinquent has little direct bearing on the delinquency, but sheds a flood of light on the environment in which he lives. Psychotherapy has only a very limited field in child delinquency. The home and school environments contain the key to the solution of the majority of child delinquent cases; here there is a valuable field for the social workers of child guidance clinics.

Ophthalmia

A feature of the year was the transfer of twenty-three schools or children's homes from the former Poor Law authorities to the L.C.C. Education Committee. Arrange-

* London County Council. Annual Report of the Council, 1930. Vol. iii (Part ii). Public Health (Report for the year 1930 of the School Medical Officer). London: P. S. King and Son, Ltd. 1931. No. 2851. (1s. 6d.)

ments were at once made to standardize the medical supervision and treatment. Several cases of trachoma occurred in one of the residential schools and in a large philanthropic orphanage, the managers of which welcomed the assistance of the London School Medical Service. Subsequently at the orphanage all the 360 children were inspected; 93 were suffering from some form of conjunctival disease, mostly "follicular conjunctivitis." Of these, 18 showed signs of granular conjunctivitis suggestive of trachoma. On being seen by Mr. Bishop Harman, two were sent to the White Oak Hospital, Swanley, as suffering from trachoma; the remainder were treated at the orphanage. No child requiring treatment was allowed to take up swimming unless specially permitted.

At the Anerley Residential School, of 564 children, 190 were affected with some form of conjunctival disease. Of these, ten were admitted to Swanley as cases of trachoma. Extreme care is taken to ensure the use of clean towels in this school. Immediately after use each towel is placed in a receptacle and taken to the laundry, and no towel (face or bath) is used a second time unless it has been washed. Liquid soap is used instead of a common piece of soap. Every child has fresh water for washing and bathing; the water of the swimming bath is changed and the bath thoroughly cleansed once a week.

Rheumatism

Rheumatism now takes the first place among diseases which produce chronic invalidity in the children. An analysis of 1,028 attacks of all forms of rheumatism—rheumatic fever, subacute rheumatism, and chorea—shows that attacks are more evenly distributed throughout the year than is generally thought. Although the first and last quarters of the year are usually accepted as the peak period for rheumatism, 41 per cent. of the rheumatic attacks occurred in the second and third quarters; this means that pressure on the available beds is heavy throughout the year. Another valuable figure for administrative purposes, deduced from the statistics available, is that there are roughly three rheumatic girls to two rheumatic boys. On an examination of the history of 1,709 rheumatic children, it was found that 11 per cent. of the first attacks occurred in the 6 to 7-year-old period, and 29 per cent. in the 7 to 8 age period. Of 1,287 children treated in hospital, 11.6 per cent. suffered from rheumatic fever, 60.9 per cent. from subacute rheumatism, and 27.5 per cent. from chorea.

Two sets of statistics are given which throw some light on the proportion of rheumatic children in whom the heart is attacked. In children suffering from rheumatism of a severe nature and discharged from Carshalton or Brentwood, 55 per cent. of the total number (1,325) had heart disease; in 26 per cent. of the total valvular disease had been established. A more valuable figure is that obtained from the rheumatism supervisory centres, which include children affected by the milder manifestations of the disease, in addition to others who have been more severely attacked. Of 1,529 children diagnosed as definitely rheumatic, the heart was affected in 41 per cent., and valvular disease of the heart was present in 14 per cent.

The value of prolonged hospital treatment has been brought out by Dr. Warner, who pointed out that although the cases sent to Carshalton were initially more severe than those treated by other methods, the relapses in the first three years represent only half the number met with in cases which have not had prolonged institutional treatment.

Practically all these rheumatic children are forbidden to swim for a time after their return from hospital. Of 810 children discharged from hospital with normal hearts, 65.4 per cent. returned to an elementary school with no restrictions, 24.3 per cent. were not allowed to drill or play games, 8.4 per cent. were sent to a school for the physically defective, and 1.9 per cent. were invalids. Of the 272 children discharged with the heart affected, the corresponding figures were 11.8, 23.2, 62.1, and 2.9 per cent.

At the Hammersmith supervisory centre, Dr. Gerald Slot finds that the greatest difficulty is to get the parents of patients in early cases to realize the importance of rest and longer sleep at night. In view of the fact that once children are known to be definitely rheumatic, they are never free from a risk of further manifestations, Dr. T. W. Preston does not discharge them from the supervisory centre until they leave school; the children are seen at intervals of six or twelve months to make sure that they are still well. As regards the children brought to the centre whose condition is doubtful, he has gained the impression that many improve as the result of milk and cod-liver oil given in school; in those cases in which glucose has been recommended, the results have been less successful than some modern teaching would lead one to hope.

Small-pox

During the year 1,774 children were notified as suffering from small-pox; the total number notified in London at all ages being 5,149. The greatest incidence occurred in the north-eastern division, where 1,124 cases of children were notified. Two deaths occurred, the causes of the first being reported as (*a*) encephalomyelitis, (*b*) small-pox; and of the second (*a*) pyaemia, cause unknown, (*b*) small-pox discrete modified. In the majority of cases, children suffering from small-pox had not attended school in an infectious condition. When there was any evidence of the possibility of spread of infection in the school, a special examination of the children in the school was made by one of the assistant medical officers, and the affected schools were visited daily by the school nurses for a period of nineteen days from the date of attendance of the last case in the school; as a result of their reports 128 cases were notified. The home contacts of cases of small-pox were allowed to return to school, provided that arrangements could be made for their daily examination in school by the school medical or school nursing staffs. Later in the year, by the engagement of extra nursing staff, practically all the contacts were enabled to attend school.

Facilities for vaccination on the school premises by public vaccinators were granted whenever applications for vaccination were received from the parents. Comparatively few applications were sent in, and only about 300 children were vaccinated with the written consent of the parents. In another part of the report, however, some evidence is forthcoming that when small-pox occurs in an area where vaccination in infancy is commonly neglected, a number of school children are given the protection of vaccination. The proportion of leavers vaccinated in four out of five London boroughs where small-pox was especially prevalent in 1928 is greater than the percentage of entrants vaccinated; for the five boroughs the comparative percentages are 50 and 53.

Diphtheria Carriers

In all, 128 persistent carriers were dealt with at the special clinics established for the treatment of diphtheria carriers at the London, St. Mary's, and Guy's Hospitals. Dr. John Eyre emphasizes once more the insufficiency of one routine swab as a means of detection of carriers. Diphtheria bacilli, when not revealed in first smears made from twenty-four-hour inspissated serum slopes, were sometimes found when plated on Douglas's differential medium. At Guy's Hospital persistent carriers with negative nasal swabbings are found to clear up rapidly after tonsillectomy. A case is recorded of a nasal carrier of twelve months' duration in which the routine examination on the first visit to the clinic revealed a foreign body in the nose; after removal of this body and healing of the ulceration the swabs became negative. Vaccine therapy was used with good effect at all three clinics.

The association of members of the Chartered Society of Massage and Medical Gymnastics in private practice has published a new edition of its directory giving the names, addresses, and qualifications of members, and the work they are prepared to undertake. They have adopted regulations which pledge them to work only under the direction of a registered medical practitioner. Medical practitioners may obtain copies (post free) from the secretary of the Private Practitioners' Association, Hygeia, Falmouth, Cornwall.

British Medical Journal

SATURDAY, OCTOBER 3rd, 1931

DOSAGE OF DIPHTHERIA ANTITOXIN

During the past thirty-five years probably some millions of patients have been treated with diphtheria antitoxin, a medicament whose specific activity can be measured with reasonable precision ; yet even to-day the proper dosage is unsettled. The clinician, with scientific humility, will wonder how firmly founded are many of our ordinary medical practices and beliefs if in this field, with its incomparable wealth of clinical data, we have not reached agreement. In the treatment of diphtheria the dosage recommended ranges from 2,000 units in a mild infection (Goodall) to 300,000 in a severe attack (Bie). What is the reasonable *via media* which the conscientious physician can follow?

When faced with a patient suffering from diphtheria we are bound to ask how much of the specific toxin of the diphtheria bacillus is still in the circulation and therefore accessible to attack by antitoxin, how much is already intracellular and therefore wholly or almost wholly beyond reach of antitoxin, and, lastly, how much damage has already been done to tissue or function, and whether any of this damage is remediable. We know that very little antitoxin is necessary to prevent the ingress into the circulation of further toxin produced by the bacilli in the throat. A human being naturally immune and negative to the Schick test, whose total blood contains perhaps as small a quantity as 200 units of antitoxin, is safe, even if virulent diphtheria bacilli lodge on the tonsil. There are a few observations which will help us to decide how much toxin a patient may have absorbed. It is known, as the result of unfortunate accidents in the early history of active immunization against diphtheria, that approximately thirty times the minimal amount of toxin that would be lethal for a guinea-pig will kill susceptible children in three to six days, and that about 300 lethal doses may kill children within twenty-four hours. This line of argument would suggest that a moderate number of units of antitoxin given intravenously would be sufficient to neutralize the total amount of toxin present in the average patient and still susceptible to attack by antitoxin. There still remains for consideration toxin already intracellular and united with the tissue. Here, a pretty series of experiments by Glenny and Hopkins are helpful. These workers injected intracutaneously into guinea-pigs a small dose of toxin sufficient to produce an inflamed area nearly an inch in diameter, appearing in about eighteen hours. They inquired what multiple of the amount of antitoxin (which would, if mixed with the toxin, completely neutralize it) must be injected at intervals after the toxin in order to prevent the appearance of the skin reaction. If given intravenously seventy minutes after the toxin, 50,000 multiples would not completely prevent the reaction, nor would 500,000 multiples when injected eighty-five minutes after the toxin. This amount of toxin, therefore, had entrenched itself impregnably in the cells within an hour and a half. In another series, 10 million multiples of antitoxin given intravenously four hours after the intracutaneous injection of toxin could not suppress the reaction. It proved impossible to save the life of an animal if antitoxin was delayed for two hours. It is reasonable, therefore, to conclude that no practicable excess of antitoxin can overtake toxin which has had a few hours' start. The clinician cannot well avoid the thought that but little time is granted him for the immediate administration of the one effective dose which will neutralize the toxin—accumulated but still accessible—and save his patient, if he can be saved ; and that controlled laboratory experiment offers no justification for dividing the effective quantity of antitoxin into separate doses to be given at intervals. In the researches mentioned above there appears also a striking illustration of the well-known superiority of intravenous over subcutaneous administration. A dose of 1,000 units of antitoxin, if given subcutaneously half an hour before the intracutaneous injection of toxin, reduced the reaction to half the expected size, whereas one-hundredth of the amount of antitoxin—that is, 10 units—given intravenously even half an hour after the toxin was equally effective.

With a knowledge of these facts, and with the mass of clinical experience now available, how can we decide what is to be the effective dose? The route will be intravenous or intramuscular, and not subcutaneous—whether we agree or not with Banks that "a haphazard subcutaneous injection of serum is equivalent to postponing operation on a gangrenous appendix for three days." The experienced man with facilities available tends to choose the intravenous route in all severe and even moderate attacks, though the Ministry of Health, with the general practitioner in mind, does not consider that there is justification for the general use of the intravenous method. The Ministry emphasizes early and adequate dosage, and suggests a minimum of 8,000 units in mild attacks seen early, and a maximum of 30,000 units for a patient severely ill, admitted late in the attack. American practice is represented by Stimson's range—from 5,000 in a very mild attack to 25,000 injected intravenously in severe cases. If this dosage is doubled for the intramuscular route, we approach the scale of 5,000 to 60,000 quoted by Ker and by Park. Banks and McCraken have recently urged intravenous dosage up to 140,000 units in severe attacks, and Bie in Copenhagen has given 300,000. Probably the moderate man will conclude that the recommendation of the Ministry of Health is a good general guide, and will give 8,000 to 10,000 units intramuscularly to the patient with a mild attack, and 30,000 to 50,000 units intravenously to the child desperately ill, the ever urgent indication being for early administration. The attempt to see what damage to tissue and function is remediable is outside our present discussion.

The Beit trustees recently commented on the increasing number of Fellows who choose the indirect attack on microbic disease by research in biochemistry Specialists in infectious fevers will welcome the help of the biochemists and pharmacologists who are now investigating the disturbed metabolism of diphtheria, promising results from the use of glucose and insulin are already being recorded In investigations of this kind lies the hope of further reduction of mortality in attacks of diphtheria already beyond the reach of antitoxin treatment

DIET AND CARIES

The Committee upon Dental Disease working under the Medical Research Council, has just issued an interim report on the influence of diet on caries in children's teeth[1] In the introduction to this pamphlet it is explained that the Council is publishing a series of reports describing Mrs Mellanby's work on diet in relation to the development of the teeth and jaws Two of these reports, which set forth the results of Mrs Mellanby's experiments on animals have already been noticed in our columns and a third report by the same author, describing the effects of diet upon human teeth, will be published sometime during the next few months The knowledge obtained from this experimental work appeared to the Medical Research Council to be of such great practical significance that it was determined to test the powers of this new weapon of preventive medicine by a large scale trial Such an investigation was organized in Birmingham in 1927 and the Council considers that the results already obtained in this trial justify the publication of an interim report

The investigation, which was carried out under the supervision of Mrs Mellanby and Dr Langdon consisted in studying the influence of the addition of vitamin D to the diet of children living under uniform conditions The children who numbered about 800, and were of ages from 2½ to 16 years, lived in residential institutions in Birmingham Two series of investigations were made In the first series three groups of children, each living in a different institution, were studied The additions to the diet were as follows one group received about an ounce of treacle daily, a second group about half an ounce of olive oil, and a third group about half an ounce of cod liver oil In the second series two groups of children in the same institution were compared One group received olive oil and the other group olive oil to which irradiated ergosterol had been added (the preparation used was radiostol which was supplied free of charge by British Drug Houses) The teeth of the children were examined every six months, and the report deals with observations extending over two years Continuous observations were made on about eighty children in each group

The question which the present report seeks to answer is "Can the incidence and rate of progress of caries in teeth already erupted be lessened by the adoption of dietetic measures?" The results published by Mrs Mellanby and her fellow workers show that "In groups of children, numbering from sixty five to eighty six, living under similar institutional conditions, each group receiving a certain specific addition to the standard dietary, over a period of two years, the progress of caries in the permanent teeth has been significantly retarded in those children receiving an added ration of fat soluble vitamins as compared with those whose additions consisted of treacle and olive oil respectively the increase of caries in the vitamin group whether measured by its incidence or its extent being approximately one third of that in the other groups" Moreover the second investigation shows that administration of irradiated ergosterol led to a correspondingly favourable result

The report is short and inexpensive—less than twenty pages at the price of 6d—but it contains full statistical details of the figures on which the authors conclusions are based and should be studied by all who are interested in the hygiene of childhood It is an interim report, and deals with results produced in the short period of two years but the hope may reasonably be entertained that more prolonged treatment along the same lines will yield even more striking results The evidence already obtained shows however that the incidence and the degree of dental caries in children can be greatly lessened by simple dietetic measures, hence it follows that this disability so common as to be almost universal among our people must be regarded as a disease that is at least in part, preventable The organization and the prosecution of long-drawn-out observations on the scale of those described must have been costly both in time and in labour, and those who took part in the inquiry at Birmingham are to be congratulated on the fact that their efforts have produced results of great potential importance for the future health of the nation

NUTRITIONAL ANAEMIA IN INFANCY

During the past five years Dr Helen Mackay and her colleagues have been making an investigation into the prevalence, etiology, and prevention of anaemia in young babies, and the results of this extensive research are now published,[2] together with a statistical analysis of the data by Dr A Bradford Hill A review of the literature of anaemia in infancy shows that there is no general agreement concerning cause course or treatment whether the infants considered be premature or full term Some hold that the anaemia of the full term infant is analogous to the chlorosis of adolescence others that it is due to the toxic effects of cow's milk others that it is secondary to a variety of factors—such as infections and dietetic error—while a few others,

[1] Medical Research Council Special Report Series No 158 The Influence of Diet on Caries in Children's Teeth (Interim Report) By the Committee upon Dental Disease London H.M Stationery Office 1931 (6d net)

areas shows that these are now lower in the towns than in rural districts in Germany, Switzerland, Holland, Belgium, Sweden, Finland, and Bulgaria. In Italy the mortality in rural districts is now exactly the same as in the towns, and the rural mortality is only a little lower than the urban in England and Wales, Denmark, and Norway. At the present time only France, Spain, Hungary, Scotland, and the Irish Free State show a fairly marked urban excess. Although formerly infantile mortality was much higher in towns than in the country, it is now almost everywhere in Central Europe lower in towns than in rural districts. In Southern Europe, on the contrary, there seems to be little difference between urban and rural infant mortality, and in England and Wales both the birth rate and infantile mortality are higher in towns than in rural districts. After the age of 40 the urban death rates are everywhere higher than the rural death rates, but in youth, especially in the case of the female sex, the position of the rural population in this respect is in most countries unfavourable. Tuberculosis generally causes a higher mortality among young women in rural districts than in towns, and more deaths are due to respiratory diseases, including whooping-cough, in rural districts than in towns. The maximum death rates for the other epidemic diseases of childhood occur later in life in rural than in urban areas. It should, however, be borne in mind that the notification of infectious diseases is almost invariably less complete in rural districts.

FARADAY'S OBSERVATIONS ON MENTAL INERTIA

In the British Association Centenary Number of *Discovery* (for October) Professor D. F. Fraser-Harris contributes some interesting notes on the principle of mental inertia, with special reference to Faraday's conception of the subject. His remark that early in his career Faraday was thinking of *mental* phenomena in the most comprehensive terms is a timely one, since the impressive developments of Faraday's researches in physical science are apt to obscure the value of his speculations in other departments of knowledge. In a lecture entitled, "Observations on the inertia of the mind," which he delivered in his twenty-seventh year to the City Philosophical Society in London in 1818, Faraday declared:

> "There is a power in natural philosophy of an influence universal and yet withal so obscure in its nature, so unobtrusive, that for many years no idea of it existed. It is called 'inertia.' It tends to retain every body in its present state and seems like the spirit of constancy impressed upon matter. Whatever is in motion is by it retained in motion, and whatever is at rest remains at rest under its sway. It opposes every *new* influence and strengthens every *old* one. Is there anything in the human mind which seems analogous to this power? Is there no spiritual effect comparable to this corporeal one? . . . I have endeavoured to establish the analogy between habit of industry and the inertia of a moving body. I have said that the inertia of matter is continually blended with other forces which complex its results and render them apparently contrary to their cause, and also that in this respect it resembles the inertia of the mind."

Professor Fraser-Harris's article possesses also an extrinsic interest, for he expounded his own theory of inertia for the first time at the British Medical Association's meeting at Ipswich in 1900, unaware that Faraday had read a paper on the subject about eighty years before that date.

OLD MEDICAL BOOK CATALOGUES

The market for second-hand medical books published from the fifteenth to the nineteenth century is still flourishing, in spite of the world depression. These books were literally a drug in the market until quite recently. The catalogues announcing them were poorly printed on indifferent paper, or they were to be found in the 2d. or 6d. box outside the shop door as not worth the cataloguing. Times are now changed; from London, from Paris, from Amsterdam, from Leipzig, and from Vienna come quartos and large octavo volumes beautifully printed on excellent paper, gorgeously illustrated, and annotated. Books which are an education in themselves and deserve to be kept and bound if only one had room for them on one's shelves. But then the prices asked! Each catalogue has to be studied carefully as to its origin. All are marked in plain figures, as the shops say, but 4.50 gulden is very different from 4.50 lire, and 200 Swiss francs are by no means identical with the francs of Paris, nor is the reichsmark the equivalent of the Austrian schilling; so it behoves the buyer to be wary before he orders. He learns by experience when he has been thinking in francs and the bill arrives in gulden. It is like the lady who, attending the auction of antique silver, was simple enough to believe that she was bidding by the piece, when in reality she was buying by the ounce.

MEDICAL BRANCHES OF THE SERVICES

A note in the *Journal* of August 29th announcing the Educational Number, 1931, made brief reference to the present terms of service and remuneration of officers of the R.N.M.S., R.A.M.C., and R.A.F.M.S., and commended these Services to the notice of younger members of the profession. The wording of this sentence needs modification, in the light of recent events and decisions. Members will recollect that the Council of the British Medical Association issued three reports on the medical branches of the fighting Services (*Supplement*, April 25th, 1931, p. 152), pointing out improvements both in pay and in conditions of employment which the Association considers imperative if the medical services of the Navy, Army, and Air Force are to attract an adequate number of new entrants. These reports having been approved by the Representative Meeting on July 21st, 1931, the official policy expressed therein now obtains. The Association has presented documentary and oral evidence before the committee which was appointed by the Prime Minister to investigate the causes of diminished recruitment of medical officers to the fighting Services, and it is understood that this committee is now engaged in preparing its report.

Before leaving Scotland the King invested Dr. Alexander Hendry, Surgeon Apothecary to His Majesty's Household at Balmoral, with the insignia of Knight Commander of the Royal Victorian Order, and conferred on him the honour of knighthood.

BRITISH ASSOCIATION CENTENARY

SCIENTIFIC PROCEEDINGS

The British Association for the Advancement of Science continued its daily sectional meetings which began last week; a note on the first day's discussions in the Sections of Physiology and Psychology was published in our last issue. These two Sections have been dealing with various topics of medical interest, as also has the Section of Chemistry, and some of the more salient points deserve attention.

SECTION OF PHYSIOLOGY

Biological Nature of the Viruses

Dr. H. H. Dale, F.R.S., in his presidential address to the Physiological Section, introduced a discussion of the biological nature of the viruses by raising the question as to the minimum degree of organization which could be reasonably attributed to a living organism. He remarked that it was interesting to note that Edward Jenner was dealing with small-pox and vaccinia—characteristic virus infections—long before there was any hint of the connexion of visible bacteria with disease. Pasteur also was confronted by another typical example of a virus infection in the case of rabies. Since the pioneer observations of Ivanovski's work in 1892 on the mosaic disease of the tobacco plant, and Loeffler and Frosch's demonstration about the same time that the infection of foot-and-mouth disease was due to something microscopically invisible, which passed easily through ordinary bacteria-proof filters, the study of viruses had progressed until they were recognized now as the causative agents of many of the more serious infections of man, animals, and plants. Dr. Dale then proceeded to a critical examination of what had hitherto been considered the standard characteristics of a virus. Microscopical visibility was obviously a loose term, and, recently, progress had been rapid in the direction of bringing into the visible range minute bodies associated with an increasing number of viruses; such enhanced visibility had thrown doubt on the position of the Rickettsia group of infections, and the limit of the process of exclusion on such lines could hardly be forecast. Another line of criticism, while not insisting on microscopical invisibility, demanded more evidence that the minute bodies seen or photographed were real infective agents, and not merely products of a perverted metabolism due to such infection. The physical evidence obtained by filtration through porous fabrics and colloidal membranes, and by measurement of the rates of diffusion, was simply concerned with the size of the units of infective material, and had to be taken in conjunction with the microscopical evidence. There was no fixed limit of filterability now; the only proper use of a filter in this connexion was to give a quantitative measure of the maximum size of the particles which passed through it. The third negative characteristic of a virus—namely, its failure to propagate itself except in the presence of living cells which it infected—might obviously provide another unstable boundary, shifting with the advance in knowledge and technique. A good example of the central difficulty which was to be tackled by the discussion was the action of the herpes virus, one conception of which was that it was a distinct ultra-microscopic organism, the person liable to attack being a carrier in whom the virus could be awakened to pathogenic activity and multiplication by injuries which weakened the normal resistance of his cells to such an invasion. The other conception regarded the virus as a pathogenic principle produced by the cell in response to injury, and awakening other cells to further production when transmitted to them.

Dr. Dale hoped that, even though they might be forced to the conclusion that some viruses consisted of units too minute to be classed as living organisms, they might avoid an alternative conception which referred to them as "enzymes." No evidence was available that any enzyme had the properties of a virus, or that any virus had those of an enzyme. The virus might be regarded as a transmissible toxin when it caused the infected cell to disintegrate, or as a transmissible stimulant when it induced an abnormal proliferation. In either case the special characteristic of a virus must be postulated as a power of imposing on the cell which it infected an altered metabolism, which led to its own reproduction. The study of infection during the past century had resulted in its becoming the epoch of the visible bacteria; the new century seemed likely to be an epoch of no less important discoveries concerning the viruses.

Dr. T. M. Rivers said he preferred a positive characterization of the viruses, which would emphasize the intimate relation between them and their host cells, rather than the negative characterization by their properties utilized by Dr. Dale. If it was true that viruses could be cultivated on lifeless media, they were autonomous living agents, but it was doubtful at present whether this conclusion could legitimately be drawn from the data, which, though numerous, were of uncertain value. There was no conclusive proof yet that viruses were filterable forms of bacteria, nor had it been established that a clinical entity was due to a single agent. Some virus maladies were induced by more than one such agent, while others appeared to be produced by the concerted action of viruses and bacteria. While it was undeniable that viruses were present in certain types of cells exhibiting inclusion bodies, there was still doubt about the nature of the small intracellular coccoid bodies. Some fowl tumours were undoubtedly caused by agents separable from cells, and this fact might have a significance in the case of human cancer, though it was by no means certain that all neoplasms arose through the activity of such agents.

Dr. J. Henderson Smith remarked that viruses in plants had essentially the same characters as those in animals, but there were differences in their effects; thus, for example, plants could not develop an active immunity. It seemed reasonable at present to adopt a provisional hypothesis that plant viruses were parasitic organisms, not necessarily bacterial or protozoal, but having special characters imposed by their small size.

Dr. S. P. Bedson gave reasons for his belief that filterable viruses were independent living entities. Although the size of these particles varied in the different viruses, each species maintained a constant order of size irrespective of the environment in which it was multiplying. Moreover, each species preserved its antigenic individuality irrespective of its environment. If a human strain of herpes was adapted to the guinea-pig and an anti-herpes serum prepared therefrom, this serum would neutralize specifically human and rabbit strains of herpes virus as well as the guinea-pig strain. Similar phenomena could be demonstrated by the complement-fixation test, and be applied equally to other viruses.

Physiological Aspects of Muscular Exercise

Professor A. V. Hill, F.R.S., critically examined the views held with regard to the physiology of muscular exercise in man. Until the end of 1926 the current theories of muscular contraction had been enunciated in terms of lactic acid, and of the energy provided by its formation from glycogen. The discovery of creatine-phosphoric acid at the beginning of 1927, and the later discovery by Lundsgaard, in 1930, that muscles treated with iodo-acetic acid would contract apparently normally, but without the production of lactic acid, involved readjustment and restatement of the conclusions based on earlier work. The present view was that the immediate chemical change in a stimulated muscle was the breakdown of creatine-phosphoric acid; this product was immediately re-formed at the expense of energy liberated by the production of lactic acid, and, later, by the oxidative restoration of this lactic acid to glycogen.

Professor J. Barcroft, F.R.S., dealt with the limits placed by altitude on physical exercise. Italian researches had shown that man could live at an atmospheric pressure of about 110 mm. Hg if he breathed oxygen, but could do little or no work. More recent investigations by himself, Douglas Kendal, and Margaria had, however, indicated that, by breathing oxygen at a pressure of 170 mm., a

man could step up 1,000 feet in an hour. This pressure was much lower than that on the top of Mount Everest; it followed that if the respiratory passages were supplied with oxygen, the feat of climbing the highest altitudes was not impossible. The problem of climbing such a mountain was one for an engineer who specialized in designing apparatus for promoting respiration in such special circumstances rather than for the mountaineer. The problems concerned included how a man could carry 30 cubic feet of oxygen; how he could rid himself of the carbonic acid if he rebreathed the oxygen; and how he could cope with such incidental difficulties as the freezing of the expired water vapour. By prosecuting investigation on these lines much less expenditure of money and lives would be entailed than was involved in the equipping of successive expeditions to the Himalayas.

Resuscitation Problems

A valuable discussion on problems of resuscitation, including asphyxia, electrocution, and drowning, was opened by Sir E. Sharpey-Schafer, F.R.S., who reviewed the circumstances which give rise to asphyxia, and the physiological conditions involved. He discussed the way in which the various methods of artificial respiration had developed, and emphasized the importance of selecting a procedure which would be simple of application and independent of apparatus. He dealt in detail with the prone pressure method, which was efficient, simple, involved no fatigue, required only one operator, and obviated any obstruction by the tongue, soft palate, or mucus. He gave instances of fatal results in cases of drowning due to turning the patient from the prone to the supine position, and commented on the danger which might ensue if the medical practitioner was uninstructed in such respects. He regretted that artificial respiration was not taught in most medical schools, and that few medical students or doctors had ever practised it. The prone pressure method had a physiological basis, when the centre in the bulb was no longer paralysed by an excess of CO_2, owing to the renewal of air in the lungs being started by the movements of the chest, it responded to each such pressure with an inspiration; in other words, each expiration caused a respiratory movement—the well-known Hering-Breuer phenomenon. In this way the method promoted the recovery of natural respiration, and might be regarded as physiological, although the direct action of the operator in the first instance was to produce expiration. Adrenaline should be given as soon as possible to promote recovery of the heart and of the arterial tone, it should preferably be injected directly into the heart in a dose of about 20 minims of the 1 in 1,000 solution, which might be repeated if necessary. In normal circumstances adrenaline was constantly being secreted into the blood by reflex stimulation of the centre in the bulb. As in the case of other bulbar centres, it was stimulated at the beginning of asphyxia, but was later paralysed by the excess of CO_2, so that adrenaline was no longer secreted, and, therefore, had to be administered. Asphyxia neonatorum, which was usually caused by obstruction of the umbilical vessels, must be treated on a different principle, because the lungs were empty of air and needed to be filled. This was accomplished, if possible, by inducing natural inspiration by stimulation of the skin, but the method failed if the respiratory centre was paralysed by an excess of CO_2. Inflation could be effected through a cannula passed into the trachea; mouth-to-mouth inflation was difficult, since air driven into the mouth was too apt to pass only into the oesophagus and stomach. If the lungs were inflated, respiration could be continued by intermittently blowing air in and allowing it to escape, or, alternatively, by pressing on the chest or abdomen, the child being in the prone position for choice; adrenaline should always be injected at once into the heart.

Professor Yandell Henderson remarked that it was not enough to resuscitate a man from drowning, asphyxia, or from any other accident, or from surgical anaesthesia, if he was to die a few days later from secondary pneumonia. He commented on the value of the inhalation of carbon dioxide as the most effective means of stimulating respiration when it was depressed or had stopped. It had also proved to be a highly useful preventive of the collapse of the lungs which led to pneumonia. Respiration was closely associated with the tone of the muscles, especially those of the thorax. Depressed breathing and a low muscular tone permitted collapse of part or the whole of a lung, and from such a collapse pneumonia developed if infection was present. The inhalation of carbon dioxide, by its action on the respiration and the muscular tonus, kept the lungs open, and prevented the development of pneumonia.

Illustrations were given by Dr. C. K. Drinker and Mr. T. J. Shaughnessy of the value of this treatment in asphyxia due to gas poisoning.

Sir Francis Shipway said that the pulmonary gaseous exchange might be interrupted by temporary paralysis of the nervous system owing to lack of oxygen or the action of anaesthetics, by paralysis of the muscles of respiration—generally secondary to paralysis of the nervous centres—and by circulatory failure; treatment had, therefore, to be based on the condition which was actually present. The pumping action of the heart was promoted by alternate expansion and contraction of the lungs, the supplying of oxygen and carbon dioxide, cardiac massage, and the injection of adrenaline. In the case of the apparently stillborn child the nervous system and heart were more resistant to the lack of oxygen than was the case in the adult. In addition to inflation measures, the application of warmth increased the excitability of the nervous system, and improved metabolism.

Professor J. A. Gunn discussed the survival time of tissues, especially of the central nervous system after stoppage of the circulation. He described in detail such resuscitation measures as massage of the heart, cardiac and respiratory stimulus, and the methods of administration and the duration and action of adrenaline. He reported a modification of Bunt's method of performing artificial respiration, which was useful in the case of the newborn child.

SECTION OF PSYCHOLOGY

The Nature of Mind

Dr. Charles S. Myers, F.R.S., president of this Section, devoted his address to a disquisition on the nature of mind, and opened with a review of the progress of the Section of Psychology since 1913, when it was separated from physiology as a Subsection; seven years later it was accorded the rank of a Section. He dealt in considerable detail with the relation of the mathematician with physics and psychology, and contrasted the past and present conceptions entertained as regards the nature and action of mind. Psychology, like mathematics, had been bereft of "reality" by the operation of mathematicians, whose particular interests lay in mathematical operations, and in numbers and figures for their own sake, and not for the sake of their physical significance. Dr. Myers then passed to discuss measurements of psychology in terms of behaviour, pointing out that the estimation of mental ability or character or quality was not achieved directly; all that could be so determined was the corresponding stimulus, or the outward response or expression by which that mental ability or character or quality was manifested. The "behaviourists" were quite correct in insisting that scientific measurement was only applicable to the behaviour of the organism. Where they were wrong was in assuming that conscious processes must necessarily be ousted from scientific psychology because measurement was excluded. Self-activity was to be regarded as the highest unitary integration of the directive mental (conscious and unconscious) activity of the organism.

After briefly considering the origin of actions and the contents of consciousness, Dr. Myers passed on to discuss multiple personalities and their redintegration, and presented an analogy based on different forms of national government. The earliest stage of consciousness was represented by a primitive monarchical government, the king being a weak, diffusely moving spirit in all its varied activities. The intermediate stage was comparable with a stronger government consisting of a cabinet with a large number of members, each busily acting in consider

able independence of his colleagues and of his chief, the prime minister. At the highest stage there might be conceived a differentiation, co-ordination, and integration as having so harmoniously co-operated as to produce a prime minister who was functionally identical with the king, and had such complete control that he regarded the more important " acts " of his hierarchy of lower-level colleagues as his own " presentations." In some such way, Dr. Myers suggested, could be dimly portrayed the evolution of the self, its increasing powers of control and devolution, its development of the function of presentation, and its ability in certain conditions to look down on what appeared to be itself, or on one or more other selves, acting and experiencing feelings and presentations. He then passed on to indicate the development of two modifications of the self—namely, feeling and presentation—and went on to deal with conscious and unconscious direction and purpose by the personality. He rebuked psychoanalysts for their failure to recognize that the nature of unconscious mental processes could never be described in terms of the human body and mind. "Psycho-morphism" in psychology was an error no less cardinal than anthropomorphism in religion. It was impossible to localize consciousness in special regions of the brain. The highest processes of learning, of comparison, and of all that underlay higher intelligent activity, had a generalized localization, and there was no warrant for supposing that there existed definite seats or centres of sensation or emotion, or for the association of such experiences.

In conclusion, Dr. Myers passed on to the relation between the directive and mechanical activities, and remarked that mental work appeared to make far greater demands on the general metabolism than it should do, according to purely physical considerations of the expenditure of mechanical energy. The psychologist's principle of the conservation of self, which corresponded with the biologist's inevitable principle of the struggle for existence, was the fundamental function of the conscious activity manifested when the physiological activities of the lower-level systems met with the highest-level activities, and became apparent as conscious " presentations." This " conservation of self " principle was as real and important as the physicist's principle of the conservation of energy.

Mental Deficiency

Dr. E. O. Lewis, who described the social aspects of mental deficiency, remarked that a complexity of conditions were involved, as shown by the many classifications of defectives, such as those into primary and secondary cases of amentia, the familial and non-familial, and the inherited and sporadic. In approaching the social aspects of the problem, however, a simpler classification into the pathological and subcultural types was more helpful. In the pathological case there was a definite organic lesion or abnormality, such as cerebral haemorrhage, hydrocephalus, or some physical defect due to toxic factors which had impeded growth. The subcultural type of defective was merely a variant of the normal, but was all-important from the point of view of the social significance of this condition, whereas the pathological group had comparatively little sociological interest. Less than half of the total number of mental defectives fell into the pathological group ; its members were mostly low-grade, and needed little more than custodial care and some simple form of training. They were fairly evenly distributed among the various social grades of the community. The subcultural defectives, on the other hand, were far more numerous, and, not infrequently, several were to be found in the same family. A large proportion of these families formed an important group in the lowest social strata of the population, giving rise to many chronic social problems. The higher the species in the biological scale, the greater was the individual variety of form, function, and behaviour. Mental deficiency of the subcultural type might be regarded as one manifestation of this variety. The endowment of innate mental characteristics varied more and more as civilization progressed, and so the problem of the subcultural group was an inevitable concomitant of the advance of civilization. Economic and social factors tended to segregate the subnormal members of a social group in certain districts, where they became a financial burden upon their families or upon public funds. The assimilation of this group, and of the still larger contiguous group—" the subnormal tenth "—into the general life of the community constituted one of the most difficult problems that Western civilization had to solve.

Professor F. A. E. Crew, dealing with the genetic background of mental defect, said that in the case of the human subject the geneticist did not collect his own data, but used the clinical records collected by those unskilled in psychology, and who were too prone to accept anecdote in place of evidence. There was so much variety in diagnosis and in interpretation that it was impossible to determine whether mental defect, as defined, could be the expression of different genetic forces ; but it was certain that there was a genetic background of mental defect. Mental deficiency could be eradicated by breeding, if parentage was denied to all who carried the hereditary ingredients ; but the success of any attempt to control the spread of these among a population would be determined largely by the nature and the number of the genetic factors involved.

Drs. R. G. Gordon and R. N. Norman reported psychological experiments on different types of mental defectives, which had been conducted in order to discover the distribution and nature of various functions. Two series of patients were investigated—namely, 100 adult girls with an intelligence quotient of over 40 per cent., and 109 boys of the idiot and imbecile class. Head's aphasic tests were tried, and those concerned with verbal and language manipulation proved much easier for the defective than did those concerned with spatial discrimination and manipulation. Rorschach's blot tests were applied to the same two series of patients to test the nature of visual imagery, the observation of colour, and the tendency to descriptiveness. Imagery was found in all cases to be restricted in scope, and confined to concrete objects within the limited experience of the defective. Colour was noticed by a minority of the subjects, and descriptiveness was more characteristic of the responses of the higher grade of children. Thorndike's puzzle box test was used to determine the possibility of the patients grasping a spatial and mechanical problem as a whole, of learning by experience, and of applying the solution of simpler puzzles to help in solving more complex problems. The last two capacities were well developed in both groups, so much so in the higher-grade subjects as to make the serial tests valueless for them. The lower-grade subjects showed a varying ability to solve the more complex puzzles in the light of simpler ones. Yerkes's discrimination tests were modified to test the power of retaining the image of a spatial configuration, but proved useless for the higher-grade cases. In the lower-grade patients interesting results were obtained, but they only indicated so far how this method might be usefully applied in a more elaborate research. All these experiments revealed a general but by no means exact correlation with intelligence as measured by the Binet and Porteus tests.

Dr. F. C. Shrubsall compared the frequency of the types found in the course of a statutory ascertainment with those defined by Dr. E. O. Lewis in his special investigation. Among other conclusions reached was the discovery that mental age was only one of the factors in deciding on suitability for a special school. The intelligence quotients of the ineducable showed no relation to the type of defect.

SECTION OF CHEMISTRY

The Vitamins

Sir Frederick Gowland Hopkins, P.R.S., opened a discussion on vitamins by pointing out that certain definite knowledge was now available about the constitution of these substances ; discussion of food factors by the Chemistry Section was thus now fully justified. As the result of oxygenating certain animal fats it had been shown that vitamin A was more easily oxidized than vitamin D. All doubts as to the individuality of these two vitamins had disappeared with the acquirement of new chemical facts. Sir Frederick Hopkins outlined the characteristic symptoms due to deficiency of each

substance, and mentioned the recent meeting of an international committee in London, when it was made clear that there was now available a technique in respect of biological standards; this would certainly lead to results of a more practically useful character as regards the administration of vitamins. The next task of the physiologist was to discover how the very potent influence of these substances was exercised in the human body, and how such minute amounts could produce such profound effects. When the synthetic chemist knew all that was to be known about their constitution it was possible that he might improve upon nature, and obtain from his synthetic products still more startling results than those which had accrued from the natural preparations.

The chemical constitution of vitamins was outlined by Professor P. KARRER, who remarked that, although vitamin A from cod-liver oil was not identical with carotene, yet active vitamin A preparations when ozonized produced geronic acid, just as carotene did. The vitamin A of cod-liver oil must therefore contain in its molecule the same carbon ring as carotene, and in that sense could be regarded as a derivative of it.

In close connexion with Professor Karrer's contribution, Professor H. VON EULER summarized recent investigations into the biological and biochemical effects of the carotenes, some carotene derivatives, and other growth-promoting factors. He said that the current view was that only one vitamin A was present and active in the animal body, but the discovery of the heterogeneous nature of carotene seemed to support the suggestion that there were several fat-soluble factors of the vitamin A type.

Dr. T. MOORE, discussing steps in the concentration of this vitamin, stated that all natural mammalian-liver oils were richer sources of it than was cod-liver oil, although this superiority might be set off against the much smaller amount of oil present per unit of liver. The mammal offered an additional advantage in being amenable to artificial feeding before treatment of the liver, by which means the vitamin A content might be raised very high. He cited experimental results which shed further light on the changes which must occur in carotene so converted to vitamin A by the animal. Such a conversion was accompanied by at least a tenfold increase in colour value, but it did not seem necessary to assume that the spectroscopically different colour units given by carotene and vitamin A must bear the same relation to biological activity. So far as could be judged from a limited number of tests the best concentrates were not more than two or three times as active as crystalline carotene.

The chemistry of vitamin B and related problems was discussed by Professor B. C. P. JANSEN, who described the method adopted by himself and Dr. Donath in isolating the anti-neuritic B, vitamin. Mr. R. B. BOURDILLON announced that attempts to isolate crystalline vitamin D from the resinous mixture obtained from the ultra-violet irradiation of ergosterol had now been partially successful in three different countries—England, Germany, and Holland. He suggested that the three different products might be mixtures in different proportions of two nearly isomorphic anti-rachitic compounds: one showing a high dextro-rotation and considerable stability, the other being less stable and presenting laevo-rotation or low dextro-rotation.

HEALTH WORK OF THE LEAGUE

[FROM OUR CORRESPONDENT IN GENEVA]

The work of the Health Organization of the League of Nations has produced the usual crop of appreciative speeches in the present Assembly, but this year the desire for economy has silenced virtually all proposals for new enterprises. The only new work to be undertaken consists of medical help to be given to China with the object of averting epidemics which might be expected to follow the recent floods. Even here no large expenditure is contemplated, but only the loan of the services of experts and the grant of medical stores.

The health work of the League was reported on by Dr. Fierlinger, delegate of Czechoslovakia, who stated that during the past year the Health Organization had developed one of its most important tasks—that of giving assistance to Governments who asked for it with regard to methods to be employed to solve general and special administrative and medical problems in the sphere of public health. He mentioned the liaison which has been established with the Ministry of Public Health and Physical Education in his own country, also the medical assistance given by the League to Bulgaria, the inquiry into the causes and means of prevention of infant mortality in Rumania, the mission sent to Liberia to advise on health matters, the programme undertaken for the reorganization of the Bolivian Health Service, the study which has taken place in various South American countries on the measures for combating the perils which threaten early infancy, and the conference recently held at Montevideo on serological methods for the detection of syphilis. A great deal of special work has been undertaken in China, a country which is now being visited by Dr. Rajchman, the director of the Health Organization. A central health station is being organized at Nanking to form the nucleus of a national health service, and the first national hospital, also at Nanking, is already working at full pressure. The Chinese national quarantine service began its task several months ago in a number of localities. A standard programme of instruction has been drawn up for Chinese schools of medicine. An effective organization against cholera is being set up in the Shanghai zone. Most recent of all is the urgent work which has been set on foot, through the health services of neighbouring countries, to prevent the spread of epidemics from China, in view of the flood disaster in that country, resulting in starving communities, crop failure, refugee camps, and vast areas under stagnant water. So much for the special work of the year. Turning to the more or less permanent tasks of the Health Organization, Dr. Fierlinger referred to the Eastern Bureau at Singapore, which, he said, was steadily increasing in usefulness as a result of technical improvements in the transmission of notifications of infectious disease.

The collective study tours known as interchanges are being continued. A tour of this kind has lately been in progress in Great Britain for the study of questions concerning milk supply and disinfection of ships. The French Government has offered to establish in Paris an international school for advanced health studies, with the object of continuing and centralizing, through a permanent institution available for all nations, the work already done in this field by periodical meetings of directors of various schools of hygiene, by the system of interchanges, and by a grant of scholarships. The Permanent Commission on Standards has adopted several new international standards for serological products. Inquiries made by the Malaria Commission have led to the definition of a standard product of the total alkaloids of cinchona (the "totaquina"), which has the same effect as quinine, and is likely to meet the necessity for an increase in the supply of the active product, and probably reduce the cost of treatment.

Finally, Dr. Fierlinger spoke of the European Conference on Rural Hygiene. This conference, in which the Health Organization, the International Labour Office, and the International Institute of Agriculture participated, was attended by eighty-six delegates and experts from twenty-five European countries. That its influence spread beyond

Europe was proved by two other speeches in the Assembly from delegates of Canada and of Australia—both women, and the Australian a woman doctor—who said that the work of the European conference had been fruitful of suggestions which were capable of adaptation to their own sparsely populated territories

Lord Astor, one of the principal delegates of Great Britain to the Assembly, referred to the important work undertaken by the Permanent Commission on Standards He said that this work did not perhaps appeal much to the popular imagination, and yet it was of the greatest utility There was always a risk said Lord Astor, that in these days of economy an uninstructed public opinion would demand the abandonment of some form of beneficial activity not understood by the man in the street The objects of the commission are to standardize modern products in medicine, such as insulin, antitoxins, and the like, so as to ensure that in different countries, as far as possible, the same methods of testing and dosage, and the same terminology, are employed

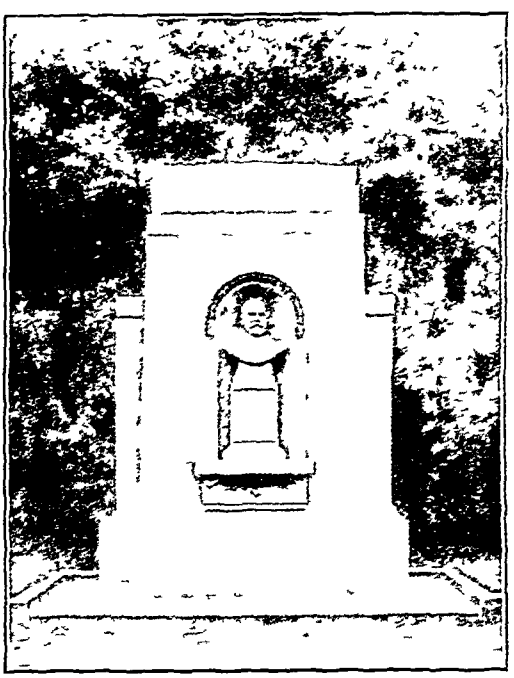
The discussion on health matters in the Assembly covered a wide range and included an interesting speech from another medical delegate, Dr Chodzko of Poland, who gave a rather startling account of how the doctrines of Malthus as he said, are spreading even in the most secluded parts of Europe The Slavs are no exception, and according to this authority, are practising on a widespread scale the artificial limitation of births

JAMES MACKENZIE MEMORIAL

CEREMONY AT BURNLEY

In October, 1929, Lord Moynihan President of the Royal College of Surgeons of England opening the new radium clinic at the Burnley Victoria Hospital drew public attention to the fact that nowhere in Burnley was there any outward record of the long and notable association of the late Sir James Mackenzie with that town The publicity given to Lord Moynihan's observation aroused much interest locally, and very many old friends and colleagues of Sir James expressed a desire to assist in remedying an omission which, they felt, reflected unfavourably on Burnley

The Mayor (Alderman H R Nuttall, J P) thereupon convened a meeting of those likely to be interested, at which it was decided to open a public subscription list As a result of the appeal that followed, sufficient funds were speedily obtained to enable consideration to be given to the form of the memorial The committee set up by the subscribers after giving much thought to the matter, came to the conclusion that the memorial should take two forms — namely, a plaque on the wall of the house in Burnley, No 68 Bank Parade, in which James Mackenzie resided for many years, and a bust in a suitably chosen position



MACKENZIE MEMORIAL AT BURNLEY

On Saturday last, September 26th the two memorials were unveiled at a public ceremony—the plaque by James Mackenzie's brother, Lord Amulree, G B E, K C, Secretary of State for Air, and the bust by Lord Moynihan The plaque bears the following inscription

Sir James Mackenzie M D, LL D F R S, F R C P, 1853 1925 Who achieved fame by his researches in connexion with diseases of the heart, was from 1879 to 1907 a general practitioner in Burnley and lived in this house

The Burnley Town Council gave permission for the bust to be placed in Thompson Park, and the site chosen, the easterly side of the Rose Garden, gives a good background to the monument and is particularly appropriate It is within a very short distance of, and can be seen from, No 68 Bank Parade

The bust has been modelled by Mr L F Roslyn, R B S, of South Kensington It is of cast bronze and has been placed in the niche of a monument eight feet wide by twelve feet high built of polished Darley Dale masonry provided by the town council

LORD MOYNIHAN'S ADDRESS

The following address was delivered by Lord Moynihan when unveiling the bust in the Rose Garden at Thompson Park

This is a day of remembrance! To-day we commemorate the life, and pay tribute to the service, of one who was Burnley's most distinguished citizen, perhaps the greatest general practitioner we have ever produced, and who was certainly possessed of the most original and acute mind of any physician who has practised in this country during the last fifty years

"Sir James Mackenzie's mind was not so much acquisitive as observant and creative As with Hippocrates, whom we call the Father of Medicine, his eye saw things which escaped the observation of others his mind retained not only the broad truths, but even the minute details of things once seen, and in due time the facts observed were marshalled, correlated, contrasted compared until a great general truth emerged The intellectual road was often long and rough the path beset with problems of bewildering complexity, he was perpetually halting to ask questions and an answer when found showed, as always in science the need for new and still more difficult inquiry Yet in the end we must confess that though he never gained intellectual contentment and repose he rarely failed to accomplish something that steadily advanced the science of medicine, and brought a real help to those who suffered Indeed, I always felt that the virtue which was his main incentive

was compassion. Mackenzie loved his fellow men; he was consumed by a longing to help them, to save them from suffering, to strengthen them for their daily task, to sustain their faltering courage in times of danger and distress, to rescue them from death. These desires were the mainspring of his untiring labours. Was he not therefore most justly called the 'Beloved physician'?

"This tablet perpetuates the view that Mackenzie's greatest work was concerned with disease of the heart. A philosopher might, however, claim that his method of work was greater even than its results. It is indisputable that he created new knowledge, vast in quantity, of highest value, and most relevant in application to maladies of the heart. Yet to the science of medicine he contributed something of at least an equal importance: he vindicated the Hippocratic method in medicine, the method of accurate clinical observation leading to the power of classification, and of wide generalization. He was indeed the great observer, the keen, thoughtful eye-witness of events which he submitted to an almost vexatious scrutiny, that he might satisfy himself of their truth and of their contesseration. I think he rather disdained the academic scholar, the learned collector of other men's opinions, the bookworm who knew old and new authorities alike. Once I reminded him of the story of Jesse Foot, the enemy of immortal John Hunter whom he reviled for his ignorance of the Latin tongue. 'Jesse Foot rebukes me that I do not know the dead languages; but I could show him that on the dead body that he never knew in any language dead or living.' So I pointed out to Mackenzie that he might himself say to those learned only in the classic literature of medicine, 'I can show you that on the living heart that you will never find in books, ancient or modern.' His invention of the polygraph, first made in Padiham, a feat acclaimed throughout the world, which enabled him to read the heart's actions as in a book, was only an incident in his unwearying search for truth.

"When Mackenzie left Burnley he was already regarded throughout the world as the most eminent of English physicians. He faced the venture of his journey to London with equanimity. 'If I get consulting work, I shall do it; if I don't, well, mon, I shall just play gowf,' he said to me, in rugged Scottish accent. London received him as silently and at first almost as indifferently as years before it had received Lister. But little by little London was conquered, and to his consternation the 'Mackenzie school,' not entirely to his liking, was founded. Many of his disciples failed to grasp the real significance and the philosophical basis of Mackenzie's work. So after years of work of highest quality, both literary and professional, after expressing his longing to get back to general practice, he retired to St. Andrews and established the Institute there. In the end he died in London of the disease he had studied so carefully, angina pectoris, adding one more to the examples of those who succumb to a disease which had been their main interest during their professional lives.

"Mackenzie was indeed the beloved physician. He was the sanest and most powerful influence in English medicine for a whole generation; he added knowledge of incalculable value to its science; he renewed and strengthened our faith in the ancient method of Hippocrates; he held aloft the standard of our profession, and caused it to be honoured throughout the world. He made a multitude of friends wherever he went; he stirred hope in many hearts that were afraid, and gave comfort to those who suffered. Great men praised him for his knowledge, his wisdom; all men loved him for his tenderness, his gentleness, his power that gave them strength, his courage that inspired them, his skill that saved them. His presence was a benefaction; his memory will forever be an inspiration."

After the unveiling Lord Amulree moved a vote of thanks to Lord Moynihan, and speeches by the Right Hon. Arthur Henderson and Professor John Hay, M.D., of Liverpool, brought the ceremony to an end.

Scotland

Scottish Mental Hospitals Board

The report of the Scottish Mental Hospitals Pathological Scheme for 1930 has just been issued. It is pointed out that the researches are of a scope and on a scale which would go beyond the resources of the individual hospitals, and are secured by co-operation between the various Scottish mental hospitals. The Board considers that the amount of research work on neuropathology which has been carried out by Dr. F. E. Reynolds and his fellow-workers in the last seven years has furnished ample justification for the continuance of the laboratory. A monograph containing important joint researches by Dr. Logan Turner and Dr. Reynolds on pyogenic intracranial diseases has been prepared, and is ready for publication. The revenue for the year amounted to £2,204, and the expenditure to £1,272. The Medical Research Council contributed a grant of £200 to the fund for the current year. In addition to research work, reports are made on specimens sent by contributing hospitals; some two hundred specimens were dealt with during the past year.

Edinburgh Practitioners and the Capitation Fee

A well-attended meeting of practitioners on the Edinburgh panel was held in Edinburgh on September 22nd, when it was agreed to accept the proposed reduction of one shilling in the capitation fee. The meeting, however, was of the opinion that more attention should have been paid to the statement of certain principles which may have to be taken into account in future negotiations. These are that the sacrifices made by practitioners in 1922 and in 1924 in aid of national economy, which represented a reduction of two shillings in the capitation fee, should have been emphasized; that the present capitation fee is not sufficiently above the pre-war rate to be commensurate with the cost of living; and that a period should have been defined after which the amount of the capitation fee would be considered.

Open-air School at Edinburgh

A new building of the open-air type, Prestonfield Primary School, situated in Peffermill Road, Edinburgh, was opened on September 22nd by Councillor P. H. Allan, chairman of the Edinburgh Corporation Education Committee. The school has been built to meet the requirements of the neighbouring housing scheme at Prestonfield, where about seven hundred houses have been erected within recent years. The classrooms are built on one floor only, and have a pleasant garden in the centre. In fine weather the sides of the classrooms, which are provided with glass doors throughout their full length, can be completely opened, so that the pupils can enjoy the full benefit of the open air. The school is the first in Scotland to have an "under-floor" heating system. There are fourteen classrooms, with accommodation for seven hundred pupils, in addition to a sewing room, a large hall or gymnasium, and the usual arrangements for staff, medical inspection, and stores. At the opening ceremony Councillor Allan remarked that the Education Committee of Edinburgh had been guided by the fact that "more men fail from want of energy than from want of ability." Although the vagaries of climate might often prevent the full use of the facilities provided it would usually be possible to take at least partial advantage of them with resulting benefit to health. The school was of the nature of an experiment, and its success depended, to a large extent, on the teachers.

Economies in Medical Services, Fife

A committee of the Fife County Council has made various recommendations for the restriction of expenses in connexion with medical services in this area. Certain changes in the county hospitals, including the closing of St Andrews Poor Hospital are expected to effect a saving of £2,500, and an amalgamation of areas would cut down the number of parish medical officers, with resulting saving in salaries. The Public Health Committee is requested to revise the scheme for nurses and health visitors, with a view to reducing the number of nurses. The committee also recommends that the scheme for supplying milk to school children should meantime be postponed, as the medical officer of health is satisfied that the school children are well nourished. The reduction of the ordinary scale of poor relief by 10 per cent. and of the clothing allowance by 20 per cent., is advocated among other economies, the estimated saving being £9,000. The committee drew attention to the growing costs incurred at the Springfield Asylum for the Insane, and proposed that the expenditure for this district asylum should be reduced by £2,000.

Ayr Hospital Co-operation

At a meeting on September 14th the Town Council of Ayr considered a report from the Department of Health concerning the hospitals in Ayrshire including the proposals advanced for the utilization of the accommodation available. It is suggested that it would be economical and ultimately in the best interests of the county and the various burghs concerned if Kirklandside Hospital, Kilmarnock, were developed by co-operation between the town councils of Ayr and Kilmarnock in such a way that it would eventually become the central council hospital of the district. It would then supplement the various voluntary hospitals, and would provide for infectious diseases and abnormal obstetrical cases besides supplying generally, extra beds for medical and surgical cases. At present the authorities of Ayr burgh, Ayr county, and Kilmarnock burgh co-operate to a certain extent, and it is considered that this definite step in organization should offer little difficulty.

England and Wales

Sir Robert Bolam

The House Committee of the Royal Infirmary, Newcastle-on-Tyne, in its last quarterly report, announces with much regret the retirement from the honorary medical and surgical staff of Sir Robert Bolam, O.B.E., M.D., LL.D., F.R.C.P., honorary physician in charge of the Skin Department, on having reached the statutory age limit. Sir Robert Bolam has been associated with the work of the Infirmary for a period of thirty-two years, and the committee are deeply sensible of the loss which his retirement entails. They wish to place on record their appreciation of the valuable services he has rendered and their recognition of the distinguished position held by him in the profession. They have also agreed that an illuminated address be presented to him. Further, the committee have unanimously agreed upon a recommendation which appears on the agenda, to appoint Sir Robert Bolam an honorary consulting physician to the Skin Department.

British Red Cross Society

In a foreword to the report of the British Red Cross Society for 1930 Sir Arthur Stanley comments on the encouraging progress that is being made at the Central Clinic for the Treatment of Rheumatism in Peto Place, Regent's Park. Since the clinic began to admit patients in March last year, the average weekly attendance has risen to well over a thousand and it is estimated that about 70 per cent. of the male patients, and 80 per cent. of the female, have definitely benefited. During this experimental period sufficient experience has been gained to determine the probable cost of treatment per attendance, and a revised list of fees is being prepared. The hope is expressed that in time the clinic will be more or less self-supporting. At present the active medical staff consists of five visiting physicians, with their clinical assistants, a specialist staff, a medical registrar, a matron, and the treatment staff. The social service department is directed by a lady almoner. It will be recollected that the clinic admits adult walking patients only, and that all patients, without exception, are required to have a recommendation signed by a doctor. The clinic is open from 8.30 a.m. to 9.30 p.m. daily, except Sundays. A full report of its work is published separately, and may be obtained on application. During the year requests for blood transfusion numbered 1,627—the highest figure so far recorded. This service was utilized by 115 hospitals apart from nursing homes and private cases. A point is made of the number of middle-aged and elderly persons who are enrolling as donors, owing apparently, to the reports of younger relatives of the feeling of fitness that follows a transfusion. While expressing satisfaction with this department of its activities, the society resents that the voluntary nature of the service is being exploited for the benefit of more or less well-to-do patients. Out of 156 private cases served during the year, less than fifty patients made any donation. Increases in membership are recorded in the voluntary aid detachments now numbering 735, in the British Red Cross detachments, and in the Junior Red Cross, in which 17,838 boys and girls have been enrolled. During 1930 notewothy progress was made overseas, branches of the society having been established in Kenya and in Southern Rhodesia. In this country the reports of the county branches, which are incorporated in the report, show steady development.

Medical Aspects of the Gas Industry

During the annual conference of the British Commercial Gas Association in Exeter from September 28th to 30th, special attention was paid to the part that might be played by coal gas in promoting the public health, and as a source of radiant energy for the treatment of disease. Dr. Meredith Davies, county medical officer of health for Devon, emphasized the importance of gas as a smokeless fuel for private houses as well as for factories. He said it was clean, efficient, and reliable in use, and eliminated the drudgery and fatigue involved in antiquated methods of heating and cooking. It satisfied modern standards of hygiene, comfort, and ventilation in room heating, provided hot water, and also was utilized in the cheapest automatic refrigerator on the market. It facilitated the use of coal by the population in such a way as to make the conditions of living as healthy as possible. In an ideal house installation there would be an automatically controlled central heating apparatus to keep the air temperature correct all over the building, and some source of radiant heat associated with a form of ventilating system in every room occupied for any length of time. In the ordinary living room however in the temperate climate of this country, the source of radiant heat would generally be sufficient to maintain an equable air temperature. Dr. Meredith Davies commended panel heating, mentioning that panel heaters in the ceiling delivered the highest percentage of radiant heat, though in the wall emanated about 60 per cent. of their heat in the radiant form when running at about 100° F. Owing to the amount of reflection from the walls and furniture the heating provided by ceiling panel mechanisms was remarkably even,

the air temperature was practically constant, except for a few inches from the ceiling. Gas light was less tiring to the eyes than any other artificial illuminant; the fumes which had been regarded as an objection in the past consisted only of carbon dioxide and water vapour. Sir Leonard Hill remarked that gas provided the long ultra-violet rays which were considered by the Finsen Institute to have a curable effect in cases of surgical tuberculosis. It also gave off the visible and infra-red rays which were of importance in flushing parts of the body with blood, warming up damaged tissues, and promoting resistance to infection. These activities were of special significance in regard to the treatment of rheumatic diseases. Sir Leonard described certain types of gas lamps with the aid of which cases of chronic rheumatism had been treated, with resulting alleviation of the pain and the improvement of stiff and swelling joints. They could be kept in action for five hours at a cost of 1d., and could be used safely in the home or the doctor's consulting room.

India

The Incidence of Diphtheria

In an appendix to the report of the King Institute of Preventive Medicine, Guindy, for the year ending September 30th, 1930, it is remarked that an outbreak of diphtheria investigated by the Institute suggests that, contrary to general opinion, such occurrences are not infrequent in India. A patient with conjunctivitis and sore throat developed later paralytic symptoms. The throat swab was found to be positive, and contact cases were detected; further cases of diphtheria ensued, and a bacteriological unit was sent to the locality to make an extended investigation. Complete proof of the nature of the epidemic was forthcoming, both bacteriologically and in the immediate response of some patients to antitoxin. Infection was traced to personal contact in the out-patient department of a hospital. No definite diphtherial membrane was discovered in any instance, and it was noteworthy that in spite of the lack of isolation and proper treatment, the disease did not spread rapidly. It is probable that the diphtherial strains were of low virulence; possibly the prevailing dry and hot atmospheric conditions contributed to the insignificance of the outbreak. Attention is drawn in the report to the lack of satisfactory purification of water in several places, in spite of instructions previously issued. Lieut.-Colonel H. H. King, director of the Institute, mentions that considerable improvements to the main buildings are being carried out.

Madras Hospital for Women and Children

The publication of the annual clinical report for 1929 of the Government Hospital for Women and Children at Egmore, near Madras, has been delayed owing to the reorganization of the report on the lines of similar institutions in Great Britain. The result is a volume consisting almost entirely of gynaecological and obstetrical reports, which will be of service to those who wish to compare conditions in India with those elsewhere. During the year under review certain important changes were made in the internal arrangements of the hospital. The admission department was separated from the main delivery ward, in which one large room has been equipped for all operative deliveries short of Caesarean section. This has greatly facilitated the work, since emergency obstetrical operations can now be conducted without delay, no special preparations having to be made; strict aseptic and antiseptic conditions are enforced. In the admission department, now in another part of the hospital, arrangements have been made to obviate the transmission of sepsis from cases already infected. An attempt is also to be made to diminish chances of cross-infection; it is hoped to provide separate delivery cubicles. An ante-natal department has been inaugurated in a separate block, and venereal cases are now treated apart from the general out-patients. It is hoped to obtain an ante-natal block and children's department away from the main blocks of the hospital, and instruction in mothercraft is already being given by experts. In December, 1929, a research department was opened. Work is being carried out on the anaemias and toxaemias of pregnancy and on the causation of stillbirth. As fuller facilities are obtained, it is proposed to make further investigations into the tropical diseases which complicate pregnancy in India. This research work is being conducted in close co-operation with the director of the King Institute, and with the professors of pathology and biochemistry. Clinical meetings of the hospital staff are held monthly, each member being responsible for reporting the work of his particular section, and for the presentation of any specially interesting case. Post-graduate instruction continues to be given, students coming from all parts of India, Burma, the Straits Settlements, and Ceylon. The extent of the clinical material available is indicated by the fact that during the year under review 7,084 women and 661 children were admitted for treatment. Lieut.-Colonel C. A. F. Hingston, superintendent of the hospital, states that the chief methods of treating eclampsia were the control of the blood pressure by the administration of veratrone; the injection of morphine or omnopon to prevent the recurrence of fits; intestinal lavage to relieve intestinal toxaemia; iced enemas, and other measures to control hyperpyrexia; and general precautions against pulmonary complications and respiratory or cardiac failure. Emphasis is laid upon starvation and elimination; in most cases, delivery was either natural or aided by forceps in the second stage.

Accommodation in Mental Hospitals

The provision of increased accommodation in mental hospitals in various parts of India is becoming a serious question, especially since few steps can be taken owing to general lack of funds. In his report for 1930 of the mental hospitals in the Madras Presidency, Major-General C. A. Sprawson, I.M.S., Surgeon-General with the Government of Madras, points out that while the average population of the largest of the three hospitals in Madras, Waltair, and Calicut respectively, was over 1,000, it has a normal accommodation for less than three-quarters of that number. Moreover, the population is tending to increase yearly, and although schemes are contemplated for further building, it is already obvious that the numbers of mentally afflicted patients are sufficient to fill the three hospitals, even after their anticipated enlargement. It is also urged that the time has come for establishing a home for mentally defective children in connexion with the Madras institution, there being at present more than thirty such children below the age of 16 in the hospital, and many more outside it. A start might be made, it is suggested, by providing a day school for the high-grade mental defectives, and a home for idiots and imbeciles. A medical officer is already available for this special work. It is thought that a fourth mental hospital in the southern part of the Presidency will be urgently needed in the near future. In the Indian Mental Hospital at Ranchi the total number of beds is less by 162 than the combined total of the three hospitals which it replaced in September, 1925. The overcrowding of male patients in this institution has constituted a very difficult administrative problem, as nearly half of them are of the criminal type. A scheme of expansion is being designed

which will raise the accommodation from the present 1,286 to 1,600, the largest number with which a single institution under one administrative head can conveniently cope. Some success has attended an effort to place under the care of friends and relatives the incurable, but harmless, patients, who formed such a large proportion of the inmates when the institution was first opened. Curative measures are seriously hampered by the restriction of space, and it has not yet been possible to construct for paying patients wards which could be completely self-supporting. In the Provincial Mental Hospital at Tezpur in Assam, however, considerable improvement has followed the reconstruction of the hospital, permitting the reduction of overcrowding. It was only possible previously to accommodate the most serious chronic cases, a selection from the worst of those which had been detained in jail until room could be found for them, the recovery rate was naturally affected adversely. Since enlargement of the institution the patients have gained obviously in general health, but it is mentioned in the annual report for 1930 that some time must necessarily elapse before it will be possible to clear up the aftermath of diseases, such as dysentery and tuberculosis, due to the previous overcrowding.

Correspondence

BREECH PRESENTATION

SIR,—In the correspondence on breech presentation in your issue of September 19th three important points are raised:

1. *Should midwives be allowed to take sole charge of breech cases?*—According to the rule of the Central Midwives Board they must report breech presentation in the primiparæ, the rule should certainly be extended to the multiparæ. It is not always certain if a breech delivery will be easy, and a qualified doctor should have the responsibility. In addition, if a diagnosis of breech is made when a shoulder is presenting, disaster will occur and has occurred. Let the Central Midwives Board authorize alter the rule.

2. *The size of the parents' heads.*—I always teach my students to ascertain, when possible, the size of the husband's hat. It is of great assistance sometimes in determining treatment.

3. *The question of version.*—After a version, carefully and gently done, the fœtal heart has stopped. This is due either to interference with the placental circulation or entanglement of the cord. Version therefore, is not without its danger.—I am, etc.,

Dublin, Sept. 28th. BRUNET SOLOMONS,
Master Rotunda Hospital.

THE TREATMENT OF CHRONIC OSTEOMYELITIS

SIR,—In your issue of September 19th you devote an editorial note to the treatment of osteomyelitis by maggots, and mention also Dr. Winnett Orr's method. Both of these have always struck me as thoroughly unsurgical and somewhat offensive method of treatment. It must surely be very disagreeable to the patient to have his wound attacked by animal scavengers, and those who have tried Winnett Orr's treatment bear witness to the fact that the fetor of the discharge is such as to make it practically impossible to nurse other patients in the same ward.

You suggest that osteomyelitis is more common in the United States than in this country, but surely no hero have surgeons been faced with a greater problem in the treatment of this condition than that presented to them at the end of the war. The vast majority of the large number of severe and complicated cases of chronic osteomyelitis which resulted from war injuries were satisfactorily dealt with by ordinary surgical measures, and the failure to carry on the work in the treatment of the much smaller number of civilian cases can only be due either to lack of appreciation on the part of the surgeon of the principles upon which a radical operation should be carried out, or else to a lack of boldness in carrying the operation through in an adequate manner.

The radical operation was originally described by Professor Broca, whose book on the after-effects of wounds of the bones and joints was translated into English in 1918, and gave a very thorough account of the method of radical treatment. A description of the principles of Broca's method was published by me in *The After-Treatment of Wounds and Injuries*, and in Sir Robert Jones' *Orthopædic Treatment of Injuries*. These principles are briefly (1) that all tracks and sinuses in the bone must be well opened up, leaving no escape from it by removing all granulation tissue, and, as far as possible, all sclerosed bone; (2) that no cavity with raised walls must be left into which soft parts cannot fall. A cavity which cannot be obliterated interferes with healing. When necessary, muscle must be loosened, or even a muscular flap cut in order to carry out the principle. When such a radical operation has been properly performed many of the wounds can be sutured immediately with a small drain. But even when the surgeon feels himself not confident to suture the wound he can practically always do it and leave it to granulate, or carry out a secondary suture at the end of ten to fourteen days.

The radical treatment of chronic osteomyelitis is one of the boons of war surgery, which has been too little appreciated since, and which it is to be feared may be completely forgotten.—I am, etc.,

London, W.1, Sept. 24th. R. C. LEWIN.

plete ignorance on our part of the etiology. My objection to the use of the label "serous meningitis" in these cases is that on account of its traditional value it may lead the physician to believe that he has made a complete diagnosis and so allay the spirit of inquiry. Looked at from this point of view serous meningitis is not a diagnosis but a luxury.—I am, etc.,

C. P. Symonds.

London, W.1, Sept. 26th.

SPINAL ANAESTHESIA

Sir,—I was asked by the secretary of the Section of Anaesthetics to take part in the discussion of Dr. Howard Jones's paper at Eastbourne, but was unfortunately prevented from being there. His paper has now appeared in the *Journal* of September 12th, and I venture to repair the omission. With many of his general conclusions—for example, that for the strong muscular man needing a high laparotomy spinal analgesia is strongly indicated—all who have had extensive experience will agree. It is with his remarks under the sections headed "Spinocain and durocaine" and "Respiratory embarrassment and collapse" that I feel he is an unreliable guide.

He persists in the idea that spinocain and durocaine act as if they were heavier than cerebro-spinal fluid, when in fact they are lighter. His explanation of this curious phenomenon is that the alcohol content, which makes them lighter, is absorbed as soon as it enters the cerebro-spinal fluid, leaving the remainder (novocain, gliadine, and normal saline) as the heavier constituent. This is ingenious, but not in accordance with the facts. Pitkin particularly warns all users of spinocain not to inject in the sitting-up position, because the solution rises too rapidly. An extensive experience of both the lateral and upright positions leaves no doubt whatever that a higher anaesthesia is obtained in the sitting-up position than in the lateral. I think that all who have had much experience with these solutions would confirm this observation.

He says: "The 'air bubble in a spirit level' arrangement is possible only between two media which are not miscible." Possibly as a general statement of a physical phenomenon that may be true. In the matter in hand it is misleading. Durocaine is miscible with cerebro-spinal fluid, but it takes a long time to become completely mixed. If 0.5 c.cm. durocaine is dropped on to the surface of 1 c.cm. of cerebro-spinal fluid at the bottom of a test tube, each drop falls a certain depth, and then gradually comes to the surface. The whole of the 0.5 c.cm. durocaine sits on the surface of the cerebro-spinal fluid, the two fluids being quite distinct and separated by a less translucent layer at their junction. Gradually the cloudy juncture-layer puts forth arms into the subjacent cerebro-spinal fluid, and in the course of one to two hours the mixture appears to have become a slightly opalescent homogeneous mixture.

Seeing that the physical facts are in harmony with the clinical findings, it seems unnecessary to have recourse to wholly imaginary physical phenomena which would explain none of the observed facts. It is true that at a later stage, when the analgesia is as high as is desired, the Trendelenburg position is a "constant feature in the ritual": certainly, to prevent the anaesthesia going higher. Moreover, the Trendelenburg position is, or should be, a constant feature in the ritual of all spinal anaesthesias that paralyse vaso-constrictors. Again, Dr. Howard Jones says: "The danger in intrathecal administration is not a vasomotor effect from a regional block of the thoracic and lumbar roots . . . but from blood absorption and paralysis of the vasomotor centre, leading in some cases with excessive dosage to severe collapse to a pulseless state." Dr. Howard Jones makes this statement, but does not support it by any facts. If he is referring to percaine, of course his clinical experience with that drug would be valuable evidence almost amounting to proof that percaine paralyses the vasomotor centre by blood absorption. As regards novocain the facts are quite otherwise. It has absolutely no paralytic effect on the vasomotor centre whatever. The proof of this will appear in a paper now being prepared for publication, in which it is shown that the injection of novocain into the cisterna magna has no such effect. If the direct application of novocain to the centre itself has no paralysing effect on it, it is idle to suppose that any dose absorbed from the lumbar theca into the blood stream could affect it in this way.

What are the facts? The largest dose of novocain (as spinocain and durocaine) that I ever use is 0.3 gram. The minimum lethal dose of novocain intravenously is 0.04 gram per kilo; for a man weighing 10 st., or 70 kilos, the minimum lethal dose would be 2.8 grams—that is, more than nine times the maximum dose ever used. Moreover, the minimum lethal dose kills by paralysis of the respiratory centre; there is no evidence that the vasomotor centre is even weakened.—I am, etc.,

Manchester, Sept. 20th. E. Falkner Hill.

HUNGER PAIN AND PRESERVATIVES

Sir,—As I stated in my letter published in the *British Medical Journal* of September 19th, only two preservatives—namely, sulphur dioxide and benzoic acid—are allowed in a limited number of specified articles of food and in certain beverages. I mentioned in that letter all the articles in which one or other of those preservatives is permitted. With the exception of beer the use of preservatives in any of those articles is only allowed on the condition that the nature and quantity of the preservative present is declared on the article as sold. If, therefore, Mr. Forrest's symptoms are due to preservatives it ought to be quite easy for him, in view of these regulations, to trace the cause to one or other of these preservatives.

Mr. Forrest states in your issue of September 26th that his indigestion is provoked by the articles of food to which sulphur dioxide in minute quantities may be added. As the list I gave of those articles is a very short one it will be no great privation for him to omit them from his dietary. He further states: "the preservative that is added to butter brings on the symptoms." I can only assure him that for some years the addition of any preservative to butter, whether made in this country or imported, is forbidden under penalty.

From the perusal of Mr. Forrest's two letters I am driven to the conclusion that he must seek elsewhere than in preservatives in food for the *fons et origo* of his hunger pain.—I am, etc.,

Liverpool, Sept. 26th. Arthur P. Luff.

ETIOLOGY OF PEPTIC ULCER

Sir,—I am very grateful to you for having referred, in a leading article in your issue of September 12th, to my book, *The Causation of Chronic Gastro-Duodenal Ulcers*, and for having drawn the attention of your readers to my conception of a most urgent problem, although your reviewer has come to a somewhat indifferent conclusion as regards the validity of my theory, and has given guarded advice in respect of its application to treatment.

Perhaps you will permit me to comment on the isolated criticism brought forward by your leader writer. He points out what he considers the only weakness in my argument—namely, that I conclude duodenal regurgita-

tion into the stomach to be a pathological mechanism instead of accepting what seems to be the usual teaching (with which he agrees), which says that duodenal regurgitation is a normal physiological function for the reduction of gastric acidity. But what are the facts?

In my book I have given several reasons why the orthodox teaching cannot be accepted. It will now be agreed by all that the contents of the first part of the duodenum are acid, and therefore they cannot have any role in the reduction of gastric acidity. McClendon (*Journ. Biol. Chem.*, 1918, xxxiv, 1) has shown by means of estimation of the hydrogen-ion concentration that the *p*H value of the lower part of the human duodenum varies from 4.5 to 5.1, and, as far as bile is concerned, according to Okada and Arai (quoted by Schmidt, *Physiol. Rev.*, 1927, vii, 129), its hydrogen-ion concentration may vary from 4.7 to 3.4, both reactions being, of course, markedly acid. There is no need to consider the possibility that continual retro-peristalsis may take place from the alkaline part of the intestine, for reasons obvious to everyone. It is worth while to recall that Professor MacLean (*Journ. of Physiol.*, 1928, lxv, 63) has made it quite clear, after most exhaustive investigation, that duodenal regurgitation, as such, is in no way whatever concerned in the reduction of gastric acid. Furthermore, as far as the action of the gastric acid is concerned, it may be worth while to remind your readers that it is accepted by all that acid by itself is not the primary factor concerned in the formation of peptic ulcers, but that some other cause is to blame, which only acts deleteriously in conjunction with the hydrochloric acid.

I now claim that this primary and essential factor concerned in the production of peptic ulcers is bile, when it is in the presence of hydrochloric acid, and I have attempted to justify my claim on physiological, pathological, experimental, and clinical grounds. I therefore leave it to my readers to decide whether I have made out a case for my theory, or whether they will be satisfied to apply the older methods which your reviewer seems to advocate, and which are still a constant bone of contention between physicians and surgeons.

I regret that amongst my other contributions on the subject which contradict the usual interpretation of normal gastric function, only one item was singled out for criticism, and no mention was made of the new conception of the pathology which I have introduced to differentiate between acute and chronic ulcer, and which actually forms the initial and most vital part of my theory. The subject involved is of such vast importance and urgency that any contribution which may further the solution of this problem should at least receive sympathetic consideration.—I am, etc.,

London, W.1, Sept. 26th. J. JACQUES SPIRA.

RADIOLOGY AND THE RADIOLOGIST

SIR,—I cannot lay claim to be the world's clearest writer, but I hoped I had made it quite definite that the radiologist is not asking for any monopoly in the use of *x* rays. What he rightly asks for is adequate training; and if the clinician, without any adequate training, thinks fit to make use of apparatus, by no means simple or danger-free, that is his affair and his responsibility. My personal view, in regard to diagnosis in chest and gastro-intestinal disease, is for the clinical and the radiological investigations to be made by separate people. Such a view is, naturally, not binding upon those who think differently. Several of these latter are my own personal friends, for whom I have the greatest respect, and I think we quite amicably agree to differ.

The future of radiology, as it appears to myself, seems to lie in the direction of closer association of the clinician and the radiologist under the same roof. By this I do not imply the necessity for a clinic, but as individual men, each doing his own job. In such a way I seem to visualize the greater good of the patient, both as regards diagnosis and (may I suggest it?) his pocket.—I am, etc.,

London, W.1, Sept. 27th. STANLEY MELVILLE.

THE RADIOLOGIST AND THE CANCER PATIENT

SIR,—At the present day the position of *x*-ray therapy in malignant disease is practically limited to cases that are, for one reason or another, not amenable to operation, or, after operation, for prophylactic purposes. There is a very natural desire on the part of surgeons and physicians to refrain from telling the victims of malignant disease that they have cancer. This may be, in many cases, quite a right and proper attitude. But the difficulty is that, when these patients are advised *x*-ray treatment (which the public now know is usually given for cancer), they ask why, when they have been given to understand that they have not got this dreaded malady, it is necessary to have this treatment, and, still more, to have repeated series at intervals for at least two years. Radiologists get bombarded with a series of questions most difficult, often impossible, to answer without giving away either the consulting surgeon or physician, or the patient's general medical practitioner, who has been forced to tell the same story as the consultant.

May I make a suggestion? When an operation is performed on a patient with malignant disease, and subsequent *x*-ray therapy is considered advisable, some such statement as this might be given. It could be explained that microscopical examination of what was removed demonstrated that some of the cells showed changes indicating that they were *trying* to become malignant, and that the *x*-ray treatment was advised, and must be repeated, to abort this tendency of these particular cells. The treatment is advised to prevent recurrence and further trouble. By some such explanation as this—which in my experience is seldom given—the patient's mind would be calmed, if not absolutely set at rest, and he or she would realize the necessity for further treatment. Also, the radiologist, and those who had the after-care of the case, would be unhampered in doing their utmost in the circumstances.

Surely it is only loyal to the patient that any utterance of the surgeon or the physician, to whom he has entrusted his life, should be so carefully considered that it cannot be interpreted so as to act contrary to his or her best interest. When it is considered not to be wise to tell the sufferer the whole truth—even though this be communicated to some relative or friend—it is for the physician or surgeon to say so much as will encourage the patient to persevere in what is considered to be to his greatest advantage.—I am, etc.,

as far as possible, to the consideration of the signs, symptoms, and treatment of injuries to the live-born.

As regards the question of the cause of wry-neck, there has been considerable difference of opinion, but I think most of the recent work on the subject shows that the condition is caused by vascular disturbances rather than by direct trauma to the muscle. The subject is discussed at some length by von Reuss[1] and Ehrenfest.[2]—I am, etc.,

Glasgow, Sept. 22nd. GEOFFREY B. FLEMING.

SIR,—Mr. McFarland would be greatly interested to know what evidence I have that there is a rupture of muscle at all, but I hardly think it necessary for me to produce my evidence. In your issue of the previous week (September 19th) there is a letter from Dr. Herbert R. Spencer, the eminent obstetrician, referring to a paper by him in which he showed "that the haematoma is due to bruising, stretching, and rupture at the time of birth." His paper was based on the post-mortem examination of fifteen cases of haematoma occurring in newborn children. Is not this all the evidence Mr. McFarland can possibly require?

But, really, what is the argument about? If Mr. McFarland prefers to think that the muscle is *pinched* at birth, when I think it is bruised, stretched, or ruptured, are we not in agreement? Or, if we are not, could we not become so by saying that the muscle is *damaged* at birth, and leave it at that?—I am, etc.,

London, W.1, Sept. 26th. PAUL BERNARD ROTH.

TREATMENT OF UTERINE HAEMORRHAGE NOT DUE TO UTERINE DISEASE

SIR,—In his excellent article on the above subject (September 26th, p. 556) Dr. James Young does not allude to the use of the galvanic current. In 1900 Dr. A. Zimmern of Paris wrote a lengthy volume on this method. The late Dr. Samuel Sloan of Glasgow discovered it quite independently, and employed it with great success for many years in his practice. He described his method in his *Electricity in Gynaecology*, published in 1917. Both these physicians taught me their technique, and I have found the method astonishingly successful. In the October number of the *Practitioner* I published full details of four severe cases which responded to the galvanic current after all else had failed. (*X* rays and radium had not been tried.) The most striking case of all which I have treated was that of a girl of 22, sent to me by the late Sir John Williams, with the report that she had never had a period in all her life without bleeding continuously for months. She had been twice curetted, once cauterized, and every possible drug and endocrine therapy had been tried. Sir John said that she was sent to me in a very weak condition, after seven weeks of continuous bleeding, and that, if electricity was not successful, hysterectomy was imperative. The treatment had to be begun when there was profuse bleeding and the patient so weak that she could scarcely stand. She was cured, and after eight applications had normal and regular periods for four years. Then she had a relapse, but soon responded to galvanism, and remained normal for over six years, in spite of developing tuberculosis of the lungs. Then a second relapse occurred, for which she is now having a few applications of copper ionization, and is apparently responding as favourably as in the past.—I am, etc.,

London, W.1, Sept. 28th. AGNES SAVILL, M.D.

[1] von Reuss, A. R.: *The Diseases of the Newborn*, 1921, p. 177.
[2] Ehrenfest, H.: *Birth Injuries of the Child*, 1931, p. 231.

EPIDEMIC SORE THROAT

SIR,—The following brief account of some cases of sore throat in a country village may be of interest, when taken in connexion with the paper on acute tonsillitis and its sequels, which appeared in the *Journal* of September 19th.

In the latter part of July and the beginning of August there was an epidemic of diphtheria here. On August 6th a boy was brought to my surgery with a highly inflamed throat and a membrane on the right tonsil. I took a swab of his throat, and sent him to hospital as a case of diphtheria. The swabs on all occasions were negative.

Since then I have had some twenty cases of tonsillitis, none of them showing any membrane, but shall confine myself to the mention of eight, all related to the boy mentioned. (1) August 11th, *uncle*—tonsillitis; (2) August 13th, *aunt*—tonsillitis; (3) August 20th, *aunt*—tonsillitis, with transient rash, no desquamation, no complications; (4) August 25th, *grandfather*—tonsillitis; (5) August 28th, *uncle*—tonsillitis; (6) August 28th, *cousin*—tonsillitis, with marked rash, not typically scarlatiniform, desquamation, no albuminuria; (7) September 14th, *father*—tonsillitis; and (8) September 16th, *cousin* (son of Nos. 1 and 2)—scarlet fever. These eight people live in five different houses, mostly at a considerable distance apart; but I think it is obvious that all these cases are different manifestations of the same condition.—I am, etc.,

Isleham, Sept. 22nd. J. W. MCFEETERS.

CONSULTING FEES AND RENTALS

SIR.—I write, in view of the serious economic position, to make the following suggestion: that all consultants shall reduce their consulting fees to £2 2s. during the present stringency, provided that their landlords also reduce their rents to them by 20 per cent. Many of us are paying very high rentals, much in excess of the true present values—so much so that I should think that very few, if any, landlords could obtain such rentals for any fresh agreements or leases. I do not see how we can reduce our fees otherwise, a course that a large number of us would willingly follow were it feasible.

I think there is no doubt that a large number of persons who desire to seek our advice are debarred by the necessarily high fees, and I am sure that, as a consequence, they are seeking our help more and more at the hospitals, thus throwing an increased burden on these institutions. I write in no commercial spirit, for a true doctor will always consider his patient first and his own pecuniary reward second.—I am, etc.,

London, W., Sept. 24th. WILLIAM IBBOTSON.

RHEUMATOID ARTHRITIS

SIR,—There is a suggestion in connexion with rheumatoid arthritis which, as it seems of some interest and practical importance, I venture to send to you.

A feature of this disease which has been little stressed is that, *when occurring in youth*, it is confined almost entirely to the female sex, and is rarely seen in boys. I am not alluding to Still's disease, which attacks children, but to that serious form of true arthritis which begins, in many cases, soon after adolescence. The above observation, which appears to have been little considered, would seem to have a bearing on one of the methods of treatment commonly tried at present—I mean the removal of dead and crowned teeth and tonsils, as being possible sources of the trouble. I would suggest that the virtual sex monopoly of the disease is a strong indication that toxic infection from these centres has no connexion with the causation of the disease, because such infection would

surely not discriminate between male and female If this is so it follows that the removal of teeth or tonsils is futile as a method of treatment

If it is true that the disease does sometimes occur in young males, such cases are nevertheless so infrequent as to leave the point worthy of consideration My contention is also strengthened by the lack of success which, in fact, so often attends these operations In my own case the tonsils were enucleated when I was 20 but, although they were said to be in a septic condition, it made not the smallest difference to the course of the disease, nor, so far as I know, to my health in any way —I am etc,

September 14th "CRIPPLED"

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

This week the National Economy Bill passed through its remaining stages in the House of Commons and was considered in the House of Lords The Commons was also asked to complete its discussions on the Finance Bill In the Economy Bill debate Mr Chamberlain announced that the reduction in the remuneration of panel practitioners would be limited to 10 per cent It is understood that he has indicated his inability to make further concessions in this direction [See opening pages of this week's *Supplement*]

The propriety of an early General Election has been discussed during the week and a very early appeal to the country is expected This would be made by the National Government

The Economy Bill

PROCEEDINGS IN COMMITTEE

On September 25th the House of Commons was in committee on the National Economy Bill and considered the services in respect of which Orders in Council restricting expenditure might be made under the Statute

The Health Insurance Cut

Mr REES DAVIES moved to omit from this schedule the words national health insurance He said the Minister of Health had issued a White Paper which would lead the House of Commons to believe the panel doctors were generous enough to hand over to the Treasury £850 000 per year of their own money The case was not exactly like that What happened apparently was that the Minister of Health went to the British Medical Association and asked it to come to the rescue of the pound sterling Panel doctors were paid a 9s capitation grant in respect of the fifteen million insured persons in the country Except for a small contribution from the Exchequer that 9s came out of the funds of the approved societies and if the 9s was reduced the reduction ought to accrue to the funds of the approved societies from which it came After the Minister of Health had made an agreement with the British Medical Association he came to the representatives of the approved societies on the Consultative Council and informed them of it The contract for this reduction was practically completed before the approved societies had a chance to say a word about it The proposal the House was considering made a cut of 1s in the fees of panel doctors Only in respect of national health insurance did the Government propose cuts going beyond the May Economy Committee's recommendations

Mr CHAMBERLAIN (Minister of Health) asked how Mr Davies reached that conclusion

Mr DAVIES replied that the May Committee suggested a saving on health insurance of £1 000 000 but the Bill suggested £1 100 000 He asked whether the approved societies would get the same service from the doctors for 8s that they were now getting for 9s Since the Minister of Health had made this arrangement with the chemists one of the largest chemist firms in this country had asked their staff to accept a reduction in wages as a consequence of the proposed reduction of the grant It was claimed that the chemists would hand over £120 000 to the Treasury but the staff of this one firm would suffer a reduction of wages probably amounting to that sum The firm might make a profit out of the transaction Mr Davies declared that the Government was receiving stolen property The doctors and the Ministry of Health had arranged to hand over to the Treasury approximately one million pounds which did not belong to them but to the societies as a body He did not criticize the professional ethics of the doctors but he was afraid they might as a result increase their charges to their non-panel patients He doubted whether in the end the doctors would suffer much

Dr MORRIS JONES remarked that the panel doctors had suffered a cut of over 10 per cent, whereas no reduction had been made in the amount given to the approved societies for administration He thought that amount ought to be reduced now

Mr DAVIES said it was appropriate to ask whether patients would get from the panel doctors in future the service they were getting now and the same quality and the same standard of drugs from the chemists as now In 1913 there were 12 674 panel doctors In 1930 there were 15 750 The average income of each panel doctor was £304 in 1913 to £463 in 1930 an increase of about 50 per cent Mr Davies added that he did not think the medical profession was overpaid but the May Committee had made a scathing attack upon the capitation payment to panel doctors That committee said municipal authorities found it difficult to secure the services of medical men because the fees under the national health insurance scheme were so much lower The May Committee pointed out definitely that 9s was too much because under the old friendly societies system the figure was 2s 6d Every Government had made a raid on health insurance funds and in result would be a reduction of benefits Statutory benefit would not be reduced at the moment but dental optical convalescent home and distress grants would probably go by the board in consequence of these raids In the end this reduction to the Treasury would make it certain that people on permanent disablement benefit would receive not 10 out 7 6d If the Government reduced the doctors' fees by £1 000 000 and handed over that sum to the Treasury that money must come from one fund or the scheme Whenever fees had been reduced in the past that reduction had always accrued to the funds of the societies Mr Davies concluded by declaring that the panel doctors and approved societies had helped considerably to reduce the general mortality rate and infantile mortality By taking away money from the scheme the Government damaged the health of the whole community

Minister of Health's Pep!

Mr CHAMBERLAIN said that Mr Davies really knew something about national health insurance and there was no excuse for his attempt to represent the action which the Government proposed as a raid upon the funds of societies Mr Chamberlain denied he had ever told the House that the societies had agreed to take a shilling from the capitation fees of the doctors and hand it to the Exchequer In the ordinary course any arrangement reducing the capitation fee would benefit the funds of the societies But this was not the ordinary course The doctors were asked whether they would agree to a reduction in their remuneration as a contribution to the national needs and not to the societies funds If the latter had been asked to give up 1s simply for benefiting the funds of the societies they would have refused and would have fought the case to the end They asked whether Mr Chamberlain could give an assurance that anything they gave up would go to the Exchequer and not to the societies It was quite clear that he asked them to accept the cut and they agreed to it The contribution of the doctors was the pecuniary equivalent which the May Committee had recommended That committee estimated a saving thereby in a full year of £750 000 A closer estimate showed that it would be £850 000 but there was no difference in principle He did not know why the May Committee did not recommend any reduction in the remuneration of the chemists If the doctors were asked to make a contribution it was reasonable and right that the chemists also should contribute and the chemists also agreed

Mr Chamberlain then announced an additional reduction of the figures in the White Paper He recalled that the Prime Minister had announced alterations in the cuts originally proposed for the Defence Services for the police and for the teachers For these there was to be a maximum of 10 per

cent instead of the varying rates previously proposed The cut of 1s from the doctors represented 11 per cent Mr Chamberlain thought it unfair to them, and inconsistent with the general scheme of the Government that, when an alteration had been made, the doctors and chemists alone should be left out of it Accordingly he had written to the Insurance Acts Committee of the British Medical Association, and also to the Pharmacists' Union, and said the Government proposed to substitute a simple 10 per cent reduction in both cases That meant the economy would be lessened by about £90 000 in a full year, which he hoped to make good by savings in other directions Mr Chamberlain went on to say that the approved societies were relieved at the proposals the Government made in connexion with the Central Fund of the health insurance scheme Owing to the enormous increase in the claims for sickness benefit the position of a number of societies after the next valuation would be much less satisfactory than after the last Without outside help some societies might not even be able to meet the statutory benefits It was true that £142,000, which would fall to be paid this year from the Exchequer, was not to be paid, but instead of that the Central Fund would get £300 000 per year which it had not had before, and also arrears of that £300 000 since 1928 That would amount to something like £1,000 000, placing the Central Fund in an unassailable position and guaranteeing the standard benefit all round There was no raiding of the funds, and approved societies would be made stronger by the Government proposals

Mr THOMAS LEWIS said that the money under discussion was at the present time the property of the approved societies Formerly the Government made a grant in respect of the payment of doctors but that grant was subsequently withdrawn, and the societies were made to contribute 13s to the Medical Fund, of which 9s went in payment of doctors Some societies had felt for a long time that the doctors were being overpaid He was a member of the Consultative Council in connexion with health insurance, and he believed that council had agreed to the Government's proposals, though he himself demurred It was a gross impertinence to hand over other people's money in this fashion It was very nice to give up one's own money out of goodness of heart, but to make a sacrifice on somebody else's behalf savoured of very great impertinence National health insurance required the funds for it was in a precarious state A number of small societies could not to day pay the statutory benefits, and it was expected that on the fourth valuation a very large additional number would be unable to meet that benefit Exchequer grants to the system were now £4,000,000 less per year than they were ten years ago Receipts and payments to the scheme were just balancing He feared that the reform which was imperative with regard to maternity benefit was going to be delayed The Consultative Council had considered this for many years, and it had reached the final stage in regard to the halving of the grant of £2 per head, so that £1 could be used for building up a new service of maternity homes He hoped the Minister of Health would not allow that to go by the board

Dr MORRIS JONES said that the medical profession would be pleased with, and the House as a whole would gladly accept, the offer which had been made by the Minister of Health It would not have been right, after the profession had accepted the cuts, not on their merits, but in a time of emergency, that they should be penalized for taking quietly what a number of other professions had not accepted He was disappointed at the attitude of Mr Davies He had expected him to say that the medical profession had behaved extraordinarily well in this instance While thanking Mr Chamberlain for the 1 per cent concession, Dr Morris Jones asked, on what principle of equity the 4s 6d per head allowed for administration expenses for approved societies remained unaltered There had been no cut there, although the financial situation of the societies was such that they could bear a small reduction per head for administrative expenses That would have produced some small sum for the State, and have given the approved societies an opportunity of following the very patriotic example of the medical profession.

The House then divided, and by 237 votes to 153 retained national health insurance in the schedule of the Bill

During the resumed debate on the Economy Bill, on September 28th, Mr SOMERVILLE HASTINGS said that during the past week they had talked a great deal about the gold standard, and whether it ought to be maintained or not He thought that the man standard of this country was of greater importance We could not afford to neglect anything which would help to maintain our man power, whether employed or unemployed, at the highest possible level of fitness and efficiency We must depend upon such efficiency in producing the goods which were required to pay for our food and other imports If the standard of living of the unemployed were lowered the consequences might be serious When an unemployed man found a difficulty in obtaining work he felt that he was not wanted, and if, added to that, there was destitution, the mental effects might be serious Fortunately, in this country, we had not seen anything of that kind, but in other countries, where the unemployed were differently treated, it had led to an increase in suicide and crime

On September 29th the Economy Bill was read the third time in the House of Commons

Dr DRUMMOND SHIELS, in opposing, remarked that little had been said about the doctors and chemists He had always found it very difficult to work up sympathy in the House for doctors, and sometimes for chemists, but they were said to have taken their medicine without flinching It had been hinted by one member that they were at the time unaware that more income and petrol taxes were awaiting them What their present state of mind might be was not stated, but here, again, the real attack was not on the doctors and the chemists but on the social services of which they were a part The Royal Commissions had shown that the national health insurance system, while good so far as it went, was quite inadequate Members who knew those reports knew that the improvement of specialist service and services for dependants and many other developments, were required before it could be said to be an adequate service for its purpose Yet, instead of improvements, we had this setback, and the standard of working class medical service was definitely lowered compared with that of other sections of the community He was referring to the developments foreshadowed by the Royal Commission This national health insurance was a vital service It was one of the things which were not often sufficiently emphasized, in view of the wonderful developments of medical and surgical skill, that these ought to be available in full and ample measure to the very humblest members of the community They were not so just now, and the gesture of this Bill in regard to that service was definitely to lower its status

By a majority the Bill was read a third time and sent to the House of Lords

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Control of Imported Milk

On September 24th, replying to Colonel Gault, Mr CHAMBERLAIN said the laws as to adulteration applied equally to liquid and frozen milk, with the added safeguard, in the case of imported milk, that it was subject to sampling at the time of importation The regulations also required that imported milk should be free from tubercle bacilli, and should not contain more than 100,000 bacteria per cubic centimetre These conditions were at least the equivalent of those which applied to English milk Colonel Gault, in his question asserted that milk is now imported into England frozen into solid blocks

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Medical Care of Prisoners.—Replying to Sir C Rawson on September 24th, Sir H SAMUEL said there was no reason why a prisoner in Parkhurst Prison, who suffered from angina pectoris, should be visited by his own doctor, as he was receiving all necessary medical care and attention, and had been free from heart attacks during his sentence If necessary, the prison medical officer could call in a specialist

Meals for School Children.—Sir D MACLEAN told Mr Tinker, on September 24th, that in the week ending July 18th, 134 local education authorities made provision for the feeding of school children The number of children receiving meals was approximately 154,500, of whom 101,500 were necessitous children receiving meals free of charge Sir D Maclean told Mr E Williams, on the same day, that he had no statutory power to authorize local education authorities to provide boots for necessitous school children, or to make a special grant for this purpose

Obituary

Sir William John Ritchie Simpson, C.M.G.

M.D., F.R.C.P.

Director of Tropical Hygiene, Ross Institute

We have to record with deep regret the death of Sir William Simpson, which occurred at the Ross Institute on the night of Sunday, September 20th. He had been in his usual health the week before but developed a cold which passed into pneumonia with fatal results. Born in Scotland on April 27th, 1855, Simpson was thus 76 years of age. He was educated at Aberdeen University, where he graduated M.D. in 1880. He soon decided to devote himself to the study of public health, and took his D.P.H. at Cambridge in 1880. He was then appointed health officer for the City of Aberdeen. After this he came to London and studied at King's College. In 1886 he went out to Calcutta as health officer and remained there until 1897. It was here that he gained his tropical experience. On his return to London in 1898 he was appointed professor of hygiene in King's College, and also lecturer in tropical medicine at the same place. When Sir Patrick Manson was forming the London School of Tropical Medicine in 1899, Simpson joined the staff with Cantlie, Duncan, Baker, Howlett, and Sambon. There he lectured on tropical hygiene, and held the appointment until 1923, when he retired on the age limit. After this, however, Simpson was not finished, and he had much vitality left. When the Ross Institute was founded he became director of tropical hygiene there, and put much energy into furthering the development of that institution. He became a Fellow of the Society of Tropical Medicine and Hygiene in 1909, served on the council from 1911 to 1917, was vice-president from 1917 to 1919, and president from 1919 to 1921. He chose for the title of his presidential address "Some considerations regarding preventable diseases and their prevention." During his period of office he was instrumental in getting the society raised to the position of a royal one, and from that date always took the greatest interest in its affairs. He supported strongly the move to Manson House, where the society is now installed, and it is sad to think that he will not see the opening of the new building on its completion.

During his career Simpson held many other important posts, for example he was a member of the Naval Medical Consultative Board, of the Colonial Medical and Sanitary Committee of the Yellow Fever Commission in West Africa, and of the Government Commission on Enteric Fever, South Africa, 1900–1. He also served on a Government Commission to inquire into the causes and continuance of plague in Hong Kong, 1902, and to report on the sanitary condition of Singapore in 1903; West Africa, 1908; East Africa, Uganda, and Zanzibar, 1913–14; and of mines and mining villages of the Gold Coast as regards the prevalence of plague there, 1924.



Sir William Simpson.

Writing also did not come amiss to him. He was editor of the *Indian Medical Gazette* from 1889 to 1896, and editor of the *Journal of Tropical Medicine* in the old days and up to the present time. While in India he became interested in plague, and in 1905 published an interesting and valuable monograph upon the disease. In addition to this, he published a textbook entitled, *Maintenance of Health in the Tropics* (1916), a previous work published in 1908 being termed *The Principles of Hygiene in Relation to Tropical and Subtropical Climates*. He delivered the Croonian Lectures at the Royal College of Physicians in 1907.

He was elected a Fellow of the Royal College of Physicians in 1899, was made C.M.G. in 1909, and received the honour of knighthood in 1923. During the war he undertook service in Serbia, and was given the Order of St. Sava of Serbia in 1918. He married Mary, daughter of the Rev. Dr. Jamieson, St. Machar Cathedral, Old Aberdeen. He lost his son in the war, and is survived by his widow and a daughter.

Simpson was liked by all and had no enemies, and he was always delighted to help young men in forming their careers. Though of a kindly disposition he was possessed of great determination, which in certain instances brought him into conflict with those with whom he had to deal. This determination is well illustrated by his recent tour to Rhodesia on behalf of the Ross Institute, an undertaking which might have deterred even a younger man. Lately he had been much interested in London's open spaces, which were being encroached upon by modern building operations. He did his best by illustrated pamphlets and other means to check this retrograde step, which he was convinced was bad for the health of London's population.

Simpson may be termed one of the pioneers of tropical medicine, one of that band of workers who did so much at the beginning of the century to develop the Tropics and make them healthy and habitable for the white races. Dr. Sambon, another of these, passed away only the other day; they were lifelong friends, and were much devoted to each other.

G. Carmichael Low.

Sir William Simpson was vice-president of the Section of Tropical Medicine at the Annual Meetings of the British Medical Association in 1898 and 1913, and president in 1914.

[The photograph reproduced is by Claude Harris, Ltd.]

Sir Harry Baldwin, C.V.O.

M.R.C.S., L.D.S.

Honorary Surgeon Dentist to the King

We announced briefly in last week's *Journal* the death of Sir Harry Baldwin, honorary surgeon dentist to the King. While cruising in his motor yacht *Mal de Mer* off the Brittany coast he contracted typhoid, and after three weeks' illness died in hospital at Vannes, France, on Sunday, September 20th.

Harry Baldwin was born at West Bridgford, Notts, in 1862, and was educated at Nottingham High School. Thence he went to Middlesex Hospital and the Royal Dental Hospital of London for his medical and dental training. On qualifying in 1884 he joined the late Sir Charles Tomes in dental practice in Cavendish Square, and for many years attended Queen Victoria; later, in 1918, he was appointed surgeon dentist to the King, and in 1926, on his retirement from practice, honorary surgeon dentist. He was knighted in 1918, and made C.V.O. in 1923.

From 1891 to 1899 he served the Royal Dental Hospital as assistant dental surgeon. In 1913 he was president of the Metropolitan Branch of the British Dental Association, and in 1915 of the Odontological Section of the Royal Society of Medicine. In 1912 he was president of the British Society for the Study of Orthodontics, and for many years was treasurer of the British Dental Association. During the war he was consulting dental surgeon to the military hospitals of London, and again undertook the work of dental surgeon to the Royal Dental Hospital.

Sir Harry Baldwin made two outstanding contributions to the progress of dental surgery—he popularized in England the use of plaster-of-Paris in taking impressions of the mouth, and he originated a method of combining cement and amalgam in filling a tooth which has resulted in saving large numbers of apparently hopelessly decayed teeth. His professional standard was of the highest, and his skill in all branches of his profession made him worthy of all the honours and success that fell to his lot. As a junior surgeon to the Royal Dental Hospital, the writer of this notice served with Sir Harry (then Mr.) Baldwin, and vividly remembers how the self-reliance and keen analytical acumen of his senior helped him through many a difficult case.

Like his partner, Sir Charles Tomes, he was an excellent artist, and, under an assumed name, had exhibited at the Royal Academy. He had, too, an expert's knowledge of etchings and of Chinese porcelain ware. On his retirement he went to live at St. Helens, Isle of Wight, where he took up golf and shooting, and, in spite of the fact that he had neither played golf nor shot before, rapidly became proficient in both sports. Later he took up motor-cruising, which led to his untimely death from a disease which sanitary science should have banished long since.

The whole dental profession will mourn and miss him, especially those who, like the present writer, knew him intimately and felt his personal charm. He leaves a widow and a daughter.

J. G. T.

W. F. DEARDEN, M.R.C.S., L.R.C.P.

Medical Officer of Health, Manchester Port

Dr. William Francis Dearden of Manchester died in hospital on September 15th, after a short illness which ended very suddenly when he was confidently expecting relief and ultimate cure from operation, and was full of plans for the future. By his death the medical profession has lost one of those quiet, unobtrusive, and efficient workers who are so ill spared in any community. Qualifying in 1885 as M.R.C.S. and L.R.C.P., he spent some years in general practice—a good training, as he always admitted, for his long and distinguished service as medical officer of health to the Manchester Port Sanitary Authority, and as factory surgeon to this area. He was honorary secretary to the Association of Factory Surgeons, made many contributions to the literature of industrial hygiene, was one of the first to call attention to the incidence of epithelioma among cotton spinners, and in 1927 gave the Milroy Lecture before the Royal College of Physicians of London on "Health hazards in the cotton industry."

Very early in his career Dearden became interested in public work, and though he represented his ward in the city council for some years, this interest was soon centred in work for the British Medical Association and his professional colleagues. Mention of the offices held by him can but outline our indebtedness and indicate the range of his service. Locally, he was representative, chairman of the North Manchester and later of the combined Manchester Divisions, and charities secretary; and outside the Division he was a member of the Charities and Public Health Committees of the Association, and served as secretary of the Section of Industrial Hygiene and Diseases of Occupation at the Annual Meeting of 1902, vice-president of the Section of Industrial Diseases in 1908, and president of the Section of Occupational Diseases in 1929. In Stretford—the district in which he resided—he was past-president of the local medical society, and chairman of the medical board of the Memorial Hospital—a general practitioners' hospital organized mainly on the lines since adopted by the British Medical Association in its Hospital Policy.

But probably he would himself have wished—and many of his colleagues would agree—that the highest meed of appreciation and gratitude should be reserved for his really great work as secretary of the Manchester Medical War Committee. To this Dearden gave of his best, and it was a great satisfaction to him that as a result of that work the interests of the medical services of Manchester and of her absentee doctors were so well conserved that those who returned found that their practices had suffered none but the inevitable damage. It was a point of honour with him that this work should be its own reward, and he firmly declined to accept a decoration offered him on its conclusion.

Reserved, quiet, of high standing in the chosen branch of his profession, even keener on work for his professional brethren, it is impossible to assess our loss. There has been no medical movement in Manchester for the past thirty-five years that has not been helped by Dearden's active support and wise counsel; those of us who have had the privilege of working with him know what a loyal friend and hard worker we have lost; and the heartfelt sympathy of all goes to his wife and daughter.

R. G. M.

Sir Thomas Legge writes:

A foremost interest in Dearden's life was his participation in the work of the certifying factory surgeon; for over thirty years as honorary secretary, and then as president of the Certifying Factory Surgeons' Association, he was indefatigable in his efforts to consolidate and strengthen it. No trouble was too great for him to take in that interest, by deputations to the Home Secretary, to increase the fee and scope of the work, in organizing an Industrial Disease Section at meetings of the British Medical Association, in advancing their status, and tracing their honourable history over the past century of their existence. He recognized that the shortcomings in their work were not due to the men, but to the narrow statutory requirements of the section of the Factory Act under which they have to work. He deplored the negative character of the certificate of fitness, and the lack of power to follow up and re-examine. He lived to see this negative certificate converted into a positive one—namely, that the employee is fit for employment "for the full time allowed by law," which, if not yet statutorily enforced, is at any rate embodied in both the Factory Bills which have been published, the one by a Labour and the other by a

Conservative Government. And in his own district, in an important branch of the cotton industry, and the india-rubber industry, he was able to achieve this object. He took immense interest in other branches of factory hygiene, reporting on notifiable industrial diseases, on gassing cases, in his monthly examination of workers under Home Office Regulations for the india-rubber industry, and in his work under the Workmen's Compensation Act.

RICHARD WHYTOCK LESLIE, M.D., M.Ch., LL.D.

Consulting Physician to the Ulster Hospital for Children and Women

We much regret to announce that Dr. R. W. Leslie died on September 22nd at a nursing home in Belfast after a few weeks' illness. By his death the medical profession of Northern Ireland loses a trusted leader and representative.



R. W. Leslie, M.D., LL.D.

Richard Whytock Leslie was born in County Tyrone on September 26th, 1862. His father was the Rev. John Knox Leslie of Cookstown. From Raphoe Royal School he went to University College, Galway, and thence to Queen's College, Belfast, graduating M.D. and M.Ch. at the old Royal University of Ireland in 1887, having obtained in the previous year the L.M. of the Rotunda Hospital, Dublin. A large part of Dr. Leslie's active professional career was spent in Belfast, where he served for thirty-five years as physician to the Ulster Hospital for Children and Women in Templemore Avenue; he was also physician to Campbell College, Belfast. For many years he gave up much of his leisure to the work of ambulance instruction, serving as examiner and medical secretary of the Ulster Branch of the St. John Ambulance Association. For several years he conducted a first-aid class in the city of Belfast, particularly in the Strandtown district, where he won the respect and affection of all classes. In recognition of his services, more particularly during the war, he was created a Knight of Grace of the Order of St. John of Jerusalem.

In 1905 Dr. Leslie was elected a senator of the Royal University of Ireland, and in 1909, when Queen's College was merged in the new Queen's University of Belfast, he received the honorary degree of LL.D. As a senator of Queen's University and a member of convocation he undertook many duties, including membership of the Standing Committee, the Committee for the Extension of University Teaching, the Committee on Military Instruction, the Athletic Field Committee, the Committee to Administer Research Funds, and the Board of Curators. He was an active member of the Ulster Medical Society, in which he held office as president in 1912-13. In politics Dr. Leslie was devoted to the Unionist cause; he was a member of the Ulster Unionist Council and of the Queen's University Voters' Association. An influential Freemason and a warm supporter of masonic charities, he was Past-Master of Acacia Lodge, and one of the founders of Queen's University Lodge.

To the work of the British Medical Association, both locally and at headquarters, Dr. Leslie gave much time and thought. He was chairman of the Belfast Division in 1919-20, a member of the Irish Committee from 1922 onwards, and a member of the Central Council from 1923 to the time of his death. He was diligent in attendance at Council meetings in London, though never prominent in debate. When the Association held its Annual Meeting in Belfast in 1909 under the presidency of Sir William Whitla, he was vice-president of the Section of Diseases of Children. He had also served as president of the Ulster Branch.

Mr. C. J. A. Woodside, F.R.C.S., honorary secretary of the Ulster Branch, sends the following personal tribute:

Dr. Leslie practically never missed a meeting of council or a general meeting of the Branch. His interest in every detail of the work never flagged. With others who had so many interests, and especially who took such an active part in the work at headquarters, one would have been hesitant in seeking help in minor affairs, but in the case of Dr. Leslie, no matter what the difficulty, I never hesitated to seek his help and advice. His good nature, geniality, sincerity, his wisdom, and his competence, were a combination of virtues seldom found in one man. His place in the British Medical Association will not soon be filled, nor will those who knew him soon forget him.

[The photograph reproduced is by Lafayette, Dublin.]

Dr. Frédéric Wanner, tutor to British post-graduate medical students, 1924-31, died at Lausanne on September 12th. He was privatdocent de l'Université, and since 1925 also Chef du Service Sanitaire Cantonal, and also Vice-Président du Conseil du Santé. His death at the age of 54 will be learnt of with deep regret by his old students all over the world.

The following well-known foreign medical men have recently died: Dr. Siegfried Rabow, first professor of psychiatry and subsequently of pharmacology at Lausanne, and author of a work on prescriptions which went through several editions; Dr. Charles Karsner Mills, emeritus professor of neurology in the University of Pennsylvania, and corresponding member of the Section of Neurology of the Royal Society of Medicine, aged 85; Dr. Hobart Amory Hare, professor of therapeutics at the Jefferson Medical College of Philadelphia, and author of works on therapeutics and complications of typhoid and other fevers, aged 68; and Dr. Lawrence Webster Fox, a Philadelphia ophthalmologist, aged 78.

The Services

PRESENTATION TO SIR G GUISE MOORES

Major General Sir G Guise Moores, K C B, was presented on September 25th with a silver tray, tea and coffee service, and entree dishes, and a settee and two armchairs, from the officers who have passed through the King Edward Convalescent Home for Officers at Osborne, together with the matron and nursing sisters during his seven years' term of office as house governor and medical superintendent The presentation was made by Colonel D J J Hill, who eulogized his work at Osborne Sir G Guise Moores will be succeeded as house governor and medical superintendent at Osborne by Major-General Godfrey Late on October 9th

DEATHS IN THE SERVICES

Colonel Edward Patrick Connolly, late R A M C, died at Kingstown, Ireland, on August 5th aged 54 Born in 1876, the eldest son of D I G William Connolly R N (ret), he was educated at the Catholic University, Dublin, and took the *L R C P and S I in 1898 After being resident surgeon at* St Vincent's Hospital Dublin he entered the R A M C as lieutenant in 1899, became lieutenant colonel in 1915, colonel in 1927, and retired early in the present year, when holding the post of A D M S in Northern Ireland He served throughout the South African war being awarded the Queen's medal with five clasps and the King's medal with two clasps, and in the Tibet expedition of 1903 4, receiving the medal with clasp He also took part in the great war

Lieut Colonel Leopold App Arthur Andrews, R A M C (ret) died at Beckmeadow *Mundesley, Norfolk, on August* 6th aged 49 Educated at the school of the Royal College of Surgeons in Ireland he took the L R C P and S I in 1906 and entered the R A M C as lieutenant in the following year After service in the great war he became major in 1919 and retired with the honorary rank of lieutenant-colonel in 1928

Universities and Colleges

UNIVERSITY OF LONDON

LONDON HOSPITAL MEDICAL COLLEGE

The following scholarship awards have been made at the London Hospital Medical College Prize Scholarship in Science (£100) Mr G K Taylor Entrance Scholarship in Science (£50) Mr P H Tooley Scholarship open to students of Epsom College Mr R B Taylor Scholarships open to students of Universities of Oxford and Cambridge (1) Price Scholarship in Anatomy and Physiology (£100), Mr T L R Shore, (2) Freedom Scholarship in Pathology (£100), Mr A M Birrell Two open Scholarships (each of the value of £100), Mr G E Godber and Mr G W Hayward

The Schorstein Memorial Lecture will be delivered by Dr. Arthur J Hall, professor of medicine, University of Sheffield, in the Bearsted Clinical Theatre on Thursday, October 15th, at 4 15 p m, the subject will be "Chronic epidemic encephalitis" Members of the medical profession are cordially invited

A post graduate course for former students will be held on October 14th, 15th, 16th and 17th, and the old students' dinner will take place at the Trocadero Restaurant on Thursday, October 15th

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The second course of five Heath Clark Lectures on the rise of preventive medicine will be given by Sir George Newman K C B, on October 13th 15th, 16th, 20th, and 22nd at 5 p m

UNIVERSITY COLLEGE

A course of six lectures on the physiology of the sense organs will be given by Dr R J Lythgoe on October 12th 19th 26th, and November 2nd 9th, and 16th, at 5 p m

Four lectures on speculation observation, and experiment, as illustrated by the history of embryology, will be given by Dr Joseph Needham on October 14th, 21st, 28th, and November 4th at 5 30 p m

Dr L L Bayliss will give a course of four lectures on the respiratory functions of the blood, on October 16th, 23rd, 30th, and November 6th at 5 p m

KING'S COLLEGE

Four lectures on metabolism of the carbohydrates and fats will be given by Dr J A Hewitt on October 15th, 22nd, 29th, and November 5th, at 5 p m

UNIVERSITY OF LEEDS

The following candidates have been approved at the examinations indicated

M D—J Phillips

Final M B Ch B—Part I: J H Hudson, J H Lawrence, R Raines *Part II* N W Roberts, M G Ross, C K Shum R J Tunbridge, Ethan I Waller *Part III* R J Tunbridge (second class honours), L Glick, J M Holmes, G Hyman H Mattison, N W. Roberts, M G Ross, B Schroeder, Ethan I Walker

DIPLOMA IN PUBLIC HEALTH—Catherine M Gray

The William Nov Medal and the West Riding Panel Practitioners' Prize have been awarded to P R Allison

LAUSANNE MEDICAL GRADUATES

The following have received the M D degree from the University of Lausanne during the last academic year (October 1930 to July, 1931): Miss Louise M Poynder, Colin McIver Major I M S The following have passed the examinations, and are now qualified to present a thesis for the degree of M D Owen Henry Bellerby, G K Kee, Edwin M Robertson The university opens for the academic year 1931-32 on October 15th

Medical News

The new winter session at Guy's Hospital Medical School will open to-day (Friday, October 2nd), at 3 p m, when Sir Farquhar Buzzard, regius professor of medicine in the University of Oxford, will deliver an address and distribute the prizes. The subject of the opening address is "The General Medical Council"

At the opening of the ninetieth session of the School of Pharmacy of the Pharmaceutical Society of Great Britain, on Wednesday, October 7th, at 3 o'clock, the inaugural sessional address will be given by Professor G E Gask, dean of the Faculty of Medicine, University of London

Sir James Jeans, F R S, will speak (under the auspices of the British Institute of Philosophy) on "The mathematical aspect of the universe," at University College, Gower Street, W.C, on Tuesday, October 13th, at 8 15 p m Tickets (for which there is no charge) can be obtained from the Director of Studies, University Hall, 14, Gordon Square, W.C.1.

The presentation of medals and prizes in the Faculty of Medicine of Birmingham University will take place on Tuesday, October 6th, at 5 p m, in the Medical Lecture Theatre, the University, Edmund Street An address to students will be given by Professor Leonard Gamgee, Ch M, F R C S Tea at 4 30 p m in the University Club

The Hunterian Society of London will open its new session on Thursday, October 22nd, with a dinner meeting at Simpson's Restaurant, Cheapside, when Dr David Ross will give his presidential address on "Some problems of gout" The subject for discussion on November 16th is "The medical aspects of crime in fact and fiction," and on December 17th "Oral sepsis" The Hunterian Lecture will be given on January 18th by Professor von Eiselsberg of Vienna, entitled "How Roentgen has helped in modern surgical diagnosis."

Mr Maurice Sorsby will deliver the presidential address on "Deafness and its prevention" before the London Jewish Hospital Medical Society on October 8th, at 3 30 p m, at the London Jewish Hospital, Stepney Green, E Lord Moynihan, President of the Royal College of Surgeons, will be the guest at the annual dinner to be held on Thursday, December 10th, at 7 30 p m, at the Trocadero Restaurant

A short course of lectures on functional nervous disorders, for practitioners and medical students, will be given at the Tavistock Square Clinic from November 2nd to 14th inclusive Sessions will be held at 4 45, 5 45, and 8 15 p m on Monday, Tuesday, Wednesday, Thursday, and Friday of each week, and there will be demonstrations on the Saturday afternoons from 2 30 to 5 o'clock The fee for the course is £2 2s for medical graduates and 10s 6d for students, tickets to be obtained in advance from the honorary lecture secretary, 51, Tavistock Square, W C 1.

The Fellowship of Medicine and Post Graduate Medical Association announces that the first of a series of eighteen evening lectures for the M R C P examination will be given at the Medical Society of London 11, Chandos Street W 1, at 8 30, on Monday, October 5th, by Dr W Langdon Brown on The clinical importance of blood sugar high and low, followed on Wednesday, October 7th by Dr L J Witts on 'Achlorhydria' Fee 10s 6d each lecture payable at the lecture room, or £6 6s for the series The following courses will begin on Monday, October 5th At the Central London Throat, Nose, and Ear Hospital for four weeks including a clinical course, fee £5 5s, or £2 2s for the first week only, and at the Hospital for Tropical Diseases 25 Gordon Square, in tropical medicine occupying the whole of each day, fee £8 8s for three weeks Other courses in October will include gynæcology at the Chelsea Hospital for Women October 12th to 23rd fee £5 5s cardiology at the National Hospital for Diseases of the Heart October 12th to 23rd fee £7 7s, diseases of children, at the Hospital for Sick Children mornings only, October 19th to 31st fee £5 5s (this course will only be held if a minimum of ten post graduates take it, and early application is therefore essential) A series of free lectures on Prognosis will be given on Wednesdays at 4 p m at the Medical Society of London 11, Chandos Street Cavendish Square beginning on October 14th Copies of all syllabuses are obtainable from the Fellowship of Medicine 1 Wimpole Street W 1

A short course of lectures on contraceptive technique will be given without fee at the Royal Institute of Public Health (37 Russell Square W C 1) on Thursdays November 12th 19th and 26th, at 4 p m In association with the lectures clinical demonstrations will be held at 108 Whitfield Street W 1 on the afternoons of Wednesday November 4th and Wednesday, December 2nd Applicants desirous of attending the demonstrations must send in their names to the clinic in advance and obtain tickets These will be limited to members of the medical profession and senior medical students attending the lecture course at the institute

The fourth Annual Graduate Fortnight at the New York Academy of Medicine will be held from October 19th to 30th The subject for consideration will be Disorders of the circulation,' and an extensive programme of lectures clinics, and demonstrations has been drawn up Further information may be obtained from the New York Academy of Medicine 2, East 103rd Street New York

A course of lectures on the health of the citizen will be delivered at the Royal Institute of Public Health (37 Russell Square, W C) on Wednesdays, at 4 p m, from October 14th to December 16th inclusive The lecturers include Sir Ernest Graham Little Sir Leonard Hill Professor F J Browne Dr L E Claremont (Director Eastman Dental Clinic Royal Free Hospital) Professor Winifred Cullis, Dr Chalmers Watson Dr David Lees Professor H R Kenwood, Professor Edgar L Collis and Sir Pendrill Varrier Jones The course is intended primarily for the Fellows and Members of the Institute but all others interested in medico-sociological problems are invited to attend

The annual meeting of the French Society of Gynæcology will be held at the Paris Faculty of Medicine on October 5th when the following papers will be read (1) A report by M Paul Ulrich of Paris, on the chemistry of the vagina and its physiological significance, followed by a paper by M C Guillaumin of Paris on the best chemical conditions for the development of different organisms in the vaginal secretions, (2) Indications for operation in chronic non tuberculous salpingitis, by M Ch Martin of Angers

A general meeting of the Guild of St Luke, St Cosmas, and St Damian will be held in the Cathedral Hall Archbishop's House Westminster, on Sunday, October 18th immediately after High Mass in the Cathedral at 10 30 a m In the annual report for the year 1930 31 it is stated that the council had decided that it was not advisable for the Guild to participate in any official manner at public meetings on the subject of Lourdes the council decided further, to take no action that might in any way derogate from the competence and value of the medical bureau at Lourdes The Irish membership of the Guild is increasing, particularly in Dublin, and the formation of an autonomous Irish branch is under consideration Reference is made in the report to the successful meeting of the Guild held at Eastbourne during the Annual Meeting of the British Medical Association

The fortieth French Congress of Surgery will be held at the Paris Faculty of Medicine from October 5th to 10th, when the following subjects will be discussed post operative peptic ulcers introduced by MM Gosset of Paris and Leriche of Strasbourg, pneumococcal peritonitis introduced by MM Brechot of Paris and Nové Josserand of Lyons and immediate treatment of compound fractures of the leg, introduced by MM Roux of Montpellier and Senegue of Paris

The Salon des Medecins for the exhibition of works of art by doctors, dentists veterinary surgeons pharmacists and members of their families will be held at 117 Boulevard Saint Germain from October 4th to 12th

We are informed that in view of the general economic depression the Aerzte Verein Davos has decided to postpone until 1932 the conference on tuberculosis which was to have been held this year at Davos from October 5th to 10th

Messrs Edward Arnold and Co announce for early publication *The Rheumatic Infections in Childhood* by Professor Leonard Findlay and *Diseases of the Stomach* by Dr Hugh Morton

In the New Spanish Parliament forty seven doctors have seats

Letters, Notes, and Answers

All communications in regard to editorial matters should be addressed to **The EDITOR British Medical Journal British Medical Association House Tavistock Square W C 1**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated Correspondents desiring to be supplied with reprints of their communications should notify the fact when sending them for publication

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The address of the Irish Office of the British Medical Association is 16 South Frederick Street Dublin (telegrams *Bacillus Dublin* telephone 7390 Dublin) and of the Scottish Office 7, Drumsheugh Gardens Edinburgh (telegrams *Associate Edinburgh* telephone 24361 Edinburgh)

QUERIES AND ANSWERS

Prophylaxis of Lumbago

"S L" would be glad to hear of any treatment other than that which in other practitioners hands has proved of benefit in preventing lumbago He has a patient who suffers from attacks of extreme severity occurring once or twice a year when weather conditions appear to be having a bearing on the immediate cause Attacks come on with extreme sudden ness and in a few seconds the patient is helpless and cries out on the least movement For the first few days of an attack the patient cannot turn in bed cannot blow his nose and a fit of coughing would cause agony Radiant heat greatly relieves temporarily In other respects the patient is quite healthy and normal as to the condition of all organs blood pressure etc He is a tee totaller and is over 40 years of age, a business man, doing no specially arduous or out of door work

Glossitis

Dr. Thomas Jones (Colwyn Bay) writes: The condition described by "T. S. S." is probably chronic streptococcal glossitis (see *Rose and Carless*, 1930, p. 915). Treatment is as follows: avoid acids, pungent drugs, potassium bromide, chlorides, and condiments, etc.; make good use of tongue by masticating food well, swill the mouth after each meal with glyc. thymol co., diluted with fairly warm water; also wash dentures thoroughly before replacing. Should tongue become dry suck glycerin pastilles (Allen and Hanburys).

Income Tax

Motor Accident Expenses

"Exe" took over a practice in 1930, buying a second-hand car for £30. As a result of an accident he sold the car for £1, buying another for £95, and was compelled to pay further sums by way of damages and legal costs. Can he deduct these expenses?

*** In calculating his profits for his first year, "Exe" can deduct the cost of replacing his car to the extent of £30 − £1 = £29, and, in our opinion, also the legal and other costs incurred as a result of the accident. (We assume that it occurred while the car was being used for professional purposes.) But the question of the damages and costs is not free from argument, and in the event of that claim being refused by the local official we advise "Exe" to place all the facts before the authorities at Somerset House and ask for sympathetic consideration.

LETTERS, NOTES, ETC.

British Drugs

Dr. W. Bertram Watson (Harrogate) writes: The newspapers, led by the National Government, exhort us to "Buy British." May I suggest there is an additional duty on ourselves—where possible, to "Prescribe British."

Menorrhagia not due to Uterine Disease

Dr. N. Pines (London, E.) writes: May I add one remark to the valuable paper by Dr. James Young on menorrhagias not due to uterine disease, published in your issue of September 26th. Diabetes mellitus may be the cause of a sudden and alarming bleeding in a woman of post-climacteric age. I can cite one case, where a specialist thought of cancer of the body of the uterus, but further examination proved the womb to be quite healthy. A few weeks afterwards I discovered glycosuria, and put the patient on diet. Since then—more than five years ago—she has had no further haemorrhage.

Phimosis and Circumcision

Dr. Ian Jefferiss (Totnes) writes: As one who believes that the prepuce, like the tonsil, does not require mutilation, I entirely disagree with everything Dr. Jessiman says (September 19th, p. 554), except that he does not favour stretching. When no scar tissue is present, all that is required—and I have pointed this out more than once in the columns of the *Journal*—is to pass a blunt probe between the foreskin and glans, sweep it round, draw back the skin, break down adhesions, remove smegma, and immediately draw it forward. Do this three or four times at intervals of a few days; show the mother or nurse how it is done, the glans acts as the stretching agent. Habits which are said to be due to the presence of a prepuce are as common in the female, yet we do not mutilate the corresponding organ. Circumcision is a relic of barbarism and religious fanaticism. Being covered with mucous membrane (like the vagina) the glans requires protection, and intelligent parents are coming to realize that a great deal of this unnecessary interference with helpless children is quite uncalled for. To say that there is no pain during and after the absurd mutilation of the organ is simply extraordinary.

"G. F." writes: Dr. Jessiman advises "circumcision in every male child . . . even if easy retraction of the prepuce is possible." Granted an intelligent mother, surely she can be taught to retract the prepuce gradually. Is there any evidence that a penis covered by a prepuce which is retracted and washed in the child's bath can cause balanitis, convulsions, etc.?" Are the non-circumcising races of the earth more liable to convulsions and enuresis than Jews and Mohammedans? Of my three sons one was circumcised at birth and the others never. None of them suffered from enuresis, nor did I as a child, but two of my grandchildren—both circumcised—have this troublesome habit. Dr. Jessiman does not even mention the great argument in favour of circumcision—namely, the lessened liability to contracting syphilis. Do monkeys learn "bad habits" owing to lack of circumcision? If the prepuce was only evolved as a protection to the glans, why should it have nerves of special sense? No; the prepuce is a part of the genital organs.

Maggots in Wounds

Dr. Janet M. C. Gray (London, S.E.) writes: I was very much surprised to see in the *Journal* of September 19th the article on this subject. Since 1892 until the end of 1928 my work was chiefly hospital work in India, although not entirely; but it was only there that I saw wounds infested by maggots, and in every case I did my best to get rid of them. A girl Mohammedan, in a village fifty miles from a hospital, had extensive disease of her right tibia, swarming with them; the skin was all destroyed, and her foot was like a boat-full of foul fluid, and the fetor was intense. I amputated at the knee, and she made a very good recovery and went back well. I had several cases among out-patients, who had maggots in their noses and were frantic with the distress they caused; drachm doses of chloroform syringed up their noses cured them completely; once a woman fell to the ground and was unconscious for a few moments, but soon recovered. I, like all the surgeons I have met with, had a great abhorrence of fetid discharges, and carried on a constant fight against flies, mosquitos, bugs, fleas, and lice.

The Weak Heart?

Dr. Garry Simpson (Lancaster Gate, W.) writes: I have recently come across another life made miserable, and the patient become a confirmed hypochondriac, by being told he had a weak heart; this is only one of many sad cases I have met with in the last forty years. The case in point was a miserable, weedy-looking man about 30 years of age, who came to consult me about some ear trouble. He told me that he had a weak heart, and I suggested that I should examine it; this I did, and found it as sound as a bell, and told him so. After two months he called again, and there was such a change I hardly recognized the man; he told me he had put on half a stone in weight, and was feeling a new man in every way. He confessed that his life had been made miserable for some years by what his doctor had told him. Unless there is some organic disease or other strong reason, I look upon it as next door to criminal to tell a patient he has a weak heart.

Winter Time and the A.A.

On and after Sunday, October 4th, when summer time ends, the Automobile Association's road patrols will be on duty from 9 a.m. until lighting-up time. Patrols with night service outfits will patrol the roads from lighting-up time until midnight. The emergency service which is maintained at the A.A. headquarters in London (telephone, Whitehall 1200) is available to members throughout the night from 6 p.m. to 9 a.m.

Medical Golf

The second autumn meeting of the Sussex Medical (B.M.A.) Golfing Society was held on the links of the Brighton and Hove Golf Club on Sunday, September 27th. Play was against bogey, and the captain's prize, presented by Dr. A. H. Morton Palmer, for singles, was won by Mr. H. G. Downer with 2 down; Drs. Craig and Garland tied for second place with 3 down. The sweep in the afternoon four-ball competition was won by Drs. Garland and Twiston-Davies with a score of 6 up; Drs. Bonnalie and Wright, and Butcher and Raymond, tied, with a score of 3 up, for second place. There was a very disappointing entry for this meeting, the attendance representing less than 2½ per cent. of the estimated number of golfing doctors in Sussex. It is hoped that the spring meeting, which is to be held at Cooden Beach, will be better patronized. The address of the honorary secretaries is 8, Second Avenue, Hove, whence particulars of membership may be obtained.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 52, 53, 54, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 199.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

279 Heredity in Paternal Tuberculosis

P. Nayrac and A. Breton (*Presse Méd.*, August 8th, 1931, p. 1181) conducted a pathological examination of the testes of eleven males, from 17 to 35 years of age, with bilateral pulmonary tuberculosis. During life there had been no sign of testicular tuberculosis, nor had there been azoospermia. The testes were removed a few minutes, at the most two hours, after death, and fixed at once with Bouin's interstitial injection ; five cases, those in which the pulmonary condition had developed slowly, showed a sclerosis of the interstitial tissue of the testes. This sclerosis is, in the opinion of the authors, inflammatory in origin, for they noted all stages between it and an interstitial orchitis with perivascular infiltration. Evidence of inflammatory change was found in nine cases. Long has shown that the injection of tuberculin into the testicular gland of a tuberculous guinea-pig causes hyperaemia, inflammatory oedema, and coagulation necrosis of spermatocytes and spermatoids, progressing in three or four weeks to atrophy of the tubules. Baitsell and Mason have reported that a similar injection of tubercle bacilli causes a rapid degeneration of the germ cells in the seminiferous tubules, and that both testes may be affected even if only one is inoculated. The authors do not consider that there is a specific reaction of the testicular gland to the toxin of tubercle, but that this is only one instance of a general reaction of the gland to toxins. Evidence of atrophy has been found in syphilis, alcoholism, pneumonia, *B. coli* infection, cancer, and abscess of the lung. The authors claim that it has been definitely established that the child of a father with pulmonary tuberculosis is born of an abnormal spermatozoon.

280 Anatoxine Prophylaxis of Diphtheria

R. Debré, G. Ramon, M. and G. Mozer, and Mlle J. Prieur (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, July 13th, 1931, p. 1246) have found that the usual method of administering the Pasteur Institute preparation of anatoxine, which contains 10 anatoxic units per c.cm.—namely, 0.5, 1, and 1.5 c.cm. at intervals of three weeks—gives 94 to 96 per cent. of negative Schick reactions. In this way 30 anatoxic units are given. The present authors, in an endeavour to obtain 100 per cent. of negatives, tried the effects of giving an additional injection of anatoxine, of increasing the interval between the injections, and of increasing the units in each dose. The desired results were obtained by the last method, a certain degree of immunity (measured by the amount of antitoxin in the serum) being also produced. Accordingly, an increase of the dosage to 1, 2, and 2 c.cm. is recommended. This method does not involve a more intense reaction or greater danger than the usual one, even in older children or in tuberculous subjects. Cathala claims an anti-typhoid as well as an anti-diphtherial immunity following the administration of three successive injections at intervals of 20 days of 1/2 c.cm. anatoxine with 1/2 c.cm. T.A.B. 1 c.cm. of each, and 2 c.cm. anatoxine respectively.

281 Sudden Death from Heart Disease in Adults

W. Munck (*Ugeskrift for Laeger*, July 30th, 1931, p. 787) has made a study of the post-mortem examinations at the University Medico-Legal Institute in Copenhagen during the past ten years. Of 242 necropsies on adults who had died a sudden, natural death, 130 were performed on persons whose death was traced to disease of the heart and aorta. These cases were classified according as the parts affected were: (1) the coronary arteries ; (2) the myocardium alone ; (3) the valves of the heart ; and (4) the aorta. There were only 28 women to 102 men in this material, and of the 74 comprising the first group, only 17 were females. The age of the patients was most frequently between 50 and 70. In the second group, in which only the myocardium was involved, there were 13 men and 2 women. In the third group, in which the valves of the heart were involved, there were even fewer, only 7 men and 1 woman, and it would seem that disease of the valves alone very seldom gives rise to sudden death. This is less rare when an endocarditis is complicated by diseases of the myocardium and coronary arteries. The average age in this group was only 48 years. In the last group, in which sudden death was traced to disease of the aorta, there were 25 men and 8 women, whose average age was only 45 years. These cases, all syphilitic, represented 26 per cent. of all the cases of sudden death from heart disease, whereas the cases in the first group (disease of the coronary arteries) accounted for about 57 per cent. of all the sudden heart deaths. The author notes that it was often very difficult, or even impossible, to obtain reliable information as to the existence of premonitory symptoms in persons who may have been living alone and have been found dead at home.

282 Arsphenamine-resistant Syphilis

There seems reason to believe that a form of syphilis which is resistant to arsphenamine is becoming increasingly common in France and Germany, though no such change is evident in the United States. T. H. Miller (*Journ. Amer. Med. Assoc.*, July 4th, 1931, p. 11) reports a case of primary syphilis which was resistant to this drug. The lesion healed after sulpharsphenamine and bismuth had been given intramuscularly ; the arsphenamine was carefully tested, and proved to be trypanocidal to a high degree. From the beginning the patient showed a vascular instability, and reacted badly to arsphenamine. Miller remarks that such resistance may be due to an alteration in the drug, to a change in the *Spirochaeta pallida*, or to some peculiarity of the host, who is generally considered to constitute the responsible etiological factor, although the mechanism of the resistance has not been determined. Arsphenamine-resistant syphilis may manifest itself in one or all of three ways: in persistence of lesions (as in the present case), in a persistently positive blood Wassermann reaction, or in the persistence of spirochaetes in the lesions while the patient is under adequate arsphenamine therapy.

283 Achlorhydria and Anaemia

D. T. Davies (*Quart. Journ. of Med.*, July, 1931, p. 447) records a study of the gastric secretion in cases of achlorhydria which shows that there are degrees of impairment, the most advanced being in primary or pernicious anaemia. Some patients, although showing achlorhydria, produce a good proteolytic secretion following stimulation with histamine. These patients usually do not suffer from any constitutional effects as the result of the minor gastric impairment. A further stage occurs in patients with a secondary anaemia ; in these there is an excessive mucus output, with diminished pepsin content, and in some cases a fixed *p*H. Achlorhydria with secondary anaemia is a distinct clinical entity. The splenic enlargement, atrophic changes in the lingual mucosa, and symptoms of anorexia and flatulence are analogous to what is found in the case of pernicious anaemia. Blood examinations, as a rule, readily establish the diagnosis. The response of these patients to iron, and the necessity for its continued administration, are suggestive of delayed, defective, alimentary absorption. Intermediate grades between the primary and secondary types are found in which both primary and secondary characters occur. In primary anaemia there is no mucus, pepsin is diminished or absent, and the *p*H is fixed. Davies suggests that the " intrinsic factor of Castle " must be a product of gastric secretion, which fails when and as pepsin fails. Those few patients who secreted some ferment required less intense liver treatment

than those who had no peptic secretion after stimulation. The deposit of squamous cells in the gastric secretion of cases of primary anaemia signifies the complete inability of that secretion to digest cells, normally shed from the oesophagus and carried down into the stomach. Examinations of the gastric secretion permit the grading of the degree of gastric failure ; cases of secondary anaemia fall into the second and third stages, those of the primary type into the fourth and final.

284 Pure Meningeal Spirochaetosis

S. Schwartz (*Thèse de Paris*, 1931, No. 192), who records seven illustrative cases in patients aged from 14 to 36, one of which is original, states that a pure meningeal spirochaetosis, due to the spirochaete of Inada and Ido, was first described in France during the war, in 1916, by S. Costa and J. Troisier, who have given their name to this syndrome. The clinical symptoms suggestive of the condition are a sudden onset, naso-labial herpes, and intense conjunctivo-ciliary congestion accompanied by a slight meningeal reaction. The disease may progress towards an uninterrupted recovery, or there may be one or more recurrences of meningeal symptoms, without a rise of temperature. The prognosis, however, is always favourable. A certain diagnosis can be made by a direct examination for the spirochaetes, inoculation of a guinea-pig, the reaction of neutralization, and the agglutination test of Martin and Pettit. It is probable that in the future a large number of cases of abortive meningitis will be found to be of spirochaetal origin.

Surgery

285 Paralytic Deformity of the Foot

L. J. Miltner (*Nat. Med. Journ. of China*, June, 1931, p. 313) describes an operation for the correction of paralytic deformity of the foot. Through a modified Kocher incision the lower fourth of the fibula is exposed and the peroneal tendons are divided. The posterior half of the fibula is cleared of muscular and fascial attachments, and is then separated from the main shaft of the bone by a longitudinal incision with an electric saw. Areas are cleared on the upper surface of the os calcis and the posterior surface of the tibia. The piece of fibula is now broken off, swung inwards, and fastened down by a screw to the tibia, the surface of which has been roughened by a chisel. After suturing the peroneal tendons the wound is closed. The fragment of fibula thus acts as a block to limit the movement upwards of the os calcis. Finally, a subastragaloid arthrodesis is performed, and the foot is put in plaster for three or four months according to the time taken for the bones to heal as observed by radiograms.

286 Deaths following Therapeutic Injections of Varicose Veins

K Kettel (*Ugeskrift for Laeger*, June 11th, 1931, p. 641) traces the rarity of embolism among patients, whose varicose veins have been treated with injections, to the gradual development of the thrombus and to its secure attachment to the wall of the vein. If a vein is excised only ten to fifteen minutes after an injection, no changes are to be seen in the intima. It does, however, show certain changes after two or three hours, and after twenty-four hours the thrombus which has formed has attached itself so securely that it can be removed from the wall of the vein only with the help of scissors and forceps. In six to seven days organization of this thrombus is in full swing. With regard to the score of deaths which have been recorded in association with this treatment, the author insists that a careful scrutiny of these records leads to the conclusion that in uncomplicated cases the risk of embolism is practically non-existent, provided that the correct technique is practised, and hypertonic salt solutions are used of so high a concentration that a violent reaction in the intima is provoked, with the consequent formation of a very adherent thrombus. The two sequels which together impose a mortality risk of from one-quarter to one-third per thousand are sepsis and the formation of a secondary coagulation thrombus proximal to the site of injection. Of the 20 deaths in the literature, 4 are discarded by the author as having been too sketchily recorded to be considered. Among the remaining 16, two were due to poisoning by mercury, which should evidently never be used, even in small doses, to this end. Three deaths were due to sepsis, and one to disease of the coronary vessels which had nothing to do with the treatment. With regard to the remaining ten deaths, all were due to embolism of the pulmonary arteries, but a causal relationship between this accident and the treatment could not always be incontrovertibly established. These 20 deaths occurred in association with about 60,000 injections. The author believes that even this small operation risk can be further reduced by never giving an injection when there is the slightest suspicion of an already existing infectious process, for an injected varicose vein is a *locus minoris resistentiae* easily subject to infection.

287 Osteochondritis Dissecans

G. Wagoner and B. N. E. Cohn (*Arch. of Surg.*, July, 1931, p. 1) describe osteochondritis dissecans as a non-infectious process involving the articular cartilage and the subchondral bone of certain long bones of the extremities, which, by sequestration from the articular surface, usually produces a single foreign body, or possibly two, in the contiguous joint. The body is of osteo-cartilaginous composition, but undergoes structural alteration by the joint fluids. The most common site is the mesial half of the articular surface of the internal femoral condyle, but the heads of the radius, femur, and humerus may be affected. The disease occurs most frequently in the tall, rapidly growing boy. The involvement by osteochondritis dissecans of more than one joint in the same person is uncommon, but when it does occur it is frequently found to be bilateral. Various etiological theories are mentioned, such as trauma, the result of static inperfection, vascular changes secondary to arthritis deformans, infarction secondary to a fat embolus, and infection. Five cases are reported which support the authors' view that heredity operates as an etiological factor in the occurrence of osteochondritis dissecans ; three were members of the same family—son, father, and paternal uncle—and the other two patients were brothers. In four instances operation for the removal of the loose body was performed with complete success.

288 The Diagnosis of Brain Abscess

I. L. Meyers (*Arch. of Otolaryngol.*, May, 1931, p. 683) records a study of twenty-four cases of abscess of the brain, which he has observed. In all the diagnosis was confirmed either by operation or by post-mortem examination. In the whole series it was found that conjugate deviation of the eyes was a most valuable sign in diagnosis. In cerebral abscess this deviation was to the side of the lesion, and was accompanied by deviation of the head to the same side ; it was extreme in lesions of the angular gyrus, of moderate extent in the Rolandic area, and absent in the frontal region. In abscess of the cerebellum conjugate deviation is always present regardless of the position of the head, and is directed to the side opposite to the lesion. Nystagmus may be slight or absent in abscess of the cerebellum ; if present it is towards the side of the lesion, if the labyrinth is functioning, and to the opposite side if the labyrinth is destroyed.

289 Prevention of Post-Operative Broncho-pneumonia

L. Cevario (*Il Policlinico*, Sez. Prat., August 3rd, 1931, p. 1105) states that the post-operative complications affecting the respiratory tract consist of tracheo-bronchitis which may become transformed into broncho-pneumonia, lobar pneumonia, or pleuro-pneumonia. These complications are most liable to develop in the cold season of the year, and the anaesthetic (especially ether) plays an important part in their production. They may occur, however, in the summer and after a local anaesthetic. They are all the more likely to arise when the operation

has been long and serious, especially if there has been previous involvement of the respiratory tract The danger is greatest during the presence of an epidemic of influenza For the last year Cevario has avoided the risk of complications by keeping the patients 24 hours before and after the operation in a room communicating with the operating theatre of the same temperature By this method he has performed urgent operations on patients the subjects of bronchitis, influenza, pleurisy, or asthma without a single failure

Therapeutics

290 Treatment of Accidental Perivascular Injections

Perivascular infiltrations may be due to various causes and the immediate and secondary reactions of the tissues to infiltration with irritating solutions are well known For infiltrations with arsenical solutions T K Lawless (*Journ Lab and Clin Med*, July, 1931, p 1019) employs sodium thiosulphate as follows One gram of the salt is dissolved in 15 c cm of sterile distilled water The arm band of a blood pressure apparatus is placed as high above the infiltration as possible, and is inflated until both the venous and arterial circulations are stopped With a needle 10 to 20 c cm of blood are withdrawn from a vein as far below the infiltration as possible, and 10 c cm of the solution slowly injected the constrictor is gradually released and the remaining 5 c cm are injected simultaneously The relief of pain is immediate and muscular spasm is equally influenced Necrosing arsphenamine lesions yield to this method in a surprisingly short time Brief notes are given of a case of a tumour caused by perivascular infiltration due to arsphenamine, both the blood and the tumour fluid being positive for arsphenamized arsenic seven months later Abelin's test for the presence of arsenic in blood is also described

291 Immunization Against Scarlet Fever

A Lichtenstein (*Acta Paediatrica* June 30th, 1931 p 539) records the results of combined active and passive immunization against scarlet fever in forty adults and forty two children who had been exposed to infection The technique was as follows Dick positive cases were first given anti scarlatinal serum, or, if they had previously received horse serum, convalescent's serum The doses of the first were 10 c cm for children, and 20 c cm for adults of the latter 25 c cm were administered to children and 50 c cm to adults Within a week active immunization was carried out using a vaccine containing 1 billion streptococci with 0 20 c cm of toxin per c mm Adults were given doses of 0 1 0 5, 1 2, and 5 c m , and children 0 1, 0 3 0 5 0 7 and 5 c cm of the vaccine The injections were made at intervals of three or four days and the results were as follows After the injection of the serum 27 of the 40 adults, and 37 of the 42 children, became negative after vaccination the Dick reaction became negative in all None of the patients contracted scarlet fever until five weeks later, when all developed the disease Six weeks after treatment the Dick reaction had become positive again in 12 out of the 21 cases examined

292 P S Rhoads (*Journ Amer Med Assoc*, July 18th, 1931, p 153) agrees that the Dick test was a reliable indication of immunity to scarlet fever, since no case developed among 533 nurses with negative reactions, whereas there were 15 cases during the same period among 449 nurses who were either Dick positive, or were neither tested nor immunized Immunization with five doses of scarlet fever toxin of 500, 2 000, 8,000, 25,000, and 80,000 skin test doses injectively was successful No scarlet fever developed among 298 nurses who received the full series of doses whereas 14 cases occurred among 449 who had had no immunizing doses and there was one case in a nurse who had had only three doses The results of immunization against diphtheria with five doses of toxin antitoxin and with diphtheria toxoid, followed by retesting and more doses when indicated, were distinctly better than when only three doses had been given

293 Hypertension and Dietetic Therapy

From a view of the literature on the relation of hypertension to cardio vascular renal change W W Priddle (*Journ Canadian Med Assoc*, July, 1931, p 5) concludes that many cases of hypertension are primarily of the so-called essential type, and that renal and vascular diseases, which were formerly considered a cause of the increased blood pressure, are really its results Stigmata of disturbance of the sympathetic nervous mechanism have frequently been noted in hypertensive patients, hence, a cause of the increased peripheral resistance of the circulation may lie in this system The sodium ion appears to be a factor in the increase of blood pressure, and the potassium ion in lowering it The restriction of sodium, calcium, and magnesium and the increase of potassium intake, in 45 cases of hypertension (here analysed) brought about uniform clinical improvement and reduction of the blood pressure Priddle considers that a knowledge of the mineral content of the food is essential for the proper treatment of hypertensive cases since this is not always easy to obtain, an outline of suitable dieting is given He believes that it will be necessary for all patients with well established hypertension to continue their diet restrictions indefinitely, and many will have to maintain permanently a high potassium intake Saline cathartics should be avoided, and also bread, butter, and cheese

294 Treatment of Amoebic Infestation

P W Brown and A E Osterberg (*Amer Journ Med Sci*, August, 1931 p 257) remark that, while emetine will probably continue to prove effective in controlling the acute phase of amoebic infestation of the intestines, it must be used in conjunction with arsenical preparations in a large percentage of cases in order to effect a cure They have therefore conducted an investigation of the clinical toxicity and rate of elimination of such organic arsenicals as stovarsol and treparsol in such patients though they believe that non arsenical remedies like yatren or dihydranol will eventually prove more popular The authors have found emetine and treparsol very satisfactory and recommend them as the first line of treatment unless contraindications to their use are present The rate and route of arsenic elimination following the administration of treparsol were determined in four cases in a group of 253 patients suffering from entamoebiasis It was found that the more finely ground preparations were absorbed more quickly and excreted more rapidly These four patients received a single course of treatment consisting of the daily ingestion of 0 75 gram of treparsol for four days Two patients chewed the tablets, and two swallowed them whole In the first two patients the ratio of arsenic in the urine to that in the faeces was 1 to 3, but when the tablet was swallowed without chewing the ratio in one patient was 1 to 9, and in the other 1 to 16 In all cases 90 per cent or more of the total arsenic was recovered by the third day following the last ingestion Treparsol seemed to be more rapidly eliminated than stovarsol, and to produce fewer untoward sequels, such as peripheral neuritis The authors emphasize the danger of continuing the administration of organic arsenicals when warnings of intolerance are present, they add that certain persons are very sensitive to arsenic in any form, toxic erythema and even exfoliative dermatitis resulting

295 Physostigmine in Exophthalmic Goitre

I Bram (*Arch Int Med*, July 1931 p 127) submits a preliminary report on the treatment of 200 cases by physostigmine salicylate none of the cases has yet been observed over a long period but the results obtained so far are thought to justify publication Digitalis even in very large doses has not given any encouraging results in the treatment of tachycardia due to thyroid intoxication except when rhythm is disturbed an mean of reducing the heart rate should save the heart from effort, and postpone or prevent the onset of failure hence the use of physostigmine in combating sympathicotonia can be considered a rational measure In 73 per cent of cases so treated there was an appreciable lowering of the rate and force of the heart beat The doses ranged from

1/30 to 1/60 grain three times a day, the larger ones being administered to patients weighing 9 stone or more; accessory measures of treatment, such as rest in bed, high caloric diets with low protein content, and hypnotics when required, were also given, and septic foci were eradicated whenever discovered. As a control 100 patients were treated on ordinary lines; it was found that improvement of the cardiac symptoms was obtained much less rapidly than with the use of physostigmine, and that periodic crises were more frequent. Results of treatment, up to the present, show that 49 per cent. of the patients have regained a normal pulse rate, and maintain the improvement of their general condition; 48 per cent. have shown transient but tangible improvement, and 27 per cent. have not been influenced. The drug had to be discontinued in 5 cases only, on account of diarrhoea. The best results were noted: towards the age limits (under 14 and above 50); in the case of patients approaching remission after one or more crises; in chronic protracted forms of exophthalmic goitre; in patients with a basal metabolic rate of less than plus 40 per cent.; in extreme exophthalmos; and in cardiac arrythmia, especially auricular fibrillation, the drug being given in combination with 5-grain doses of quinidine sulphate three times daily. The improvement in the exophthalmos was often very gratifying in chronic and stubborn cases. In a few instances of post-operative recurrence, with excessive exophthalmos, physostigmine produced particularly good results.

Disease in Childhood

296 Enuresis of Allergic Origin

G. W. Bray (*Arch. Dis. in Child.*, August, 1931, p. 251) emphasizes the fact that some cases of persistent enuresis are allergic in origin. In this condition, when there is no response to the routine therapy of waking the child, restricting the fluid intake, and administering belladonna, the application of protein skin tests may reveal the true causal factor; its subsequent elimination on the lines thus indicated, possibly combined with the administration of judicious doses of ephedrine, will probably lead to a prompt cessation of the habit. Illustrations are given of children betraying hypersensitivity to wheat, feathers, horse-hair, eggs, potatoes, pork, and other foods. When these sources of irritation were removed, recovery at once ensued. Enuresis may accompany such a condition as lichen urticatus, which is of allergic origin. It also occurs similarly with asthma, hay fever, eczema, urticaria, and migraine. Delay in diagnosis is brought about by the parents regarding the enuresis too often as a transient infantile weakness, and neglecting to obtain medical advice.

297 Pneumococcal Peritonitis

M. Lafitte (*Bull. et Mém. Soc. Nat. de Chir.*, June 13th, 1931, p. 835) reports six cases of pneumococcal peritonitis, all occurring in girls between the ages of 5 and 14. In two cases a vulvo-vaginitis was present, and in two the bacteriological examination demonstrated abundant pneumococci. Four children came from the same district, which was a very poor one, and where they had been living under bad hygienic conditions. In only one instance were the home conditions fairly good. The onset of the disease was rapid and violent, with high temperature and rapid pulse; in every case there was diarrhoea which lasted for several days. Sickness was present in most cases, and abdominal distension with rigidity was very marked. Operations were performed in five cases following a diagnosis of appendicular peritonitis in four of the patients. In three cases free pus was found in the abdomen. The appendix in each case was normal, or slightly inflamed. Of the five patients operated on two died; the remainder had a stormy convalescence with secondary infections such as pleuro-pneumonia, localized peritonitis below the umbilicus, parotitis, and metastatic abscess. The three children who recovered were in hospital for five or six weeks, but were finally restored to good health. In one instance no operative treatment was carried out, and the child died the following day. It is suggested that in all cases where pneumococcal peritonitis is suspected a laboratory examination of the vaginal discharge should be made. The question is discussed whether surgical intervention is advisable, and the author is of opinion that when a diagnosis of pneumococcal peritonitis has been confirmed by microscopical examination, medical treatment is preferable. In cases where the diagnosis is in doubt an exploratory laparotomy should be undertaken in order to examine the condition of the appendix and the abdomen generally.

298 Suppurative Arthritis in the Infant Hip-joint

C. Roederer (*Bull. et Mém. Soc. Chir. de Paris*, May, 1931, p. 254) emphasizes the importance of early diagnosis of suppurative arthritis of the hip-joint, which is often confused with congenital dislocation. The acute stage of the disease may pass unrecognized; it may lead to the destruction of the bony tissue and a dislocation which is difficult to reduce, and which after reduction may again become dislocated owing to the destruction of the ligaments. The prognosis is grave, but may be modified if early diagnosis is made with immediate surgical intervention and vaccine therapy. The result of this treatment depends on the virulence of the pathological agent, which may be pneumococcal, streptococcal, or staphylococcal, and on the condition of the joint. In certain cases excellent results have been obtained and the function of the hip has been completely restored. Sometimes, however, during the development of the child, modifications take place in the articulation of the joint which give less satisfactory end-results. A case is quoted of a child who wore an instrument to keep the leg in abduction for more than two years; when this was replaced by a celluloid splint and walking was permitted, the dislocation recurred immediately. The importance of early diagnosis and prompt treatment is stressed, and cases in which treatment was delayed are described with the bad results that ensued.

299 Intracranial Haemorrhage of the Newborn

Intracranial haemorrhage was found by R. M. Tyson and W. H. Crawford (*Amer. Journ. of Obstet. and Gynecol.*, May, 1931, p. 694) in one out of three cases of stillbirths, and also of neo-natal deaths, coming to necropsy; including the non-fatal cases, approximately one in fifty births in a series of 2,256 was associated with intracranial haemorrhage. About one infant in three recovered. The mothers included equal proportions of primiparae and multiparae, and the great majority were at term. Intracranial haemorrhage occurred in 0.8 per cent. of spontaneous labours; for cases of forceps delivery, version, breech delivery, and Caesarean section the corresponding percentages were 2.3, 7.6, 13.8, and 1.1 respectively. In the prevention of bleeding the authors attach importance to judicious cutting short, by obstetric operation, of the second stage of labour when its duration has exceeded two hours; active methods of artificial respiration should be abandoned in favour of the carbon dioxide and oxygen apparatus, or the Drinker respirator. Prophylactically, 10 c.cm. of the mother's blood may be injected into the muscles of each buttock before the infant leaves the delivery room after difficult labour. Diagnosis is dependent on the history of labour and the recognition of: (1) fretfulness, especially on manipulation; (2) difficulty in swallowing; (3) absence of the suction reflex when the nipple is placed in the mouth; (4) cyanotic spells, which may be provoked by disturbance; and (5) muscular twitchings or convulsions. Lumbar or cisternal puncture gives vent to a fluid which almost invariably contains blood and under a pressure increased from a normal average of 8 mm. to averages of 11.5 and 15.7 mm. in non-fatal and fatal cases respectively. Cerebro-spinal fluid containing blood is found, however, in about one in five normal infants. In the treatment repeated drainage of the spinal fluid is invaluable; careful nursing is required, and bathing and dressing may have to be omitted for a time.

Obstetrics and Gynaecology

300 Anaemia of Pregnancy

S. Mitra (*Indian Medical Gazette*, July, 1931, p. 363) gives an account of the anaemia of pregnancy—the "puerperal chlorosis" of Lebret—found in India. Although this disease is rare in the United Kingdom and on the Continent, it is common in India. Among 1,883 cases delivered at the Women's Hospital, Calcutta, there were 86 of anaemia during the last four years. A complete analysis of these cases is given. This aplastic anaemia differs from pernicious anaemia: (1) in being always associated with pregnancy and terminating with it; (2) in the absence of marked remissions and exacerbations; (3) in its shorter duration; and (4) in occurring at a comparatively younger age. According to the graphs given in the text the anaemia of pregnancy develops most commonly about the twenty-fifth year, and after the sixth month of pregnancy. It appears to be more frequent in the later months of the year. The clinical course is very rapid, the patient being either dead or cured in the average of 11.4 days. The blood picture shows an average of 28.4 per cent. haemoglobin; 1.35 colour index; a red blood count below one million in 40 per cent., and under two millions in 53.7 per cent. of cases; no leucopenia; and the presence of myelocytes, anisocytes, and poikilocytes. In 9 out of 10 cases premature labour occurs spontaneously; the maternal and foetal mortality rates are very high. Definite histological changes are found in the liver, which appear to point to a toxaemia of pregnancy. With regard to treatment, symptomatic and palliative measures were employed until the pregnancy was terminated. Blood transfusion and many other therapeutic measures were tried. In order to stimulate the activity of the reticulo-endothelial apparatus, fractional deep *x*-ray doses were delivered over the liver, spleen, and heads of the long bones in 16 cases. The results of this treatment were encouraging.

301 Choline in Treatment of Menopausal Symptoms

K. Adel (*Zentralbl. f. Gynäk.*, June 6th, 1931, p. 1843) quotes reports in which it is stated that the choline content of the blood, normally from 1.5 to 2 mg. per cent., is increased in menstruating women by six to eight times, and that during the menses the choline of the sweat is increased nearly a hundredfold. Choline is present in the organism in the form of esters, which are much more active physiologically than choline. They stimulate the parasympathetic system, and antagonize adrenaline, thus inducing diminution of blood pressure, and the dilatation of arterioles, veins, and capillaries. Choline is unsuitable for oral administration, being hygroscopic; acetyl-choline, besides requiring parenteral injection, is too active for therapeutical convenience. Abel, in an extensive series of tests, has had, like other German observers, very satisfactory results from the use of a double choline ester in the treatment of functional symptoms of the menopause. Success is chiefly attributed to correction of the irregularities of the vasomotor system to which flushings, rushings of blood to the head, headache, and insomnia are due.

302 Serum Prophylaxis of Puerperal Fever

A. Schossberger (*Zentralbl. f. Gynäk.*, July 4th, 1931, p. 2125) states that in every case of delivery in which a vaginal examination has been made, or any internal or external trauma has occurred, he has given a prophylactic intramuscular injection of a polyvalent streptococcal serum immediately after birth and before the delivery of the placenta. Of 100 cases so treated, including Caesarean section, forceps cases, versions, and cervical and perineal lacerations, the results have been remarkably good. During the first five days after delivery the axillary temperature never exceeded 99°, and subsequently there were only slight rises of temperature, partly due to the condition of the breasts, and partly to serum sickness. Schossberger concludes that not only the mortality but also the morbidity of puerperal fever can be reduced to nil both in hospital and in private practice. He thinks that serum prophylaxis should be made compulsory in all deliveries, just as is Credé's treatment of the eyes of the newborn; this is especially important when the delivery is not being conducted in a large lying-in institution.

303 Salt-free Dieting during Pregnancy

J. Hofstein and P. S. Pétrequin (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, May, 1931, p. 390) have noted in four cases that patients who had been given diets free from salt some weeks before term had rapid and easy labours. In order to ascertain whether this was merely coincidental, or if the special diet had any influence on labour, determinations of the blood chlorine figure and alkaline reserve were made in 18 cases. These showed that there was no apparent relation between the amount of chloraemia and the progress of labour; the chlorine was usually normal and the alkaline reserve lowered. A strictly salt-free diet was then given to six primiparae some weeks before term; in these labour was easy with only little pain, and the period of dilatation was short and uneventful. Though this series of cases is small, the authors consider that the results merit further investigations along this line.

304 Differential Diagnosis of Ovarian Haemorrhage

A. Als-Nielsen (*Ugeskrift for Laeger*, July 2nd, 1931, p. 703) has found that in the Surgical Department D of the Bispebjaerg Hospital in Denmark as many as 14 cases of pathological ovarian haemorrhage came to operation in the course of the last three years. At one time ovarian pregnancy was considered the only cause of pathological ovarian haemorrhage, and as late as 1916 Forssner insisted that all the cases hitherto recorded of haemorrhage from ruptured corpora lutea were really due to ovarian pregnancy. Before this diagnosis could be eliminated, serial microscopical sections would have to be made with a negative result. Several subsequent studies have, however, invalidated this hypothesis, and the author traces none of his cases to pregnancy, although in several he did not examine the ovaries microscopically. He could not do so, as the treatment was limited in some instances to cauterization of the bleeding point. In as many as five cases, small cystic degeneration of the ovary was observed, and in six cases (including several of the above five) the haemorrhage was probably due to rupture of a follicular cyst. With regard to the pre-operative diagnosis, the author finds from a study of the literature that the true state of affairs is never diagnosed before operation; the large haemorrhages are traced to extrauterine pregnancies, the small haemorrhages to appendicitis or salpingitis. In the differential diagnosis between this condition and appendicitis two factors may be helpful: the coincidence of the symptoms with the period of ovulation, and the suddenness of the onset of the symptoms. With only two exceptions, the patients in the author's material described the pain as having begun quite suddenly, having been violent, and as having passed off quickly—a series of happenings to be explained on the assumption that they coincided with tension and rupture in the ovary, followed by the effusion of blood causing more or less marked irritation of the peritoneum which passes off after a time. Apart from these two points, the author can find nothing wherewith to clarify the differential diagnosis.

305 Abscess of the Pregnant Uterus

R. L. Wood (*New York State Journ. Med.*, June 15th, 1931, p. 747) reports a case of an abscess in a pregnant uterus; rupture occurred into the peritoneal cavity, but the patient recovered. After spontaneous rupture of the membranes in the course of an apparently normal confinement a child was born, and the placenta came away spontaneously ten minutes later with only slight bleeding. Half an hour afterwards the patient had intense pain in the right lower abdominal quadrant; the systolic pressure fell to 60, the red cells numbered only just over 2 millions per c.mm., and the pulse became imperceptible. After blood transfusion the abdomen was opened, and free pus exuded. On the posterior uterine surface, just below the

right cornu, and behind the round ligament, there was a ruptured abscess cavity as large as a walnut ; it did not communicate with the cavity of the uterus. Suction drainage was instituted, and the abdomen was partly closed. Rectal instillations of saline solution and the adoption of Fowler's position, with the exhibition of digifoline, were followed by recovery. Wood concludes that the cause of the abscess was a small fibroid, which had undergone degeneration, with progressive thinning of the wall over it. With the first hard uterine contraction it had ruptured, the consequent shock nearly proving fatal.

Pathology

306 The Renal Function in Diphtheria

R. Lereboullet, J. J. Gournay, and J. Donato (*Ann. de Méd.*, May, 1931, p. 547) record their observations on 60 cases of diphtheria in which they had estimated the blood urea concurrently with determining the glycaemia and cholesterinaemia ; 20 of the cases were ordinary, and 40 malignant attacks. They also made a chemical and microscopical examination of the urine, measured the urinary output, and in some cases tested the renal permeability by the usual methods. Their results were as follows. In mild forms of diphtheria the blood urea was normal or only slightly modified, ranging from 0.25 gram to 0.40 gram per mille. Among 20 fatal cases of malignant diphtheria with symptoms of suprarenal insufficiency there was an initial and terminal increase in the blood urea in 16. Clinical as well as anatomical and experimental data did not indicate any severe renal involvement in most of the cases of diphtheria, and on microscopical examination of the kidneys of children who had died from malignant diphtheria, or in animals killed by diphtheria toxin, no very marked lesions of nephritis were found. Subsequent examination of diphtheria convalescents, who had had nephritis during the acute attack, showed that the kidneys were normal. The authors conclude that while the kidney may be affected like the other organs with severe diphtheria, and its involvement may be accompanied by well-marked azotaemia, it is rarely a predominant feature, the cardiac, suprarenal, and nervous involvement being much more important.

307 Anti-coagulant Action of Uroselectan

G. Ravasini (*Biochim. e. Terap. Speriment.*, May 31st, 1931, p. 141) has studied the action of uroselectan—iodo-piridon acetate of sodium—in delaying or inhibiting the coagulation of the blood of normal rabbits. This was first demonstrated *in vitro* by adding increasing doses of uroselectan to 5 c.cm. of blood drawn from the carotid, and observing the interval of time between the termination of the bleeding and the loss of mobility of the blood in the test tubes. *In vivo* experiments comprised intravenous injections of increasing doses of a 30 per cent. solution of uroselectan, and after 90 seconds collecting the blood and noting the appearance of coagulation. It was found that in a rabbit after receiving 1.25 grams of uroselectan per kilo of body weight, coagulation of the blood occurred twenty minutes after the bleeding—as compared with the normal eighteen minutes. In a rabbit that had received 2 5 grams per kilo, coagulation did not ensue until after six hours; the blood of rabbits injected with 5, 7.5, 10, 13, 16, and 19 grams per kilo remained liquid for twenty-four hours after bleeding.

308 Detection of Occult Haemoglobin in the Faeces

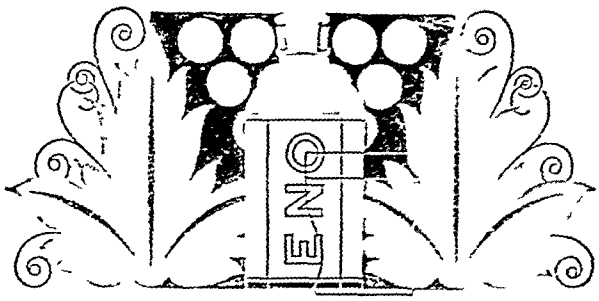
I. Boas (*Deut. med. Woch.*, July 24th, 1931, p. 1271) describes a method for detecting haemoglobin (as distinct from haematin) in faeces. After three to four days of a diet containing no fish, meat, or chlorophyll, 3 to 5 grams of faeces are extracted repeatedly with pure acetone until the last fraction remains practically colourless after half an hour's contact. The acetone is removed as completely as possible ; the residue is dried, preferably at 37°–40° C., and ground to a fine powder. This is now extracted with 10 to 20 c.cm. of 25 per cent. alcohol, which dissolves the haemoglobin, but not the haematin ; this process is repeated until the filtrate is clear. To 2 to 3 c.cm. of the filtrate 10 drops of glacial acetic acid and 5 c.cm. of neutral ether are added ; after shaking, the guaiac or benzidine test is performed on the ether extract. The haematin can be estimated similarly by examining the residue from the alcohol extraction. In cases of insufficient gastric acidity, or increased intestinal peristalsis, haemoglobin is imperfectly reduced to haematin. The oral administration of haemoglobin, and the subsequent examination of the faeces may therefore prove to be a useful test of these conditions. In large haemorrhages from the upper or lower parts of the alimentary tract, free haemoglobin appears in the faeces, but only temporarily, for within a week or two haematin only is found. On the other hand, the repeated minute haemorrhages from ulcerating malignant disease are characterized by the persistence of haemoglobin in the faeces. Thus the presence of haemoglobin on repeated examinations is highly suggestive of carcinoma of the stomach or colon, whereas if haematin only is present, the cause is more probably simple ulceration.

309 Outbreaks of Food Poisoning due to Salmonella Infection

J. C. Geiger and Margaret Nelson (*Pub. Health Reports*, July 3rd, 1931, p. 1565) describe three outbreaks of food poisoning in which three different members of the Salmonella group were involved. The first outbreak affected 35 persons, and was due to the consumption of a creamed chicken-veal mixture. The causative organism, *Bact. enteritidis*, was isolated from the food, and it is probable that the veal came from an infected calf. In the second outbreak, which occurred in a hospital, over 200 persons were affected. Rice pudding was found to be responsible, and *Bact. aertrycke* was isolated from it directly. This organism had probably gained access to the food from rat virus poison, which had apparently been used in the kitchen two days previously. The third outbreak likewise occurred in a hospital, and involved 52 persons. An egg soufflé shrimp mixture, which had been kept standing overnight, was incriminated. Since all of this had been consumed, no bacteriological examination could be made. It was found, however, that the assistant chef was a *paratyphosus* A carrier, who had just joined the staff, and it was concluded that the outbreak was due to this organism, though it was not isolated from the stools of three patients which were examined, nor from the viscera of one patient who died. The organisms isolated from the first two outbreaks proved fatal to mice, when fed in pure culture ; the toxicity was retained, at any rate to some extent, even after heating to 240° F. for ten minutes.

310 The Congo Red Test in Pulmonary Tuberculosis

M. Lucacer and G. Cardinale (*Rif. Med.*, July 22nd, 1931, p. 951) have tried the Congo red test in 92 cases of pulmonary tuberculosis. According to Adler and Reimann, after the injection of 10 c.cm. of a 1 per cent. solution of Congo red, part of the dye is fixed by the cells of the reticulo-endothelial system ; the amount which is found in the blood one hour after the injection is the measure of the power of the reticulo-endothelial system to fix the dye. Wedekin and Löwenstein suggested that the test might be used in the diagnosis of pulmonary tuberculosis ; they estimated colorimetrically the amount of dye in the blood one hour after the intravenous injection, taking the amount present in the blood four minutes after the injection as 100 per cent. They concluded that the results so obtained gave some indication of the extension of the pulmonary lesion. Lucacer and Cardinale have now obtained results which agreed closely with those obtained by Wedekin and Löwenstein. In 24 early cases of pulmonary tuberculosis the amount of Congo red found in the blood 60 minutes after the injection ranged from 50 to 69 per cent. ; in 21 mixed cases from 53 to 78 per cent. ; and in 47 exudative cases from 75 to 95, the percentage falling between 85 to 90 in the majority of the cases.



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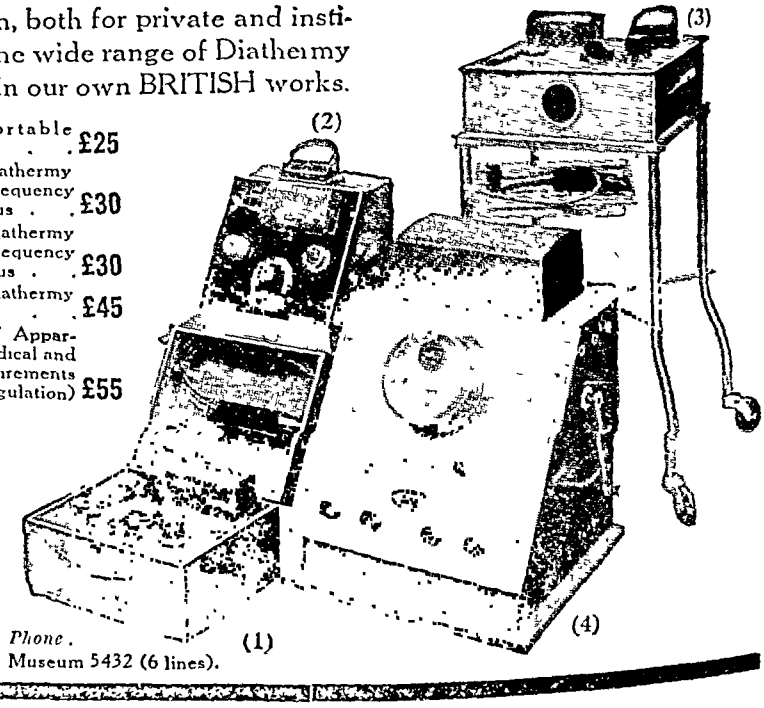
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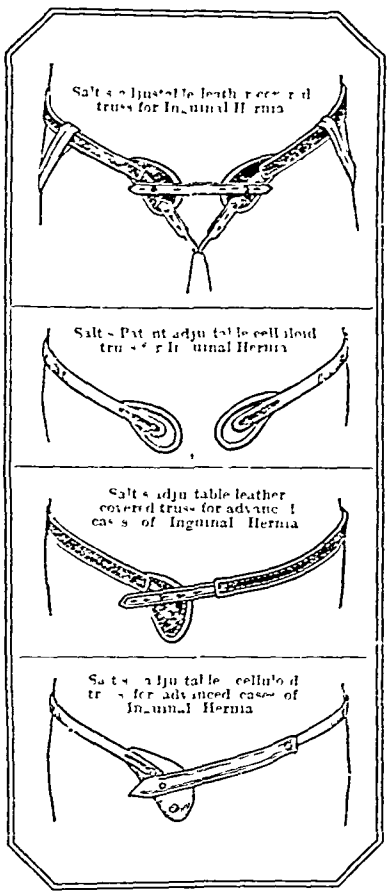
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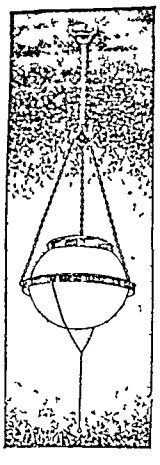
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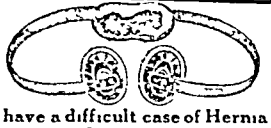
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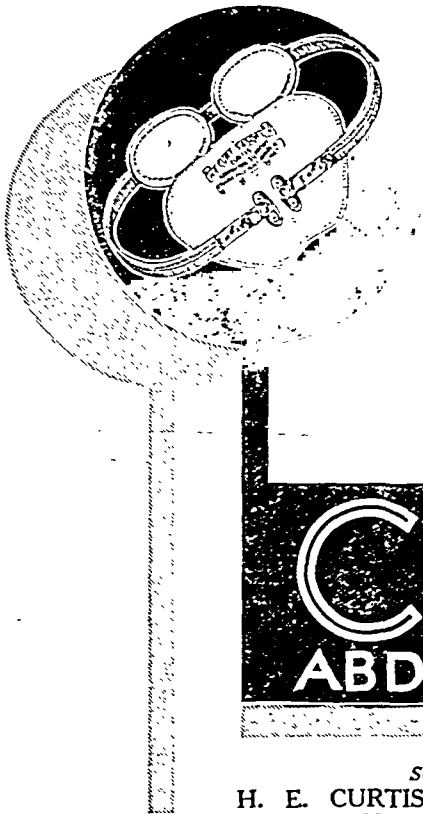
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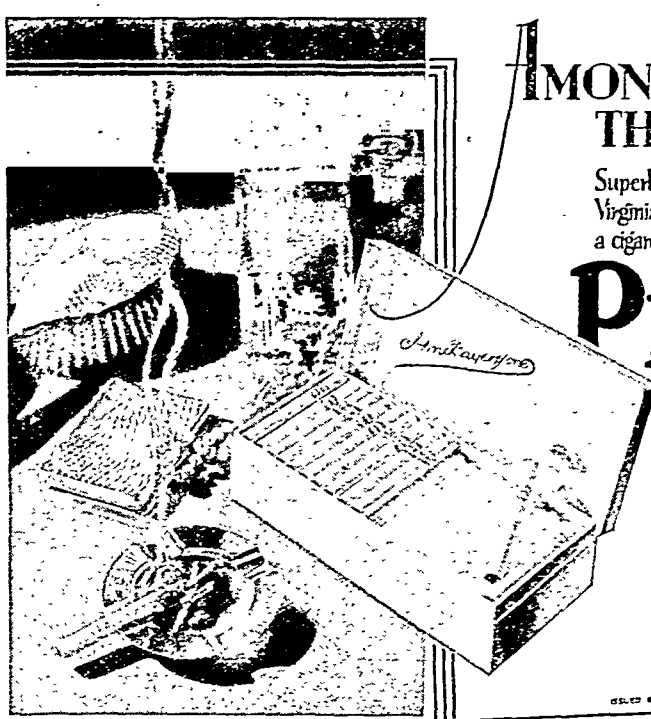
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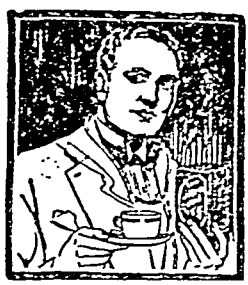
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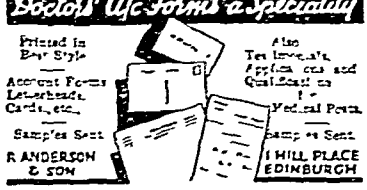
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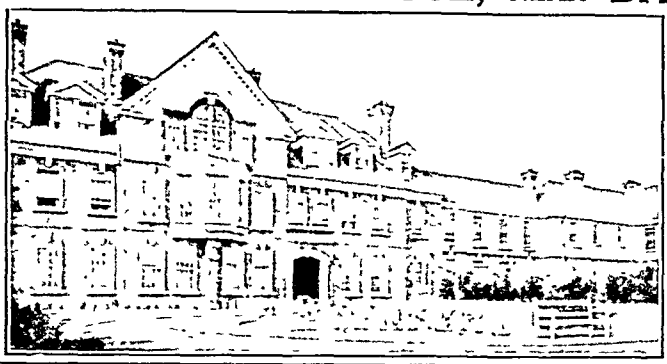
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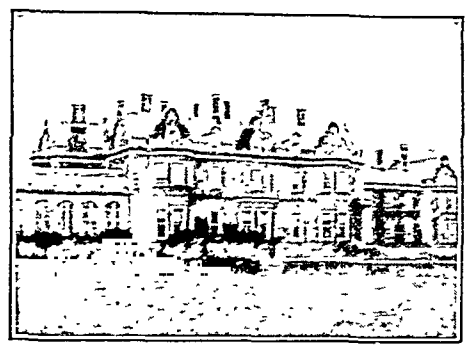
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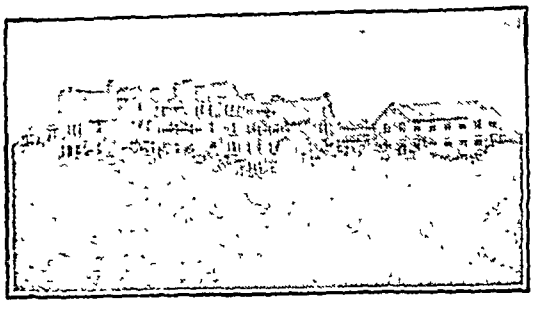
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For all information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

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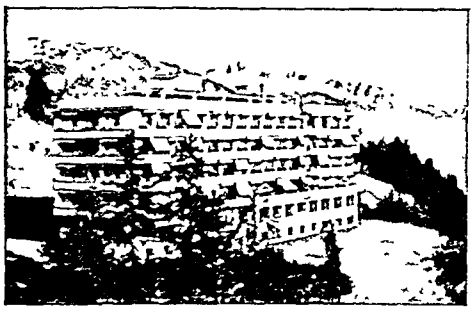
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M.D. (Cantab.), M.R.C.P. (Lond.)
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ANDREW MORLAND,
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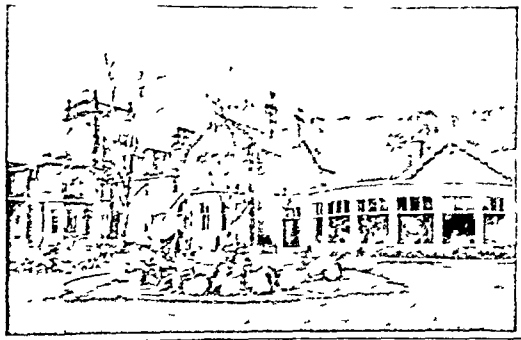
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Mr. H. P. Winsbury-White.	Calculous Disease of the Urinary Tract.	Oct. 7th (Wed.)
Dr. G. R. Mather Cordiner.	Radiotherapy.	Oct. 14th (Wed.)
Mr. W. K. Irwin.	The Diagnosis and Treatment of some important Bladder Conditions.	Oct. 21st (Wed.)
Mr. Kenneth Walker.	Prostatic Obstruction.	Oct. 28th (Wed.)
Mr. Stanford Cade.	Epithelioma of Penis.	Nov. 4th (Wed.)
Dr. Nathan Mutch.	Diuretics.	Nov. 11th (Wed.)
Mr. R. H. Jocelyn Swan.	Renal Tuberculosis.	Nov. 18th (Wed.)
	NO LECTURE ON NOVEMBER 25th.	
Mr. Frank Kidd.	Urethroscopy.	Dec. 2nd (Wed.)
Mr. Claude H. Mills.	Some interesting Urological Cases, with Demonstration of Pathological Specimens and Radiograms of same.	Dec. 9th (Wed.)
Dr. Jenner Hoskin.	Medical Complications of Prostatectomy.	Dec. 16th (Wed.)

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A Course of Six Lectures on *The Physiology of the Sense Organs* will be given by Dr. J. H. PARSONS at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1) on MONDAYS, OCTOBER 12th, 19th, 26th, and NOVEMBER 2nd, 9th, and 16th, at 5 p.m.

A Course of Four Lectures on *Metabolism of the Carbohydrates and Fats* will be given by Dr. J. A. HEWITT at KING'S COLLEGE, LONDON (Strand, W.C.2) on THURSDAYS, OCTOBER 15th, 22nd, 29th, and NOVEMBER 5th, at 5 p.m.

A Course of Four Lectures on *The Respiratory Function of the Blood* will be given by Dr. L. E. BAYLISS at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1) on FRIDAYS, OCTOBER 16th, 23rd, 30th, and NOVEMBER 6th, at 5 p.m.

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The Long Fox Memorial Lecture will be delivered by Dr. A. L. FLEMMING on Tuesday, October 27th, 1931, in the Physiological Lecture Theatre of the University of Bristol, at 5 p.m.

Subject: *"The Partnership between Anaesthesia and Surgery."*

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Canvassing, either directly or indirectly, will disqualify.

By Order,
PERCY SAUNDERS,
Town Clerk.

Town Clerk's Office,
(Carlton Street Branch),
Halifax.
September 23rd, 1931.

City of Aberdeen

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Applicants must be registered members of recognised teaching universities, and must have had experience in the practice of medicine and surgery. The successful applicant will be required to take up duty on [illegible].

Applications, stating age, qualifications and experience, and accompanied by copies of not more than three testimonials, should be lodged at Office of the [illegible]

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.3

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried Medical Men for an appointment of House Surgeon, vacant on November 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on October 17th next.

Nottingham General Dispensary,
Broad Street, NOTTINGHAM

Wanted, RESIDENT SURGEON (male or female), unmarried. Must have Medical and Surgical qualifications. Salary £250, with £25 increase per year. House, with attendance, lights, and fuel (not board). This Institution is a non provident one. No beds. No midwifery.

Applications, stating age, and accompanied by copies of recent testimonials, to be sent by October 8th, to—

5, Thurland Street, Nottingham. R. J. WILLATT, Secretary.

Royal Eye Hospital,
St. George's Circus, Southwark, S.E.1

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital. The appointment is in the first instance for a period of six months, with board and residence, as from December 1st. Salaries: House Surgeon at the rate of £150 per annum, Assistant House Surgeon at £100 per annum. Candidates must be registered Practitioners.

Applications with copies of three recent testimonials, should be sent to the Secretary at the Hospital, not later than Friday, October 30th.

I. L. D. ALTON, Secretary.

Chester Royal Infirmary.
(211 Beds.)

There are vacancies for a HOUSE PHYSICIAN and TWO HOUSE SURGEONS (male) (staff of five Resident Medical Officers) to commence duties November 1st. Salary £150 per annum, with board, lodging and washing. Application list closes October 10th.

Application forms may be obtained from the undersigned.

W. H. GRACE, M.D., M.R.C.P., Hon. Supt. of the Resident Medical Staff.

September 17th, 1931.

Altrincham General Hospital,
CHESHIRE (100 Beds.)

Applications are invited for the position of JUNIOR HOUSE SURGEON. Salary at the rate of £120 per annum, with board, residence, and laundry. The appointment is for six months in the first instance, commencing at once.

Applications stating age and experience together with copies of recent testimonials, to be sent to the Secretary, Altrincham General Hospital, forthwith.

Margate and District General Hospital
(98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). Salary £150 per annum, with board and laundry.

Applications accompanied by copies of testimonials should be addressed to the Secretary at the Hospital as early as possible.

National Sanatorium, Benenden,
KENT

RESIDENT ASSISTANT MEDICAL OFFICER (male) required at Benenden Sanatorium (147 beds). Salary £300 per annum, rising by annual increments of £25 to £350. Preference given to candidates with experience in Tuberculosis and Pneumothorax Treatment.

Applications, with copies of three recent testimonials, should be sent to the Medical Superintendent not later than Thursday, October 1st.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management, not later than

H. R. NORTH, Secretary.

University College Hospital,
Gower Street, W.C.1.

Applications are invited for the whole time post of FIRST ASSISTANT in the Children's Department of University College Hospital. The appointment will be made as from November 1st, and will be tenable for a period of one year, subject to reappointment for a further period of two years. Salary £250 per annum.

Applications must be received on or before Monday, October 5th. Further information and copies of conditions governing the appointment may be obtained from the Secretary of University College Hospital Medical School, University Street, W.C.1.

Warwick County Mental Hospital, HATTON, Near WARWICK.

There is a vacancy for a JUNIOR ASSISTANT MEDICAL OFFICER. Salary £350 per annum, rising by annual increments of £25 to a maximum of £450, with board, attendance, etc.

In addition £50 per annum is paid to the holder of a special qualification in Psychological Medicine. Candidates need have had no previous experience, and preference will be given to a lady.

Applications, together with copies of testimonials, should be forwarded to the Medical Superintendent at the Hospital.

Royal National Orthopaedic Hospital.

SURGICAL REGISTRARS.

The Committee invite applications for the appointment of Four Registrars (male) as from November 1st. Honorarium £105 per annum. The appointments are for 12 months, renewable for a further 12 months on the recommendation of the Medical Board. Applications, with copies of three recent testimonials, should reach the Secretary, 234, Gt. Portland Street, W.1, not later than October 15th.

Royal National Orthopaedic Hospital.

HONORARY ASSISTANT SURGEON.

The Committee propose to appoint an Honorary Assistant Surgeon, whose duties will include attendance in the Out Patient Department on Wednesday and Friday afternoons, and charge of beds. Applicants must be F.R.C.S. (Eng.), and applications, with copies of three recent testimonials, should be received by the Secretary, 234, Great Portland Street, W.1, on or before October 8th.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE SURGEON (male) required. The appointment is for six months, commencing November 1st. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, should be sent to the undersigned on or before October 6th.

W. S. RANDOLPH BISS, Secretary-Superintendent.

Royal Infirmary, Doncaster.
(185 Beds.)

HOUSE SURGEON (male) required immediately. Appointment is for six months. The position offers opportunity of gaining good Surgical experience.

The successful candidate is eligible for reappointment. Salary £175, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, to be sent to—

WALTER R. SMITH, Secretary-Superintendent.

Royal Infirmary, Sunderland.
(360 Beds.)

ASSISTANT PATHOLOGIST.

Applications are invited from registered Medical Practitioners for the above post. Salary £350 per annum.

The successful applicant will work under the direction of the Pathologist and will be required to devote the whole of his time to the Laboratory.

Apply, with copies of testimonials, and stating experience, by October 10th, to—

S. C. FRYERS, House Governor & Secretary.

Royal Buckinghamshire Hospital
AYLESBURY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) for six months. To commence duty on October 31st. Salary £200 per annum, with board, residence and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROWN, Secretary.

Southampton Children's Hospital
AND DISPENSARY FOR WOMEN.
(45 Beds.)

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER (lady). Appointment for six months. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, stating age, and accompanied by copies of testimonials, to be sent to the undersigned by October 7th, if possible.

ELLA K. MATTHEWS, Secretary.

Glamorgan County Mental Hospital, BRIDGEND

JUNIOR ASSISTANT MEDICAL OFFICER (male or female) required. Salary £350 per annum net, rising by annual increments of £25 net to £450 per annum net, and emoluments (board, apartments, washing, and attendance) valued at £150 per annum net. Knowledge of Welsh language desirable. Applications, stating age, qualifications, etc., to be sent, with copies of recent testimonials, to the Medical Superintendent not later than Tuesday, October 6th.

St. Mary's Hospitals, Manchester.

TWO HOUSE SURGEONS for the WHITWORTH ST. WEST HOSPITAL (Maternity), and one for the WHITWORTH PARK HOSPITAL (Gynaecological Dept.); each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before October 15th.

R. RATCLIFFE, Secretary.

Bristol Royal Infirmary.

Applications are invited for the posts of HOUSE SURGEON and HOUSE PHYSICIAN. Salary at the rate of £60 per annum, with board, apartments, and laundry. Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned.

ELLIS C. SMITH, F.C.I.S., Secretary & House Governor.

Worthing Hospital.

[illegible] invited for the post of [illegible] OFFICER, now vacant, for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, giving age, qualifications and experience, with copies of three testimonials, to be sent to the Secretary at once.

Bedford County Hospital.
(124 Beds.)

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing October 21st. Salary £175, with board, lodging, and laundry.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

Bedford County Hospital.
(124 Beds.)

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
CENTRAL LOST OFFICE. (*Assistant Medical Officer—Bo an*)	**CONTRACT PRACTICE** (*contd*)	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY GLAMORGAN (*Workmen's Medical Scheme*)	DEVON COUNTY COUNCIL. (*School Medical Inspector—Male*)
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION (*Medical Practitioner*)	MYRTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. (*Workmen's Medical Scheme*)	STEVENAGE OF HERTFORDSHIRE (*Assistant Medical Officer and Assistant School Medical Officer*)
EBBW VALE MON (*Workmen's Medical Society*)	NEATH AND DISTRICT (*Medical Aid Association*)	SOMERSET COUNTY COUNCIL (*Assistant Medical Officer*)
GILFACH GOCH GLAMORGAN (*Workmen's Medical Scheme*)	OAKDALE MON (*Medical Officer for Medical Aid Association*)	YORKSHIRE (NORTH RIDING EDUCATION COMMITTEE. (*Assistant School Medical Officer*)
LOWESTOFT MEDICAL INSTITUTE. (*Medical Officer*)	OGMORE VALLEY GLAMORGAN (*Bridgam Colliery Medical Aid Society*) (*Workmen's Medical Scheme*)	
LLWYNYPIA CEFNDACH VALE, PENYGRAIG GLAMORGAN (*Workmen's Medical Scheme*)		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1

Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch	Town or District	Hon. Sec. of Division or Branch
NEW SOUTH WALES (*All Friendly Society Appointments*)	Dr. J. G. HUNTER (Medical Secretary New South Wales Branch) 133, Macquarie St., Sydney, N.S.W.	SOUTH AUSTRALIA. (*Lodge Appointments*)	Secretary South Australian Branch B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. (*Contract Practice Appointments*)	Dr. G. F. V[illegible] (Hon. Sec. New Zealand Branch) British Medical Association, P.O. Box 1556, Wellington, New Zealand.
QUEENSLAND. (*Brisbane Associated Friendly Societies Institute*)	The Hon. Sec. Queensland Branch British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. (*All Institute or Medical Dispensaries*)	Dr. J. P. MAJOR (Hon. Sec. Victorian Branch) British Medical Association, Medical Society Hall, East Melbourne.	WESTERN AUSTRALIA. (*Contract and Lodge Practices*)	Hon. Sec. Western Australian Branch British Medical Association, c/o 6 Barker's Arcade, Chambers, St. George's Terrace, Perth, Western Australia.

September 30th, 1931 By Order of the Council ALFRED COX, Medical Secretary

West London Hospital,
Hammersmith, W.6 (*234 Beds*)

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Genito-Urinary Department. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh or Ireland. The successful candidate will be required in addition to his other duties to undertake such teaching for the Post Graduate College as the Board may approve.

Applications with copies of testimonials must reach me not later than Thursday, October 22nd. Candidates must attend the meeting of the Medical Council on Friday, October 23rd, at 4.30 p.m. and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board of Management but, nevertheless must send copies of their application and testimonials to each member thereof and if so notified be in attendance at a meeting of the Board at 5 p.m. on Tuesday, October 27th when the election will be made.

H. A. MADGE, Secretary.

St. Thomas's Hospital

VACANCY

Applications are invited for the post of JUNIOR OPHTHALMIC HOUSE SURGEON at this Hospital. Applications with full academic career to be sent to Lt.-Col. A. P. B. IRWIN, Secretary, not later than October 12th.

Bethlem Hospital,
MONKS ORCHARD, EDEN FARE, BECKENHAM, KENT

Wanted One *RESIDENT HOUSE PHYSICIAN* (*gentleman unmarried*) recently qualified in Medicine and Surgery. The terms of residence is for six months' apartments complete board and laundry being provided, and an honorarium at the rate of £150 per annum will be paid for the first three months during if commendable service be given to the rate of £200 per annum for the second period of three months.

Written applications with testimonials are to be forwarded to the Physician Superintendent at the Hospital from whom copies of the duties can be obtained.

JOHN L. WOPSFOLD, Clerk, &c.
Bethlem Hospital Office
14a, New Bridge Street, E.C.4

Belgrave Hospital for Children
(Incorporated) 1, Clapham Rd., S.W.9

The Committee of Management invite applications for the posts of TWO HOUSE PHYSICIANS which will become vacant on October 31st next.

Applicants, men must be fully qualified and registered. The appointments are for six months with board residence and washing provided. Salary at the rate of £100 per annum.

Applications with copies of testimonials stating age should be forwarded on or before Thursday, October 8th to the Secretary.

St. Mary's Hospital for Women & CHILDREN, Plaistow, E.13

Applications are invited for the posts of *RESIDENT* and *ASSISTANT RESIDENT MEDICAL OFFICERS* (vacant on or about October 12th) male or female. The appointments are approximately for six months and will expire on April 30th next. Board and residence are provided. Salaries at the rate of £150 and £120 respectively, and £5 a year each for laundry. The duties of the Resident Medical Officer are mainly Surgical and those of the Assistant Resident Medical Officer mainly Medical. Personal canvassing not desired. Applications with copies of three recent testimonials to be sent to the undersigned not later than October 5th.

A. ERNEST WILKES, Secretary.

Warneford General Hospital,
LEAMINGTON SPA. (*120 Beds*)

RESIDENT HOUSE SURGEON required on or about December 1st next.

Salary £150 per annum, board, lodging and laundry.

Applications from qualified and registered Medical Practitioners (unmarried) must be sent to the undersigned on or before 15th accompanied by copies of not less than three recent testimonials.

W. RUSSELL PUDALL,
House Governor & Secretary.

(Appointments continued on p. 52.)

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,

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ASSISTANCIES.

Wanted. — Assistantship (outdoor), *with or without view, South of England preferred* by London Graduate, aged 28. English married, abstainer 5½ years' *varied experience hospital, panel and private practice*. Own car. Free now.—Address, No 6129, B.M.A. House, Tavistock Square, W.C.1.

Wanted, early in October, male, *indoor ASSISTANT, for South Wales Port*. Must be good anaesthetist. Very little night work or midwifery. Salary £300 p.a. State age, nationality, and all particulars. Dispenser kept. Must be able to drive a car.—No 5558, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, October 1st to 10th, indoor ASSISTANT, male, single, under 30, for private and panel Practice, South Coast town. Salary £300. *Recent testimonials* and photo returnable. Usual bond.
Address, No 5910, B.M.A. House, Tavistock Square, W.C.1.

Wanted, well-qualified, outside ASSISTANT, with view if suitable, in *Panel Practice in Manchester suburb*. About £400. Abstainer preferred. Own car. At once. State experience and personal particulars.—Address, No 6110, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship now by M.B., B.Ch. (woman). Five years' experience of panel and private practice. Excellent worker. Well received. Drive car. Free in London.—Address, No 6115, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with *view to partnership* early view, by M.B., B.Ch. (age 30). Ex H.S., H.P., and C.O. London Teaching Hospital. Some experience G.P. Resident exp. Capital. Own car.—Address, No 6138, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or Branch Management, with view, by Scot, 28, Protestant, single. F.R.C.S., L.R.C.P. Ex H.S. and R.M.O. Maternity Hospital; G.P. exp. Int'view London if necess.—Addr., No 6125, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with *view to Partnership*, by M.B.Glas., aet 28, [illegible] years' exp. in Hospital and G.P. [illegible] anaesthetics, midwifery.—Address, No 6120, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for busy mixed practice in Yorkshire. Gd. opportunity for young ener. man, single, not afraid of work. Usual bond. Able to drive car. Salary £250. State age and full particulars.—No 6121, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, in small *industrial* town in North, to live in, with one of the Partners. Suit recently qualified man. Salary £265. Usual bond.—Address, No. 6139, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor *ASSISTANTS for Town and* Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, *Cross Street, Manchester*.

Wanted. — Assistantship, outdoor, by M.B., B.Ch. (1924). Ex H.S. *and H.P. Experienced in panel and private* practice. London preferred.—Address, No. 6157, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by M.B.Edin, 1924. Scot. Married. Excellent experience panel and private. Own car.—Address, No. 6135, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Doctor as *ASSISTANT, indoor, for general and* panel practice in Yorkshire, West Riding.—Address, stating age and essential particulars, No 6133, B.M.A. House, Tavistock Sq., W.C.1.

Wanted— Outdoor Assistant in Country Town Practice, North Wales. Well light. Able to drive car.—Address, No. 6125, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted, preferably primary, with early view to Partnership, in Southern Counties, by Scottish Graduate. 8 yrs' G.P., *tropical exp.*, and wide exp. mid. Married. Own car. Accust. sole charge.—Add., No. 6131, B.M.A. House, Tavistock Sq., W.C.1.

Assistant (indoor) wanted at once; £300 p.a.; all found, except laundry. Mixed Practice in Newcastle upon-Tyne.—Address, No 6120, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted about October 21st, male, single, Scotchman preferred, for Lancashire Town Practice. Salary £270, all found. Newly qualified man would suit. Usual bond.—Address, No. 6163, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Locums wanted by Medical Woman. Five years' experience private and panel practice. Accustomed to sole charge. Can drive car.—Address, No. 6152, *B.M.A. House, Tavistock Square, W.C.1.*

Assistantship wanted, recently qualified, Englishman, 32, married; own car. Keen for experience; also holds Dental qualification; free end of October.—Address, No 6137, B.M.A. House, Tavistock Sq., W.C.1.

Indoor, male Assistant required for panel and private practice in London residential district. Salary £300 per annum. *State age, date of qualification, and experience.* —Address, No 6154, B.M.A. House, Tavistock Square, W.C.1.

M.D. (T.C.D.), 31, married, desires permanent ASSISTANTSHIP, with or without view, preferably in South of England. 5 years' Hospital experience. Has held Medical Surgical, Obstet., and Gynaec. appts. Ex Medical Registrar large Teaching Hospital.—No. 6164, B.M.A. House, Tavistock Sq., W.C.1.

M.B., Irish, young, ex H.S., some experience panel, desires ASSISTANTSHIP, in or near London preferably. Testimonials. — Address, No 6162, B.M.A. House, Tavistock Square, W.C.1.

Medical Woman's Practice.—Wanted, a Woman ASSISTANT, with view to early Succession. Excellent scope for surgery. State age, experience, and qualifications. — Address, No 6127, B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Wanted, outdoor ASSISTANT, General Practice (private and panel). Salary £435, with car allowance. *Welsh desirable. Usual bond.* References required. — Address, No 6106, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Light Locums, Management of Branch, Institution, etc., fees accordingly, by Medical Man, 60, active, abst., drive; own practice 30 years. London or Southern Counties preferred.—Address, No 6158, B.M.A. House, Tavistock Square, W.C.1.

Doctor requires Locums, experienced panel, private practice. South preferred. Six guineas weekly; travelling expenses if work light. — Address, *No 6167*, B.M.A. House, Tavistock Square, W.C.1.

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MEDICAL POSTS, DISPENSERS, etc.

NORTH BORNEO.

GOVERNMENT DISTRICT SURGEON required for Interior Residency. Commencing salary £650 p.a., and plainly furnished quarters. *Selected applicants must be young, unmarried,* and able to sail on October 30th.—Further particulars on application to BRITISH MEDICAL BUREAU, 12, Stratford Place, Oxford St., W.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Capable Lady seeks post as HOUSEKEEPER to Doctor's household. Excellent private. Good organizer and cook. References Free now. London or Provinces. Address, No. 6168, *B.M.A. House*, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part time. Bookkeeper-Dispensers, Secretary-Dispensers, Nurse Dispensers, and Chauffeuse Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

London, N. (nr. St. Pancras).—Well-established cash and panel PRACTICE. Receipts last year £406, panel 350. Rent of surgery £1 weekly inclusive. Premium £500, *including drugs and furniture.*—Apply, PEACOCK & HARLEY, LTD., 19, Craven Street, Strand, W.C.2.

London, S.E. — Old-established. Receipts £1,250, last year £1,350. Panel 635, excellent scope increase. Nice house, garden, garage, rent £75. Price £1,850, *part deferred.* — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Medical Practice. — Vacancy in South-Western Manitoba Town; pleasant residence; good district; wide-awake town; on Hydro line. Present circumstances admittedly dry, but prospects excellent. Bungalow, with recently installed water-works, $3,000.00. Office furniture, including X-ray bedside unit and all fittings, $1,000,00. Part of payment may be deferred. — Apply, ALFRED B. ESTLIN, Melita, Manitoba.

Midlands.--Old-established Practice for sale. Panel 1,700. Cash receipts £1,600 p.a. Good house and garage. Assistantship and Partnership will be entertained. If sale, 1½ years' purchase.—Address, No. 6111, B.M.A. House, Tavistock Sq., W.C.1.

Nucleus for Medical Woman. Easy terms for immediate sale. Industrial town, 30 miles from London. Panel 200. House available.—Address, No. 5622, B.M.A. House, Tavistock Square, W.C.1.

Practice, London, N., £400 p.a. and over (half panel), and growing, with good house, garage, and garden, for sale, as Vendor taking full-time work. Open to every investigation. — Address, No. 5905, B.M.A. House, Tavistock Square, W.C.1.

Practice or Partnership wanted. —*Owing to the almost unprecedented* demand for bona fide Practices and Partnerships, Mr PERCIVAL TURNER has several clients waiting to negotiate for any investment in Town or Country, and will be pleased to hear, in confidence, from anyone wishing to take a partner or retire. Ample capital at command.—All communications to PERCIVAL TURNER, 4 and 5, Adam Street, Adelphi, W.C.2.

Practice or Partnership wanted in South Wales or London for immediate cash. Income £1,500—£2,000. Good panel. Usual details treated in strict confidence.—Address, No. 5909, B.M.A. House, Tavistock Square, W.C.1.

S.W. England. — Unopposed Country PRACTICE, £1,350. Panel worth £525. Appt. and club £75. House, with garden, tennis court, garage. Electric light and water to rent at £40. No agents. Cash only.—Address, No. 6122, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers. — Do not buy without expert assistance. With 50 yrs.' *experience* Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9311. Telegrams: "Epsomian, London."

£300 receipts; good Nucleus for Sale owing to ill-health. Panel 250. Plenty of scope. Thickly populated district. Large corner house, 3 *bedrooms, etc. Premium* £500.—Box C.L., 14, Briardale Gardens, N.W.3.

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Charming modern House, op- [illegible] Tube station; 3 b.d., 2 rec., lounge [illegible], labour saving, newly decorated. Price, [illegible] £1,450; cash £200, balance as rent.—[illegible] "Quality Houses," Gloucester Gardens [illegible] Golders Green Road, N.W.11. Speed-[illegible]

Bath.—Consulting Room in the Circus. Furnished or unfurnished.—Address, No. 5741, B.M.A. House, Tavistock Square, W.C.1.

Consulting Rooms to Let.—Harley Street and District. Whole and part-time. Rents £80 to £300. Lists sent on *application. Rooms wanted in Harley Street* district.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

Doctor, living at seaside, is desirous of ACCOMMODATING little Girl or Boy about same age as his daughter, age 4. Suitable for parents going abroad.—Address, No. 6124, B.M.A. *House, Tavistock Square*, W.C.1.

Doctor receives into his Private *Nursing Home, situated Enfield, Middlesex,* Invalids, Convalescents, or Chronic Cases, requiring rest, and special treatment. Terms *moderate.*—*Address*, No. 6169, B.M.A. House, Tavistock Square, W.C.1.

Excellent Opening for Dentist.—Woolwich. Modern self-contained FLAT of 6 *rooms and hall. Planned on 2 floors,* situate in main trading position, midst multiple companies. Thousands pass the door daily. Rent only £100 p.a. on lease.—Apply, MORRIS & MORRIS, 20, George Street, Hanover Sq., W.1.

For Sale. — In rapidly growing district in Surrey, a six-roomed SEMI-BUNGALOW; ideal for Doctor wishing to start Practice. Price £650, freehold, £25 deposit secures. — Address, No. 6119, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Small Home for Borderland Patients, Sussex. Since 1893 conducted by layman. Comfortable accommodation for 15 gentlemen.—Address, No. 5768, B.M.A. House, Tavistock Square, W.C.1.

Harley Street (*adjoining*). — Charming bachelor SERVICE FLAT. Large light rooms, quiet, well and comfortably furnished, passenger lift. Rent 3½ gns. per week inclusive.—Address, No. 6117, B.M.A. House, Tavistock Square, W.C.1.

Hendon, 15, Shirehall Lane.—Fine Detached Corner Freehold RESIDENCE, with full size separate garage, specially built for owner, 5 bed., 3 recep., lounge, hall, *tiled bathroom*, w.c., and *large kitchen. Fitted* with e.l. power. Central heating, parquet floors, and oak panelling. Perfectly decorated, and a beautiful garden. Most suitable for a Doctor. Price £4,000, part can remain.—No. 5940, B.M.A. House, Tavistock Sq., W.C.1.

Imposing Residence in Woburn Square, 3 mins. B.M.A. House, to be LET. Very suitable for Doctor or Dentist. 10 rooms, 2 bathrooms, etc. Upper part could be let off as self-contained maisonette. Rent only £200 per annum.
ALAWAY & PARTNERS, F.A.I., 20, Bloomsbury Square, W.C.1. Museum 0431.

Lady living in London, S.W., will take a Medical Man doing post-graduate work, etc., as PAYING GUEST. A Doctor practising in neighbourhood will provide light Evening Employment. — Address, No. 6132, B.M.A. House, Tavistock Square, W.C.1.

Queen Anne St. — Excellent bachelor FLAT, unfurnished, with part-time Consulting Room; plate on door. Handsome *waiting room*, service, and attendance. £150 p.a. Unique bargain. — Address, No. 6159, B.M.A. House, Tavistock Square, W.C.1.

Residential Club for Gentlemen. —Hampden Club, Hampden Street, N.W.1, close to King's Cross Station. Large Club rooms, 300 bedrooms and bedsitting rooms. 15/- to 25/- per week. Illustrated Prospectus, Secretary, Museum 3424.

Rheumatic or Arthritic case welcomed as sole RESIDENT PATIENT by Doctor; Midlands. Specialising in Rheumatic Diseases. Modern Electrical Treatment, Massage, etc., on premises. Well-appointed house, garden, car.—Address, No. 6116, B.M.A. House, Tavistock Square, W.C.1.

Richmond (main road). — Ideal for Doctor or Dentist.—Detached RESIDENCE, 6 bedrooms and bathroom, 4 reception rooms, all on ground floor. Large garage, tennis, orchard, etc. 3/4 acre. Garage and stabling. Price £1,950.—WILLIAM WILLETT, LTD., Sloane Square, S.W. (Sloane 8141.)

Winter by Sea.—Bognor (near). —Well-furnished COTTAGE: 5 bedrooms (running water), bath (h. and c.). Minute sea. Garage available. October-March.—Particulars from Major MAYBURY, "Sunny Newlands," Claygate, Surrey.

MISCELLANEOUS SALES, etc.

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to MEMBERS of the MEDICAL PROFESSION

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Medical Surgical Sundries Ltd.
Supply Instruments, etc. First Field Dressings. Army type, 1 yd. Gauze, and 1 by 2½ in. Bandage. 2/- per doz. Sample, post free, 2d. *Showroom*: 97, Swinderby Road, Wembley.

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VINCENTS of Reading, Station Square, Reading. 'Phone 1047.

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Wanted — Second-hand parcels of JADIUM in any form. Enquiries solicited for all types of Jadium work—repair, substitution a specialité. — Address, No. 6134, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Hoisting Apparatus for transporting invalids chair or bed up staircase. Hatfield folds well under seat. Suitable spinal case or nursing home.—Apply, Dr. Lapage, 1 Frost Low, Stroud.

APPOINTMENTS—Contd

County Borough of St Helens

ASSISTANT MEDICAL OFFICER OF HEALTH

Applications are invited for the post of Assistant Medical Officer of Health (female) to the above Authority.

The Person appointed will be required to reside at the Council's Maternity and Child Welfare Hospital and will be responsible for the conduct of the Council's Maternity and Child Welfare Clinics and such other duties as the Chief Officer of Health may direct.

Special experience in midwifery essential and experience in general nursing and the possession of a Diploma in Public Health will be regarded as additional qualifications.

Salary £600 rising by annual increments of £25 to £650 per annum plus London Weighting.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St Helens, and completed applications, accompanied by copies of not more than three recent testimonials, should reach him not later than Monday, October 12th.

FRANK HALLWELL
Medical Officer of Health

Town Hall,
St. Helens.
September 18th, 1931.

City of Liverpool

RESIDENT ASSISTANT MEDICAL OFFICER
(Male)

Applications are invited for the appointment of Resident Assistant Medical Officer at the MILL ROAD INFIRMARY (800 beds) LIVERPOOL for a period of one year at a salary after the rate of £200 per annum together with the usual residential allowances. The appointment will be made in accordance with the Standing Orders of the City Council.

Candidates must be single, fully qualified and registered.

Application stating age, qualifications etc., with copies of three recent testimonials to be received by the undersigned not later than Friday, October 9th.

Envelopes to be endorsed Resident Assistant Medical Officer.

WALTER MOON
Town Clerk.

Brougham Terrace,
Liverpool.
September 28th, 1931.

General Hospital, Nottingham

(297 Beds)

A HOUSE PHYSICIAN is required at the above Institution. The appointment is for six months. Salary at the rate of £150 a year with board, residence and laundry. Candidates are desired to send applications and full particulars as to age, qualifications and experience to the undersigned not later than Wednesday, October 7th.

Duties to commence Friday, October 23rd.

PETER M. MACCOLL
Hon. Governor & Secretary.

A Radiological House Surgeon

and RESIDENT ANAESTHETIST is wanted at the ROYAL BERKSHIRE HOSPITAL (243 beds). Candidates (male) must be fully qualified and registered. Appointment is for six months. Salary at the rate of £150 per annum, with board, residence and laundry.

Applications with copies of testimonials, to be addressed to the undersigned.

F. A. LYON,
Secretary.

Reading.

City and County of Kingston-upon-Hull

HULL MATERNITY HOME AND INFANTS HOSPITAL

SENIOR RESIDENT MEDICAL OFFICER
(Woman)

The Corporation of Hull invite applications from unmarried or widowed registered Medical Practitioners under the age of 40 years for the appointment of Senior Resident Medical Officer (woman) at the Maternity Home and Infants Hospital. Candidates must have had Hull Conditions and must be of at least three years standing in their profession.

Salary £450 per annum together with board, washing and residence at the Maternity Home. The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applicants must have had Post graduate experience in Obstetrics, Paediatrics and the treatment of Venereal Diseases in women.

The successful candidate will be required to devote the whole of her time to the duties of the appointment which will also include attendance at the Venereal Clinic and the Ante-Natal Post-Natal and other clinics.

Particulars of the duties and forms of application may be obtained from the undersigned.

Completed applications (in an envelope endorsed "Senior Resident Medical Officer Maternity Home") together with copies of three recent testimonials must be received not later than Saturday, October 10th.

R. PAINES
Acting Medical Officer of Health

Health Department,
September 1931.
Guildhall, Hull.

City and County of Kingston-upon-Hull

ASSISTANT MEDICAL OFFICER OF HEALTH

The Corporation of Hull invite applications from Medical Men under the age of 40 years and of not less than three years standing in their profession for the post of Assistant Medical Officer of Health.

Salary £600 per annum rising by annual increments of £25 to £700.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act 1922.

The successful candidate will be required to devote the whole of his time to the duties of the office which consist mainly of work in the School Medical Department but may also include duty in any section of the Health Services.

Experience in Refraction work is essential.

A form of application may be obtained from the undersigned and must be returned to the Acting Medical Officer of Health (in an envelope endorsed "Assistant Medical Officer of Health") together with copies of three recent testimonials, not later than the first post on Saturday, October 17th.

R. RAINES
Acting Medical Officer of Health.

Hounslow Hospital, Staines Rd., Hounslow, Middlesex. (70 Beds)

Wanted November 1st male HOUSE SURGEON. Salary £200 per annum with board, residence etc. The appointment will be for six months.

Applications stating qualifications age, and experience and enclosing copies of testimonials, should be sent (marked "House Surgeon" top left hand of envelope) to W. T. Poss Secretary, Hounslow Hospital, Staines Road, Hounslow.

The Willesden General Hospital, N.W.10 (106 Beds)

The Council of Management invite applications for the appointment of a DENTAL SURGEON.

Candidates must be Licentiates in Dental Surgery, registered in the United Kingdom.

Further details may be obtained upon application to the Secretary of the Hospital to whom 20 copies of application and testimonials should be forwarded not later than October 24th.

September 24th, 1931.

Macclesfield General Infirmary

(100 Beds)

Wanted, SECOND HOUSE SURGEON. Salary £150 per annum, with board and residence. Candidates must be legally qualified and have had experience in the administration of anaesthetics. Appointment for six months.

Applications stating qualifications and enclosing copies of three testimonials to be sent to the undersigned.

A. E. HAPPIAN, Secretary.

Borough of Leyton.

DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners possessing a Registered Diploma in Public Health or State Medicine for the appointment of Deputy Medical Officer of Health and Deputy School Medical Officer.

The salary attaching to the post will be £600 per annum.

Preference will be given to candidates possessing previous experience in School Medical Inspection, Maternal and Child Welfare, and in the diagnosis and treatment of Infectious Diseases.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 to the approval of the Board of Education, and to the certificate of the Medical Officer of Health.

Applications must be made on the prescribed forms which can be obtained from the undersigned, and delivered endorsed "Deputy Medical Officer" not later than 10 a.m. on Monday, October 10th.

Applications must be accompanied by copies of not more than three recent testimonials, and any canvassing directly or indirectly will be a disqualification.

JNO. ATKINSON
Town Clerk.

Town Hall,
Leyton, E.10.
September 26th, 1931.

City of Leicester

RESIDENT MEDICAL OFFICER

The Health Committee of the City of Leicester invite applications for the position of Resident Medical Officer (male) at their CITY GENERAL HOSPITAL for a period of twelve months.

The Hospital is a modern building with 500 beds and two Resident Medical Officers.

Salary £200 per annum, together with full board, apartments, etc. The gentleman appointed will be required when required to act at the Institution of the Fever Hospital.

Further particulars of the appointment may be obtained from the Medical Superintendent, Fever Hospital, Gwendoline Road, Leicester.

Applications stating age, experience, qualifications, and the names and addresses of three gentlemen to whom reference can be made, accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned not later than October 14th.

WILFRID CARR
Secretary.

Health Offices,
Greyfriars,
Leicester.
October 2nd, 1931.

Stannington Sanatorium, Clifton, Morpeth, Northumberland

Applications are invited for the post of JUNIOR MEDICAL OFFICER (Lady) at the above Institution of 310 beds for Children.

The successful candidate will be appointed for six months and will have special opportunities of gaining experience in artificial pneumothorax treatment, and in X-ray work. The salary will be at the rate of £100 per annum, with board, residence and laundry.

Applications with copies of testimonials should reach the Medical Superintendent not later than October 7th.

Caernarvonshire and Anglesey Infirmary, Bangor.

GENERAL HOSPITAL.

Wanted, RESIDENT HOUSE SURGEON (male) and JUNIOR RESIDENT HOUSE SURGEON. Must be fully qualified and registered. Salary £150 and £100 respectively, plus board and laundry. Hospital contains 100 beds. Early Xmas and Thursday vacations. Full anaesthetic and X-ray Departments. The appointments are resident. Opportunity for private practice. Applications addressed to the Secretary should be in by October 6th.

Swindon and North Wilts Victoria Hospital, Swindon.

(80 Beds)

Wanted a RESIDENT MEDICAL OFFICER (male). Salary £125 per annum, with board, residence and laundry. Candidates must be registered under the Medical Act. Appointment for the minimum of six months. Applications stating age, etc., and accompanied by copies of not more than three recent testimonials should be sent to the undersigned not later than October 8th.

F. V. KNAPP, Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital. The appointment is for six months, commencing on November 1st, with an honorarium of £50.

Applications are also invited from duly qualified Medical Men for the post of JUNIOR HOUSE PHYSICIAN at the Sanatorium at Frimley. The appointment is for six months commencing on November 1st, with an honorarium of £50. At the expiration of his term of office, or in the event of a vacancy, the Junior House Physician will be expected to apply for, and if appointed, to hold the post of Senior House Physician for a further term of six months.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, October 17th.

Brompton, October, 1931. FREDERICK WOOD, Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of ASSISTANT RESIDENT MEDICAL OFFICER. Candidates must be registered Practitioners, and must have held a Resident Hospital appointment for six months. Salary £150 per annum, with board and residence. The post is a Senior Resident appointment and will include the duty of Assistant to the Surgeons to the Hospital. Applications, with testimonials, must reach the undersigned not later than Saturday, October 17th.

Brompton, October, 1931. FREDERICK WOOD, Secretary.

Bristol City and County Mental
HOSPITAL

Applications are invited for the post of THIRD ASSISTANT MEDICAL OFFICER.

Candidates must be duly registered and single. Preference will be given to those with previous Mental Hospital experience, and who possess a Diploma in Psychological Medicine. Salary £150 per annum, rising by annual increments of £25 to £550, with an additional £50 for D.P.M., with emoluments valued at £150. The appointment will be subject to the Asylums Officers Superannuation Act, 1909.

Applications, stating age, qualifications and full particulars of experience, to be sent to the Medical Superintendent, Bristol Mental Hospital, Fishponds, Bristol, on or before Monday, October 12th.

JOSIAH GREEN,
Clerk to the Visiting Committee.
The Council House, Bristol.
September 24th, 1931.

The Staffordshire General
INFIRMARY, STAFFORD.

Applications are invited for the post of HOUSE PHYSICIAN (either sex) which will be vacant at the end of October.

Candidates must be duly qualified and registered under the Medical Acts. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be received by the undersigned not later than Thursday, October 8th.

Stafford, September 25th, 1931. A. E. COLLINS, Secretary.

The Royal Eye and Ear Hospital,
BRADFORD.

Wanted HUNIOR HOUSE SURGEON (male). Salary £150, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before October 15th.

F. BRIGGS, Secretary-Supt.

The Sheffield Royal Hospital.
(340 Beds.)

There are two vacancies for Residents:
OPHTHALMIC HOUSE SURGEON. £120 per annum.
ANÆSTHETIST. £80 per annum, rising to £120 per annum.
Applications—

W. H. BOOTH,
Superintendent & Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A MEDICAL REGISTRAR is required (for mornings only) in the Out-patient's Department, on October 22nd.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, written especially for the purpose, before 12 o'clock, on Monday, October 19th.

The appointment is made for one year, but may be held, subject to re-election, for three years.

Salary £250 per annum, with luncheon when on duty, and an allowance of nine guineas for the purpose of providing a substitute during annual leave.

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up the duties on October 22nd.

All candidates must be in attendance at the Hospital to appear before the Joint Committee, if required, on Wednesday October 21st, at 5 p.m.

Forms of application and copies of Rules for, and details of the duties of the appointment, will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
September, 1931. Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male). Duties to commence on December 1st next. Also for the post of HOUSE SURGEON (male). Duties to commence on January 1st, 1932.

Salaries at the rate of £150 per annum, with residence, board, and laundry.

The appointments are for six months, and are renewable.

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

September 21st, 1931.
ARTHUR H. LIMB, Secretary.

North Staffordshire Royal
INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, with board, residence, and laundry.

The appointment will be made for twelve months if possible.

Previous Hospital experience necessary.

Applications, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.
September 28th, 1931.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds.)

Applications are invited for the post of RESIDENT ANÆSTHETIST and HOUSE SURGEON to the Special Departments (female).

Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence at once. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to be sent to the undersigned.

ARTHUR R. CASH,
September 28th, 1931. Gen. Supt. & Sec.

St. John's Hospital, Lewisham,
S.E.13.

Applications are invited for a RESIDENT MALE HOUSE SURGEON for the six months beginning November 1st. Remuneration £100 per annum. Applications, with copies of testimonials, should reach the undermentioned not later than October 17th.

J. C. GILBERT,
Secretary-Superintendent.

King Edward Memorial Hospital,
Ealing.

Applications are invited for the post of HONORARY CONSULTING DERMATOLOGIST. Applications should be sent to the Secretary-Superintendent, from whom details of the appointment may be obtained.

Manchester Royal Infirmary.
CENTRAL BRANCH, Robv Street,
MANCHESTER.

HOUSE-SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is tenable for nine months, commencing forthwith, three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 8th.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Manchester Royal Infirmary.
BARNES CONVALESCENT HOSPITAL,
CHEADLE, CHESHIRE.

RESIDENT MEDICAL OFFICER.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is tenable for twelve months, subject to the provision of the By-laws as to notice.

Remuneration is at the rate of £250 per annum, with board and residence.

Applicants must state age, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 15th.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.
September 9th, 1931.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

The following Resident posts will be vacant on November 1st next:
(a) ONE SENIOR HOUSE PHYSICIAN,
(b) TWO SENIOR HOUSE SURGEONS, salary at the rate of £120 per annum.
(c) ONE JUNIOR HOUSE PHYSICIAN,
(d) TWO JUNIOR HOUSE SURGEONS; salary at the rate of £90 per annum.
Board, residence, and laundry.

Appointments held for six months, but holders are eligible for a further term.

Candidates (male) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Saturday, October 17th.

J. C. BURDETT,
Sept. 25th, 1931. Director.

The Queen's Hospital for
CHILDREN, Hackney Road, London, E.2.

The Committee invite applications for the post of SURGEON for the Ear, Nose, and Throat Department, with charge of beds. Attendance required on Monday and Thursday mornings. An honorarium to cover travelling expenses will be paid. Candidates must be Fellows by examination of the Royal College of Surgeons, England.

Applications, with copies of three recent testimonials, which may be printed or type-written, should be sent on or before October 27th, to the undersigned, from whom further particulars may be obtained.

CHARLES H. BESSELL,
September 17th, 1931. Secretary.

Kent and Canterbury Hospital,
CANTERBURY.
(Recognised by the University of London for the purpose of M.S. EXAMINATION.)

HOUSE SURGEON required. Six months' appointment. Salary payable at the rate of £125 per annum, plus board, residence, and laundry.

Applications, stating age and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned.

W. T. SOUTHWOOD,
Superintendent & Secretary.

Liverpool & Samaritan Hospital
FOR WOMEN.

Wanted at once, HOUSE SURGEON, for six months. Applications, with testimonials to be sent to the undersigned.

J. ST. GEORGE WILSON.
13, Rodney Street, Liverpool.

Paddington Green Children's HOSPITAL (Incorporated) London W 2

HOUSE PHYSICIAN
HOUSE SURGEON

These appointments will become vacant on November 1st Gentlemen (unmarried) are invited to send in their applications with copies of three testimonials to the undersigned not later than the first post on Friday October 16th Salary of each at the rate of £150 per annum with Board and Residence Candidates who have held a responsible Resident Hospital appointment are preferred The appointments are for a period of six months

JAMES V HAMLIN, Secretary

Royal Free Hospital, Gray's Inn Road W C 1

Applications are invited from duly qualified Medical Women for the post of RESIDENT CASUALTY OFFICER Previous experience as Hospital resident essential Salary £150 per annum Intending candidates should submit applications stating age and accompanied by copies of three recent testimonials to the undersigned on or before October 5th The appointment is tenable for six months from Nov 1st

REGINALD E GALLATT Secretary

Bristol Eye Hospital

Applications are invited for the post of RESIDENT HOUSE SURGEON Salary £150 per annum Twelve months appointment Vacant November 1st Applications to be received by the Secretary on or before Wednesday October 14th

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14 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town Panel 1,640 House available Applicant should be a capable Surgeon Premium one third share or one fourth share 1½ years' purchase

15 W. OF ENGLAND. — Practice averaging about £1,100 p.a. in popular Seaside Resort Panel 1,150 Large house for sale or rent Scope for considerable increase Premium 1½ years' purchase

16 N.W. COAST. — Partnership in Practice £5 500 p.a. in favourite Watering place No panel Good well situated house (7 bedrooms), for sale or rent Premium one half share 2 years' purchase Partner should be young and hold F.R.C.S.

17 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town Panel 3,000 Nice detached house (7 bedrooms) garage etc, garden and grounds of 10 acres, for sale Sport of most kinds Considerable scope Premium two thirds or four ninths share 2 years' purchase

18 WEST HAM. — Practice (carried on by Medical Woman) in populous area Receipts last year £580 p.a. Small panel No midwifery Six roomed house to rent Premium £750, most of which may be paid by instalments

19 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district Seven roomed house, with electric light, garage, etc, for sale or rent Ideal climate Sport Hospital Premium £600

20 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London Panel 1,460 House (5 bedrooms) garage and nice garden for sale. Premium one third share £2,000

21 HOME COUNTIES. — Partner required in [illegible] practising in [illegible] House [illegible] scope Premium two fifths [illegible] of between £1,500 and £2 000 p.a. in neighbourhood within 15 miles of London, etc, garage and garden, to rent Good share 2 years' purchase

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Practices and Partnerships for Disposal (continued).

22 BIRMINGHAM.—Practice about £700 p.a in resid ntial suburb Small panel Well situated house (7 bed and dre sing rooms) garage and charming garden for sale Good scope Premium £750

23 S WALES.—Partnership in steadily increasing Practice of about £3 000 (appr over £1 000) p a in growing district easy distance of important Seaport Panel 1,750 One-third to two fifths at once, with succession to whole Practice after 5 years Premium 1½ years' purchase

24 SOUTH AFRICA. — Country Practice in healthy district (elevation 2 000 ft) in Cape Colony Cash receipts year ended June, 1931, over £1 000 Sport of all kinds Well built house for sale or rent Easily worked Premium £550

25 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p a in first rate town Panel 1,344 Good hous (6/7 bedrooms) to rent Premium one third share 2 years purchase

26 DEATH VACANCY.—LONDON, S.W.—PRACTICE of £2 350 p a (over £600 from panel), in pleasant suburb Suitable accommodation to rent

27 S. OF ENGLAND. — Practice averaging nearly £1 000 p a in small seaside resort Eight roomed house for sale or rent Excellent educational facilities Sea fishing, etc. Premium £1,500

28 W. MIDLANDS. — Country Practice of about £1 000 p a in beautiful part Panel 552 Very good house (5/6 bedrooms) Good garden, orchard, etc, for sale or rent Premium £1,500

29 KENT.—Country Practice of over £800 p.a. in beautiful part Panel nearly 400 Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc, for sale Sport Premium 1½ years purchase

30 LONDON, E.—Cash and Panel Practice of £1 235 p a in populous area Panel 1,700 House (5 bedrooms) for sale Premium 1½ years purchase

31 S OF ENGLAND.—Partnership in Ophthalmic Practice about £1 300 p a in small but delightful resort Commencing able to one able to operate Premium on half share 1½ years purchase

32 LONDON, E —Practice doing about £1,200 p a in outlying suburban district Panel 658 Detached house (6 / bedrooms) with garage and lovely garden, for sale Premium—Practice—£1,500.

33 LONDON, W.—Panel of 400 for transfer in suburban district Rent of Lock up Surgery £65 p a Premium to include furniture and drugs, £500

34 MIDLANDS —Practice over £800 p.a. in first rate town Panel 500 Large or small house available Premium only £300

35 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £6,000 p a in delightfully situated Country Town, easy distance of coast Attractive house (4 bedrooms) to rent Partner must hold the F P C S, and be aged about 30 Appointment on Hospital Staff Premium for one sixth to one fourth share 2 years purchase Preliminary Assistantship

36 EAST ANGLIA.—Partnership in good-class non dispensing Practice in favourite Seaside Resort Partner must be a Varsity man, about 30 years of age experienced in Medicine and Anæsthetics Good up-to date Hospital Share of £1,000 p a 2 years purchase

37 S. of ENGLAND.—Partnership in increasing Practice of about £1 600 p a, in flourishing Seaport Town Panel 1 000 Plenty of scope for increase Premium, one half share, 1½ years purchase Preliminary Assistantship entertained

38 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent Premium £500

39 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p a), easy access of West End Premium for one half share £2,300

40 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non dispensing Practice of £1,800 p.a. (in beautifully situated Country Town Panel about 650 House (5 bedrooms) to rent Good schools Excellent sport First-class Hospital *One-third to one half share at 1½ years purchase.* Welsh not necessary

41 W. MIDLANDS.—Practice £800 p.a. in market town Panel 170 House (5 bedrooms), garage and garden, to be sold or let Premium 1½ years' purchase

42 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p a Panel 1,600 Nice house (4 bedrooms) to rent. Premium for one-half share 1½ years' purchase

43 W. OF ENGLAND. — Country Practice over £600 p a in beautiful district Small panel House, with lovely garden and paddock, for sale Scope Prem 1 yr's pur

44 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5 000 p a in an important town Panel 4 000 Premium for one fifth share 2 years' purchase

45 LONDON, S.W. — Increasing Practice about £700 p.a. in outlying suburb Panel £100 Modern house (5 bedrooms) Premium £1 100

46 CORNWALL —Practice of £1,200 p.a. in a favourite seaside resort Panel 520 Hospital Good house and garden, to rent Premium 1½ years purchase

47 KENT — Country Practice of about £850 p a Panel 550 Good house and garden for sale Prem £1,100

48 MIDLANDS. — Country Practice of nearly £900 p a in beautiful district Panel over 700 Large house in splendid condition with central heating and electric light, beautiful garden with greenhouse, for sale All kinds of sport Premium £1,350

49 LONDON, N.W.—Partnership in Practice of £2 240 p a in suburban district Panel 2 525 Scope for increase Premium one half share 2 years purchase

50 NORFOLK —Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500 Detached house with garage and small garden, to rent Sport of all kinds Premium one third share 2 years' purchase Preliminary Assistantship

51 LEEDS. — Very compact mixed Practice over £1 200 p.a. Panel 1,300 Large well situated detached house (4 bed and dressing rooms) with large garden, to rent on lease Premium 1½ years' purchase

52 MIDDLESEX.—Increasing Practice about £700 p a in developing district Panel 250 Convenient semi detached house (4 bedrooms) with good garage and secluded garden, for sale Great scope. Premium £850

53 CO. DURHAM.—Partnership in Country Practice easy distance of coast Income about £1,650 p.a. Panel 1 550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale Premium for one half share only £1,000

54 SOMERSET. — Practice averaging £870 p a in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,300

55 GLAMORGANSHIRE. — Assistantship, with view to Partnership, in Practice about £2 700 p a, in small town Panel about 2,400 One third share at 2 years purchase, payable by arrangement if desired.

56 DORSET.—Country Practice of £1,000 p a. in beautiful part near the coast Panel 660 Detached house (6 bedrooms) with garage and beautiful garden to rent Hunting, shooting, fishing, etc Premium 1½ years purchase. Suitable for retired Service man

57 EASTERN COUNTIES —Small Practice in town of 20 000 population near the coast. Receipts average £300 p.a. (including £100 from panel) Large convenient house, with good Surgery and nice garden, to rent Premium 1 years pur.

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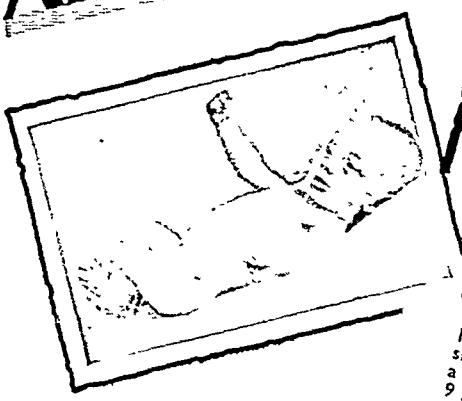
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1. MIDLANDS.—Suburb of COUNTY TOWN.—Very sound old established middle and working class PRACTICE, easily worked, and capable of good increase. Gross cash receipts for last three years average £3,584 (last year £3,686) Panel of 3,000. No appointments Fees 3/6 to 7/6. Mid 3 to 4 gns. About 30 cases. Very suitable house, with 2 reception, 4 bedrooms, etc. Garden. Garage. Rent on lease £85 p.a. Premium £5,000.
2. LONDON SUBURB (S.E.).—PARTNERSHIP.—Third share of very old-established non-panel Practice, in pleasant residential suburb, is for disposal through serious illness of retiring partner. Remaining partner has been in the practice for many years. Cash receipts average over £4,500 p.a. Two suitable houses available (Price, freehold, £2,000 and £1,400 respectively). Premium £2,974, £1,500 down and balance by instalments.
3. NORTH WEST COAST.—SURGICAL PARTNERSHIP.—In a popular residential seaside resort the half share of middle and upper class Practice is offered to a suitable gentlem . . .S., as the retiring partner does the surgical wo . . ner the medical side. Receipts average nearly . . house in its own grounds, with ample accommodation. Price, freehold, £3,000, part on mortgage, or would be let on lease at £175. Premium 2 years' purchase
4. GLASGOW.—Very well established middle and working-class PRACTICE producing for the last 12 months nearly £1,800 (average 3 years £1,700) Panel of between 1,500 and 1,600. Fees from 2/6, with medicine extra Exceptionally good house, in excellent repair, with large garden, and containing 3 reception, 4 bedrooms, etc. Good surgery Electric light Garage. Price for Practice and House £4,500 cash
5. PARTNERSHIP.—In a most desirable outlying residential suburb of London, a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1,200 p.a., in an old established good mixed class Practice averaging just over £10,000 p.a. Very good house, with ample accommodation. Rent £150 p.a. Premium 2 years' purchase cash.
6. LONDON, W.—Old established good middle class PRACTICE averaging over £2,500 p.a. Medium sized panel. Visits mainly 10/6. Midwifery discouraged. Suitable house, with ample accommodation. Vendor's leasehold property. Price £1,650, or will be let on lease at £150 p.a. Premium 1½ years' purchase.
7. PARTNERSHIP.—SOUTH WALES, near a large Town.—A one-third or two fifths share in a well established and good middle and industrial class Practice, producing for last 12 months £3,174. Panel of 1,750. Fees from 3/- Suitable house, with 4 reception and 4 bedrooms, etc Electric light Garden Can be rented on lease. Premium 1½ years' purchase, part by arrangement.
8. MANCHESTER.—Good mixed class PRACTICE, averaging over £1,200 p.a., but capable of much increase. Vendor having neglected work owing to ill health Panel of about 550. Fees 3/6 to 7/6 House, with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £2,700. Premium 1½ years' purchase, payable by arrangement.
9. SOUTH-WEST OF ENGLAND.—COUNTY TOWN.—PARTNERSHIP.—A third share is offered in a very sound middle class Practice, averaging approximately £2,000 p.a., with panel of 2,788. Fees 3/6 to 10/6. Increase up to two thirds at the end of 18 months. Suitable house can be obtained. Premium £1,367, payable part down and balance as arranged.
10. SOUTH AFRICA.—Within 100 miles of East London.—Increasing PRACTICE, in very pretty Township near sea coast, producing last financial year £1,066 Practically all fees cash. Climate excellent. No night work and little or no visiting. Living cheap. Bungalow residence in 3/4 acre of productive garden. Price £750, £400 on mortgage, or rent on lease £72 p.a. Premium £550. Sport of all kinds
11. BORDERS OF SHROPSHIRE — Old-established good mixed-class PRACTICE, situated in attractive district, and averaging over £1,000 p.a., with selected panel of 400. Fees from 3/6 to 30/-. Very good house, in excellent repair, with very fine garden, and containing 2 reception, 6 to 8 bedrooms, etc. Garage. Price for freehold £2,000, £1,000 on mortgage. Premium 1½ years' purchase. Very good sporting and social facilities Excellent prospects of surgery.
12. LONDON, S.E.—Well established mixed class PRACTICE, averaging for past three years £3,885. Panel of 3,900, and appt. worth £200 p.a. Fees from 2/- Mid 30/- to 2 gns. Suitable house, in very good repair, with 2 reception, 6 bedrooms, ample professional accommodation, garage for 2 cars. Good garden. Rent on lease £90 p.a. Premium £7,500, £5,000 down and balance by arrangement.
13. KENT.—NURSING HOME, and small private Practice combined (the latter offering excellent scope if desired as it has not been developed), situated in very pretty district within 15 miles of London. Total receipts last year £1,100. Beautiful house (11 bedrooms, etc.) standing in 2½ acres of garden, tennis lawn, etc. Price for freehold and goodwill £2,100
14. BORDERS OF BERKS AND HANTS.—In a delightful sporting and agricultural district, within reach of market town, an old established mixed class PRACTICE averaging about £850 p.a., including panel over 400. Visits 5/ to 10/6, medicine extra. House containing 2 sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. Rent £50 p.a. on lease. Premium £1,100.
15. SURREY.—PARTNERSHIP.—A two fifths share is offered in a rapidly increasing good mixed class PRACTICE, having large scope for increase, and situated in a developing residential district, within easy reach of town. Gross cash receipts for past 12 months approximately £1,500. Panel (which can be much increased) 350. Fees from 2/6 Suitable house, with 2 reception, 5 bedrooms, etc Garden Garage Price £1,250, part on mortgage. Premium 2 years' purchase
16. DEVON.—PARTNERSHIP.—Half share of very old established unopposed Country Practice, offering scope, and situated in pretty village within reach of large town Cash receipts last year £2[illegible], including appts. and panel of 880 Visits 3/6 to 21/-, medicine extra. House contains 2 reception, 4 bedrooms, bathroom, etc Garden. Garage. Rent £50 p.a. Premium £2,000. Hunting, shooting, fishing, etc.
17. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one third share (with increase to one-half later) is for disposal in a particularly sound well-established mixed class Practice, owing to the illness of the senior Partner. Gross cash receipts average £4,379 p.a. (last year £4,437). Panel of 1,344. Consultations 3/6 upwards Visits 5/- to 21/-. Very suitable house, with 3 reception, 6 to 7 bedrooms, etc Garden. Garage. Rent on lease £100 p.a. First-rate schools and sport. Premium 2 years' purchase.
18. NORTH DEVON & CORNWALL BORDERS.—Very old established unopposed Country PRACTICE, in beautiful district near coast Cash receipts average just over £1,100 p.a., including appt and panel of 330.—Suitable house available Premium £1,600, to include drugs, etc. Hunting, golf, fishing, etc.
19. MIDDLESEX.—OUTLYING SUBURB.—A third share of an old established good middle and working class PRACTICE, offering excellent future prospects, is for disposal. Cash receipts last year amounted to £2,665, including panel of 1,468. Suitable house available, either on rental or by purchase. Premium £2,000.
20. WEST OF ENGLAND.—Near Favourite Town.—Unopposed country PRACTICE in beautiful surroundings, averaging about £600 p.a. but offering scope. Panel worth £150 p.a. Fees 2/6 to 21/-. Exceptionally good house, with large garden, containing 3 reception, 7 bedrooms, etc. Price for freehold £2,000, £1,000 on mortgage Premium £600.
21. LANCS.—LARGE TOWN.—Old-established better and middle class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.
22. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,500
23. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000 A fifth share is for disposal, with increase to a third later. Suitable accommodation available Premium 2 years' purchase
24. NORTH MIDLANDS.—WITHIN 3 MILES OF FAVOURITE TOWN.—Old-established good middle class PRACTICE, offering large scope Cash receipts for last 12 months £1,332, including panel of over 1,000 Fees from 3/6 Mid. from 2 gns. Exceptionally nice house in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc., containing 3 reception, 6 bedrooms, etc Freehold for sale. Premium 1½ years' purchase.
25. NEAR HUDDERSFIELD.—PARTNERSHIP.—A half share is offered in a very well-established good mixed-class Practice, having considerable scope for increase. Average gross cash receipts for the past three years £4,000; last year £4,273. Panel of 3,500 Fees from 3/6 to 7/6. Midwifery 1½ to 7 gns.; about 50 cases. Very good house with 4 reception, 6 bedrooms, etc., and 1½ acres of garden Price for freehold, £2,500, or would be let on lease. Prem. 1½ years' purchase (later)
26. NORFOLK.—PARTNERSHIP.—A one third share (with increase later) is for disposal in a very well established Practice in an attractive town near coast. Average gross cash receipts nearly £4,500 Panel of nearly 3,000. Visits 2/6 to 30/-, with medicine extra Very nice house, with large garden. Freehold for sale. Premium 2 years' purchase
27. MANCHESTER.—Semi-residential Suburb.—Very old established practice, averaging £2,500 p.a., dispensing mainly middle class PRACTICE, capable of much increase including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery Price from 5 gns. Well-situated house, with good accommodation (freehold) £1,600. Premium £3,750.
28. LINCS. — PLEASANT MARKET TOWN.—PARTNERSHIP.—A half share, with possible succession in two years' time Average income for past three years £1,900, including appointments and panel producing £500. Advice and medicine 3/- upwards; visits from 5 Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200 Sport of all kinds, and excellent schools for boys and girls. Premium 2 years' purchase, payable £1,000 down, remainder by arrangement.

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The following case will, I am sure, interest you. Baby Lowe was born on November 4th, 1929, at the 28th week. Its weight at birth was 4 lbs. It was put in an incubator and fed with a fountain-pen filler. First it was fed from the breast, then on a spray-process dried milk, and finally on a peptonised food.

It was brought to the Motherhood Bureau on June 10th, 1930—aged 7 months. Its weight was 8¼ lbs. It was still fed on peptonised feeds and could take only 4 feeds a day, and vomited after these; and was therefore losing weight.

Baby Lowe was put on a Lacidac Half Cream—4 measures to 6 ozs. of water—with Mead's Dextri Maltose No. 1, 4-hourly feeds. Within a week the sickness had improved, the baby had begun to gain a little weight, and by July 10th its weight was 9 lbs. It was then put on Full Cream Lacidac and the appropriate additions of Brestol. In August Cow & Gate Rusks were added to the diet, and mixed feeding was commenced as the teeth were beginning to erupt.

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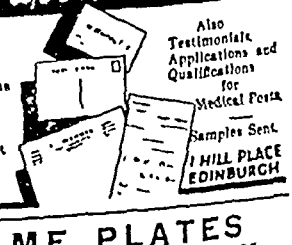
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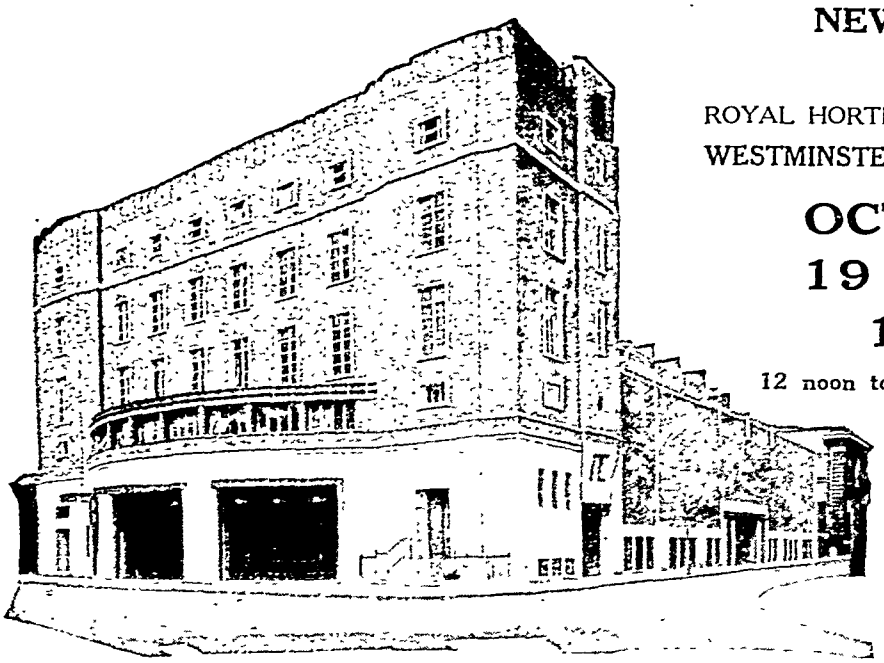


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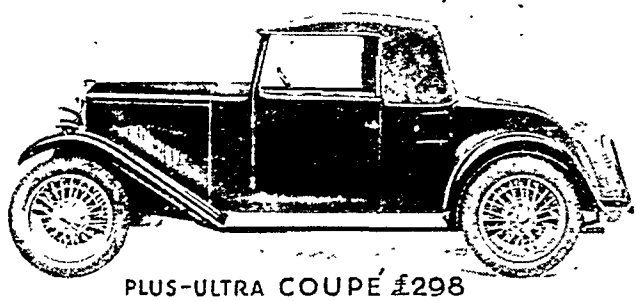
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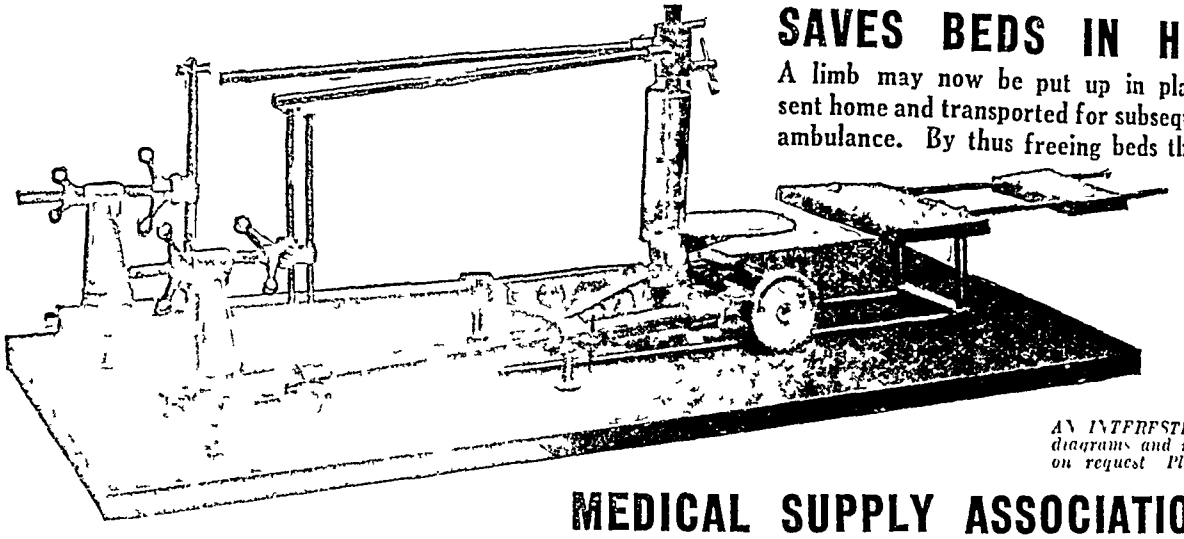
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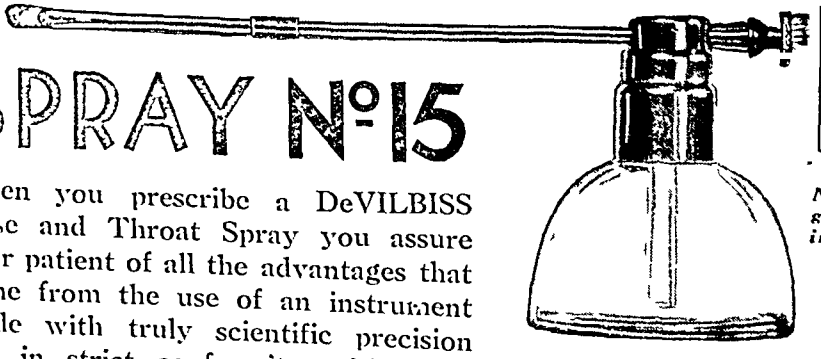
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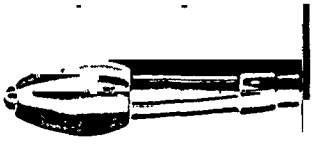
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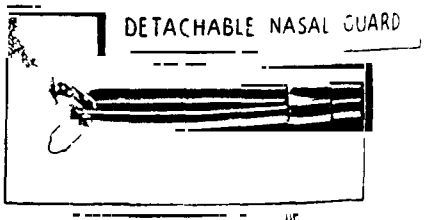
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Dr C Massatsch, *Public Analyst, Berlin. Findings published in June, 1929.* "The amounts of aluminium lost in cooking various classes of food were estimated, these were so small that they could not be determined by loss of weight, but their presence in the cooked food was shown (not quantitatively). Dogs and rats were fed with diets containing respectively aluminium oxid and dry and freshly precipitated hydrate in differing concentrations in amounts containing up to a maximum dose equivalent to 0·1326 grams alum per dog daily, no appreciable effect could be noticed."

Dr V Thieme, (*vide* Chemiker Zeitung, 18/12/29) reviewed the work done by Dr Massatsch and his co-workers. He concluded that aluminium cooking utensils were quite unexceptionable both from the technical and hygienic points of view. "No appreciable quantities of aluminium are taken up by the food, so that, apart from the unnecessariness of aluminium compounds in general, no bad effects to the health can be expected."

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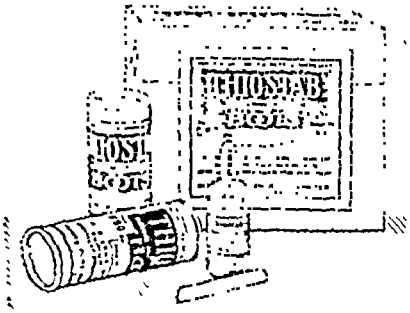
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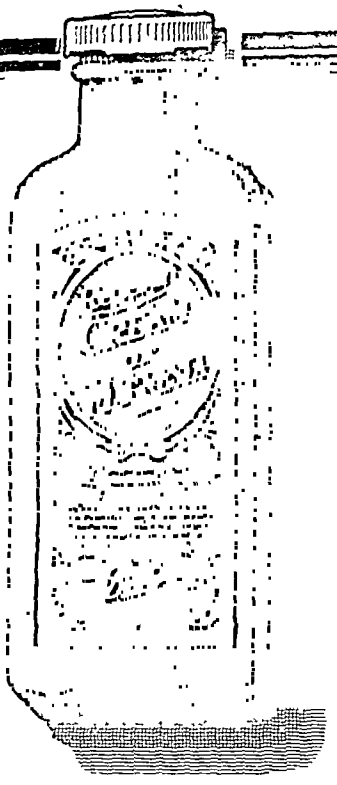
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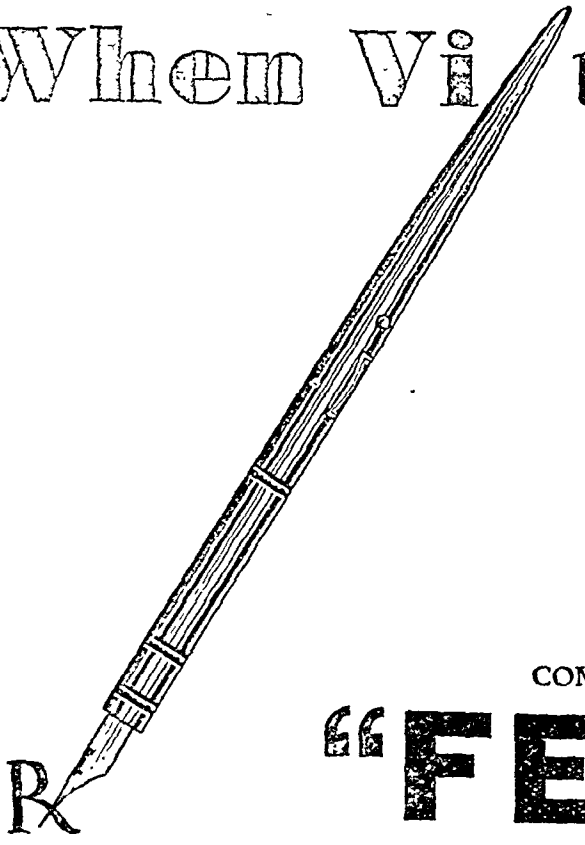
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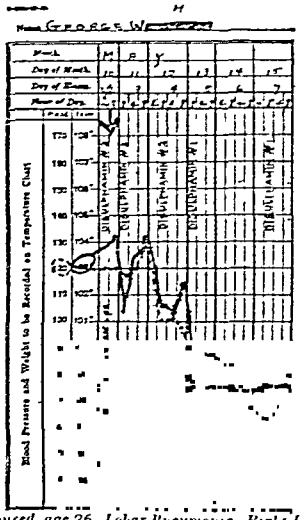
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Prof. Stejskal, of Vienna, "Wiener med. Wochenschrift," 8, 1931.

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Dr. Ettinger, of Vienna, "Wiener med. Wochenschrift," 10, 1931.

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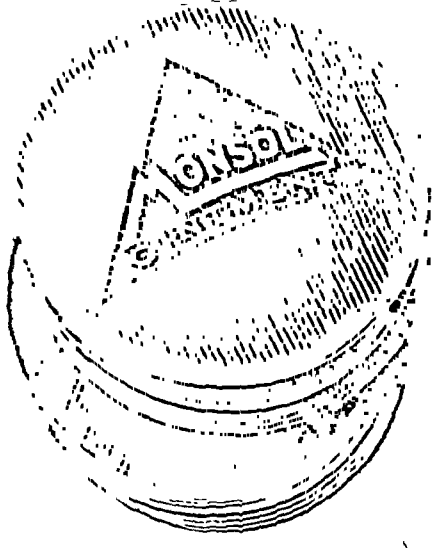


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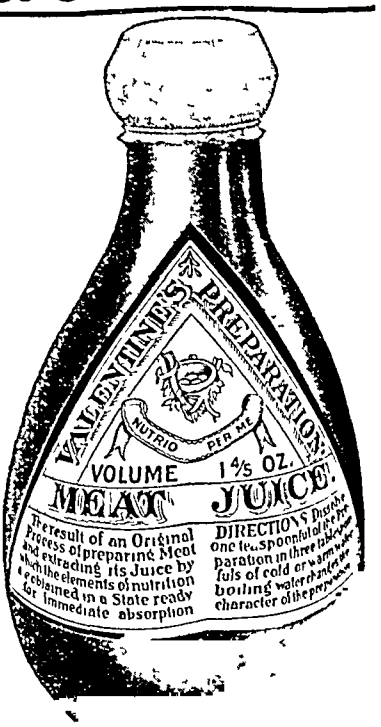
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—*Vide* B.M.J., May 3rd, 1930.

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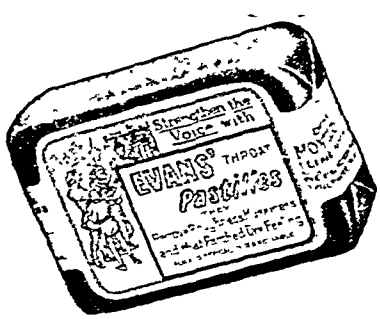
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"Advocated for headaches of nephritis."—*Am. Jl. Med. Sci.*, June, 1921, 814.

"In acute rheumatic fever."—*Pract.*, Jan., 1924, 41.

"Rheumatic heart disease in childhood."—*Lancet*, Sept. 29, 1928, 638.

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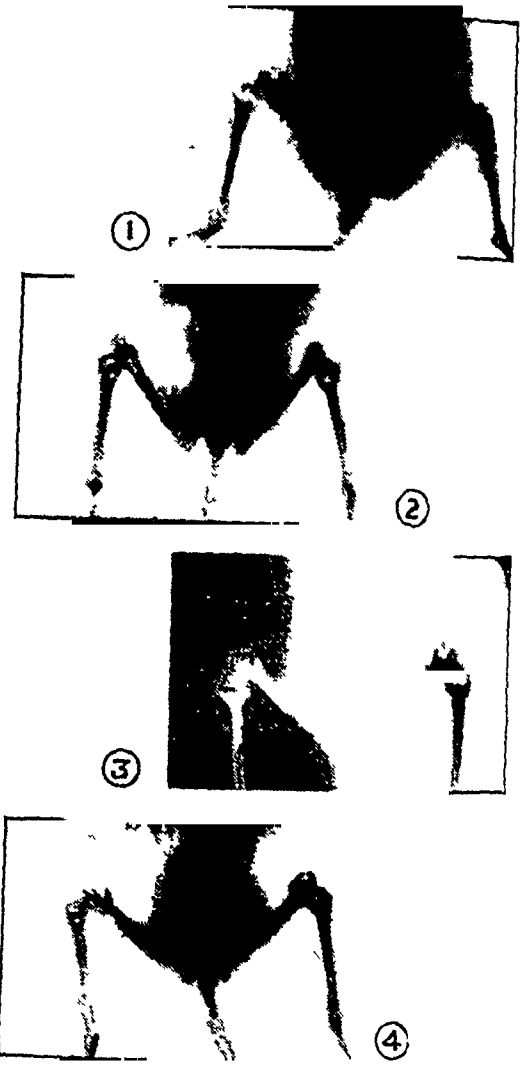
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A Paper

ON

DIAGNOSIS AND TREATMENT OF COMMON INJURIES OF THE KNEE JOINT*

BY

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LECTURER IN ORTHOPAEDIC SURGERY, BIRMINGHAM UNIVERSITY

Literature on injuries of the knee joint has been extensive, but to me accurate diagnosis in many cases becomes more difficult as my experience increases. There may be general agreement on the lines of treatment to be adopted for definite lesions, but not infrequently the accurate diagnosis is not possible. The reason for this seems to me to be that many of the ligaments, bursae, etc., described by the anatomists, are not directly palpable to the surgeon examining the joint. Before considering the question of diagnosis I think that it would make the subject clearer if I briefly refer to certain of the more important points which have been established with regard to the anatomy and physiology of the knee joint.

MECHANISM OF THE KNEE JOINT

The mechanism of the knee joint has evolved as a result of the function which it has been called upon to perform. It consists essentially of the broadened ends of the tibia and femur with a sesamoid bone—the patella—in the extensor tendon, and two intra-articular fibro-cartilaginous disks. It is the connecting link between the two longest bones in the body, so that body weight transmitted through these levers in movement of the joint subjects it to enormous strain. We therefore find that nature has provided it with powerful muscles for its control, and strong ligaments on which it largely depends for its stability.

Movements of the Knee Joint

Movements allowed at the knee joint are flexion, extension, and moderate rotation when the joint is flexed. These movements, except that of flexion, are limited by the ligaments. The fact that the articular surfaces of the condyles are not perfect arcs of a circle, and that that of the internal condyle is ¼in. longer than that of the external condyle, allows the femur to twist or screw inwards on the head of the tibia on full extension of the joint.

In this position the lateral and the anterior crucial ligaments are taut and tense, and the femur and tibia become practically one continuous rigid support, no antero-posterior or lateral movement being possible. If internal rotation of the femur on the tibia is maintained, flexion of the joint cannot occur. Before flexion commences the knee must unlock, and muscle action is then necessary for its stability. We thus see that where full extension of the joint is impossible constant strain is thrown on the quadriceps muscle. We all recognize that joints and the muscles controlling them usually have a common nerve supply, so that muscle atrophy is an early sequela of joint injury; but is it not probable that fatigue resulting from constant strain may account for the very marked wasting of the quadriceps which is so frequently seen when the mechanical locking of the knee in extension is not possible? In flexion of the knee moderate internal and external rotation are allowed, but little if any lateral or antero-posterior movement.

* Read in opening a discussion in the Section of Orthopaedics at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

ANATOMY OF KNEE JOINT

A knowledge of the relation of the intra-articular cartilages to the femur and tibia is essential to a proper understanding of common injuries of the knee joint. They are two crescent-shaped pieces of fibro-cartilage. They have at their extremities strong fibrous attachments to the rough areas in front of and behind the tibial spine. Both have weak attachments by means of the coronary ligaments to the peripheral margins of the tibial tuberosities. The internal meniscus is the less mobile because of its attachment to the internal lateral ligament, while the outer cartilage is separated from the external lateral ligament by the tendon of the popliteus muscle. The closer proximity of the cornual attachments of the external cartilage also anchors it less securely. The greater fixation of the internal cartilage probably accounts for the fact that it is more frequently damaged in cases of injury. It is also to be noted as a point of possible surgical importance that the anterior convex margins of the cartilages are frequently connected by a transverse ligament.

The behaviour of the intra-articular cartilages in movements of the knee joint is also of interest. It would appear that in flexion and extension they move with and on the tibia. *In extension their anterior part is compressed* by the femoral condyles—depressions normally present on the articular surfaces of these indicate this. In rotation the disks move with the femur on the tibia. Different parts of the meniscus come under special pressure during the various normal movements of the joint. One can therefore readily understand that undue strain may disturb the usual relations between the articular surfaces and the meniscus, so that a portion of the latter may become fixed and a tearing or displacement result. In any case rotation beyond normal limits is bound to strain or tear the attachments of the coronary ligaments to the head of the tibia. Rotation is only possible in flexion, and in my experience it is strain of the flexed knee which provides the very great majority of injuries to the intra-articular cartilages.

The Patella

The patella is a sesamoid bone developed in the extensor apparatus of the knee joint. It is connected by the patellar ligament to the head of the tibia. Deep to the patellar tendon, but extra-synovial, lies the large infra-patellar pad of fat.

Capsule and Ligaments

The capsule of the knee joint is itself a thin membrane, but is reinforced by strong ligaments and expansions from the muscles controlling the joint. The main ligaments are the lateral, crucial and posterior. Their points of attachment are well known. The functions of the ligaments are to prevent slipping of the bones on one another in extension, to keep them in proper apposition during movement, and to limit movement. All are taut in extension of the joint except perhaps the posterior crucial ligament, which is made tense by movements backwards of the tibia, but it is doubtful if it limits flexion.

Muscles and Bursae

For weight bearing in any position except full extension, muscle action is necessary for stability. These muscles are numerous and have strong attachments to bony points in close proximity to the joint. In relation to the joint and the structures controlling it at least 12 bursae have been described. Four of these—the supra-patellar bursa, those lying under the heads of the gastrocnemius muscle, and that surrounding the popliteus tendon—usually communicate with the synovial cavity.

Articular Cartilage

The articular surfaces of the bones entering into the formation of the knee joint are covered with hyaline cartilage. It is to be noted that it is avascular and so has little or no power of repair.

Synovial Membrane

The synovial membrane supplies the oiling system which ensures free movement in healthy joints. The point to be remembered with regard to it is that it is richly supplied with sensory nerves. Any damage to this structure is therefore accompanied by pain. It lines the capsule of the joint but is reflected over the infra-patellar pad of fat and crucial ligaments, so that these structures are intra-capsular but extra-synovial. It also covers the intra-articular fibro-cartilages on their articular surfaces. It does not cover the articular cartilage but is attached to the margins. The synovial membrane covering the infra-patellar pad of fat is prolonged to form an attachment to the intercondyloid notch. This is named the ligamentum mucosum, the lateral expansions of which form the ligamenta alaria.

DIAGNOSIS AND TREATMENT

In all joints, disturbance of the normal mechanism is due usually either to trauma or to infection, although even in cases of injury the possibility of neoplasm or neuropathic degeneration must be borne in mind. Trauma may be mild or severe—blows, twists or fractures. Infection may reach a joint directly through an open wound, or by haematogenous implantation. We must realize that the majority of strains of the knee, as of other joints, make a natural and full recovery without special treatment. The knee joint however is particularly liable to more severe strain because it has to sustain body weight transmitted through long levers, and whilst doing so allows a wide range of movement. It therefore provides many cases of injury, but I would suggest that we should confine our discussion to cases of chronic or recurrent disability following common injuries of this joint.

For the purposes of this communication I have reviewed 522 consecutive cases of which I have detailed notes of the condition found when the case was first presented to me.

Diagnosis in 522 Cases of Injury of the Knee Joint

Lesions of internal semilunar cartilage		179
Lesions of external semilunar cartilage		71
Lesions of internal lateral ligament		34
Loose bodies		34
Lesions of exterior apparatus		11
(a) Transverse fracture of patella	6	
(b) Rupture of quadriceps tendon	3	
(c) Rupture of patellar tendon	1	
(d) Avulsion of tibial tubercle	1	
Neuroma on patellar branch of internal saphenous nerve		7
Rupture of crucial ligament including fracture of the tibial spine		7
Lesions of external lateral ligament including rupture of biceps and traction fracture of head of fibula		7
Fractures involving articular surfaces of femur or tibia		4
Traumatic exostosis		4
Direct infection		4
Strain of posterior ligament		3
Osgood-Schlatter's disease		2
Haemarthros-Haemophilia		2
Traumatic dislocation of patella		2
Others		4
(a) Myeloma in external condyle of femur	1	
(b) Charcot's disease	2	
(c) Fibro-lipoma in vastus externus	1	
Indefinite lesions		147

These are cases of pain and limitation of movement following injury. Many of them were due to adhesions and responded to manipulative treatment. Others, where the history of injury did not entirely account for the condition found on clinical examination, I believe were cases of subacute infective arthritis. There still, however, remains a large proportion of cases in which a definite diagnosis is not possible, because of the facts that the attachments of certain muscles and ligaments are not accessible to direct palpation. In support of this belief I would point out that while anatomists describe 12 bursae in relation to the knee, surgical reference is available with regard to only 3 or 4 of these, all of which are, or become, superficial.

Surgical textbooks usually confine themselves to a description of commonly recognized lesions in relation to particular joints. The patient complains of pain, weakness, and/or limitation of movement in conditions such as tennis elbow, tenosynovitis, the presence of a ganglion, rupture of the *plantaris* tendon, etc. These cases are readily diagnosed when they occur in situations where the structures involved are accessible to direct palpation. This, however, is not possible in the case of many of the ligaments, bursae, etc., apt to be affected by strain of the knee joint.

There seems to me to be no reason why similar types of lesion should not occur in inaccessible portions of the knee, and I feel sure that this possibly accounts for much of the difficulty in accurate diagnosis. I propose to draw attention to points in diagnosis and treatment of the lesions of the knee joint in the order of frequency in which they occur in this series.

LESIONS OF THE INTRA-ARTICULAR CARTILAGES

To the lay mind the intra-articular cartilages alone are responsible for what is known as "football knee"; in fact, many patients will open their consultation with the statement that they have "slipped a cartilage," whereas close investigation reveals no such possibility. It is, however, on a correct diagnosis of the condition of these structures that successful treatment will frequently depend. The position of the joint and the exact strains to which it may be subjected at the time of injury are so problematical that they have ceased to interest me as a possible line of advance in treatment. My personal belief is that lesions of the intra-articular cartilages usually occur as a result of strain and protective muscular action when the joint is in a position of flexion. A lesion of an intra-articular cartilage may be readily diagnosed if there is a history of recurrent locking of the joint with pain and tenderness limited to the attachments of one of the cartilages, the joint being normal in function in the intervals between the acute attacks, and no *x*-ray evidence of any abnormality being present.

In this series of 522 cases, 250, or about half, were diagnosed as lesions of the intra-articular cartilages. In 179 the internal, and in 71 the external, cartilage appeared to be affected. Operation was advised in 160 of the internal cartilage cases and was performed in 139. The lesions found at operation were: detachment or fracture in the anterior half (19), detachment or fracture in the posterior half (64), bucket handle type (35), no definite lesion (21).

Of the 71 external cartilage cases 62 were advised to have operation, and this was performed in 46 cases. The conditions found at operation were: detachment or fracture in the anterior half (11), detachment or fracture in the posterior half (21), bucket handle type (4), cystic degeneration (3), no definite lesion (7).

Included in the series are 65 professional footballers. A consideration of these cases should be of special interest, since they afford examples of all the common injuries, and while giving rise to points for discussion as to diagnosis and treatment, the results establish the fact that a very high percentage of men return to the most strenuous

of games, after the removal of one or, in some cases, both cartilages. Further, my notes show that in the majority of the patients, manipulation by the bonesetter had failed to cure the condition.

Lesions Diagnosed in 65 Professional Footballers

Lesions of internal cartilage	29		
Operation advised in	29	.. Operation performed in	26
Lesions of external cartilage	18		
Operation advised in	18	,, ,, ,,	18
Strain of internal lateral ligament	6	,, ,, ,,	0
Rupture of external lateral ligament (1 with rupture of biceps) ..	3	,, ,, ,,	3
Loose bodies	2	,, ,, ,,	2
Exostosis	2	,, ,, ,,	2
Secondary infection of infra-patellar pad ..	1	,, ,, ,,	0
Rupture of anterior crucial ligament	1	,, ,, ,,	0
Indefinite	3	,, ,, ,,	0

In one patient in whom the external cartilage was found fractured the *x*-ray showed very marked osteo-arthritic changes, but after operation he continued to play for a First League team, although some temporary synovial thickening and a feeling of aching in the joint recurred after a strenuous game. In only two cases of football accidents did a loose body in the joint appear to be the cause of the disability. In one the lower outer quadrant of the articular surface of the patella was found detached —the history was a typical one of recurrent lesion of the internal cartilage, but the *x*-ray revealed the loose fragment of bone, and operation was confined to its removal.

In the second case the *x*-ray revealed a loose body exfoliated from the articular margin of the inner condyle. At operation we found that this body was obviously a portion of the normal articular cartilage, not completely detached but hinged at its anterior margin by a fibrous attachment. The history of this case differed from the preceding one in that the man had occasionally had some aching in the joint previous to the first attack of locking. That he was not able to satisfy me that the knee had always been absolutely as good as the other before the original accident is, I think, a most important point in helping to elucidate the differential diagnosis in lesions of the knee joint.

Of the 9 cases of injury of the lateral ligaments none has been associated with lesions of the cartilages except one in which, in addition to damage to the internal lateral ligament, a rupture of the anterior crucial ligament had occurred. In this case operation was confined to the removal of the internal meniscus because in my hands the results of operation for replacement of a deficient anterior crucial ligament certainly do not suggest the possibility of the patient again playing first-class football. Removal of a cartilage which is obviously causing recurrent increase of disability in cases of crucial ligament injury is, however, advised.

I have not operated for repair of the crucial ligaments except in war injuries, the operation performed being that advised by Hey Groves and Alwyn Smith. My experience of the operation has been that stability of the joint was definitely increased, and for 6 months appeared to be almost a perfect success, but later examination always showed the presence of a degree of antero-posterior movement which did not justify the removal of splintage. If you read the history of the published cases you will usually find that a fractured cartilage was removed at the time of operation, and I have always had the feeling that the removal of a troublesome meniscus was not an unimportant factor in the patient's satisfaction with the result obtained. Even normal cartilages can be a source of trouble in knee joints in which rupture of the crucial ligaments is complete. A displaced or fractured cartilage is subject to more frequent displacement, so that its removal gives patients a sense of stability which previously they had not known. The history of another of the cases is very interesting and instructive.

Having had an operation for removal of the internal cartilage, and being still unfit for play, the player was given a free transfer from one club and accepted by another. He was still unfit and was then referred to a well-known bonesetter in London. When I first saw him he still had definite signs of a recurrent displacement of something on the inner side of the joint, and as the *x*-ray was negative I advised further exploration. At operation it was obvious that only the anterior portion of the cartilage had been removed at the previous operation, while the true lesion was a detachment of the posterior half which was readily drawn into the centre of the joint. This man left the nursing home on the 12th day, played his first game for the club six weeks after operation, and has since scored many goals for his side.

This case opens some interesting points for discussion. It raises the question of what should be done if with a very definite history of recurrent trouble, pointing to lesion of a particular cartilage, one explores the joint. One may find a lesion of the anterior part, or a bucket handle displacement of a portion of the cartilage into the centre of the joint. In the former case I think it is sufficient to remove as much of the anterior two-thirds of the cartilage as is possible without strong traction, and in the latter to remove the obviously detached portion. If no definite lesion is seen, the condition of the posterior portion of the cartilage can only be known by its removal, and this, I am sure, is necessary. It will then usually be found that on further peripheral dissection and traction the main body of the meniscus becomes displaced into the centre of the joint. This would not occur with a normal cartilage, so we are satisfied with the operation, and expect and usually get a joint which gives no further trouble.

It is, however, to be noted that the portion displaced into the joint is not always the entire cartilage. In fact, I believe that it is commoner to have a longitudinal tear of the cartilage than a separation from its true attachments. This means that after the operation described, a portion of the periphery of the posterior segment of the cartilage is still present, and its attachments may have been loosened as a result of the original injury. Its removal would necessitate another incision, and, personally, I am inclined to be satisfied if I feel I have dealt with the main lesion. We must, however, remember that further trouble may occur as a result of the displacement of the remaining portion of the cartilage. I have myself experienced it in three cases of which the following history is typical.

Case A.—Definite history of recurrent displacement of internal cartilage. Knee had locked on previous occasions, but he had always been able to reduce it himself, and would play several games without trouble. On this occasion, while playing, the knee locked and his usual manipulations failed to allow extension. At operation the posterior two-thirds of the cartilage appeared to be detached and displaced in front of the point of contact between the inner condyle of the femur and the head of the tibia, while the attachment of the anterior portion of the cartilage was normal. As a matter of interest manipulative reduction with the structure exposed was tried and failed, but we deal with this point later in relation to manipulative surgery. Freeing of the anterior attachment allowed displacement of the obviously detached portion into the intercondylar space, and it was removed. The young man returned to full activity and played several matches without any recurrence of his old trouble. The following summer, i.e., 9 months later, he came to me complaining that he had had a recurrence of trouble on the inner side of the same knee, the history being that he had one leg in a punt and one on the bank, when the punt drifted out and the knee on the bank

in the flexed position was subjected to strain, gave way, and he felt something move in the joint. Examination revealed tenderness over the joint line on the inner side, and as he had had several definite sensations of something slipping in this region since this accident, I decided to re-explore the joint. The peripheral portion of the posterior half of the internal cartilage was found to be detached. Since its removal, 4 years ago, the man has played football regularly and has had no recurrence of trouble.

The next question that arises in surgery of the knee joint is: "What are we to do if we have an absolutely typical history of recurrent displacement of the internal cartilage, and, the *x*-ray being negative, we explore the inner side of the joint and remove what appears to be an absolutely normal cartilage?" My personal feeling is that if we are absolutely satisfied with our diagnosis of a recurrent displacement of a meniscus the outer side of the joint should be exposed, unless there is any particular reason why we should not do so. I remember particularly one case in which the history I got was so convincing that at the operation, at which I was assisting my colleague, Mr. F. G. Allan, after a perfectly normal internal cartilage was removed with the usual difficulty, I suggested that with a history such as we had, some definite lesion should be found, and on retracting the patellar tendon and infra-patellar pad of fat we were able to see that the external cartilage was abnormal. A small incision on the outer side of the joint allowed removal of the anterior two-thirds of the external cartilage which was attached in front, but a longitudinal split and fracture rendered a portion of the anterior two-thirds free in the joint cavity. Since removal of his normal internal cartilage and the detached portion of the external cartilage the man has had no further trouble. This case illustrates the surgeon's difficulty. Are we to be satisfied with finding no definite lesion of a particular cartilage when the history clearly indicates a recurrent locking of the joint as the result of injury, and the symptoms and physical signs point definitely to an injury of that cartilage? I will make the question more difficult by referring to another case.

Mr. H. asked me to see one of his house surgeons with regard to his knee joint. The patient was an exceptionally strongly built doctor 28 years of age, and still actively interested in rugby football. As a result of examination, and from the history he gave, I felt quite sure that a portion of the internal meniscus had been detached or fractured, and that operation was necessary to restore his full activity. At operation no lesion of the internal cartilage was found, and I removed the greater part of the cartilage with difficulty. As he was a doctor, I decided to confine myself to what I had told him I should do, and asked Mr. H. to tell him that we had found nothing wrong with the internal cartilage, and if the trouble recurred we might consider exploration of the outer side of the joint. Mr. H. did not tell him anything of the apparent failure of our surgical effort, and the young man whose knee used to give way and lock when he was running to catch a bus, has to my knowledge played 15 games of rugby football without trouble in the knee from which we removed what appeared to me to be a normal meniscus.

Another case which complicates the question is the possibility of both cartilages having been torn as a result of one injury. We know that in taking our history of a recurrent case the patient is often indefinite about the side of the joint to which the pain was referred at the time of the injury, and with recurrent displacements it may also vary. In these cases I always make the diagnosis on the site of tenderness after a recent injury, but if some time later a patient presents himself with a definite story of recurrent displacement of a cartilage with pain referred sometimes to the inner and sometimes to the outer side of the joint, I will not operate, but request that the knee be tested and the patient referred to me for further examination as soon as possible after the next injury.

If after a recent injury, which the patient states is similar to previous ones, I find tenderness on the line of the inner or outer side of the joint, I advise operation accordingly. That this is not always a safe procedure is illustrated by the following case sent to me by the medical adviser of a certain well-known association football club, who suggested that the young man was suffering from an injury to his external cartilage. My examination, however, pointed definitely to a lesion on the inner side of the joint, and at operation I was particularly pleased to find a bucket handle displacement of the internal cartilage, and after its removal closed the joint. It was reported to me that the knee had given way and again locked when the patient was getting out of bed prior to discharge 14 days later. Pain and tenderness now were referred to the outer side of the joint, and exploration revealed a similar lesion of this cartilage. Since this occurrence the knee has resumed and retained normal function.

The only other type of case in which no *x*-ray changes are shown which might simulate cartilage displacement is that of lateral displacement of the patella. Many times patients will describe the displacement of an internal cartilage as a displacement of the patella, but although the latter is rare it does occur. If in doubt, I would suggest that the best way of making sure whether displacement of the patella is the cause of recurrent disability is to have the knee tested in a gymnasium, and examined by someone sufficiently experienced immediately the trouble complained of occurs. If this is not practicable, then while the patient is anaesthetized, and just before the tourniquet is applied, test the mobility of the patella. If it is readily displaced laterally while that of the other knee does not allow of lateral displacement, the patient's diagnosis is possibly right.

Lesions of the Lateral Ligaments

It is of interest to note that in this series, where strain or rupture of a lateral ligament was diagnosed, there appears to have been no case where a lesion of an intra-articular cartilage was also present. Furthermore, a complete rupture of the internal lateral ligament did not occur in any of the 34 cases in which a lesion of it was diagnosed, and recovery took place with conservative treatment. Of the 7 cases of injury to the external lateral ligament, complete rupture with laxity of the joint was present in 4, including 2 cases in which the biceps tendon was separated from its insertion. In these 4 cases operation was necessary to secure stability of the joint, and the results were excellent. One case in which there was a traction fracture of the head of the fibula made a perfect recovery without operation. This rather suggests that a complete rupture of a ligament is likely to be a more serious disability than a traction fracture of its attachment. The histories of two of this year's association football cup finalists are interesting.

Both patients indicated strain of internal lateral ligament of the knee joint, with possible displacement of the internal semilunar cartilage. Both were tender over the line of the joint on the inner side, but more tender over the femoral attachment of the internal lateral ligament. They were treated as strains of this ligament. The line of treatment advised and carried out was elevation of the heel of the boot, raising it on the inner side to prevent strain on the injured ligament, with electrical treatment of the quadriceps muscle, and a pad and strapping over the tender area on the internal condyle. One of the cases came under my care on September 3rd, 1927. He was discharged from treatment on October 7th, when local tenderness had subsided, and all forced movements were free and painless, and has since played regularly in a first division team. The other case was first referred to me on

March 31st, 1931, three weeks after the date of his original injury. I advised treatment on the aforementioned lines, and though there was still some tenderness of the femoral attachment of the internal lateral ligament, he played in the cup final four weeks later, with the knee tightly bandaged, and afterwards was playing for his club on a tour abroad.

These two cases alone satisfy me that although local tenderness on the line of the internal cartilage may be present, if tenderness of the attachments of the internal lateral ligament is also present it is wise to treat the lesion of the ligament, and wait for further evidence of true cartilage injury before advising operation.

Loose Bodies

Apart from diagnosis of the nature of gross lesions of the main articular surfaces, *x*-rays are particularly valuable in establishing the possibility of loose bodies or fracture of the tibial spine, as causes of recurrent or chronic disability following injury. Loose bodies are not infrequently present in the knee joint without giving rise to symptoms sufficiently severe to demand medical attention. There may be some "rheumatism" of the joint, and occasionally a feeling of something catching in a knee, or a sudden severe pain may cause the patient to seek medical advice. Until an *x*-ray is taken in these cases the true state of affairs is not likely to be recognized. The joint may then be found to contain many loose bodies, large and small; an *x*-ray of the other knee, of which no complaint is made, may show a similar picture. I do not propose to deal with the pathology and treatment of this type of case, but draw attention to them because they may either cause a very temporary locking of the joint, or a permanent locking may occur—i.e., persistent limitation of extension as a result of a moderately large body becoming wedged in the intercondyloid notch in front of the attachments of the crucial ligaments. In this case removal of the body is necessary to allow extension of the joint.

Fractures of Tibial Spine

With regard to fractures of the tibial spine, I am not satisfied that the *x*-ray appearance always justifies operation. It is usually possible to obtain full extension of the joint by manipulation or by gradual splintage, and although I realize that this position may not be the most favourable for the repair of a ruptured crucial ligament, it certainly allows repair of a fracture of the tibial spine, and a restoration of normal function.

Exostosis

X-rays may also reveal detached bone fragments or exostosis some weeks after injury to the lateral ligaments. If the stability of the joint is good as a result of conservative treatment, these should be dealt with surgically only if they give rise to trouble. In connexion with this question of ligaments and exostoses I must mention a case of particular interest.

Mrs. D. had for three years been unable to take part in sports because of a recurrent severe pain referred to the inner side of the knee if it was subjected to strain. Examination revealed a definitely tender point over the inner condyle of the femur, and pain was referred to this point on forced abduction and external rotation. The *x*-ray was negative. I decided eventually to force movements, but also to explore the tender area. I found there a tiny, sharp spicule of bone with a bursa around it, and have always felt that the removal of this rather than the manipulation was the cause of complete cure.

Lesions of Extensor Apparatus

I report 11 cases resulting from indirect injury to the extensor apparatus of the knee joint. Time does not allow of a full review of the possible causes and the detailed treatment of these lesions. The diagnosis is usually easy. The patient is unable to extend the limb voluntarily and fully, while passive extension is possible, and the point of tenderness will indicate the site of the lesion. This would appear to me to depend on the relation of the patella to the condyles of the femur when the protective contraction of the quadriceps muscle comes into play. As a rule the more limited the degree of flexion the lower the lesion. The following lesions may occur: separation of the tibial tubercle; detachment of the ligament from the lower border of the patella; transverse fracture of the patella; separation of the quadriceps tendon from the upper border of the patella. As a result of the strong action of the quadriceps, considerable separation may occur at the site of rupture, so that surgical treatment is usually necessary.

These observations as to the site of lesion are based partly on experience of mobilization of knee joints in war surgery, but also on the fact that the three cases of rupture of the quadriceps attachment to the patella occurred in gentlemen late in the evening, at a time when their cerebral control of muscle action might have been somewhat delayed. I surmise that perhaps earlier in the evening the protective action of the quadriceps might have been more prompt, and no lesion, or perhaps fracture of the patella, occurred.

Indefinite Lesions

These number 147 of the 522 cases reviewed. I feel that they should include several cases in which everything in the history appeared to suggest a definite lesion of a cartilage. The cases I have in my mind include the following histories.

(1) A girl aged 26, seen 10 weeks after her accident. Her doctor states that the knee was dislocated as the result of a twist while playing golf, and that he reduced the displacement under an anaesthetic. Since this, extension of the joint has been limited by 30 degrees.

(2) Mrs. W., aged 43, while being helped off a cliff three weeks previous to examination, had a feeling of something tearing inside the joint when it was acutely flexed. On examination I found tenderness on the line of the joint on the inner side, and pain on forcing extension.

In one of these cases manipulation failed to produce comfortable extension of the joint, and in neither was this possible after exploration and removal of apparently normal internal cartilages. Although I mention only two of the cases, I have come to realize that diagnosis of a true primary cartilage displacement is a very much more difficult problem than are cases in which there is a history of recurrent trouble. If the movement of flexion, as well as extension, is limited, and there is general tenderness of the joint margins, it is unlikely to be a simple cartilage lesion. A traumatic or subacute infective arthritis occurs in the knee as in other joints after a severe injury, so that limitation of extension does not necessarily mean that this is due to cartilage displacement, even although this probability is strongly suggested by the history.

Manipulative Surgery

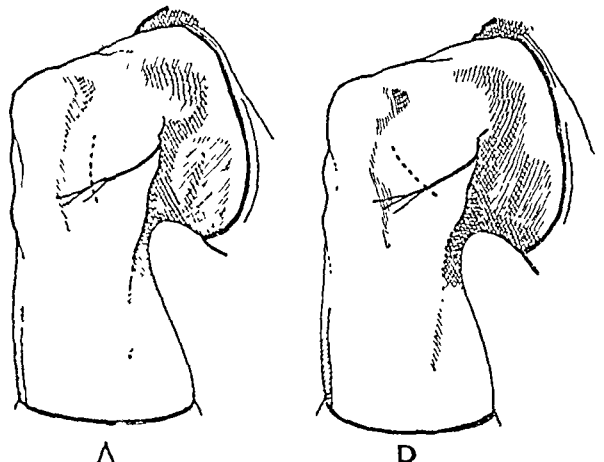
In other cases of indefinite lesions I include those in which the question arises whether the condition is likely to be relieved by manipulative surgery. This seems to me to be a branch of surgery which might with profit to the public be employed more frequently by the profession, and certainly less frequently by those whose record, as we know it, does not indicate that they have the fundamental knowledge necessary for its judicious use. It consists essentially of ensuring the normal range of movement of a joint in every position. In the knee joint attention must also be paid to securing normal lateral mobility of the patella and as far as possible of the intra-articular cartilages. There can be no mystery about this. The only question that arises is at what stage should

we apply it. It should always be utilized to ensure full extension of a joint where displacement of a cartilage is probable, except in cases of recurrent displacement, when the diagnosis is clear. In these cases the patient should be offered, or rather advised, to have the alternative—that is, operation—which will almost certainly prevent a recurrence of the trouble. The majority of cases which bonesetters cure are, however, cases of joint strain which have recovered from the usual reactions of a joint to trauma or mild arthritis, but the patient still complains of pain on certain movements. During the stage of active reaction forcing of movements can do nothing but harm, but there does come a time following joint injury at which forcing of movements, although painful at the moment, may be dramatically effective in its results.

I feel quite safe in saying that at least 90 per cent. of the professional footballers on whom I have operated have previously had their joints manipulated by a bonesetter. We may agree that manipulative surgery is not adequately taught in our medical schools, but in spite of this it must be clear to all who deal with joint injuries that the popularity of the bonesetter is more largely due to the fact that, as in the case of many popular remedies, successes rather than failures are widely advertised in the lay press.

Operative Approach for Internal Derangement of the Knee Joint

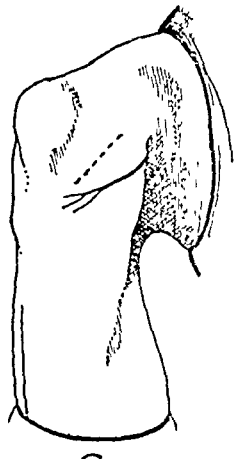
The surgical approach to the knee joint should ensure as little damage as possible to the joint structures. Incisions which divide the patella or disturb the normal attachments of muscles or ligaments should be avoided unless absolutely necessary. Personally, I use the split patellar route only for the repair of the crucial ligaments. It has the one great advantage in that while it allows free access to the joint it does not necessitate detachment of the tibial tubercle, so that after operation the joint can be treated in the position of flexion desired, without risk of subsequent separation of this structure. For removal of loose bodies which cannot be fixed and evacuated by direct incision, I prefer one or more small incisions supplemented by digital examination. Single incisions are usually sufficient for removal of the damaged portion of



A and B.—Incisions commonly used for exploration of the inner side of the knee joint

either the internal or external intra-articular cartilage. Occasionally a small supplementary posterior incision, as described by Alwyn Smith, is necessary to deal adequately with a lesion of the posterior segment of the cartilage.

It will be noted that in this series operation has been necessary in 7 cases for the removal of neuromata of the patellar branch of the internal saphenous nerve, which had been divided as a result of the incision used for exploration of the inner side of the joint at a previous operation. In 1916 my attention was first drawn to the importance of the line of the incision for the removal of the internal meniscus. In that year an officer presented himself at the orthopaedic hospital at Shepherd's Bush and stated that since the removal of his cartilage he had had no recurrence of definite locking, but that he had a tender nodule in front of the joint, and that the slipping of this over the margin of the inner condyle on flexion of the knee gave him pain and a sense of weakness. I excised the scar and he returned to France. Three months later he reappeared, and said he had lost the old sensation of pain on flexing the knee, but that he had developed a tender nodule over the inner condyle which gave him pain when riding. I removed this nodule, which was obviously a nerve bulb, by avulsion. As far as I know he had no further trouble. It was obvious to me that this was a nerve bulb on the patella branch of the internal saphenous nerve, and that the possibility of the complication which might result from its division had not been fully recognized. Since 1916 I have adopted an incision which avoids the possibility of division of this nerve.



C.—Incision advised to obviate complications following division of the patellar branch of the internal saphenous nerve.

This has the advantages that we cannot get the sequela of a painful neuroma in the scar, or the anaesthesia commonly complained of in the area of distribution of the patellar branch of the internal saphenous nerve. Both are points of great importance with regard to the treatment of professional footballers especially, as unless the limb feels absolutely normal confidence in it is unduly delayed. The essential point of the incision which I employ is that it runs parallel with the patellar branch of the internal saphenous nerve, and allows of its retraction before the capsule is incised.

Summary

(1) It is not possible to discuss adequately common injuries of the knee joint in a paper limited to 5,000 words.

(2) While the anatomy and physiology of the joint are well known, only lesions easily demonstrable clinically, or by *x*-ray examination, are described in surgical textbooks.

(3) This investigation of 522 consecutive cases of injury to the knee joint demonstrates that almost 50 per cent. are lesions of the intra-articular cartilages.

(4) While accurate diagnosis of an original injury may be difficult, the cause of recurrent lesions can usually be established as a result of a carefully taken history, together with the clinical and *x*-ray findings.

(5) Indefinite lesions are common. I believe that they include conditions analagous to tennis elbow, tenosynovitis, etc., commonly referred to in relation to other joints. The inaccessibility to direct palpation of certain regions of the knee joint probably accounts for this.

(6) While conservative treatment or manipulative surgery is successful in many cases, a surgical exploration of the joint will always be necessary for the cure of a large number.

(7) In the surgical approach to the inner side of the joint, incisions which may divide the patellar branch of the internal saphenous nerve should be avoided.

I am grateful to my colleagues, Mr. A. M. Hendry and Mr. Maister, for their help in reviewing this series of cases, and to Dr. Brailsford for preparing the slides and photographs.

DIAGNOSIS AND TREATMENT OF ACUTE OTITIS MEDIA*

BY

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Acute otitis media is a disease quite regularly described as either catarrhal or purulent in type, the first being a mild form of the second or perhaps its earlier stage. An allergic type should be kept in mind.[1] There is, however, a catarrhal variety which should be recognized as a definite clinical entity because fluid collects in the tympanum and is not easily dispelled—a *hydrops e vacuo*, perhaps, or at most the exudate of a mild inflammatory process. Pain is made little of, but fullness in the ear, deafness and head noises constitute the train of symptoms. This picture contrasts sharply with the typical attack of acute purulent otitis media with which the following observations are chiefly concerned.

Acute Purulent Otitis Media

This as a rule is a definite bacterial infection. Pain, often excruciating, warns the unhappy subject, Nature crying out in alarm because a sense organ is in jeopardy. An invasion of the middle-ear cleft may mark the ruin of the auditory and vestibular systems and give rise to very serious intracranial and general complications. Such a gloomy picture with complications is fortunately the exception, but it obtrudes regularly enough to act as a stimulus and to encourage early operation in acute middle-ear disease.

Bacteriology

Of several microbic invaders a streptococcus is the common one. Smeall[2] quotes statistics of 120 swabs from the middle ear and mastoid from the ear, nose, and throat department of the Edinburgh Royal Infirmary as follows:

Haemolytic streptococcus	73	90, or 75%
Other forms of streptococcus	17	
Pneumococcus	17, or 14.2%	
Staphylococcus	11, or 9.2%	
Diphtheroids	2, or 1.6%	

Hadjopoulos[3] classifies the usual streptococcic flora of the nasopharynx in terms of oxygen requirements. Under pathological conditions there is a reversal of the percentage in favour of the more pathogenic facultative aerobic types (*Pyogenes mutis* group), which is exactly the state of affairs when swabs taken at operation from cases of acute mastoiditis are examined. The pneumococcus fortunately was rarely found, and was then of Type 3 as a rule. This variety (often called the *Streptococcus mucosus encapsulatus*) invades, however, by stealth, an insidious onset leading to disaster at a later stage. After Type 1 infections, survival is more probable. The otologist will no doubt recall cases of pneumococcal meningitis in the presence of intact tympanic membranes but with a history of previous ear discharge, and there are also other examples of pneumococcic invasion of the meninges taking place almost at the same time as the onset of discharge from the middle ear.

Etiology

Among the causes of acute middle-ear inflammation the common cold takes an important place, as well as influenza and sinus disease awakened by the attack—in fact, any acute infection of the upper respiratory tract, sometimes even pneumonia, where invasion may take place along the Eustachian tube or perhaps by way of the blood stream. Each summer an outbreak occurs in the bathing season. Infection passes via the Eustachian tube unless an old damaged ear allows access by way of the external meatus. The micro-organisms of public swimming baths and of the sea are blamed; but no doubt the upper respiratory passages of the victim supply the lurking streptococcus, and in such a manner, too, the enthusiastic user of the therapeutic nasal douche occasionally suffers. In the early stages of a cold in the head, it is as indiscreet to go swimming as it is to use the nasal douche.

Of the acute specific infectious diseases, scarlet fever and measles predominate as invaders of the middle-ear cleft. They stand supreme as sources of lasting and permanent damage. The former, a recognized streptococcal malady from the start, shows, when attacking the tympanum, signs of rapid destruction, though in the symptoms an element of contrast is lost because the patient is already debilitated and miserable from the original disease. Information received through some complaint of pain would, however, be supplemented by the fresh rise of temperature, though such information may be lacking altogether. Discharge from the ear may anticipate arrangements to open the drumhead, and particularly if the consent of the patient has not been previously obtained at the time of admission to a fever hospital.[4] Fever hospitals have already taken charge of these cases for a considerable number of years, and the appointment (rather long delayed) of otologists to these institutions should provide a wider knowledge of the signs in the earlier stages of scarlatinal otitis media.

In measles the complication may take place at a later stage; pain, perhaps brief in duration, should leave the rising temperature curve as a useful guide, and so should a relapse in the general condition of the sufferer. A factor of indolence or latency in the middle-ear condition must not be forgotten, and the observer should anticipate this in his examination of the drumhead. Even a history of ear discharge of brief duration should not be allowed to deceive him. The sealed drumhead may need to be opened again. Kerr Love[5] gives measles the first place, even above scarlet fever, as the origin of much chronic ear discharge in school children. Early recognition and treatment, therefore, in the acute stage might help to avoid this.

Other indolent or quasi-latent acute middle-ear attacks may take place throughout life. A typical mastoiditis acuta with an intact drumhead is sometimes a final stage, but it is in the infant that French observers have endeavoured to establish the presence of a particularly quiet type of the disease—latent otitis—and many otologists will remember the questionary circulated by Le Mee, Bloch, and Cazejust in 1924, and the monograph on this subject written by the two former.[6]

In infants very sharp attacks with screaming and meningism sometimes occur, but in the following description the symptoms are moderate and less clear. Acute middle-ear disease in the infant may be an embarrassing problem. The baby with a cold of perhaps a week or ten days' duration is noticed to be restless at night and to cry out, yet during the next day it would appear to be moderately well, but as bedtime returns the troubles of the previous night are repeated, and the temperature rises, though I have seen this rise delayed. As the disease progresses, changes in the colour of the face are noted—a pallor of the cheek on the side of the lesion and then a general sickly aspect. Interference is perhaps postponed and discharge eventually appears.

Examination of an infant's ear is no simple matter, and it would be as well to approach at feeding time when the attention is concentrated on the breast or bottle.

* Read in opening a discussion in the Section of Oto-Rhino-Laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931

Once crying or struggling takes place injection of the vessels of the drumhead and even a little bulging occur. Pressure in front of the tragus, which is said to cause pain, should be avoided, too. While the infant's tympanic membrane more or less equals in size that of the adult, the entrance to the meatus is small; having negotiated this, the drumhead, instead of being found to face the observer at a comparatively easy angle, as in the adult, is here somewhat on edge, and not easy to see. Surprisingly resistant to rupture at this age, it may first be seen when the disease has progressed sufficiently to disguise its pearly surface so that it appears to merge imperceptibly into the posterior meatal wall. Should trouble involve the other ear one may profit from the lesson taught by the first. The result of an early and successful paracentesis may be quite dramatic; the child falls asleep and progress is uneventful.

From infancy to childhood brings us to the time when enlargement of the respiratory tonsil leads to the condition called adenoids, and now and during the earlier days of school life this trouble in the nasopharynx receives much blame for damage in the middle ear. Fortunately as the years pass by, the length of the Eustachian tube increases and the tympanic cavity lies further away from the nasopharynx, the nasopharynx itself becoming more spacious. Such changes are favourable to the auditory organ, until we find the adult not so much a victim of recurring middle-ear mischief as a sufferer from less frequent but more definitely established attacks.

These remarks lead to the wide problem of predisposition, but space will allow only a few brief observations.

1. The hereditary factor, for example in acute middle-ear suppuration, has impressed me more than it has done in so-called chronic progressive middle-ear deafness.

2. Congenital defects should also be mentioned. In cleft velum palati it is difficult to recall from memory a case not showing perforated or damaged drumheads in later life or with a liability to further middle-ear trouble.

3. Atrophic disease brings further interest to the problem. In atrophic rhinopharyngitis one looks to find damaged drumheads or a liability to recurrent otitis media.

4. Finally, the maligned lymphadenoid tissue of the uppermost parts of the respiratory tract should not be looked upon as the origin of all middle-ear inflammation in children, for there are many who, in spite of a perfectly executed tonsil and adenoid operation, contract it later, developing perhaps acute mastoiditis, too, and suffering an occasional fatality from meningitis.

Clinical Signs

What is the changing picture of the drumhead in this acute disease? The blood vessels of the drumhead, usually collapsed and lacking in colour, stand out vividly. An aural microscope would probably show the main supply, which runs to the handle of the malleus, to come by way of the posterior fold, avoiding the membrana flaccida; less numerous vessels pass immediately below this group.[7] Next, the inflamed tympanic mucosa shows through, casting a blush upon the face of the drumhead. The insertion of the membrane into the tympanic ring loses definition. The deep meatal wall, now growing angry, refuses to be distinguished easily from the drumskin itself, the pearly colour of which remains for a while in front of the umbo; even this disappears. The handle of the malleus is difficult to see; only its short process stands out as a landmark. The posterior superior quadrant may now begin to sag. It is, of course, this area which one sees blown out by inflation in the quiescent drumhead. Most probably the presence of abundant small vessels in the anterior part gives to it the very deep colour during inflammation; but just because it appears to bulge the best therapeutic result will not by any means necessarily follow its incision in acute otitis media; and by entering the knife too high and rather nearer the short process of the hammer bone it is possible to sever and cause damage to the main blood supply of the drumhead (Potter). It is surely better for several reasons to incise the lower part.

Incision of Drumhead

When should the drumhead be divided? Pain, of course, is the symptom which calls most frequently for an early incision of the membrana tympani. If the patient has lost one night's sleep and seems likely to lose another, the operation should not be delayed, but if the bursting of superficial blebs on the membrane is accompanied by relief of pain, interference may not be needed. With pain less severe, the presence of pyrexia, the general condition of the patient, the appearances of the membrane, and the degree of deafness must help the decision. Blebs or bullae are by no means all of one kind; some arise from beneath the superficial epithelium of the deep meatus or at the margin of the annulus, and are of considerable size, advancing outwards. When opened they are seen to be filled with blood clot, and if arising in acute otitis media, unless the hidden drumhead is also pierced, relief will not be obtained.

An objection to early paracentesis tympani is the difficulty of the operation. The description of the proceeding sounds easy enough, but in actual practice to carry it out accurately is not so easy. Myers describes well the danger zones within the tympanum.[8] An incision upwards into the superior quadrant may divide the chorda tympani nerve, and, in passing, strike the junction of incus and stapes; an incision downwards or across the lower quadrant appears safer. It is unlikely that the adjacent round window will be damaged by this method of approach, and an exposed jugular bulb will rarely be found. It is, of course, remotely possible to injure the carotid artery in the tubal area.

Ethyl chloride anaesthesia, rather than nitrous oxide narcosis, allows of a more deliberate operation, and when only chloroform or ether is available under difficult and undesirable conditions the operator at least need not complain. With the patient lying on his back on an operating table, and his head turned well to one or the other side to avoid the shoulder, conditions are certainly at their best. An acutely inflamed drumhead with the deep meatus inflamed in sympathy is not a too well-defined target, and the older method of pricking, which has given way to incising or cutting, is certainly much better treatment than no interference at all. The American instrument of Dintenfass, which I intend to try in this way, is V-shaped in section, a miniature trowel with a sharp-pointed "business end."

The immediate results of incision of the drumhead in acute otitis media are most varied. The resistant drumhead gives way under the knife with a loud crack, and the hissing noise of abundant fluid or sero-pus under pressure, or there is a frank escape of creamy pus before blood obscures the view. Less striking is the escape of some muco-pus through the indolent drumhead, for example, in a case of measles. Or, again, the immediate result may be rather disappointing when dividing the fleshlike membrane guarding a tympanic cavity, the inflammatory contents of which feel semi-solid and resistant; a discharge of pus, however, takes place later. Allergic cases (Proetz) are said to be likewise resistant and give forth little discharge, urging the operator later to repeated incisions when inactivity would have been preferable. The allergic condition may be converted into a purulent one by such interference

After-treatment

Whether in the after treatment of the case the medical attendant favours the so called dry method of mopping out, or the method of frequent washing out by syringing, irrigations must be employed if the discharge becomes tenacious, and even when discharge is free occasional relapse and disappointment can be overcome by a thorough but gently performed wash out with a mild isotonic saline or alkaline lotion Kernison[11] strongly advocates washing out almost immediately after paracentesis, to avoid gumming up of the incision by blood clot or fibrin In the later stage, too, irrigations with a mild mercurial lotion and the use of the suction speculum may result in resolution and avoid further operation as the time approaches to suggest drainage through the mastoid, namely, in three to six weeks

Differential Diagnosis from Other Causes of Acute Earache

Acute pain felt in the ear may be caused by troubles at a distance, or by local troubles, not middle ear inflammation

Referred pain from a tuberculous laryngitis, malignant growths of the posterior parts and side of the tongue, malignant disease of the pyriform fossa—these are well known More simple causes may be a carious molar tooth, and a partly erupted or impacted wisdom tooth must not be forgotten Sharp pain in the ear is noted in acute tonsillitis, particularly when peritonsillar inflammation is added, but, of course, an actual middle ear inflammation may follow as well A tonsillolith may prove a hidden cause Accessory sinus disease has also been blamed for pain referred to the ear, and in conclusion one does see a few cases, chiefly in young women, where no cause whatever can be discovered on examination

There is, of course, the occasional case of mumps when middle ear trouble or mastoiditis has been wrongly suspected A dental abscess has been seen to discharge from the external meatus But undoubtedly the commonest cause of pain, sometimes difficult to dissociate from a middle ear attack, is infection in the skin of the meatus I refer to furunculosis and to the dermatitis which we conveniently call eczematous, and occasionally the diagnosis presents very considerable difficulty Undoubtedly the pain in such cases is often referred to the front of the ear, or below it, and when infection reaches the mastoid lymphatic gland a true mastoiditis may be wrongly suspected The unpleasant condition of pediculi capitis has been responsible for an error of this kind

Sometimes when cerumen becomes impacted in the deep meatus, but particularly in that stubborn form of impaction called keratosis obturans, very great pain may arise deep in the ear (not to forget collections medial to exostoses of the canal), and it may be exceedingly difficult to decide whether the inflammation of the drumhead has been set up by such mechanical conditions, or whether an acute otitis media lies beneath The difficulty sometimes experienced in clearing the meatus for diagnosis, and the very great pain involved in any such manœuvre, provide a situation extremely trying for both patient and doctor

Foreign bodies, whether introduced from without or human material becoming foreign, as described above, may cause inflammation of the drumhead, or, to give a descriptive name, myringitis Primary myringitis must be an uncommon disease, and such conditions as interlamellary abscesses described by Politzer would be considered by Ruttin[9] as extensions from middle ear infection and situated in a small space which he has described within the structure of the tympanic membrane—a miniature bursa of the handle of the malleus

Herpes zoster oticus, a rare condition, provides another possible cause of ear pain, and perhaps it is but the severe manifestation of a syndrome which may exhibit polyneuritis meatus auditorii interni, or even so-called banal facial paresis alone[10]

In conclusion, primary otitic erysipelas should be mentioned In women the close fitting hat may be the predisposing cause The external meatus, the auricle and periauricular area may all be involved In this disease, when a large blood-clot filled bulla of the deep meatus obscures the drumhead, one might be tempted to diagnose an acute middle ear attack as the origin To open the deeply situated bulla would be permissible, but the result of an incision of the drumhead under such conditions might be far too unpleasant to contemplate

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SUB-ACUTE OTITIS MEDIA

By

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ASSISTANT SURGEON FOR DISEASES OF THE EAR, NOSE AND THROAT TO THE ROYAL INFIRMARY AND TO THE CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL

Inflammation in the middle ear is always secondary to infection of the nasopharynx, and like the latter is always sub acute in its beginning It is the obstruction of the Eustachian tube which enhances the acuity of the inflammation and leads to the production of acute otitis media

In acute otitis media, the immediate problem which confronts the surgeon is the potential danger to the patient's life The occurrence of intracranial complications is circumvented by a myringotomy when the inflammation has not spread beyond the confines of the middle ear, or by a mastoid operation when the well known signs of mastoiditis are exhibited. After the drainage of the pus has been established the case becomes one of sub-acute otitis media, and the main problem is the conservation of the patient's hearing

Sub acute otitis media differs from the acute variety in the fact that the Eustachian tube is partially patent and that the pus drains down it The acuity of the inflammation is generally in proportion to the degree of obstruction of the tube

SUB ACUTE OTITIS MEDIA IN CHILDREN

This is characterized by recurrent attacks of evanescent pain in which there may be slight discomfort when *the child presses his mastoid* against the surgeon's thumb and by a transient bulging of the membrane coincident with periods of pain The alteration in the hearing is similar to that found in acute otitis media after a myringotomy or spontaneous perforation and is believed to be due to oedema of the mucous membrane covering the round and oval windows If the diminution of the hearing power is maintained after the period of pain

* Read in opening a discussion in the Section of Oto-Rhino Laryngology at the Annual Meeting of the Public Medical Association, Eastbourne 1931

has passed or when the drumhead is no longer out-placed, it is a sign of bad prognosis A graph of the most usual form of alteration of the hearing is shown in Fig 1 In this the hearing of the middle tones is nearly normal and there is diminution of the acuity of hearing of the lowest and the highest notes.

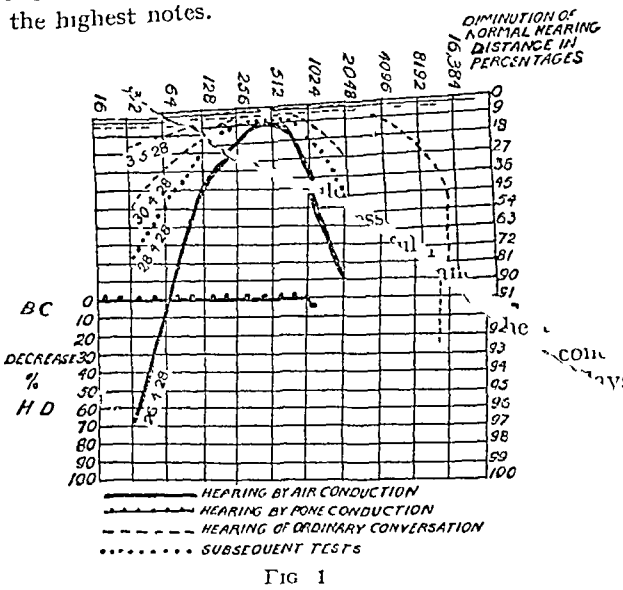


Fig 1

When this graph is found, attention should be focused on the nasopharynx and any adenoids should be removed, while sinuses suspected of infection are washed out In the mildest of the cases this is all that will be necessary, but in the more severe a myringotomy should be performed and the incision should slit the membrane for nearly its whole length behind and parallel with the handle of the malleus

After the myringotomy and the removal of the adenoids the patient should be kept in bed for a few days In cases of sub acute or of acute otitis media, deafness will follow if the inflammatory condition is maintained for a long period An increasing deafness after myringotomy will warrant the performance of a mastoid operation, particularly if the deafness is bilateral In general, I believe it to be true that if discharge persists in the middle ear for longer than six weeks and during this period is accompanied by deafness, then we cannot guarantee that the deafness will entirely disappear, although in fortunate cases it may do so

All modern operations on the mastoid of the child are based on that of Schwartze, which needs no modification if the cavity left by exenteration of the mastoid cells is small In larger cavities or in those which are exceptionlly deep and narrow, the muscle graft or periosteal graft can advantageously be used to fill the cavity When the cavity in the bone is very large, it will take so long to heal by granulation that meatal drainage by the Kuster method may be indicated, for in this method the cavity is healed by growth of skin upon the bone In our decision on the need for mastoid drainage, and in our conduct of the after-treatment, one point is specially worthy of attention This is concerned with the fact that the deafness which results from the inflammatory conditions of the middle ear does not display its full severity in the early stages In the fibrotic change which follows sustained inflammatory states of the mucosa of the middle ear, there is but little deafness till the fibrous tissue has contracted In our decision whether an operation is demanded in order to conserve the hearing in a young child suffering from sub acute otitis, we have to draw on our experience gained from those children who were old enough to co operate with the surgeon sufficiently to enable him to carry out exact tests of the hearing

The type of sub-acute otitis media which we have considered is that most commonly found in children It is of prime importance, for sub-acute otitis media does not reveal itself by the dramatic symptoms of acute otitis but requires more subtle means of diagnosis That the symptoms are not obvious does not imply that the condition is not serious Sub acute otitis media is probably the cause of a high proportion of the deafness met with in adult life Only by basing our treatment on the type and degree of alteration of the hearing can we deal with the problems met with in this condition, and only by a recognition of the danger to the hearing that the maintenance of the low-grade inflammation carries with it can we guard the child against the lack of earning power due to deafness in his adult life.

Sub acute Otitis Media in the Adult

In adults we meet with two varieties of case, the [illegible] in which the sub acute condition is of recent origin [illegible] is similar in all respects to that of children, the other in which the inflammation is maintained and, if undiagnosed [illegible] size, consequently it is in its early stages, leads to irremediable [illegible] as fibrosis This maintained otitis is met with in [illegible] deafness, until atrophic forms which bear distinct relief [illegible] trophic and hypertrophic similar states of inflammation [illegible] semblances to [illegible] nose.

Hypertrophic Form of Sub-acute Otitis Media

The history is generally that of deafness which [illegible] early stages is extremely variable from day to day [illegible] may be periodical attacks of aural pain which is [illegible] cent as the deafness Later, attacks of pain become [illegible] quent and finally they cease The deafness [illegible] intermittent and becomes continuous, and, if the [illegible] observant, he will note that in the early stages [illegible] the sounds around him with but little diminution [illegible] has considerable difficulty in understanding conversation [illegible] because the words run into one another. (Confluent speech) When there is difficulty in understanding speech although the voice is plainly audible, I class the deafness as "uncompensated," in contradistinction to the deafness which is compensated, in which the words are intelligible if the sound of the voice is plainly heard

Examination —The graph of hearing in these cases shows the same features as that of sub acute otitis media in the child (See Fig 1) In the later cases the deafness is generally more marked, the increase being steadily continuous, though slow. In the early cases, the translucency of the tympanic membrane is diminished and in the later cases it may be opaque The cone of light may be displaced and the whole membrane gives the appearance of being less concave than normally This is indeed the case and the concavity can be restored by raising the pressure in the meatus with a Siegle's speculum On raising of the pressure we may sometimes see a wave of fluid pass from one part of the tympanic cavity to another. If by the examination the presence of fluid in the middle ear is demonstrated or suspected, the next step is to cocain the nose and to obtain a sample of the contents of the Eustachian tube for microscopical examination This is aspirated from the Eustachian tube, or middle-ear, by passing a tympanic catheter along the lumen of a Eustachian catheter, so causing it to enter and pass along the lumen of the Eustachian tube, and then applying suction to it with a syringe On microscopical examination it is seen that the contents of the middle ear consist of mucus in which are leucocytes together with some micro-organisms, most of which are intracellular The slide is kept on a warm stage The leucocytes and micro organisms tend to disappear and the time they take to do so may be of service in determining the line of treatment or the prognosis.

Cases fall into the following main groups:

1. Those in which the micro-organisms and leucocytes disappear within an hour and a half. In the majority of these the infection of the middle-ear clears up spontaneously when the parent source of sepsis in the nose or nasopharynx has been remedied.

2. Those in which the leucocytes and micro-organisms disappear within three hours. The majority of these get well on removal of the parent source of sepsis and on repeated aspiration of the tube.

3. Those in which the leucocytes disappear but in which the micro-organisms remain within the fluid. In some cases these micro-organisms can be cultivated and in others they are dead. Failure of disappearance of the micro-organisms is a point of bad prognosis. This last group must not be confused with the effects of dilution of the mucus with saline. If mucus from a case in the first group, in which the micro-organisms disappear spontaneously in ninety minutes, is dissolved in saline, the leucocytes will disappear, but their bactericidal ferments are too dilute to kill the micro-organisms which may occasionally flourish in this diluted medium which before dilution was efficiently bactericidal.

A diagnosis by microscopy of these fluids cannot form part of our information in the examination of these cases, but if occasionally carried it probably enables us to recognize and treat certain cases with increased efficiency.

Malignant Disease.—The infection of the Eustachian tube and middle-ear is never primary but always secondary to some other infection in the nose or nasopharynx. This area should always be found, and if the infection is within a sinus this sinus should be washed out under cocaine anaesthesia, either alone or combined with nitrous oxide. The material for washing may well be liquid paraffin, as this does not dilute the bactericidal substances. These washings will be repeated twice a week until either the sinus contents are no longer purulent or until the failure to resolve with washings once more indicates the need of surgical drainage of the sinus. During the same visit, when the sinus is washed out, the Eustachian tube is aspirated with a tympanic catheter. The progress of the hearing must be watched with special tests and indicated on the graph or quantitative record of the hearing. In cases which are not progressing favourably and in which the infected mucus cannot escape from the middle-ear as quickly as it is secreted, a myringotomy will have to be performed. The normal, or, in fact, the only, natural means of emptying the middle-ear is by the action of the ciliated epithelium which is chiefly active in the Eustachian tube. If the ciliated epithelium has been destroyed, the Eustachian tube is generally patent, and the ear can be spontaneously inflated by Valsalva's method. If this is the case, a myringotomy may be performed, and the incision should be so planned that the middle-ear is emptied of its contents through the incision on inflation. The myringotomy will tend to close, but this may be in part prevented by the use of drops of liquid paraffin and by separating the edges of the wound each day by aspiration with a Siegle's speculum. It must be admitted that the greater the hypertrophy of the mucous membrane of the middle-ear, the greater is the tendency of the myringotomy to close. If the myringotomy wound closes and repeated aspiration fails to cure the case, the question of a mastoid operation or meatal drainage will be considered only in those cases in which the retention of the maximum degree of hearing is of real importance and the condition has not advanced beyond the point at which the subsequent contraction of the fibrous tissue in the tympanic mucous membrane will inevitably cause deafness.

Rutt

Atrophic Form of Sub-acute Otitis Media

Isolated cases in this group appear generally to trace the destruction of their deafness to an attack of influenza. Influenza appears to be a generic term for all forms of acute nasal inflammation in which the infection is by micro-organisms which do not produce pus, that is to say, they do not call forth leucocytes by their chemical attraction. The type of micro-organisms which produce attacks of influenza appear to be those for which an antiserum can be elaborated in the circulating serum. The manufacture of this serum is accompanied by fever, and when the temperature falls it may be because the immunity is now established. The fall of fever may, however, indicate that the infection has been partly cured by some local application. If the micro-organisms are thus artificially destroyed within the nose, they still survive within the ear, and they are present in too small a quantity to produce immunity and bactericidal substances, and so they live and flourish in the tympanum.

If a study is made of each case of influenza which is accompanied by deafness, we find that after the attack the nasal mucus contains a quantity of desquamated epithelium. Similar desquamated cells are characteristic of the contents of the tympanic mucus in the atrophic type of sub-acute otitis media. In such cases the history differs little from that of the hypertrophic form of the condition.

The hearing in the early stages of this complaint shows the changes which are characteristic of the sub-acute otitis media of children. (See Fig. 1.) In the chronic cases, which are those we generally see, there is a steadily progressive deafness which finally becomes indistinguishable from that associated with otosclerosis. The graph of such a case is shown in Fig. 2.

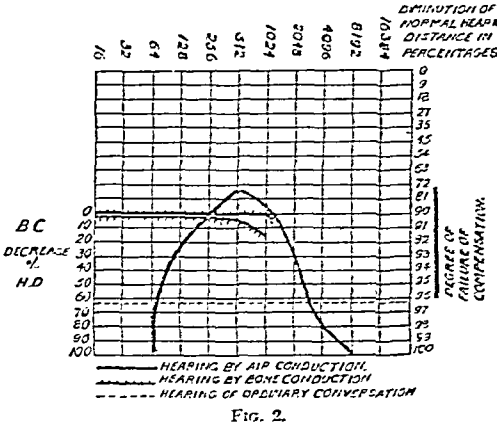


Fig. 2.

On inspection, the tympanic membrane is more translucent than the normal, and, in fact, may nearly be transparent. The inner tympanic wall, denuded of its epithelium, shines red through the transparent drumhead. Sometimes the middle-ear is nearly dry, and in other cases it is filled with mucus in which bubbles may be clearly visible. This stage of the condition is as incurable as otosclerosis, which it resembles closely. Unlike otosclerosis, however, this condition was at one time eminently curable, but because in its period of curability it was symptomless, it attracted no attention. If after an attack of influenza the ear is inspected, as a part of the routine examination, with an electrically illuminated Siegle's speculum, in a few cases fluid with bubbles in it will be noticed in the middle-ear. Such patients should receive an aspiration of their Eustachian tubes, and their return to aural health should be supervised both by examination of the secretions of the nose or ear and by the record of the hearing in some graphic manner such as will display the rate of its return to normal. In watching such patients we discover that the majority

recover aural health spontaneously. It is the recognition of those who do not thus recover aural health which is important, for a proportion of them will drift on to deafness, which is as preventable in its early stages as it is irremediable in the stage in which we generally see it.

The conditions which tend to cause the maintenance of the state of inflammation should be kept in mind. I will not deal with them, for, except for the occasional occurrence of a sinusitis, or a tonsillitis, they are the province of the physicians, who tell us that anaemias, liver deficiencies, constipation, acidosis, and the presence of a toxic focus are the common causes of the failure of establishment of immunity from an infection.

THE USES AND MISUSES OF VACCINES*

BY

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With the introduction of vaccine therapy as a general therapeutic remedy by Wright and his school we witnessed what so often occurs when a good remedy has bad or indifferent advocates. Many of those who in the early days of vaccine therapy "used vaccines" had little or no knowledge of the remedy they proposed to use, nor did they attempt to study the principles of an antigen-forming antibody as exemplified by the injection of an antigen (or vaccine) into their patient. They merely administered the vaccine by rule of thumb at stated intervals, and hoped for the best. It never seemed to occur to those who thus misused vaccines that they were not even prepared to allow to a foreign protein (such as a vaccine undoubtedly is) the same vagaries as they would to a drug such as digitalis—namely, personal idiosyncrasies. It is therefore not to be wondered at that vaccine therapy, after a certain period of great popularity, fell under a cloud and was looked at askance. From being a "cure-all" it became a "no-good-at-all" in the eyes and teaching of many, and only of recent years has a more sane and reasonable view been adopted as to the place of vaccines in the therapeutic armamentarium. Even nowadays one has recently seen correspondence on such a subject as "Why do not pathologists adopt a standard initial dose?" Why does the *Pharmacopoeia* lay down the dose of iodides within the region of 5 to 20 grains according to the salt used; and have those practitioners who want a standard dose ever heard of iodism?

Generally speaking, vaccines can be used where time is not of great urgency, and where an active immunity lasting for some time can be aimed at. Antiserums, on the other hand, are remedies for urgency, and the production of passive, and usually very temporary, immunity only. Thus vaccine therapy is of the greatest use in prophylaxis, and it is probable that the public will never realize the debt it owes to T.A.B. prophylactic inoculation during the late war.

While it is obvious that for prophylactic inoculation stock vaccines must be used, I am strongly of opinion that where there is a chronic bacterial infection, the organism of which is known and can be obtained from the lesion, then an autogenous vaccine is the best. I have come across certain cases that have failed on an autogenous vaccine, and then have cleared up on a stock vaccine of that particular organism; but such cases are in my experience rare.

Detoxicated vaccines are in my opinion useless as specific remedies, and whatever good may be obtained from their exhibition is merely the result of foreign protein shock. In fact, one has obtained as good results in certain gonococcal cases from giving detoxicated T.A.B. as from giving detoxicated gonococcal vaccines.

* An abstract of a lecture to the Post-Graduate Section of the Hertfordshire and West Herts Medical Society.

Type of Case Suitable for Vaccines

As regards the type of case suitable for vaccines, I think success is more likely with young people than with old, and the nearer one gets to the age of 50 the less likely one is to have success. After 50 I am always chary of advising a vaccine, and in my opinion the lack of success with colon bacilluria in elderly women is due to "anno Domini." Even in this type of case one sometimes seems to get remarkable results, for some women after the menopause seem to take a new lease of life, and once more I would emphasize the advisability of autogenous *coli* over stock vaccines.

In many types of infection I really think the pathologist or bacteriologist should see the case it is proposed to treat. It may be argued that this involves an additional fee and expense, and that a bacteriologist is no clinician. While these things may be true in theory, in practice a bacteriologist who is accustomed to treat cases with vaccines is apt to know more about the chances of success with any given case. While I am no advocate of retrograde medicine, there is much to be said in practice for our forebears' ideas of "types" and "diatheses," and this applies equally in vaccine therapy.

Patients with a high temperature are unsuitable for vaccine therapy; and in acute infections it is unwise to give vaccines. Here again one comes across notable exceptions; for I well remember one of my laboratory clerks, desperately ill with a streptococcal arm, who seemed to pick up (and finally recovered) from the first administration of an autogenous vaccine. Anyway, should you decide to give an acute infection a vaccine, start with almost incredibly small doses, and increase them by doubled amounts daily until a reaction is obtained.

Patients with conditions of great chronicity, such as chronic sinuses, particularly if there is any cause for the chronic sinus, such as a buried stitch, a piece of dead bone, etc., are quite hopeless until the cause has been removed, then healing perchance may be accelerated by the administration of a suitable vaccine. During the war there were some types of mind that insisted on requesting the bacteriologist to prepare a vaccine for chronic sinuses at the bottom of which were huge sequestra caused by comminuted fracture from shrapnel. The only legitimate reason for putting such a case on a vaccine is to increase its bacterial resistance pending an amputation or removal of sequestrum, and this may be done with benefit in such cases. In the war, I am afraid, it was sometimes asked for under the peculiar impression that the vaccine would unaided heal the sinus and remove the sequestrum. Very chronic colon bacillurias, again, are quite unsatisfactory cases, for the time to put a patient on a *coli* vaccine is in the acute stage, as soon as or, in some cases where the fever is not severe, before the temperature falls. So often I think one is inclined to give the urinary antiseptics first and the vaccines as a last resource. This I believe to be wrong, for I hold that all the "shots in the locker" should be brought to bear on the enemy, and that both vaccine and urinary antiseptics should be given. Do not let us regard a vaccine as a thing apart from ordinary therapy, but as a part of ordinary therapy—another weapon to be used in suitable cases along with drugs and surgical operations.

Dosage

And now we come to dosage. I have made a few observations on those who desire a standard initial dose and so forth. I believe from the nature of a vaccine such a thing to be impossible. I would go further and say that

every case you attempt to treat with a vaccine is in the nature of a personal experiment on your particular patient When I am asked to treat a case, or advise on a case I always try to insist that the patient be made to understand that one is about to try and see whether or not he will form curative bodies as the result of the injections The patient, as a rule, readily appreciates the idea, and co-operates in such details as letting you know about any feelings of malaise, local soreness, etc , after an injection Explain before the start that you may fail because his tissues may possibly fail He readily appreciates from common knowledge of drugs in general that drugs occasionally are not successful in producing the desired effect, and so he is not disgruntled to the same degree at a failure of a vaccine to stimulate his tissues to cure him

I am often asked how to judge the interval between the dose As one of the first principles of vaccine therapy, I may say there is no such thing as a rule-of thumb interval While a general rule is that as you increase the dose you increase the interval, it is most important to recognize from the beginning that each case must be treated strictly on its merits

In prophylaxis one gives one to four doses at more or less fixed intervals, but even here one sometimes finds undue susceptibility to the first or subsequent doses, and it is most harmful to proceed to inject the case again at the prescribed rule of thumb interval Wait until the reaction has passed off and then proceed

In therapy there are two main schools one recommends a large dose at fairly long intervals, the other small doses at frequent intervals I myself prefer to give small doses at frequent intervals in the early stages, gradually lengthening the intervals and increasing the doses as tolerance appears to increase

There are certain advantages in this latter method, in that one never should get an unduly severe reaction How does one tell when a patient gets a reaction? Apart from general malaise, etc , which one aims at avoiding as far as possible, it is the site of injection that tells this At the site of subcutaneous injection there will almost invariably be a red mark This follows any injection of foreign protein, but if in addition there is local induration, this is a reaction The amount of the induration is a measure of the reaction

Therefore whatever vaccine is being administered, start with a low dose and look for this induration If it is absent, I repeat with a larger dose next day, and so on daily until a reaction appears When a reaction appears, wait until the induration has almost gone, and repeat the same dose that produced the original reaction If this dose produces a trivial or no reaction a further increase may be essayed in the dosage, again watching for the reaction Should reaction occur, observe the same rules as have been formerly laid down, and do not yet increase the dose *Only increase the dose when you are sure that little or no induration has occurred*

You will find that individual cases vary enormously In *B coli* or staphylococcal cases, starting as I do with 25 to 50 millions it may be found that the first reaction occurs with 250 millions or even more, whereas in some cases one cannot go higher than 50 to 100 millions I am convinced that many of the failures of vaccine therapy have been due to the lack of appreciation of this extreme variability in the sensitiveness of the individual to his vaccine

Vaccine Therapy

Tuberculosis —As regards tuberculosis, I only use old tuberculin (both bovine and human strains) and similar preparations of bacillary emulsion (B E) I prefer the old tuberculin for treatment, though this is not in accord with all authorities As an initial dose, in both preparations I use a dilution of 0 002 gram per c cm , which works out to about 0 0001 per minim (taking 1 c cm as 20 minims) I start with 1 minim and increase the dose by 1 minim a day until a reaction occurs, and then proceed according to the lines previously mentioned As the doses get larger (and you may get up to even 1/2 to 1 c cm of the undiluted tuberculin) so, of course, you will find the intervals have to be much increased I regard phthisis, even apyrexial cases, as quite unsuitable for tuberculin treatment, at any rate outside a sanatorium, and I think the bacillary emulsion (either bovine, human, or a mixture) the preparation to be used for this type of case Most of the cases of renal and pelvical tuberculosis that one encounters are too advanced or quite unsuitable for vaccine therapy, though early tuberculosis of the testicle may afford some hope of success I have seen quite remarkable results in tuberculous pleurisy and in peritonitis of the non-adhesive type Certain eye and skin conditions and early tuberculous joints give a percentage of success, but the best cases to deal with in my opinion are tuberculous glands In treating these tuberculous conditions do not hesitate to employ or have employed any other beneficial remedy known to give relief—thus, for example, see that an early tuberculous joint is kept at rest

Gonorrhoea —In gonococcal infections I have never been in the least impressed with the results of vaccines in the acute stages, even though on many occasions I have used an autogenous vaccine In the chronic stages of prostatitis I have used stock vaccines without great success, but I think a mixture of stock vaccine plus those organisms of secondary infection which always occur and which can be obtained in the secretion after careful prostatic massage, are often very helpful It is these organisms of secondary infections that keep up the trouble, and not the gonococcus In women I do not give vaccines, because, candidly, I am afraid of possibly producing a violent reaction, with spread to the tubes and peritoneum I have seen it occur more than once, and I do not think it worth the risk for the problematical benefit that may accrue

Chronic Catarrh —In the chronic catarrhal states, including bronchitis and asthma of bacterial origin, one is up against many difficulties For instance, if there is any nasal or sinus condition present, that must be treated by suitable means It is useless to treat a condition of chronic nasal catarrh associated with a badly deflected septum or nasal polypi with a vaccine, but I have been invited to do so more than once Hence, have such conditions carefully excluded by a competent specialist Similarly, in an aged patient with emphysema and purulent bronchitis of considerable chronicity, the real trouble is that his lungs and bronchioles have lost their elasticity, and purulent secretion collects in the dilated bronchioles A vaccine will not restore his elasticity nor close his dilated bronchioles, and I regard a vaccine as useless in this type of case In patients who suffer from recurrent colds, particularly the seasonal ones of autumn and spring, much can be done by autogenous vaccines in the former and stock vaccines given prophylactically in the latter case Again I would remind you not to neglect auxiliary methods of treatment and I always advise that cases of chronic nasal catarrh should use a glass nasal douche (never a syringe) with some mild antiseptic lotion (such as glycerin thymol co *B P C*) night and morning, combined with the injections of vaccine After all, one is dealing with a susceptible and damaged mucosa and if it is to recover it is as well to remove the products of inflammation and catarrh as often as possible One never quibbles about washing away the products of inflammation from wounds, so why avoid the obvious? I have never seen Eustachian tube trouble follow from douching, provided a syringe is not used.

Vaccines in Dental Practice

I suppose you have wondered why I have not mentioned the question of vaccines in dental practice, and the pros and cons of vaccines in pyorrhoea and apical infections. The subject is too difficult, and to a certain extent too controversial, to deal with in a brief lecture, but I maintain that, given co-operation between the bacteriologist and a dental surgeon, who is also an expert in interpreting *x*-rays of the teeth, a great deal of most valuable salvage work can be done. Some teeth have to come out, others may be salvaged, and it is the expert dentist, accustomed to working with a bacteriologist, who, in my opinion, can do such useful work.

Intravenous Method of giving Vaccines

All my remarks so far have referred to subcutaneous administration of vaccines, but to conclude my lecture I would mention one method of giving vaccines which may or may not be a method of producing a non-specific protein shock. I refer to the intravenous method of giving vaccines, and I hold that in many cases one is certainly giving a specific protein. One knows that large doses of T.A.B. have been given intravenously in cases of general paralysis of the insane, asthma, etc., also peptone solutions, and this, of course, is non-specific protein therapy. I have, however, had many cases of arthritis, in particular where there seemed to be definite foci of infection (either dental, intestinal, etc.), that have responded in a most striking manner to autogenous intravenous treatment when the subcutaneous method had failed. It is necessary to add a few words of caution about the intravenous administration of vaccines. The initial dose must be small, at least half the dose that I should commence with in subcutaneous injection. The patient must be warned that he or she may feel quite uncomfortable about an hour or so after the injection, the symptoms being headache, shivering, and pains all over. Aspirin, bed, and hot bottles usually quickly ameliorate these symptoms, and after a fairly profuse sweating the patient recovers in a few hours, and feels none the worse, though possibly a little limp. Occasionally these symptoms may be very severe, but I assure you that, however severe, there is no cause for alarm. In extreme cases the reaction may last two to three days, and, although your patient may reproach you for causing such inconvenience, it is in these cases that I have seen the best results.

I had one patient with arthritis who, after each injection, had the most violent reaction ; yet so impressed was she by the obvious improvement that followed each bout that she continued the treatment till a free movement of her joints was obtained, and all that remained was the existing bony and joint changes prior to treatment. I may add that she is now playing a very useful game of golf, and, while regarding me as her benefactor, does not properly apportion the credit due to herself for sticking it out.

Though one may get these violent reactions in susceptible cases, there is fortunately no cause for alarm, and the symptoms need only be treated. Once you have adjusted the dose you will find that on increasing your dosage the subsequent reactions tend to be of a trivial nature, and that the case I have just quoted is the exception rather than the rule.

THE ORGANIZATION OF TREATMENT FOR INFANTILE PARALYSIS*

BY

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The organization of treatment for infantile paralysis may be divided under two distinct headings, the first dealing with the acute attack, the second with the after-effects of the attack. The object of this paper is to explain that the scope and variety of the special technique involved in each case are so wide that organization becomes a necessity.

Treatment of the acute attack is of importance because it may greatly influence the subsequent degree of disability. This is a point on which emphasis should be laid, as it is too little realized. Unfortunately, owing to the infrequency of its occurrence and the unexpected way in which single cases or epidemics occur in out-of-the-way places, the acute attack often goes undiagnosed until after its subsidence; the signs of paralysis follow what was thought to be a case of influenza or something of that sort, and are not discovered until the patient is allowed to get up.

In the orthopaedic scheme of the East Sussex County Council, we have complete preparations for acting promptly at the onset of the disease, but we are, of course, dependent upon the alertness and co-operation of the general practitioners in every case.

With regard to early diagnosis I would emphasize the importance of examination for muscular tenderness in all cases of acute pyrexia without obvious cause. A rapid passage of the hands over the four limbs and squeezing of the various muscle groups can be carried out in a couple of minutes. If acute tenderness is noted and for this and other reasons suspicion is aroused as to the diagnosis of acute anterior poliomyelitis, prompt investigation of any case rising in East Sussex may be secured by telephoning to the county M.O.H., Dr. Ashleigh Glegg at Lewes. If it is considered desirable, Dr. Glegg will then ring me up and I will proceed to the spot to meet the practitioner in consultation, with all dispatch.

By arrangement with the Lister Institute I have a supply of the new anterior poliomyelitis antitoxin always in readiness and, if we make the diagnosis, can administer it at once. This is considered to be the best procedure, but in case I might be unavailable with sufficient dispatch, I have in cold storage a supply at the Girls' Heritage School, Chailey, so that the R.M.O. can administer it without waiting for me. It should be given partly intrathecally and partly intravenously. For a favourable prognosis, the serum should be given, at any rate, in the first few hours of the attack, but in view of the pathological picture, it appears to me worth while to administer it at any time during the persistence of the pyrexia. Apart from this antitoxic treatment, special orthopaedic measures are important.

The correct posturing of the affected parts *at the very outset of the disease* is of paramount importance, and this should be secured without pressure from bandages, which tends to increase the atrophy of the affected muscles. The lumbar puncture carried out in the administration of the antitoxin affords an opportunity for withdrawing cerebro-spinal fluid to relieve pressure, if desirable. The posturing of the limbs by the method of slinging, which I will shortly describe, should be carried out without delay as soon as the muscular pain has departed. There is no need to wait until tenderness to pressure has gone.

* Read in opening a discussion in the Section of Public Health at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

The pathology of the disease being outside the scope of this paper, I will only allude to it so far as necessary in dealing with the after-treatment.

We must bear in mind that in the majority of cases, although there is complete obliteration of anterior horn cells to a variable extent, many of these are frequently put out of action by a disturbance which falls short of complete destruction. This disturbance may be the result of the toxin or of pressure from engorgement and extravasation of blood in the anterior cornua. After a time, many of these cells may recover but their axons may have perished. A year or more may elapse during which regeneration of these axons is taking place. If the muscles are ill treated or, in many cases, if they receive no treatment, they may lose their contractility, so that little or no muscular response can be elicited when the regenerated axons reach their destination. Therefore measures should be carried out with a view to preserving the contractility of all the affected muscles for at least a year before hope of recovery is abandoned.

These measures are partly the correct posturing of the affected groups, while protecting them from pressure, and partly other measures. It is, however, important to mention that the patient should be placed in the hands of those who are specially qualified to treat such cases. Properly administered electrical treatment is of great assistance in maintaining the contractility and nutrition of the paralysed muscles, but if improperly administered much harm may be done and is done, leading to opinions adverse to electrical treatment which are quite erroneous.

It is a surprising fact that physical treatment is not included in the examinations or curriculum of the medical student, consequently it is carried on as a general rule without the competent supervision of medical men. This supervision is needed not only to direct the treatment but to decide when it is needed and when it is no longer of any use. Much time and expense are wasted on the electrical treatment of muscles long after an electrologist with the requisite knowledge would have explained that recovery of function could not take place.

One of the greatest yet commonest of mistakes in giving electrical treatment for anterior poliomyelitis is excessive faradic stimulation. In fact, it should never be administered in the early stages of nerve recovery, when the faradic response is just returning. Only the single stimulus of the interrupted galvanic current should be used at this time. Massage, a very important part of the treatment, is less likely to cause damage, but even here harm may be done by deep effleurage, which is in my opinion a mistaken form of treatment for almost any condition.

There is yet another aspect of this disease which calls for special mention. We should never forget that the acute attack is a severe shock to the nervous system as a whole, and every patient who has been through it is left in a state of profound general neurasthenia demanding prolonged rest and constitutional treatment. I am convinced that if these facts were more generally realized the [illegible]ent of recovery in many cases would be greatly [illegible]d. For this reason open-air nursing and helio- should always be carried out and continued for [illegible]ths or even years, according to the severity of

[illegible]apy is of decided value, though its effect vi[illegible]y according to the type of radiation and the met[illegible]oyed. At Chailey we have fourteen complete sets of la[illegible] each set being a complete unit for the production of the whole solar spectrum. As a result of comparative tests carried out at St. Thomas's Hospital and the Victoria Hospital for Children, I have not installed any carbon arc lamps at Chailey, and have in fact ceased to use them anywhere. In their place I use a battery of four carbon filament lamps for the production of visible and infra-red rays and one mercury vapour tube for the ultra-violet rays, in each unit. The ultra-violet radiation can thus be adjusted to the tolerance of each patient, separately from the longer rays, which is very important. As a result of experiment with intense visible radiation I now attach great importance to this part of the spectrum.

This general radiation of the body is, of course, a measure for improving the general nutrition and recuperative powers of the patient. It is, I can assure you, a treatment of very high value. Its effect in the treatment of debilitated patients can hardly be overestimated. A couple of years ago, an adverse report on the subject of artificial heliotherapy was published by the Medical Research Council. You will be well advised to pay no attention to this astonishing document. It is only fair to the Medical Research Council's own special committee on light to say that this publication was issued without its authority.

For local treatment, I have for many years, as a routine, irradiated the paretic muscles with intense red light. The scientific rationale of this treatment I explained in a paper read before the International Congress of Radiology in London in July, 1925, and published in the *British Journal of Radiology* of May, 1926, and in a paper on the treatment of infantile paralysis published in the *Lancet* of August 15th, 1925.

Postural treatment is another measure demanding special care. When any of the trunk muscles are affected it may be needful to carry out prolonged treatment in the recumbent position to prevent the tragic spinal and costal deformities so often seen in these cases. Sometimes this recumbency should be maintained for several years in the case of growing children. It is the only way to prevent very serious spinal deformity if the abdominal or erector spinae muscles are affected to any practical extent. For such cases open-air nursing all the year round is very desirable. The patients remain strong, vigorous, and in excellent health if they are kept in the open air, whereas in hospital wards they would become weak. All these matters have been referred to, in order to explain the necessity for organized institutional treatment for infantile paralysis, because the many needs of these patients can be met economically in this way owing to the congregation of a large number of cases.

[Lantern slides were then shown depicting various methods of treatment carried out at Chailey.]

In summing up, it may be reiterated that many cases of infantile paralysis require institutional treatment extending over a number of years. When you come to think of it, this is far from being an unreasonable demand. No one hesitates to provide instruction for children in schools where they are taught lessons hour after hour every day, from the age of 5 until they are 14, therefore it is not asking too much to demand that a growing child, suffering from the effects of infantile paralysis should have daily treatment extending over some years; because this can be obtained concurrently with education at Chailey and other institutions throughout the country, and if the children can live at home many cases can receive this treatment at the out-patient clinics of the county orthopaedic organizations.

The reason that treatment is so important in the case of the growing child is that, as the limbs grow, paretic limb muscles are apt to become shorter than their twins on the opposite side, leading to postural deformity or further weakening by stretching. These affected muscles may need periodical treatment until the patient has ceased to grow. The need for operative treatment is in most cases brought about by lack of, or improper, physical treatment.

The county orthopaedic organizations are now spreading throughout Great Britain as the result of the original inspiration of Sir Robert Jones. East Sussex has its own county scheme on these lines, with Chailey and its marine hospital at Tidemills as its central hospitals and school, and out-patient clinics at Lewes, East Grinstead, Hailsham, Crowborough, and Burgess Hill, where after-treatment can be given to children discharged to their own homes under medical supervision from Chailey, and children attending these clinics can be admitted to Chailey as occasion demands for hospital treatment. In this way the whole East Sussex area is linked up with its central hospital.

I cannot conclude this paper without reference to the lack of organized treatment for paying patients of small or moderate means. To obtain privately the necessary treatment under the right conditions is impossibly expensive for any but rich people. If those institutions which offer resident treatment for paralysed poor children or adults wish to make their work complete they should certainly make separate provision at a little over cost price for those who can pay only small or moderate fees. The present institutions are unsuited for the children of the upper class, because there they must be educated with those who are by their upbringing and ideas unsuitable for them as companions. A vulgar accent is only one of the drawbacks that arise from such companionship. Only we doctors seem to realize the pitiable circumstances arising so often from lack of sympathy and enterprise in this matter.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

OEDEMA ROUND THE EYES CAUSED BY TRICHINA SPIRALIS

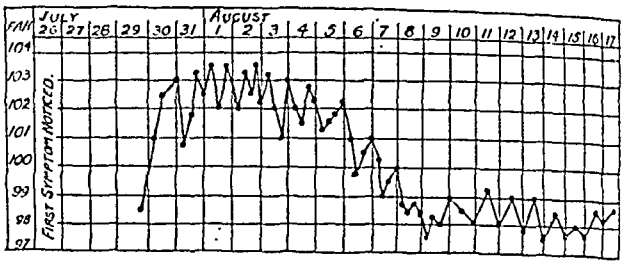
Infection with *Trichina spiralis* in man may produce a variety of clinical pictures. The patient may present a pyrexia with no obvious cause, and enteric fever be simulated; or the fever may be accompanied by severe pains in the limbs and back, so that a diagnosis of acute rheumatism or of influenza may be suggested. But there is another group of cases in which the chief symptom is oedema round the eyes, with no other striking symptom; these cases are usually first seen at ophthalmic hospitals. The following case is an illustration of the last group.

History of the Case

The patient was a female, aged 25, who lives in London and has never been abroad. Her husband is a french-polisher. She was quite well until July 26th, 1931. On that day she awakened with a feeling as though she were about to develop a "cold in the head," and in the afternoon noticed that her eyes seemed rather puffy underneath. On the following day the eyes were much more puffy; she had no other symptoms, and felt well in herself. On July 28th the eyes were almost closed by the swelling, and towards evening she felt tired and depressed, her appetite was lost, and she had slight diarrhoea. She felt thirsty, and drank a large amount of water. On July 29th she was unable to open the eyes on account of the swelling, and during the day vomited on several occasions. In the afternoon the temperature was 98.6°, when she was examined at Mr. G. G. Fenwick's clinic at the Royal Westminster Ophthalmic Hospital. The fundi and ocular movements were normal, and the urine contained no albumin. She was seen by me at the Royal Westminster Ophthalmic Hospital on the following day.

On July 30th the eyes were almost closed by oedema, and they appeared to be unduly prominent. The patient felt ill and sleepy and sick, though she did not vomit on this day. There was no pain or tenderness in any muscle. As the urine did not contain albumin, as the blood pressure was normal, and as the fundi did not present any abnormality, a provisional diagnosis of infection with *Trichina spiralis* was made. A blood examination showed no eosinophilia. The patient was admitted to Charing Cross Hospital for investigation.

On admission in the afternoon of July 30th the temperature was 101.2° (see chart). There was fever for nine days. A



second blood examination made on August 5th (the eleventh day of the illness) revealed a high eosinophilia. The results of several blood counts are shown in the table. The patient vomited twice after admission, on August 2nd and 3rd. No other gastro-intestinal symptoms were noticed. The oedema round the eyes subsided during the first week after admission. At no time was any pain or tenderness noticed anywhere, and the patient made an uneventful recovery.

On August 10th (the sixteenth day of the illness) a small piece of the trapezius muscle was removed by Mr. R. A. Fitzsimmons; to the naked eye this did not present any abnormality, but in teased-out portions of the muscle many embryos of *Trichina spiralis* were clearly visible under the low power of the microscope. These embryos were not encysted, and for some time after the removal of the portion of muscle they were seen to be alive, coiling and uncoiling themselves among the muscle fibres. Under the high power the spiral arrangement of the worms could be clearly seen, as the whole length of the worm could be followed round the spiral by raising and lowering the lens. There appeared to be two and a half or three turns in the spiral. The adult worms were not recovered from the faeces.

The following table shows the blood changes. The total leucocytes varied between 6,000 and 9,000 per c.mm.

	July 30	Aug. 5	Aug. 7	Aug. 10	Aug 12	Aug 17
Neutrophil polymorphs...	78.0	55.5	51.0	46 0	38 0	45 0
Eosinophil polymorphs...	4.0	18.0	14.5	27.0	18 0	13 5
Lymphocytes	7.0	20.5	24.5	18.5	33 5	34.5
Monocytes	10.5	4.5	9.5	8.5	10 0	6.5
Basophils	0.5	1.5	0.5	—	0 5	0 5

Commentary

The following are the interesting features of this case. The first and, for two or three days, the only symptom was oedema round the eyes. There was a high fever which did not appear until five days after the first symptom; at no time was pain felt in the muscles, nor could tenderness be elicited; eosinophilia was absent five days after the first symptom also, but appeared between the fifth and eleventh days. Living embryos of *Trichina spiralis* were found in a piece of muscle on the sixteenth day of the illness.

It is generally assumed that the oedema round the eyes in cases such as this is due to invasion of the muscles round the eyes by the embryo worms. If this is so, it is interesting that neither fever nor eosinophilia appeared until five days had elapsed after the first appearance of swelling round the eyes.

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Reviews

THE PSYCHONEUROSES

Dr. Millais Culpin has undertaken the by no means easy task of writing *Recent Advances in the Study of the Psychoneuroses*,[1] a book which is an addition to the well-known Recent Advances Series. The author formerly practised as a surgeon, and served as a surgical specialist during the war, at which time he became so impressed by the considerable incidence of psychoneurosis masquerading under the guise of organic disability of one kind or another that he was subsequently led to specialize in a branch of medicine which he felt to be one of fundamental importance. While, however, his professional interest has been deflected from surgery to psychopathology, it is evident that his attitude towards the problems of medicine has undergone no fundamental change, since (like the surgeon) he shows himself in this book to be primarily interested in the practical and clinical aspect of his subject rather than in its theoretical elaborations. Dr. Culpin holds the view, no doubt rightly, that the chief advances in our knowledge of the psychoneuroses have been the direct or indirect result of psycho-analytic discoveries. At the same time it has not been his aim to add to the already numerous expositions of psychoanalysis, and only sufficient reference is made to psychoanalytical principles and practice to make the general theme of this work intelligible, and to bring out their relationship to general medicine.

In the opening chapters it is shown how the great war provided a stimulus to the study of the psychoneuroses, especially since it was recognized that the war cases, though their symptoms were determined largely by immediate influences, offered nothing different from the cases in civil life. In the war patients it was found that a large proportion had a predisposition to psychoneurosis, but unfortunately no figures were available giving the prevalence of predisposition in the general population. Dr. Culpin has endeavoured to fill up this gap in our knowledge, and, together with Dr. May Smith, has investigated, on behalf of the Industrial Health Research Board, the incidence of psychoneurosis in 1,500 employees in various establishments, with a view to ascertaining the number of persons exhibiting psychoneurotic symptoms. The conclusions reached are somewhat disquieting, since it would appear that nearly 50 per cent. of the " normal " individuals examined were found to exhibit psychoneurotic symptoms in a greater or lesser degree. Fortunately it does not follow that nervous symptoms necessarily involve nervous *disability*, for Dr. Culpin found that one establishment had a high incidence of subjects with severe symptoms, and yet had a low absenteeism, in which nervous breakdown played no part. A chapter is devoted to the occupation neuroses, with special reference to telegraphists' cramp and miners' nystagmus. The author makes it evident, as Janet pointed out some thirty years ago, that the motor symptoms in the occupation neuroses should not be considered in isolation, as these are invariably associated with definite, though less evident, psychoneurotic symptoms. The book includes some interesting observations on the conditioned reflex and the physiological concomitants of emotion, and evidence is advanced in favour of the view that physiological disorders such as asthma, exophthalmic goitre, and various visceral disturbances may be the expression of unrecognized anxiety states.

The above outline of the author's treatment of his subject makes it evident that the book includes much that the general practitioner, as well as the psychopathologist, will find both interesting and helpful. Dr. Culpin is not responsible for the last four chapters. Independent contributions are written by Dr. A. R. Redfern on the individual psychology of Adler, and by Dr. James Young on the teaching of Jung. Child psychopathology and the management of a psychotherapeutic clinic are also treated separately by Dr. E. Miller and Dr. J. R. Rees, each of whom has had special experience in the subject upon which he writes. These additional articles are admirably written, and it may certainly be claimed that this book as a whole provides a useful outline of the " recent advances " in a branch of medicine of great social importance.

[1] *Recent Advances in the Study of the Psychoneuroses*. By Millais Culpin, M.D., F.R.C.S. London: J. and A. Churchill. 1931. (Pp. xi + 348. 12s. 6d.)

NOGUCHI THE MAN

Noguchi[2] is the title of a new book by Gustav Eckstein. So interesting a biography of a scientific man has not appeared since Vallery-Radot published his *Vie de Pasteur* in 1900. Dr. Eckstein has written it in a cramped style somewhat resembling that used by Carlyle. It is often ungrammatical, but is admirably suited to the subject, because it was years before Noguchi learned to speak or write even tolerable English, and his letters blend, therefore, admirably with the text of the story. The book is handsomely produced and well printed in sixty-five short chapters. The dates are those of the Japanese era, but in the summary on the dust jacket they appear according to the Christian reckoning. This is a pity, because the dust jacket will soon be destroyed, and the summary should have been printed and bound in with the book.

The story is an extraordinary one, and is well worth reading and thinking about. To the outside world Noguchi has been known as an early worker on snake poisons. These venoms led him to make and study serums with a view to immunity. Serology interested him in syphilis; syphilis led to spirochaetes and spirochaetes to tropical diseases. Perhaps his most important discovery was the relationship of general paralysis and tabes to syphilis. Hitherto he has been known as a skilled and indefatigable worker in the bacteriological laboratories of America and Denmark; but of his human side, of his hopes and fears and early struggles, nothing was known. Dr. Eckstein has made all clear, and has enabled us to form a lifelike picture of Noguchi the man.

Born in 1876 in dire poverty in a remote village in Japan, he was the second child of a drunken father, who deserted his family, and of an illiterate mother, who earned a scanty living by working in the ricefields, and who, later in life, became the village midwife. From her Noguchi received his mental gifts and his healthy body. Throughout his life he reverenced her, but did nothing to help, even in his days of comparative affluence. But she had her reward; for although she could neither read nor write, she knew that her son had won world-wide renown and had added lustre to Japan as a scientific nation. At the age of three years Noguchi was severely burnt while his mother was away at work, and his left arm was permanently crippled. Throughout her life she blamed herself for the accident, which, in reality, was the making of her son. Noguchi remained a peasant, fighting, as he often said, with his fists and not with the sword, as did the Samurai. Lustful, eating and sleeping how and when he could, untidy in his clothes and habits, secretive, servile and yet arrogant, extraordinarily " messy " in his work, he yet achieved great results by sheer pertinacity and a plodding addiction to the particular piece of work he had on hand. Of money and its value he had no sense at all, and like Ralph Bigod, Esq., of

[2] *Noguchi*. By Gustav Eckstein. New York and London: Harper and Bros.; London: H. Hamilton, Ltd. 1931. (Pp. ix + 419; illustrated. 18s. net.)

whom Charles Lamb wrote, he contrived to keep his treasury always empty by acting on the aphorism that "money kept longer than three days stinks." He was consequently always in debt and had no hesitation in borrowing again and again from those who had helped him repeatedly, well knowing that they would never be repaid. It seems to have been impossible to resist his applications when he wanted to go to China.

"The commission refuses to advance passage money. However, that is simple. He hurries to Chiwaki. But, alas the master has no money, has spent all on his marriage. Noguchi is immediately despondent. He is really a pitiful sight to look on. Chiwaki quiets him with telling him that somehow, he, Chiwaki, will find the money. The way Chiwaki finds it is to sell his wife's new bridal kimono. The sailing is for the following morning."

Is it surprising that the lady had no friendly feeling for him afterwards? Outside his laboratory Noguchi was a child, quick to take offence, but equally quick at reconciliation, fond of gambling, and often drinking to excess. Dr. Eckstein gives a picture of this side of him in the following words:

"Sometimes it is necessary to ask Noguchi to watch the boiling rice. Araki does not like to do so but Noguchi is always willing, brings his chair into the kitchen, puts the chair in front of the gas-range and props up his feet and continues to read. Suddenly he turns to Araki. What is the smell? He seems never able to grasp that the smell could come from the burning of the rice that he is watching. Araki snatches the cover off the boiler. Noguchi looks in. He shakes his head. 'Yes, it's gone. We go out to eat.' He always uses the same words and both get their hats, leave the kitchen as it is, go always to the same Japanese restaurant, a cheap place. As soon as the waiter sees who is coming he begins to serve, never asks Noguchi what he wants because Noguchi always wants the same thing. Sometimes Noguchi does not say one word, not even in the beginning for politeness, right away opens his book, puts it next his plate and Araki does not disturb him. Yet Araki cannot help noticing how Noguchi eats, because that is peculiar. He pokes his fork towards his plate, has no idea what he is poking at, but whatever is at the end of the fork he puts into his mouth. And when he is using chopsticks it is remarkable to carry rice with chopsticks from a bowl you do not see."

Dr. Eckstein makes Noguchi and friends tell the story in their own words, and secures a remarkable picture, the picture of a highly gifted child, lovable because he was so irresponsible, who died on May 21st, 1928, at the age of 52.

CLINICAL INTERPRETATION OF LABORATORY FINDINGS

Studies at the bedside and studies in the laboratory have each their part to play in the arts of diagnosis and treatment, and while they are sometimes presented as rivals their true relation is that of mutual helpfulness. It is from this standpoint that Dr. Michael Wohl has written his book, *Bedside Interpretation of Laboratory Findings*.[3] He neither hopes nor attempts to make every practitioner an expert in the more complicated chemical and biological tests, but he urges that at least the more simple investigations should be undertaken by the practitioner, and that certainly the significance of all laboratory reports should be appreciated by the clinician. He therefore includes in his pages many procedures which were among the commonplaces of bedside study before laboratory medicine made its appearance, such, for example, as the microscopical examination of the blood, and the chemical testing of the urine. That such investigations should now be frequently referred to the laboratory is the responsibility of the clinician, and perhaps also of the clinical teacher, and Dr. Wohl wishes to counteract this practice. Here he is supported by the practical and common-sense "Introduction" written by Professor Joseph McFarland, who points out that a personal observation by the physician in charge of the patient is much to be preferred to a "report" from a non-interested observer. He adds, too, the warning that at the best a "report" is not a diagnosis, but only a contribution to a diagnosis, and that, like other observations and conclusions, this also is not infallible.

Dr. Wohl has kept his ambitions steadily in view through all the chapters of his book, and has certainly attained a large measure of success. He speaks from his own experience in relation both to laboratory methods and to clinical meanings, and carefully avoids inflicting on his readers alternatives which are unnecessary, and which are apt, moreover, to be confusing. The practitioner who wants to cultivate a modest measure of personal laboratory work as supplementary to his clinical responsibilities may consult Dr. Wohl's pages with advantage.

MODERN TREATMENT OF NASAL CATARRH

A valuable addition to the Modern Treatment Series has been contributed by Dr. Lowndes Yates on *The Modern Treatment of Nasal Catarrh*.[4] The solution of the many problems which present themselves is sought on strictly scientific lines by an investigation of the underlying pathological and anatomical conditions. Although the book is intended as a guide for the practitioner in the management of this common ailment, it is by no means a mere compilation of current opinions, but includes a large number of original observations, the result of much patient research by the author, who modestly conceals the fact. Dr. Yates has devoted much time and work to the investigation of the pathological changes which occur in the nose and accessory sinuses during and as the result of inflammatory states. He gives a complete account of this work, which provides a solid basis for appropriate treatment. There is in consequence much in this book which cannot be found in the usual works of reference, and it should be useful to the specialist as well as to the general practitioner. The chief lesson which Dr. Yates has to teach is that the best means of treatment are not always operative, and he shows clearly how much harm can be done by an excess of surgical zeal in relieving obstructions and draining infected cavities. The relation between local and general immunity and the occurrence and control of nasal infections has been elaborately studied, and although much remains to be elucidated, the author shows that an important advance has been made towards a proper understanding of these obscure problems. No attempt is made to provide a complete survey on rhinology, but from the angle at which the subject is approached the author has fulfilled his limited task with thoughtfulness and originality. The criticisms we have to make are that there is unnecessary repetition and that there are many long involved sentences unbroken by a comma, both suggesting insufficient revision of the text.

FRENCH CLINICAL LECTURES

A second volume of the Thursday morning lectures at the Charité Hospital, Paris, has been issued under the title of Modern Clinical Questions (second series),[5] with a short introduction by Professor Émile Sergent, in whose department the eighteen lectures have been given by colleagues in other clinics or assistants at the Charité, and they represent the trend of modern French medicine. Two lectures on asthma give a good account of the subject from certain special points of view. Dr. Haibe of Namur considers

[3] *Bedside Interpretation of Laboratory Findings.* By Michael G. Wohl, M.D. With an introduction by Joseph McFarland, M.D., S.D. London: H. Kimpton. 1931. (Pp. 321; 133 figures. 25s. net.)

[4] *The Modern Treatment of Nasal Catarrh.* By A. Lowndes Yates, M.D., F.R.C.S.Edin. The Modern Treatment Series. London: J. Cape. 1931. (Pp. 160. 5s. net.)

[5] *Questions Cliniques d'Actualité.* 2e série. Paris: Masson et Cie. 1930. (Pp. 343; illustrated. 45 fr.)

bronchial asthma in adults as due to bacterial antigens, and he claims 90 to 95 per cent of cures by vaccine therapy. Dr E. Lesné, dealing with this disease in childhood, is not so optimistic, and he gives a well-balanced account of the special features of the disorder in this period of life. Dr R. Mignot deals with the use of insulin in maladies other than diabetes, and he produces a surprisingly long list of suitable types of treatment. These examples serve to indicate the scope of the book, which well carries out the purpose of introducing these well-known lectures to an even larger audience than can find their way to the famous amphitheatre.

In Medical and Surgical Actualities[a] the younger generation of the medical staff of the University of Marseilles have collected sixteen of their clinical lectures, very much in the same fashion as have their Parisian colleagues. An account of the anaemias of early infancy by Dr. G. Sesques, and a critical review on the subject of hydronephrosis by Dr. C. Lahayville, are among the best of the contributions, which all reach a good standard of interest.

NOTES ON BOOKS

The second edition of *Cremation in Great Britain*,[b] prepared by the Cremation Society, is an authoritative and comprehensive account of the subject in its historical, legal, and technical aspects. The contents include the full text of the regulations for carrying out cremation, a detailed and illustrated description of each of the twenty-two British crematoriums, and architectural and engineering sections, with plans, diagrams, and articles, to aid local authorities and town-planning bodies. Special attention is paid to the changes in method and technique that have been recorded since the first edition of the volume was published in 1909. Of much interest to the medical profession is a carefully compiled bibliography, which starts with Sir Thomas Browne's *Hydriotaphia* (1658) and concludes with Miss Fidler's book on cremation, reviewed in these columns last year.

Miss BARBARA LOW has translated into English four lectures by ANNA FREUD, comprising an *Introduction to Psycho-Analysis for Teachers*.[c] These lectures were delivered in Vienna, to teachers primarily concerned with children between the ages of 6 and 14, and they deal from the Freudian standpoint with infantile amnesia and the Oedipus complex, the infantile instinct life, the latency period, and the relation between psycho-analysis and pedagogy. The work of translation has been well done, and the book, which is usefully indexed, comprises a simple but practical exposition of the outlines of the psychological development of children.

The *Unorthodox Reminiscences*[d] of Sir GEORGE TURNER, consulting surgeon to St. George's Hospital, are a mine of good stories about men in various walks of life, contain much about sport and racing, and, indeed, fully correspond with his dictum that "it is too absurd to think that a surgeon has no time except for his profession." He entered the Medical School of St. George's Hospital in 1873, at a time when for students "the tall silk hat was *de rigueur*, and woe betide any student who came up to the Corner' in a bowler. The offending hat was used as a football. He prescribes punching a ball and riding a home trainer, he has been in many accidents, having done "everything that was possible in this line in hansom cabs." The last chapter, on his service as temporary surgeon rear admiral in the war, shows that he had many interesting experiences, and confesses that he was sometimes "more than outspoken." In the preface he perhaps flatters himself by saying that he is "endowed with the gentle art of making enemies," but his reminiscences will certainly attract many readers.

Reference has been made more than once in the pages of the *Journal* to the work of Sir J. C. Bose on plant-physiology. He has now published a small volume[e] of the Transactions of the Bose Research Institute of Calcutta, placing on record the results of recent researches by himself and his scholars dealing with the problems of the ascent of sap, rhythmic pulsation, and the transmission of impulses under varying conditions. There has long prevailed a consensus of opinion that the rise of sap in plants is a purely physical process depending on root-pressure, supplemented by backwardly transmitted suction caused by transpiration from the leaves. Sir J. C. Bose's experiments seem to prove conclusively that there is a mechanism of sap propulsion independent of both of these physical factors, and that the ascent of sap is as truly a physiological process as the propulsion of the blood in animal physiology. Thus he has shown that the ascent of sap may occur in a stem which has been detached from the root, and also when transpiration has been eliminated by coating the leaves with vaseline. The direction taken by the sap is determined by the situation of the point of maximum cell-activity in the portion of stem experimented on, propulsion being in the direction away from this point. It is possible, therefore, to reverse the direction of the sap if the application of the stimulus is changed from the bottom to the top of the stem. The precise mechanism by which propulsion is effected has been demonstrated in the author's previous work. It is due to a peristaltic wave of cell-activity progressing along the whole length of the stem from the point of stimulation, and, being dependent on protoplasmic changes, it can be arrested by the application of protoplasmic poisons and depressants. Sir J. C. Bose's simple but beautiful and extremely delicate experiments on plants are well known, and many additional applications of them are described in the present interesting volume.

In his essay on the Causes of the Pforzheim Typhoid Epidemic of 1919,[f] which forms the tenth instalment of the Pettenkofer memorial volume, Dr FRIEDRICH WOLTER, director of the Hamburg Research Institute for Epidemiology, comes to the conclusion that this epidemic, the greatest which had hitherto occurred in Germany, cannot be explained by infection through water, milk, food, or contact according to Koch's doctrine, but can only be accounted for by Pettenkofer's theory of periodic climatic factors acting on a contaminated soil.

[a] *Actualités Médico-Chirurgicales*. Par les Chefs de Clinique de la Faculté de Médecine de Marseille. Préface du Professeur Léon Imbert. Paris: Masson et Cie. 1930. (Pp. 342. 55 fr.)

[b] *Cremation in Great Britain*. Edited by P. Herbert Jones, M.C., B.A., and George A. Noble, F.I.S.A. Second edition. London: The Cremation Society. 1931. (Pp. 160, illustrated. 3s. post free.)

[c] *Introduction to Psycho-Analysis for Teachers*. Four lectures by Anna Freud. Translated by Barbara Low. London: G. Allen and Unwin Ltd. 1931. (Pp. 117. 3s. 6d. net.)

[d] *Unorthodox Reminiscences*. By Sir George Turner, K.B.E., C.B., F.R.C.S. London: J. Murray. 1931. (Pp. xv + 343, 9 illustrations. 15s. net.)

[e] *Life Movements in Plants*. Edited by Sir Jagadis Chunder Bose, D.Sc., LL.D., F.R.S., C.S.I., C.I.E. London and New York: Longmans, Green and Co. 1931. (Pp. xi + 211, 83 figures. 18s. net.)

[f] *Die Entstehungsursachen der Pforzheimer Typhusepidemie von 1919 in Rücksicht auf die Koch'sche und die Pettenkofer'sche Auffassung der Typhusgenese*. Von Dr. Friedrich Wolter. München: J. F. Lehmann. 1930. (Pp. 71. 6 tables.)

PREPARATIONS AND APPLIANCES

GLUCOSE D

Glucose D, issued by the Glaxo Laboratories, 56, Osnaburgh Street, London, N.W., is a high grade powdered glucose (98 per cent.) to which is added ostelin vitamin D and an easily assimilable calcium phosphorus compound. The makers claim that each ounce of the product contains the vitamin D equivalent of more than a pint of milk and the calcium equivalent of about half a pint of milk. One of the difficulties in invalid feeding is that an otherwise suitable diet may be very deficient in vitamins. The vitamin D and calcium added to this dextrose are not intended to provide medicinal doses of these substances but merely to help to replace any reduction in daily intake that may be occasioned by special dietary modifications, such, for instance, as the low fat diet necessary in acidosis.

THE STATE OF THE PUBLIC HEALTH

SIR GEORGE NEWMAN'S REPORT

[Second Notice]*

The year 1930 presented nothing of unusual interest for the epidemiologist. Even in respect of influenza it was one of the "between years," for while the severe outbreak of 1929 was followed by a milder outbreak in the early part of 1931, the intermediate year registered fewer deaths (5,019) from this cause than any year since 1911. During the first quarter of the present year the deaths numbered 9,384. Recent recrudescences of influenza have had their maximum in the age group 55–75, whereas in the epidemic of 1918 it was the younger age groups which accounted for by far the larger mortality. Wales was the most seriously affected area in 1931, and the least seriously affected in 1929.

Common Infections

Small-pox (variola minor), which continues to be of a mild character, showed an increased prevalence during 1930 in London and in one or two parts of the provinces. The total number of small-pox cases was 11,839, with 28 deaths. During the first half of the present year 4,570 cases were notified, with 8 deaths. Sir George Newman states that an examination of the behaviour of the disease during the ten years in which the minor type has been prevalent suggests that the number of cases in an area where vaccination and revaccination are not readily accepted, and where, therefore, it has succeeded in establishing itself, tends to increase to a maximum in the fourth and fifth year of incidence, after which it declines. If the present downward trend of incidence is maintained there is hope that the country may be relieved during the coming winter of the incubus of weekly infections which have ruled during the last decade.

Notifications of enteric fever (including paratyphoid) were slightly higher than in 1929—2,952 cases as compared with 2,835. Many practitioners, it is stated, fail to take advantage of the facilities gratuitously provided by the local sanitary authorities for bacteriological aid in diagnosis. A rise of 10,000 in the number of cases of diphtheria was not accompanied by a corresponding rise in the number of deaths, so that it is reasonable to hope that the large increase is due in part to greater care in the notification of mild cases. The type of disease has varied in severity in different outbreaks, but there is nothing to indicate that it has failed to respond to antitoxin given early and in sufficient dosage. Scarlet fever showed a noticeable fall in the number of notifications, with a very slight rise in deaths. Deaths from measles were slightly higher than before, and reference is made to the increased frequency of nervous complications in this infection. A few cases of undulant fever originating in this country have been reported, four of them concurrently in a South Coast town, where the probable source of infection was milk. The outbreak of psittacosis died away in the spring of 1930, after the prohibition of importation of parrots, but in October a group of three cases was reported from North Wales.† So far as is known, only one case of indigenous malaria occurred in England. The number of cases of dysentery notified was 538, and 97 cases proved fatal. The decline in the notifications of encephalitis lethargica, which has gone on uninterruptedly since 1924, continues, as does the decline in poliomyelitis and polio-encephalitis, but the number of cases of cerebro-spinal fever has gradually increased each year since 1923, and a similar increase has been recorded in other countries. Among epidemics in schools attention is drawn to an outbreak of epidemic catarrhal jaundice in a boarding school of 400 boys in a West Country town—the first such epidemic on a large scale in a public school.

The Growing Incidence of Cancer

The number of deaths recorded as being due to cancer again shows an increase. The total in 1930 was 57,882, as against 56,896 for the previous year. It is equivalent to a death rate of 1,454 per million persons living. The number has steadily increased year after year. In 1926 the rate was 1,362; the average for the five years before that was 1,269. The tendency to regard the annual increase of mortality as evidence of a growing inability to control the disease may be natural, but it is pessimistic. If it be true that a fraction of the increase is a natural consequence of the higher average age at death, and that another fraction is the result of greater diagnostic ability to recognize the disease, especially in the organs more deeply seated, it is clear, says Sir George Newman, that in the absence of some striking improvement in the methods of treatment, an annual increase of recorded mortality should not be received with surprise or dismay, and (bearing also in mind the long interval elapsing before the preceding pathological condition develops malignancy) may actually be expected for some years to come. Some observations from Scotland are cited which suggest that approximately three-quarters of the recorded increase in recent years can be ascribed to ageing of the population, and the remainder of the increase, with the exception of breast cancer, to better recognition of the disease.

Of the 26,284 deaths of males from cancer in 1929, 6,116 were from cancer of the stomach, 3,413 from cancer of the intestines, with a further 2,770 from cancer of the rectum. The site of next greatest frequency was the prostate, with 1,430 deaths. Of the 30,612 deaths of females, cancer of the uterus, of the ovary and Fallopian tube, and of the vagina and vulva, accounted for 6,022; of the breast, 5,944; of the stomach, 5,190; and of the intestines, 4,394. Cancer of the breast shows a real tendency to increase, cancer of the uterus a slight tendency to decline. There is no evidence, says Sir George Newman, of the association of genital cancer with multiparity; the real distinction is between women who have borne no children and women who have borne one or more. Clinically it has long been accepted that cancer of the cervix uteri tends to appear in lesions arising in the organ during childbirth, and the fall in mortality is reflected in the incidence, which in its turn is associated with improved care of the pregnant and parturient woman. The main problem of the causation of cancer is evidently not one and indivisible; there is a separate problem for each organ affected.

Tuberculosis and other Diseases

The figures relating to tuberculosis as a whole in 1930 were the lowest ever recorded in this country. The number of persons dying from all forms of tuberculosis was 35,745, as compared with 37,990 in 1929, and 36,623 in 1928. The deaths from pulmonary tuberculosis were 863 per million of the population among males, and 623 among females. All ages and both sexes share in the general decline. It is estimated that tubercle bacilli of human origin are responsibile for 50 per cent. of the deaths from tuberculosis in early childhood. Attention is drawn in the report to three interesting developments of after-care work now in progress: the residential provision for ex-patients at Fazakerley Sanatorium, Liverpool; the Sheffield scheme for the rehousing of tuberculous patients and their families; and the Burrow Hill Sanatorium Colony, for the treatment and technical training of youths. An alteration in the clinical type of pulmonary tuberculosis during the last twenty years is

* The first notice of the Annual Report of the Chief Medical Officer of the Ministry of Health for the year 1930 appeared in the *Journal* of September 26th (p. 581).

† *British Medical Journal*, 1930, i, 887.

noted. There is a tendency for the disease to proceed less rapidly to a fatal conclusion, persisting with little toxaemia and few constitutional symptoms. The need for examination of the larynx in all cases suspected of pulmonary tuberculosis is the subject of a special note.

Venereal diseases are now treated at 190 centres, which last year dealt with 69,445 cases, together with 31,104 cases which were other than venereal. The number of cases for the first time dealt with showed a slight increase on the previous year, both in men and in women. Mention is again made of the low proportion of women with gonorrhoea dealt with at the centres. While the ratio of males to females in syphilis is about 1.8 to 1, that of males to females in gonorrhoea is 3.9 to 1, indicating that gonorrhoea is ignored by females even more than is syphilis. It is evident that, in the absence of a specific remedy for gonorrhoea, analogous to the arsenobenzene treatment for syphilis, the most hopeful line of attack on the incidence of gonorrhoea is much more intensive propaganda among women, with the object of inducing them to resort more freely to skilled treatment, and a great increase in facilities for intermediate treatment. There is a general impression that medical officers are still under-treating syphilis.

Under the heading of "rheumatism" Sir George Newman discusses the prevention of the acute condition in childhood as one of the new ideals of the public health service.

Food and Poison

An interesting section of the report is devoted to nutrition. Sir George Newman is of opinion that the nutrition of the people, notwithstanding the improvements of recent years, leaves much to be desired. There is still much apathy and ignorance in the choice of foods, often associated with deplorable cooking. "It is not too much to say that our national capacity for work and output is impaired by unsatisfactory nutrition." There is a widening sphere for investigation into the relation between nutrition and capacity for work, and between defects of nutrition and disease. It will be recalled that the Minister of Health recently appointed a committee, under the chairmanship of Professor Major Greenwood, to advise on the practical application of modern advances in the knowledge of nutrition.

A good deal is said in the report about milk. In the absence of any practicable means of completely eradicating tuberculosis from the herds, proper pasteurization, the report declares, affords a solution of the difficulty, and supplies a means of rendering safe the ordinary milk supply. As to whether pasteurization affects the nutritive value of milk, any alteration which could be produced by pasteurization could not be otherwise than small, and for ordinary purposes of nutrition negligible, when offset against the immense advantage of safety which pasteurization ensures.

An account is given of poisoning outbreaks, and of the cases of adulteration and contamination of food which have occupied the attention of the officers of the Ministry during the year. There were twenty-five outbreaks of food poisoning in 1930, which were responsible for 292 cases of illness and 16 deaths. The majority of these outbreaks were confined to families, or even to individuals, suggesting that food infection is at least as likely to occur in the domestic kitchen or larder as in the wholesale or retail shop or restaurant. Only one outbreak had an extensive incidence. This was due to contaminated meat pies prepared in a wholesale factory.

Administration of Public Health

The working of the Local Government Act, 1929, is the subject of extended reference. In speaking of the replacement of part-time medical officers of health by whole-time officers, Sir George Newman says that it must inevitably be some time before whole-time appointments can generally be secured throughout the country. Out of 1,200 medical officers of health in the country, only 375 are whole-time. But Section 58 of the Act means the ultimate passing of the part-time officer. Hitherto whole-time appointments have been mainly in the counties, county boroughs, and larger centres of the urban population; in the future, smaller urban and rural districts will come within this category. Hence the necessity of securing that the development of the services in the new conditions shall be such as will attract suitable candidates to a professional career.

It is also stated that progress has been made in the much-desired co-ordination both of public health services within the area and of hospitals—municipal and voluntary. Sir George Newman stresses the need for the fullest consultation between the local authority and the medical profession in regard to the usage of all the hospitals of the area in the public interest and for the benefit of the sick.

"Both types of hospital are desired and required, both will remain with us; what is needed is that they shall both be organized and administered together, to the maximum utility and advantage."

Finally, he returns to the national health insurance service—the front line of preventive, ameliorative, and curative medicine. As a scheme of organized general medical practice he admits that it is neither perfect nor complete. The war and its social aftermath gave it little chance. But as compared with the earlier club and contract practice—which is the long-distance comparison to make—there has been great gain. The large majority of the practitioners of England and Wales have elected to serve the community in sharing in this form of organized medical practice; the arrangements effectually bring the doctor and patient together on favourable terms, and the patient is receiving more, better, and earlier treatment than he did formerly.

"It is perhaps hardly too much to say that the principle of insurance has been introduced to our national life with a speed, zeal, and width of social application which is almost overwhelming Let us give it more time. Year by year the five partners in national health insurance—the insured person, the employer, the doctor, the approved society, and the Exchequer—are learning where the shoe pinches, where economy is necessary, and where extension practicable."

Insurance practice is the outpost of the attack against disease. By co-operating actively with his colleagues in the public health service in ensuring early notification, prompt isolation of infectious cases, disinfection, special treatment for cardiac conditions, cancer, tuberculosis, venereal disease, by his advocacy and practice of antenatal supervision, by his general advice on health and well-being, in a score of different ways the insurance practitioner is constructively and educatively applying medical benefit to the prevention of disease, alike by removing or lessening its primary cause, and by preventing and reducing its sequels. He is, in fact, "an integral part of a national organization of preventive medicine"

The Board of Education has published a booklet, entitled *Secondary School Buildings*, which contains suggestions for the planning of new buildings of this kind, and replaces the last issue of regulations, which appeared in 1914. The conclusions are based on discussions between the officers of the board and the officers and architects of local education authorities and Government bodies. The new publication deals in detail with such topics as the sizes and sites of schools, general planning and accommodation, ventilation, heating, and artificial lighting, water supply; and the arrangements advisable in institutions with boarders. The treatment of all these subjects is essentially practical. The booklet may be obtained from H.M. Stationery Office, price 1s. 6d.

British Medical Journal

SATURDAY, OCTOBER 10th, 1931

COMMON INJURIES OF THE KNEE-JOINT

The paper on the diagnosis and treatment of common injuries of the knee-joint, with which Mr. Naughton Dunn opened the session of the Orthopaedic Section at the Annual Meeting at Eastbourne, presents in succinct form a good survey of the subject, with an authority which only wide experience and careful observation can confer. In his introductory sentences he remarks on the difficulties of accurate diagnosis, and assigns these difficulties to their probable cause. Although the knee-joint is subcutaneous in three-fourths of its circumference, and might therefore be supposed to be easy of examination, yet many of the important structures that take part in its mechanism are beyond the inspection of the surgeon's eye or the palpation of his fingers. Of the twelve bursae that are described as connected with or in relation with the joint, only four are directly exposed to examination. Even when explored by incision, only a small part of the joint structures can be seen at a time, and it is not possible, without unjustifiable interference, to get a complete view of the whole. In such circumstances it is not surprising that out of the 522 consecutive cases with which Mr. Dunn dealt no fewer than 147 had to be classified as "indefinite" lesions. Sir Robert Jones and other speakers in the debate which followed the paper stated that in this respect their experience was similar. A large number of these cases of pain and limitation of movement following injury were no doubt due to adhesions; others, as Mr. Dunn suggests, were cases of subacute infective arthritis. Even when these cases were eliminated there remained a residue to which no cause could be assigned.

Much has been heard about the triumphs of manipulative surgery—as it has been called, to distinguish it from the surgery of the knife—though, as a matter of fact, all surgery is manipulative in the larger sense of the word. The kind of manipulative surgery which attracts so much public notice often has its greatest successes in the hands of those who have not chosen to lay the foundations of their skill by the study of anatomy, physiology, and pathology. Defined as Mr. Dunn defines it, as "ensuring the normal range of movement in a joint in any position," manipulative surgery may be of great value, and fully deserves his recommendation. As a means of cure of a displaced and locking knee cartilage, it has no permanent value. In this connexion Mr. Dunn's remark is of interest—namely, that 90 per cent. of the professional football players on whom he has operated had at some previous time been treated by bone-setters. No doubt a number of these were at the time claimed as triumphant successes for unqualified practice. Familiarity has dulled the edge of our wonder that structures of such apparent anatomical importance as the knee-joint menisci should be so easily dispensed with—structures, too, which have none of the characteristics of developmental relics. So many years have passed, during which so many knee cartilages have been removed, that there has been plenty of time for the production of end-results. It would be interesting to know the conditions twenty years after removal of a cartilage in a large number of knee-joints. Are such joints more liable or less liable to arthritis than their fellows, whether one or both menisci have been removed? Professional football players are admittedly prone to internal derangement of the knee-joint. It is, however, instructive to note that of the sixty-five players whose cases are included in these statistics, only one-half suffered from dislocated cartilage, thus roughly agreeing with the proportionate occurrence of such injuries among the total cases—namely, 250 in 522.

The diagnosis in these cases is classified under twenty-one headings, so diverse are the ways in which the knee-joint may be injured; but when the lesions of menisci, of the lateral ligaments, and loose bodies and indefinite lesions are excluded, only sixty cases of different kinds remain. Among these sixty cases, however, are many of importance and interest, illustrating the variety of conditions which it may fall to the lot of an orthopaedic surgeon to treat. In one respect Mr. Dunn's experience differs from that of most authorities—namely, in the relative frequency in his cases of lesions of the internal and of the external cartilages. All observers are agreed that the internal is more often affected than the external, but most authorities put the ratio between them at 1 to 7, whereas his figures were 1 to 2½. Whatever may be the explanation of this discrepancy, his figures are more than borne out by his operation statistics in professional football players, which show that in eighteen cases the external cartilage was operated on, and the internal in twenty-six, giving a still more striking approximation to equality of numbers for the two cartilages.

The subject could not be dealt with in all its aspects in the time allotted to it, and therefore the speaker confined his remarks to the operative treatment of knee lesions, saying practically nothing of the use of splints, radiation, or of heat or cold, and giving only a paragraph to manipulation. Among the lessons to be learnt from this paper is that thoroughness in operations on the knee is all-important, and that there is no certainty as to the condition of a meniscus until it has been exposed and examined, nor when one has been removed is it safe to assume that its fellow is in normal condition. Lesions of the lateral ligaments are usually serious injuries, not only on account of the damage to the ligamentous band itself—though that is not to be treated lightly—but also because of the extensive damage which may at the same time have occurred to the adjacent parts. Complete rupture of the external lateral ligament generally calls for suture,

but many surgeons will agree with Mr. Dunn that suture of the anterior crucial ligament is seldom likely to prove effective permanently. The history given of two cases of probable strain of the internal lateral ligament and suspected cartilage displacement, which were treated conservatively, is instructive. Both these patients, it is remarked, were able afterwards to play first-class football.

WHAT IS LIFE?

Dr. John Haldane of Oxford occupies a unique place in the medical world: he is a philosopher as well as a physiologist; he has made abiding contributions of the highest importance to our knowledge of the living animal body. When he expounds to us, as he does in his latest book,[1] which is an extension of the Donnellan Lectures, given in the University of Dublin last year, the conception he has formed of the ultimate nature of life, we are bound to listen to him with the most respectful attention. Nay, most of us will desire to agree with him rather than to differ from him. Of one thing he is certain: the ultimate problems of life, the essential nature of living matter, can never be solved in terms of physics, chemistry, or mechanics. As a man of science he admits that his own discoveries, and all the great advances made by physiologists in recent times, have been made just because he and they have applied to the study of life the precise methods of the physical, chemical, and mechanical laboratories. As a philosopher he maintains that these methods, although they will continue to throw light on living processes, will never explain the mystery which underlies them. "Never" is a dangerous word, even in the mouths of philosophers. How often has the apparently impossible been attained by men with even an imperfect conception of time and space and matter.

We are grateful to Professor Haldane for laying before us a clear description of the picture which rises in his mind when he is confronted with matter in a living state. It is very different, for instance, from that which rises in the mind of Sir Oliver Lodge. Sir Oliver believes that life is something which seizes and uses matter for its manifestations—an entity separable from matter. Professor Haldane adopts, what seems to us a more reasonable interpretation of appearances, the belief that life is inseparable from matter, that life is matter existing in a superphysical state. This superphysical state of matter (protoplasm, for example) is made manifest by certain powers—the power to reproduce, to build up structures, to maintain them, to repair them, and to co-ordinate all transformations of energy in order that some particular purpose or end may be accomplished. Matter in its ordinary physical states is devoid of such properties. Although Professor Haldane refuses to believe that the methods of physical and chemical research will ever explain the secrets of living matter—matter in a superphysical state—he cherishes a lively hope that some day there may come into being a knowledge of superphysics, and that biologists, with this new system of knowledge at their disposal, will swallow up the descendants of Einstein. At the present time physiologists go to the chemist and physicist for methods and inspiration. A glance at present progress in our knowledge of animal and human physiology makes it abundantly clear that every advance in the physical laboratory has its repercussion in the biological laboratory. If Professor Haldane's philosophy leads him rightly then a time will come when the physicist will go to the biologist to obtain enlightenment on the ultimate constitution of matter and for an understanding of what lies behind this mysterious universe of ours. To say, as Sir James Jeans has it, that our universe is a "thought" leaves us little wiser, for it is easier to form a mental picture of a universe than of a thought.

Living matter—if we have interpreted Professor Haldane's text aright, for on this aspect of his philosophy he is less explicit than he might be—can pass into a still higher or more specialized state than the one just described as superphysical. Living brain tissue, which manifests consciousness—has powers of memory, retrospection, and anticipation—is in a supra-superphysical state. For the interpretation of living matter in a state of consciousness Professor Haldane refuses to believe that chemist or physicist can give any light whatsoever. Biological methods of inquiry may help in the analysis of the phenomena of consciousness, but for the ultimate solution of the problem of sentient tissues there is no mode of approach—save philosophy. These are early days; science is still young; so is philosophy. If one might hazard a guess it would be to promise success to those humble beings who approach the problems of conscious living matter with earthly instruments rather than to those who seek to unveil them by a heaven-born philosophy.

As already indicated, *The Philosophical Basis of Biology* is based on the Donnellan Lectures. In these lectures we meet with our philosopher in a spirit of revolt—a revolt against the complacency which grew up in the minds of physiologists in the latter part of the nineteenth century, when they felt confident that all the processes of life would ultimately be interpreted in terms of physics and chemistry. The success which attended the efforts of those who approached the problems of life under this belief led them to minimize the extent of the field which remained untouched and unsolved. Professor Haldane's aim in these lectures is to compel physiologists to realize the extent of the field which lies outside the limits of their endeavours. His philosophy has led him, we think, to exaggerate the obstacles confronting the modern investigator. He has done well, therefore, to add to his lectures an appendix in which he reviews criticisms directed against his philosophy. He has met with a worthy champion of the modern methods of investigation in Professor L. Hogben, who, in his *Nature of Living Matter*, has extolled Professor Haldane as an investigator, but

[1] *The Philosophical Basis of Biology*. By J. S. Haldane, C.H., F.R.S., M.D. London: Hodder and Stoughton, Ltd. 1931. (7s. 6d. net.)

criticized him as a philosopher. We confess that in this matter our sympathies are with Hogben rather than with Haldane, and anyone who desires to know the criticisms which Professor Haldane would bring against the opinions we have expressed here will find them in that part of the appendix where he defends himself against Professor Hogben's attack. Whether we agree with Professor Haldane or differ from him on a particular issue our admiration remains the same for what he is and for what he has done.

MATERNAL MORTALITY

It is probable that the section of the annual reports of the Chief Medical Officer of the Ministry of Health which has attracted most widespread attention during the last few years has been that dealing with maternity. The public are becoming more and more familiar with the statistics of maternal mortality and puerperal sepsis, and it is not uncommonly held to be a reproach to obstetricians, general medical practitioners, midwives, maternity nurses, and public health medical officers, that in England and Wales these stand at over 4 and nearly 2 respectively per 1,000 live births registered, and that there has been no material alteration of these figures for a considerable number of years. In our abstract of Sir George Newman's report on "The State of the Public Health" for 1930 (September 26th, p. 581), the relative importance of this subject is fully emphasized, and an aspect of the matter to which we drew attention in an article on the corresponding report for 1929 (November 15th, 1930, p. 831) and which Sir George Newman now makes prominent in his new report, is referred to. It is this: that the relatively high incidence of maternal mortality in the whole country is largely due to the abnormally high incidence in two compact areas—Wales and the Northern Counties of England. If the rate of maternal mortality in these areas could be brought down even to the present average of the country as a whole, it is safe to say that that average would then be a cause of satisfaction rather than of reproach, though even then there would no doubt remain some particular authorities in whose areas the need for further effort would be apparent. Maternity has sometimes been described by those whose object has been to startle and alarm (no doubt with a good ultimate aim) as the most dangerous of dangerous occupations. This is not true of England generally, though it may not be wholly untrue of certain limited areas. It seems all the more necessary to insist that in these special areas more attention shall be paid to this matter, and more strenuous preventive efforts made. As Sir George Newman says with truth, "it is seldom fair to judge the maternal mortality of an area from the figures of any one year. The numbers are small in themselves, and an outbreak of sepsis or unexpected emergency cases may raise the rate temporarily. . . . But there are certain towns and districts which constantly have a maternal mortality rate considerably above the average for the country as a whole, and in any list of a dozen or twenty places where maternal mortality is highest the names of certain towns recur year after year." A list of eighteen such towns, in respect of the years 1923–29, appears in the report. They are all (with the exception of Plymouth) in Lancashire or the West Riding of Yorkshire, or on the very borders of those counties. It may be noted that of the two border towns Darlington (Durham) has jumped in 1930 from an average rate of 5.16 to the rate of 13.15, the highest in England; and Stockport (Cheshire) has fallen from an average rate of 5.3 to a rate of 1.7—amongst the lowest of those recorded last year. It would be interesting to have an explanation of this. The report suggests that in all, or almost all, these areas with a continuously higher mortality rate there is "apparent apathy" on the matter. We hope it will not long be possible for such a charge to be made with any justification.

POLIOMYELITIS

In a comprehensive review of the chief characteristics of poliomyelitis since the emergence of this infection from its endemic home in Norway and Sweden twenty years or so ago, and its subsequent spread over the world, including parts of the Tropics, Dr. Simon Flexner[1] of the New York Rockefeller Institute suggests that there has become discernible a natural process of immunization which may ultimately eradicate the disease. Northern America has latterly been suffering disproportionately, and Dr. Flexner attributes this to its population having been hitherto less exposed than the European nations to the infection, with a consequent lack of opportunity for the development of immunity. The infective organism in poliomyelitis is transmitted by the secretions of the nose and throat of carriers, as well as of infected cases. It is known that some persons harbour this organism for a time without any symptoms of disease, although a permanent immunity is gradually developed in them. Two small isolated outbreaks in New York State during the last few years were traced to milk, apparently a far more rare route of infection; they were characterized by their restricted extent and the rapid succession of the cases for a brief time, after which there was complete, or nearly complete, cessation. Subsequent immunity to this disease has been shown to depend on the presence in the blood of a substance which prevents the organism from causing the disease again. The serum of such a protected person, when injected into patients in the first stage, aborts the disease—the basis of the convalescent serum treatment of Professor Netter. The early investigations in the United States, by Anderson and Frost in 1911, led to later studies on a larger scale by the Harvard Poliomyelitis Commission under Dr. Aycock; these have indicated that such a preventive process seems to be proceeding steadily, and to promise a general eradication of the infection. Thus in childhood —when the disease reaches its highest incidence—little protection is discernible; from the age of 10 upwards the degree of protection rises, and susceptibility declines. The number of protected adults increases proportionately with increased exposure to the infection; it is, hence, higher in urban than in rural communities. In the present New York epidemic far more children under the age of 10 than over it have been affected. Protective serotherapy is still an uncertain procedure, but Dr. Flexner believes that benefit is to be expected. He

[1] *Science*, September 11th, 1931, p. 251.

adds that paralysis of the muscles is by no means an inevitable sequel, and may vary in its intensity. The extent of the paralysis at the beginning of the attack is no measure of its persistence; recovery from it often occurs.

MALIGNANT TUMOURS OF THE TONSIL

The operative treatment of malignant growths of the tonsil has always been one of the least encouraging fields of surgical enterprise. Unless the diagnosis is made at an early stage, when the growth is still confined to the tonsil, and an operation through the mouth still gives sufficient exposure, severe operations, including division of the mandible, as practised by Langenbeck, Bergmann, and Kocher, are necessary. Although the laryngeal drainage devised by Soerensen has made such operations less dangerous, they are nevertheless associated with a high mortality generally estimated to approach the neighbourhood of 30 per cent., and the ultimate results have been poor. Local recurrence and deposits in the lymphatic glands reduce the number of good results to less than 10 per cent. The introduction of diathermy for destruction of the primary tumour, combined with a radical dissection of the lymphatic glands in the neck, gave better results, so that in 1923 Norman Patterson was able to record seven cases of carcinoma of the tonsil which had been free from recurrence for periods up to eight years. A study by Elis G. E. Berven of the cases of malignant tumours of the tonsil[1] sent to the Radiumhemmet in Stockholm for radiological treatment reveals possibilities which compare favourably with the achievements of surgery. The report deals with a total of 86 cases; these include 42 cases of carcinoma, 4 of lympho-epithelioma, 35 of sarcoma, and five of malignant mixed tumours. A number of cases treated since 1927 have not been included in these statistics. Beyond this histological classification, each of these four types has been subdivided clinically into three groups, according to whether (1) the tumour is still confined to its original site and remains within its capsule, or (2) has produced palpable deposits in the regional glands which are still freely movable and would be operable, or (3) the tumour has begun to infiltrate locally and the corresponding glands have become fixed. In addition, the cases have been described in two sections because the original treatment by *x* rays externally with surface application of radium to the tumour has been replaced since 1924 to a great extent by teleradium treatment, rendered possible by an increased supply of radium. With the old technique twenty-eight cases of carcinoma were treated, and in seven of these the growth entirely disappeared, but in no case for longer than eighteen months. With the new technique of teleradium and surface application of radium to the tumour fourteen cases have been treated, of which four (three in Group I and one in Group II) have remained free from symptoms for more than three years. The group of lympho-epithelioma, not widely recognized in this country, and usually classified as sarcoma, but capable of recognition by a refined histological diagnosis, is important because of its high degree of radio-sensitivity. All the cases treated were free of symptoms for periods up to five years. Of the thirty-five cases of sarcoma fourteen were free from recurrence from four to fourteen years. There were six in Group I and eight in Group II. All in Group III succumbed. Of the five mixed tumours, corresponding mostly to the description of endothelioma, there are three from which the patients have had no recurrence for four, five, and six years. This statistical study brings out the possibilities of the recent methods of radiological treatment, but Dr. Berven refers also to a number of other conclusions in addition to giving a full clinical and pathological description of the tumours with their case histories and a complete account of the technique employed in the treatment. The results obtained do not indicate any possibility of obtaining improved results by combining radiological and surgical treatment, and the therapeutic object is to produce a slow, continuous disappearance of the tumour with the least possible reactive inflammation of its surroundings. Syphilis appears to exercise an unfavourable influence by weakening the reactionary capacity of the whole organism, so that there is an increased malignancy of tumours associated with this infection. The tumours grow rapidly and metastases occur early. Moreover, the changes in the vascular and connective tissues surrounding a tumour render them less resistant to irradiation than is normally the case. Treatment by teleradium avoids the violent primary reaction in mucous membrane caused by *x* rays, and as the ultimate results are better it shows a superiority over treatment by *x* rays, which is suspected in some cases of having caused numerous distant metastases. These are some of the conclusions reached by Dr. Berven, whose admirably illustrated book is full of carefully gathered details and demonstrates the importance of collecting both the radium and the clinical material in a large central institution, such as the Radiumhemmet in Stockholm. Decentralization has been avoided in Sweden, and the use of radium is limited to three centres.

[1] *Malignant Tumours of the Tonsil.* By Elis G. E. Berven. *Acta Radiologica*, Supplementum xi. Stockholm: P. A. Norstedt und Soner. 1931. (Swedish crowns 22 net.)

NATIONAL INSTITUTE OF CHILD PSYCHOLOGY

It has been a common complaint of Continental and American visitors that there is no provision for the study of medical psychology in London. Especially is this true for those wishing to study child psychology. The medical profession in England has sometimes been criticized for its reluctance to accept new ideas; but in no profession, perhaps, is a conservative attitude more to be desired. Yet while this attitude secures a certain margin of safety it may at times, by its rigidity, impede progress. It is, however, now being gradually realized that the mind of the child, as well as the body, has its disorders—disorders which cannot be lightly dismissed by parental admonition and chastisement, but which demand the patient investigation and experiment so fruitful in their results in other departments of clinical medicine. The need for a separate machinery and personnel to provide adequate treatment for "the difficult child" has long been felt by physicians working in the out-patient departments of children's hospitals. To meet this need the Children's Clinic for the Treatment and Study of Nervous and Delicate Children was started three years ago. So successful has been its work, carried out in the face

of exceptional material difficulties, that it has now been possible to reorganize the children's clinic under the ambitious title of the National Institute of Child Psychology. What might be called the "clinical policy" of the institute is admirable in its conception. It has been wisely recognized that the "difficult child" must be investigated from the physical and the social aspect, as well as from the psychological, if any true solution of its problems is to be found. The child is studied as a living organic unit reacting to its environment. Play is an important method of self-expression for the child. In play its attitude to the world is unconsciously revealed. Its behaviour during play is therefore the starting point of the psychological investigation which is carried out by the medical director, Dr. Margaret Lowenfeld. The social background of the child is explored by a trained social worker. On admission to the clinic each patient is medically examined by Dr. Leonard Findlay, and a staff of specialists in the various branches of medicine and surgery act as consultants to the clinic. It was decided at a conference held in July of this year that the institute should be not only a therapeutic centre, but also a training centre for social workers, teachers, and doctors who need or wish for special knowledge of the emotional difficulties of children. A provisional syllabus has been drawn up for a training course of one year; there is a shorter course for medically qualified men and women. The importance of this work cannot be too strongly emphasized. That it should continue and increase is essential. For this, more money and accommodation are needed—a need which will, we feel sure, be satisfied when the institute's activities are more widely known in medical and lay circles. Anyone wishing for fuller information can obtain it from the medical director, Robert Browning's House, 19, Warwick Crescent, W.2, which is the institute's present headquarters.

THE CANCER CAMPAIGN IN AUSTRALIA

A brief reference was made in these columns on July 25th (p. 153) to the second Australian Cancer Conference, held at Canberra last March; the official report of this conference has now been received, and it is apparent that despite the prevalent financial difficulties real progress has been made in the promotion of research and in the education of the public. In a review by Dr. M. J. Holmes (of the Commonwealth Department of Health) of developments in cancer control in Australia during 1930, great importance is attached to the investigation of each case by a consultant committee, with a view to determining the most suitable lines of treatment. Such a committee, it is urged, should be brought into being in every treatment centre; it should be representative of all the clinical and pathological departments, and include a dental adviser; it should meet at least once a week to review all cases of cancer attending the centre, and the medical officer in charge of any patient should attend the meeting. Case records should be kept on lines as nearly uniform as possible, so as to facilitate statistical inquiries, and space should always be provided to indicate if the case is operable, borderline, inoperable, or very advanced, with the reasons for such classification. The conference agreed that a systematic follow-up of all patients should be more general than hitherto; without such a scheme it would be impossible to assess the results of the various lines of treatment, and progress in cancer therapeusis would be retarded. The card-index system, it was stated, had given good results in many institutions, regularity of the re-examination of patients being thus achieved. It was generally agreed at the conference that in many hospitals inadequate protection was provided against the dangers of exposure to radium, among the staff as well as the patients; each hospital was invited to determine the practical adequacy of the protective measures in force. In a statistical appendix to the report of the conference figures are set out which indicate that the increase in cancer mortality is mainly referable to the carcinoma group; the death rate curve for epithelioma, which was rising until 1918, appears now to have turned. In rodent ulcer the tendency is still upwards, but the sarcoma death rate remains fairly stationary. The August issue of the *Journal of the Cancer Research Committee of the University of Sydney* records that the cancer mortality rate is rising in each State, in both males and females, and this in spite of the fact that improved methods of treatment are resulting in a larger number of cures than was the case under the older methods. In this connexion Mr. F. L. Hoffman, consulting statistician to the Prudential Insurance Company of America, discusses in the same issue some principles of cancer statistical research, and indicates the importance of realizing that "cancer" is not an entity; each variety must be considered by itself if practically useful results are to be obtained.

TABULAE BIOLOGICAE

Tabulae Biologicae Periodicae[1] is a new scientific journal, edited by W. Junk. *Tabulae Biologicae* consisted of six large volumes of tabulated biological data, and it is proposed to continue publication in periodical form. This proposal has already been noted in the *Journal* (November 15th, 1930, p. 835), and we now welcome the appearance of the first two numbers of the new periodical. The scope of the volume is indicated by some of its chief contents, which are as follows: the chemical and physical properties of blood pigment and its derivatives (40 pages); the vitamin content of foodstuffs (18 pages); the chromosome numbers of plants (116 pages); the iodine content of vegetable foods (5 pages). These few examples indicate the wide range of subjects covered. The value of the periodical is best realized if one considers the time that would be needed to hunt up the information summarized in any table. The editor intends to publish quarterly numbers (one volume a year). The first volume will contain about 420 pages, and will cost 55 marks (48 marks to subscribers to previous volumes). This price seems quite reasonable in view of the fact that the work consists entirely of tabulated material. It is pleasant to welcome the appearance of a new periodical that will reduce, instead of increase, the labours of biological research workers.

[1] *Tabulae Biologicae Periodicae*. Herausgegeben von C. Oppenheimer und L. Pincussen. Band i, Nr. 1 und 2. Berlin: W. Junk. 1931. (Four parts, £2 15s.; subscription £2 8s.)

THE CAVENDISH BICENTENARY

Our knowledge that water is not an element, but a chemical combination of two gases, may be said to derive from the observation of Henry Cavendish that after an explosion of hydrogen with air (later he used pure oxygen), the "certain amount of liquid" present in the flask was "plain water." The long-drawn-out controversy as to whether Watt or Cavendish was the first to reach this conclusion is now ended. The former, in 1783, wrote that "water is composed of dephlogisticated and inflammable air," but without a knowledge of Cavendish's work obtained through Priestley (who had secured it in 1781 directly from Cavendish) it is improbable that Watt's conclusion would ever have been reached. Henry Cavendish, who was born at Nice on October 10th, 1731, and whose bicentenary occurs this week, is an example of the intellectual giant emerging occasionally from solitude with Promethean fire for men. Had there been no delay of nineteen years in publication, Cavendish, instead of Joseph Black, would be known to-day as the original theorist of latent and specific heat, and only a like delay makes Coulombe, instead of Cavendish, the discoverer of the inverse square law of electrical attraction. It is inevitable that the bicentenary of this very great man should be overshadowed by celebration of the birth of Michael Faraday. It should be remembered, however, that more than eighteen years before Faraday was born, Cavendish had observed the specific inductive capacities of glass, wax, resin, and shellac, and had determined their numerical ratios. Moreover, in the small portion of nitrogen which, he discovered, cannot be reduced to nitric acid, Cavendish had a sample of what Ramsay and Rayleigh in 1894 recognized as a new element, argon. His classical determination of the earth's specific gravity at 5.448 crowned Cavendish's later years. The rich, untidy, and eccentric recluse of Clapham was a giant of our race. He died early in 1810, having uttered, as Lord Brougham said, "fewer words in the course of his life than any man who had ever lived for four-score years." The Cavendish Physical Laboratory at Cambridge commemorates his name.

THE RISE OF PREVENTIVE MEDICINE

Sir George Newman, Chief Medical Officer of the Ministry of Health and of the Board of Education, is continuing the series of lectures under the Heath Clark bequest to the University of London, on "The rise of preventive medicine," at the London School of Hygiene and Tropical Medicine, Gower Street, on the following dates: October 13th, 15th, 16th, 20th, and 22nd. All the lectures commence at 5 o'clock, and are open to the public without ticket.

RECOGNITION OF DR. COX'S SERVICES

TESTIMONIAL FUND OPENED

In the *Journal* of August 1st, 1931 (p. 199), and in the *Supplement* of the same date (pp. 105 and 116) reference was made to the steps that are being taken to recognize in a suitable manner the forthcoming retirement of Dr. Alfred Cox from the post of Medical Secretary of the British Medical Association. A representative general committee has been formed of members who, after inquiry, expressed their desire to be associated with the appeal, and from it an executive committee has been elected. A list of the members appears on the appeal forms, which are being circulated this month. The chairman of the general committee is Sir Humphry Rolleston, Bt., the chairman of the executive committee Sir Ewen Maclean, the honorary treasurer Mr. N. Bishop Harman, and the honorary secretary Dr. E. Rowland Fothergill, 6, Brunswick Place, Hove, Sussex. The appeal states:

"The Centenary Meeting of the British Medical Association in 1932 will coincide with the completion of Dr. Cox's term of service as Medical Secretary. Dr. Cox has held this position, including three years' duty as Deputy Medical Secretary, for the long period of twenty-five years, and during this time, as is universally agreed, he has accepted loyally the responsibilities of his important office, and has discharged its duties with unfailing devotion. His name has an assured place in the history of the Association from the date of the adoption of the new constitution to the celebration of the centenary year, and as he retires from office he carries with him the kindly thoughts and good wishes of innumerable friends, both at home and over-seas.

"The relations of the Medical Secretary are both official and personal. Thus on many occasions he has to speak for the Association in negotiations and conferences with various authorities and organizations, and here Dr. Cox has always stood firmly for the legitimate interests of the profession, and for policies which promote the welfare of the general community, while in more personal relations, and by his experienced judgement, courtesy, and goodwill, he has gained the regard and gratitude of the numerous members of the profession who have sought his counsel and help. In a word, Dr. Cox's professional and personal record is one of strong and sustained service rendered to medical interests and to public policy, and of loyal and whole-hearted co-operation with his colleagues.

"There is naturally a general desire among members of the profession to mark in no uncertain fashion their appreciation of Dr. Cox's large contribution to the success and prestige of the Association with which his name is so prominently associated; and not less appropriate is the proposal that some permanent memorial of the man and his work shall be secured for the Association's House and headquarters in London. To meet this end it has been decided that a portrait of Dr. Cox shall be painted by an artist of the first rank and presented to the Association in the course of the Centenary Meeting, and arrangements to secure this aim have been made. While, however, a portrait of Dr. Cox will be an interesting and valuable addition to the historical record of the Association, members will certainly wish to make some personal gift to Dr. Cox himself, and here the suggestion is that this should take the useful and flexible form of a substantial cheque, and of a volume carrying the names and addresses of all subscribers to the testimonial fund; a replica of the portrait for presentation to Dr. Cox may possibly be arranged.

"The full value and significance of such a presentation will be determined by the number of individual subscribers rather than by relatively large contributions from a limited number of members. Hence this appeal is for personal contributions not exceeding ten shillings in amount."

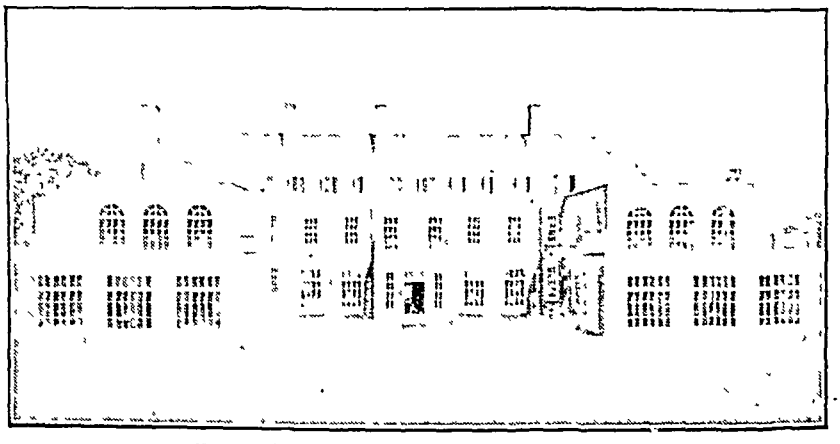
Contributions from members in the British Isles, Service members, and those outside any Branch area, may be forwarded direct to the Honorary Treasurer, Cox Testimonial Fund, B.M.A. House, Tavistock Square, London, W.C.1. In other parts of the British Empire plans are being made through the Branch and Division organization for issuing the appeal letter and for the collection of subscriptions. Canada and South Africa are making special arrangements through Dr. T. C. Routley (Toronto) and Dr. A. J. Orenstein (Johannesburg).

NEW SANATORIUM AT EPSOM COLLEGE

OPENING CEREMONY

Epsom College held high festivity on October 3rd, when its new sanatorium was opened by Lord Dawson of Penn, President of the Royal College of Physicians. A glorious day of St. Martin's summer showed the College buildings and grounds to their best advantage, while the new sanatorium, with its pleasant lines, its warm brickwork, and its mansard roof of red pantiles, appeared as a distinctive addition to the architecture of Epsom. It has provision for fifty beds, is completely separated from the other school buildings, and all its wards are arranged so as to have full sunshine and the benefit of the southerly breezes across the Downs.

About five hundred guests, including members of the College council, together with head masters, bursars, and medical officers of several public schools, assembled in a marquee adjacent to the new building. Supporting Lord and Lady Dawson on the platform were Sir George Newman, Sir Milsom Rees, Dr. Raymond Crawfurd (chairman of the College Council), Sir William Hale-White (treasurer), and Dr. Arnold Lyndon (chairman of the Sanatorium Committee). The head master (Mr. A. C. Powell) welcomed the guests, and described the new sanatorium as second to none and a model to all.



Epsom College Sanatorium. South Aspect.

Lord Dawson's Address

In the course of a brief address, Lord Dawson said that the completion of the sanatorium represented a further stage in the onward march of the school. During the last ten years well-planned developments had almost wrought a transformation in its buildings. The chapel had been rebuilt, a fine block erected for the teaching of chemistry, and a sports pavilion put up, and now the sanatorium was the latest manifestation of the far-sighted policy pursued by the council under the inspiring leadership of Dr Raymond Crawfurd. It was fitting that a school which had so many medical associations should set a high standard in its provision for health. After complimenting the architects (Messrs. Pite, Son and Fairweather) and others connected with the construction, including the medical officer (Dr. McBean Ross) and Dr. Arnold Lyndon, Lord Dawson emphasized the arrangement whereby the building can be brought into use in sections, each of which can be isolated as regards heating, lighting, and water supply. The provision for non-infective illness is quite isolated from that for infectious diseases; four infections —chicken-pox, mumps, measles, and influenza—can be simultaneously handled (graver infections being transferred, as hitherto, to fever hospitals), and the total beds available are sufficient to deal with those epidemics of influenza which occasionally visit public schools.

Lord Dawson went on to stress the value of physical education, which at Epsom was particularly well organized. Properly conceived, physical education (not the old mechanical soul-destroying drill), he said, was an effective means of training, on the one hand, mind and character in initiative, leadership, and power of expression, and, on the other, of training the body to beauty of form, resilience in movement, and that perfection of function of lungs and skin which gave endurance and adaptation to changing climate and resistance against disease. Physical education in too many schools "tumbled along," and some head masters had not yet begun to understand it. Instead of a few odd hours grudgingly conceded, physical culture should occupy a definite place, where it would enhance the value and enjoyment of games and sports.

The consideration of physical education led him to suggest that the duties of medical officers of schools should not be limited to the care of boys who are ill, but should include a study of physical education and its responsible co-operation in its purpose. This did not mean that medical officers should participate, still less interfere, in its day-to-day performance, but they should study physical education in being and its reaction on different boys. In this way the trained eye would detect in an early stage, and without formal examination, defects of frame and function when such could be easily rectified. The time to study a boy was when he was in movement. Defects of shape or expansion of chest, defective breathing, compensating asymmetry of frame, early flat foot, and cases which exercise produced fatigue rather than vigour, pallor rather than glow, could thus be detected, thus correlating the educational and the remedial. It was tragic to think how often medical men saw defects which could have been rectified in youth and which were a handicap to life's fulfilment.

In conclusion, Lord Dawson referred to the advantages of Epsom College in its proximity to London and in its surroundings and climate. It was upon its youth that England would depend for regaining the paths of civil prosperity and happy citizenship. "Equip youth well and let the full-grown man struggle for himself. To the child the community has obligations to help his growth into an effective citizen, but after that the debt of the man to the community is greater than that of the community to the man. . . . We have to train boys to hard and successful efforts to help themselves, and through themselves the country they love, and Epsom College is showing the way."

A Model School Sanatorium

At the conclusion of the address, the architect, builders, clerk of the works, and the medical officer and matron were presented. Lord Dawson was then handed a commemorative key, and proceeded to the door of the new building, which he unlocked, prayers of dedication being said by the chaplain. The company afterwards made an inspection of the building.

In addition to accommodation for the separate care of infectious and non-infectious cases, the building provides under one roof for out-patient attendance, observation and convalescence. It more than fulfils the requirements laid down in the *Memorandum on Public Schools Sanatoriums* recently issued by the Ministry of Health, and the standards there given with respect to floor space and

effective air space per bed are exceeded There are four eight bed wards, one four bed ward, and six single bed rooms Open air balconies are provided, as well as cheerful solariums fitted with 'vita" glass The administrative block at the front of the building includes an admirable room for x-ray work, a small theatre—with sterilizing room adjoining—for minor operations, a dispensary, a pathological laboratory, an inspection room, and offices for medical officer and for matron The sick accommodation is arranged on the ground and first floors, and the second floor is given over to the matron and staff Much ingenuity has been expended on details of installation, such as the maintenance of a constant temperature of 60° in all rooms, with 70° in the operating theatre, the provision in general of rubber floors, with quarry tile floors in bathrooms, sanitary annexes, and kitchens the rounding of all wall corners, and the use of doors of a special hospital pattern designed to prevent the accumulation of dust A number of the beds and one of the wards carry names of donors

THE TRAFFIC IN OPIUM

[From our Correspondent in Geneva]

One of the last acts of the Assembly of the League of Nations which ended last week was to receive a report by M Sawada of Japan, in the name of the committee which is charged with social activities, on the traffic in opium and other dangerous drugs M Sawada referred with satisfaction to the important advance represented by the establishment in 1931 of a convention for limiting the manufacture and regulating the distribution of narcotics He believed that the League was now in possession of an effective instrument for combating the evil One result of the new Convention, together with the previous Geneva Convention of 1925, would be to make the headquarters of the League itself a sort of counting house for the world drug traffic He also pointed out that the Convention covered a far larger number of drugs than preceding conventions, it brought codeine under control, whereas for many years morphine converted into codeine had to some extent, escaped all supervision it prohibited the export, except on very strict conditions, of a substance which has in the past bulked very largely in the illicit traffic—namely, diacetylmorphine—and it contained stipulations relating to reserve stocks and surplus stocks which would be gradually brought into use for legitimate consumption by a corresponding reduction in output, or would be disposed of under the sole responsibility of the Government concerned Above all, through a system of estimates furnished by the Governments, the Convention he said enabled a world total of the quantities to be manufactured to be fixed, and set up a supervisory body to examine this estimate

The powers and responsibilities of the Permanent Central Opium Board have also been enlarged It will be the duty of the Board not only to collect statistics from the various countries but also to prepare a statement of these figures, so that it may be possible to discover or prevent over production or excessive imports or exports or the accumulation of stocks which might find their way into illicit use Thirty six signatures to the Convention have so far been received, and the delegates of several other Governments, including those of China Colombia Persia, and Rumania, stated during the Assembly that they hoped to be able to sign the Convention shortly The rapporteur, speaking for his committee took the view that this limitation of the manufacture of narcotic drugs was the first step towards a subsequent limitation of the production of raw materials and he asked the Assembly to pass a resolution (which it did) requesting the Advisory Committee and the competent sections of the Secretariat of the League to undertake as soon as possible, the collection of all material that might serve as a basis for discussion at a future conference on the limitation of the production of opium and the cultivation and harvesting of the coca leaf Delegates of certain countries producing the material stated that they had no objection to this preliminary inquiry, though they hoped that other countries would pay due regard to the economic aspect of the question as it affected themselves The Persian delegate particularly stressed the difficulties involved in limiting production in a country whose opium exports amount to 25 per cent of its foreign trade

The Geneva Convention, 1925, has now been ratified by forty seven States, as a result of the recent accessions of Lithuania Norway, Iraq, Cuba, and the Irish Free State This Convention now more than ever heads the list of League Conventions as regards the number of ratifications received, though an important group of Latin American countries have not yet ratified Various useful measures have been taken in several countries In Germany, at the Government's request, the drug factories have given up manufacturing benzylmorphine (peronine) although this drug is not covered either by the 1925 Convention or by the new German opium law In Colombia a decree has been issued placing the import and distribution of drugs for medical and scientific purposes under the control of the National Health Office, and the Parliament there is considering a new law for the severe punishment of clandestine trading The Rumanian Government is preparing a new Bill to convert the drug trade into a Government monopoly The Swiss delegate made a very interesting speech in the Assembly He said that excellent results had been obtained in his country from the application of the measures of control of the various recommendations of the Advisory Committee regarding post and customs The output of morphine in Switzerland he said, had fallen from 2 246 kg in 1928 to 1,576 in 1930, the output of heroin from 952 kg in 1928 to 4 in 1930, while the exports of morphine had fallen from 1,761 kg in 1928 to 615 in 1930 and exports of heroin from 1 119 kg in the former year to 83 in the latter

The importance of the new regulations issued by the Turkish Government in February of this year under which *drugs may only be exported against an import certificate* issued by the Government of the importing country was also brought before the Assembly and a tribute was paid to the spirit of co-operation shown by the Turkish Government which has closed the Ethin narcotic drugs factory at Eyoub (Istambul), this factory having been implicated in illicit transactions The decline in addiction reported in Egypt, and the improvement of the supervisory system in Persia, were also noted favourably It is hoped that this latter system will make it possible to suppress the illicit traffic which has sprung up during the last few years at Bushire, its chief destination being China The report of the Permanent Central Opium Board to the council of the League was couched in rather less optimistic terms It stated that in 1930 more than ten tons of pure narcotic drugs found their way into the illicit traffic—a truly appalling quantity of poison—and, although the world manufacture of morphine and cocaine was last year reduced, this fact is unfortunately offset by an increase in the production of heroin, the most powerful of all these poisons, and the one with which medicine and science could most easily dispense

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The seventeenth annual report of the British Guiana Infant Welfare and Maternity League states that with a view to the prevention of malaria—a very serious factor in the infantile mortality rate in that colony—mosquito netting and curtains for children's cots are being sold at cost price or even given away in the various districts where the league is operating and that excellent results have been obtained A relief fund is at present at work in thirteen centres to supply milk to mothers and infants who are suffering from malnutrition it is hoped that additional distribution agencies will be organized but further financial assistance is required from village authorities for this purpose Monthly and fortnightly clinics are being held in many towns and villages by the respective Government health officers assisted by the league nurses

OPENING OF THE WINTER SESSION

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

PROFESSOR H. R. DEAN ON "SCIENCE AND MEDICINE"

The formal opening of the session at King's College Hospital Medical School, Denmark Hill, took place on October 1st; the occasion was of especial interest because the school is just completing the first hundred years of its existence. Mr. A. D. Power, vice-chairman of the committee of management of the hospital, presided over a large gathering of students and others, and Professor H. R. Dean, Master of Trinity Hall, Cambridge, delivered the inaugural address.

The Chairman, in opening the proceedings, paid a tribute to the dean, Mr. H. Willoughby Lyle, who is shortly retiring from the office which he has held for many years. The Dean, in presenting his report, cited as indicating the growth of the medical school the fact that, when the new King's College Hospital was opened in 1913, there were between 50 and 60 students, whereas to-day there were 303. The number of fellowships, degrees, and diplomas obtained during the past academic year was 123. It was satisfactory to note that, in spite of adverse economic conditions, £26,924 had been contributed towards the £40,000 required for the centenary building fund.

Professor H. R. Dean, having distributed the prizes, prefaced his address by congratulating those connected with the hospital and medical school on being able to look back on a hundred years of hard work, progress, and achievement, during which three great King's College Hospitals had been built, each planned, erected, and equipped with generous foresight for the furtherance of the three great indivisible objects for which medical science existed—namely, the advancement of medical science by research, the care of the sick, and the instruction of those who came to be taught. Having briefly traced the origin and history of medical science and recapitulated some of its developments and achievements, the speaker said that those present would agree with him that, from the dawn of knowledge to the present day, there had been a very close association between science and medicine. In fact, there could be few new discoveries which would not in the course of time, in some way or other, play a part in medical progress. To medicine other sciences owed their origin, and it was fitting that these daughter sciences should, in their turn, make contributions to medical advance. No investigation in the principles of chemistry, or any branch of biology, could be so aloof from material needs that it might not at times yield results which would revolutionize practice. Indeed, the study of disease was a common interest, which united all concerned, whether workers in ward or laboratory, and progress could best be made when men with different points of view and knowledge worked together.

If it was believed, as it surely must be, that nearly every branch of science had made, and would continue to make, contributions to the advancement of medicine, what could those who to-day enjoyed that great inheritance of science do to make full use of the discoveries of the past and of the new opportunities which the continuous advance of science put ready to hand? In these days, in which the sum of all the sciences was so vast that nobody might know more than a fragment, specialization had become inevitable, and the need for co-operation was very real and urgent. But close association between all branches of medical science could be achieved only by close co-operation of workers in various fields, co-operation which, though vital, was very hard to achieve. The problem of correlation confronted all who entered the medical profession. The student, in the long years of his apprenticeship, was confronted by a series of courses and classes in the various branches of the medical sciences. Teachers had to be specialists, and must devote all their time to their subject. Thus it happened that in some subjects medical students were taught by those who had no knowledge of medicine and, consequently, no first-hand knowledge of the problems which awaited their pupils in the later stages of their careers.

Moreover, Professor Dean continued, each field of knowledge in which every student must browse for a little while was separated from the next by a fence, or an examination. It was not without significance that chemistry, physics, botany, and zoology had come to be termed the preliminary sciences, a term which seemed to imply subjects which must be completed and might be forgotten before the study of medicine commenced. If, as the speaker supposed, present-day students were more regularly taught, and had better opportunities for practical work than their predecessors, he could not help wondering at times why it had been thought necessary to increase the hours of compulsory attendance, the number of compulsory lectures, and to enforce, with greater severity, the system by which signatures were required for every course prescribed. To be signed-up might soon become the student's main objective! Did the need for signature lie in the fact that students were expected to attend, not only more classes than they would without a signing-up system, but actually more classes than could be attended with profit during the average span of a student's life? One of the most serious changes that had taken place during the past few years had been the handing over of the basic medical sciences of chemistry, physics, and zoology to the public schools. While the teaching of those subjects in many schools was excellent, the change of place in which instruction was given would render it much more difficult to achieve the co-ordination and correlation of all the branches of medical science, so badly needed to-day and, in fact, overdue. In the speaker's opinion the time had come for those concerned to put their house in order and to co-ordinate, if they could, the various fragments of the medical curriculum. In the process of reconstruction the majority of subjects would need pruning, and some might have to go altogether, for students were overworked and over-examined. But cutting down or cutting out would not be sufficient. Things would not become very much better until it was possible to recapture the ideal of one great medical science, or at least of one great group of medical sciences, using different methods, but united and welded together by one common purpose. Those whose privilege it was to work in that, the third King's College Hospital, might not think much of the second King's College Hospital, but it was there that their predecessors witnessed the development of the greatest advance in surgery that the world had ever seen, for in that second hospital Lister had changed the practice of surgery, and the world had followed him. Those attached to the medical school in that new and third King's College Hospital were entering the second centenary of the medical school. In the first hundred years of its existence that school had made history, and had handed down a great tradition. In the hands of present-day students rested the future of the hospital and its medical school.

A vote of thanks was accorded to Professor Dean on the motion of Mr. J. B. Hunter, seconded by Dr. H. Audley Lucas.

MIDDLESEX HOSPITAL MEDICAL SCHOOL

PROFESSOR McINTOSH ON "THE INFINITE INVISIBLE IN MEDICINE"

The prize-giving ceremony in connexion with Middlesex Hospital Medical School took place at Queen's Hall on October 1st. Mr. S. A. COURTAULD presided, and an address was given by Professor JAMES McINTOSH, director of the Bland-Sutton Institute of Pathology.

Professor McIntosh confined his remarks to bacteriology, and after a brief historical sketch of early epidemics, gave some account of the work of Leeuwenhoek, the Dutch microscopist, who, through the art of the microscope, discovered bacteria in the seventeenth century. The most powerful of his microscopes was said to have magnified about three hundred times. A further 150 years were to elapse, however, before the germ theory of disease was to be fully established by the work of such men as Pasteur, Lister, and Koch. The orator spoke particularly of the more minute disease-producing bacteria. He said that bacteria had been classified into the microscopic and ultra-microscopic. The larger or visible bacteria caused such familiar diseases as tuberculosis, typhoid fever, diphtheria, lockjaw, plague, and dysentery, while the ultra-microscopic viruses, as they were usually termed, caused small-pox, infantile paralysis, typhus fever, rabies, encephalitis, herpes, dog distemper, and many other diseases of animals and plants.

The orator proceeded to give his audience some idea of the size of these organisms. The smallest particle which could be seen by the unaided eye measured rather less than one-tenth of a millimetre or one hundred microns. The larger disease-producing micro-organisms, such as those of typhoid and diphtheria, measured from one to seven microns in length and about one micron in width. Therefore the area embraced by the minutest speck to be seen by the unaided eye would cover about two thousand of these organisms, whilst the same area would cover some three million of the more minute invisible microbes or viruses. It was this minuteness which was so difficult to appreciate, for the size approximated to that of chemical molecules; and, in fact, these filter-passers were smaller than the largest of the molecules, as, for example, the molecule of haemoglobin, which was some thirty micromillimetres in diameter. It had been calculated that the smallest virus known at present had a diameter of about twenty micromillimetres. The general consensus of opinion was that these bodies were alive, and, if they were not actually bacteria, were closely allied with them. The viruses could not be directly seen by the ordinary microscope, although in fluid media their presence, if not their form, could be made apparent by the ultra-microscope. Cultivation on the artificial media employed to grow ordinary bacteria had been so far a failure in the case of these viruses. Some of them, however, like that of small-pox, could be grown under conditions which would allow of the multiplication of tissue cells, known as tissue culture. Under such conditions and with living cells present, multiplication of the virus could be obtained in an indefinite series. It had been suggested that the presence of living cells in the cultures was necessary because these viruses actually lived and multiplied inside the living cells. In no instance as yet had it been possible to show that these viruses had a definite metabolism comparable to ordinary bacteria. So far the only real test of their presence was their power of multiplying in the animal tissues and producing disease. The fact that these viruses could live only in close relationship with living cells of the animal body suggested that they were much more parasitic than ordinary bacteria; many appeared to live actually inside cells, while ordinary bacteria only exceptionally did this, living mainly on the juices of the tissues in the intercellular spaces.

After a reference to the bacteriophage, the supposed virus which lived on and attacked living bacteria, Professor McIntosh said that apparently many of the characteristic features of the diseases caused by these viruses were the result of the close relationship between the virus and the cells. Further, the tissue cells which were attacked frequently showed highly characteristic changes in protoplasm, with the development of structures known as inclusion bodies. These peculiar bodies could be demonstrated by staining, and were, in certain instances, colonies or aggregates of the virus. Thus there were Guarnieri bodies in small-pox, Negri bodies in rabies, polyhedral bodies in diseases of plants and insects, nuclear inclusions in herpes, and so forth. There were scientists who declared that these viruses were not alive, and that they were of the nature of a ferment or enzyme, but a ferment could not increase or multiply, and their only similarity was that both could act in small or minute quantities. Others attempted to explain the regenerative or growth effects of these viruses by supposing that they were ferments which regenerated in some way from the destroyed body cells or bacteria. They suggested that these viruses were produced from the protoplasm of the destroyed cell in much the same way as Charles Creighton suggested that visible bacteria were the result of the disease, and not the cause. But the facts elicited in support of this view were not convincing. In support of the contention that they were living agents, experimental work showed that the action or effect of physical agents—antiseptics, heat, drying, and radiation of these viruses—approached nearer to the effect on ordinary bacteria than to that on ferments. Again, the invasion of the tissues during an attack of a disease such as small-pox led to the appearance in the patient's blood of antibodies which were capable of destroying or neutralizing the virus, whereas no such bodies followed the injection of ferments. These viruses, said Professor McIntosh, were apparently living bodies capable of multiplying within the tissues, where they called forth specific antibodies, and even a complete immunity, yet so small were they that they contained only a few molecules of protein substance. It seemed probable that in these viruses, just as in the case of the atoms, electrons, and protons in the physical world, the limit of size in biology had been reached.

THE SCHOOL YEAR

In the absence of the dean (Dr. Izod Bennett) through illness, the dean's report was read by Mr. PEARCE GOULD. He said that for some years past there had been a drop in the number of maternity cases needing domiciliary attention. This fact, together with rival claims of pupil midwives upon the available cases, had made it difficult for medical schools in London to provide for their students adequate practical experience in midwifery. During the past session an arrangement had been completed with the Royal Northern Hospital whereby the midwifery cases of that hospital and the surrounding district were made available for the training of students from the Middlesex Hospital. As a result adequate practical experience in this most important branch of medicine was assured for all students of the school, even allowing for a considerable increase in the present number of students. An increasing recognition of the importance of using radium in the treatment of malignant disease in strict accordance with the exacting detail involved in the modern technique, and, moreover, of keeping in continuous touch with cases thus treated, had, during the past year, led the hospital and the school jointly to appoint a whole-time medical officer in charge of this

work. The authorities of both hospital and school had already ample proof of the value of this new development, not only in the more encouraging results obtained from the use of radium, but in particular from the reliable statistical evidence now accumulating upon which before long it was hoped some definite conclusions might be based as to the true place of radium and *x*-ray therapy in the treatment of cancer. Reference was made to the loss sustained by the school in the retirement from the active staff during the year of Sir Arnold Lawson, Mr. Comyns Berkeley, and Mr. Herbert Charles, all of whom had been appointed to the consulting staff of the hospital.

Sir John Bland-Sutton, in distributing the prizes, said that if there was one pleasure greater than receiving prizes it was distributing them, and that day this pleasure was enhanced, because it concerned Middlesex Hospital Medical School, which he might call his own school, because he belonged to it, body and soul. It was only in this respect that he agreed with the Pauline charge to the elders of Ephesus, that "It is more blessed to give than to receive." It was a healthy instinct to strive for prizes, not only in college, but in the sports ground. The council of the school had a double object in awarding scholarships and prizes. Primarily, such awards attracted students of ability. Scholarships were assets when resident posts were being sought. Some were of sufficient value to enable the scholar to visit hospitals abroad—a good thing for curbing the natural vanity of the young, who found, oddly enough, that their equals in skill and knowledge were to be discovered outside the walls of their own hospital, and, indeed, all over the world.

Dr. R. A. Young proposed a vote of thanks to Professor McIntosh, remarking that while the addresses of the great astronomers and physicists at the British Association that week had directed attention to the infinitely great, Professor McIntosh had illustrated the significance of the infinitely small.

The vote of thanks was seconded by Professor Sidney Russ, who said that the work of the pathologist was taking him more and more into regions where the things studied must always remain invisible. A further vote of thanks, with many expressions of affection and of delight at seeing him back after his world tour, was accorded to Sir John Bland-Sutton, on the motion of Mr. Sampson Handley, seconded by Dr. R. C. Davis.

OLD STUDENTS' DINNER

The annual dinner of past and present students of the Middlesex Hospital Medical School took place at the Savoy Hotel on October 1st. In proposing the toast of "The School," Dr. Herbert Charles, from the chair, said that the west wing of the hospital was now complete, and contained the most up-to-date wards and theatres in London. The board hoped to complete the east wing and cross-piece early in 1932, so that the nursing home for private patients could be finished. The new hospital would have 700 beds, an increase of 308. He described the wonders of the nurses' home, with its splendid common rooms, seventy-six bathrooms, tennis and badminton courts, and swimming bath, the opening of which had been celebrated by an excellent display of diving and swimming by the nurses themselves. But he added that the board still required £210,000 for the completion of its great improvement scheme. Dr. Charles also expressed his sense of the privilege of occupying the chair, and claimed that the appointment of an anaesthetist to that position was a gesture of appreciation of the services of anaesthesia to the hospital and school.

Colonel W. Alan Gillett, in replying to the toast, emphasized the vital importance of the teaching function, which distinguished the voluntary hospitals and made them indispensable. He urged each member of the gathering to go out and proclaim boldly the part which voluntary hospitals might play in a national health service. Mr. Eric Pearce Gould, the acting dean, who also replied, announced an entry of students which eclipsed all figures since the exceptional years just after the war. He also mentioned that private nurses were now available for cases of every kind on application to the lady superintendent. A further reply was made by Mr. A. J. B Goldsmith, the senior Broderip scholar, who performed the traditional duty of voicing the grievances and other sentiments of the students in a most amusing speech, well in the traditions of the Middlesex Hospital.

The toast of "The Guests," proposed by Dr. G. E Beaumont, was coupled with the name of Sir Walter Fletcher, who, the speaker said, as secretary of the Medical Research Council, determined the direction in which medical knowledge should advance. Sir Walter Fletcher, in responding, drew a cheering picture of the Middlesex Hospital, in these depressing times, not falling, like the pound, but rising up in a magnificent new building with a record entry of students. No other hospital, he said, had such a splendid record in the field of research, a field in which all workers were essentially voluntary. The gathering closed with a warm personal tribute paid by Mr. Victor Bonney to the chairman, who briefly replied.

ST. BARTHOLOMEW'S HOSPITAL

OLD STUDENTS' DINNER

As in previous years, the new session of St. Bartholomew's Hospital Medical College was opened by the old students' dinner, which was held on October 1st in the Great Hall of the hospital. The chairman this year was Sir Percival Hartley, physician and lecturer in medicine. He was supported by the treasurer, Lord Stanmore, and other members of the governing body; Sir John Rose Bradford; Sir Holburt Waring; Admiral Sir Hugh Watson; Surgeon Vice-Admiral R. St. G. Bond; Air Vice-Marshal J McIntyre; Lieut.-Colonel Samman, Master of the Society of Apothecaries; the Masters of the Grocers', Mercers', and Farriers' Companies; the Dean of St. Paul's; Sir George Collins, Sheriff of the City; the Rev. Dr. Scott Lidgett, Vice-Chancellor of the University; Mr. Forrest Cowell, Secretary of the Royal College of Surgeons; the Deans of St. Thomas's and Guy's Medical Schools; and Mr. Edward Matthews, Architect to the hospital.

Sir Percival Hartley reviewed the progress of the year in a humorous speech, delivered in his invariably graceful style. He remarked that the centenary of Abernethy indicated a milestone in the hospital's history, but as long ago as 1662 students were receiving medical and surgical instruction there, while a little later John Freke, sergeant-surgeon to Queen Anne, was in charge. With Abernethy, however, the modern school of medical instruction might be said to have begun. The chairman congratulated Mr. Girling Ball on the success of the first twelve months of his deanship, and, mentioning the regretted departure of Sir Holburt Waring, added that a ward in the new surgical block had been named after him. This block, which had been in use now for twelve months, was realizing the highest expectations. The chairman expressed the hope that some day, not too far remote, the residential college might be again brought into being. With a view to improving the practical side of the obstetrical teaching an attempt was being made to co-operate with the City of London Maternity Hospital. After congratulating St. Bartholomew's Hospital on various athletic successes, including the winning for the

third time of the Rugby football cup, the chairman proposed the toast of "The Medical School," which was warmly received.

Dr. GEOFFREY EVANS, who proposed the toast of "The Guests," remarked that three voluntary hospitals were represented that night; he hoped that this might be taken as a happy omen for further co-ordination, and might develop into a unified medical service which could co-operate with municipal and other medical services in London. DEAN INGE, replying, caused considerable amusement by suggesting that medical practitioners had a great advantage over the clergy in that they saw their patients individually, and did not have to pour water over very narrow-necked vessels assembled in rows. He referred gratefully to the work of St. Bartholomew's in the City, and expressed the hope that, in spite of the national financial stringency, the money necessary for its improvement would soon be collected. The toast of "The Chairman," proposed by Sir CHARLES GORDON-WATSON, was drunk with musical honours.

ST. MARY'S HOSPITAL MEDICAL SCHOOL

ANNUAL DINNER

St. Mary's Hospital Medical School held its annual dinner at the Trocadero Restaurant on October 2nd. In proposing the loyal toasts, Sir WILLIAM WILLCOX, the chairman, claimed the reverent allegiance of all present to His Majesty, whose courage was so valuable a support to the country in the present stress, and their gratitude to the Duchess of York, the charming president of the hospital.

Lieut.-Colonel H. E. VEREY proposed the toast of "The School," and summarized the history of the past year in the form of a balance sheet. On the credit side he placed the new buildings, the foundation stone of which had been laid at a successful gathering during the past summer, and which would, he hoped, be ready for occupation by August next. The endowment fund had received an accession of £12,000. The out-patient department had been reorganized, and it was hoped that much of the waste of time so general in such departments would now be abolished. Arrangements had been made with the Paddington Borough Council for the provision of a unit of forty maternity beds. On the debit side, the extension fund appeal limped haltingly along; £120,000 was still required for the first section of the projected nurses' home, which would accommodate 225 nurses, but work would be commenced when £100,000 had been raised. The whole expansion of the hospital depended on an increased nursing staff. The London County Council, in framing its policy under the Local Government Act, had not been particularly interested in the fate of the voluntary hospitals; it had rather pursued the plan of *divide et impera*, and the big teaching hospitals of London had hardly ever been known to agree. He felt that the future of the voluntary system depended completely on the medical profession.

In responding to the toast, Dr. C. M. WILSON, dean of the Medical School, struck a note of defiant optimism. He said that eleven years ago there had been often only two applicants for the two university scholarships, and hardly six for all the public school scholarships, whereas this year the combined number of applicants had been sixty-two, all of them picked men. The Government grants had risen in his own time from £1,900 to £11,000. He appealed to the board to provide him with a hospital of 500 beds, and said that he would guarantee to push the entry to the highest number obtained by any London school. With regard to sporting matters, he mentioned that the Rugby team had reached the final for the first time in its history, and the boxing team had been runners-up. At the conclusion of an enjoyable evening, Sir WILLIAM WILLCOX, in reply to the toast of his health, proposed by Sir JOHN BROADBENT, gave many entertaining reminiscences of his connexion with the hospital and school.

ST. THOMAS'S HOSPITAL

OLD STUDENTS' DINNER

The winter session at St. Thomas's Hospital opened once again without formal ceremony, but the annual old students' dinner was held on October 2nd at the May Fair Hotel, with Mr. J. HERBERT FISHER, F.R.C.S., consulting ophthalmic surgeon to the hospital, in the chair. Among those at the high table were the treasurer, Sir Arthur Stanley, Sir Charles Sherrington, Sir John Rose Bradford, Surgeon Vice-Admiral R. St. G. Bond, Sir George Roberts, Dr. H. G. Turney, Mr. W. Girling Ball, dean of St. Bartholomew's Hospital Medical College, Professor T. B. Johnston, dean of Guy's Hospital Medical School, Mr. C. H. Fagge, and Mr. George Harcourt, R.A., who painted the portrait of Sir Cuthbert Wallace which hung in this year's Royal Academy.

Proposing the toast of "Prosperity to St. Thomas's Hospital and Medical School," the chairman made sympathetic reference to Sir George Makins's bereavement, recalling that Lady Makins had been a Nightingale nurse at St. Thomas's, where she soon won recognition from Florence Nightingale. In his reply Sir ARTHUR STANLEY gave the cheering news that financial stringency did not yet exist in its worst form at St. Thomas's. The hospital was able to go on for the present in its usual way, and while every possible economy was being undertaken, it was hoped that no cuts would be called for. Professor LEONARD DUDGEON, dean of the Medical School, was able to report that the numbers and work of the students of to-day were most satisfactory, with a fine record of academic distinctions. He mentioned, however, that all the London schools were now suffering from "under production" on their maternity districts, which made it difficult to give adequate training in midwifery. Co-operation with the Lambeth Municipal Hospital was proving a great advantage to St. Thomas's students, and for this the superintendent, Dr. A. L. Baly, deserved their thanks. A great step forward in medical education had been taken by Bart's, Guy's, and St. Thomas's, which now combined to examine candidates for university scholarships. The toast of "The Guests" was proposed in a witty speech by Sir PERCY SARGENT, and Mr. GIRLING BALL responded.

SIR CUTHBERT WALLACE'S PORTRAIT

The chairman then presented to Sir Cuthbert Wallace, on behalf of the subscribers, the excellent portrait which had been on view in the ante-chamber, and in so doing paid a warm tribute of friendship and admiration. In acknowledging the gift, Sir CUTHBERT said: "The repeated kindness of my old school makes the task of an adequate reply very difficult. St. Thomas's has given me most of the things that make life worth while—it has given me friends. It has given me life friends of which, Sir, you are one, and to me it is intensely pleasing that you should be in the chair to-night. It has given me good friends among my teachers, among my colleagues, among those I have taught, in the nursing world, and on the lay side of the hospital, from workmen in the basement to two treasurers in the counting-house. St. Thomas's has given me and taught me my profession and thereby a means of livelihood, but it has shown

me at the same time that there is much more in medicine than the scientific healing of the sick. Lastly, in this last gift it has given me another favour. I suppose that most people have a longing that when they go they will not be entirely and at once forgotten. So I hope that some time in the future in this portrait I may again enter the walls of the hospital, take part in its daily life, and share in its trials and its triumphs."

The proceedings ended with the toast of "The Chairman," proposed in appreciative terms by Mr. T. A. M. Forde.

CHARING CROSS HOSPITAL

PRIZE DISTRIBUTION

At the opening of the winter session at Charing Cross Hospital Medical School on October 2nd, prizes and certificates awarded during the last session were presented by Sir George Newman, who afterwards delivered the inaugural address.

Sir George Newman, speaking on the importance of preventive medicine, said that the end-results of medicine had too often determined its teaching and practice. Anatomy had been learnt from the dead rather than from the living, and the practice of medicine from the final entities observed in the hospital bed. Disease was a process, and medicine must be applied at an earlier stage if the end-results were to be avoided. More attention must therefore be given to conservative or preventive medicine. In England, the speaker continued, diseases such as cholera, plague, and typhus, which had once been terrible pestilences, had been conquered. To-day they were the actual witnesses of the control obtained over small-pox and other diseases. The infant mortality rate had fallen from 150 per 1,000 births to 60 in one generation. These were not the victories of hospital treatment, but the results of preventive medicine. Sir George Newman proposed four ways in which the study of this important subject could be advanced. The fourth- or fifth-year student should be taught the outlines of hygiene and preventive medicine in a series of lectures by competent teachers. This was done more thoroughly in the provincial than in the London medical schools. Secondly, the student should attend at certain clinics for instruction and demonstration in preventive work. Thirdly—the best method of all—the preventive principle and a preventive trend should be introduced into the main subjects of the curriculum. In the fourth place, a suitable examination should be passed before qualification. In this country, he said, there was a lack of appreciation by newly qualified doctors of the preventive trend of modern medicine. The public would soon be demanding preventive advice from the private practitioner, the real outpost of preventive medicine. In England and Wales 15,000 practitioners had already accepted service under the National Insurance Act, an Act passed by Parliament for the prevention as well as for the cure of disease. Was the public receiving an effective preventive service or not? If not, was it because the doctor was not trained to provide it, and perhaps did not appreciate that it was his function to seek the causes of the diseases for which he was consulted and then to control them?

Annual Dinner

The annual dinner of past and present students was held on October 3rd at Gatti's Restaurant, with Dr. J. M. H. MacLeod in the chair. After proposing the toast of "The Hospital and Medical School," he entertained his audience, in a delightfully informal speech, with personal reminiscences of his early life in London. In spite of prevailing financial difficulties Charing Cross Hospital, he said, was solvent. He paid a warm tribute to the work of the voluntary hospitals, a system which should not be interfered with. Mr. Eric Crook, the dean, replying to the toast, said that in response to their various efforts the medical school was growing, and made a reference to the success which had attended the recently instituted post-graduate courses. They welcomed, he said, the presence with them that evening of Professor Blair of King's College. The health of the chairman was proposed in a gracious speech by Dr. S. Cochrane Shanks, who indulged in a eulogy of Scottish heather and Scottish clans. Dr. S. Taylor Harris sang several songs, which were greatly appreciated, and the company adjourned to a dance held in the medical school.

MEDICAL DEFENCE UNION

The annual general meeting of the Medical Defence Union was held at Bedford Square, London, on September 24th, with Dr. W. S. A. Griffith, acting president, in the chair. Feeling reference was made to the great losses sustained by the Union in the recent deaths of its president, Sir Herbert Waterhouse, its treasurer, Dr. Seymour Taylor, and two members of its council for many years, Dr. Hedley Hill and Dr. W. Tracy Lydall.

Progress of the Union

Dr. Griffith went on to congratulate the members on the steady growth and prosperity of the Union. When he vacated the office of president, thirty years ago, the membership was 4,605, and the accumulated funds stood at £918. The membership now was 16,587, and the accumulated funds stood at £55,780. He said that the Union was consulted by its members on an increasing variety of subjects, and in any difficulty with which a practising doctor was confronted he was likely to derive great benefit from the experience which the Union had acquired. Two important stipulations were made before the assistance of the Union could be given—namely, that the subscription of the member applying must not be in arrear, and that the matter brought forward must concern a professional principle. It was to be regretted that there were still many practitioners who allowed themselves to remain unprotected against the attacks of unscrupulous persons, or the results of their own errors. He also drew attention to the friendly relations existing between the Medical Defence Union and the sister society, the London and Counties Medical Protection Society, relations which were furthered by a joint committee, whose business it was to explore misunderstandings and remove difficulties.

Solicitors' Report

The report of the council, which was adopted [illegible] story, but s unanimously at the meeting, gave a numb[illegible] medical ar of the range and variety of the cases dea[illegible] the year. The solicitors to the Union (Mes[illegible]ter John Free, reported that 110 cases had been referred to charge. With 1930. More than half of these were in resp[illegible] of medical on account of alleged malpraxis. Very fe[illegible] The chairman arisen in which libel or slander was the issu[illegible] of the fir to and during the war cases turning on libel[illegible]tioning th were as numerous as actions raising questions [illegible] praxis. The majority of such cases were those, of course, in which action was taken on behalf of members by reason of unjustifiable attacks upon them or their professional good name. Probably the activity of the Medical Defence Union in the past has helped to bring about the diminution of libel and slander cases; persons have learned the danger of seeking to attack a medical man who has been wise enough to safeguard himself by membership of a protective organization. The solicitors mention one matter in connexion with cases of libel and slander, which, they say, has led to some misunderstanding and perhaps to a feeling of grievance among members

Members often ask the Union to take action for alleged slander, and state that there will be no difficulty in obtaining witnesses. But the Union has declined to institute or even threaten proceedings for slander unless written statements from witnesses have been obtained. Otherwise, it is found that as the day of evidence draws near the memories of these witnesses suffer considerably. As to the charges of alleged malpraxis, these are usually cases where members are met with such an allegation in response to an application for payment of their account. More often than not the allegation is mere bluff, and if the position is resolutely faced, and the patients learn that the practitioner is not prepared thus to be intimidated, but is ready and willing, with the support of the Union, to fight the matter out in court, they realize that their bluff has failed, and that it is better to pay at once rather than run the risk of having to pay costs in addition.

Some of the cases described in detail in the report have been recorded in these columns as they arose, notably the action against a surgeon on the allegation that seven years previously he had left a pair of forceps in the patient's abdomen after an operation. The patient had, in the meantime, undergone another operation in the South of France, and the case turned largely upon the evidence of French surgeons as to their method of checking instruments. In the end a verdict was returned in favour of the defendant, with costs (*British Medical Journal*, 1930, i, 620). The costs in this case—well over £1,000—proved irrecoverable, except for the small amount of £120. Although by the awards of the courts the Union was entitled during 1930 to recover many hundreds of pounds, all that was recovered, owing to the fact that the litigants in most cases were without means, was about one-fourth of the costs.

Dr. W. S. A. Griffith, Dr. V. A. Jaynes, and Dr. A. Lyndon, the retiring members of the council, were re-elected.

ROYAL MEDICAL BENEVOLENT FUND

The number of new applicants helped during the last three months of each year has usually averaged about thirty-three cases, this being in addition to the grants which have been renewed to old beneficiaries on the books of the Fund. This year only seven new applications can be considered between now and the end of December unless further support is given to the committee. New subscribers are urgently needed in order that the activities of the Fund may not be curtailed during the coming winter months.

All who can are urged to send a subscription to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, W.1.

At the last meeting of the committee thirty-four grants were voted, amounting to £577 10s. The following are particulars of two cases helped:

Widow, aged 35, of M.R.C.S., L.R.C.P. The husband qualified in 1930, and a fortnight before he was to sail to take up an appointment in a medical service abroad he was accidentally killed, at the age of 28. The young widow is left with two infant children, a girl of 2 and a boy of 7 months. A man so recently qualified and cut off at the outset of his career is in a poor position to make provision for his family, and his widow is left with £55 a year. Fund voted £26 in four instalments. Personal service and possible further help will be given.

Widow, aged 38, of M.B., who died in November, 1930, at the age of 47. She is left with two boys, aged 9 and 6, to educate. The applicant is suffering from encephalitis lethargica. She is quite incapable of earning a living or even attending to her household affairs, mainly because she has reached the stage of Parkinsonism. A medical man, in supporting the application, writes that the husband was one who literally gave his life in the service of others. He never failed to help those in need, and the poorest of the poor were always his greatest concern. His widow is left with 30s. a week. Fund voted £26 in four instalments. Other societies are being approached to co-operate in this case.

MOTOR CARS FOR 1932

THE OLYMPIA SHOW

[From our Motoring Correspondent]

Once again the time has come round when "all roads lead to Olympia" for the annual inspection of the new models of cars that manufacturers are producing for the 1932 season. The Show, which is the twenty-fifth organized by the Society of Motor Manufacturers and Traders, will open its doors at 10 a.m. on Thursday next, October 15th, and continue until Saturday, October 24th. Considering the world-wide industrial depression, this year's exhibition will be found well up to previous standards, embracing not only chassis, cars, and accessories, but also sections for the display of appliances for the servicing of motor vehicles, and one for motor boats. So far as the car and chassis section is concerned, the stress of competition, coupled with the business depression, has not been without its effect, for the number of firms showing these has declined from seventy-four last year to sixty-one. While the international character of the Show is maintained—examples of the motor products of seven countries being on view—it is noticeable that the tendency is for it to become more and more national in character, British car builders leading with twenty-six different makes, American and French motor manufacturers being, however, again strongly represented.

Growing Popularity of Medium-power Cars

The chief feature of the exhibition is unquestionably the increased number of makes of cars equipped with engines of from 7 to 10 h.p. The growing popularity of this type of vehicle may be ascribed to two main causes. In the first place, the industrial world-wide depression of the past two years, and the recent national financial crisis in this country, with its accompanying heavier taxation, is undoubtedly causing motor users to study ways and means of effecting economies. Secondly, the low first cost and the moderate running and maintenance charges, coupled with the very satisfactory results they are giving on the road, have attracted many buyers, and, with the wave of economy alluded to, the trend of demand in favour of the low-powered car may be expected to be more marked than ever during the coming twelve months.

With regard to the question of prices, in view of existing costs of labour and material, as well as higher taxation, many people thought that bottom had been touched. Despite this, however, some manufacturers have found it possible to announce slight reductions, and although in the majority of cases prices, generally speaking, are unaltered, when the new cars are closely examined it will be found that they represent much better value than ever before.

Although emphasis has been laid upon the great development in small cars up to 10 h.p., this must not be allowed to eclipse the attraction of vehicles of greater horse-power, and, remembering the requirements of a large section of the medical profession, it may be presumed that interest will largely centre in the numerous examples of six-cylinder vehicles of from 12 to 15 h.p. which, in "sunshine roof" form, are being offered at prices ranging from £199 to £265.

The Trend in Chassis Details

From the point of view of mechanical detail no very startling departures in chassis lay-out will be found. A year or two ago there were writers who were foretelling the early disappearance of engines with only four cylinders, but the improvements which have been effected in them, and the satisfactory results they are giving in practice,

taken in conjunction with the necessity for economy, would appear to have given them a new lease of life. As has already been indicated, there is even in the popular-priced range of cars quite a number of attractive vehicles with six-cylinder engines, while for the more luxurious and costly types of cars the number of cylinders runs up to sixteen, with six as a minimum. Engine details continue to be the subject of careful study, resulting in better carburation and lubrication, while additional makers have fallen into line with new radiator shapes which, if not adding to general efficiency, certainly add to the attractive appearance of cars. Another change in constructional practice is the location of the petrol tank at the rear of the chassis, instead of above and close to the engine.

As regards ignition, the once universal magneto has almost entirely been displaced by a coil and distributor, using the lighting and starter battery as the source of current. While there are still those who regret the passing of the reliable magneto, considerable improvement has undoubtedly been effected in battery ignition, and, given the necessary attention which accumulators continue to demand, there should be no need for anxiety as to the regular and reliable functioning of the modern form of ignition. Clutches show little if any change, but, notwithstanding the increased efficiency of modern engines, there is a growing tendency to provide gear-boxes with four instead of three speeds, and the majority of makers now claim to give a "silent third," as well as a quiet-running top direct drive. In general, change-speed gear control remains unaltered, either by a centrally located or right-hand lever. It is to be noted, however, that not only is the Armstrong-Siddeley Company fitting its pre-selective gear controlled by a small lever on the steering column to all its different models, but that the same system has been adopted in a new medium-power Lanchester car. A device which appears to be catching on in America—for it will be found in several cars from that country—but which has not so far met with approval or adoption in Great Britain, is a "free wheel" incorporated in the transmission.

Bodywork Tendencies

The wire wheel with the large boss type of hub, and cover-plate giving access to the concealed detachable bolts, has increased in favour, while tyres incline to a slight increase of cross section. The longevity of the modern pneumatic tyre is such that car users can nowadays practically leave them out of their calculations of cost and maintenance, because of the immunity from trouble and the long mileages that they now afford.

Although there are a few motorists, medical and non-medical, who still prefer the open type of car, the popularity of the saloon is more pronounced than ever. It is, however, satisfactory to find that more attention is being paid to interior ventilation, and that the practice of providing a sliding sunshine roof is become more general. Bodywork of fabric construction is fast giving way to that of all-metal. Two improvements which stand out in 1932 body work are the increased girth and space of many of the hitherto very small cars, and the greater immunity from the noises that were formerly associated with all-metal bodies. Safety glass for windscreens and windows is fast becoming universal practice, while collision bumpers or fenders have now passed into the standard equipment of most cars. Complete as are modern vehicles, however, a visit to the accessory section of the exhibition will reveal a host of fittings which, if not exactly necessary, will be found to add to the comfort and convenience of motor users. Finally, it may be mentioned that those medical men who, in their leisure hours, indulge in the pastime of motor-boating, will find much to interest them in the motor-boat section, in which examples of every form of craft, from large cruisers to small boats with outboard motors, will be on view.

It may be added that the exhibition will be open daily from October 15th to 24th, from 10 a.m. to 10 p.m., the charge for admission on the opening day being 5s., on the two Fridays and Saturdays 2s. 6d., and on other days 5s. up to 6 p.m., and 2s. 6d. after that hour.

Next week it is proposed to review the main features of the exhibition, and to deal briefly with some of the new cars, and in particular with those suitable for the use of medical men, of whom to-day it may be said that practically all are motorists.

C. J. W.

Ireland

Dublin Slums

The Dublin Corporation has decided to borrow £1,000,000 for building new houses in the slum area, as well as for reconstructing some of the better tenement houses. The council moved that the recommendation of the Housing and General Purposes Committee of August 18th be adopted; that the terms and conditions of the proposed issue of £1,000,000 Dublin Corporation 4½ per cent. redeemable stock, 1955–75, referred to in the letter from the Irish Banks' Standing Committee, be approved of; and that a committee consisting of Alderman James Hubbard Clark, Councillors Sean T. O'Kelly, T.D., and David Coyle, be appointed, with full power to settle all necessary details in connexion with the proposed issue.

Distribution of Sweepstakes Money among Dublin Hospitals

After the cost of prizes and general expenses had been deducted from the sweepstakes money, £895,179 remained for distribution among nineteen hospitals in Dublin. The following hospitals in Dublin have discharged heavy debts, and are, in addition, carrying out many necessary improvements in equipment and in structural alterations Sir Patrick Dun's Hospital, from the sweepstakes on the Manchester November Handicap, 1930, and on the Grand National and Derby, 1931, received £108,578 7s. 2d.; of this, £90,000 has been invested, and an out-patient department is being built at a cost of about £34,000. The hospital's debt of something like £12,000 has been paid off. As more money comes in further building will be undertaken. When the committee knows the exact figure that will stand to its credit on the close of the series of sweepstakes yet to come, it will be able definitely to decide on its programme of reconstruction. Jervis Street Hospital, which also participated in the three sweepstakes, received £94,611 0s. 9d. The first thing that the hospital did was to wipe off its debt of approximately £30,000. There are about fifty men now working in the hospital at repairs and painting. Sixty additional beds have been provided, and eight new wards—four large and four small—with all necessary equipment. The x-ray department, the ultra-violet ray department, and the laboratory have received similar attention, and the governors have undertaken to build a school for nurses and premises for maids in Mary Street. Having discharged its debt, the Mater Misericordiae Hospital is building new annexes, which will contain bathrooms and all the necessary sanitary fittings for each ward. They will accommodate 310 patients. The Meath Hospital received £77,090 12s. 7d. from the last two sweepstakes. This hospital, like others, has suffered the loss of its Government grant (which amounted to £688 a year) and

also the contribution from the Hospital Sunday Fund—approximately £300 It has, however, cleared off its debt since the sweepstakes came to its assistance, and has invested £60,000 , £7,000 was set aside for building a new dispensary St Ultan's Hospital benefited from the three sweepstakes to the extent of £35,209 8s. 3d. ; having discharged a debt of £1,400, it has undertaken several improvements A new wing for babies and further accommodation for nurses have been provided. A flat roof now exists where the infants may enjoy the sunshine, the hospital has been externally plastered, and the grounds have been made more attractive. The board has invested £10,000 There is an up-to-date out-patient department, which has also been greatly improved. St. Patrick's Infant Hospital, Mountjoy Square, received £19,272 13s 2d from the last two sweepstakes, and has made good use of the money. A large overdraft has been wiped out, and three new wards have been provided at the Temple Hill premises, Blackrock, which were acquired as an extension to the Mountjoy Square house, where the accommodation was found to be inadequate. Richmond Hospital received £77,090 12s. 7d. as the result of the last two sweepstakes, and has invested the money until such time as the board learns what is going to happen in regard to the Government grant of £5,000—reduced from £7,000—which has been withheld from the hospital. A sum of £19,927 11s. 2d. was received by the Children's Hospital, Temple Street, as a result of participating in two sweepstakes. Like the other hospitals, it paid its debt and made provision for the future. A very necessary addition that has been made to the hospital is a lift, and a fine new sunshine department has been finished and is ready for use at the back of the hospital premises

Grangegorman Mental Hospital

Dr. Donelan, resident medical superintendent, in his report to Grangegorman and Portrane Mental Hospital Committee at Portrane, referred to the letter from the Department of Local Government asking for information on the manner in which funds to be received from the sweepstakes were to be allocated The ideal to be aimed at, Dr Donelan stated, was the removal of the institution into the country and its rebuilding on modern lines at a cost of probably £500,000 or more Assuming that to be beyond the capacity of the funds, he suggested the following improvements in the existing institution. (1) an amusement hall at a cost of about £8,000 , (2) hydropathic and electropathic treatment departments at a cost of about £2,000 each , (3) extension of the "vita" glass pavilion at a cost of about £8,000 , (4) improved furnishings in the day rooms at about £10,000 ; (5) improvement of roads and paths at Grangegorman and Portrane, about £4,000 , (6) a setting-up on modern lines of the pathological and bacteriological laboratory recently built at a cost of £800 Dr Donelan's recommendations were referred to a subcommittee for examination.

Health of School Children

The Strabane and Castlederg regional education committee has had an unsatisfactory report concerning the health of school children in its district. The school medical officer up to June 30th had examined no fewer than 1,453 children, of whom over 1,000 were suffering from some form of illness—616 alone from bad teeth. The Education Committee has had two dentists employed for eighteen months, and has now decided that the dentists must in future send monthly reports of their work The committee is disturbed over this state of affairs, and realizes, of course, that things must improve quickly if their schools are to remain on a level with the other schools throughout the province. The Strabane District Hospital board of governors decided that operations for tonsils and adenoids could be performed on condition that the committee pays fifteen shillings towards the cost of every case, but the Ministry of Home Affairs stated that such an arrangement was unnecessary, as the hospital must regard the treatment of these patients as the ordinary work of the hospital This may have the desired effect of lowering the percentage of ill-health among the school children. It is, however, believed that the Ministry's reference applied only to children who are eligible for free treatment and hospital maintenance under the Medical Charities Acts.

County Louth Board of Health

By five votes to four the Louth Board of Health postponed for twelve months the proposal to appoint an assistant county medical officer of health to Dr Musgrave, who urged the appointment. Dr. Musgrave said the appointment would cost the ratepayers only £150 a year The amount of work made the appointment essential if the health schemes, now four years in existence, were to be properly carried out. The chairman said the splendid work which had been done hitherto had cost the board a good deal less than the schemes which were in force in 1927 Diphtheria, which had been epidemic in Dundalk for generations, had been almost wiped out by the immunization scheme. When the result of the division was announced, the chairman said he was sorry to say it, but he believed the members of the board had failed in their duty. For the matter of threepence on the average ratepayer of £20 valuation, they had turned down a scheme destined to be of great help to the poorest classes in the towns and county districts of the country

Scotland

Welfare of the Blind in Scotland

The sixth report of the Scottish Advisory Committee on the Welfare of the Blind, covering the period from December, 1929, to May 28th, 1931, has just been issued. This committee was first set up in 1918 to advise the Department of Health for Scotland on matters relating to the care and supervision of the blind in this country. The report points out that in regard to the provisions devolving upon local authorities under the Local Government (Scotland) Act, 1929, there has been no change in the policy of utilizing voluntary associations. The committee holds that so long as a high standard of efficiency is maintained in the services for the blind carried on by voluntary associations, no attempt should be made by municipalities to displace these, although certification of blindness and the provision of allowances to the necessitous blind might be better undertaken by local authorities. The report expresses satisfaction that practically every town and county council has declared that it would remove the blind from the administration of the Poor Law and provide assistance under the Blind Persons Act instead of under the Poor Law. The number of registered blind persons in Scotland had continued to increase, and the total of 8,897 at April 1st, 1930, was 379 more than in the previous year. Of new cases, numbering 1,062, registered in the course of the year, at least 50 per cent had become blind after 50 years of age The percentage of registered blind persons under 16 years of age, on the other hand, had continued to show a decrease, thus indicating the beneficial results of the maternity and child welfare schemes carried out by local authorities Of the total number of blind persons 69 8 per cent were classified as unemployable for various reasons The report also discusses the question of the institution of a craft school for the blind

Dunfermline Orthopaedic Clinic

The medical welfare committee of the Carnegie Dunfermline Trustees reported on September 24th that arrangements had been made to transfer apparatus belonging to the trustees in their orthopaedic clinic to the Dunfermline and West of Fife Hospital, where it would be used in future for the treatment of patients in this institution. At the same time it was announced that the committee proposed, after consultation with its chief medical officer, Dr. Mackenzie, and the local medical practitioners, to establish a centre for the investigation of juvenile rheumatism. This centre will be opened at the clinic of the Carnegie Dunfermline Trustees on January 1st, 1932, and will provide medical practitioners with opportunities for the study of this disease in collaboration with a specialist in children's diseases.

Homoeopathy in Glasgow

A new homoeopathic hospital in Great Western Road, Glasgow, was opened on October 1st by the Earl of Home. Mr. Walter Currie presided, and Lord Home, in declaring the hospital open, said that many people in Glasgow would watch its progress with interest. He added that all the doctors who practised this particular form of medical treatment were fully qualified members of the profession, and that homoeopathy was simply a method of administration of the ordinary drugs. Dr. F. B. Julian of Liverpool, who also addressed the meeting, maintained that the orthodox school of medicine was dominated by the idea of a specific for each disease, and that in homoeopathy there was a definite principle of treatment whose further investigation and application promised good results. The hospital has originated from a meeting held in the Merchants' Hall, Glasgow, in December, 1908, when it was resolved to form a public homoeopathic dispensary. This has been carried on since March, 1909, at 8, Berkeley Street, Glasgow, and last year the committee of management acquired a building in Great Western Road, which has been remodelled to provide numerous small wards, with an operating theatre and sterilizing room.

Edinburgh Blood Transfusion Service

A voluntary service of persons willing to offer their blood for transfusion in urgent cases has been established at Gilmore Place, Edinburgh. The service was inaugurated some nine months ago, and an appeal is now being made for increased membership. Donors are at the disposal of the medical profession in cases of pernicious anaemia or of loss of blood through accident. As a rule those who have supplied a pint of blood are not called upon for another transfusion until two months have elapsed. Advantage is being taken of the service, which has received as many as five calls in one week-end. Intending donors are requested to communicate with the organizing secretary.

Banff Hospital Reconstruction

At a meeting of the trustees of the Chalmers Hospital, Banff, held on September 16th, a scheme of reconstruction and improvement for this hospital was adopted. The scheme is estimated to cost approximately £10,000, and will increase the number of beds from 45 to 74. An intimation was received from the secretary of the local voluntary collecting committee that this committee would undertake to be responsible for collecting £3,000 towards the scheme if the work was started at an early date. The trustees decided, therefore, that part of the scheme, involving about half the contemplated expenditure, should be commenced immediately. This portion includes the installation of a new electric lighting system, a new building for plant, and new heating arrangements.

Dundee Royal Asylum

The 111th annual report of Dundee Royal Asylum states that the revenue for the year was £7,290 and the expenditure £7,307, while the capital fund at the disposal of the directors amounted to £61,501. According to the report of the medical officer, Dr. Arthur B. Dalgetty, there were 58 patients on the register on June 15th—one more than on this date in the previous year. Patients admitted during the year numbered 19, including 5 men and 14 women, of whom only 5 were certified. Eleven inmates, including 7 voluntary patients, were discharged, and 7 died. Of the deaths, one was that of a woman aged 102 years 10 months.

England and Wales

Lord Mayor Treloar Cripples' Hospital

The annual report of the Lord Mayor Treloar Cripples' Hospital and College for the year ending March 31st, 1931, mentions that not a single child has been refused admission to this institution, despite the work of rebuilding which has been going on. Details about these new extensions were given in the *Journal* of October 25th, 1930 (p. 707), but it may be added that the isolation hospital gained five cubicles of the most modern design during the year under review. This expansion has become necessary through the development of orthopaedic work at Alton; the more frequent admissions and discharges in that department have increased the possibility of infection, and, therefore, the necessity of taking more stringent precautions. The new Connaught ward was completed and opened in December, 1930, and the Portsmouth ward in June of this year. Besides these building operations the development of the college at Alton has been the subject of anxious consideration. The trades previously taught were the making and repairing of boots and shoes, tailoring, and leather work, including the production of suit-cases, portmanteaux, attaché-cases, and fancy leather goods. With the advent of mass production and mechanized forms of manufacture, it has become increasingly difficult to find suitable situations for crippled boys in factories. On the other hand, those trained in tailoring or bootmaking are better able to earn a living by working in their own homes, or in smaller establishments, and there is also a greater demand for training in boot and shoe making. The trustees have therefore decided to reorganize the college so as to provide greater facilities for giving instruction in the bootmaking shop, and to accommodate there a larger number of boys, while reducing the number to be trained in the leather shop. The latter shop will not be closed, however, but will deal with a smaller number of those who are most fitted for the work, and have greater prospects of obtaining employment in that trade. Sir Henry Gauvain, the medical superintendent, calls attention to the most important point that successful sun treatment does not require constant and intense sunlight; alternating shade and darkness in turn are as essential for the sun cure as is light. This form of heliotherapy is a shock treatment, and the changes from darkness to light have definite curative value, whereas continuous exposure to light has none. Sir Henry Gauvain maintains that sunlight treatment in England is of much greater benefit than it is in the Tropics. Similarly, in the case of sea-bathing for surgical tuberculosis, he finds that this shock treatment is particularly useful in raising the metabolic activity. It is a powerful accelerator of the healing process, and is of special help in cases of discharging wounds. He believes that there is some property in sea water, not found in fresh water,

which is of undoubted curative value; the benefits obtained by immersion in salt water do not occur when fresh water is used. Graduated sea-bathing associated with heliotherapy is the routine treatment for the majority of patients at Hayling Island, and excellent results are being obtained.

Chartered Society of Massage and Medical Gymnastics

The third annual dinner of the Chartered Society of Massage and Medical Gymnastics took place at the Connaught Rooms, London, on October 2nd, under the chairmanship of Mr. R. C. Elmslie, and a very large company of members and guests assembled. In proposing the toast of "The Society," Captain Ian Fraser referred to the kindly assistance it had given to blinded soldiers entering the profession, but added that in his judgement the society now exhibited too much zeal in the initiation of students. While agreeing in theory with the new rule that massage treatment should only be given under medical supervision, he considered restrictive rules not always good; the spirit of the law was the essential thing. Mr. Elmslie, in responding, replied to a criticism on the ground of overcrowding of the profession; out of a total membership of 8,000, he said, only 1,500 were in private practice. He announced that Lord Moynihan had accepted the presidency of the society in succession to Sir Cooper Perry. After referring to the auspices of the Society of Apothecaries' *Bio-Physical Assistants* recently set up under the new rules, and defended the ordinance that treatment should only be carried out under medical supervision. He also said that advertising was unethical, and no member who had the interests of the society at heart would stoop to it. Miss J. H. Wicksteed proposed the toast of "The Guests," and responses were made by Mrs. Ivens-Knowles and Dr. A. E. Barclay. The former congratulated the society on its wise organization to protect the public from unqualified practitioners, and welcomed the extension of physical therapy to obstetrics and gynaecology; the exercises now practised in hospitals would be of great benefit in puerperal cases. Dr. James Mennell proposed the toast of "The Chairman," speaking of his great work for the establishment of orthopaedic hospitals, and the toast having been drunk with musical honours, Mr. Elmslie briefly replied, thanking the staff of the society for their work, and especially for the organization of another successful congress. During the evening a telegram of loyal homage was sent to the Queen, who is patron of the society, and later a reply was received. A telegram of greeting was also sent to Sir Cooper Perry, whose services in obtaining the charter, said the chairman, would always be gratefully remembered.

Ethel Hedley Orthopaedic Hospital for Crippled Children, Windermere

The Ethel Hedley Orthopaedic Hospital, Calgarth Park, Windermere, is one of the institutions linked with the national scheme for the cure of cripples. Although the hospital was opened in 1920, this is its first report, covering the work of eleven years; it contains a good deal of information about the cases treated. There was a small epidemic of poliomyelitis in Lancashire, Westmorland, and Cumberland in 1910, which resulted in a number of deformities and disabilities for which no treatment was available. In 1911 and 1913 the North of England again suffered from small epidemics, and it was decided in 1920 that if another epidemic occurred every effort should be made to treat cases at once in order, as far as possible, to prevent the onset of deformity. Accordingly, when the disease reappeared two years later, the forces prepared beforehand were mobilized, with the gratifying result that, in the fifteen cases treated by special splinting, plaster frames, etc., not only were contractional deformities entirely prevented, but the power of the affected muscles was restored to a remarkable extent. The hospital contains fifty beds and a small recovery ward, and helps to serve eight after-care clinics. The medical director, Dr. C. H. Hough, states that all the beds have been continuously occupied. The average number of the staff is thirty-two, and the average weekly cost amounts to £2 17s. 8d. Thanks to the continued generosity of Mr. Hedley, the management is freed from all financial anxiety.

Correspondence

BENDIEN METHOD OF CANCER DIAGNOSIS

SIR,—The Investigation Committee of the British Empire Cancer Campaign has inquired into the Bendien method of diagnosis for cancer, and finds that, although the preliminary results were encouraging, subsequent inquiries have failed to justify the early promise. The Investigation Committee, therefore, has come to the conclusion that the Bendien method of diagnosis for malignant disease cannot at the present time be accepted as reliable.

—I am, etc.,

C. GORDON-WATSON,
Chairman, Investigation Committee.

London, S.W.1, Oct. 2nd.

RHEUMATOID ARTHRITIS

SIR,—The letter of "Crippled" in your issue of October 3rd (p. 630) is, I think, of more value to the interested than are many which are more dogmatic. The sex preponderance of rheumatoid arthritis is, I believe, very generally accepted, but timely reminders of such a fact are valuable when we have to face, as we have now, the problem of the local focus of infection and all it implies. When we collect evidence on the subject we are met with difficulties on every side. Some cases seem so obvious that for the moment all appears to be clear; the obvious focus is removed, improvement follows, or if there is delay many maintain that a careful use of a suitable vaccine will complete the recovery. Other cases are, however, most unconvincing, for there is no evidence of a local focus suggested in the history or found on physical examination. Even then we are left unsatisfied, because we know that we cannot exclude every possibility of local foci, which year by year are being discovered in unsuspected sites and which may apparently lie latent.

Again, there may be difficulties equally great when we have found and dealt with a local focus; for what may be the result? It may be this—that we see a patient with active rheumatoid arthritis, and later see the same patient edentulous and without tonsils and still with active rheumatoid arthritis. Once more it may be said that the treatment of these local foci had been undertaken too late. Worse disasters may happen, as illustrated by the recent interesting paper by Dr. L. Abrahamson (*Journal*, July 4th, p. 8), which I can support with comparable cases of patients who have exchanged for septic teeth and compensated heart disease, no septic teeth but malignant endocarditis.

The history of tonsillitis and acute rheumatism has close bearing on these problems, for it shows how highly sensitized the rheumatic child may become to streptococcal infections. The throat infection may be of the slightest, but the outburst of rheumatism severe. From the study of the morbid anatomy it is difficult to picture a rheumatoid arthritis arising without infection acting as the lighted match; possibly this infection is influenza possibly a "cold," possibly a local focus undiscovered

Nevertheless, we also cannot escape from such unexplained facts as the greater frequency in females of the acute rheumatism in childhood and of the rheumatoid arthritis in young adult life, the tendency of the daughters of gouty parentage to develop rheumatoid arthritis rather than gout, and the influence of nerve shock and strain.

We can understand a vaccine assisting in the cure of an obvious infection, but such a vaccine may not be able to cope with sex incidence, nerve strain, hereditary predisposition, or unsuitable surroundings added to this infection; and we can understand that a local focus stirred up to special activity may just turn the balance against a sensitized patient. The rheumatic diseases are so difficult to investigate and often so disappointing to treat that we need continual reminding that around them is concentrated the struggle over the problem of what the term "infection" implies.—I am, etc.,

London, W.1, Oct. 5th. F. JOHN POYNTON.

SIR,—In the *Journal* of October 3rd "Crippled" makes the entirely reasonable deduction that, as the sex incidence of rheumatoid arthritis is predominantly female, therefore neither dental nor tonsillar infection can be causal. I entirely agree with him (or should it be her?).

Not only so, but there is a very grave danger of aggravating the disease if the supposed foci of infection are interfered with. A most tragic case occurred in my own experience when a woman had some pain and weakness of the smaller joints of the hands and feet. Her tonsils were removed. Thereafter the advance of the disease was so rapid that from the day of the operation she remained in bed for six months. Rheumatoid arthritis is a general disease with marked toxic features, as opposed to osteo-arthritis, where the health is seldom impaired. Any operative treatment will lower the resistance still further, thus accounting for unhappy results.

At the Charterhouse Rheumatism Clinic it is the deliberate policy of the staff not to interfere with foci of infection in typical cases of rheumatoid arthritis occurring in young women, but to treat them entirely by stock vaccines. So far there has not been a failure to cure early uncomplicated cases. When cure is complete, and only then, should any removable focus be dealt with, since foci of infection are, of course, a potential source of ill-health.

Our results at the clinic fully justify the dogmatic statement that, in treating rheumatoid arthritis, interference with supposed foci of infection is *not* a necessary preliminary to cure.—I am, etc.,

London, W 1, Oct 2nd. H. WARREN CROWE.

MENORRHAGIA OF OBSCURE ORIGIN

SIR,—I was very much interested in Dr. James Young's article "Menorrhagias not due to uterine disease" in the *Journal* of September 26th; and after having read it, what occurred to me was the fact that, in a large percentage of cases, the primary cause was unknown, or, to use his own word, obscure. Therefore the treatment he adopted in those cases was purely symptomatic.

This subject has aroused much interest on the Continent, and especially at the Peham Klinik in Vienna. Hofbauer, who for some time has proved experimentally that the Schroeder syndrome can be produced by feeding guinea-pigs on anterior pituitary lobe extract, recommended *x*-ray therapy to the pituitary body in such cases in women, and under his directions the Peham Klinik has had very encouraging results. Hofbauer himself told me that hitherto his work was founded purely on an experimental basis, but recently he has had the good fortune to examine the pituitary body in women suffering from menorrhagia who had died of some other condition. One case was that of a woman suffering from menorrhagia who died as a result of a street accident. In those cases he found that the anterior lobe of the pituitary body showed definite signs of over-activity. I look upon Hofbauer's work as a distinct step forward in the elucidation of what Dr. Young describes as an "obscure" condition.—I am, etc.,

Hull, Sept. 28th. A. PATRICK, M.B., F.R.C.S.Ed.

SPINAL ANALGESIA

SIR,—In the *Journal* of October 3rd Dr. Falkner Hill states that novocain "has absolutely no paralytic effect on the vasomotor centre whatever. The proof of this will appear in a paper now being prepared for publication, in which it is shown that the injection of novocain into the cisterna magna has no such effect. If the direct application of novocain to the centre itself has no paralysing effect on it, it is idle to suppose that any dose absorbed from the lumbar theca into the blood stream could affect it in this way." But a subarachnoid injection of novocain into the cisterna magna is no more a direct application to the vital centres than is a lumbar administration. This is a fallacy of direct medullary action all over again, and any conclusions based on such an assumption will be likely to have as little clinical value as those of Koster.

Nevertheless it will be interesting to have the results of his cisternal administrations. His test tube experiment with durocaine describes the slow descent of the mixture into the subjacent cerebro-spinal fluid owing to the gradual evaporation of the alcohol, and exactly corresponds with what I predicted in my paper in relation to spinocain.—I am, etc.,

London, W.1, Oct. 3rd. W. HOWARD JONES.

CARDIOSPASM

SIR,—May I be permitted a few comments on Dr. H. B. Butler's interesting case (September 26th, p. 565). I prefer the older title (as above) to the humorous one coined by Sir Cooper Perry; the exact pathology of the disorder is still open to argument.

The type of case described by Dr. Butler (in which there is no actual spasm) is easily dealt with by dilatation by the air-bag method. I described this method fully in the *Journal* as long ago as October 11th, 1913. The passage of the bag, its inflation with air, and its subsequent slow withdrawal by gentle traction, should be done always under fluorescent screen observation; only thus can it be safely done; the air-filled bag is easily seen, and its slow passage through the cardia is readily followed.

This, however, is not the difficult type of case; for then one has to deal with a real persistent spasm of the cardiac orifice—a spasm very difficult to overcome, whether from above by a dilator or from below by open operation. This genuine cardiospasm goes on for years, and the oesophagus becomes enormously dilated, with its lower end expanded into a great horizontal sac; from a point toward the left side of this sac, the narrow passage into the stomach is directed vertically down. In such a case it is impossible to pass any kind of tube or dilator into the stomach unless guided by a thread, and even with a thread as guide it may prove impossible to pass a tube into the stomach. Even then an operation is not, in my opinion, either justified or likely to succeed; correct treatment, however, can and will do much to overcome the spasm and restore the patient to good health. All my genuine cases of cardiospasm go to prove that the complaint is due to a combination of (1) traction of a large heavy stomach on the cardia; (2) toxaemia of the tissues concerned, being part of a general toxaemia due to chronic

intestinal stasis and (3) an idiosyncrasy which I cannot explain My complete bismuth x ray examinations of the alimentary tract have confirmed this in every case of genuine cardiospasm With regard to the stomach, it is remarkable that this organ should be constantly enlarged and overloaded, although for years food has not been able to enter it except in small amounts at infrequent intervals, proof positive that there was gastric enlargement prior to the oesophageal trouble

The treatment briefly, is (1) to prevent traction on the cardia by an abdominal support and abdominal exercises, (2) to relieve spasm (cardiac, pyloric, ileo caecal, colonic) by moderate doses of belladonna and alkali and (3) to combat the toxaemia of stasis by diet, paraffin, kaylene, and colonic lavage Steady improvement follows this treatment even in the worst cases, and, though not so satisfying as the dramatic cures achieved when dilatation is possible the final result is even better, since the patient is relieved of toxaemia The improvement that follows dilatation is so great that the need for general treatment is apt to be forgotten, though highly necessary —

I am etc,

ALFRED C JORDAN, MD MRCP, DMRE

London W 1 Sept 26th

ETHER CONVULSIONS

SIR,—The riddle of ether convulsions is still unsolved They have been attributed in turn to impure ether, to excess of CO, to excess of oxygen and to its lack, and cases occur which appear to confound each theory Deep anaesthesia is the only common factor, but since convulsions are not frequent, and a flaccid patient is often demanded, another line of research must be sought

Convulsive manifestations may be produced by a shift in the *p*H of the blood, either to the alkaline side as in tetany, or in the acid direction as in uraemia, and one observer tells me of a case of ether convulsions which strongly resembled uraemia

It might be feasible for a sample of blood to be collected in a hypodermic syringe, when a case occurs as near as possible to the time of occurrence of the convulsion so that any change in *p*H could be detected The more suddenly such a change took place—due, perhaps, to uneven anaesthesia, especially further deepening—the more likely would it be to cause a cerebral disturbance, in the endeavour to cope with it (just as occurs in a sudden oxygen deficiency where a gradual change may be compensated)

The sample should also be tested for histamine, which has been suggested as a possible cause It seems well established that ether sensitizes to histamine, and the only case which I have had so far tends to support this theory as it occurred in a man aged 29, badly crushed in a pit accident His signs were those of a ruptured viscus but at the end of a complete investigation of his alimentary tract no perforation was found At that moment the convulsions started as described I gave O, and the surgeon was able to stitch up, but the patient died half an hour after returning to the ward There was extensive bruising of the omentum, and post mortem a rupture of the vena cava was discovered The patient was anaesthetized with a Shipway apparatus and a semi closed mask Respiration had been of a rather shallow type but there was no cyanosis until after the convulsions started

A passage in Professor Samson Wright's *Applied Physiology* reads "The increased excitability of the nervous system may be analogous to that found in tetany, and may be due to a disturbance of the balance between the different ions of the blood" If this be true of uraemia, why not also in ether convulsions? It is at least worth looking to see, and if results agree as to the presence of a blood change, it will be a hint for preventive treatment before operation, designed to increase the margin of safety although nothing should take the place of watchful care, during the operation, to avoid the other factor, the one which is already known—namely, tendency to overdose —I am, etc,

B E COOK

Doncaster Sept 29th

FATS IN THE CAUSATION OF PEPTIC ULCER

SIR —Your leading article in the *Journal* of August 15th, on hunger pains in pyloric and duodenal ulcer deals fully with the two theories which up to the present have held sway The cause of the hunger pain in one case is hyperacidity at the height of, or end of gastric digestion, the acid having an irritant effect on the producing mechanism or on the mucous lining of the stomach, causing spasm, and, by reflex action pain The other theory is that the pain is chiefly due to abnormal motility, the peristalsis increasing when the stomach is empty, or practically so The ingestion of suitable food induces the stomach contractions to quieten down as your article points out, the hunger pains may be a symptom of pyloric gastritis Dr Arthur F Hurst puts forward the theory that in persons who suffer from peptic ulceration there is an inborn hypersthenic diathesis, and a constitutional tendency to hyperchlorhydria

One would have liked consideration of another theory, explained at length in a book recently published (*The Causation of Chronic Gastro Duodenal Ulcers* by J Jacques Spira) Briefly, this work points to a food factor as responsible for the disease, and fat in excess the offending article of diet

The presence of fat in the stomach produces delay in evacuation of its contents stimulates concurrently the secretion of bile in the liver and hydrochloric acid in the stomach At the same time it causes duodenal regurgitation into the stomach with prolonged irritation of the pyloric mucous membrane and consequent pylorospasm and hypertonus from mixture of bile salts and acid gastric contents The pain is induced when this retro-peristalsis begins and ceases the moment some chyme passes through the pylorus—that is on resumption of normal peristalsis

This work also puts forward new ideas as regards the causation of chronic peptic ulcers and acute peptic ulcers, the etiology and pathology of each being different I consider that the theory set forth in this book should be developed, and the change of treatment as regards diet tested by other medical men The author has had excellent results over a period of several years The surgeons who perform gastro enterostomy and partial gastrectomy also claim excellent results, but surely operation in any but complicated cases, where there is structural deformity, is merely mutilation Then again, many patients suffering from gastro-duodenal ulceration, and from the pre ulcerative stages, do well on massive doses of alkalis and numerous feeds of milk eggs with olive oil, etc, which, according to this new theory are contraindicated Certainly no more depressing form of treatment than the above could well be devised but the complete rest in bed, which is invariably insisted on is of immense value and a big factor in relief from symptoms The period of rest following surgical treatment has similar good results

The new theory, of course indicates a line of treatment in which only a small quantity of fat—in the form of fresh butter for its valuable vitamin content—is allowed as also are small doses of alkalis Otherwise a non fatty dietary must be worked out and be strictly adhered to —I am etc

J M ANDERSON

Hove Sept 26th

*** Reference to Dr Spira's theory was made in a leading article in the *Journal* of September 12th, on "The role of fats in the stomach"

THE SYNDROMES OF THE JUGULAR FOSSA

Sir,—The case recorded by Dr. A. F. Tredgold in the *Journal* of September 26th is of particular interest to the otologist. Syndromes of the jugular foramen (that is, involvement of the ninth, tenth, eleventh, and sometimes the twelfth cranial nerves) are occasionally met with in association with diseases of the ear, so it happens that a primary ear case turns up as a case of hoarseness.

At the moment I have under observation a woman, aged 34, with hoarseness of some duration. The right vocal cord is paralysed, as are the right side of the soft palate, the right superior constrictor, the right sterno-mastoid, and the right trapezius muscle. There is no sensory loss in the palate or larynx. The tongue is not paralysed. The right ear is the subject of a chronic otitis media with a large perforation. Hearing is impaired but present. The *x*-ray of the mastoid is negative. There is a history of relapsing pleurisy. In view of this the diagnosis is tuberculosis of the temporal bone, involving by compression the nerves traversing the jugular fossa. The lesion is an extension of the ear condition, which is probably tuberculous. A case akin to this was recorded by Mr. Harold Kisch (*Proc. Royal Soc. Med.*, Section of Otology, February, 1931). In his case the lesion was tuberculous, confirmed by a microscopical examination of tissue removed at operation.

In light of these two cases it would be of great interest to know the post-mortem ear findings in Dr. Tredgold's case. Was there any evidence of tuberculosis? He does report that, clinically, a granulation, with perforation of the tympanic membrane, was present on the same side as the lesion in the temporal bone. The neurological syndrome in his case is that of Hughlings Jackson, who first described, in 1864, the homolateral paralysis of the larynx, soft palate, tongue, sterno-mastoid, and trapezius. Vernet (*Journ. of Laryngol.*, xxxiii, No. 12, 1918, p. 354) gives an excellent summary of the various syndromes of the jugular foramen.—I am, etc.,

London, W 1, Sept 28th. N. Asherson.

DIPHTHERIA CARRIERS

Sir,—In an article on diphtheria carriers in the *Journal* of September 26th Dr. James Grant refers to nasal carriers which "practically always had a sore or small excoriation of one or both nostrils, frequently with an acrid nasal discharge," and which "at first yielded practically pure cultures of Klebs-Loeffler bacilli." He also says that he had little doubt that nearly all these carriers harboured virulent bacilli, as they were intimate contacts of diphtheria cases. Surely these so-called carriers would be more correctly described as cases of nasal diphtheria, and as such should be notified and effectively isolated.

In the Medical Research Council's publication on diphtheria a carrier is defined as "a person who harbours in his throat or elsewhere virulent diphtheria bacilli without exhibiting manifest signs of the disease." Are not excoriated nostrils with an irritating discharge yielding positive cultures manifest signs of the disease? I am convinced from my own experience that if diphtheritic rhinitis were more frequently recognized and treated as such the incidence of faucial and laryngeal diphtheria would drop considerably. Too often, because of the generally slight constitutional disturbance, and the relatively infrequent formation of membrane, nasal diphtheria is missed, or, when recognized, regarded as merely a temporary carrier condition.

My opinion is that a missed case of nasal diphtheria is the primary focus of infection in many outbreaks of faucial diphtheria, and as the condition is commonly regarded as "only a sore nose," the child is allowed to attend school or mix freely with other children, passing infection to its susceptible contacts. The irritating nasal discharge induces picking of the nose, and the child's hands readily pass on the infection. In contrast, the true nasal contact carrier, having no nasal irritation or discharge, is relatively non-infective.—I am, etc.,

George Chesney, M.B., D.P.H.
Poole, Dorset, Sept. 29th. Assistant M.O.H.

DIABETIC ACUTE ABDOMEN

Sir,—I was interested to read the case of diabetic acute abdomen reported in the *Journal* of September 19th by Drs. Lawrence, Millman, and Pilkington. Some years ago I had the opportunity of seeing many of these cases when serving as house-physican to a distinguished physician, long since passed away. His constant method was to give, for a few days, a full ordinary dietary with unlimited carbohydrates; then to ascertain the percentage of sugar passed in the urine for twenty-four hours, and the presence or absence of acetone. Then he would suddenly change the dietary to a carbohydrate-free diet, with plentiful proteids and fats. The patient's condition generally changed rapidly for the worse, and within a few days there were complaints of abdominal pain, rapidly becoming an agony, with some vomiting, complete anorexia, great unrest, and anxiety. The objective signs were a generally tender and retracted abdomen, a reddish-blue facies and extremities, marked unrest, and much dyspnoea. However, a sign which was always most marked was the well-known strong, sweetish, stale, alcoholic smell which pervaded the breath and whole being of the patient. This odorous sign can never be forgotten by anyone who has ever smelt it, and in my humble opinion this should be a most useful guide to the diagnosis of this condition. I could not see any mention of this symptom in the interesting case detailed in the paper.—I am, etc.,

Beaumont H. Comerford, M.D., D.P.H.

London, S.W., Sept. 28th.

AN IMPROVED WHITEHEAD'S VARNISH

Sir,—A simplified and inexpensive modification of Whitehead's varnish has been in use at the Hospital for Sick Children, Great Ormond Street, for many years, and has proved invaluable as a dressing seal. The following record of its composition and preparation may be of interest.

Whitehead's varnish is composed of the following: gum benzoin, 4 parts; styrax, 3 parts; balsam tolu, 1 part; ether, 40 parts; with the addition of 10 per cent. iodoform. All five constituent drugs are antiseptic when used. The action of iodoform is well known, and its presence is not always necessary or desirable in a varnish.

Prepared styrax or storax contains an oily liquid and resin, cinnamic acid and its esters, and closely resembles balsam of Peru in its action. Balsam tolu contains benzoic and cinnamic acids and their esters, and resins. Benzoin (*B.P.*) contains cinnamic acid, free and combined, benzoic acid, and numerous aromatic substances. Ether is likewise antiseptic. The combination forms a mildly stimulating antiseptic application. It has the disadvantage of not drying readily, of being unduly expensive, and, furthermore, iodoform is frequently unnecessary.

The original sealing agent for wounds was no doubt the balsam traumaticum of the 1746 *London Pharmacopoeia*. This was replaced by compound tincture of benzoin, or friars' balsam. Both were popular, and almost universally used as domestic remedies. Collodion

then became an official preparation, and came into favour with practitioners. Collodions such as those of the *British Pharmacopoeia* and *British Pharmaceutical Codex* are not suitable for all purposes. They sometimes peel off, and are non-elastic. Whitehead's varnish, and the mastic varnishes of various formulae, have again superseded them for many purposes. During the war styrax was difficult to obtain, and rose in price to between 30s. and 35s. per pound. It is the non-drying constituent. It seemed to the writer to be an unnecessary waste of money to buy styrax when the common resin (*B.P.*) or colophony would substitute so well. The cost of resin is 8d. per pound as against 6s. 9d. for styrax.

The following formulae were devised, and have been in constant use for fifteen years, to the exclusion of the well-known Whitehead's varnish.

Pigmentum benzoin (benzoin varnish). Benzoin, 4 drachms; resin, 3 drachms; balsam tolu, 1 drachm; ether 0·720, 5 ounces.

Pigmentum iodoformi (iodoform varnish). Iodoform, 1 drachm; benzoin varnish, 10 drachms.

These formulae are effective, and are cheap to use. They do not retract the skin, but dry well and remain elastic. They are clean and antiseptic, and are mildly stimulating.—I am, etc.,

J. WICLIFFE PECK, Ph.C., F.C.S.

The Hospital for Sick Children, Great Ormond Street, Sept. 21st.

THE TERM "CONGENITAL"

SIR,—It seems to me that the application of this term should be revised. A disease such as syphilis can never be congenital in the truest sense. This term should be applied only to primary diseases, which, so far as our present knowledge goes, are inseparably associated with the germ-plasm of the individual.

I desire to suggest the use of the word "connatal" for the terms "ante-natal" and "post-natal" which are already widely current. Syphilis, therefore, which is acquired by inoculation of the spirochaete during the passage through the birth passages in labour is "connatal syphilis." It is said, moreover, that certain cases of this disease—for example, syphilitic iritis—may occur in the foetus *in utero*. This is "ante-natal syphilis." In both cases it is an acquired disease. The term "congenital," as applied to syphilis, is a relic of the days before the organism of the disease was discovered; and the latter, therefore, had to be classed with the true congenital diseases.

If what I have said is true, the term "congenital syphilis" should cease to be used. Similarly, ophthalmia neonatorum (when the organism is the gonococcus) is due to connatal gonorrhoea.—I am, etc.,

M. MELGRAVE.

Durham, Sept. 22nd.

RADIOLOGY AND THE RADIOLOGIST

SIR,—As we do our own screening and *x*-ray work here, and in most other sanatoriums, I have been greatly interested in your article and the correspondence.

From time to time I get specialist radiographers' films sent me with their readings attached, and I am always lost in amazement at the cavities found, and at such common phrases as "a heavy peri-bronchial infiltration of a beaded type throughout the upper part of the lung." Might I suggest an intensive campaign, conducted by the clinician, the radiologist, and the pathologist, the end of each case investigated being the post-mortem room. No one is certain of what a pleural ring means; some consider it a cavity, some a spontaneous pneumothorax, and others a pleuritis. Surely this enigma could be solved in the post-mortem room. The radiologist could use lipiodol to help him. Strong hospital committees would be able to insist on a post-mortem examination of any patient dying in their chest hospitals.—I am, etc.,

JAMES D. MACFIE.

Wingfield Sanatorium, Sept. 26th.

PERNICIOUS ANAEMIA

SIR,—I should be very grateful if any of your readers would refer me cases of pernicious anaemia for treatment at Guy's Hospital. Patients with septic complications or paralysis are not suitable.—I am, etc.,

L. J. WITTS.

Guy's Hospital, S.E.1, Oct. 5th.

ADENOIDS

SIR,—I am particularly anxious to obtain for display in our museum photographs of a case of adenoids, one showing the condition before operation and another taken a year or so later, to illustrate the mental and physical improvement that has resulted from treatment. If any reader has such, and would loan the same to me, I would have them copied and the originals promptly returned.—I am, etc.,

H. B. NEWHAM, Curator.

London School of Hygiene and Tropical Medicine (University of London), Keppel Street, W.C.1, Oct. 5th.

Obituary

G. WASHINGTON ISAAC, M.B., C.M.

We regret to announce the death of Dr. George Washington Isaac, which took place at his house in Gower Street, London, on September 24th, after a month's illness. He was born on January 18th, 1857, and from Clifton College went to study medicine at the University of Edinburgh, where he obtained the M.B. and C.M. degrees in 1882. After graduation he came to London and practised at first in Camden Town, removing some forty years ago to Gower Street. He was for many years medical officer to the Home and Colonial Training College for Governesses at Wood Green; also to the St. Pancras Female Orphanage, the St. Giles's Almshouses, and the Nurses' Lodge in Colosseum Terrace, Regent's Park. A strong individualist and devoted to the daily work of his profession, Dr. Washington Isaac won the esteem and affection of a wide circle of patients, who found in him a genial friend, as well as a trusted and skilful adviser. It has been said of him with truth that he gave himself unstintingly to his patients, always putting their interests before his own. He was long a Fellow of the Medical Society of London, and a member of the Westminster and Holborn Division of the British Medical Association. The funeral service at Golder's Green Crematorium on September 28th was attended by many friends and colleagues, the Association being represented by Mr. L. Ferris-Scott, Financial Secretary and Business Manager.

Mr. G. GORDON-TAYLOR, surgeon to the Middlesex Hospital, sends the following appreciation:

The death of Dr. Washington Isaac, at the age of 74, removes a familiar figure from the Bloomsbury district of London. Graduating at Edinburgh half a century ago, like many others he sought the arenas of the South, and built himself up a big practice in London. He was a most competent, pain-taking, kindly, and hard-working practitioner, dearly beloved by his patients, in whose welfare he never spared himself. His interest in motoring must have been as long-lived as that of any medical man,

and the small cars that he was accustomed almost invariably to drive himself were nearly as well known as was the owner. In latter years his one recreation was an interest in wireless, and he constructed for himself a fine piece of apparatus, in the mechanisms of which he took an absorbing interest. He was, however, essentially a hard worker, and it is characteristic of the man that during the war he took a commission in His Majesty's Forces. He was an excellent example of one whose years reached well into the seventies, yet whose energies were unabated, whose mind was acute, despite the fact that he never found time to take a holiday.

THE LATE SIR WILLIAM SIMPSON

Colonel W. G. King, C.I.E., I.M.S. (ret.), sends the following appreciation:

The obituary notice in the *Journal* of October 3rd concerning Sir William Simpson, C.M.G., conveys lucidly and sympathetically the fact that he was typically a sanitarian, in that he strove to marshal and utilize accumulated knowledge of all branches of euthenics for the prevention of disease. May I be permitted to afford further examples of the work he fulfilled in this direction. Thus, as editor of the *Indian Medical Gazette*, to secure interchange of opinions among medical men dealing with the diverse circumstances met in the huge area of India, it was at his suggestion, in October, 1893, and largely by his aid in organization, that the first Indian Medical Congress was assembled in 1894. The numerous annual meetings thus inaugurated have undoubtedly proved of much professional utility. Devotion to the practical application of hygiene necessarily left him little time for "research," as understood at the present day. Nevertheless, that aspect of sanitary science was not neglected, and hence I would recall as memorable work by him, that at a time when the profession held firmly the view that variola vaccine must revert to its original source when used on the human being, he proved experimentally (1884-85) the fallacy of that dogma. His evidence, although accepted by the Local Government Board of the period, was not published till the issue of the sixth report of the Royal Commission on Vaccination in 1897; and the facts consequently were not known to the men who in and after 1891 also dealt with the subject. In 1894, whilst health officer, Calcutta, in conjunction with Haffkine (who happened to be there in connexion with his now famous cholera vaccine), he collected data which tend markedly to demonstrate the connexion of cattle with Hindu social habits and the spread of cholera. To this subject I invited attention in my letter which appeared in the *British Medical Journal* of December 27th, 1930. On referring the subject to him in the month concerned, Sir William informed me that owing to his departure from India it had been impossible for him to further investigate the subject. Seeing that the Government of India in the period which has elapsed has annually provided liberal funds for research, there seems no sound reason why this highly important subject, which entailed much arduous labour by the investigators, has failed to secure attention. It certainly deserves a definite "yea" or "nay" in a country where, in the period 1914-23, within the British India area alone, there were recorded 3,154,908 deaths from cholera.

We regret to record that Dr. Herbert Arnott Eadie was killed in an accident to a motor tractor at Post Hill, Leeds, on September 27th. Dr. Eadie was born in Edinburgh in 1901, was educated at the Edinburgh Academy, and received his medical training in Edinburgh, where he graduated M.B., Ch.B. in 1922. After holding resident posts at the Royal Infirmary, Edinburgh, and at the Leeds Public Dispensary, he entered into general practice in Leeds in 1924, and very soon became well known both medically and socially in the city. He was a popular officer in the Territorial Army, and for the last four years had held a captaincy in the R.A.M.C. (T.A.) in the 146th Field Ambulance. A keen and true sportsman, he was fond of riding, shooting, golfing, and motoring. He was a man of charming personality, and many among his large circle of friends will have experienced in his sudden and tragic death a real sense of personal loss. His great popularity was manifested at his funeral, which was accorded full military honours. He leaves a widow and two young children, a daughter and a son.

The following well-known foreign medical men have recently died: Dr. Louis Goudard, a former president of the Société Médicale de Paris; Dr. Ducamp, professor of clinical medicine at Montpellier; Dr. A. Besson of Paris, author of a work on microbiological and serotherapeutic technique, now in its eighth edition; Dr. Piana, for twenty-five years director of the Radiological Institute of Genoa; and Dr. Hubert Arrowsmith, founder and past-president of the American Bronchoscopic Society, aged 68.

Universities and Colleges

UNIVERSITY OF LONDON

Honorary Degrees

A reception was held at the University on September 28th, to celebrate the centenary meeting of the British Association. On this occasion the degree of Doctor of Science *honoris causa* was conferred on the president of the association (General the Right Hon. Jan Christiaan Smuts, C.H., F.R.S.), and on the following distinguished members: Sir Frederick Gowland Hopkins, P.R.S., Sir Charles Scott Sherrington, O.M., G.B.E., F.R.S., the Right Hon. Lord Rutherford of Nelson, O.M., F.R.S., and, *in absentia*, Sir Joseph John Thomson, O.M., F.R.S.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Museum Demonstrations

The autumn course of museum demonstrations in the theatre of the College will commence on Friday, October 23rd, when Sir Arthur Keith will discuss specimens illustrating the nature and extent of the changes which have affected the jaws of English people in recent centuries. On October 30th he will explain specimens illustrating the anatomy of the pyloric sphincter in cases of hypertrophic enlargement, and on November 6th specimens illustrating the pathology of hydrocephaly. Mr. Cecil P. G. Wakeley will discuss primary bone tumours and secondary tumours of the bone on October 26th and November 2nd respectively. The course will terminate on November 9th, when Mr. R. Davies-Colley will demonstrate the borderline tumours of bone. The demonstrations, which are open to advanced students and medical practitioners, will be held at 5 p.m.

UNIVERSITY OF LONDON GRADUATES' ASSOCIATION

A communication addressed to the University of London Graduates' Association from Earl Beauchamp, announcing his resignation as Chancellor of the University, having been read at the meeting of the council of the association on October 2nd, it was resolved unanimously to invite Lord Moynihan of Leeds, President of the Royal College of Surgeons of England and a distinguished graduate of the University, to accept the association's nomination for the office of Chancellor.

It was further unanimously resolved, in view of the forthcoming General Election, that the association should again nominate Sir Ernest Graham-Little, the sitting member of Parliament for the University, as its candidate, and the council expressed gratification that he had declared himself a supporter of the National Government.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

Parliament was prorogued on October 7th, and a Dissolution immediately followed, elections for a new Parliament being ordered for October 27th. At the end of the session the Foodstuffs (Prevention of Exploitation) Bill and the Sunday Performances (Temporary Regulation) Bill were considered.

National Health Insurance

Mr Chamberlain told Mr Oliver on September 24th that 515 approved societies and branches had included in their schemes of additional benefits Additional Benefit No. 16 under which special treatment for rheumatic diseases would be possible.

Mr L. D. Sutton (Parliamentary Secretary Ministry of Health) told Mr Stephen on September 30th that provision of a second medical opinion in cases of doubt whether an insured patient was incapable of work had been recognized as desirable since sickness benefit first came into operation. He could not therefore consider a suggestion for abolishing or reducing the regional medical office department and allowing panel practitioners to determine whether their patients were fit or otherwise without interference from an outside department.

Replying to Mr Stephen on September 30th Mr Sutton said that grants from the special expenses portion of the mileage funds in England and Wales were made when requisite to enable insurance doctors practising in sparsely populated areas to provide improved service for the benefit of their insured patients. Special conditions governing the division of such a grant for expenses were in operation when two or three doctors practised in a sparsely populated area.

Replying on October 1st to Sir Robert Young Mr Chamberlain said unemployed workers would not be automatically deprived of national health insurance benefits should the Public Assistance Committee under the means test deprive them of further unemployment benefit. So long as a person remained insured under the Insurance Acts he would continue to be entitled to benefits in accordance with the provisions of those Acts and would not be subject to penalties for arrears of contributions in respect of weeks for which satisfactory proof of unemployment was produced.

On October 5th Mr Chamberlain replying to Mr Rhys Davies stated that the cost of the regional medical service under the national health insurance scheme for the last five years was: 1926–27 £130 785; 1927–28 £156 721; 1928–29 £156 700; 1929–30 £164 886; and 1930–31 £184 036.

Tuberculosis Mortality

Replying to Mr Shepherd on October 1st Mr Chamberlain stated that the number of deaths from all forms of tuberculosis per cent. of the total population in England and Wales in each of the years 1911–30 was:

1911	0·1468	1921	0·1126
1912	0·1372	1922	0·1121
1913	0·1362	1923	0·1062
1914	0·1361	1924	0·1058
1915	0·1515	1925	0·1078
1916	0·1529	1926	0·0961
1917	0·1624	1927	0·0972
1918	0·1694	1928	0·0926
1919	0·1284	1929	0·0959
1920	0·1133	1930	0·0898

The figures for the years 1915–20 inclusive were based on civilian deaths and civilian population.

Foot and Mouth Disease

Sir J. Gilmour replying to Brigadier-General Brown on October 5th said that twenty-three cases of foot and mouth disease had been confirmed in Great Britain since August 1st last of which seven had occurred since September 1st. The most recent outbreak was confirmed on October 4th at Grafham (Huntingdonshire). Infected area restrictions were at present in force in three districts—namely, within areas of fifteen miles radius of Grafham (Huntingdonshire) and of Walsall (Staffs.) and an area covering five miles radius of two infected places in adjacent parishes in Pembrokeshire and Carmarthenshire. Since August 1st 375 cattle, 631 sheep, 514 pigs, and 1 goat had been treated with foot and mouth disease serum. The disease appeared in only one instance among treated stock in this period—namely, on August 30th—when five cattle went down out of a number of animals which had been inoculated with serum thirteen days previously. Replying to supplementary questions Sir J. Gilmour said that it was too early to form an definite conclusion as to the actual result of the serum treatment. He still considered that the best way to counteract the disease was by slaughter, and burning the carcases.

Exports of Indian Opium.—On September 28th Sir S. Hoare replying to Major Pole said that in 1926–27 26 254 592 ounces of opium were exported from India. In 1927–28 18 259 840 ounces were exported, in 1928–29 14 951 975 ounces, in 1929–30 13 392 800 ounces, and in 1930–31 9 558 480 ounces.

Milk Standards.—Mr Chamberlain told Mr Potts on October 1st that he could not introduce any legislation enforcing a definite bacteriological standard of milk and making it an offence for producers and retailers to sell milk not of the fixed standard.

Puerperal Fever.—Mr Chamberlain told Viscount Cranborne on October 1st that the theories of Mr Todd with regard to the prevention of puerperal fever submitted to the Ministry of Health had been referred to the Departmental Committee on Maternal Mortality and were still under its consideration.

Tuberculous Cattle.—On October 2nd Sir John Gilmour (Minister of Agriculture) stated that the cattle population of England and Wales in June 1931 was 5 849 776. In 1930 reports were made under the Tuberculosis Order 1925 on 15 008 premises containing 471 827 cattle. On these premises 177 425 cattle or 3 per cent. of the total cattle population were the subject of reports and 12 760 cattle were slaughtered in pursuance of the Order being 0·2 per cent. of the total cattle population.

Dust from Cement Mills.—The reports of the alkali inspectors of the Ministry of Health show that progress has been made in reducing the emission of dust from the cement factories on the banks of the Thames in Essex and Kent. No recent complaints have been received.

Pensions Claims.—Major Tryon states that during the twelve months ended last June 11 193 new claims outside the seven years limit were received by the Ministry of Pensions. In that time 13 000 claims were decided of which about 630 cases were admitted to pension and 22 were found to require not more than medical or surgical treatment.

Rate-aided Mental Patients.—On January 1st last there were 108 917 rate-aided patients in mental hospitals in England and Wales. On the same date 16 119 persons were in receipt of domiciliary medical relief while on June 27th last 13 218 persons were receiving this form of relief.

The Services

DEATHS IN THE SERVICES

Deputy Inspector-General Richard Edmund Bullup, R.N. (ret.), died at the Royal Naval Hospital, Bighi, Malta, on July 6th. He was educated at Trinity College, Dublin, where he graduated as B.A. and M.B. in 1876, and as M.Ch. in 1877. Entering the Navy as surgeon soon after he attained the rank of fleet surgeon on October 1st 1889, on retiring as deputy inspector-general on April 28th 1897.

Deputy Inspector-General Richard Gavin Pearson, R.N. (ret.), died at Southsea on July 9th. He was educated at Aberdeen, where he graduated as M.B. and C.M. in 1869. Entering the Navy soon after he attained the rank of fleet surgeon on November 14th 1882, and retired with the rank of deputy inspector-general on April 1st 1900. He served as senior medical officer in the Nile expedition of 1884–85, was in medical charge of the Naval Brigade during the Suakin campaigns of 1885 and 1886, and took part in the Soudan campaigns of 1885 and 1886, and was mentioned in dispatches by Commander Sir W. N. Hewett. He was in receipt of a Greenwich Hospital Pension.

Surgeon Captain James Duff Scott Milln, R.N. (ret.), died at Alverstoke, Hants, on August 28th. He was educated at Dundee and at Edinburgh University, where he graduated as M.B. and Ch.B. in 1897. Entering the Navy as surgeon soon after graduation, he attained the rank of surgeon commander on November 29th, 1911, and retired, with an honorary step of rank as surgeon captain, on November 10th, 1924. He served throughout the war of 1914-18.

Surgeon Francis Henry Spencer, Army Medical Department (ret.), died at Exeter on June 10th, aged 82. He was born at Chippenham, Wilts, in 1849, and was educated at King's and University Colleges, London, and Aberdeen University, where he graduated M.B. and C.M. in 1873, and M.D. in 1876. He took the M.R.C.S. and L.S.A. in 1871, entered the Army as surgeon in 1873, and was placed on half pay, on account of ill health, on March 1st, 1879.

Colonel John Archibald Hamilton, C.M.G., Bengal Medical Service (ret.), died in a nursing home at Bath on July 29th, aged 61. He was born on November 4th, 1869, the son of Robert Gordon Hamilton, Esq., cotton broker, Birkenhead, and was educated at Edinburgh, where he graduated as M.B. and C.M. in 1892. Subsequently he took the diploma in tropical medicine at the London School of Tropical Medicine in 1913. Entering the I.M.S. as surgeon lieutenant on January 29th, 1895, he became lieutenant-colonel on July 29th, 1914, was placed on the selected list for promotion on March 1st, 1921, and retired, with an honorary step in rank as colonel, on June 8th, 1922. He served in the China war of 1900, receiving the medal and clasp; and in the war of 1914-18, in France in 1914-15, and in Iraq in 1916-20, was mentioned in dispatches four times—in the *London Gazette* of January 1st, 1916, January 5th, 1919, February 12th, 1920, and May 21st, 1920—and, in addition to the medals, received the C.M.G. on January 14th, 1916. Subsequently he served in Kurdistan in 1919-20, and in Waziristan in 1920-21.

Medical News

The President and Council of the British College of Obstetricians and Gynaecologists have issued invitations to a dinner on Friday, October 23rd, at Grosvenor House, Park Lane, W.

The annual dinner of the Chelsea Clinical Society will be held at the Rembrandt Hotel, Thurloe Place, S.W., on Tuesday, October 20th, at 7.30 p.m.

The annual general meeting of the West Kent Medico-Chirurgical Society will be held at the Miller General Hospital, Greenwich, to-day (Friday) at 8.45 p.m., after which clinical cases will be discussed.

The Cockburn Memorial Lecture before the Child-Study Society will be given by Dr. A. F. Tredgold at 90, Buckingham Palace Road, S.W.1, on Thursday, October 22nd, at 6 p.m.; the title of the lecture is "Some observations on mental development."

Sir Richard Gregory will open, at 4 p.m. on Wednesday, October 21st, at the Science Museum, South Kensington, an exhibition illustrating modern research in the British glass industry. Besides the exhibition there will be lectures on Thursday afternoons dealing with the modern developments in optical glass, plate glass, electric light bulbs, and safety glass.

The next monthly clinical meeting for medical practitioners will be held at the Hospital for Epilepsy and Paralysis, Maida Vale, W.9, on Thursday, October 15th, at 3 o'clock, when Dr. Russell Brain will give an address on epilepsy. Tea will be provided. Those intending to be present are asked to send a card to the secretary.

The course in venereal diseases arranged to be held at the municipal clinic of the Salford Public Health Department has had to be postponed indefinitely owing to the illness of Dr. E. T. Burke.

A post-graduate course on renal and cardiac diseases is being arranged at Frankfort, under the direction of Professors Volhard and Schmieden. The fee is 25 marks. Further information can be obtained from the Medizinische Klinik, Eschenbachstrasse 14, Frankfurt-a-M.

A free post-graduate course on malignant tumours will be held at the Medical Faculty of Tübingen University from October 26th to 28th. The programme can be obtained from the dean of the faculty.

The thirty-eighth Italian Congress of Surgery will be held at Bari from October 18th to 21st, under the presidency of Professor G. Righetti of Bari. The principal subjects for discussion will be the syndrome associated with the right abdomen, introduced by Professor N. Leotta of Palermo; and acute and chronic pancreatitis (in conjunction with the Italian Society of Internal Medicine), introduced by Professor G. Tunisi of Genoa.

The thirty-seventh Italian Congress of Internal Medicine will be held at Bari from October 13th to 21st, when the following subjects will be discussed: diabetes, introduced by Professor L. Zoia; the onset and evolution of pulmonary tuberculosis, introduced by Professors C. Gamna and A. Omodei-Zurini; acute and chronic pancreatitis, introduced by Professor Gasbarrini; and malaria and tuberculosis in the army, introduced by Colonel V. de Bernardinis.

The annual meeting of the International Society of Medical Hydrology will take place in Amsterdam at the American Hotel from October 31st to November 2nd. Discussions will be held on the influence of chill in the causation of disease, opened by Professors Schade and van Loghem, and on factors in marine treatment, opened by Professor Moll and Dr. Häberlin. Arrangements have been made for visits and demonstrations at various clinics and objects of interest in the city. A limited number of places are available for non-members, including ladies; full particulars can be obtained from the society's office, 55, Wellington Road, London, N.W.1.

In the annual report of the department of neurology and psychiatry of the Severance Union Medical College, Seoul, Korea, Dr. C. I. McLaren commends warmly the epidural injection method for the treatment of sciatica and trigeminal neuralgia. He compares the scope for neuro-psychiatry in Korea with that in Europe and America, and mentions the reappearance of beri-beri among Koreans with the recent introduction of machine methods of preparing rice. The majority of cases treated during the year were neuroses and psychoneuroses; Dr. McLaren prefers the therapeutical methods of Dejerine and Adler to those of Freud.

The Fellowship of Medicine and Post-Graduate Medical Association announces that a lecture on cancer will be given in the Medical Society of London lecture room on October 14th, at 4 p.m., by Mr. W. Sampson Handley; no fee. In connexion with the series of evening lectures for the M.R.C.P., Dr. L. J. Witts will lecture on gastric and duodenal ulcer, on October 12th, and Dr. R. D. Lawrence on diabetes, on October 14th, both at 8.30 p.m.; fee for each lecture, 10s. 6d., payable at lecture room (or £6 6s. for series of sixteen lectures). A post-graduate demonstration will be given by Mr. J. P. Lockhart-Mummery at St. Mark's Hospital, City Road, on October 12th, at 2.30 p.m.; no fee. "The management of difficult cases of feeding" will be dealt with by Dr. Eric Pritchard at the Infants Hospital, Vincent Square, on October 16th, at 3.30 p.m.; no fee. The following courses will begin on Monday, October 12th: in medicine and surgery, at the Prince of Wales's Hospital, Tottenham, occupying the whole of each day for two weeks, fee £5 5s. or £3 3s. for either week; in dermatology, at St. John's Hospital, Leicester Square, daily clinics at 2 and 6 p.m. and lectures at 5 p.m., on Tuesdays and Thursdays, fee £1 1s. for four weeks; in diseases of the heart, at the National Heart Hospital, occupying the whole of each day for two weeks, fee £7 7s. Forthcoming courses include paediatrics, at the Hospital for Sick Children, Great Ormond Street, from October 19th to 31st, in the mornings only, fee £5 5s.; medicine, surgery, and gynaecology, at the Royal Waterloo Hospital; neurology, at the West End Hospital for Nervous Diseases; and ophthalmology, at the Royal Westminster Ophthalmic Hospital. Copies of syllabuses on application to the Fellowship of Medicine, 1, Wimpole Street, W.1.

Prophylaxis of Lumbago

"B S" writes, in reply to "S L" (October 3rd, p 637) The answer is warmth, dryness, rest, exercise, and diet I would suggest a dry, warm house, well ventilated, dry bedding (feather beds absorb damp, and should be periodically warmed all day by the fire), a sufficiently long indoor jacket, a waistcoat lined with flannel at the back, moderate walking exercise, and occasional rests, lying flat on a firm, level bed, very moderate use of sugar and carbohydrates, massage once or twice weekly, and a Turkish bath every two or three weeks A short course of resorcinol, or some other urinary antiseptic, is often found beneficial

Dr H Fergil Woods (London, W) writes, in reply to "S L" The recurrent attacks suggest a lesion of the sacro iliac synchondrosis, or of a lumbar vertebra, and manipulation might entirely do away with recurrence of attacks Relief at the time of an attack might be gained by the administration of rhus toxicodendron, which has an immediate effect in some forms of lumbago I can speak for the efficacy of both the above mentioned methods of treatment, after a score of years' experience of them

Income Tax

Depreciation or Cost of Renewal of Car

"G P" inquires which is better—to claim depreciation annually, or only cost of replacement when the car is exchanged

*** Depreciation annually If the car is not renewed—for example by reason of retirement—the allowance is entirely lost if cost of renewal is relied on for redress Further, the allowance of depreciation does not prevent a claim for 'obsolescence" being made for a deduction of the cost of the car less the amount received for it, together with the aggregate of the depreciation allowances For example car cost £250 £96 allowed for depreciation in three years car sold for £75, when another purchased in place of it, obsolescence allowance as an expense of year of sale would be £250 − (£96 + £75 =) £171—that is, £79

Liability on New Basis

"Member B M A" asks what tax will be payable by him on a pension of £634 He is a bachelor, 66 years of age, and has a dependent relative, his sister acts as housekeeper

*** Assuming that the pension ranks as "earned income" his liability under the second Budget will be as follows

		£	£
£634 less 1/5 = £127 earned relief			507
Personal allowance	.	100	
Dependent relative allowance	..	25	
Housekeeper allowance	..	50	
			£175
			£332

Tax payable

£175 at 2s 6d	= £21 17	6
£157 at 5s	= £39 5	0
£332	£61 2	6

Car Replacement

"D M J" has had several cars during the past few years, and the allowance for maintenance has been on the basis of cost of replacement" In 1928 he had two cars but one was not satisfactory, and he bought a third Not being able then to obtain what he considered a reasonable offer, he retained it for a time, and ultimately sold it two and a half years later During that time all three cars were licensed and used The inspector of taxes declines to make an allowance for the loss on sale on the ground that the car bought in 1931 was not a "replacement"

*** The essential point seems to us to be whether, in fact, the transaction was intended to be—as it ultimately proved to be—a replacement If "D M J's" intention was to add to his car equipment and was subsequently changed, the inspector's view would be correct—the subsequent change would not affect the real nature of the original transaction But it is obviously not essential that the sale of the replaced asset should be effected immediately, and, although the interval was quite unusually long in this case, we consider that there is no legal bar to the allowance, and, further, that the local commissioners or the Board of Inland Revenue would be impressed with the obvious equity of our correspondent's case It is, of course, a pity that "depreciation" was not claimed year by year

LETTERS, NOTES, ETC.

Maggots in Wounds

Dr Arthur J Turner (Lee-on-the-Solent) writes During my work in hospitals on the North-West Frontier of India I met with several cases of bone disease caused by maggots Under the surgeon's full control it may be true, as Dr Bate concluded, that "maggots, by their digestive action clear away the minute fragments of bone and tissue sloughs caused by operative trauma." But sad indeed were the cases to which I refer, where, through flies having entered the patient's nose or ear, eggs had been deposited in the nasal or aural cavities, and the resulting maggots were at work digesting, uncontrolled, the mucous membranes fibrous and bony tissues, and even the brain of the still conscious and functioning human being In the worst case (one can never forget it) parts of the face, nose, mouth, skull and brain had been eaten away, presenting a terrible spectacle Spirits of turpentine in aqueous solution, 20 minims to a pint of water, was the most successful in reaching and killing the maggots, and patients in an early stage of nose or ear destruction were cured, but the above case of extensive attack was brought in too late, and drastic search under an anaesthetic proved unavailing to reach the furthest areas to which the maggots had penetrated The patient died a few days later.

Medical Care on Passenger Ships

Dr E H Price (Brighton) writes: I have recently returned from a voyage to Canada on one of the Cunard liners and I was much impressed by the arrangements now provided for the sick at sea There was excellent hospital accommodation, including isolation and special wards The dispensary was large, and contained all the medicines serums, and vaccines one could possibly require Everything was scrupulously clean, and the surgical instruments were of the latest design and in good order The ship carried a trained nurse and dispenser. A very accurate account of illnesses and accidents occurring on the voyage had to be kept As one who acted for many years as medical superintendent of a large hospital, I was much impressed with the efficiency of this small medical unit afloat Doctors who recommend sea voyages for their patients can rest assured that they will be well cared for in these days of modern ocean travel

Advantages of Home Spas

Mr F J C Broome, general manager of wells and bath at Harrogate, writes At the present time, when every pound spent abroad reacts unfavourably on the financial situation I would draw the attention of physicians who may be contemplating sending patients to foreign spas to the advantages of home spas, where all the treatments obtainable abroad are administered The patient's prescription is rigidly followed, and his comfort is a matter for careful consideration by attendants more highly qualified and intelligent than those at foreign centres

Imported Diathermy Apparatus

Victor X-Ray Corporation Ltd, of Cavendish Place W 1 writes Your readers will perhaps be interested to learn that there is no duty upon imported diathermy apparatus as a whole, the only part of such machines subject to duty being any meters containing permanent magnets Rarely does this duty exceed 2s or 3s

Fencing

Dr A E Finckh of the Sydney Clinical Research Laboratories has sent us an English edition, which he has prepared for the use of the members of the Sydney Eppée Club of the rules governing fencing displays and competitions as issued by the International Fencing Federation The booklet purports to be an interpretation rather than an exact translation of the French text, and should be of interest to members of hospital fencing clubs in this country A copy has been placed in the Library of the British Medical Association.

Vacancies

Notifications of offices vacant in universities medical colleges and of vacant resident and other appointments at hospitals will be found at pages 51, 52, 53, 56, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 215

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

311 Prophylaxis against Pneumonia

A. J. ORENSTEIN (*Journ. Med. Assoc. South Africa*, June 13th, 1931, p. 339) comments on his fourteen years' experience of the inoculation of native mine workers on the Witwatersrand against pneumonia. In 1911 the mortality from this cause among the natives was over 12 per 1,000, and in subsequent years there was an apparent fall, but reasons are given for doubting the real value in this connexion of prophylactic vaccination. In 1929 inoculation was discontinued in certain mines, and the subsequent history there did not suggest that any special benefit had been conferred by the previous vaccination against pneumonia. A contention that the clinical type of this disease had radically changed is examined by the author, and shown to be unjustified. No evidence emerged that prophylactic inoculation had diminished the attack rate in the early period of the natives' service in the mines. Orenstein reports also that study of the experimental work undertaken before the wholesale immunization of natives was attempted reveals that the results were by no means conclusive; only one experiment (in 1914) could really be considered encouraging. He concludes that in view of the probable existence of a large number of types of pneumococci, and the feebleness of the immunity conferred even by an attack of pneumonia, the possibility of effective prophylactic immunization appears to be very remote.

312 Early Nephritis in Scarlet Fever

E. ASHWORTH UNDERWOOD (*Brit. Journ. Child. Dis.*, April–June, 1931, p. 114), who records an illustrative case, remarks that the onset of true nephritis occurs generally about the second or third week of the disease, although febrile albuminuria may develop very much earlier. He quotes a case reported by Priest in 1927 in which nephritis was present from the onset of the disease, and ended in recovery. His patient was a girl, aged 16, who developed acute haemorrhagic nephritis on the second day, if not earlier, of an ordinary attack of scarlet fever, which was not treated by scarlatinal antitoxin. The tonsillitis showed a definite recrudescence during each of three attacks of tonsillitis in convalescence. On her discharge from hospital after 183 days' residence the urine had been normal for a fortnight. Four years later, however, the patient was reported to be suffering from chronic nephritis. Underwood suggests that the *Streptococcus scarlatinae* caused the initial nephritis, which was of a mild glomerular type, and that an acute interstitial nephritis supervened, which ultimately became chronic and involved other elements of the kidney.

313 Axillary Pleurisy after Artificial Pneumothorax

A. VITON (*Arch. Méd.-Chir. de l'Appareil Respir.*, 1931, vol. vi., No. 1, p. 42) has seen four cases of a form of pleurisy, following artificial pneumothorax, which he terms "axillary." In each case pneumothorax had been induced for an active tuberculous lesion. Three of these patients had lived at high altitudes for a long time. Three were women, and the axillary pleurisy was on the left side; the male patient had right axillary pleurisy. Viton defines two distinct types. In three patients the axillary symptoms appeared during resorption of a generalized pleurisy, following artificial pneumothorax. In the other form a localized axillary pleurisy occurred without a preceding effusion into the general pleural cavity. The physical, chemical, and cytological characteristics of an axillary pleuritic exudate are similar to those of an ordinary effusion following artificial pneumothorax. Axillary pleurisy is one of the forms of localized pleurisy ("pleurésie cloisonnée") described by French writers; it recommends no special treatment, except that he endeavours to promote pulmonary collapse. As is usual in these cases, the pleural coefficient of gaseous absorption diminishes considerably, hence the intervals between insufflations can be increased. Treatment should not be restricted to one method, but should be selected according to the necessities of the case or the type of the disease—for example, tuberculin, antigen therapy, or sanocrysin should be used when indicated.

314 Meningitis due to Ascaris lumbricoides

A. CHALLAMEL (*Bull. Soc. de Thér.*, June 10th, 1931, p. 184), who records an illustrative case, emphasizes the clinical and cytological resemblance of meningitis caused by worms to tuberculous meningitis, and points out that owing to the formation of toxins the nervous symptoms may develop after the expulsion of worms in a macerated condition. Challamel's patient was a girl, aged 6 years, who suddenly developed left facial paralysis, followed the next day by symptoms of meningitis. The cerebrospinal fluid, however, was clear, though under pressure; it showed a leucocytosis, 50 per cent. of the cells being polymorphonuclears, and the remainder lymphocytes. A diagnosis was then made of incipient poliomyelitis, but after expulsion of a dead *Ascaris lumbricoides* was changed to that of helminthous meningitis. The temperature fell and Kernig's sign disappeared, although the facial paralysis persisted for a month.

315 Diagnosis of Meningococcaemia

S. MCLEAN (*New York State Journ. of Med.*, June 15th, 1931, p. 684) emphasizes the value of smears from purpuric lesions in cases of endemic purpuric meningococcal bacteraemia. About 11 per cent. of patients admitted to the Babies' Hospital, New York, with meningococcal infections showed purpuric eruptions, the youngest was aged 46 days and the oldest 7 years. Out of seventeen cases in which an effort was made to find meningococci in the haemorrhagic skin lesions, organisms were discovered in twelve.

Surgery

316 Malignant Tumours of the Bladder

R. DARGET (*Bordeaux Chirurgical*, July, 1931, p. 189) summarizes the results of radium therapy in twenty-three cases of malignant tumours of the bladder. It is pointed out that extensive surgical intervention such as partial cystectomy, hemi-cystectomy, with or without nephrectomy, or total cystectomy, has now been abandoned; operation is limited to cystostomy, which makes the use of physical agents possible. Electro-coagulation of the exposed bladder, and radium therapy by implantation of needles or tubes of radium, are the two methods of treatment; the author favours the latter procedure. Of the twenty-three cases treated by radium therapy, five patients died following the operation, but were all very unfavourable cases. Five other patients died a few months after operation from varying causes, such as pneumonia, cerebral haemorrhage, and recurrence of the tumour, but the remaining thirteen made good recoveries and were still well at the end of varying periods of from three months to seven years. In each case the malignancy of the neoplasm was confirmed by histological examination. The aim of the radium therapy is the destruction of the tumour and prevention of recurrence, and it is important that as little discomfort as possible should be felt by the patient during the application of the radium, and details of technique which render this more tolerable are given. The time for the needles to be left in position depends on the condition and situation of the tumour. For accessible tumours which are well exposed and well defined the duration of the application should be from

five to six days, but for grave ulcerated tumours which are badly placed in the bladder the radium must be left in place for seven days. The results from this form of treatment of malignant tumours of the bladder encourage the author to hope that it will be more widely adopted.

317 Congenital Dislocation of the Hip

In a review of congenital dislocation of the hip, M. C. Scholder (*Rev. Méd. de la Suisse Romande*, June 25th, 1931, p. 467) discusses at some length its pathogeny, due chiefly to the intrauterine position of the foetus and to the anatomical relations between the foetal cotyloid cavity and the femoral head. The condition is frequent in the white races, but rare in the black, and does not occur in animals; it predominates in females (88 per cent.). The reason for these differences is explained. Until the sixth month of foetal life the cotyloid cavity is hemispherical, its index (the ratio between the depth and diameter of the cavity) being 0.51; at birth the cavity is flattened, with a lower index, and admits only about a third of the femoral head. After birth the depth of the cavity and the index progressively increase till in adults two-thirds of the head is contained in the cavity. It is shown that during foetal development, owing to the increasing pressure of the uterine walls, there is a posterior displacement of the head of the femur, with ante-torsion of its neck, the latter being the more serious. The slightest exaggeration of these factors results in dislocation. The instability of the hip and the danger of dislocation increase as parallelism between the plane of the opening of the cotyloid cavity and the axis of the femoral neck is established; if parallelism is reached, dislocation becomes inevitable. The diagnosis of this condition from the clinical and radiological signs is usually easy. Orthopaedic treatment should be instituted early, and before the age of 4. After this age the muscular and capsular resistance increases, and reduction becomes more difficult; after 15 years it is almost impossible.

318 Injection Treatment of Varicose Veins

F. Maignon, C. Grandclaude, and M. Lambret (*Presse Méd.*, June 17th, 1931, p. 889), while studying the effects of injecting glycerin intravenously in dogs, discovered by chance the powerful sclerosing action of this reagent, and have elaborated a technique which they have used with great success in man. A first dose causes no trouble or apparent effect, but subsequent doses at the same point between the fourth and tenth days produced in all cases a very marked sclerosis, accompanied by the painless obliteration of the veins. There were neither local nor general reactions, and healthy patients were able to continue their occupations. The first injection results in sensitization of the vein wall; this begins to appear after about twenty-four hours, and is followed by a desensitization after about a fortnight. A preliminary dose of 5 to 10 c.cm. of a 50 per cent. solution of glycerin in distilled water is first injected through a suitable needle, and this is usually followed by one or two injections six days later of a 75 per cent. solution. All the cases were quite successful, and became free from disability; five are reported in detail. The patients' ages ranged from 50 to 77 years; the general state was poor and the health unsound, especially as regards the heart and lungs.

319 Digital Examination in Rectal Disease

F. C. Smith (*Med. Journ. and Record*, June 17th, 1931, p. 575) comments on some cases referred to him for treatment without a previous adequate local examination. In a woman diagnosed as suffering from haemorrhoids a large post-anal ulcer was seen as soon as the buttocks were pulled apart; there were no piles. Another woman had been treated for persistent diarrhoea for three months; a large carcinoma of the rectum was found within reach of the index finger. In a child treated for haemorrhoids a rectal polyp proved to be the cause of the haemorrhage. A man believed to have an acute rectal abscess was shown by digital examination to have a small chicken-bone stretched across the anus. An "ischio-rectal abscess" in a man was by a digital examination revealed as an external thrombotic haemorrhoid.

Therapeutics

320 Thiocyanate Therapy in Hypertension

W. G. Egloff, L. H. Hoyt, and J. P. O'Hare (*Journ. Amer. Med. Assoc.*, June 6th, 1931, p. 1941), as the result of treating a controlled series of hypertensive patients with potassium and sodium thiocyanate, conclude that this line of therapy is disappointing and disagreeable. Of their 25 ambulatory patients, all of whom had previously been under observation for two to ten years, 12 had primary hypertension, 11 had hypertension with hypertensive heart disease, and two had hypertension with moderate renal involvement. All other medication having been suspended, the thiocyanate was administered in diminishing doses for three weeks. The potassium salt was early abandoned in view of the distressing weakness and nausea that ensued. The sodium salt was given in an 8 per cent. aqueous solution. During the first week 1 gram was administered daily; in the second week the dose was reduced to 0.6 gram; and in the third week only 0.3 gram was taken. Eight patients discontinued the treatment after the first week, owing to the unpleasant results, and without any definite lowering of the blood pressure. Only 2 out of the 25 derived any benefit, and in their cases the improvement was not outside the limits of temporary diminution which sometimes occurs in hypertension even without medicinal administration. The headache, dizziness, and nervousness were unaltered in all the remaining cases. Every patient complained of nausea, and sometimes vomiting, commencing two to five days after the treatment started. Other common symptoms were diarrhoea, increased nervousness, and apprehension, with ringing noises in the head. One patient developed disorientation as to time and place. In view of these findings the authors conclude that thiocyanate therapy cannot be commended in hypertension.

321 Atropine in Encephalitis Lethargica

E. Schenk (*Münch. med. Woch.*, July 10th, 1931, p. 1177) records ten cases of encephalitis lethargica in patients aged from 20 to 53, in which good results were obtained by the long-continued administration of atropine, commencing with three drops of a 1/4 per cent. solution, the dose being increased daily by two drops. G. Arghiris (ibid., p. 1183) claims to have obtained complete cure in one case and considerable improvement in three others by use of the following method. An injection of 2 c.cm. of a 40 per cent. sterilized solution of urotropine is given intrathecally on the first day, and 10 units of insulin subcutaneously; three days later 5 c.cm. of urotropine and 15 units of insulin are administered, the same treatment being continued every three days until 20 units of insulin have been injected. In the case which recovered twenty lumbar punctures were performed, and in the other three, five to twelve. The treatment was combined with massage, light baths, diathermy, and tonics, such as arsenical preparations, or sedatives such as luminal or gardenal.

322 Treatment of Addison's Disease

C. H. Greene and L. G. Rowntree (*Proceedings*, Staff Meetings, Mayo Clinic, May 20th, 1931, p. 305) report further results from treating Addison's disease with the cortical hormone of Swingle and Pfiffner, with special reference to the chemical and metabolic changes, which they have found to be very similar to those reported in suprarenalectomized animals. Considerable doubt remains, however, as to the advisability of accepting chemical or metabolic changes in animals as valid criteria for the standardization of commercial preparations of this hormone. In recording the results of treating patients, moreover, it is necessary to exclude the influence of secondary effects which are not properly attributable to suprarenal insufficiency. The best methods of administration and the correct dosage have not yet been established. In 22 cases of Addison's disease, so treated, excellent immediate results followed in 17, some of the failures being possibly due to inadequate dosage. The clinical

improvement associated with this treatment comprises: disappearance of the anorexia, nausea, vomiting, and pain; return of healthy hunger and of the normal gastro-intestinal activity; relief from fatigue and insomnia; increase in weight, strength, endurance, blood pressure, and resistance to infection; decreased pigmentation; a more hopeful outlook, and a return to work. In treatment it is important to secure physical and mental rest, an adequately fluid diet, arrest of the dehydration, and employment of the Muirhead regimen when cortical hormone therapy is impossible. The inability of Swingle and Pfiffner to supply further material for clinical investigation has necessitated the authors making use of the product supplied by Parke, Davis, and Co., which is now being administered in close co-operation with the two previously mentioned originators of this special hormone therapy in Addison's disease. They add that the dramatic improvement, characteristic of cases treated by the first-named product, is now less notable, and that it is uncertain as yet how far the good results gained more slowly are attributable to the newly tried extract, or to the part played by the exhibition of glucose, water, and salt. Clinical idiosyncrasies in the later series of patients may also be concerned.

Anaesthetics

323 Effect of Anaesthetics on the Blood Lactic Acid

Among the metabolic effects following the administration of anaesthetics, hyperglycaemia and increase of lactic acid in the blood are known to occur. The latter also occurs in cases of liver insufficiency, and whenever there is a shortage of oxygen in the tissues; anaesthetics may produce either condition. In order to demonstrate minute disturbances of carbohydrate metabolism, or slight degrees of hepatic insufficiency, W. Seebening (*Schmerz Narkose-Anaesthesie*, June-July, 1931, p. 104) has studied the blood lactic acid curve following the intravenous injection of sodium lactate solution, corresponding to 4 grams of lactic acid. Blood is collected five, twenty, thirty, and sixty minutes after the injection. In normal persons the blood lactic acid is 7 to 13 mg. per 100 c.cm., and after the injection of 4 grams of lactic acid it returns to normal within 30 to 60 minutes. Operations tend to raise the lactic acid content, the amount of increase depending upon the disease and the condition of the patient, but above all on the type of anaesthetic used. Using the lactic acid tolerance test, as just indicated, the author found normal values during local or spinal anaesthesia, whereas during ether or avertin anaesthesia the blood lactic acid figure was increased, and the return to normal after injection was delayed. Even three or four days after the anaesthetic, when the initial blood lactic acid was within normal limits, the curves showed a diminished capability of the organism to deal with lactic acid.

324 Nupercaine in Spinal Anaesthesia

Despite the fact that the toxicity of nupercaine appears to be twenty times as great as that of procaine, E. L. Keyes and A. M. McLellan (*Journ. Amer. Med. Assoc.*, June 20th, 1931, p. 2085) conclude that its advantages outweigh its disadvantages. They report a series of 215 inductions of anaesthesia by nupercaine, the dose being 2 c.cm. of a 1 in 200 solution in spinal fluid. A preliminary subcutaneous injection of morphine and scopolamine is given half an hour before the patient is due in the operation theatre. A subcutaneous injection of 50 mg. of ephedrine hydrochloride follows just before the nupercaine is slowly introduced into the spinal canal, this being effected between the third and fourth lumbar vertebrae, with the patient in a sitting position. Additional anaesthesia was necessary for pain in 16 cases. The fall of blood pressure seemed to be less than when procaine is used; nupercaine anaesthesia is relatively slightly delayed, more intense, and from three to six times as lasting. The minimal blood pressure is reached always within half an hour. Nupercaine has also been used successfully in 1,000 solution for infiltration anaesthesia in such operations as cystotomy, circumcision, hydrocele, epididymectomy, and abscess opening. The authors do not commend the employment of a mixture of procaine and nupercaine. They encountered no evidence of intoxication with nupercaine, even in patients who had been previously rendered toxic by procaine.

325 Extra-ocular Muscle Paralysis following Spinal Anaesthesia

K. R. Fawcett (*Minnesota Med.*, July, 1931, p. 648) records two cases of unilateral abducens paralysis following spinal anaesthesia. The complication is rare, only five cases having been reported in a series of 2,000 spinal anaesthesias, and its etiology and peculiar affinity for the external rectus as compared with the other ocular muscles is as yet unexplained. The abducens nerve, however, occupies a very superficial position in relation to the fourth ventricle, which communicates directly with the subarachnoid space into which the anaesthetic is injected and it has been shown experimentally on dogs that the anaesthetic agent frequently reaches the medulla. If the strabismus is due to a mild meningitis the divergent type would be expected, but the type following spinal anaesthesia is usually convergent. The onset varies from three days to three weeks, and most cases clear up spontaneously in three weeks. In Fawcett's first case paralysis of the right external rectus with slight photophobia, vertigo, and headache, developed on the thirteenth day after operation, and had entirely disappeared thirteen days later. In the second case the squint occurred on the twelfth day, and persisted with but slight improvement for seventeen months. Owing to its tendency to clear up spontaneously, treatment of this condition should be conservative, and any operation postponed for at least eighteen months. The paralysis occurs more often with stovaine than with novocain.

Obstetrics and Gynaecology

326 Amaurosis during Pregnancy

B. H. Swift and A. L. Tostevin (*Med. Journ. Australia*, May 23rd, 1931, p. 632) report a case of increasing blindness during pregnancy; although no other sign of toxaemia was discoverable, it was decided to empty the uterus, and the vision rapidly returned to normal. There was a typical history of gradual diminution of vision at about the fifth month of pregnancy, with early loss of colour vision, and tenderness on moving the eyes. Repeated examination of the visual fields excluded the possibilities of hysteria and malingering. No toxic foci were detected in the cranium or elsewhere, and no evidence was obtained of syphilis or renal disease. The authors remark that increasing blindness or dimness of vision during pregnancy is usually a sign that the patient is becoming toxaemic, even though the usual signs of this condition are absent. Blindness often precedes the convulsion in commencing eclampsia, and usually clears up as soon as the uterus is emptied. It is attributed to toxic poisoning of the ganglia and optic nerves, and atrophy may ensue in the authors' case there had been slight dimness of the vision towards the end of a previous pregnancy, which had, however, terminated naturally, a healthy child being born.

327 Diagnosis of Gonorrhoea

L. Izwojnicka and T. Zawodziński (*Gynécol. et Obstét.*, June, 1931, p. 496) report the results of a comprehensive investigation of the complement-fixation test in the diagnosis of gonorrhoea in women which has been in progress since 1926 at the University of Warsaw. They emphasize the importance of using a uniform antigen, and commend those of Crostu and Owers. In technique they followed the method described by Besredka for the deviation of complement in tuberculosis; 1,495 tests were performed to discover whether the test was specific, and how rapidly the reaction disappeared in the blood of

patients who had been treated for gonorrhoea. In order to prove the specificity of the reaction a number of men were examined and tested because of the greater facility in proving the presence or absence of gonococci locally. The authors found that during the first three weeks after infection the reaction was negative in half the number of cases, but after the twenty-first day the results were almost uniformly positive (94.6 per cent.). As a control for this investigation 831 cases in which *a priori* gonorrhoea was not suspected were tested. The results were negative in 97.6 per cent. cases. The authors therefore conclude that they can state that the deviation of complement *in gonorrhoea* is specific. They found, further, that it remained specific even when the serum gave a positive Wassermann reaction. A small dose of gonococcal vaccine given within three months before the test would cause a positive deviation of complement; in the majority of cases the reaction became negative about one month after clinical cure. A positive reaction indicated, therefore, that the patient actually had, or at some previous period (not far distant) had had, an attack of gonorrhoea, or had been given a dose of vaccine some time during the three previous months. A negative reaction showed that: (1) infection was not present, or was too recent to have produced antibodies; or that (2) there was no ability to produce antibodies against gonococcal infection; or that the infecting dose was too small to give rise to antibodies; or that a pre-existing infection had terminated. The authors conclude that the value of a positive complement-fixation reaction has been demonstrated in the case of gonococcal infection in women.

328 Treatment of Menstrual Disorders

A. Lafront and H. Fulconis (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, April, 1931, p. 243) have made subcutaneous injections, in doses up to 8 c.cm., of the heated, filtered, and centrifugalized urine of pregnant women near term, into patients suffering from menstrual disorders. They thought that a therapeutic effect might ensue from the large amounts of folliculin which the urine contains towards the end of pregnancy. No response was obtained in patients with uterine deviation or ovarian cysts, but menstruation returned in three patients, aged about 30, who were suffering from secondary amenorrhoea. Local reactions to the injections were absent; general reactions were absent or slight. Urine of early pregnancy has been used by Zamkoff, who has reported some successful results in menstrual dysfunction, and attributes them to the anterior hypophyseal hormone.

Pathology

329 The Effect on Bone of Toxic Doses of Irradiated Ergosterol

R. Soeur (*Presse Méd.*, July 4th, 1931, p. 1003) undertook an experimental study on 11 adult rats, and 9 young guinea-pigs with one adult. To the guinea-pigs, which were of an average weight of 250 grams, were given daily doses of from 0.4 c.cm. to 7.5 c.cm. of the oily solution of irradiated ergosterol. They were kept under observation from 4 to 35 days. General results observed were: (1) an arrest of growth in all the animals; (2) loss of weight; (3) a series of morbid symptoms such as loss of appetite, diarrhoea, increased respiration, loss of vivacity, and loss of hair; (4) hypercalcaemia and hyperphosphataemia; and (5) the presence of deposits of calcium in the kidney, aorta, heart, and more rarely in the lung, stomach, or intestine. The principal phenomena observed in the bones were an arrest of the process of ossification, and a simple osseous reabsorption causing pathological fractures. Intense vascularization, and an aseptic necrosis of the bone marrow, were present. The adult rats were given daily doses of from 0.4 c.cm. to 2.7 c.cm. The general results were of the same order as those seen in guinea-pigs, but the rats showed greater sensitivity. In addition there were small haemorrhages at the nasal orifices, and round the eyes. The adult guinea-pig showed results intermediate between the young guinea-pigs and the adult rats. In conclusion Soeur finds that irradiated ergosterol does not act by stimulating the action of the parathyroids. It appears to act directly on the bone by a process of hypervitaminosis, or a simple toxic action, or possibly an intoxication resulting from impurities of the product.

330 Determination of Hydrogen-ion Concentration of Nutrient Agar

M. W. Lisse, O. G. Jensen, and R. P. Tittsler (*Journ. of Bacteriol.*, June, 1931, p. 383) have compared the colorimetric and the potentiometric methods for estimating the hydrogen-ion concentration of nutrient agar. The agar was diluted to varying degrees with distilled water after autoclaving; this prevented it from setting when it was cooled, and enabled potentiometric methods to be used. With the quinhydrone electrode a drift in potential occurred, which rendered the readings lower than those taken with the hydrogen electrode. Comparison of the results obtained by the hydrogen electrode and bromthymol blue showed remarkable agreement, indicating that bromthymol blue does not exhibit either salt or protein errors in nutrient agar. It was found that the agar medium could be diluted seven times without altering the *p*H; further dilution led to a slight fall. For routine determination of *p*H it would therefore appear as if the colorimetric method, using bromthymol blue, should give results of a fairly high degree of accuracy. The dilution of the agar has two great advantages: it prevents the medium from setting, thus enabling the readings to be taken at room temperature, and it renders the determination of colour changes very much more easy.

331 Fungus Infection of Sweat

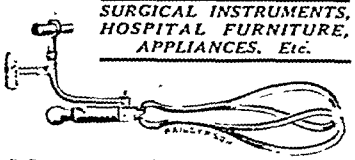
O. L. Levin and S. H. Silvers (*Arch. Derm. and Syphil.*, June, 1931, p. 1094), realizing that sweat affords an excellent culture medium and is therefore probably an active factor in spreading infection, undertook experiments to prove the relationship between hyperhidrosis and fungus infections. Since the feet are more frequently involved by dermatophytosis than other parts of the body, sweat was obtained by a special procedure, the technique of which is described, from the lower third of the legs and from the feet of eight patients; it was inoculated into a 4 per cent. maltose-agar medium. In every case fungus growths were observed within a fortnight; these were studied microscopically on slides and in hanging-drop preparations. Pathogenic fungi belonging to the Kaufmann-Wolf group, and growing rapidly and abundantly, were obtained in five cases. The authors regard perspiration as being probably as important a single factor as any other in the epidemiology of ringworm infection; they expect that further similar studies will show that fungi occur in the skin of the feet of most people. Besides the fungi bacteria, *Aspergillus niger* and yeastlike organisms were also present. Microscopical studies of hanging-drop preparations showed abundant slender mycelia and numerous ectospores; in older colonies the formation of chlamydospores was common.

332 Mycosis and Pulmonary Tuberculosis

A. Barbero (*Rev. Españ. de Tuberculosis*, June, 1931, p. 253), who records two illustrative cases in patients aged 21 and 28, states that the association of mycosis with pulmonary tuberculosis has been known since 1833, when R. Owen found a fungus in a tuberculous cavity. Special attention was later devoted to the subject by Artault in 1898, Sallet in his Bordeaux thesis in 1922, Redaelli in 1925, and Braunstein in his Paris thesis in 1927. Barbero made a mycological examination of the sputum and saliva in fifty-four cases of pulmonary tuberculosis, using Sabouraud's medium, and found that 33, or 61 per cent., were positive, and 21, or 39 per cent., were negative, ninety-three different species of fungi being obtained. The fungi were more frequent in the sputum (43 per cent.) than in the saliva (21 per cent.), in which the forms most frequently found were yeasts. Barbero is of opinion that the mycotic association exercises an unfavourable influence on the course of pulmonary tuberculosis.

W. H. BAILEY & SON

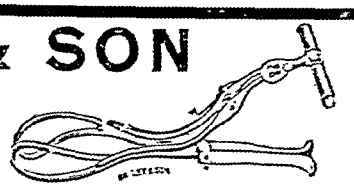
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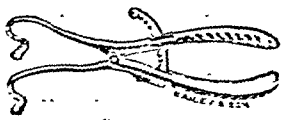
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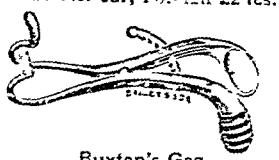
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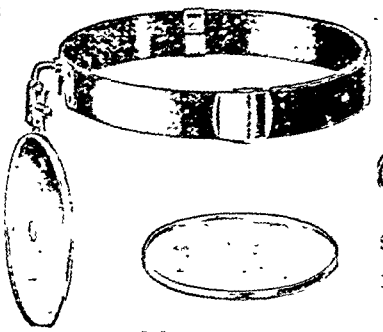
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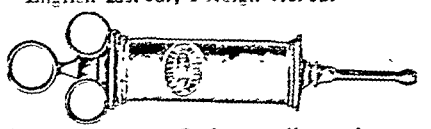
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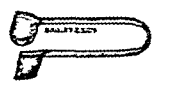
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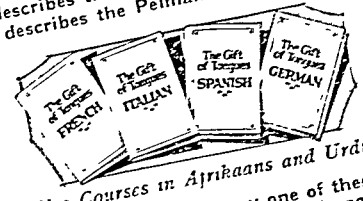
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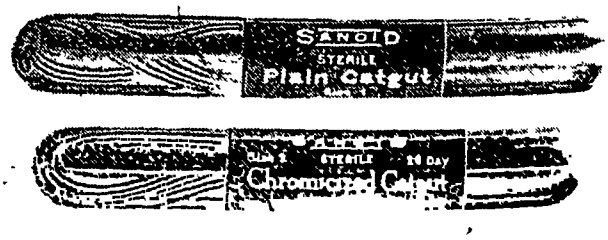
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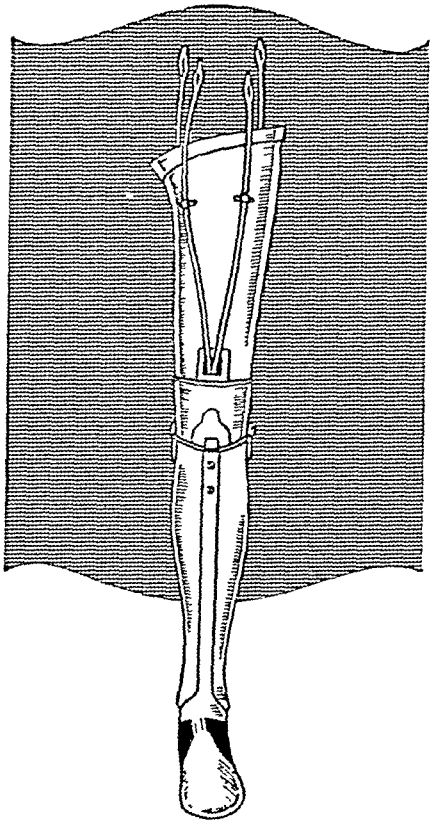
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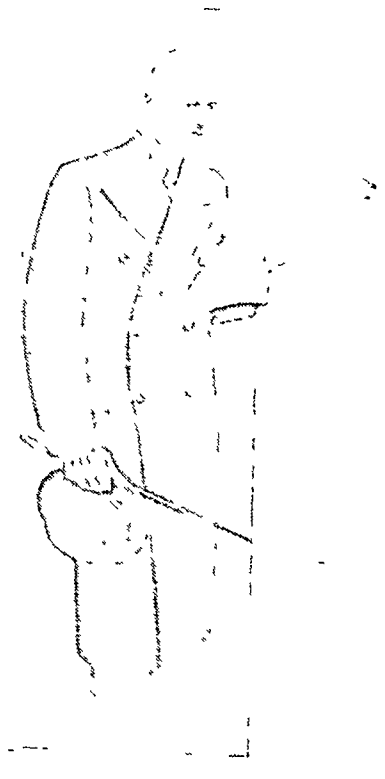
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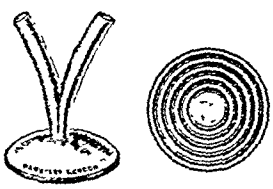
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Doctor receives into his Private *Nursing Home*, situated English Middlesex, Invalids, Convalescents or Chronic Cases requiring rest and special treatment. Terms moderate.—Address No. 6169, B.M.A. House, Tavistock Square, W.C.1.

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For Mental Disorders, with or without certificates.
Resident Physician: CEDRIC W. BOWER.
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For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea level, facing S. 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. 'Phone Tel. 150

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Ladies and Gentlemen received for treatment under certificates and without certification as either VOLUNTARY or TEMPORARY PATIENTS at a weekly fee of FIVE GUINEAS and upwards.

Grove House, All Stretton, Church Stretton, Shropshire.

A Private Home for the care of and treatment of a limited number of ladies mentally afflicted. Country health and training. Medical Superintendent, Dr. MOLLY [illegible]

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FOR MENTAL DISORDERS,

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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: Daniel F. Rambaut, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are *suffering from incipient* mental disorders or who wish to prevent recurrent attacks of mental trouble, *temporary patients*, and certified patients of both sexes, are received for treatment. *Careful* clinical, biochemical, bacteriological, and pathological examinations. Private rooms, *with special nurses*, male or female, in the Hospital or in one of the numerous villas in the grounds of the *various branches* can be provided.

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This *is a Reception Hospital* in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It *contains* special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières *treatment, etc.* There is an Operating Theatre, a Dental Surgery, an X-ray Room, *an Ultra-violet Apparatus*, and a Department for Diathermy and High Frequency treatment. It also *contains Laboratories for* biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by *appointment*.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel: 64117. *For terms, etc., apply to the Medical Superintendent.*

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FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An Approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

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For the *reception* and *treatment* of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and *grounds* of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out-door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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A *Private* Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

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For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2354.) Apply J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8450.

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A PRIVATE HOSPITAL for the care and treatment of persons with mental and nervous disorders.

Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILLHAM, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Batheaston 8189.

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For terms, etc., apply to the *Medical* Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester *by appointment*.

Telephone: 2231 GATLEY.

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HOME for ladies Mentally afflicted. Voluntary Boarders received. Large grounds, 400 ft. above sea. Station: Brentwood and Shenfield 1 mile. Liverp'l St. 26 *mnn.*—Apply, *Dr* HAYNES.

BETHLEM ROYAL HOSPITAL, for Nervous and Mental Disorders,

Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg Tel Address Bethlem, Beckenham. *Telephone* Springpark 1180—1181.

Station. Eden Park (Southern Railway)

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D
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Physician-Supt: J. G. PORTER-PHILLIPS, M.D., F.R.C.P.

This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds. Applications can be considered on behalf of patients of the educated classes in a presumably curable condition. With a view to early treatment voluntary uncertified patients are admitted.

Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as voluntary boarders. The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free of charge.

Every facility for special investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.

Furthermore, provision is made for Electro-Therapy and Hydro-Therapy to be carried out in all their forms.

In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.

The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms.

For forms and further particulars apply to the Physician Superintendent at the Hospital.

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REDUCTION OF FEES

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The fees include medical attendance, all scientific investigations that may be needed, such as analyses, bacteriological cultures, the ordinary x-ray examinations, and electrocardiograph readings, all treatment that may be prescribed, such as special diets, insulin, artificial sunlight, electrical treatment, baths, massage, nursing, *medicines or vaccines, board and lodging*.

The only extra charge is that for a complete alimentary x-ray examination, or for x-ray therapy.

Many people who would go abroad for health will not do so this winter. All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 29·5 inches, that is, less than the average for England. There is central heating throughout. Should the accommodation in the Castle not prove sufficient, comfortable rooms can be obtained near by for those undergoing treatment.

Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 66.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4721—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, *Croquet, Squash Racquets*, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray [illegible] and also. Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, Chapel. Senior Physician, Dr. Hubert James Norman, assisted by three Medical Officers, Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

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THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., where Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

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GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 6288.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from *Charing Cross*. Easy access from all parts.
Six acres of ground highly situated. [illegible]
P[illegible] Voluntary Patients and [illegible] received without certification.
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The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Air and Vichy Douches, Massage and Plombières Treatment, and Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 300 acres Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants

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Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc, from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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Only bright and intelligent boys and girls are eligible for admission.

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The number in residence at any one time being strictly limited, close individual attention can be given, whilst the patient is provided with a comfortable home life in pleasant surroundings, with suitable occupation for leisure hours

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A HOUSE Licensed for the reception of a limited number of Ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. Approved for Temporary Patients This is a large country house, with beautiful grounds and park five miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act 1930. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. 'Phone: 10 P.O., Church Stretton.

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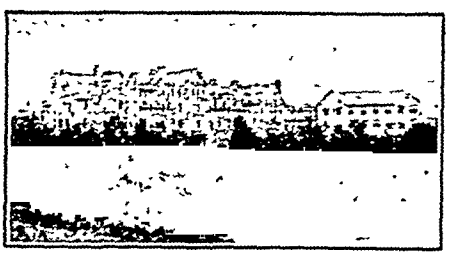
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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

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This Sanatorium was specially built for the treatment of Pulmonary and other forms of Tuberculosis, and has an ideal situation facing S.S.E. in a very sunny district. Special treatment by artificial Pneumothorax (X-ray controlled). Ultra-violet Ray treatment is available for suitable cases. Matron and full nursing staff. Nurse on duty all night. Electric lighting throughout, radiators and wireless (headphones) in all rooms.

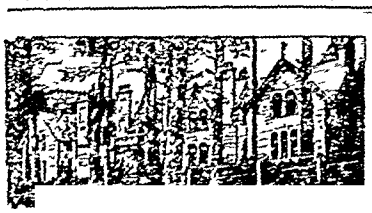
Dr. Jane Walker, C.H., J.P., LL.D., Medical Superintendent. Dr. Eleanor Soltau, Assistant Medical Supt.

For all information apply: The Secretary, East Anglian Sanatorium, Nayland, near Colchester.

Telephone: NAYLAND 1.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level on the south-west slopes of mountains rising to over 1,500 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29·57 per annum. Full day and night nursing staff. X-ray plant. Every facility for Artificial Pneumothorax and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Medical Superintendent: H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.



KINGUSSIE, N.B.

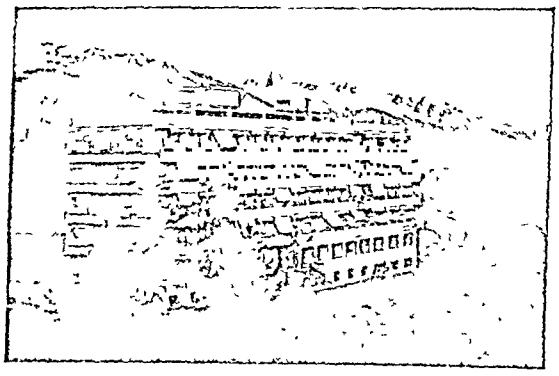
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Situated in the upper Speyside district of Inverness-shire, one of the highest inhabited districts in Britain. The Switzerland of the British Isles. Bracing and dry mountain climate. Well-sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 850 ft. above sea-level. Electric light throughout Buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax and Ultra-Violet Rays for surgical cases of Tuberculosis. [illegible] per week inclusive. No extras.

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Built 1929-1930. Opened, October 1930.

(No connection with any other Sanatorium in Montana.)



For the treatment of Tuberculosis, Diseases of the Chest, Asthma; for patients requiring rest in the Alps under strict medical supervision; and for medical conditions in which sun and air bathing are indicated.

THE ONLY SANATORIUM IN SWITZERLAND UNDER BRITISH OWNERSHIP AND CONTROL, AND WITH A FULL DAY AND NIGHT STAFF OF BRITISH TRAINED NURSING SISTERS.

Large roof Solarium. Private balconies. All rooms have running water, central heating, wireless (headphones), and light signals (instead of bells). A number of rooms with Private Bathrooms. Spacious public rooms. The cooking is adapted to English requirements.

MONTANA (5,000 feet above sea-level) is the sunniest health resort in the Swiss Alps. Many miles of level walking. Twenty hours by train from London.

Inclusive terms:—from 24.50 Swiss francs per day, according to the room. Telegrams: "Montall, Montana-Vermala."

For further particulars kindly apply to the Resident Medical Superintendent: HILARY ROCHE, M.D.(Melb.), M.R.C.P.(London), Tuberculous Diseases Diploma (Wales).

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IN SUMMER AND AUTUMN. The greater part of Italy is more pleasant in Summer than at any other Season of the year. There are HUNDREDS of DELIGHTFUL ALPINE, DOLOMITE, LAKE and SEA-SIDE RESORTS.

IN WINTER AND EARLY SPRING there are, in Italy, more SUNNY and WARM RESORTS and SPAS than in any other country in Europe. Many of them have the best all-round climatic conditions to be found in Europe.

THE SPAS OF ITALY are world famous for their 'cures,' and besides those having seasons in the Spring, Summer, and Autumn there are many that have a pleasant Winter climate.

ENIT ALL THE YEAR ROUND ENIT

HELOUAN (Egypt) *The Principal Health - Resort in Egypt -*

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THERMAL BATH ESTABLISHMENT. SULPHUR BATHS. MASSAGE. ELECTRO-THERAPEUTICS, Etc.

The best winter health resort. Warm, dry, equable climate. Average eight hours daily sunshine in winter. Situated in the desert, 16 miles South of Cairo. Baths are suitable for treatment of Rheumatism, Gout, Rheumatoid Arthritis, etc., Albuminuria, Chronic Skin Diseases.

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For particulars apply to the MANAGER, GRAND HOTEL, HELOUAN.



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According to this principle, which has turned out well, we are successfully treating since 6 decades: Inflammation of Vertex, Arthritis, Deformations, hereditary Luxation of Hip-joint, particularly after unsuccessful taxis, Paralysis of any kind, consequences of Meningitis of Children, Curvature of the Spine. The beautiful quiet situation of our Sanatorium in the midst of vast parks, and the excellent diet, provide for the increased general health of our patients. Prospectus with full particulars.

Hofrat Friedrich von Hessingsche Orthopädische Heilanstalt.

Management: { Georg Hessing, Director General. Dr. med. G. Hessing, Specialist of Surgery.

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In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Palm-lined winter garden, swimming bath, tennis, golf, curling, golf, fishing. Fully licensed. Modern baths installation. Physio-therapeutic, massage, electrical treatment, ultra-violet radiation. Physician in attendance. *Write for prospectus.*

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BOURNEMOUTH HYDRO,

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Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra violet Light
Every kind of Electricity. Diathermy.
Every kind of Diet
High Frequency. Electric Lift.

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Prospectus from Secretary.

Resident Physicians: { W. JOHNSTON SMYTH, M.D. L. T. ROSE HUTCHINSON, M.D.

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When satisfactory convalescence from pulmonary disorders depends on a healthy invigorating atmosphere, Bournemouth offers the ideal winter residence. Long hours of sunshine, sheltered situation, and the resinous perfume of the many pine trees combine to expedite the successful recovery of normal health and strength.



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First opened in 1868 and rebuilt in 1925. On the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 500 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled). Tuberculins, Medicated Inhalations by means of the Apneu Inhalation Installation, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiator-, hot and cold basins, and Wireless in all rooms.

Resident Physicians: GEOFFREY A. HOFFMAN, B.A., M.B., T.C. Dub., and MARGARET A. HARRISON, M.B., B.S. Lond.
Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. Full day and night Nursing Staff. *Telephone*: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP.

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Established 1903 for Treatment of Pulmonary and other forms of Tuberculosis. Sheltered Situation on the slopes of the bracing moorland. Idiographic Installation. Electric Light, Central Heating. Separate Bedrooms, Efficient Treatment, combined with individual comfort and minimum restrictions. Illustrated Prospectus on request to the Resident Physician: C. H. BERRY, M.R.C.S., L.R.C.P., Torr House, Chagford, Devonshire. Telephone: 11 CHAGFORD. Telegrams: TORR, CHAGFORD.

LONDON HOSPITAL MEDICAL COLLEGE.

(University of London).

SCHORSTEIN MEMORIAL LECTURE.

The above Lecture will be delivered by ARTHUR J. HALL, Esq., M.A., M.D., D.Sc., F.R.C.P., Professor of Medicine, University of Sheffield, on Thursday, October 15th, at 4.15 p.m., in the Bearded Clinical Theatre.
Subject: "*Chronic Epidemic Encephalitis.*"
Members of the Profession are cordially invited to attend.
Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean.

University of London.

Applications are invited from Graduates of the University of London in Medicine and Surgery for the GEOFFREY DUVEEN TRAVELLING STUDENTSHIP IN OTO-RHINO-LARYNGOLOGY, which is of the value of £450 a year and is tenable, in the first instance, for one year.
Applications should reach the University on or before December 31st, 1931, and must be made on the prescribed form, which may be obtained, together with further particulars, from the Academic Registrar, University of London, South Kensington, S.W.7.

University of London.

HEATH CLARK LECTURES. The Second Course of Five Lectures (illustrated) on "*The Rise of Preventive Medicine*" will be given by Sir GEORGE NEWMAN, K.C.B., M.D., F.R.C.P. (Chief Medical Officer, Ministry of Health), at THE LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE (Keppel Street, Gower Street, W.C.1) on OCTOBER 13th, 15th, 16th, 20th, and 22nd, at 5 p.m.
A Course of Six Lectures on "*The Physiology of the Sense Organs*," will be given by Dr. R. J. LYTHGOE at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on MONDAYS, OCTOBER 12th, 19th, 26th, and NOVEMBER 2nd, 9th, and 16th, at 5 p.m.
A Course of Four Lectures on "*Metabolism of the Carbohydrates and Fats*" will be given by Dr. J. A. HEWITT, at KING'S COLLEGE, LONDON (Strand, W.C.2), on THURSDAYS, OCTOBER 15th, 22nd, 29th, and NOVEMBER 5th, at 5 p.m.
A Course of Four Lectures on "*The Respiratory Functions of the Blood*" will be given by Dr. L. E. BAYLISS at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, OCTOBER 16th, 23rd, 30th, and NOVEMBER 6th, at 5 p.m.
Admission free, without ticket.
S. J. WORSLEY, Academic Registrar.

University of London.

A Course of Four Lectures, which will be illustrated, on "*Speculation, Observation, and Experiment, as Illustrated by the History of Embryology*" will be given by Dr. JOSEPH NEEDHAM, M.A., Ph.D. (Fellow of Gonville and Caius College and University Demonstrater in Biochemistry, Cambridge) at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAYS, OCTOBER 14th, 21st, 28th, and NOVEMBER 4th, at 5.30 p.m. At the first lecture the Chair will be taken by Professor J. P. HILL, D.Sc., F.R.S. (Professor of Embryology in the University).
Admission free, without ticket.
S. J. WORSLEY, Academic Registrar.

F.R.C.S.(Edin.).

Full PREP. COURSE with Anatomical Cadaveric and Living Models and Path. Demonstrations, for next Exams., with personal attention. POSTAL TUITION also arranged.—H. C. OZANNE, F.R.C.S., Surgeon of Experience—Hall, Edinburgh.

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The Consulting Rooms and Laboratories of this Association (established in 1894) are available for all Medical Practitioners desiring Laboratory assistance in the investigation and diagnosis of cases under their care. All necessary apparatus and full instructions for collecting pathogenic material, or for the personal attendance of Patients at the Consulting Rooms of the Association, will be forwarded immediately on application

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POST-GRADUATE COURSES in October:

Medicine and Surgery (Prince of Wales's Hospital), Diseases of the Ear, Nose, and Throat (Central London Throat Hospital), Tropical Medicine (Hospital for Tropical Diseases), Gynaecology (Chelsea Hospital for Women), Dermatology (St. John's Hospital), Diseases of Children (Hospital for Sick Children). M.R.C.P. EVENING LECTURES, Mons. and Weds. at 8.30 p.m. Free Lectures on Weds. at 4 p.m., free Clinical Demonstrations.

Copies of all syllabuses obtainable from the FELLOWSHIP OF MEDICINE, 1, Wimpole Street, W.1.
(Langham 4266.)

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

POST-GRADUATE STUDY AT THE NORTH-EAST LONDON POST-GRADUATE COLLEGE

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Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

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MEDICAL STUDENTS admitted to Hospital practice with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

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Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1929. Prospectus from Head Master.

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COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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Qualified Medical Women are admitted to

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Remedial Tuition on modern lines for Stammer, Aphonia, Cleft Palate, Tracheotomy, and Disturbed Co-ordination, by ERIC MIALL, A.L.C.M., who is Speech Instructor at the Middlesex Hospital.

Short courses in elocution, accent, clarity, and public speaking.

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CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

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Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN.*

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Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
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Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.B. of various Universities, also for D.P.M., D.M.S., T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., etc. Numerous successes.

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Bedford County Hospital.

(124 Beds.)

HOUSE SURGEON (male) fully qualified, unmarried required for a term of not less than six months commencing October 21st. Salary £175 with board, lodging, and laundry.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried required for a term of not less than six months commencing at once. Salary £130 with board, lodging, and laundry.

Applications stating age, nationality, qualifications together with three recent testimonials to be sent to the Hon. Secretary, Hon. Medical Staff Committee as soon as possible.

Victoria Hospital, Blackpool.

(132 Beds.)

HOUSE SURGEON (JUNIOR). Salary at the rate of £150 per annum, together with board, residence, and laundry. The appointment being for six months, and if suitable, will be eligible to apply for the Senior Post.

Applications must be duly qualified and registered. Applications must be sent to the undersigned stating age, qualifications, and experience together with three recent testimonials endorsed "House Surgeon" on or before Monday, October 19th.

JOHN HACKING,
Hon. Secretary.

Great Yarmouth General Hospital

(72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two positions). Salary at the rate of £140 per annum, with board residence and laundry.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

City and County of Kingston-upon-Hull

ASSISTANT MEDICAL OFFICER OF HEALTH

The Corporation of Hull invite applications from Medical Men, under the age of 40 years and of not less than three years standing in their profession, for the post of Assistant Medical Officer of Health.

Salary £600 per annum, rising by annual increments of £25 to £700.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to devote the whole of his time to the duties of the office, which consist mainly of work in the School Medical Department, but may also include duties in any section of the Health Services of the City or Port.

Experience in Refraction work is essential.

A form of application may be obtained from the undersigned, and must be returned to the Acting Medical Officer of Health (in an envelope endorsed "Assistant Medical Officer of Health") together with copies of three recent testimonials, not later than the first post on Saturday, October 17th.

R. RAINES,
Acting Medical Officer of Health.

County Borough of Darlington.

HEALTH VISITOR

Applications are invited from properly qualified Persons for the appointment of Health Visitor.

The duties are chiefly concerned with Maternity and Child Welfare, and the successful applicant will be required to carry out such duties under the direction of the Medical Officer of Health.

The salary will be at the rate of £180 per annum, rising by annual increments of £10 to £200 per annum, and additional allowances amounting to £10 per annum in respect of travelling and uniform are made.

The appointment will be subject to the Local Government and Other Officers Superannuation Act, 1922, and the successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications, experience, must reach the Medical Officer of Health, Feethams, Darlington, not later than Monday, October 19th.

H. HOPKINS,
Town Clerk.

Darlington,
October 2nd, 1931.

Western Ophthalmic Hospital,

Marylebone Road, N.W.1

Applications are invited for the post of HONORARY NON-RESIDENT HOUSE SURGEON. The salary is at the rate of £100 per annum, and the appointment is for six months. Ophthalmic experience is required. The selected candidate will be required to take up duties at an early date.

Applications accompanied by copies of not more than three testimonials should be sent to the undersigned by October 23rd.

H. W. BURLEIGH,
Honorary Secretary.

Warneford General Hospital, Leamington Spa

(143 Beds.)

RESIDENT HOUSE SURGEON required on November 1st, and RESIDENT HOUSE PHYSICIAN on December 1st next.

Salary £165 per annum for each post, with board and laundry.

Applications from qualified and registered Medical Practitioners (single men and women) should be sent to the undersigned by October 15th, accompanied by copies of at least three recent testimonials.

W. RUSSELL RIDALL,
House Governor & Secretary.

Royal Hampshire County Hospital, Winchester.

(158 Beds.)

HOUSE SURGEON (additional). Applications are invited from fully qualified men for the above post, to take up duties at an early date. Six months' appointment. Salary £100 per annum, with board residence, and laundry. Candidates, who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials.

HERBERT MASLEN, Secretary.

Margate and District General Hospital

(98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). Salary £150 per annum with board and laundry.

Applications accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible.

County Borough of Stockport.

MEDICAL OFFICER OF HEALTH

Applications are invited for the appointment of Medical Officer of Health to the County Borough of Stockport.

Candidates must be duly qualified Medical Practitioners not exceeding 45 years of age on January 1st 1932 and must possess a Diploma in Public Health or similar qualification.

The person appointed will be required to carry out the duties of Medical Superintendent of the Corporation Hospitals for Infectious Diseases and Tuberculosis, Medical Superintendent of the Maternity Home, Medical Officer to the Education, Maternity and Child Welfare, and Public Assistance Committees, and Administrative Tuberculosis and Venereal Diseases Medical Officer.

He will be required to devote the whole of his time to the duties of the office, and must not engage in private practice.

The salary will be an inclusive one at the rate of £1,100 per annum.

The appointment will be subject to the provisions of the Local Government and other Officers' Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination.

Particulars of the terms and conditions of the appointment can be obtained from the undersigned.

Applications endorsed "Medical Officer of Health" must be delivered at my office not later than Monday, October 19th, canvassing directly or indirectly will be a disqualification, but candidates may, if they wish, send 20 copies of their application for the members of the Health Committee.

FRANK KNOWLES,
Town Clerk.

Town Hall,
Stockport.
October 7th, 1931.

Kent County Council.

RESIDENT ASSISTANT MEDICAL OFFICERS

Applications are invited for the post of Resident Assistant Medical Officer at each of the following Institutions:—

1 FARNBOROUGH INSTITUTION HOSPITAL (600 beds.)

2 MEOPHAM INSTITUTION HOSPITAL (700 beds.)

3 PEMBURY INSTITUTION HOSPITAL (435 beds.)

The salary in each case is £250 a year with residential emoluments which are valued at £120 a year. In the case of the Medway Institution Hospital, an additional allowance will be made for lodging until residential accommodation becomes available at the Institution. A Superannuation Scheme is in operation, and each successful candidate will be required to pass a medical examination.

The appointments are whole-time ones, and will be for one year.

Forms of application can be obtained from the Public Assistance Officer, Brunswick House, Buckland Hill, Maidstone, to whom applications must be sent by 10 a.m. on October 24th.

W. L. PLATTS,
Clerk of the County Council.

Sessions House, Maidstone.
October, 1931.

Royal Isle of Wight County Hospital, Ryde

A vacancy having occurred on the Honorary Medical Staff, the Election Committee of the Governors will proceed to fill the appointment.

Applications, stating age and registered qualifications, with copies of not more than three professional testimonials, to be sent to the Secretary at the Hospital not later than Saturday, October 17th. Candidates must be engaged in practice in the Isle of Wight and must present themselves for interview by the Election Committee in due course. Canvassing will be a disqualification.

A. S. GORDON, Secretary.

Merthyr General Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER. Experience in administration at Anaesthetic Department desirable. Salary £150 per annum with board residence and laundry. Applications with copies of three recent testimonials to be sent to the Secretary, Merthyr General Hospital, Merthyr Tydfil.

The Royal Infirmary, Sunderland

(290 Beds.) SURGICAL REGISTRAR

Wanted November 1st HOUSE PHYSICIAN (male). Salary £140 per annum, with board, residence and laundry. Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FREERS,
House Governor & Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital. The appointment is for six months, commencing on November 1st, with an honorarium of £50.

Applications are also invited from duly qualified Medical Men for the post of JUNIOR HOUSE PHYSICIAN at the Sanatorium at Frimley. The appointment is for six months, commencing on November 1st, with an honorarium of £50. At the expiration of his term of office, or in the event of a vacancy, the Junior House Physician will be expected to apply for, and, if appointed, to hold the post of Senior House Physician for a further term of six months.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, October 17th.

Brompton, October, 1931. FREDERICK WOOD, Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of ASSISTANT RESIDENT MEDICAL OFFICER. Candidates must be registered Practitioners, and must have held a Resident Hospital appointment for six months. Salary £100 per annum, with board and residence, and an additional £25 per annum for services in connection with paying patients. The post is a Senior Resident appointment and will include the duty of Assistant to the Surgeons to the Hospital. Applications, with testimonials, must reach the undersigned not later than Saturday, October 17th.

Brompton, October 1, 1931. FREDERICK WOOD, Secretary.

North Staffordshire Royal
INFIRMARY, STOKE-ON-TRENT.
(350 Beds.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, with board, residence, and laundry.

The appointment will be made for twelve months if possible.

Previous Hospital experience necessary.

Applications, with copies of two recent testimonials, to be sent to the undersigned immediately. By Order,

W. STEVENSON,
Secretary and House Governor.

October 5th, 1931.

St. Bartholomew's Hospital,
ROCHESTER. (125 Beds.)
Rochester, Chatham, Gillingham, & District.

The House and Finance Committee invite applications for the post of HOUSE SURGEON, who will act as Casualty Officer and have charge of the Orthopaedic Cases, which will become vacant on December 1st.

Candidates must be unmarried, qualified, and registered Medical Men. The appointment is for six months. Salary at the rate of £175 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, experience, and accompanied by copies of three recent testimonials, must be received by the Secretary not later than October 22nd.

Canvassing the Honorary Staff will disqualify.

St. Mary's Hospitals, Manchester.

RESIDENT OBSTETRIC OFFICER for the WHITWORTH ST. WEST HOSPITAL (Maternity); and RESIDENT SURGICAL OFFICER for the WHITWORTH PARK HOSPITAL (Gynæcology and Children); each for a period of 12 months from November 1st next. Salaries £175 per annum, with board and residence. Applications, with copies of three testimonials, to be sent to the undersigned on or before the 15th instant. (Recent residents are candidates for these posts.)

R. RATCLIFFE, Secretary.

St. Mary's Hospitals, Manchester.

TWO HOUSE SURGEONS for the WHITWORTH ST. WEST HOSPITAL (Maternity); and one for the WHITWORTH PARK HOSPITAL (Gynæcological Dept.); each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before October 15th.

R. RATCLIFFE, Secretary.

Manchester Royal Infirmary.
BARNES CONVALESCENT HOSPITAL,
CHEADLE, CHESHIRE.

RESIDENT MEDICAL OFFICER.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is tenable for twelve months, subject to the provision of the By-laws as to notice.

Remuneration is at the rate of £250 per annum, with board and residence.

Applicants must state age, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 15th.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

September 9th, 1931.

Manchester Royal Infirmary.
CENTRAL BRANCH, Roby Street,
MANCHESTER.

HOUSE SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is tenable for nine months, commencing forthwith, three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 22nd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male). Duties to commence on December 1st next. Also for the post of HOUSE SURGEON (male). Duties to commence on January 1st, 1932.

Salaries at the rate of £150 per annum, with residence, board, and laundry.

The appointments are for six months, and are renewable.

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

September 21st, 1931.

ARTHUR H. LIMB, Secretary.

Southport General Infirmary.
(150 Beds.)
Special Departments for Eye, Ear, Nose, and Throat, X-Rays, Massage, Pathology, Skin, and V.D.

Wanted immediately, a JUNIOR HOUSE SURGEON, fully qualified and registered, unmarried. Salary £150 per annum, with residence, board, and laundry. Excellent opportunity for gaining experience, in a fully equipped, up-to-date Hospital, situated in beautiful surroundings. Special experience in the administration of Anæsthetics is desirable.

Applications, stating age, nationality, and experience, with copies of testimonials, to be sent in by October 15th, to the Secretary, Infirmary Office, Southport.

Royal Northern Hospital,
Holloway, N.7.

Applications are invited for the post of HOUSE PHYSICIAN, vacant on November 15th. The appointment is for nine months (six months as House Physician and three months as Out-patient Casualty Officer and Anæsthetist). Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by October 16th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER,
Secretary.

Royal National Orthopaedic
HOSPITAL.

SURGICAL REGISTRARS.

The Committee invite applications for the appointment of Four Registrars (male) as from November 1st. Honorarium £105 per annum. The appointments are for 12 months, renewable for a further 12 months on the recommendation of the Medical Board. Applications, with copies of three recent testimonials, should reach the Secretary, 234, Gt. Portland Street, W.1, not later than October 15th.

West Riding Mental Hospital,
STORTHES HALL, KIRKBURTON, near
HUDDERSFIELD.

Applications are invited for the position of ASSISTANT MEDICAL OFFICER, aged about 30, unmarried. Applicants must be fully qualified and registered. Preference will be given to candidates possessing the Diploma in Psychological Medicine and who have held a medical or surgical Hospital appointment.

Salary £400 per annum, rising by annual increments of £25 to £500, with board, apartments, laundry, and attendance, valued for superannuation purposes at £120 per annum. An addition of £50 per annum is granted for possession of the D.P.M. On promotion to senior grade the salary rises to £800.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909, and the selected candidate will be required to pass a medical examination before being appointed.

Laboratory facilities exist for Research and Clinical work.

Applications, enclosing copies of three recent testimonials, to be sent immediately to the Medical Superintendent.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON and SECOND ASSISTANT CASUALTY OFFICER. The salary attached to the post is £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service salary is at the rate of £100 per annum.

Applications, with copies of testimonials to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S.
General Supt. & Secretary.

Board Room, October 5th, 1931.

Sutton and Cheam New Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER at this Hospital now vacant.

The appointment is for six months and the salary is £200 per annum, with full board, suite of apartments and washing.

Applications, giving full particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned.

Applicants must have held a House appointment previously.

By Order of the Board of Management,
F. COLLINS, Secretary.

The Glasgow Eye Infirmary.

The Directors invite applications from registered Medical Practitioners for the post of RESIDENT ASSISTANT HOUSE SURGEON. Salary £150 per annum, with apartments and board. The post is now vacant.

Applications, with copy testimonials, should be lodged with the undersigned by Oct. 12th.

171, West Regent St., Glasgow, C.2. WM. M. MOORE, Secretary.

September 30th, 1931.

The Glasgow Eye Infirmary.

The Directors invite applications from registered Medical Practitioners for the post of RESIDENT HOUSE SURGEON. Salary £250 per annum, with apartments and board. The post will be vacant shortly.

Applications, with copy testimonials, should be lodged with the undersigned by Oct. 12th.

171, West Regent St., Glasgow, C.2. WM. M. MOORE, Secretary.

September 30th, 1931.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of CASUALTY OFFICER (male). The appointment will be for a period of six months at a salary of £120 per annum and will date as from November 11th next.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, October 23rd, addressed to the Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The appointment will be for a period of six months at a salary of £175 per annum, and will date as from December 1st next. Preference will be given to those who have held resident appointments.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, October 23rd, addressed to the Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
CENTRAL POST OFFICE. *(Assistant Medical Officer—Women)*	**CONTRACT PRACTICE** *(contd)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MAERDY GLAMORGAN *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(Senior Medical Inspector—Male)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MEIRTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	STEWARTRY OF KIRKCUDBRIGHT *(Assistant Medical Officer and Assistant School Medical Officer)*
FRIENDLY SOCIETY *(Workmen's Medical Society)*	NEATH AND DISTRICT *(Medical Aid Association)*	SOMERSET COUNTY COUNCIL *(Assistant Medical Officer)*
CILFACH COCH GLAMORGAN *(Workmen's Medical Scheme)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OGMORE VALLEY GLAMORGAN *(Ogmore Valley Colliery Medical Aid Society) (Workmen's Medical Scheme)*	
LLWYNYPIA CILFACH VALE PENYCAE GLAMORGAN *(Workmen's Medical Scheme)*		

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary N S W South Wales Branch) 135 Macquarie St, Sydney N S W	**SOUTH AUSTRALIA.** *(Lodge Appointments)*	Secretary South Australian Branch I M A House 206 North Terrace, Adelaide	**WELLINGTON, NEW ZEALAND.** *(Contract Practice All Practices)*	Dr G F V ANSON (Hon Sec New Zealand Branch) British Medical Association P O Box 156 Wellington New Zealand
QUEENSLAND. *(Friendly Societies Institute)*	The Hon Sec Queensland Branch British Medical Association B M A Building Adelaide St, Brisbane	**VICTORIA.** *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association Medical Society's Hall East Melbourne Victoria	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch British Medical Association, No 6 Bank of N S W Chambers St George's Terr Perth, Western Australia

October 7th, 1931 — By Order of the Council — ALFRED COX, Medical Secretary

Hampstead General and North-West London Hospital, Haverstock Hill N W 3

APPOINTMENT OF A HOUSE SURGEON

Applications are invited from unmarried Medical Men for an appointment of House Surgeon vacant on November 1st next The salary will be at the rate of £100 per annum together with board residence etc, and the term will be for six months

Applications to be made on a form which will be supplied by the Secretary together with copies of not more than three testimonials should reach the Secretary not later than noon on October 17th next

Royal Eye Hospital, St George's Circus Southwark S E 1

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital The appointment is in the first instance for a period of six months with board and residence as from December 1st Salaries House Surgeon at the rate of £150 per annum Assistant House Surgeon at £100 per annum Candidates must be registered Practitioners

Applications with copies of three recent testimonial should be sent to the Secretary at the Hospital not later than Friday October 30th J F D ALTON Secretary

Dewsbury and District General INFIRMARY (100 Beds)

Applications are invited for the post of SECOND HOUSE SURGEON Salary £150 per annum together with board, residence and laundry

Applications stating age and qualifications together with copies of testimonials should be sent to the undersigned The appointment commences about 1st Nov 1st H C PRICE Secretary Superintendent

The Prince of Wales's General HOSPITAL Tottenham N 15

The following Resident posts will be vacant on November 1st next

(a) ONE SENIOR HOUSE PHYSICIAN,
(b) TWO SENIOR HOUSE SURGEONS salary at the rate of £120 per annum
(c) ONE JUNIOR HOUSE PHYSICIAN
(d) TWO JUNIOR HOUSE SURGEONS salary at the rate of £90 per annum

Board residence and laundry

Appointments held for six months but Holders are eligible for a further term

Candidates (male) must be fully qualified and registered and applications (on the prescribed form) together with copies of three recent testimonials should be sent to me on or before the first post on Saturday, October 17th J C BOLDFTT, Director

Sept 25th 1931

The Royal Eye and Ear Hospital, BRADFORD

Wanted JUNIOR HOUSE SURGEON (male) Salary £150 with board, residence, and laundry

Applications stating qualifications age etc with copies of recent testimonials, to be forwarded to the undersigned on or before October 15th

F PRIGGS Secretary Supt

Swindon and North Wilts VICTORIA HOSPITAL SWINDON (80 Beds)

Wanted a RESIDENT MEDICAL OFFICER (male) Salary £125 per annum with board residence and laundry Candidates must be registered under the Medical Act Appointment for the minimum of six months Applications stating age etc and accompanied by copies of not more than three recent testimonials should be sent to the undersigned S KNAPP Secretary

West London Hospital, Hammersmith W 6 (234 Beds)

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Genito-Urinary Department Candidates must be Fellows of one of the Royal Colleges of Surgeons of England Edinburgh or Ireland The successful candidate will be required, in addition to his other duties to undertake such teaching for the Post-Graduate College as the Board may approve

Applications, with copies of testimonials, must reach me not later than Thursday October 22nd Candidates must attend the meeting of the Medical Council on Friday October 23rd, at 4.30 p m and prior to that late call post and send copies of application and testimonials to each member thereof They must not canvass members of the Board of Management first, nevertheless must send copies of their application and testimonials to each member thereof and if so notified be in attendance at a meeting of the Board at 5 p m on Tuesday October 27th, when the election will be made H A MADGE Secretary

The Queen's Hospital for CHILDREN Hackney Road, London E 2

The Committee invite applications for the post of SURGEON for the Ear Nose and Throat Department with charge of the Out-Patient Department Attendance required on Monday and Thursday mornings An honorarium to cover travelling expenses will be paid Candidates must be Fellows by examination of the Royal College of Surgeons England

Applications with [illegible] to be sent in writing to the undersigned from whom further particulars may be had

CHARLES H BENNETT

September 17th 1931 Secretary

(Appointments continued on p 56)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
Tel.: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted, well-qualified, outside ASSISTANT, with view if suitable, in good Practice in Manchester suburb. About £400. Abstainer preferred. Own car. At once. State experience and personal particulars.—Address, No. 6110, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or Branch Management, with view, by Scot. act. 29, Protestant, single F.R.C.S., L.R.C.P. Edin. Ex H.S. and R.M.O. Maternity Hospital; also 3 P. exp. Int'view London if neces.—Add., No. 6029, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, ex H.P. or H.S. (gen. or ophthalm.). No midwifery. £355 p.a. (indoor). Suitable for married man. State exp. height, and capital (if with view). Photo. — Address, No. 6214, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant (indoor), single, male, for mixed Practice near University Town, Yorkshire. Salary £300, all found. Usual bond. Able to drive car. State age and full particulars.—Address, No. 6220, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, London or South Coast, by Scot, act. 33, married, M.B.Edin., 1924, H.P., six years' G.P. keen and well received. Own car. Can be free month. — Address, No. 6303, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor, by well-qualified woman doctor. Aged 29. Experience Hospital and G.P. References. Can drive car. London preferred, not essential.—Address, No. 6231, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, East Coast pref. Capital available. M.B.Victoria, act. 38, married, ex R.M.O. Maternity Hospital, 10 years' G.P., Anæsthetics, etc. Free now.—Address, No. 6308, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with definite early view, by M.B., B.Ch. (Cantab). Ex H.S., H.P., and C.O. London Teaching Hospital. Some experience G.P. Pleasant town. Capital. Own car.—Address, No. 6237, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, male, indoor, mixed Practice South Wales. £300 all found, except laundry. Recently qualified preferred. Car kept. Dispenser. Usual bond. State age, nationality, etc.—Address, No. 6312, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, by M.B. and Ch.B. St. And. (1926). Ex R.M.O.; fully experienced G.P.; keen, energetic. State terms. Free now. —Address, No. 6310, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant for Glamorgan Colliery Practice branch. £400 p.a., outdoor, and free furnished rooms. Single; total abstainer. Usual bond.—Address, with references, No. 6233, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, in small industrial town in North, to live in, with one of the Partners. Suit recently qualified man. Salary £265. Usual bond.—Address, No. 6314, B.M.A. House, Tavistock Square, W.C.1.

Wanted, November 1st, qualified male ASSISTANT for panel and private Practice in Belfast, Northern Ireland. Single. Please reply, stating age, religion, experience, and other essential particulars.—Address, No. 6216, B.M.A. House, Tavistock Square, W.C.1.

Wanted, December 1st, Assistant, indoor, with view, bachelor. Country Town, 35 minutes' London. Large panel. Able to drive car. £350.—Address, No. 6202, B.M.A. House, Tavistock Square, W.C.1.

Wanted in Glamorgan Colliery Practice, outdoor ASSISTANT, single, British. £350 p.a., with rooms and attendance.—Address, stating age, etc., No. 6320, B.M.A. House, Tavistock Square, W.C.1.

Wanted now, indoor Assistant for panel Practice, Yorkshire. Irish. Salary £250 to £300, plus extras, according to experience. Car driver preferred.—Address, No. 6215, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Young, outdoor ASSISTANT (either sex), for *industrial* town, near Nottingham. Wanted immediately. —Address, No. 6321, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, male Assistant, British, indoor. East End of London surgery.—Address, No. 6234, B.M.A. House, Tavistock Square, W.C.1.

Wanted— Outdoor Assistant in Country Town Practice, North Wales. Work light. Able to drive car.—Address, No. 6125, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted by West African, British subject, age 35, M.B., Ch.B.(Edin.), D.T.M. and H.(Lond.), 9 years' experience hospital, panel, and private work. Drive car. Willing to stay at least 2 years. Now free.—Address, BAXTER, 97, Sutherland Avenue, London, W.9.

Assistant (man or woman), indoor, wanted. Country town, *Midlands. Public Health*, private, panel. State age, height, religion, and full particulars. Only letters replied to where essential particulars are stated. — Address, No. 6221, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, with view to *Partnership* in busy London (E.) Practice. Must hold Dental qualification as well. Excellent opportunity.—Address, No. 6224, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted, outdoor, by *Scot's* Graduate, 35, married. Conscientious; thoroughly reliable. Available November, earlier for interview.—Address, No. 6232, B.M.A. House, Tavistock Square, W.C.1.

Assistant, young, wanted at once, outdoor, *single*, Cheshire. Mixed Practice in pleasant town. Dispenser kept. Usual bond. Coupé provided. Salary £400.—Address, No. 6238, B.M.A. House, Tavistock Square, W.C.1.

Medical Assistant wanted, North London; £150, indoor. Suit anyone taking classes or wanting light work, or if outdoor, pro rata.—Address, No. 6209, B.M.A. House, Tavistock Square, W.C.1.

Medical Woman's Practice. — Wanted, a Woman ASSISTANT, with view to early *Succession*. Excellent scope for surgery. State age, experience, and qualifications. — Address, No. 6127, B.M.A. House, Tavistock Square, W.C.1.

North Wales.—Wanted, outdoor ASSISTANT, General Practice (private and panel). Salary £435, with car allowance. Welsh *desirable*. Usual bond. References required. — Address, No. 6106, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistant wanted, North East Coast Town. Commencing salary £400, rising to £450 second year. Dispenser kept. Ex H.S., with some experience of general practice, preferred.—Address, No. 6317, B.M.A. House, Tavistock Square, W.C.1.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.—Lady Dispenser-Bookkeeper at the beginning of November. Private and panel Practice, 13 miles North of London. Ability to type an advantage.—Address, stating age and previous experience, No. 6306, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, sers, and or 'phone REAU FOR E.C.1.

Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Lady Dispenser (Hall) requires WHOLE, PART-TIME, or LOCUM work. Six years' experience, book-keeping, etc. Good references. London district preferred.—Address, No. 6212, B.M.A. House, Tavistock Sq., W.C.1.

M. Ch., F.R.C.S.Eng., aged 30, good surgical experience, at present Resident Surgical Officer in large general hospital, wishes to hear of prospective SURGICAL VACANCY, preferably with established firm. Capital available. Free early next year.—Add., No. 6210, B.M.A. House, Tavistock Sq., W.C.1.

Nurse, S.R., C.M.B., London trained, age 34, 11 years' General Hospital experience, seeks SECRETARIAL or SIMILAR POST. Knowledge of book-keeping. —Address, No. 6201, B.M.A. House, Tavistock Square, W.C.1.

Nurse-Secretary, S.R.N., experienced shorthand, typewriting, book-keeping, wants POST; resident or *non-resident*; good testimonials; part or whole time.—Address, No. 6315, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Work wanted by ex C.O., H.S., H.P., reading for F.R.C.S. Experienced private and panel *Practice*. Evening Surgeries or *Night Locum preferred*.—Address, No. 6316, B.M.A. House, Tavistock Square, W.C.1.

Technical Biochemist, lady, young, with varied *clinical experience* extending over three years, and research work, desires POST in laboratory. B.Sc. degree. Satisfactory testimonials.—Address, No. 6309, B.M.A. House, Tavistock Square, W.C.1.

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Wanted at once, Practice, Partnership, or ASSISTANTSHIP with view. *London Suburbs or South Coast.*—Address No. 6239, BMA House, Tavistock Sq., W.C.1.

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Most suitable for a Medical Man, or as a *SMALL NURSING HOME.*—A fine Corner HOUSE at Streatham, two mins. from main road, common, trams, etc. Two flrs., 6 bed, 3 rec., large kitchen, scullery, etc. Electric light. Lease 71 years. G.R. £10 10s. Bargain price £1,175.—Write, in first instance, to Box E334, Willings, 86, Strand, W.C.2.

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Derbyshire County Council.

WOMAN MEDICAL OFFICER.

The Derbyshire County Council require the services of a fully qualified Whole time Woman Medical Officer experienced in Ante-Natal Work, Midwifery and Children's Diseases, to hold (under the direction of the Medical Officer of Health) Consultations at the Maternity and Child Welfare Centres of the Derbyshire County Council, and (under the like direction) to perform such other duties as appertain to the office.

The salary will be £600 per annum, rising by £25 per annum to £750 per annum.

The appointment will be a designated post under the Local Government and Other Officers Superannuation Act, and the successful candidate will be required to pass a medical examination.

The appointment will be terminable by one month's notice on either side.

Applications must be sent to the undersigned, together with copies of not more than three recent testimonials, not later than Saturday, October 24th.

W. M. ASH,
County Medical Officer of Health.

New County Offices,
Derby.

St. Albans and Mid Herts HOSPITAL AND DISPENSARY, CHURCH CRESCENT, ST. ALBANS.

Applications are invited for the post of RESIDENT HOUSE SURGEON (male or female). Salary £150 per annum, with board, residence, and laundry.

Applications to be sent to the Secretary, St. Albans and Mid Herts Hospital, No. 38, St. Peter's Street, St. Albans.

October, 1931.

County Council of Middlesex.

REDHILL COUNTY HOSPITAL EDGWARE.

RESIDENT ASSISTANT MEDICAL OFFICER

The County Council invite applications for the post of Resident Assistant Medical Officer at the Redhill County Hospital Edgware.

Candidates must be registered Medical Practitioners who have held resident appointments in a General Hospital. The officer appointed will work under the control of the Medical Superintendent and will devote himself to the hospital duties.

Salary is at the rate of £400 per annum rising by annual increments of £50 to £600 per annum together with board lodging and laundry.

The successful candidate will be required to pass such medical examination as the County Council may direct and unless subject to the Poor Law Officers Superannuation Act 1896 to contribute to the County Councils Superannuation Fund. The appointment will be held during the pleasure of the Council and subject to one month's notice on either side.

Applicants stating (1) age (2) qualifications and (3) previous experience together with copies of not more than three recent testimonials must be received by the undersigned not later than October 24th.

No special application forms are provided. Envelopes must be endorsed Resident Assistant Medical Officer.

Canvassing directly or indirectly will be a disqualification.

NB—Redhill Hospital is a modern General Hospital with accommodation for some 200 acute cases and a similar number of patients at the adjoining Redhill Institution suffering from chronic disease are under the care of the Medical Staff of the Hospital.

ERNEST S. W. HART
Clerk of the County Council
Middlesex Guildhall Westminster S.W.1
October 5th 1931

Samaritan Free Hospital for

WOMEN, Marylebone Road N.W.1

Applications are invited for the post of HOUSE SURGEON for a period of six months commencing on November 10th next. Salary at the rate of £100 per annum with board lodging and washing. Previous experience as House Surgeon essential. Applications stating age accompanied by copies of testimonials must reach the Secretary at the Hospital on or before Thursday noon Oct. 29th.

C. H. HAWKINS Secretary.

Norfolk and Norwich Hospital,

NORWICH

Applications are invited for the post of CASUALTY OFFICER AND HOUSE SURGEON (with charge of 25 beds). Salary £120 with board residence and laundry. Candidates (male) will must possess registered qualifications should forward applications stating age nationality etc. together with copies of testimonials to the undersigned as soon as possible.

FRANK INCH
Oct. 9th 1931 House Governor & Secretary.

Essex County Hospital,

COLCHESTER (160 Beds)

Wanted in October ASSISTANT HOUSE SURGEON AND REGISTRAR (male). Salary £120 with board washing and residence. Medical and Surgical qualifications required.

Applications with three recent testimonials to be sent by Saturday October 17th to

ALFRED G. BUCK Secretary.

The Sheffield Royal Hospital.

(340 Beds)

There are two vacancies for Residents
OPHTHALMIC HOUSE SURGEON £120 per annum
ANAESTHETIST £80 per annum rising to £100 in six months
Applications to— W. H. BOOTH
Superintendent & Secretary

King Edward Memorial Hospital,

Ealing

Applications are invited for the post of HONORARY CONSULTING DERMATOLOGIST. Applications should be sent to the Secretary Superintendent from whom details of the appointment may be obtained.

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Salary £150 per annum. Twelve months appointment. Vacant November 1st. Applications to be received by the Secretary on or before Wednesday October 28th.

Royal Victoria Infirmary,

NEWCASTLE-UPON-TYNE (662 Beds)

The House Committee declare vacant the office of HONORARY ASSISTANT to the Skin Department.

According to statutory provision every candidate must be a registered Graduate in Medicine of any University recognized by the General Council of Medical Education and Registration of the United Kingdom or a registered Fellow or Member of one of the Colleges of Physicians of the United Kingdom provided that in pursuance as a Physician or Surgeon to a General Practitioner.

Applications stating age qualifications and previous experience must be sent to the House Governor and Secretary Royal Victoria Infirmary Newcastle-upon-Tyne not later than Saturday October 31st.

The appointment will be made on Thursday November 5th.

Candidates may if they so desire forward to each member of the House Committee a copy of their application and testimonials.

Personal canvassing will be considered a disqualification for office.

S. DUNSTAN
October 6th 1931 House Governor & Secretary.

Evelina Hospital for Children,

Southwark S.E.

Applications are invited for the post of CASUALTY AND OUT-PATIENT OFFICER (male) for six months from November 1st. Salary at the rate of £120 per annum with board and residence. Hours of duty from 9.30 a.m. to 5.30 p.m. from Monday to Friday inclusive Saturday until 2 p.m. No Sunday duty.

Applications stating age experience and qualifications accompanied by copies of four testimonials to be sent before October 22nd to the undersigned from whom rules and other particulars can be obtained.

By order of the Committee of Management
W. H. SIDNELL
October 5th 1931 Secretary Staff.

Manchester Northern Hospital

FOR WOMEN AND CHILDREN
Park Place Cleveland Hill Road

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON both duly qualified and are to commence duties as early as suitable. Senior House Surgeon salary £130 per annum with board and residence. Junior House Surgeon salary £100 per annum, with board only.

Applications stating age and experience with copies of recent testimonials to be sent to the Secretary Mr. JAMES C. DANIELS 33 Faraday Street Manchester.

Royal Berkshire Hospital,

READING

HOUSE SURGEON required for PLASTIC AND BRANCH HOSPITAL (60 beds) on November 1st for six months. Candidates must be fully qualified and registered. Remuneration at the rate of £150 per annum with board residence and laundry. Suitable post for applicant working for examination or thesis.

Applications with copies of testimonials should be sent to the undersigned on or before October 20th.

F. A. LYON Secretary.

A[illegible] Surgeon

A[illegible] required at the [illegible] (243 beds) qualified and registered. Appointment is for six months. Salary at the rate of £150 per annum with board residence and laundry.

Applications with copies of testimonials to be addressed to the undersigned.

F. A. LYON
Reading Secretary.

Royal Berkshire Hospital,

READING (243 Beds)

A CASUALTY OFFICER wanted on Nov. 16th for six months. Candidates (male) must be fully qualified and registered. Remuneration at the rate of £150 per annum with board residence and laundry. Applications with copies of testimonials should be sent to the undersigned on or before October 26th.

F. A. LYON Secretary.

Manchester Royal Eye Hospital

JUNIOR HOUSE SURGEON required. Salary £120 per annum with residence, board etc. Applications with copies of testimonials endorsed House Surgeon to be addressed to the Chairman of the Board of Management. Post now vacant.

H. P. NORTH Secretary.

Administrative County of

LONDON

HOSPITAL SERVICE.

The LONDON COUNTY COUNCIL invites applications for appointment to the following posts:

The persons appointed will be required to carry out such duties as may be agreed by the Medical Superintendents and Committees in charge under the control of the Council. The successful candidates will be required to live in the Hospital. There is no accommodation for married officers.

ASSISTANT MEDICAL OFFICERS

Salary £330 a year rising by annual increments of £25 to £425 together with board, lodging and washing. Candidates must be duly qualified Medical Practitioners of at least one year's standing. Experience in a recognized appointment in a General Hospital is desirable.

(1) ST. LUKE'S HOSPITAL, Lower Road (for acute mental cases) (210 beds). For pulmonary and female cases. Light treatment and X-ray facilities. Experience in the treatment of mental disorders is desirable.

(2) HIGH WOOD HOSPITAL FOR CHILDREN, Brentwood Essex (370 beds). Experience in the treatment of tuberculosis is desirable.

(3) DOWNS HOSPITAL FOR CHILDREN, Sutton Surrey (260 beds). Experience in administration of anaesthetics is essential.

(4) GROVE PARK HOSPITAL, Lee S.E.12 (322 beds). Experience in the treatment of pulmonary tuberculosis is desirable.

HOUSE PHYSICIANS

Salary £80 a year together with board, lodging and washing. Appointment is for six months only in the first instance but may be extended for a further period of six months up to a maximum of two years provided that not more than 12 months are spent at one hospital. Candidates must be qualified Medical Practitioners without necessarily having had previous hospital experience.

KING GEORGE V SANATORIUM Godalming, Surrey (Two appointments) (232 beds). For early cases of pulmonary tuberculosis in women.

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division) The County Hall Westminster Bridge S.E.1 and must be returned by October 30th. Candidates should specify the position or positions for which they desire to apply. Canvassing disqualifies. Inquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendents at the respective Hospital.

MONTAGU H. COX,
Clerk of the London County Council.

City of Birmingham.

PUBLIC HEALTH COMMITTEE.

LITTLE BROMWICH ISOLATION HOSPITAL. WITTON SMALL-POX HOSPITAL.

MEDICAL SUPERINTENDENT OF INFECTIOUS DISEASES HOSPITALS.

Applications are invited from fully qualified registered Medical Practitioners for the above whole-time appointment.

The Little Bromwich Hospital has accommodation for 466 patients mainly scarlet fever and diphtheria cases while the Witton Small-pox Hospital can accommodate 100 patients.

The salary will commence at £1,000 per annum including emoluments (a house decorations and rates) valued at £130 per annum, and will rise by two equal increments of £50 to a maximum of £1,100 per annum. The officer appointed will be required to refund to the Council all fees allowances and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation Superannuation Scheme and to the candidate passing a medical examination and will be subject to three months' notice on either side. Form of application and further particulars may be obtained from the Medical Officer of Health. The Council House Birmingham to whom applications stating age whether married experience and qualifications and accompanied by copies of three recent testimonials should be addressed not later than Wednesday November 4th.

F. H. C. WILTSHIRE Town Clerk.

The Council House Birmingham
October 9th 1931

Worthing Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER now vacant. The appointment is for six months renewable (1 terminable by three months' notice on either side). Salary at the rate of £150 per annum, with board lodging and laundry.

Applicants giving age qualifications and experience with copies of three testimonials, to be sent to the Secretary at once.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A MEDICAL REGISTRAR is required (for morning duties only) in the Out-patient's Department, on October 22nd.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials, written especially for the purpose, before 12 o'clock on Monday, October 19th.

The appointment is made for one year, but may be held, subject to re-election, for three years.

Salary £250 per annum, with luncheon when on duty, and an allowance of nine guineas for the purpose of providing a substitute during annual leave.

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up the duties on October 22nd.

All candidates must be in attendance at the Hospital, to appear before the Joint Committee, if required, on Wednesday October 21st, at 5 p.m.

Forms of application and copies of Rules for, and details of the duties of the appointment, will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
September, 1931. Secretary

Royal Buckinghamshire Hospital
AYLESBURY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) for six months. To commence duty on October 31st. Salary £200 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROWN, Secretary.

Bristol Royal Infirmary.

Applications are invited for the posts of HOUSE SURGEON and HOUSE PHYSICIAN. Salary at the rate of £60 per annum, with board, apartments, and laundry. Candidates, *who must be duly qualified, to send in their applications*, stating age, together with copies of not more than three testimonials, to the undersigned.

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Midland City. — £3,584 p.a. Panel 3,000. Visits 5/6 to 7/6. Good main road house, 4 bed., etc., to rent. Premium £5,000 cash, or terms.—No. 8920.

Glos. Country. — £1,250 p.a. Panel over 1,100. Clubs £250. Det. house, 3 recep., 5 bed., to rent. Prem. £1,750. —No. 8919.

Death Vacancy.—Devon Resort. £600 p.a. nucg. Panel 500. Fees 2/6 —10/6. Leasehold house, 7 bed., 2 recep., etc., and half acre.—No. 8916.

Eastern County. — £1,900 p.a. Panel 1,250. Fees 5/6 to 21/-. Ample scope. Good house, 5 bed., 3 recep., and large garden. Would suit 2 men.—No. 8914.

London, N.E. — Old-established family PRACTICE. Over £4,000 p.a. Panel about 2,000. 1/3 share. House to rent. Fees 2/6 to 5/-.—No. 8912.

Surrey Town. — Aver. £4,000. Panel about 2,000. Appts £630. Fees 5/- to 12/6. 1/5 share for sale now.—No. 8911.

Kent.—Within 30 miles. About £2,500 p.a. 2/5 share after preliminary Ass). Panel 1,000. Appts. £250. Fees 3/6 to 21/-. Good house, garden, garage, etc., to rent. —No. 8909.

East Coast. — Popular resort. About £4,200. 1/3 share. Panel 2,000. Appts. about £200. Visits 5/- up. Good house to rent.—No. 8908.

Middlesex Suburb.—Share worth about £900. Good panel. Appts. £40. Fees 3/6 to 10/6. Good house and garden for sale.—No. 8907.

Midlands.—Country. — £2,150 p.a. 1/2 share for £1,900. Panel 1,000. Furnished house, 4 bed., etc., and garden. Suit man or woman.—No. 8906.

London, E.—Over £1,300. Panel 1,700. Fees 3/6, with med. Freehold house £1,150. 1½ years' purchase.—No. 8901.

Kent. — Country, unopposed, about £900 p.a. Panel 330. Fees 5/6 to 12/6. Appointments £125 p.a. Premium £1,300.—No. 8900.

Suffolk. — Over £1,000 p.a. Panel over 600. Fees 4/- to 10/-. Appointments £65 p.a. Good house, garden, and outbuildings. Premium £1,600.—No. 8899.

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Kent.—Near London.—£2,100. 1/3 share, incg. to 1/2. Panel 1,660. Fees 4/- to 21/-. Good house and garden to rent.—No. 8892.

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DEVON.—DEATH VACANCY.—Well-established General PRACTICE, situated in seaside resort. Detached double-fronted house with separate entrance to professional quarters. Receipts nearly £700. Fees 2/6 up. Panel 500. Premium £500.

MIDDLESEX, WEST.—PARTNERSHIP in rapidly developing residential district. Receipts approx. £1,500, increasing. Panel nearly 1,300. Suitable accommodation available. Premium for one-half share £1,500, payable £750 down and balance in 12 months or £1,250 cash. Suitable to young experienced man, preferably one having L.C.C. Hospital appointments.

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LONDON, S.W.—DEATH VACANCY.—Old-established middle-class G.P. situated in residential district. Suitable house to rent, garden, garage, part sub-let. Receipts between £1,500 and £2,000 (subject to confirmation). Panel 1,200/1,300. Premium 1½ years' purchase or rear offer.

CHESHIRE.—Near Coast.—Small G.P., with excellent scope for expansion, situated in working-class and residential district. Receipts £600. Panel 900. Suitable house available. Premium 1½ years' purchase. Excellent scope for keen and energetic man.

KENT.—Well-established Country PRACTICE situated in growing locality. Medium-sized house to rent (4 beds). Receipts just over £500 p.a. Panel 331. Fees 3/6 up. Cottage Hospital. Excellent scope. Premium £1,300.

TOPAS.—PARTNERSHIP in busy rapidly increasing Town Practice. Receipts £2,300. Panel 1,500. Purchase house and take one-third share, with view to succession. 2 years' purchase.

SURREY.—PARTNERSHIP in rapidly developing residential locality with splendid scope. Receipts approx. £1,000 p.a. Panel nearly 300. Fees 2/6 up. Premium for 2/3 share, 2 years' purchase. Excellent opportunity for young and energetic man.

LONDON, W.—PARTNERSHIP in suburban middle-class G.P. situated in rapidly developing locality. Suitable modern house to rent. Receipts £2,750—£3,000. Panel approx. 2,000. Fees 2/6 up. Premium for 1/3 share, 2 years' purchase. Excellent scope for young and energetic man.

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The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.

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9 MIDLANDS.—Partnership in easily worked good class non dispensing Practice over £4,000 p.a., in beautifully situated county town. Panel about 1,600. Hospital in town, and incoming Partner must be a good Surgeon. One fifth share at first at 2 years' purchase.

10 DEATH VACANCY.—LONDON, W.C.—PRACTICE, averaging over £1,200 p.a. No panel or dispensing. Fees 5/- to 10/6 and £1 1s. House to rent. Scope for increase.

11 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bedrooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

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13 S.W. ENGLAND.—Third Partner required in Practice, averaging £5,645 p.a. in small Industrial Town. Partner must be experienced in Surgery (preferably F.R.C.S.) as there is excellent scope in this direction. Panel over 4,000. Semi detached ten roomed house for sale. Premium one sixth share 2 years' purchase. Preliminary Assistantship.

14 LONDON, E. — Branch Surgery doing about £6 weekly in thickly populated area. Panel 250. House contains 2 bedrooms, etc., rent £130 p.a. Premium 1½ years' purchase.

15 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort. Receipts past year £623. Panel 500. House (7 bedrooms), garage, and half acre of garden, for sale.

16 LONDON, S.E. — Partnership in sound Practice of £4,500 p.a. in pleasant suburb. No panel. Choice of two houses for sale. Premium, one third share, 2 years' purchase.

17 HOME COUNTIES. — Non-dispensing PRACTICE in delightfully situated Town under 15 miles from London. Receipts past year over £1,200. No panel. Centrally situated house to rent. Premium £2,100.

18 NEW ZEALAND.—NORTH ISLAND.—Non dispensing PRACTICE, about £1,800 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,250.

19 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and very little midwifery. Well-situated house (6 bedrooms), good garden and garage, for sale. Good scope. Premium 1½ years purchase.

20 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round. Receipts about £150. No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

21 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. House available. Applicant should be a capable Surgeon. Premium one third share or one fourth share 1½ years' purchase.

22 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Good well-situated house (7 bedrooms), for sale or rent. Premium one half share 2 years' purchase. Partner should be young and hold F.R.C.S.

23 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two thirds or four ninths share 2 years' purchase.

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24 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £593 p.a. Small panel. No midwifery. Six-roomed house to rent. Premium £750 (or £500 without instalments).

25 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven-roomed house with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

26 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms) garage and nice garden for sale. Premium one-third share £2,000.

27 HOME COUNTIES. — Partner required in steadily increasing Practice of between £1,500 and £2,000 p.a. in rapidly growing neighbourhood within 15 miles of London. House, with 5 bedrooms, etc., garage and garden, to rent. Good scope. Premium two-fifths share 2 years' purchase.

28 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well-situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

29 S. WALES.—Partnership in steadily increasing Practice of about £3,000 (appts. over £1,000) p.a. in growing district, easy distance of important Seaport. Panel 1,750. One-third to two-fifths at once, with succession to whole Practice after 5 years. Premium 1½ years' purchase.

30 SOUTH AFRICA. — Country Practice in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June 1931, over £1,000. Sport of all kinds. Well-built house for sale or rent. Easily worked. Premium £550.

31 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first-rate town. Panel 1,344. Good house (6/7 bedrooms) to rent. Premium one-third share 2 years' purchase.

32 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight-roomed house for sale or rent. Excellent educational facilities. Sea-fishing, etc. Premium £1,500.

33 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years purchase.

34 LONDON, E.—Cash and Panel Practice of £1,285 p.a. in populous area. Panel 1,700. House (3 bedrooms) for sale. Premium 1½ years purchase.

35 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,300 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one-half share 1½ years' purchase.

36 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock-up Surgery £65 p.a. Premium to include furniture and drugs, £500.

37 MIDLANDS.—Practice over £800 p.a. in first-rate town. Panel 500. Large or small house available. Premium only £300.

38 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £6,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent. Partner must hold the F.R.C.S. and be aged about 30. Appointment on Hospital Staff. Premium for one-sixth to one-fourth share 2 years' purchase. Preliminary Assistantship.

39 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a Varsity man, about 30 years of age, experienced in Medicine and Anæsthetics. Good up-to-date Hospital. Share of £1,000 p.a. 2 years' purchase.

40 S. of ENGLAND.—Partnership in increasing Practice of between £1,500—£2,000 p.a., in flourishing Seaport Town. Panel 1,000. Plenty of scope for increase. Premium one-half share 1½ years' purchase. Preliminary Assistantship entertained.

41 S. AFRICA.—CAPE PROVINCE.—Practice of over £1,400 in small Town (4,000 to 5,000 inhabitants) in healthy pastoral district. Well-built house (2 bedrooms) to rent. Premium £500.

42 LONDON, S.W. — Partnership in well-established suburban Practice (about £2,400 p.a.) easy access of West End. Premium for one-half share £2,300.

43 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in *beautifully situated Country Town*). Panel about 600. House 5 bedrooms) to rent. Good schools. Excellent sport. First-class Hospital. One-third to one-half share at 1½ years' purchase. Weekly service.

44 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 170. House (5 bedrooms) garage and garden, to be sold or let. Premium 1½ years purchase.

45 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one-half share 1½ years' purchase.

46 W. OF ENGLAND. — Country Practice over £600 p.a. in beautiful district. Small panel. House with lovely garden and paddock, for sale. Scope. Premium 1 year's purchase.

47 YORKSHIRE (N.R.) —Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000. Premium for one-fifth share 2 years' purchase.

48 LONDON, S.W. — Increasing Practice in outlying suburb. Panel about 400. Modern house (7 bed rooms). Premium £1,100. Bookings last year £890.

49 CORNWALL.—Practice of £1,260 p.a. in a favourite seaside resort. Panel 520. Hospital. Good house and garden to rent. Premium 1½ years' purchase.

50 KENT. — Country Practice of about £350 p.a. Panel 550. Good house and garden for sale. Prem. £1,100.

51 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

52 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district. Panel 2,525. Scope for increase. Premium one-half share 2 years' purchase.

53 NORFOLK.—Partnership in Country Practice of £2,600 p.a. in agricultural district. Panel 1,500. Detached house with garage and small garden to rent. Sport of all kinds. Premium one-third share 1½ years' purchase. Preliminary Assistantship.

54 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 250. Convenient semi-detached house (4 bedrooms) with good garage and secluded garden for sale or rent. Great scope. Premium 1½ years' purchase.

55 CO. DURHAM.—Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms) in quarter acre of garden, for sale. Premium for one-half share only £1,000.

56 SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 200. House with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,500.

57 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 632. Detached house (6 bedrooms) with garage and beautiful garden to rent. Boating, shooting, fishing, etc. Premium 1½ years purchase. Suitable for retired Service man.

58 EASTERN COUNTIES.—Small Practice in town of 20,000 population near the coast. Receipts average £350 p.a. (including £100 from panel). Large convenient house, with good Surgery and nice garden, to rent. Premium 1 year's purchase.

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1. PARTNERSHIP.—LONDON SUBURB (EAST).—In a thickly-populated district, on the confines of the country, the half share of a very old-established lucrative Practice averaging over £4,900 p.a. (last year £5,074) is offered owing to the retirement of the senior partner. Good appts. and panel of 4,870. Expenses light. Little midwifery. House, with good accommodation and garden. Rent £50 p.a. Premium 1¾ years' purchase, part by instalments.
2. MIDDLESEX.—Within ten miles of London.—Very old-established middle and working-class PRACTICE, in pleasant and increasing residential district. Cash receipts average £1,560, including panel of about 1,500. Very attractive house, with 6 bedrooms, etc., and large garden. Garage. Rent £125 p.a., or freehold for £2,500. Separate surgery accommodation 6 minutes away. Rent £70 p.a., including rates and taxes. Premium 1½ years' purchase.
3. WITHIN TEN MILES OF LONDON.—PARTNERSHIP.—The third share of an old-established good middle and working-class Practice is for disposal, offering excellent future prospects. Cash receipts last year amounted to nearly £2,700, including panel of nearly 1,500. Suitable house available at moderate price. Premium £2,000.
4. WITHIN SIX MILES OF THE BANK.—Old-established working-class PRACTICE, producing for the last 12 months £2,300, including panel of over 2,800. Appts. worth about £160. Visits from 2/6. Low expenses. Suitable house can be rented or bought. Surgery premises on rental. Premium £4,000 cash.
5. SOUTH-WEST OF ENGLAND. — FAVOURITE SEASIDE HOLIDAY RESORT.—PRACTICE is chiefly good class, and has averaged for the last three years £1,114. Panel of 1,150. Fees 3/6 to 7/6. No midwifery. House is a very good one, in best part of the town, with ample accommodation. Price for freehold £3,500. Part sublet. Premium £1,500.
6. HEREFORDSHIRE.—DEATH VACANCY.—Old-established unopposed country PRACTICE, averaging for past few years £700 p.a., including panel of 600. Situated in beautiful district, near large town. Fees 2/6 to 21/-. House contains 2 reception, 4 bedrooms. Garden, orchard, and paddock of 3½ acres. Rent £55 p.a. Premium £1,000, or near offer.
7. LONDON SUBURB (S.E.).—PARTNERSHIP.—Third share of very old-established non-panel Practice, in pleasant residential suburb, is for disposal through serious illness of retiring partner. Remaining partner has been in the practice for many years. Cash receipts average over £4,500 p.a. Two suitable houses available (Price, freehold, £2,000 and £1,400 respectively). Premium £2,974, £1,500 down and balance by instalments.
8. NORTH-WEST COAST.—SURGICAL PARTNERSHIP.—In a popular residential seaside resort the half share of middle and upper-class Practice is offered to a suitable gentlem[an] [M].S., as the retiring partner does the surgical wo[rk] [ne]r the medical side. Receipts average nearly £[ ] house in its own grounds, with ample accommodation. Price, freehold, £3,000, part on mortgage, or would be let on lease at £175. Premium 2 years' purchase.
9. GLASGOW.—Very well-established middle and working-class PRACTICE producing for the last 12 months nearly £1,800 (average 3 years £1,700). Panel of between 1,500 and 1,600. Fees from 2/6, with medicine extra. Exceptionally good house, in excellent repair, with large garden, and containing 3 reception, 4 bedrooms, etc. Good surgery. Electric light. Garage. Price for Practice and House £4,000 cash.
10. PARTNERSHIP.—In a most desirable outlying residential suburb of London, a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1,200 p.a., in an old-established good mixed-class Practice averaging just over £10,000 p.a. Very good house, with ample accommodation. Rent £150 p.a. Premium 2 years' purchase cash.
11. LONDON, W.—Old-established good middle-class PRACTICE averaging over £2,500 p.a. Medium-sized panel. Visits mainly 10/6. Midwifery discouraged. Suitable house, with ample accommodation. Vendor's leasehold property. Price £1,650, or will be let on lease at £150 p.a. Premium 1½ years' purchase.
12. PARTNERSHIP.—SOUTH WALES, near large Town.—A one-third or two-fifths share in a well-established and good middle and industrial class Practice, producing for last 12 months £3,174. Panel of 1,750. Fees from 3/-. Suitable house, with 4 reception and 4 bedrooms, etc. Electric light. Garden. Can be rented on lease. Premium 1½ years' purchase, part by arrangement.
13. MANCHESTER.—[illegible] p.a., but [illegible].—Good mixed-class PRACTICE, averaging over £1,200 owing to [illegible]ing of much increase. Vendor having neglected work with 2 rec[illegible]nth. Panel of about 550. Fees 3/6 to 7/6. House, Premium [illegible], 5 bedrooms, etc. Garden. Garage. Price £2,700.
14. SOUTH A[illegible]rs' purchase, payable by arrangement.
PRACTICE[illegible]CA.—Within 100 miles of East London.—Increasing financial y[illegible] very pretty Township near sea coast, producing last No night [illegible] £1,066. Practically all fees cash. Climate excellent. residence [illegible] and little or no visiting. Living cheap. Bungalow mortgage, [illegible]4 acre of productive garden. Price £750, £400 on kinds. [illegible]nt on lease £72 p.a. Premium £550. Sport of all
15. BORDERS OF SHROPSHIRE. — Old-established good mixed-class PRACTICE, situated in attractive district, and averaging over £1[illegible] p.a., with selected panel of 400. Fees from 3/6 to 30/-. Very [illegible] house, in excellent repair, with very fine garden, and containing reception, 6 to 8 bedrooms, etc. Garage. Price for freehold £2,[illegible] £1,000 on mortgage. Premium 1½ years' purchase. Very good [illegible]ing and social facilities. Excellent prospects of surgery.
16. KENT.—NURSING HOME, and small private Practice combined [illegible] latter offering excellent scope if desired as it has not been develop[illegible] situated in very pretty district within 15 miles of London. [illegible] receipts last year £1,100. Beautiful house (11 bedrooms, etc.) stan[illegible]ing in 2½ acres of garden, tennis lawn, etc. Price for freehold [illegible] goodwill £2,100.
17. BORDERS OF BERKS AND HANTS.—In a delightful sporting [illegible] agricultural district, within reach of market town, an old establish[illegible] mixed-class PRACTICE averaging about £850 p.a., including [illegible] over 400. Visits 5/- to 10/6, medicine extra. House containing [illegible] sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. Rent £50 p.a. on lease. Premium £1,100.
18. SURREY.—PARTNERSHIP.—A two-fifths share is offered in a rapidly increasing good mixed-class PRACTICE, having large scope for increase, and situated in a developing residential district, within [illegible] reach of town. Gross cash receipts for past 12 months approximate £1,500. Panel (which can be much increased) 350. Fees from 2[illegible] Suitable house, with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £1,250, part on mortgage. Premium 2 years' purchase.
19. DEVON.—P[illegible]RTNERSHIP.—Half share of very old-established [illegible] posed Country Practice, offering scope, and situated in pretty village within reach of large town. Cash receipts last year £2,22[illegible] including appts. and panel of 880. Visits 3/6 to 21/-, medicine extra. House contains 2 reception, 4 bedrooms, bathroom, etc. Garden. Garage. Rent £30 p.a. Premium £2,000. Hunting, shooting, fishing, etc.
20. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-third share (with increase to one-half later) is for disposal in a particularly sound well-established mixed-class Practice, owing to the retirement of the senior Partner. Gross cash receipts average £4,379 p.a. (last year £4,437). Panel of 1,344. Consultations 3/6 upwards. Visits 5/- to 21/-. Very suitable house, with 3 reception, 6 to 7 bedrooms, etc. Garden. Garage. Rent on lease £100 p.a. First-class schools and sport. Premium 2 years' purchase.
21. NORTH DEVON & CORNWALL BORDERS.—Very old-established unopposed Country PRACTICE, in beautiful district near coast [illegible] receipts average just over £1,100 p.a., including appt. and panel of 330.—Suitable house available. Premium £1,600, to include [illegible] etc. Hunting, golf, fishing, etc.
22. LANCS.—LARGE TOWN.—Old-established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £[illegible] Premium £2,050.
23. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old-established middle and upper-class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,600.
24. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000. A fifth share is for disposal, with increase to a third later. Suitable accommodation available. Premium 2 years' purchase.
25. NORTH MIDLANDS.—WITHIN 3 MILES OF FAVOURITE TOWN.—Old-established good middle-class PRACTICE, offering large scope. Cash receipts for last 12 months £1,332, including panel of over 1,000. Fees from 3/6. Mid. from 2 gns. Exceptionally nice house in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc., containing 3 reception, 6 bedrooms, etc. Freehold for sale. Premium 1½ years' purchase.
26. NEAR HUDDERSFIELD.—PARTNERSHIP.—A half share is offered in a very well-established good mixed-class Practice, having considerable scope for increase. Average gross cash receipts for the past three years £4,000; last year £4,273. Panel of 3,500. Fees from 3/6 to 7/6. Midwifery 1½ to 7 gns.; about 50 cases. Very good House, with 4 reception, 6 bedrooms, etc., and 1½ acres of garden. Price for freehold, £2,500, or would be let on lease. Prem. 1½ years' purchase.
27. MANCHESTER.—Semi-residential Suburb.—Very old-established [illegible] dispensing mainly middle-class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 5 gns. Well-situated house, with good accommodation. Price (freehold) £1,600. Premium £3,750.
28. LINCS. — PLEASANT MARKET TOWN.—PARTNERSHIP.—A half share, with possible succession in two years' time. Average income for past three years £1,900, including appointments and panel fees producing £500. Advice and medicine 3/- upwards; visits from 5/-. Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200. Sport of all kinds, and excellent schools for boys and girls. Premium 2 years' purchase payable £1,000 down, remainder by arrangement.

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LANCASHIRE TOWN—Old-established PRACTICE. Average cash receipts £[illegible] p.a. Panel 710. Excellent house in best district, 2 reception, 4 bedrooms. Garage and garden. Premium 1½ years' purchase—No. 278.

CHESHIRE TOWN, near COUNTY—Well-established PRACTICE. Cash receipts last year £1,784. Panel 1,300. Excellent house, 2 reception, 4 bedrooms, rent £60 p.a. Premium 1½ years' purchase less panel refunds—No. 269.

MANCHESTER — RESIDENTIAL SUBURB — PRACTICE. Cash receipts last year £1,243. Panel 570. Plenty of scope. Charming modern house, recently built, for Practice. 5 bedrooms, 2 reception rooms. Garage and garden. For sale or may be rented on lease. Premium—Practice—1½ years' purchase—No. 288.

NEAR PRESTON—PRACTICE offering scope. Cash receipts 1930 £626. Panel 250. Good house, 2 reception, 4 bedrooms. Rent £70 p.a. Premium £800 or near offer—No. 234.

LIVERPOOL—Old-established Middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 600. Excellent house, 2 reception, 7 bedrooms, garage and garden to rent—No. 276.

LANCASHIRE TOWN—Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house to rent, 3 reception, 5 bedrooms. Garage and garden. Premium £1,500, partable by arrangement—No. 232.

BIRMINGHAM SUBURB—Mid-Hanglass PRACTICE with great scope. Receipts last year £700. Small list panel. Excellent house, 2 reception, 6 bedrooms. Garage and large garden. Price £750. Premium—Practice £750 or near offer—No. 283.

MANCHESTER — PLEASANT RESIDENTIAL SUBURB—Old-established PRACTICE. Average cash receipts £685 p.a. Panel over 600. Much scope. Excellent house, 2 reception, 4 bedrooms, garage and good garden, to be sold, or may be rented for a period on lease. Premium 1 years' purchase. Vendor retiring—No. 246.

CHESHIRE TOWN—Old-established PRACTICE. Average cash receipts £1,420 p.a. Panel 2,000. Nice house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice—£2,200—No. 293.

LANCASHIRE TOWN, near Coast—Old-established PRACTICE. Cash receipts last year £1,125. Panel 1,085. Excellent house, 3 reception, 5 bedrooms, Garage and large garden. Premium—Practice—£1,250—No. 241.

MANCHESTER — RESIDENTIAL SUBURB—PRACTICE. Cash receipts 1931 £[illegible]. Panel 1,450. Two assistants, with ample accommodation, to rent. Premium 1½ years' purchase, part by arrangement—No. 2[illegible].

SOUTH COAST—SEASIDE RESORT—PRACTICE. Cash receipts £685 p.a. Panel 660. Excellent house, 3 reception, 5 bedrooms, garage and garden, to rent. Premium 1½ years' purchase—No. 1[illegible].

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NORTH-WEST COAST — SEASIDE RESORT — Old-established PRACTICE. Cash receipts 1930 £874. Small salaried panel. Excellent free residence, 5 bedrooms. Garage and garden—No. 266.

NEAR MANCHESTER — PLEASANT TOWN, largely residential — Old-established PRACTICE. Average cash receipts £995 p.a. Panel 592. Age of numerous panel patients £[illegible]. Great scope. Excellent detached house (fronting), 3 reception, 5 bedrooms. Garage and garden, and tennis court. Premium—Practice—1½ years' purchase—No. 234.

NEAR LIVERPOOL — PRACTICE offering scope. Cash receipts £500 p.a. Panel 550. Good house, 2 reception, 5 bedrooms. Garage and garden. Rent £[illegible] p.a. Premium £650 or near offer—No. 257.

MEDICAL WOMAN'S PRACTICE—LANCASHIRE TOWN—Cash receipts last year, £45[illegible]. Panel 303. House, 4 bedrooms, 2 reception, to rent at £[illegible] p.a., or would sell for £550. Premium £500 or near offer—No. 269.

BIRKENHEAD—PRACTICE in great scope. Cash receipts about £700 p.a. Panel 500. Good house, 3 bedrooms, garage. Premium—Practice—£700 or near offer—No. 235.

LANCASHIRE TOWN, near MANCHESTER — PARTNERSHIP in old Practice. Cash receipts £[illegible] £2,422. Panel nearly 2,000. House available, 3 reception, 5 bedrooms, garage. Premium £[illegible] p.a. Practice—Half-share—£1,[illegible] to be divided £[illegible] and £[illegible] p.a.—No. [illegible].

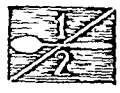
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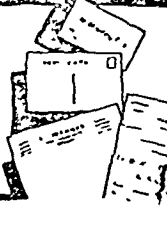
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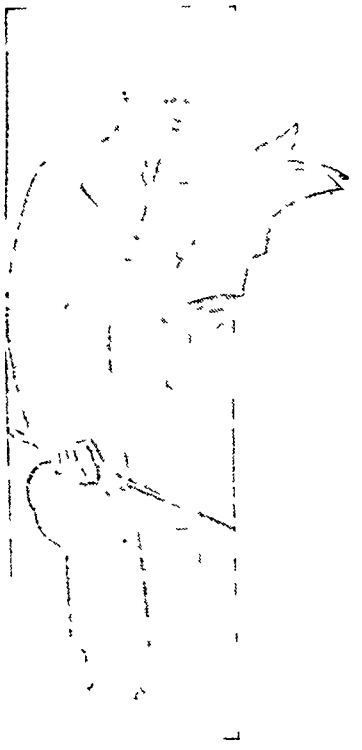
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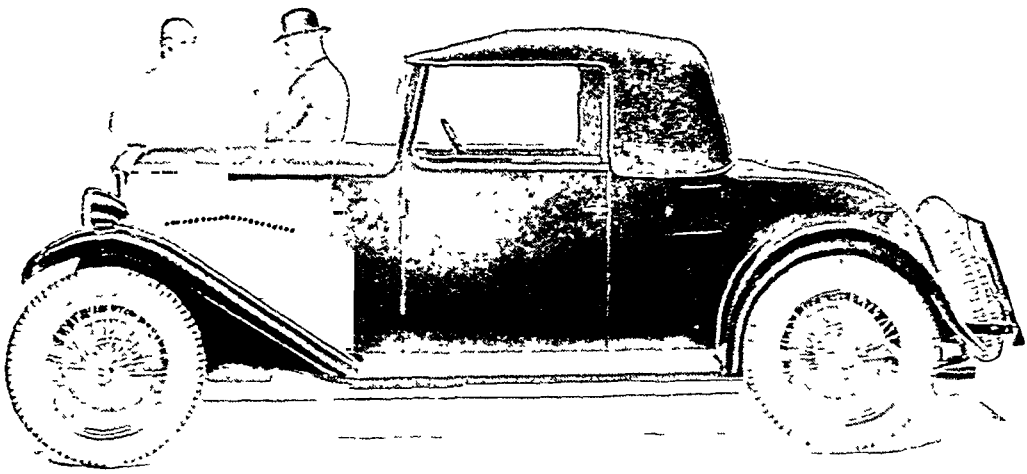
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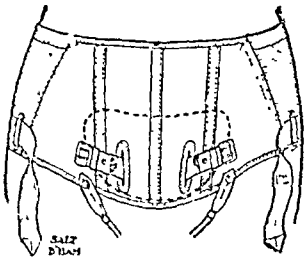
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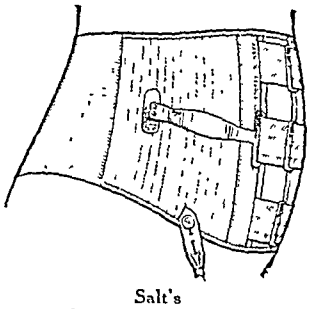
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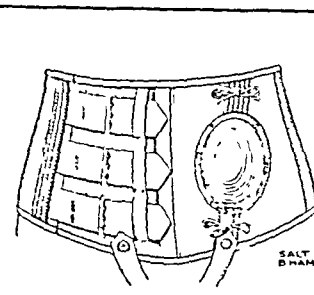
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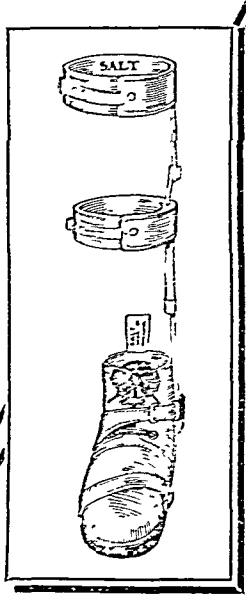
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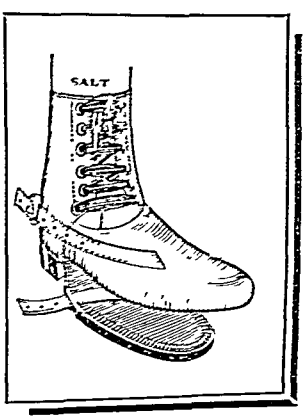
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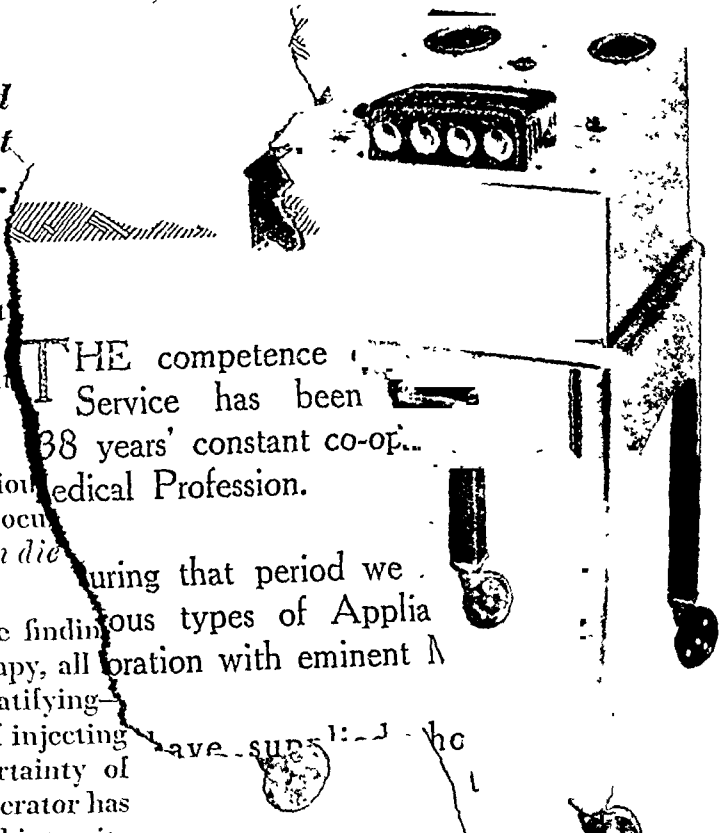
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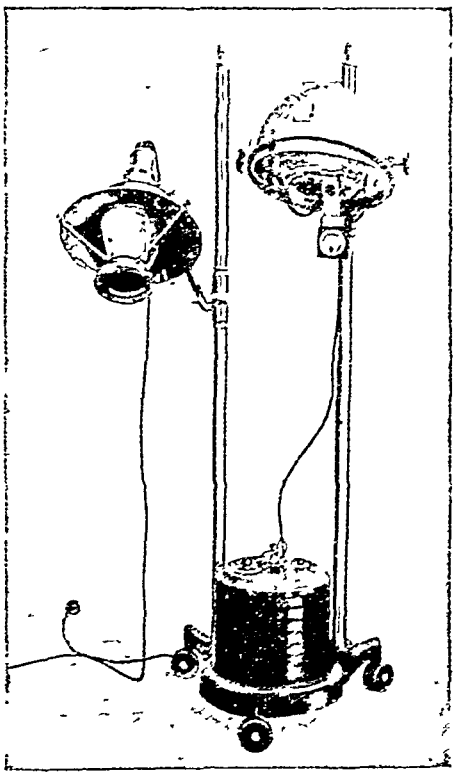
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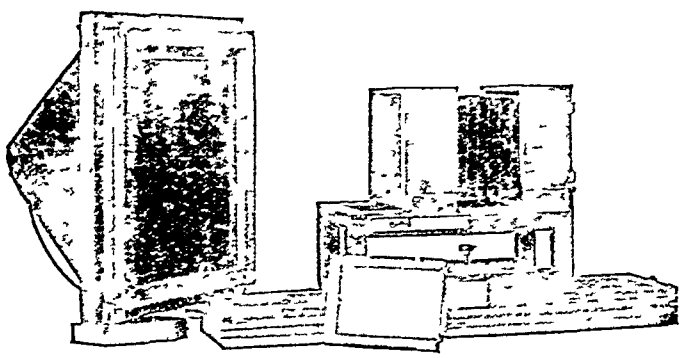
The scope of this service covers:—(a) The supply of Radium, Radium Containers, Needles, Tubes, Plaques, etc.; (b) The filling and measurement of Radium Containers; (c) The re-distribution of Radium from large into smaller containers; (d) All types of repair work; (e) The supply of Gold, Silver, and Platinum "Seeds" for Radon Plant.

Newton & Wright Ltd

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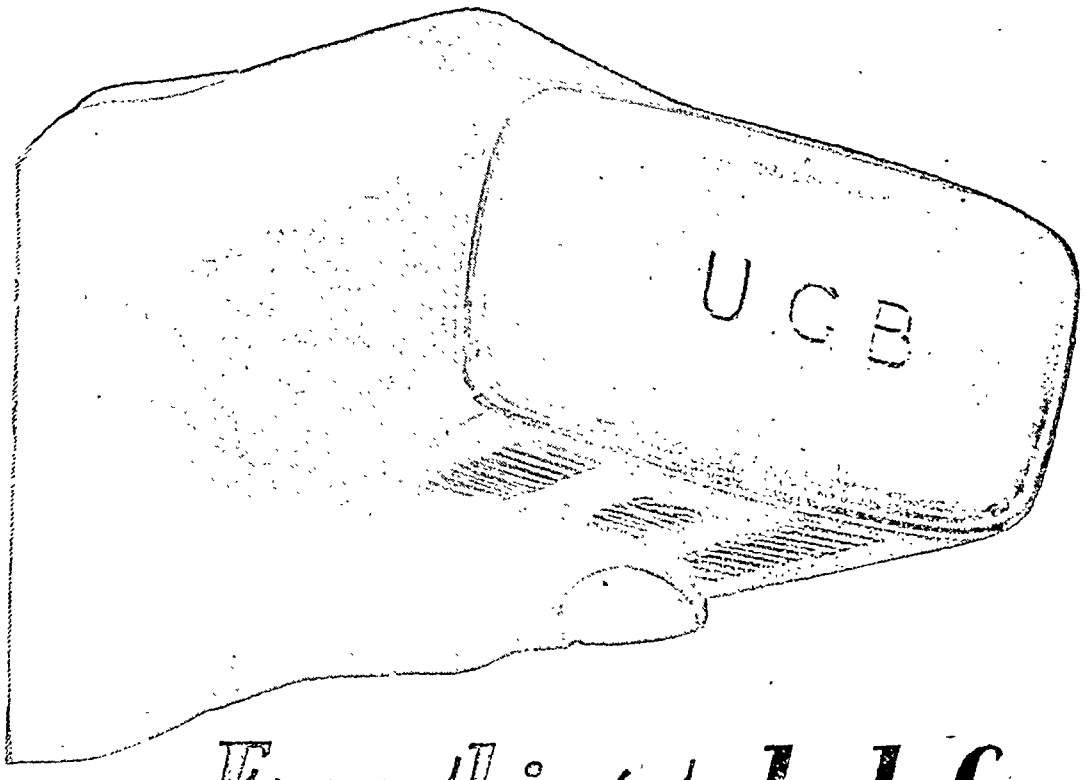


A simple and solidly built camera. Reduces negatives of any size up to 17 x 14 ins.

Suitable for making bromide prints or transparencies of $6\frac{1}{2}$ x $4\frac{3}{4}$ size or smaller, and lantern slides.

An automatic focussing scale makes the "Kodak" Reduction Camera exceedingly simple to operate.

Kodak Limited, (Medical Dept.)
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Everything to look for on a Bottle..

IMITATION may be the sincerest form of flattery, but the extent to which the U.G.B. Medical Bottle is imitated in inferior quality is far from gratifying.

Designed some ten years ago as an ideal dispensing bottle, it is now the standard for this purpose. The consistently high quality, accurate capacity and attractive appearance, places the U.G.B. Medical in a class by itself.

The success of this bottle has been greatly enhanced by the introduction of the "WASHED & STERILIZED READY-TO-USE BOTTLE" packed in non-returnable Dustproof Solid Fibre Cartons—supplied either for Corks or complete with Rustless White Enamelled Screw Caps.

Obtainable from all leading Wholesalers.



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GROUP LIFE ASSURANCE

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BUT we do urge every Medical Practitioner to make provision by means of LIFE ASSURANCE, suitable to his own particular and individual needs, for the protection of his family and estate, and for his greater comfort in retirement.

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WHICH EXISTS TO GIVE FREE EXPERT AND UNBIASSED ADVICE AND SAVE YOUR MONEY.

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Trade Mark

Sclerosing Solutions

For the Modern Treatment of Varicose Veins

"VARICANE" SODIUM MORRHUATE is specially noteworthy for its purity and its light colour which allows blood to be readily seen in the syringe when the needle enters the vein. Available in strengths of 5% and 10%

"VARICANE" QUININE HYDROCHLORIDE & URETHANE. The special process of manufacture prevents crystallising out and obviates irritation on injection

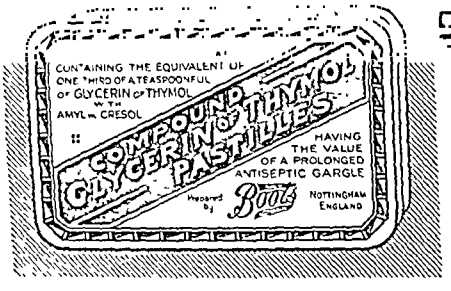
"VARICANE" SODIUM SALICYLATE. Available in strengths of 20%, 30%, 40% and 50%

Write for your copy of "The Modern Treatment of Varicose Veins" and clinical trial sample

MAY & BAKER LTD.

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Full size trial sample free to any medical practitioner in Great Britain on application by postcard to BOOTS THE CHEMISTS, STATION STREET, NOTTINGHAM.

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GLYCERIN OF THYMOL PASTILLES

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Each Pastille contains the equivalent of twenty minims of Glycerinum Thymol Co. B.P.C. fortified by the addition of a powerful new antiseptic, Amyl-Meta-Cresol, discovered in the Research Laboratories of Boots Pure Drug Co. Ltd.

Amyl-Meta-Cresol has a R.W. co-efficient of 250, and the equivalent of 2½ grains of pure Phenol has been added to each pastille.

Compound Glycerin of Thymol Pastilles retard development of throat and mouth infection and have the value of a prolonged antiseptic gargle.

OBTAINABLE FROM

The Boots Chemists

OVER 900 BRANCHES IN GREAT BRITAIN

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The following extracts from reports furnish evidence of the value of Contramine in general clinical practice:—

"....case of endocervicitis . . improvement commenced after second application, surface no longer raw, bleeding stopped, after third application cleared up no discharge"
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"....as for Contramine, I could not do without it, especially in the treatment of rheumatism."
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Successful Chemo-therapeutic Treatment in Chronic Infections and Chronic Complications

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Co119

HORLICK'S *for*
The EXPECTANT MOTHER

When added to the diet of expectant mothers *Horlick's Malted Milk*:—

1. *Provides extra nourishment* in an easily digested and assimilated form. Horlick's causes no digestive disturbances.

2. *Helps the elimination of waste products.* Constipation is frequently a troublesome feature of pregnancy. Horlick's promotes good bowel habits, and prevents constipation. As a food-drink it helps elimination by the kidneys.

3. *Prevents and relieves morning sickness.* The easily assimilated carbohydrate content of Horlick's Malted Milk counteracts the mild toxaemia, which causes many cases of morning sickness.

4. *Promotes sleep*—sleeplessness frequently complicates pregnancy, and adversely affects its course by increasing both worry and fatigue. Horlick's, by promoting sound sleep, places the patient in a favourable position to counteract these adverse influences.

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THE BEST PREVENTION

to invasion by infecting germs in the nose and naso-pharynx

DIMOL SNUFF

Diluted with 10 times its bulk of mucus will kill:

Pneumococci in 30 seconds

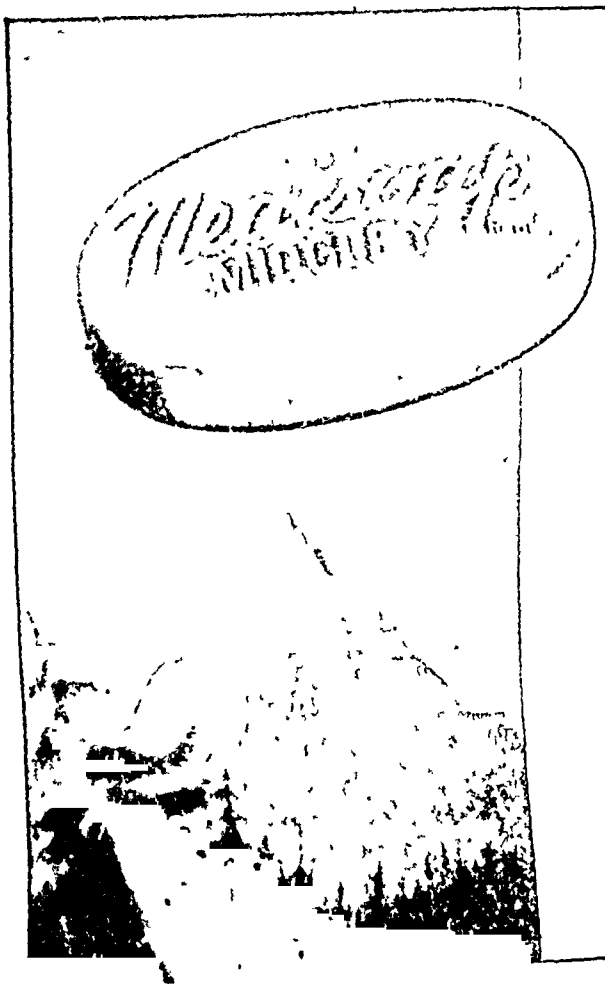
B. influenzae in 30 seconds

M. catarrhalis in 35 seconds

Streptococci in 40 seconds

Prices and particulars will be sent on application to:

DIMOL LABORATORIES LTD., 40, LUDGATE HILL, LONDON, E.C.4.



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MIDGLEY'S MEDICATED SOAPS

ACNE

For the treatment of this condition there are a number of Medisoap formulae recommended by many practitioners, and patients prefer this treatment to the disfiguring effects of ointments.

MEDISOAP No. 18, containing Naphthol 2½% and Sulphur 10%, used with success in Acne Vulgaris.

MEDISOAP No. 39, containing Ichthamol 5%, Ac. Salicyl. 2½%, recommended in Acne Rosacea.

MEDISOAP No. 15, containing Ichthamol 5%, Pix Liquida 5%, is another popular formula.

For further particulars see 'Prescriber's Index,' sent on request

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INDISPENSABLE!

WHEN EXHAUSTION PROHIBITS SOLID FOOD . . .

WHEN ANOREXIA RETARDS RECOVERY . . .

In serious illness when vitality is at its lowest and solid foods are prohibitive, these essences are of inestimable value.

Combining quick stimulation with almost effortless assimilation Brand's Essences of Beef or Chicken revive vitality while conserving the patient's energy.

99 out of every 100 doctors recently interviewed recommend them in illness and convalescence.

Even in cases of advanced stomach atonicity, Brand's Essences mean a quick return to normal tone and acidity.

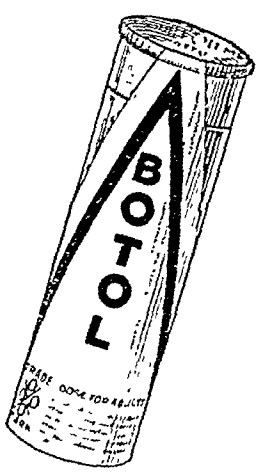
Suave and non-irritating, prepared by an exclusive process from the finest freshly killed English meats. No preservatives or colouring matter are used. They are easy to swallow and deliciously appetizing.

Samples will be gladly sent on receipt of a professional card. Dept. F40, Brand & Co., Ltd., Mayfair Works, South Lambeth Road, London, S.W.8.

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A LARYNGEAL NARCOTIC

Prepared by a new process which enables SOLID BROMOFORM to be combined with CODEINE

IN TUBES OF TWENTY TABLETS

AND IN TINS OF 100 AND 250 TABLETS

"Clinical Samples gladly sent on request"

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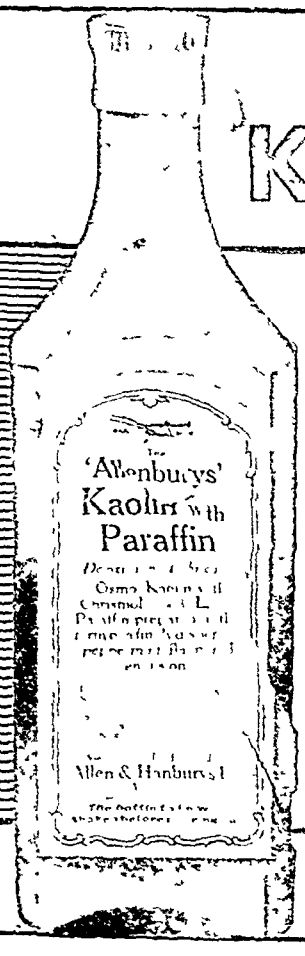
EXPECTANT AND NURSING MOTHERS

At Stand No. 49. London Medical Exhibition full particulars will be gladly supplied regarding "ALMATA"—a most readily digested Infant Food and also a most efficient galactagogue for expectant and nursing mothers.

"ALMATA"
KEEN'S COMPLETE FOOD

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Medical Practitioners and Nurses are invited to apply for samples and full analytical and clinical data to KEEN ROBINSON & CO., LTD., Carrow Works, Norwich.



The 'Allenburys' Kaolin with Paraffin

A Detoxicating Lubricant

The "Allenburys" Kaolin with Paraffin contains a combination of two already well known preparations —20 per cent. of "Osmo" Kaolin with 33⅓ per cent. of "Chrismol" Liquid Paraffin. These two constituents are so finely diffused that they form an emulsion which ensures the highest possible therapeutic effects.

The "Allenburys" Kaolin with Paraffin is indicated in all conditions in which elimination of intestinal toxins and protection of the intestinal mucosa are necessary, e.g. in chronic constipation, intestinal toxæmia, colitis, summer diarrhœa, food poisoning, cholera, etc.

In bottles: 8 oz. and 16 oz. for prescribing
80 oz. for dispensing.

Literature and clinical trial samples will be sent post free on application.

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Telephone Bishopsgate 3201 (10 lines) Telegrams Greenburys Beth London

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THE FOOD THAT BUILDS THE BODY

A POWERFUL reconstructive food that can be administered in all conditions, even those in which ordinary concentrated feeding and tonics are not supported, must fill an important place in therapeutics. Such a product is found in "Roboleine," which has been before the Medical Profession for nearly 25 years.

Bone-Marrow in Anaemia from Haemorrhage.

W. Borchardt (Deut. med. Woch., March 28th, 1930, p. 521) records the results of his experiments on young dogs in which anaemia had been artificially produced by the removal of about half their blood. In the first series some of the animals were fed with rib marrow, others with marrow from the long bones. Control animals received a corresponding amount of either fat or of liver extract. The basal diet in each case contained a sufficiency of iron (5 mg. per cent.). Only the animals receiving the red rib marrow showed a definite increase in weight, and their haemoglobin formation was more rapid than that of the others. In the next series the experiment was repeated, but the iron content of the diet was reduced to 1·4 mg. per cent. The result was similar but more striking, the dogs receiving the rib-marrow regaining their haemoglobin far more quickly than the others.

—*Vide* B.M.J., May 3rd, 1930.

"ROBOLEINE" contains the Marrow from the long bones, the RED MARROW OR JUICE FROM RIB BONES OF OXEN, together with Egg Yolk and a specially prepared Extract of Malt.

This is the original formula, and it may be of interest to note how closely it conformed to the latest requirements of modern research. This formula, however, has been developed in the light of clinical experience, and the vitamin content has been reinforced by the addition of our "Vitad," which is the unsaponifiable fraction of Cod Liver Oil.

ROBOLEINE may be taken by itself, or mixed with water, milk, porridge, or tea, and spread on dry biscuit forms a nourishing and stimulating "snack" lunch for children or adults.

INDICATIONS:—Rickets, Phthisis, Anaemia, Leukemia, Lymphadenoma, etc., and in those cases in which a debilitated stomach has rendered convalescence slow and difficult.

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To OPPENHEIMER SON & CO., LTD., Handforth Laboratories, Clapham Rd., London, S.W.9

I am interested in your announcement, please send free sample.

Name .....

Address .....

B.M.J.31

In Infancy

WHETHER the child be breast fed or bottle-fed, constipation is often a trouble-some feature. Castor oil and other purgatives, or aperients, while securing a prompt action of the bowels, possess certain definite disadvantages with which the practitioner is fully acquainted

"Cristolax," a combination of 50% of the purest medicinal paraffin of correct viscosity and 50% "Wander" Dry Malt Extract, is of special value for infants, particularly for those who are artificially fed.

One teaspoonful dissolved in three feeds a day, no matter whether they consist of milk or infants' food, renders the feeds more easily digestible, prevents the formation of hard indigestible clots, and keeps the bowels in a regular and sweet condition.

"Cristolax" is also an admirable preparation for the nursing mother, both during gestation and the lying-in period. Its use ensures regular and adequate defecation without griping, straining, or harmful effect upon the child.

"CRISTOLAX"

BRAND

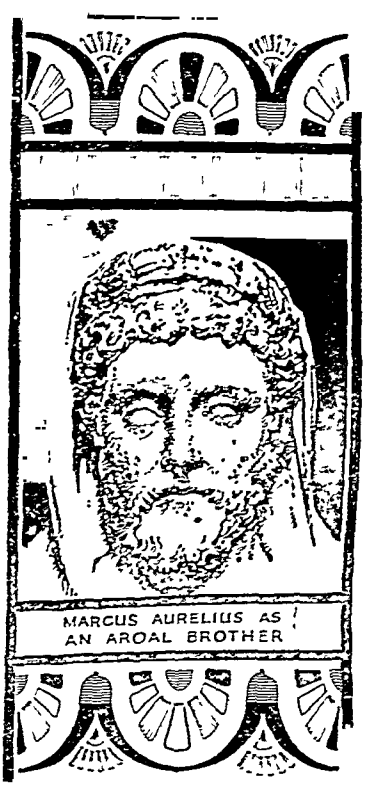
MALT EXTRACT WITH PARAFFIN

Lubricant-Laxative-Nutrient-Digestive

A supply for Clinical trial sent free on request

Of all Pharmacists in bottles at 3/6 & 2 each

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MARCUS AURELIUS AS AN AROAL BROTHER



with the caffein problem in mind—make the Night-Test

Do you have misgivings when you forbid a patient coffee? Do you doubt the patient's ability to say "No" to coffee's tempting fragrance?

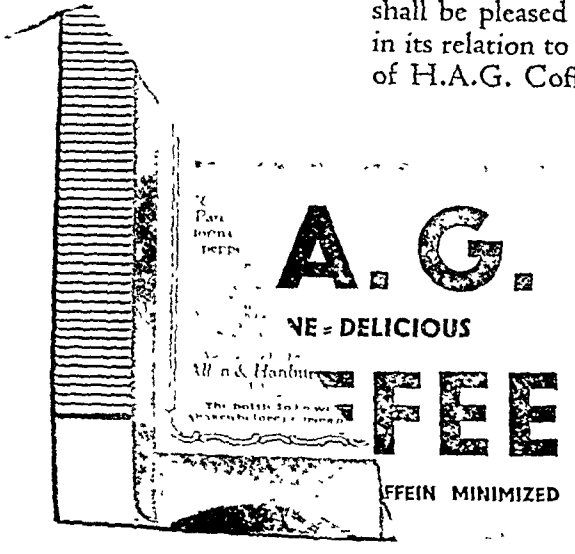
With this problem in mind, send the coupon below for a free vacuum-packed tin of H.A.G. Coffee—genuine, delicious coffee, with the effects of caffein minimized. When it arrives, make the night-test—drink your first cup of H.A.G. Coffee at night. Next morning you'll know, from your own experience, that any patient can drink H.A.G. Coffee without danger of caffein effect. More than that—you'll know that the rich, satisfying flavour of H.A.G. Coffee will shield the patient from the temptation to drink caffein-containing coffee.

Real coffee—delicious coffee!

H.A.G. Coffee is real coffee—a superior blend of the choicest Central and South American coffees. The decaffeination process takes place *before* the coffee beans are roasted. This leaves intact all the mellow flavour and fragrance that make coffee "the beloved beverage." Coffee experts recognize that no other blend is finer.

H.A.G. Coffee is under the Independent Control of The Institute of Hygiene and British Analytical Control.

Your grocer stocks H.A.G. Coffee—ground or in the bean and in vacuum tins that preserve its freshness and its fragrance. Or send the coupon below for a liberal sample tin of H.A.G. Coffee. With it we shall be pleased to send a copy of "Coffee drinking in its relation to Health," a more complete discussion of H.A.G. Coffee. Send the coupon now.



H.A.G. COFFEE COMPANY,
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Please send me free of charge a liberal sample of H.A.G. Coffee—also some literature upon the action of Caffein.

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Address _____

B.M.J.,7

'Just as Vitamin D holds the key to the formation of teeth and bones so Vitamin A controls the structure of some epithelial tissues. . . .'

(*Report of Hastings Lecture, Supplement, B.M.J., March 21st, 1931, p. 85*)

RADIOSTOL
Standardised Vitamin D

THE recent report on '*The influence of diet on caries in children's teeth*' by the Medical Research Council demonstrates that the onset and spread of dental caries in children can be controlled by the addition of Radiostol to the normal diet. The report states further that '***the successful research . . . in this field points to immediate and widespread measures of preventive control***'.

Radiostol Solution for such preventive measures ***—exactly identical with that used in the investigation***—is available to any physician from the principal pharmacists.

RADIOSTOLEUM
Standardised Vitamins A & D

In a recent investigation on the anti-infective action of Vitamin A (B.M.J., Oct. 3rd, 1931, 595) Radiostoleum was administered to 275 women during the later weeks of pregnancy whilst another 275 were kept as controls; it was found that only 1·1 per cent of the treated cases as against 4·7 per cent of the controls developed infection (B.M.A. standard of morbidity), ***thus showing less than one-fourth the susceptibility to infection when Radiostoleum is administered.***
Similar remarkable results of a smaller-scale experiment with Radiostoleum were reported previously (B.M.J., June 15th, 1929, 984).

AVOLEUM
Standardised Vitamin A

The anti-infective Vitamin A is available also through the medium of Avoleum—a highly-concentrated standardised liquid preparation of Vitamin A without the admixture of Vitamin D. Whilst Radiostoleum is recommended for administration to children and to pregnant and lactating women, Avoleum is more suitable for elderly patients and for cases in which the calcifying Vitamin D is contra-indicated.

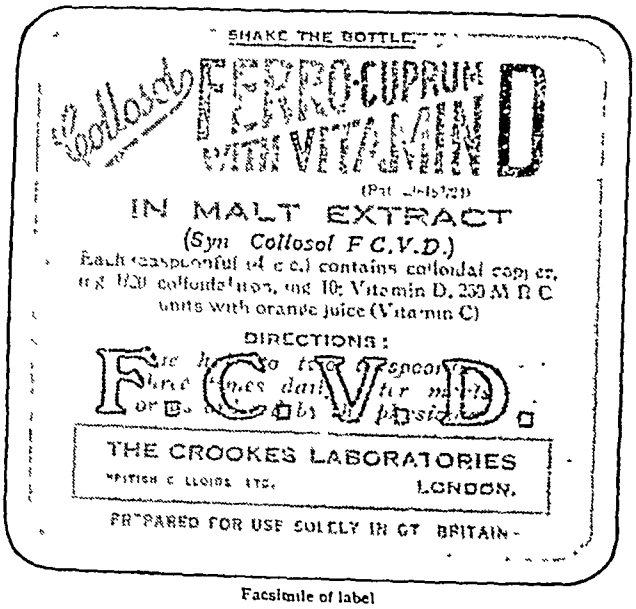
Clinical samples on request

THE BRITISH DRUG HOUSES LTD LONDON N-1

VI.Pr.219

Collosol "F.C.V.D."

FOR BLOOD REGENERATION, RECTIFYING CALCIUM DEFICIENCY AND GROWTH PROMOTION



Facsimile of label

In recent years the work of Hart, Steenbock, McHargue, Elvehjem, and others, suggests that the beneficial effect of iron therapy is largely due to the presence of a minute copper content present as an impurity.

Collosol "F.C.V.D." comprises colloidal iron activated by a small quantity of copper. Further, as calcium deficiency is frequently associated with anaemias and debility it has been considered advisable to make use of the well-established function of Vitamin D in calcium absorption. This accessory food factor has been added in the form of irradiated ergosterol combined in the medium of pure malt extract (Vitamin B) with orange juice (Vitamin C).

Sample on application to

THE CROOKES LABORATORIES

(BRITISH COLLOIDS, LTD.)

PARK ROYAL, LONDON, N.W.10

ALSO AT NEW YORK AND BOMBAY

Telegrams: COLLOSOLS, HARLES, LONDON. *Telephone (3 lines):* WILLESDEN 6313.



(*Æsculapius*).

LIVER THERAPY PER OS

HEPATEX is the most efficacious Liver Extract for administration per os. It contains the principle active in pernicious anaemia and in addition the full Vitamin B complex. Hepatex is a proved remedy not only for pernicious anaemia, but is also of considerable value in other anaemic conditions. It is so concentrated that one fluid drachm is equivalent to two ounces of fresh liver.

Issued in 4-oz. bottles.

HEPATEX WITH IRON has been introduced for the treatment of those cases of severe secondary anaemia where a combination of liver and iron is indicated. The special form of iron used is greatly superior to standard iron preparations as regards assimilation and absence of gastro-intestinal disturbances. A dosage of one or two fluid drachms a day gives a most satisfactory response.

Issued in 2-oz. bottles.

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HEPATEX P.A.F. has been introduced by us for the injection treatment of those cases of pernicious anaemia where speed of action is essential. It is presented as a highly concentrated, non-toxic solution, which on injection produces an immediate reticulocyte response. Cases of pernicious anaemia with red cell counts as low as 600,000 have responded satisfactorily, and the need for blood transfusion is entirely obviated. It is also useful where liver administered orally is not tolerated. The dose varies from 5 c.c.'s intravenously per day to 5 c.c.'s intramuscularly per week, according to the clinical condition.

Issued in 5 c.c. ampoules.

Further particulars will be sent to Physicians on application to

EVANS' BIOLOGICAL INSTITUTE,
Higher Runcorn, Cheshire.

Evans Sons Lescher & Webb Ltd.

Manufacturers of Fine Chemicals, Pharmaceutical and Biological Products

Liverpool
56 Hanover Street

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TO THE MEDICAL PROFESSION

T.C.P.

B_3 COLLOIDAL EMULSION

For the treatment of Enteritis, Gastro-Enteritis, Colitis, Hyperchlorhydria, Constipation, Dysentery, Rheumatism, Arterio-Sclerosis, Hypertension.

FORMULA.

Trichlorophenylmethyliodosalicyl	1.00%
Tribromoacetyliodoorthooxybenzoic Ac.	2.00%
T.C.P. Bismuthate	1.50%
Colloidal Aluminium Silicate	2.00%
Glycerine	3.00%
Distilled Water	90.50%
	100.00%

THE CHEMICAL REACTIONS WHICH TAKE PLACE IN THE INTESTINAL TRACT AFTER INGESTION OF T.C.P. B3 COLLOIDAL EMULSION

T.C.P. B3 Colloidal Emulsion is acid and passes unimpaired through the acid medium of the stomach. But immediately it reaches the alkaline region of the duodenum, chemical reaction occurs and the chlorine content is liberated.

Chlorine, thus free, attacks with avidity the amino-acid groups and the bacterial proteins and renders them innocuous.

This leaves phenyl-iodo-salicylic acid which in the same alkaline medium liberates iodine.

The affinity of free iodine for hydrogen liberates oxygen which by oxidation acts on the bacterial toxins and renders them also innocuous.

Phenyl-salicylate (or Salol) is left, which is well known to have very beneficial effect in all forms of Colitis.

These halogens—chlorine and iodine—together with the last product, phenyl-salicylate, are liberated in the body in a nascent state and in a most assimilable form ; they are moreover liberated in the actual position in the bowel where their therapeutic action is required.

The bromine element in the compound is also liberated and imparts a comforting and sedative effect on the nervous system.

MEDICAL REPORTS

——, M.B.Lond., sometime **Deputy Commissioner of Medical Services, London Region, Ministry of Pensions,** reports :—

"In my experience of over two years T.C.P. B3 Colloidal Emulsion has been most efficacious in many cases which in the past have failed to respond to treatment by the ordinary alkaline medication."

Dr. ——, Bengal, reports :—

"By using your T.C.P. B3 Colloidal Emulsion in a case of long continued Dysentery I have got a very brilliant satisfactory result. I think this is the and only medicine that has been discovered for dysentery."

FROM ALL CHEMISTS

T.C.P. B_3 COLLOIDAL EMULSION

Price 4/- per Bottle

Also in Winchester Quarts for Dispensing Purposes. Price 32/-

Directions for use accompany each bottle.

BRITISH ALKALOIDS LTD., Winchester House, London, E.C.2.

Factories and Laboratories: ATLAS WORKS, WILLESDEN, LONDON, N.W.10.

Manufacturers of T.C.P. (trichlorophenylmethyliodosalicyl in H_2O), T.C.P. Bronchial Antidote, T.C.P. Ointments, T.C.P. B3 Colloidal Emulsion, T.C.P. Dental Paste, &c.

T.C.P. (Trichlorophenylmethyliodosalicyl) in H_2O

STABLE NON-TOXIC NON-CAUSTIC
ANALGESIC ENDOSMOTIC ANTITHERMIC
KEROPLASTIC NON-HAEMOSTATIC

Since the origin of many maladies is bacterial infection it will be readily appreciated that the multiplicity of uses to which T.C.P. can be advantageously applied are practically unlimited, in view of its demonstrated curative virtues and unparalleled germicidal and antiseptic properties.

MEDICAL REPORTS

Some experience of the Medical Profession from amongst numerous reports emphasising the value of T.C.P.

Late Director-General, Medical Department, Admiralty, London, reports :—

"T.C.P., I have to inform you that a trial has been made of the preparation with results which were quite satisfactory."

——, M.R.C.S., L.R.C.P. Lond., late Medical Officer of Health, reports :—

"I have continued the use of T.C.P. . . . on a variety of cases. I do not wish to appear too enthusiastic, but I cannot tell you how very satisfactory it has been without appearing to exaggerate."

——, M.B. Lond., sometime Deputy Commissioner of Medical Services, London Region, Ministry of Pensions, reports.—

"T.C.P. . . . the value of which has been demonstrated and appreciated by many surgeons who have used it. The point to be emphasised is that here is an efficient antiseptic, which can have no toxic, corrosive or irritating effect on any tissue, and can also be given internally with confidence as an ideal gastro-intestinal antiseptic."

FROM ALL CHEMISTS

T.C.P.

Price **1/3** and **3/-**

Also in Winchester Quarts for Dispensing Purposes. Price **25/-**

Complete directions for use accompany each bottle.

Members of the Medical Profession will be cordially welcomed at our STAND No. 61, London Medical Exhibition, October 19th to 23rd inclusive.

BRITISH ALKALOIDS LTD.

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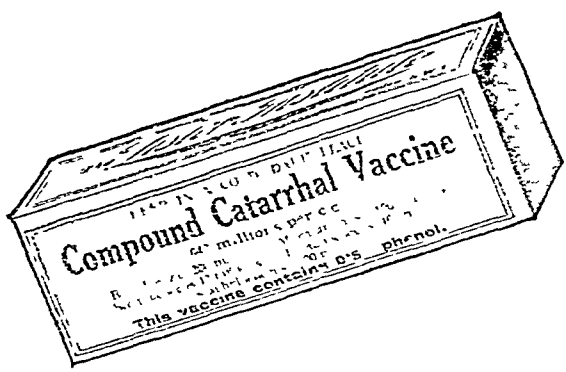
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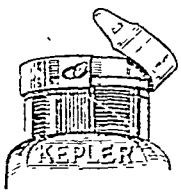
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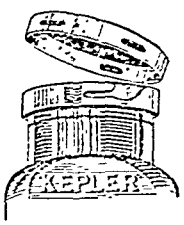
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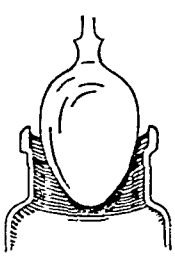


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Observations ON RESUSCITATION FROM ASPHYXIA AND PREVENTION AND TREATMENT OF SECONDARY PNEUMONIA BY INHALATION OF CO_2

BY

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The modern art of resuscitation takes its origin from the introduction about twenty-five years ago, of the prone-pressure method of artificial respiration devised by Sir Edward Sharpey-Schafer. In America, where it was early adopted, the number of persons trained to administer it is estimated at fourteen millions. In the saving of life its efficiency far surpasses that of any other procedure or apparatus. It has almost entirely replaced in America the quite ineffective and sometimes harmful, subcutaneous and intracardiac injections of adrenalin and other drugs by physicians ignorant of sound methods of resuscitation. Yet unfortunately the depression of vitality following many accidents, immersion, asphyxia, and anaesthesia still causes subsequent deaths among those temporarily revived.

It is not enough to resuscitate a man from drowning or from asphyxia or other accident, if he is to die a few days later from a secondary pneumonia. The pneumonia should also be prevented, and this is now possible by the method which I shall describe.

The subject to be discussed in this paper includes, therefore, not only resuscitation from carbon monoxide asphyxia and from many kinds of gas poisoning, resuscitation from drowning, and the resuscitation of babies that do not breathe of themselves at birth, but also other even more important applications of the physiology of respiration such as the elimination of the anaesthetic and the restoration of vitality in patients who, without this treatment after major surgical operations, may lie for hours in a state of functional depression. But most important of all is the recent discovery that in a wide variety of conditions inhalation of carbon dioxide is a highly effective preventive—indeed, it is essentially the specific preventive of the condition in the lungs from which it is probable that all secondary pneumonias develop.

Twenty-five years ago Haldane, Priestley, and Douglas in England began their epoch-making work on the part that carbon dioxide plays in respiration. Simultaneously in America I developed some other aspects of the regulation of vital functions by the carbon dioxide produced in the body. These observations led me to realize the possibility of using inhalation of carbon dioxide in the prevention and treatment of functional depressions after surgical operations and in acute disease.

The results have verified the almost inspired dictum of the Swiss physiologist Miescher, who, forty years ago, in a celebrated review of all previous investigations on respiration, remarked: "Over the oxygen supply of the body carbon dioxide spreads its protecting wings."

Eminent surgeons and physicians in public addresses sometimes complain that physiologists devote themselves too exclusively to theoretical problems and do not contribute as largely as they might to the practical matters of curing disease and saving life. In reply, it may be said that clinicians in all branches of medicine are extremely slow to accept and apply the discoveries made by physiologists. In this complaint both sides have the same good excuse. For even after a new physiological principle has been discovered and its practical importance recognized, it is often an extremely difficult problem, requiring time, money, and patience, to work out its effective clinical application. The practical problem of administering carbon dioxide is not simple, for the various conditions to which it is applied require various special techniques, with or without rebreathing, with oxygen or merely air, with a mask or a tent, for the fire brigade, the surgical operating room, or the bedside. As Sir Michael Foster once said, it is rarely possible to carry a physiological discovery "bleeding from the laboratory to the bedside."

On this account it was only ten years ago that Haggard and I were able to introduce inhalation of carbon dioxide in two distinct practical fields of resuscitation. One of these fields was that of the city fire brigade and the rescue crew in accidents in coal mines. The other was the surgical operating room. These two enterprises have developed separately, although along parallel and now converging lines. I will therefore tell the two stories separately.

RESUSCITATION FROM ASPHYXIA

In America city gas generally contains about 30 per cent. of carbon monoxide. Nearly every family has a motor car, and the exhaust gas contains about 7 per cent. carbon monoxide. In all American cities deaths from carbon monoxide asphyxia, often suicidal, are common. In New York City there are about five hundred a year.

Haldane early showed that the compound which carbon monoxide forms with haemoglobin is dissociable, and that haemoglobin is restored to normal condition under the mass action of oxygen. It was long supposed that the logical treatment for carbon monoxide asphyxia must be the administration of oxygen. But experience on the victims of asphyxia and on animals in my laboratory showed that in many cases the breathing becomes greatly depressed, a deeply asphyxiated man or animal does not draw the oxygen into the lungs in sufficient quantity, and the inhalation of oxygen alone does not quickly displace carbon monoxide from the blood. We found, however, that when carbon dioxide of 5 to 8 per cent. is administered to such cases respiration is greatly stimulated. When a mixture of oxygen and carbon dioxide is administered after a short but intense asphyxia the effects are truly extraordinary. A workman may be overcome in a trench over a leaking gas pipe, or at a blast furnace. He may be non-breathing and nearly pulseless. The inhalation of a mixture of oxygen and carbon dioxide is initiated under prone-pressure artificial respiration. As the carbon dioxide reaches the lungs natural breathing quickly returns, and, after half an hour of inhalation, the man is not only resuscitated, but feels well again and goes back to work. The inhalation not only eliminates carbon monoxide, it also restores to the tissues of the body the normal content of carbon dioxide lost during the development of asphyxia. With the restoration of carbon dioxide the general tonus of the body returns.

After longer, although less intense, asphyxiations resuscitation is not so rapid. But in these cases there is another effect of great importance for the subsequent development of pneumonia is prevented. Before inhalational treatment was introduced pneumonia was a very frequent sequel of asphyxia and was often fatal. The [illegible] to which this treatment has led

* A paper read before the Section of Physiology, British Association for the Advancement of Science, London, September 29th, 1931.

is that the inhalation of carbon dioxide in oxygen not only relieves asphyxia, but also prevents post-asphyxial pneumonia. This is a fact big with promise.

There are now many thousand inhalators in active use in American cities. There are between three and four hundred in New York, and the number is rapidly increasing. In some cities physicians frequently ask for the help of the rescue crews of the fire brigade or the city gas company with their inhalator in cases of pneumonia. Even more often they call for the inhalator for newborn babies that fail to breathe effectively.

Out of this experience has come a clearer conception than we have had heretofore regarding the state of the asphyxiated respiratory centre both in the newborn child and in persons who have been immersed almost to drowning. It has always been supposed that there must be an overpowering excess of carbon dioxide in the blood *in such cases. But our experience now demonstrates* that it is not excess of carbon dioxide, but deficiency of oxygen, that induces the depression of the centre. No very great excess of carbon dioxide is, or can be, produced when the supply of oxygen is shut off. The asphyxiated centre is like one deeply morphinized. Its sensitivity is decreased ; its threshold for carbon dioxide is abnormally elevated. But the inactive centre promptly becomes active again if the amount of carbon dioxide supplied to it is sufficient to stimulate. Accordingly, we find that when the normal 5 per cent. of carbon dioxide pressure is insufficient to stimulate, 7 per cent. carbon dioxide is often effective ; or 10 per cent., or even higher pressures, may be needed. When sufficient carbon dioxide is administered to reach the elevated threshold and to overcome the decreased sensitivity, then spontaneous respiration begins. As the oxygen supply is renewed the threshold drops again to normal, the sensitivity of the centre is restored, natural breathing returns, and the asphyxiated newborn child or drowned person is resuscitated.

In American maternity hospitals, now, the old barbarous and often ineffective methods of resuscitating the newborn by swinging, spanking, and dipping in cold water are being replaced by inhalation of carbon dioxide. As much is used as may be necessary to start breathing, usually 7 per cent., mixed with oxygen. Many babies that cannot be resuscitated in any other way are thus saved. This improvement is also making its way in England, for among the first to adopt it was Dr. Louise McIlroy, at the Royal Free Hospital in London.

Recently another advance has been made. In addition to the four babies in every hundred births that are stillborn, some of whom can, however, be saved by inhalational treatment, there are four other babies that breathe for a few days but die in the first few weeks of life. Until recently no efforts have succeeded in reducing this huge mortality ; for the decrease of infant mortality effected in recent years has been confined to the period after the first month. A large part of the neo-natal mortality is a consequence of continuing atelectasis. The lungs are not fully dilated by the first cry, or for many hours or even days after birth. The ancient practice of making a child cry several times a day is often ineffective in overcoming atelectasis. It has now been shown by Cruikshank that the majority of neo-natal deaths are due to pneumonia developing in undilated areas of the lungs. Combining this fact with other evidence, I have proposed that the lungs of every newborn child should be fully dilated by inhalation of carbon dioxide in the first few days of life. In maternity hospitals where this measure has been adopted mortality from pneumonia has ceased.

Experience in cases of drowning is affording similar evidence. Inhalation of carbon dioxide and oxygen has proved to be not only a valuable supplement to manual prone pressure artificial respiration, but also an effective preventive of the pneumonia which often causes the deaths of persons rescued from drowning.

Prevention of Post-Operative Pneumonia

I turn now to the companion story of carbon dioxide inhalation in the surgical operating room. For many years I urged this inhalation ; and it gradually came to be recognized as a procedure promoting the elimination of the anaesthetic, diminishing nausea, and restoring a vigorous heart action. It is also the most effective method of controlling an exhausting hiccup. Now another advantage has developed. Almost simultaneously three years ago in several clinics in America and also in Germany it was noted that patients who received this inhalation after operations and anaesthesia were free from the otherwise considerable risk of post-operative pneumonia. Even in the best practice the mortality from post-operative pneumonia has been four for every thousand major operations. The number that have had pneumonia and recovered has been many times greater ; indeed, some degree of pulmonary involvement has occurred probably in as many as one in ten, or even one in five, of all cases after surgical operations, especially those in the abdomen. But now in clinics which have adopted as a routine procedure full dilatation of the lungs by inhalation of carbon dioxide, all pulmonary complications, such as in the past have led to post-operative pneumonia, have been eliminated. The reason for this result throws light on problems that have still to be solved.

Several observers in the last century, and particularly the English physician Pasteur early in this century, described a condition following bronchitis or diphtheria in which a part or the whole of one lung collapses and returns to a state like that before birth. But it is only since the use of the *x* ray and the bronchoscope became common that this condition in the lungs, from which post-operative pneumonia starts, has been generally recognized. This is the massive collapse of a lung or the atelectasis of a lobe or lobules. It is now only three years since the relation of atelectasis to pneumonia was first demonstrated experimentally by Coryllos. This demonstration goes far to explain why the victims of motor and other accidents, whose ribs are broken and whose chests are partially immobilized, rather often develop pneumonia.

Normally the lungs are kept constantly expanded and their airways open. Through these tubes they are the best-drained organs in the body. The force which keeps them open is the tonus of the diaphragm and the other muscles of the thorax. Whenever this tonus is lowered, as it is after asphyxia, anaesthesia, immersion, and in elderly and debilitated patients long confined to their beds, and in those who have suffered chest injuries, the vital capacity of the lungs is diminished. In the unaerated areas mucus accumulates until some of the airways are filled and closed. If there happens to be present also inhaled foreign material or catarrh from bacterial invasion, these conditions also contribute to the blocking of airways. As soon as any part of a lung is thus shut off, the air within it *is absorbed into the blood* ; for the total pressure of all the gases in the venous blood is always forty to sixty millimetres less than the total pressure *in the arterial* blood, which is the same as in open areas of the lung, and in the outside air. The occluded lung or lobe or lobules are soon collapsed, and in such collapsed areas any bacteria that happen to be present find conditions favourable for their growth and activity. It is in this way probably that all secondary pneumonias develop.

This conception assigns to the tonus of the skeletal muscles of the body a place of prime importance in

respiration. It is this tonus that keeps the lungs expanded and prevents atelectasis. The movements of respiration do not consist merely in the alternate contraction and relaxation of the thoracic muscles. In reality, as W. R. Hess expresses it, these muscles pass at each breath from one tonus level to another and back again. When respiration is depressed the tonus level of the entire musculature of the body is depressed also. The capacity of the thorax is greatly decreased by the relaxed and elevated diaphragm and the flaccidity of the other respiratory muscles. In the partially deflated lungs atelectasis readily develops, and, if infection is present, pneumonia may follow.

When, on the contrary, respiration is stimulated, as it is in normal muscular activity by an increased production of carbon dioxide in the body, or as it is by inhalation of carbon dioxide, the tonus of all the muscles of the body, and particularly those involved in respiration, is increased. The lungs are expanded, occlusion of airways is prevented, and any airways that have already been occluded are reopened The normal drainage from the lungs through the airways is maintained, or re-established, and the development of a secondary pneumonia is prevented.

Even in the development of primary pneumonia low muscular tonus, partial deflation of the lungs, and the resulting atelectasis probably play an important part; for it is a well-recognized fact that lobar pneumonia may spread from patient to patient in the beds of a hospital, but that the physicians and nurses, who are moving about and keeping their lungs expanded, are relatively immune to the contagion.

If the length of this address permitted it could be shown that respiration exerts its chief effect upon the circulation also through its influence upon the tonus of the musculature of the body. This tonus is the chief factor in the veno-pressor mechanism—a mechanism largely distinct from the vasomotor system and scarcely less important. It is the tonus of the skeletal muscles which normally presses the blood out of the tissue capillaries into the veins and back to the right heart. Whenever respiration is stimulated, as it is by physical exercise, the increased tonus of all the contractile tissues increases the volume of the venous return, improves the heart action, and augments the circulation.

When, on the contrary, respiration and muscle tonus are depressed, the blood stagnates in the tissues, the venous return is diminished, the heart action is weakened, and the circulation is retarded. The extreme form of such depression is surgical shock. The inhalation of carbon dioxide after anaesthesia and operation, and in other conditions of lowered vitality, by restoring respiration and muscle tonus, counteracts both the depression of the circulation and the tendency to atelectasis and pneumonia.

Such in brief outline are the contributions which the physiology of respiration is making to the science and art of resuscitation. From the developments of the past few years it appears probable that in the near future all secondary pneumonias will be preventable.

Conclusions

In cases of drowning, asphyxiation, and other accidents and after surgical anaesthesia, the prevention of secondary pneumonia is almost as important as the immediate resuscitation Inhalation of carbon dioxide mixed with oxygen or with air is the most effective means of stimulating respiration. This inhalation has proved to be also a highly effective preventive—indeed, it is essentially the specific preventive—of the collapse of the lungs which leads to pneumonia. These two advantages have now been demonstrated by experience in large numbers of cases of carbon monoxide asphyxia, drowning, and other accidents In the asphyxia of the newborn this inhalatio[illegible] placing the old brutal and often ineffective methods of swinging, spanking, and dipping. In surgical clinics this treatment is used to counteract failure of breathing under anaesthesia, to restore a normal circulation, and especially to prevent post-operative pneumonia.

Respiration is closely associated with the tonus of the muscles, especially of the thorax. Depressed breathing and low tonus permit collapse of parts or the whole of a lung. From this collapse, if infection is present, pneumonia develops. If respiration and muscle tonus are stimulated by inhalation of carbon dioxide the lungs are kept open and the development of pneumonia is prevented.

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DIABETES INSIPIDUS FOLLOWING FRACTURED SKULL

BY

A. PATRICK, M.B., F.R.C.S.Ed.

HULL

Diabetes insipidus, a comparatively rare condition, has been recognized since 1674, when Willis noted that in a certain number of cases which were classed as diabetes mellitus the condition of the urine was different, in that it did not have the same sweet taste. This suggested to him a basis of differentiation. It was not until one hundred years later that Simmons described two cases of this disorder, and these were published in detail by Fitz. Following this, Frank referred to diabetes insipidus as "a long-continued abnormally increased secretion of non-saccharine urine, which is not caused by a diseased condition of the kidneys."

Although this malady was definitely recognized by clinicians, nothing was known of its etiology except that it was not due to renal disease. The nineteenth century literature contains several articles dealing with experimentally produced diabetes insipidus Claude Bernard, in his experimental puncture of the floor of the fourth ventricle, produced this syndrome, and believed that he had found a centre in the base of the brain which governed it. If diabetes insipidus is due to some disturbance of the pituitary, as we have every reason to believe, then the experimental work of Schafer, Magnus, and Herring and the deductions and observations of Cushing, are invaluable Briefly, Schafer, in 1902, proved that a polyuria in animals could be experimentally produced by the injection of pituitary extract Other experimental work showed that the diuretic action of the pituitary extract was caused by the pars intermedia. At the same time, Cushing noted that in a certain number of his operation cases in which the pituitary body was subjected to manipulation a severe polyuria frequently resulted, which

lasted for several days. He believed that this was due to a hyposecretion of the posterior lobe of the pituitary.

A great number of pathological conditions are put forward as the cause of diabetes insipidus. The commonest of these are: tumours of the pituitary body, tumours of the base of the brain, head injury, acute infectious diseases, tuberculosis, and syphilis. The two main theories advanced as the cause of diabetes insipidus are: (1) the endocrine theory, and (2) the nervous theory. According to the endocrine theory the syndrome is manifested by a lack of pituitary hormone in the blood, due either to diminished production or to deficient absorption. According to the nervous theory, the condition is due to some disturbance of the hypothalamic region. Croll has shown that the pars intermedia of the pituitary is richly supplied with nerves. Greving and Pines have described nerve tracts from the hypothalamus to the pituitary: any interference with this nerve supply is evidenced by pituitary disturbance. Whatever may be the pathology, the determining factor is the functioning power of the pituitary body.

Records of some of the American hospitals show that there have been no authentic cases. Rowntree of the Mayo Clinic, Rochester, states that of 257,000 hospital admissions, 35 were indexed as diabetes insipidus, but on careful study he disregarded 11 of these. Fitz recorded an incidence of 14 cases per 100,000, and Williams's statistical review shows the incidence to be 19.2 per 100,000. It is more common in youth and in the male sex. Of 85 cases quoted by Strauss 57 occurred under the age of 25; and of 36 cases quoted by Moffat and Greenberger 28 were males and 8 were females.

The symptoms and signs of diabetes insipidus are varied. The diagnostic features of the condition are: (1) the uncontrollable thirst, and (2) the polyuria, the urine being of low specific gravity. The other features which may be present are a subnormal temperature, slow pulse rate, low blood pressure, somnolence, irritability, lack of appetite, constipation, and dry skin. These symptoms are by no means constant in every case. The patient may complain of none other than the thirst and polyuria, describing the condition more as a nuisance than as an ailment. On the other hand, some patients may become worried and depressed, and melancholia has been known to result. Ocular symptoms which may arise during the course of the disease are usually due to the pressure effects resulting from the tumour. *X*-ray appearances of the sella turcica are, as a rule, not very helpful, except in cases where there is tumour formation. The polyuria is invariably the first sign, and the thirst is consequent upon the polyuria. The quantity of urine passed varies considerably, as much as 20 pints being voided in twenty-four hours. It is of very pale colour, and the specific gravity is always low, practically never above 1010. The reaction is faintly acid and the percentage of solid constituents small. The prognosis depends essentially upon the causal lesion. If this is a head injury the prognosis is relatively good. If it is a tumour the outcome is fatal and the disease invariably of short duration. Where syphilis is the cause anti-syphilitic treatment gives beneficial results. In the idiopathic cases where no definite lesion can be detected the patient, although responding well to treatment, may drag on for years, and death may ultimately be due to some other disease. Hypodermic injection of pituitary extract gives the most satisfactory results. The urine is greatly diminished, the blood pressure rises, the pulse quickens, and irritability and somnolence disappear. One must be guided more by the alleviation of the thirst than by the quantity of urine passed. The amount of extract used varies, and, at first, is best given in two separate doses, as its effect lasts only about eight hours. As soon as the patient wakes in the morning he should be given a hypodermic injection of pituitary extract, and this is followed by a second dose in the evening. With the co-operation of the patient one can arrive at the correct dosage to keep the condition under control. With improvement, less pituitary extract can be given and the time between the injections lengthened. Feeding the patient on fresh pituitary gland may be useful. Such a method, of course, is not practicable in the smaller towns or villages. Motzfeldt quotes a case where he fed his patient on seven fresh glands daily. Under this treatment improvement was so marked that in eighteen months' time the condition could be kept under control with one gland per day. Lumbar puncture has been used in certain cases, especially in that type due to tumour formation and serous meningitis. Such treatment, of course, gives only temporary relief. Anti-syphilitic treatment in the syphilitic type of case gives satisfactory results.

History of Case

On October 6th, 1930, a male, aged 21, was admitted to a nursing home suffering from fractured anterior and middle fossae of the base of the skull as a result of a motor accident. (The *x*-ray photograph showed an extensive fracture, commencing high up in the right temporal fossa and running down into the base of the skull into the regions of the anterior and middle fossae.)

On admission he was in a dazed condition; both eyes were swollen and discoloured, and he bled from the right ear and nose. The following day he complained of loss of vision in the right eye, together with deafness in the right ear and headaches. During the first few days the patient showed signs of improvement. The quantity of urine passed was estimated at 45 ounces +, and of specific gravity 1014; there was only a trace of albumin. About a week after admission he became rather drowsy and irritable, and he complained of thirst. His urine was now 100 ounces + per day. No active treatment was instituted at this time. He was carefully observed from day to day, and on October 24th the thirst had greatly increased, the quantity of urine passed being 160 ounces +. He was very irritable, and at times drowsy. His bowels were constipated, and his skin dry; the temperature was 97°, pulse rate 48, respiration rate 12. He stated that his thirst was insatiable, and on one occasion, so great was his craving, he secretly got out of bed when he was unattended and drank the water in the wash-basin. On the 25th hypodermic injections of pituitary extract were commenced. The results were spectacular. The initial dose given was 1 c.cm. twice daily. His thirst diminished and the polyuria decreased, the total amount of urine passed in the twenty-four hours following treatment being 59 ounces. The temperature rose to 98.4°, the pulse rate gradually increased to 68, and his respiration rate to 14. With the co-operation of the patient the dose of pituitary extract was diminished to 3/4 c.cm., given the first thing on awaking in the morning and the last thing at night. This, the patient stated, gave him total relief from all his symptoms.

He was discharged on November 10th, 1930, with instructions to carry out the pituitary treatment under his own medical adviser's observation.

The case presented illustrates many important and interesting features. I believe that the cause of the diabetes insipidus in this patient was the fracture involving the middle fossa; presumably it passed through the sella turcica and in some way injured the pituitary body. It is probable that, as a result of haemorrhage, there was pressure on the pituitary gland, causing interference with its function. The fact that the condition was not manifested until a week after the accident proves that the pituitary body was not directly injured at the time of the accident, and that its dysfunction was caused by something else. This, in my opinion, is a very useful point in the prognosis, which, had the disorder been due

to a direct injury, would have been very much worse. As this haemorrhage is absorbed so will the function of the pituitary increase, and the patient already shows signs of improvement in that less pituitary extract is required to control the thirst and polyuria. The necessity for early recognition of diabetes insipidus cannot be too strongly emphasized, as the polyuria in time has a deleterious effect upon the kidneys and bladder. Pituitary extract hypodermically is without doubt the treatment of choice, but it must be remembered that it is not a cure. The treatment must be maintained and the co-operation of the patient sought.

In conclusion, I desire to express my indebtedness to Mr. Blair for the facilities he has afforded me in observing this case.

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CONGENITAL PYLORIC STENOSIS*

BY

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Although the morbid anatomy and clinical features of congenital hypertrophic stenosis were clearly defined by Hirschsprung in 1888, no striking advance in the treatment of the condition was effected till the introduction in 1913 by Rammstedt of the simple operation of section of the sphincter. Till then treatment was essentially medical Surgical intervention was only given a chance in obstinate cases and was associated in general with a mortality rate of about 50 per cent., although a few operators using Loreta's method of dilatation quoted better results. With Rammstedt's operation the reported mortality varies from 5 to 25 per cent., and it has become almost the standard method of treatment.

It is noticeable in the literature, however, that the swing-over to surgical treatment has by no means been general, particularly in Germany and Denmark. As late as 1927 Professor Monrad of Copenhagen reported 228 cases of the condition all treated medically and with an over-all death rate of only 14·4 per cent. It may therefore be a matter of dispute how far the extended use of the operation has reduced the mortality. One undoubted advantage it has by common acceptance—namely, the shortening of the period of treatment. The wide variation in the mortality reported by various observers shows that the problem is affected by several factors. Both pre-operative and post-operative treatment influence the result as much perhaps as the method of operation.

The fact that I am allowed to open this discussion is, I think, evidence of how far in this country radical surgical treatment has been accepted. I would emphasize, however, that the surgeon plays only a small, if important, part in bringing these cases to a successful issue. The direction of the pre-operative and post-operative treatment requires the greatest judgement and care of a skilled paediatrician if satisfactory results are to be obtained. As opener I propose to outline the general points in relation to diagnosis I shall consider in some detail the operative technique and its bearing on results, leaving it to those who follow me to consider in detail the more difficult medical and biochemical problems on which they are so much better qualified to speak.

Symptoms and Diagnosis

The cause of the pyloric hypertrophy remains a matter of speculation. The fact that it is commoner in males than in females (4:1) and in the first-born is accepted. Although obstructive symptoms are seldom in evidence till the second week of life, it would seem probable from the size of the tumour even at the earliest stage that the hypertrophy develops during intrauterine life. The youngest patient I have operated on for the condition was 18 days old, and the oldest was 6 months. It does not seem to me to be necessary to discuss whether spasm and stenosis of the pylorus should be distinguished. In my experience some degree of hypertrophy is present in all cases, and even in its fully developed form symptoms are produced by spasm and not stenosis in its true sense.

The points determining diagnosis are, I think, well established, and do not provoke controversy. It is based on the presence of repeated projectile vomiting, visible peristalsis of an enlarged stomach, coupled with wasting and constipation developing about the second week of life in an infant till then apparently normal. A tumour may be felt at the pylorus, but evidence of this is certainly not necessary to establish the diagnosis. I have noticed at operation wide variation in the size and consistence of the tumour and also in the depth at which it lies under the liver. Radiography gives interesting pictures for study and definite evidence of the degree of obstruction, but it is not essential as a routine diagnostic method.

When to Operate

The decision as to when a case should be operated on is no doubt difficult, and will vary with the facilities available. My own impression is that once the full range of symptoms above described is established, the sooner operation is carried out the better will be the results. I think my colleague, Dr. Jewesbury, who has passed on to me the majority of the 150 cases I have operated on, takes this view. If serious emaciation has developed, the risk of operation is certainly gravely increased.

Treatment Before Operation

Pre-operative preparation should, I think, consist in regular washing out of the stomach for a few days and the administration of subcutaneous glucose saline for a simila period. Regular small feeds of a suitably diluted mil given at two-hour intervals are continued. I do not know how far the administration of atropine is useful, and I shall be interested to hear the views of those who follow me on this subject. To them I shall leave the fuller discussion of this problem and the strictly medical treatment, as they are better qualified to express an opinion.

Operative Technique

It is clear that the choice and administration of the anaesthetic in these infants with so frail a hold on life is a matter of importance Gray and other surgeons at the Great Ormond Street Hospital consider gas and oxygen to be the best In Germany chloroform seems to be popular It was used by Kirschner, who records 15 cases without any deaths Pauchet prefers local anaesthesia. In my own experience light ether anaesthesia given on an open mask has been satisfactory. It is certainly simple to give and readily controllable. In two cases in which death

* Read in opening a discussion in the Section of Diseases of Children at the Annual Meeting of the British Medical Association at Eastbourne, 1931.

followed closely on operation it was observed that the anaesthesia had been carried to the full degree of relaxation. This, I think, is to be avoided. The operation can be easily performed without full muscular relaxation, although irregular respiratory movements are undesirable during the few minutes the peritoneum need be open. I have carried out the operation under local anaesthesia in three cases, but I think that the movements of the infant and the tendency to the extrusion of the fine omentum and viscera add unnecessary shock and difficulties to the procedure.

I make a vertical incision about one inch in length, half an inch to the right of the mid-line situated half-way between the xiphisternum and the umbilicus. The rectus muscle is split and the underlying peritoneum opened to the full extent of the wound. This exposes the right lobe of the liver. An incision lower down may make delivery of the pylorus easier, but it does not control the other viscera so well either during operation or during the healing period. The lower angle of the wound is then drawn down with a retractor, the distended pyloric antrum thus coming into view. This is drawn out of the wound with forceps and will lead to the pyloric tumour. The delivery of the latter is generally easy with gentle traction by a rat-toothed forceps, but sometimes it is less mobile, and a special ring forceps may be convenient in order to bring it to the surface. The section of the peritoneum and superficial muscle fibres of the tumour is made with a knife, the pylorus being held between the thumb and finger of the left hand. The division of the sphincter is completed with a blunt dissector. There can be no doubt when the section is complete, as the white mucous membrane prolapses into the wound. Care should be taken at the duodenal extremity of the swelling not to puncture the mucous membrane, as at this situation the muscle tumour stops abruptly. On its stomach side the line of demarcation from the normal musculature is gradual and no harm is done by extending the incision well on to the pyloric antrum. The section is made along a line on the pyloric tumour where the surface vessels cannot be seen. If this line is chosen and if the division is completed with a blunt dissector, I do not think there is any need to control the haemorrhage by ligature. If a bleeding point of any size is seen it can be under-run with fine gut. In my experience the necessity for this is very unusual. The pyloric tumour is then slipped back into the abdomen and the wound sewn up in two layers with continuous fine catgut. The section is sutured with interrupted salmon-gut sutures. The operation performed in this way takes about five minutes from start to finish. It should not involve exposure of any viscus other than the pyloric end of the stomach.

After-Treatment

In after-management the feeding is important. It must be remembered that, though the stricture has been divided, a dilated and hypertrophied stomach is present, and there may be some mild infection of the gastro-intestinal tract. Regular and dilute feeds are given from within an hour or two of the operation. A little vomiting is not uncommon in the first day or two, though it seldom reaches the projectile type.

Complications

The complications from the surgical standpoint which may be met with are: wound infection, prolapse of viscera, recurrent vomiting, hyperpyrexia, broncho-pneumonia, and gastro-enteritis.

A mild degree of infection of the wound is more common than one would expect. It may take the form of a mild red infiltration. I think this must be due to the irritation of the catgut. I shall be interested to hear the views of other surgeons on the question of suture material for these cases. I have observed prolapse of omentum in one case and prolapse of gut in another. In the first instance, through-and-through sutures only had been employed to enclose the abdominal wound, and a fragment of omentum prolapsed between two of them. The omentum was ligatured and cut off flush with the wound, and no fresh complications were observed, the patient making a normal recovery. In the other instance the wound suppurated and broke down about the fifth day, allowing prolapse of stomach and intestines. Re-suture was promptly carried out, but the child died of general peritonitis three days later. I notice in the literature that recurrent vomiting of a projectile type has been recorded with some frequency. In my experience it has only once been necessary to reopen the abdomen and carry out a secondary operation. In one fatal case relief of stenosis was incomplete; no secondary operation had been performed. As I mentioned above, a certain amount of forcible vomiting may occur for a day or two, and need not cause alarm. some measure of hyperpyrexia is observed in about 10 per cent. of cases operated on. I am not quite clear about its significance. In one case the temperature rose to about 108°, and the baby died on the second day. In other instances it has risen to 106° and 107°, and has been brought down by sponging; it does not appear to have interfered with a successful result. Broncho-pneumonia was responsible for two deaths at a fairly early stage subsequent to operation. I do not think it common enough to contraindicate the use of ether, though no doubt these fatalities may be quoted as an argument against its use. Gastro-enteritis was the cause of death in two cases. In regard to this latter complication, it has been very much less in evidence since operation has been undertaken at an earlier stage and the after-treatment has been somewhat modified.

In regard to the function of the stomach and the condition of the children after this operation—as far as cases under Dr. Jewesbury have been observed—it appears that the child becomes normal both in physique and in its digestive functions.

Mortality

The 150 cases in which I have operated, from 1922 up to date, may be divided into two groups, namely, 60 carried out at the Victoria Hospital and Princess Mary Home, and 90 cases at St. Thomas's Hospital. It is interesting to note that the mortality in the first series averages 6.6 per cent.; in the St. Thomas's cases it is 12.2 per cent. It is not altogether easy to explain the difference in results, as the surgical and medical treatment was carried out on the same lines, though it is perhaps true that a larger number of cases at St. Thomas's came under care at a late stage of the condition, but it brings home to one the difficulty in drawing conclusions from a small group of figures. I would quote as a further example of this the fact that in 1924-1925 at St. Thomas's 14 successive cases were operated on without any fatality.

Conclusion

To sum up, I think one may say that the modern surgical treatment, if it is applied early and associated with vigilant medical supervision and skilled nursing, may be expected to reduce the mortality of this condition to 5 to 10 per cent. This estimate may not appear to be very optimistic, but it should also be remembered that the treatment curtails very greatly the period of hospitalization.

PREMEDICATION*

BY

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For the purpose of this discussion, by *premedication* is understood a new conception of pre-anaesthetic medication, whereby the patient is rendered unconscious in his bed before the administration of the anaesthetic. The drugs employed for this purpose, and the technique of their administration it is the object of this meeting to consider. The method has been aptly named *basal narcosis*.

It is no longer necessary that a man about to undergo an operation shall first of all be subjected to the ordeal of being taken from his bed to the theatre, compelled to witness the preparations for his operation, and then undergo the unpleasant experience of inhaling the anaesthetic until the last threads of his dissociating consciousness finally break. Neither is it necessary that when he once more awakens he shall reek of the anaesthetic, nor be distressed by hours of vomiting.

History

In 1913 Gwathmey introduced a method for the production of narcosis by rectal oil-ether solution; and, although this method had certain disadvantages, it marked a great step forward as far as the patient's mental reactions were concerned. I have always felt that sufficient due has not been given to Gwathmey for recognizing what a tremendously important thing is the abolishing of preoperative fear. Some years later he published a paper on synergistic anaesthesia, which marked the actual birth of basal narcosis as it is known to-day. It was this paper which stimulated me to try several drugs with the object of finding a method whereby a patient might safely be put to sleep while still in bed, and thereby saved the mental distress which often has such a deleterious effect upon his condition before, during, and after operation. I finally decided upon paraldehyde, which had been used by Gwathmey in his oil-ether mixtures. In spite of its disadvantages of smell, and in face of a good deal of opposition, the use of rectal paraldehyde steadily increased for some years.

In 1926 avertin was introduced by Prof. Eichholtz. It is given in 2½ per cent. solution per rectum and is a much more powerful drug than paraldehyde. It lacks the disagreeable smell of the latter and has the additional advantage that it is only necessary to inject a small volume of the solution into the rectum.

Towards the latter end of 1929 barbituric acid and its compounds began to receive consideration both as anaesthetics per se and as complementary or basal narcotics. The barbiturates were well established as narcotics in general medicine. In 1924 Fredet and Perlis reported in the *Presse Médicale* the intravenous use of somnifeine as an anaesthetic. I tried it and was much impressed by the results; but reports that its originators were not altogether satisfied with it, and the fact that some dogs which were anaesthetized for research work also died, caused me to abandon it. I have also tried luminal given by the mouth; in doses of half to three-quarters of a grain per stone weight, and although complete unconsciousness was not obtained, patients were rendered drowsy and required less anaesthetic. It is to American workers that we owe the introduction of the newer, quickly acting barbiturate compounds, amytal and nembutal. Pernocton, of German origin, is very like the latter. Without being unduly enthusiastic, I think one may say that these compounds (and especially nembutal) have already proved of great value as basal narcotics; and I feel certain that they will be widely used in the future. They were introduced into this country by Magill, who brought supplies of amytal and nembutal back with him after his visit to America with the British Medical Association last year, and it is to him that I owe my introduction to these drugs.

I propose briefly to consider each group of drugs, mentioning their characteristics and giving typical illustrative cases from my own experience; detailing also cases in which I have seen adverse symptoms. I shall purposely refrain from expressing any opinion as to the comparative value of the different drugs until the end, so that the descriptions may be as unprejudiced as possible.

Paraldehyde

Except in young children and very old and debilitated subjects, paraldehyde alone will not produce unconsciousness. The addition of morphine or some other such drug is needed. Patients are graded into four groups. (This classification may also be of help in deciding the dose of other narcotic drugs.)

Group 1.—Children under 7. Debilitated or severel toxic subjects. Patients with a high temperature.

These cases receive 1 drachm of paraldehyde per stone weight three-quarters of an hour before operation. The solubility of paraldehyde in water is 1 in 10, so that every drachm of paraldehyde is dissolved in 10 drachms of warm saline. This is shaken hard in a bottle to ensure solution and run slowly into the rectum by catheter and funnel; the rectum having been cleared by saline enema at least two hours previously. If the patient becomes unconscious during the introduction of the solution further administration is stopped; but this only applies to Group 1. Atropine is given hypodermically where an anaesthetic other than gas and oxygen is to follow.

Group 2.—Normal adults and children over 7.—One and a quarter hours before operation the patient receives hypodermically morphine Gr. 1/40 for every stone weight, followed in fifteen minutes by rectal paraldehyde, 1 drachm per stone weight.

Group 3.—Alcoholics. Athletes over 25 years of age. Very nervous patients. These patients receive on the night before operation (repeated during the morning, if the operation is in the afternoon) a full dose of bromide and chloral or bromidia. One and a quarter hours before operation: morphine, Gr. 1/40 per stone weight, combined with hyoscine hydrobromide, Gr. 1/150-1/100 hypodermically. One hour before operation: paraldehyde, 1 drachm per stone weight.

Group 4.—Thyrotoxic cases. A preliminary trial of the patient's reaction to hyoscine should be made some days previously as it sometimes causes great excitement. Preliminary sedatives—bromide and chloral, and morphine and hyoscine (if not contraindicated)—are given as for Group 3. Owing, however, to the fact that paraldehyde may not be sufficient to produce sleep, it may be necessary to follow on with ether. The paraldehyde is, therefore, dissolved in olive oil—half an ounce of oil to every drachm of paraldehyde—and if the patient be still awake half an hour before operation, one-half to two ounces of a 50 per cent. mixture of ether and olive oil is run into the rectum, in half-ounce doses, at intervals of five minutes, until he falls asleep. This is not, of course, an unvariable dosage; it is necessary to sum up a case, and a certain amount of experience is necessary. Most patients retain the rectal injection without trouble, but a suppository of chlorotone gr. x is of help in this respect. The average case is asleep in from 20 to 25 minutes, but some take as long as 45 minutes; the rate of absorption from the rectum varies.

* Read in opening a discussion in the Section of Anaesthetics at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

Illustrative Cases

Male aged 48.—Operation for double radical antrum. Heart, second pulmonary sound accentuated, nil else abnormal. Blood pressure, 140/90. Chest, hyperresonant, emphysema. Weight, 12 st. 8 lb. Plethoric, drinks fair amount; big smoker; muscular; fat. Night before operation: bromidia 5ijss. 7.45 a.m., morphine gr. $\frac{1}{3}$, hyoscine gr. $\frac{1}{100}$ and atropine gr. $\frac{1}{100}$. 8.0 a.m., paraldehyde 5xij in saline ℥xv per rectum. 8.30 a.m., asleep; blood pressure 130/90. 9.0 a.m., anaesthetized, tracheal tube passed with ease using only gas and oxygen. 10.0 a.m., returned to bed, colour good, blood pressure 120/75. Slept without moving until 6 p.m.; somewhat restless until 8 p.m.; received morphine gr. $\frac{1}{6}$ and slept until next morning, when he awoke asking when operation was going to take place.

Soldier aged 39.—Operation: partial gastrectomy. Heart and chest, nil abnormal. Blood pressure, 120/65. Weight, 10 st. 6 lb. Thin, active man. Night before operation: pot. brom. gr. xxx. 7.45 a.m., morphine gr. $\frac{1}{4}$ with atropine gr. $\frac{1}{100}$. 8.0 a.m., paraldehyde 5xss in saline ℥xiv, per rectum. 8.30 a.m., asleep; blood pressure 100/60. 9 a.m., anaesthetized with gas-oxygen-ether, relaxation obtained with very little ether. 10.30 a.m., returned to bed, colour good, pulse 120, blood pressure 90/60. 4 p.m., still asleep, colour good, pulse 100, blood pressure 95/70. Slept until 3 a.m. No vomiting. Convalescence uneventful.

Girl aged 8.—Operation: tonsillectomy. Physical examination, nil abnormal. Tall big child, weight 6 st. 7.45 a.m., morphine gr. $\frac{1}{6}$ with atropine gr. $\frac{1}{100}$. 8.0 a.m., paraldehyde 5v in saline ℥vii. Asleep almost immediately after paraldehyde was run in. Pulse 120, soft; respirations shallow. 9.0 a.m., anaesthesia with 50/50 mixture of gas and oxygen; operation performed without event. 9.45 a.m., returned to bed, breathing very shallow, colour poor. Oxygen administered; bad colour without oxygen. Lobeline gr. $\frac{3}{10}$ hypodermically—colour and breathing improved. Patient remained asleep until 8 o'clock next morning, very drowsy all next day. Uneventful recovery. This child was wrongly graded, and should not have received the morphine.

Boy aged 5½.—Operation: tonsillectomy. Physical examination, nil abnormal. Very fit little boy, weight 2 st. 8 lb. 8.15 a.m., paraldehyde 5ij in saline ℥iij. 8.40 a.m., asleep, colour good, pulse 98. 9 a.m., anaesthetized—gas and oxygen with very little ether at start only. 9.30 a.m., back in bed, colour good. 10.30 a.m., somewhat restless, condition good. 12 noon, crying, periods of sleep. Seen at 4 p.m., awake, condition good, vomited twice.

Avertin (Tribromethylalcohol)

Avertin is a white crystalline powder which is only soluble 1 in 28 of water. If heated above 40° C. it decomposes and dibromacetaldehyde is formed, which will cause injury to the rectal mucosa. Like paraldehyde, it is administered by the rectum. Immediately before use the solution must be tested to make certain that no decomposition has occurred. For this purpose Congo red 1:1000 solution is recommended by the manufacturers. It should remain orange red. Any trace of blue tint would indicate decomposition, and the solution should be discarded.

Avertin is very quickly absorbed by the intestinal mucous membrane. It is largely excreted through the kidneys, and to a less degree by the liver. It was originally available only in powder form, and the time required for the preparation of the solution was a great disadvantage. The manufacturers now sell a solution which is kept stable by the addition of amylene hydrate. Each c.c. of the solution contains one gram of avertin. From this a 2½ per cent. solution is prepared with distilled water at 37° C. Dosage varies from about 0.05 to 0.15 grm. per kilogram body weight, the average dose being about 0.1 grm. per kilo.

Using the classification already described my average dosage was approximately as follows: Group I, 0.05 to 0.08 grm. per kilo. Group II, 0.1 grm. per kilo. Group III, 0.12 grm. per kilo. Group IV, 0.12 with the addition of morphine, hyoscine, etc. I have never exceeded a dose of 0.12.

An enema the night before is desirable but not absolutely necessary. Morphine given an hour before operation enables one to obtain narcosis with smaller doses of avertin, but is objected to by some workers on account of respiratory depression.

The solution is very slowly run into the rectum half an hour before operation. Excitement is rare, and the patient very quickly goes to sleep in a natural manner, but narcosis progressively deepens for another ten to fifteen minutes. It is quieter and deeper than that of paraldehyde. The patient is relaxed and will more easily lose his airway. In many ways it reminds one of chloroform anaesthesia.

Contraindications are few. Disease of the kidneys and liver, rectal disease, and advanced pulmonary tuberculosis are the chief ones mentioned by German writers; but the patient's condition and the degree of toxaemia present must, of course, be the real guiding factors when deciding for or against the drug.

Recovery of consciousness occurs usually in from 1 to 4 hours; the period depends largely upon the amount of morphine and the anaesthetic used. Restlessness is rare. Frequently there supervenes a period during which the patient, though lying quietly with eyes closed, can talk and take drinks, etc., but will afterwards remember nothing of what has happened during this time. Vomiting rarely ensues, but if it does it is not remembered.

Illustrative Cases

Woman aged 50.—Operation for carcinoma of breast. Heart and lungs, nil abnormal. Weight 8 st. 6 lb.; a small spare "wiry woman." Blood pressure, 130/80. 11 a.m., morphine gr. $\frac{1}{6}$ with atropine gr. $\frac{1}{100}$. 11.30 a.m., avertin fluid 5.3 c.c. in distilled water 214 c.c. (0.1 grm. per kilo); solution shaken hard, tested with Congo red, and slowly run into rectum with catheter and funnel. 11.45 a.m., asleep; blood pressure 90/65. 12 noon, anaesthetic (gas and oxygen only), good pulse and colour throughout. 1.10 p.m., blood pressure at end of operation 90/65. 2.30 p.m., patient moved and spoke, but fell asleep again. 4.0 p.m., patient quite conscious, no vomiting. Uneventful recovery.

Man aged 68.—Operation: oesophagoscopy for carcinoma of oesophagus. Lungs, chronic bronchitis. Heart sounds distant and feeble, pulse soft, 88. General condition, wasted and feeble. 11 a.m., morphine gr. $\frac{1}{6}$ with atropine gr. $\frac{1}{100}$. 11.30 a.m., avertin fluid 5.1 c.c. in distilled water 203 c.c. (0.08 grm. per kilo). 11.40 a.m., asleep. 12 noon, pharynx anaesthetized by cocaine spray; oesophagoscopy performed without general anaesthetic. Patient asleep until 3 p.m. Uneventful recovery.

I have, unfortunately, three other cases to report when the patient died. The first two occurred in 1929—using an early sample of avertin which I obtained from Germany. The third had avertin fluid. The cause of death is not very evident. I am sure the solution of avertin was correctly made and tested; probably the error occurred in gauging the dose, and as will be seen, two were bad risks. Avertin is said to be excreted as bromine, which, in common with the other halogens, I believe is prone to attack the liver.

Last year I anaesthetized a man of 61 for partial gastrectomy—he had avertin (no morphine) followed by ether. His condition was satisfactory until two days after operation, when he collapsed with signs of pneumonia. The only post-mortem findings were hypostatic pneumonia on both sides, and fatty infiltration of the liver throughout. Something akin to delayed chloroform poisoning may be possible. Combined with morphine the respiration becomes depressed; in fact, the condition of the patient reminds one very much of chloroform anaesthesia—shallow breathing, soft pulse, absolute relaxation.

Man aged 68.—Operation for carcinoma of tongue: insertion of radium needles. Heart, second pulmonary sound accentuated, nil else abnormal. Systolic blood pressure, 120. Lungs, chronic bronchitis and emphysema. Weight, 10 st. 2 lbs. 11 a.m., omnopon 1 c.c. (=gr. $\frac{1}{3}$), atropine gr. $\frac{1}{100}$. 11.30, avertin 6.0 grams in distilled water 240 c.c. (This is 0.3 grm. less than 0.1 grm. per kilo.) Asleep on arrival at theatre at 12.15. No anaesthetic needed—patient moved once or twice when needles were inserted, but not enough to prevent, or delay, the operation. Systolic blood pressure 70, pulse 90, volume fair. Patient never recovered consciousness. He became cyanosed in spite of the administration of oxygen, and his pulse became more and more feeble, until he finally died at 2 a.m. next day.

It is perhaps hardly fair to blame avertin for death. The man obviously had too much omnopon and avertin, as

shown by the fact that he needed no other anaesthetic. There may also have been another factor—obstructed airway. Usually tongue cases are intubated and the tube left in until the patient's reflexes have returned and he will no longer tolerate it. In this case no intubation was done; the patient maintained his own airway whilst in the theatre, and the house-surgeon assured me that there was no evidence of obstruction to breathing afterwards.

Woman aged 27.—*Operation*: appendicectomy. Heart and lungs, nil abnormal. Weight 11 st. 4 lb. Healthy woman. 12 noon, morphine gr. ½ with atropine gr. $\frac{1}{100}$. 12.15 a.m., avertin 7.2 grm. in distilled water 290 c.c. (0.1 grm. per kilo). 12.40 a.m., patient asleep; pulse full and regular; no blood pressure records taken. Anaesthetic, nitrous oxide-oxygen-ether. It was necessary to give ether practically the whole time to obtain relaxation. Patient returned from theatre fit, but she never recovered consciousness, her pulse gradually became more and more feeble, and in spite of every restorative measure she finally died at 3 p.m. the following day, 26½ hours after the administration of the avertin. Unfortunately we were unable to obtain a post-mortem examination.

Woman aged 63.—Operation for exophthalmic goitre. Heart, enlarged 4½in. to left of mid-sternal line. Pulse on admission 120, on day before operation 84. Blood pressure, 138/78. Report from physician-in-charge electrocardiographic department: "no contraindication for operation." Basal metabolism rate + 46 per cent. Considerable loss of weight. Weight 8 st. 7½ lb. Typical thyrotoxic patient. 1 p.m., morphine gr. ½ with atropine gr. $\frac{1}{100}$. 1.30 p.m., avertin fluid 5.4 c.c. (0.1 c.c. per kilo) in distilled water 218 c.c. 2.0 p.m., patient not asleep on arrival at theatre. Nurse reported some of avertin solution returned; therefore hyoscine gr. $\frac{1}{100}$ given hypodermically. Anaesthetic: bilateral paravertebral cervical block, 2 per cent. novocain with adrenaline 1: 400,000. During the operation it was necessary to give a little gas and oxygen to keep patient still. Patient opened eyes and looked round in a dazed way before leaving theatre. Continuous oxygen and rectal saline given (routine) on return to ward. 5 p.m., unconscious, pulse 140, irregular, cardiazol and digitaline given. 8.30 p.m., breathing shallow; pulse 160, irregular. Lobeline, CO_2 and O_2 given, also digitaline, with very little effect. Pulse and respiration became feebler and feebler and patient died at 9.45 p.m. No post-mortem examination.

The Barbiturates

There are many barbituric acid compounds in use and they vary greatly in toxicity. Two facts which are important with regard to the effects produced by the barbiturates are: (1) The more toxic the compound, the smaller the dose required to produce a hypnotic effect; and the more rapidly is that effect produced. (2) The smaller the dose, the shorter the period during which the drug will act; and the more rapid will be its elimination from the patient's system.

The barbiturates have been used in various forms for many years; they are essentially hypnotic drugs and only produce anaesthesia in large and dangerous doses. Used as basal hypnotics the optimum dose is comparatively easy to judge, especially when given intravenously; but it is a different matter if the deeper stages approximating to anaesthesia are intended; it is very easy to administer an overdose. Morphine given beforehand increases their action, and smaller doses are needed to produce unconsciousness. As a general rule the systolic blood pressure is lowered some 20 to 30 points after the intravenous administration of a barbiturate, slightly more than this if morphine has been given. In many of my cases the blood pressure returned to normal within about ten minutes. It can always be raised by the inhalation of a little ether.

The hypnotic state resulting from the administration of a barbiturate has been divided into three stages. These merge one into another, and in the transition either into, or out of, complete unconsciousness a patient may pass through each stage; but absorption or elimination may be so rapid that the stages are indistinguishable. These stages are:—

1. Complete unconsciousness. Only obtained when a dose sufficiently large to be effective has been administered. The corneal reflex is sluggish or lost, but unless considerably more than a hypnotic dose has been administered, the patient will respond to painful stimuli.

2. A stage of semi-consciousness, during which a patient can be roused, will take drinks, and speak, but will lapse into sleep again when left alone. Some few cases (especially children) become restless in this stage; this may vary from slight movement to great excitement requiring forcible restraint. The patient has no memory whatever of events which have taken place during this period.

3. A period during which the patient is quite conscious, but feels drowsy and will sleep if left alone.

Elimination of Barbiturates

I am unable to learn anything very definite about the elimination of the barbiturates. Probably they are excreted by the kidneys, after having been broken up by the liver. I gave 4½ grains of nembutal by mouth to a patient who was suffering from toxic jaundice. He fell asleep immediately, and we were able to extract several teeth without an anaesthetic. He remained unconscious for 10 hours and drowsy for two days. The probable explanation of this appears to be that his liver was unable to deal with the drug.

An antidote has been stated to be caffeine sodium benzoate. I administered this to a woman who had taken a large amount of dial. She was deeply unconscious, with no corneal or other reflexes. I gave her caffeine 0.5 grm. with sod. benzoate 0.5 grm. intravenously, and although she did not regain consciousness immediately, her corneal reflex returned, and she moved when pricked with a needle immediately afterwards. Thyroxine, by raising the metabolic rate, is also said to hasten elimination. Zerfas reports that animals given fatal doses of sodium amytal died of respiratory failure which usually precedes that of the circulatory system, though failure of both sometimes occurs simultaneously—particularly if the drug is injected rapidly.[1]

Administration of Barbiturates for Basal Narcosis

The three barbituric compounds which have lately been employed as basal narcotics are:—sodium amytal (sodium iso-amyl-ethyl-barbiturate); nembutal (sodium ethyl—(1 methyl-butyl)—barbiturate); and pernocton (sodium salt of secondary butyl-β-brom allyl barbituric acid). They are all quickly acting drugs and very toxic, but nembutal and pernocton are twice as toxic, and therefore twice as powerful, as sodium amytal. The latter must be administered in larger doses and the recovery period is therefore longer. Nembutal and pernocton are said to be equal in toxicity, and I think that is borne out by their recovery periods, which are approximately equal.

Pernocton is supplied ready for injection in 10 per cent. solution which saves time, but in my experience it is neither so easy to use nor so pleasant for the patient as nembutal. I have only given it intravenously and the small bulk makes the dose difficult to judge—several of the cases vomited during both administration and recovery periods, and in several, excitement was present during both periods. With nembutal, I have seen practically no ill effects, apart from occasional cases of excitement during recovery. This occurs in a small proportion of adults and is seldom extreme, but it is much commoner with children, especially when administered by mouth.

Whenever possible it is preferable to give the barbiturates intravenously. They may, however, be administered intramuscularly, or by the mouth or rectum. By these routes their action is delayed and the correct dose is more difficult to judge. Intravenous administration is easy and the minimal effective dose—just enough to produce unconsciousness, and no more—which is desirable, can be gauged with accuracy.

Amytal powder is supplied in 1.0 grm quantities and nembutal in 0.5 grm. quantities, sterilized in ampoules. Immediately before use solutions are prepared by dissolving the powder in 10 c.c. of sterilized distilled water. Amytal is therefore administered in 10 per cent. and nembutal in 5 per cent. solution. Pernocton, which is

[1] *British Medical Journal*, November 29th, 1930, p. 867.

more stable, is supplied in 10 per cent. solution in ampoules containing 5 c.c. The solution is run into the vein very slowly (1 c.c. per minute); meanwhile the patient is engaged in conversation. As the injection proceeds his speech becomes more and more slurred, until finally he fails to answer questions, and sinks into a deep sleep. The administration is stopped immediately he loses consciousness. In this way correct dosage is ensured.

If a small dose of morphine and hyoscine be given beforehand, the intravenous injection is often not remembered at all. Usually very little anaesthetic is needed, although patients vary considerably in this respect; but even after ether, vomiting is practically unknown. Recovery, as a rule, takes place in from two to six hours, followed by the protracted period of drowsiness already mentioned, which may last as long as twenty-four hours.

Illustrative Case

Man aged 56.—Operation: Partial gastrectomy. Heart and lungs, nil abnormal. Blood pressure, 140/80. Fit man of 11 st. 5 lb. 9 a.m., hyoscine compound "A" (hyoscine hydrobrom. gr. $\frac{1}{100}$, morphine sulph. gr. $\frac{1}{6}$, atropine sulph. gr. $\frac{1}{150}$). 9.50 a.m., nembutal 7 c.c. of 5 per cent. solution in sterile distilled water intravenously. Patient went to sleep in midst of a sentence. No excitement. 10 a.m., anaesthetic, nitrous oxide and oxygen with very little ether; good relaxation very easily obtained. Blood pressure, 115/60. 11.25 a.m., returned to bed. Blood pressure, 110/60. Good colour, breathing normally. 2.15 p.m., recovered consciousness. Pulse good. Slept until 4 p.m. without morphine. Final recovery uneventful.

I have no deaths or mishaps to record with the barbiturates. The only case in which they were blamed (I feel sure unjustly) for subsequent events was this:

A girl of 16, apparently healthy, but with a history that she had had several faints and that her fingers often went blue, had an operation for appendicitis. She was given atropine gr. $\frac{1}{100}$ and 5 c.c. of a 5 per cent. solution of nembutal intravenously before operation. No morphine. The anaesthetic was open ether. The operation period was normal and uneventful. While the dressings were being applied, and some minutes after the ether administration had ceased, she quite suddenly stopped breathing and her pulse became impalpable. It was only after the most energetic restorative measures that she started to breathe and her pulse returned. Subsequently she had about forty convulsive fits, probably the result of failure of her cerebral circulation. She did not regain full consciousness for two days, but she finally recovered completely.

I have no idea what caused this patient's collapse—her pulse was good and she behaved in a perfectly normal manner before and during the operation; but I feel sure that, whatever the cause, it cannot be justly attributed to the nembutal she had had.

Conclusions

I must confess a personal preference for either paraldehyde or nembutal. For children I like the former because the barbiturates must generally be given to them by mouth or rectum, and thus administered they so often cause restlessness. For adults nembutal gives equally good results and is less worrying to the patient than paraldehyde. Post-operative restlessness when present is usually slight and may be controlled by morphine or rectal paraldehyde. I think that both paraldehyde and nembutal are eminently safe in expert hands.

Combinations of drugs act more powerfully, and smaller doses are needed than of any one drug alone. Elimination is easier and quicker than saturation with one. A little morphine, just sufficient nembutal or paraldehyde to produce sleep, and then nitrous oxide and oxygen or ethylene, with a minimum of ether if necessary to produce relaxation give the patient most protection, least injury, and easy awakening.

Intravenous narcosis marks a distinct advance in the administration of anaesthetics. The advantages of minimized risk are sufficiently great in themselves to warrant its use; but since, in addition, it enables us to ensure for our patients absence of vomiting and a post-operative period of unconsciousness, during which most of the anaesthetic is eliminated, and a great deal of pain evaded, its use is doubly justified. The public are beginning to recognize its merits, and I feel sure that before long the demand for it will be general.

A certain amount of experience is necessary before one can hope to obtain consistently good results. The administration of an anaesthetic becomes a very different procedure from the older methods we have been accustomed to; and it will be regrettable if reproach is brought upon basal narcosis by the inexpert.

CONGENITAL TALIPES EQUINO-VARUS*

BY

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A case of talipes equino-varus is almost invariably introduced by its mother to the surgeon in the same words: "the baby's feet are twisted in." Too often the only result of long treatment is a change of phrase, much the same appearance coming to be described as "persistent inversion." I propose in this lecture to take the mother's remark as a text, to examine what the "twisting in" actually means, to argue that it is the main element in the deformity, and finally to describe a splint specially designed to combat it.

The Nature of the Deformity

It is, of course, almost impossible to add anything to the many minute descriptions of the anatomy of talipes. My purpose is rather to try to simplify our ideas of it, for if every departure from the normal of every constituent of the foot is separately described, it is beyond the powers of most of us to fuse these elements into a coherent mental image. I think the best way in which to do this (though I am far from wishing to reopen the sterile controversy over the causation of the condition) is to say that the deformity is exactly what would result had the plastic feet of the foetus undergone long-continued pressure, while pinioned in a cross-legged position against the concave constricting walls of the uterus. If anyone wishes to see what this purely hypothetical position may be, he should procure a newly born specimen of talipes and suspend it in a landing net. The manner in which the "butt-end" folds up into an ovoid shape and thereby accentuates the deformity is very striking (Fig. 1).

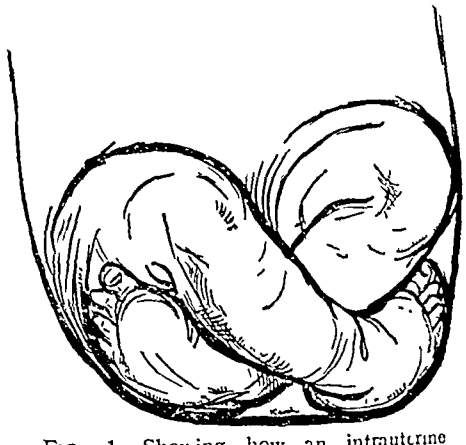


Fig. 1.—Showing how an intrauterine pinioning of the feet could produce the typical talipes deformity.

* A lecture delivered to the post-graduate class at the Hospital for Sick Children, Great Ormond Street.

The effect of pressure of this sort is confined to the foot, the tibia being prevented from bending by the support of the opposite limb against which it is folded, and prevented from rotating by the balance of the pressure on the heel against that on the toes. The foot itself is moulded so that its outer surface conforms to the curve of the inner surface of the uterus, which means that it must be curved longitudinally throughout its entire length. This length is divided into a long anterior part (the fore-foot or foot proper) and a short posterior part (the heel) by the fixed point of the ankle-joint. The argument of this lecture is *that this longitudinal curve of the fore-part of the foot is the fundamental part of the deformity, that "twisting-in" which is the first thing that strikes the lay observer, and the last thing that defies the surgeon.* It is neither the equinus nor the varus of the classic name; they are merely secondary to it, and are its inevitable consequences. No degree of pure equinus nor of varus will produce this longitudinal curve, but it is impossible to bend the fore-foot inwards in this way without swinging the foot as a whole into equino-varus. The proof of this (and of the extremely important converse theorem that bending the foot outwards swings it automatically into calcaneo-valgus) I prefer to leave to a short experiment rather than to a long dissertation on the axes of joints (Fig. 2).

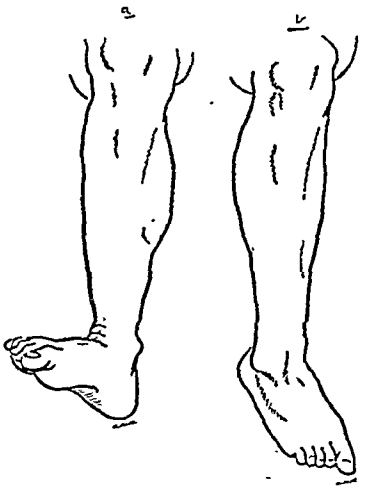


FIG. 2.—*a*, Showing how the foot, when twisted outwards, either actively or passively, to its limit of movement, goes into calcaneo-valgus. *b*, Showing how, on being forced inwards, it goes into equino-varus

To sum up, the deformity can be resolved into three elements in three planes at right angles to each other: the equinus, best seen from the side; the varus, best seen from the front; and the longitudinal curve of the entire foot, best seen from the rather unfamiliar aspect of Fig. 3, which masks both the other elements. In my opinion this is by far the most instructive view of the condition at any stage. A child lying in this position with free legs shows both the longitudinal curve of the foot itself and the relation of this deformity to the rest of the body. The position usually chosen to illustrate progress, erect on a carefully arranged foot, is only too apt to deceive the surgeon as well as others.

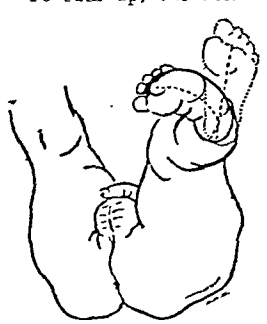


FIG. 3.—View of talipes of left foot to show longitudinal bending. The shape and position of a normal foot are shown in dotted lines.

So far the deformity has only been considered structurally, but functionally also the curve of the fore-foot is of primary importance. Experiment again will prove that if the normal foot is walked upon when turned inwards it goes into a talipes-like position, with a weight-bearing outer border and a contracted and lifted inner one. Conversely, the effect of walking upon the foot when turned outward into the "Chaplin" position is to bring the weight on to its inner border and so stretch and flatten it.

Consequently, whatever measures may be taken to correct the deformity, if they leave the child walking with the fore-foot pointing inwards, a vicious circle is set up. The mal-alignment of the foot increases the deformity, and the deformity increases the mal-alignment of the foot. This action accounts for the familiar rapid relapses of feet which, when suitably posed, appear almost perfect. It must be impressed on all concerned that if the feet are used pointing outwards they will improve, but that if they are used pointing inwards they will get worse.

Principles of Treatment

As I have said, the main object of treatment is the correction of the "twisting in"—in other words, of the longitudinal curve as it affects the fore-part of the foot. If this *be fully corrected, the foot will be a satisfactory one;* but, on the other hand, if it be allowed to persist, the result will be bad, no matter what else is done. The reason for this is a principle to which I have already referred—that it is impossible to turn the fore-part of the foot outwards without correcting the varus into valgus, and that as this turning out proceeds further the foot as a whole swings into calcaneus. Consequently, by the time the fore-foot is turned fully outwards, the only element of the deformity left is the bending inward of the heel,

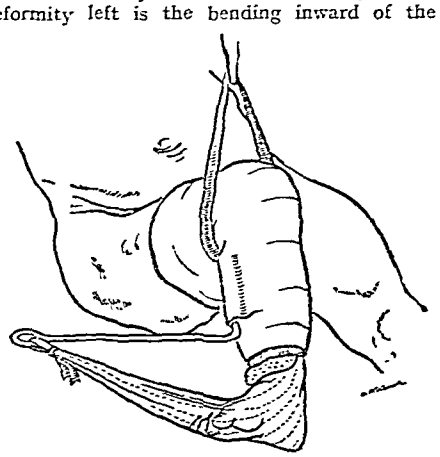


FIG. 4.—The "stocking splint" for correcting talipes.

which, *by itself*, is of negligible effect on appearance and function. It is fortunate that this should be so, as it is extraordinarily difficult to attack the heel directly. The main ways on which we rely for improving its position are, first, by leverage upon it from the fore-foot across the fulcrum of the ankle-joint, and secondly, by means of the free action upon it of the calf muscles, after the varus has been corrected.

I suggest that if the condition be assumed to be due to long-continued gentle moulding, the same sort of force may be the best means of correcting it. I do not think that anyone will deny the possibility of producing a deformity indistinguishable from congenital talipes, displacement of the astragalo-scaphoid joint and all, by pressure of this type applied in the early months of life, provided that it was as constant and ruthless as that which used to be undergone by high-born Chinese girls. A series of cases which I once treated by means of what might be called a "stocking splint" were interesting as to the possibilities of pressure of this kind. The splint (Fig. 4) consisted of a right-angled plaster over the knee,

holding a tube of stockinet round the leg. The lower end of this tube was attached at a slight constant tension to the end of an iron set in the plaster ; both the position of the iron and the pull of the fabric being continually adjusted. I do not recommend this method for general use, but it was possible by means of it to get a surprisingly rapid and complete over-correction of the type shown in Fig. 5.



Fig. 5.—Over-correction of talipes obtained by means of the stocking splint.

I am not, of course, maintaining that reduction of the original deformity can be attained without force ; many cases will tax all the strength of our fingers and any skill we may have with the Thomas wrench. But the disadvantages of violence must never be forgotten. Bone has peculiar reactions. If it is forcibly crushed and then left at rest, it tends to build itself up to its original structure and to even greater rigidity than before ; but if it is subjected to continual gentle compression, it melts before it and rebuilds itself in accommodation to the new stresses.

Another disadvantage of wrenching, and to a much greater degree of tenotomies, is that exasperating reaction by which the body, when we have separated two points by dividing the structures between them, fills up the gap with blood, turns this into scar tissue, and leaves it to contract with its familiar force and persistency. The result not seldom is that some time after the operation the bony points separated are in the same relation as before, except that instead of being connected by tissue of normal elasticity, they are indissolubly united by adherent and resentful scar tissue.

Apart from the rigidity thus produced, there is the bad effect of interference with the action of muscles upon their points of insertion. Consider, for instance, the characteristic marked atrophy of the calf muscles and the heel upon which they act. These two structures depend for their development into anything approaching the normal size upon mutual stimulation ; so that to deprive them of this by early division of the tendo Achillis is as disastrous as it is common.

It is not, however, in the attainment of over-correction that failure usually occurs. The trouble comes in maintaining the advantage gained, with, as a penalty for non-success, the repeated recourse to violent methods to restore the lost ground. For the reasons given, the best treatment will use as little violence as possible, striving for a method of restraint that will not only keep the feet in the best position possible, but will tend continuously to correct this position still further. In attempting this it must always be remembered that all the forces to which the foot is exposed, quite apart from the action of the unbalanced muscles and the automatic effect of walking, are hostile. Long clothes, bed-clothes, the position natural to every child of sitting upon the folded feet, all work to turn the toes inwards and downwards. In addition, the natural reaction of the young to any splint is to endeavour to wriggle out of it, and the instinctive way of extricating the foot from any grip is to turn it into equino-varus to minimize the projection of the fore-foot before pulling away. This means that as a general rule, until cure is complete, any time that is not spent either in effective restraint or in using the foot in the correct position is doing harm.

Methods of Treatment

If the main aim of restraining the foot is to maintain an outward bending of the fore-part, and if it be granted that in order to turn it outwards it is necessary to have some purchase from which to work, the various splinting methods can be grouped according to the anchorage they employ.

1. Tin shoes and external malleable splints.—For what it is worth the anchorage in these is their friction against the skin of the leg, but a study of the position of the foot of a vigorous baby some time after they have been applied does not lead to a very high opinion of their efficiency.

2. Sticking-plaster bands, which pull from a grip on the skin of the leg.—These have a better purchase than that of the first group, but this is obviously very weak mechanically, and apt to cause trouble with the skin. Also if the baby is watched in its mother's arms, it will be seen that they do not stop rotation inwards of the foot as a whole beyond the sagittal plane.

3. The use of the femur, held at right angles to the tibia, either by splints or by plaster, for a purchase.—These methods have in different degrees the grave fault of immobilizing the muscles of the leg, and also produce genu valgum by stretching the internal lateral ligament of the knee-joint.

4. The use of the pelvis as a fixed point from which to turn out the feet by means of walking irons.—This has obvious disadvantages, and is very seldom used now.

5. The method, which I believe to be original, of using one foot as a purchase for turning out the other by means of a " hobble splint."

The Hobble Splint

The principle on which this splint depends is, briefly, that if the two feet are fixed in relation to each other, they are also fixed in relation to the median plane of the body in general. Like other statements I have made, this statement is very difficult to prove shortly in the abstract, and yet it needs only the experiment of trying to twist the hips without shifting the position of the feet on the floor to demonstrate its truth. It will be found that " pivoting " is both uncomfortable and extremely limited.

The splint is made as a pair of foot-pieces connected together by the heels, the connexion forming a base from which the fore-parts of the feet can be " twisted out " to any desired angle to the sagittal plane of the body. The foot-pieces are extremely simple, being cut out on the flat in an L shape, with one limb corresponding to the sole of the foot in the position into which it is intended to mould it, and the other bent up at right angles to the heel end of this, so as to fit along the outer side of the leg. The upper end of the leg-piece should be slightly bent outwards to avoid digging into the skin, and will be found far better in this position than in the more usual one at the back of the leg.

These being the foot-pieces, it only remains to arrange them on their base in the correct position, which varies with every case. If there is a normal foot it should of course be inclined at the normal angle of about 20 degrees to the sagittal plane, and the correction to be aimed at in a talipes foot is to get it turned as far beyond this outwards as it was originally set beyond it inwards. In regard to this it may be remarked that one of the arguments in favour of the compression theory of causation is that though in double cases the deformity is always of the same order on both sides, it is never exactly equal ; the presumption being that the foot that is on the outer side in the cross-legged position is the more deformed.

Consequently its side of the splint must be turned out more than the other by 10 degrees or so.

The splint should be cut out of some fairly stiff metal (14 gauge hard aluminium is very suitable), and till the designing of it becomes familiar it is best to make a stiff cardboard model first. The base should first be sketched, the heels being placed with about an inch between their inner borders, and with a broad strip connecting them. Then from the position of the heels each foot-piece is marked out at the correct angle to the base, and finally at right angles to this is drawn the part to be folded up along the legs (Figs. 6 and 7).

To apply the splints, each foot is bandaged in separately by a figure-of-eight bandage of coarse flannel, the meeting of the folds over the instep driving the heel down into position (Fig. 8).

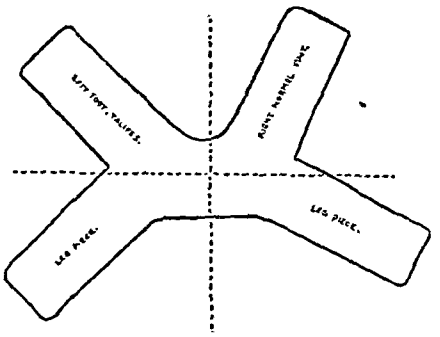


FIG. 6.—Hobble splint for moderate degree of left talipes, marked out on the flat.

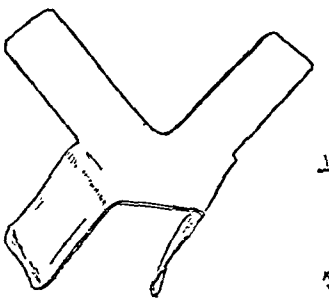


FIG. 7.—Hobble splint for double talipes, completed except for padding.

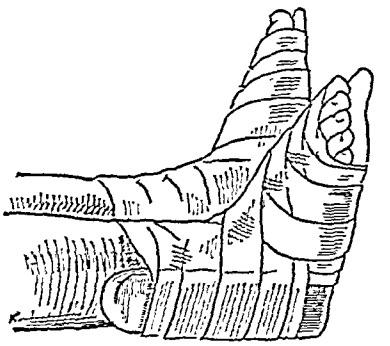


FIG. 8.—Hobble splint applied by figure-of-eight bandages.

I would claim the following advantages for this splint.

1. It is easily made and cheap.

2. One size of it has a very wide range of fitting, so that it does not need to be continually changed as the child grows.

3. The pressure on the foot is applied by soft material over wide areas, and not by hard surfaces to bony points. Consequently there is little tendency to chafing.

4. It is easily applied by an untrained mother once she has mastered the idea of the figure-of-eight bandage, which automatically pulls the foot into position.

5. It is almost impossible to wriggle out of it. It is interesting to see the powerlessness of the child when held in this way. The jiu-jitsu effect of preventing the preliminary inward turn in freeing the foot can only be appreciated by applying a splint of this type to oneself.

6. It really does maintain the outward bending of the foot gained by manipulation, with surprisingly good secondary effects on the equinus and varus.

7. The child can kick freely with the splint in position, so exercising the muscles of the calves and thighs. This is of the utmost importance in developing both these muscles and the bony points to which they are attached, more especially the heel.

In conclusion, I would say that I am fully conscious of the drastic simplifications which I have made of extremely complicated problems. I believe, however, that these simplifications are correct as far as they go. Their disproof lies in the production of cases in which the "twisting in" has been corrected, but in which crippling persists: for their proof I can only ask for a trial of the splint.

I have to thank Dr. C. A. Keogh for that help which only an illustrator who understands the argument can give.

BACTERIAL ENDOCARDITIS IN AN INFANT 13 DAYS OLD

BY

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When Finkelstein[1] suggested in 1905 that the endocardium of the infant was possessed of definite immunity against infection, it is obvious that acute endocarditis in infants was considered to be impossible. Considerably later the opinion was definitely held that, if not non-existent, the condition was certainly very rare. In successive editions of Still's *Common Disorders and Diseases of Childhood* the view is reiterated that "under the age of 3 years it is extremely rare, and under the age of 2 years it is almost unknown." In Ashby and Roberts (1922) it is stated that "endocarditis occurs at all periods of life, it may even attack the foetus: it is met with only rarely under 4." It is stated in Griffith's *Diseases of Infants and Children* (first edition) that "the inflammation may occur in foetal life and thus be one of the causes of congenital cardiac abnormalities. It is uncommon in infancy." Griffith reports that Steffen observed five cases under 1 year, and that Sutiagin reported eleven in the first year, but he considers that such numbers are certainly unusual. Lees and Poynton report one case under 3½ years, and Poynton, in his recent address at the Invalid Children's Aid Association, gave as his impression that about 12 per cent. occur under the age of 5. Bass (Abt's *Pediatrics*, iv, 362) states:

"Acute endocarditis occurs during foetal life, as a rule, on the right side of the heart and in conjunction with developmental defects. Of the post-natal infections, one of the youngest cases is that reported by Czerny in an infant of 1 month suffering from septic endocarditis. Such a case, however, is very exceptional, since endocardial inflammation is rare in children under 2 years of age. In 1,000 post-mortem examinations Holt found no case of acute endocarditis in children under 3 years of age. Steffen (quoted by Lempp), in tabulating forty-five cases of endocarditis in children, found five in children under 1 year; von Dusch, in the same number of cases, reports five in children between the ages of 8 months and 5 years. Lempp reports seven definite cases from Finkelstein's clinic. All of these are in infants, and the mitral valve was shown by autopsy to have been involved in every case. Finkelstein reports fifteen cases of endocarditis in infants, and believes that even at this early age two-thirds of the cases are due to rheumatism, the other third being a manifestation of sepsis. After the second year, and thereafter as the age of the child increases, endocarditis becomes more frequent."

Czerny's case has not been verified.

Later observations tend to show that infantile bacterial endocarditis is not quite so rare as has been considered.

Three cases were reported last year, and I here present another case, the youngest yet on record, the patient being only 13 days old at death.

History of the Case

A male baby, born on September 19th, 1930, was admitted on October 1st on account of haemoptysis He was a full time baby and only weighed 2 950 grams, and had been fed on Nestle's milk, supplementary to the breast When admitted he was slightly cyanosed, and twenty hours after admission had a profuse nasal haemorrhage of bright red and frothy blood and died almost immediately (October 2nd)

The post mortem findings were as follows The urachus contained a little pus just within the umbilicus The trachea and bronchi contained frothy blood, the lining walls being normal The lower lobes of both lungs showed numerous peripheral areas of consolidation, dark red, almost black, well defined, and raised above the surface of the aerated lung *The upper lobes were aerated, but had a few discrete areas*—similar to those found in the lower lobes—much smaller and more clearly defined These were undoubtedly small infarctions, but the actual source of the terminal haemorrhage was not discovered An area of endocarditis was discovered on the posterior wall of the right ventricle, about 1/4 inch proximal to the pulmonary valve This area, 3/4 inch by 1/8 inch, consisted of dark coloured fibrinous exudate, which stripped easily from the endocardium, leaving a roughened surface The heart valves were normal

The microscopical examination of the fibrinous material loosely attached to the endocardium below the pulmonary valve had the appearance of acellular decolorized clot deposited from the moving blood stream In sections stained for bacteria staphylococci were present in large numbers There was no microscopical evidence of disease of the heart muscles

Conclusions

The appearances in the upper lobes of the lung were due to pulmonary infarction, and in the lower lobes to insufflations of blood The primary focus was the septic condition of the cord, followed by a secondary infective (staphylococcal) endocarditis, which gave rise to multiple pulmonary infarction

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Appended is a list of references to previously reported cases, for which I am indebted to the Librarian of the British Medical Association

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RAPID LABORATORY TEST FOR PREGNANCY

BY

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During the last few years, and particularly since the introduction into general use of the Zondek-Aschheim test for pregnancy, numerous investigators have attempted to find a test which is as reliable and which would give more rapid results The great advantage of rapid diagnosis in cases of ectopic gestation or fibroids and pregnancy is obvious

Zondek and Aschheim[1] showed that the urine of pregnant women contained a substance which produced certain characteristic changes—namely, corpora haemorrhagica and corpora lutea—in the ovaries of the immature female mouse They also showed that, with few exceptions, this ovary stimulating substance was peculiar to the urine of pregnancy Friedman,[2] in 1929, appears to have been the first to have studied the mechanism of ovulation of the rabbit by injection of urine of pregnant women He showed the advantage of using the rabbit instead of the mouse to test for substances which produce ovulation In the rabbit, ovulation[3] does not occur until the age of 5 months in the summer and 6 to 8 months in the winter, ovulation is dependent on copulation, and following copulation ovulation occurs in eight to ten hours Ovulation is easily recognized by inspection of the ovaries, either fresh corpora lutea or projecting corpora haemorrhagica can be seen on the surface In a series of twenty-two rabbits in which Friedman had injected 5 c cm of urine intravenously, positive results were obtained from the urine of eighteen pregnant, and negative results from the urine of fourteen non-pregnant, women Nine of the positive results were noted twenty-four hours after the injection Friedman suggested that the test might be useful in the diagnosis of pregnancy

Adele Brouha,[4] in the early part of this year, described a similar test for pregnancy She used virgin rabbits weighing about 1 kilogram, and, with a single intravenous injection of urine, obtained results in fifteen to twenty-four hours Brouha[5] carried out the test in nearly two hundred cases in which the diagnosis was in doubt, and in each case the laboratory findings agreed with the clinical

Reinhart and Scott,[6] Schneider,[7] Magath and Randall[8] and Friedman and Lapham[9] have used a similar method for the diagnosis of pregnancy. Their techniques varied but their results have been as good as those of the Zondek-Aschheim test Reinhart and Scott used adult female non-pregnant rabbits weighing not less than 4 lb, they gave a single injection, and obtained results in twenty-four hours, in a series of fifty cases they had only one error. Schneider used female rabbits, aged 12 to 14 weeks, he gave a single injection, and obtained results in twelve to twenty-four hours, in a series of one hundred cases there were two errors, and in these two the technique was faulty. Schneider recommends the use of two rabbits in cases of urgency, as in some cases a result may be obtained in twelve hours, which may be confirmed later in another twelve hours Magath and Randall used female rabbits over 2½ months old, they gave a single injection, and obtained results in thirty hours, in a series of eighty-five cases they had two errors Friedman and Lapham used unmated mature female rabbits The urine was injected thrice daily for two days in 4 c cm doses Forty-eight hours after the first injection the rabbit was killed Before they adopted this routine Friedman and Lapham used the single injection, with post-mortem eighteen hours later, but they found that it was not entirely reliable, although in case of urgency it could be used if too much reliance was not placed on negative results.

Technique and Results

The rapidity and reliability of the test, according to these observers, suggested its use to us, and we consider that the results in a small series of fifty-three cases investigated at University College Hospital worthy of record

The technique used in the first twenty cases was that of Adèle Brouha A single intravenous injection of 8 to 12 c cm of urine was given to virgin rabbits weighing about 1 kilogram, and a post-mortem was done fifteen to twenty-four hours later Urine from seventeen pregnant and three non-pregnant women was investigated;

there were six errors (30 per cent.), all in the pregnant group. The period of pregnancy in the cases investigated was from six to fourteen weeks, a period during which the test is most useful. There were two cases of hydatidiform mole, and each gave a positive result. The technique adopted in the remaining thirty-three cases was as follows. Virgin rabbits, aged 12 to 20 weeks, were used, and two injections of 6 c.cm. were given intravenously for two days. Forty-eight hours after the first



FIG. 1.—Ovary of 12-weeks-old rabbit, which had been injected with urine from a non-pregnant woman. (×1½.)



FIG. 2.—Ovary of 12-weeks-old rabbit, which had been injected with urine from a pregnant woman. Note projecting corpora haemorrhagica. (×1½.)

injection the ovaries were inspected. Of the thirty-three cases twenty-eight were pregnant and five not pregnant, and in all cases the diagnosis was correct.

COMMENTARY

In the first series of twenty cases there was an error of 30 per cent. The failure in this series is, I believe, due to the fact that the rabbits were too young, as Snyder and Wislochi[10] have shown that ovulation cannot be produced, even with concentrated urine, in rabbits aged less than 12 weeks. The rabbits used in this series were aged 10 to 12 weeks. In the second series the results are as good as those of the Zondek-Aschheim test.

An advantage of this test is the fact that rabbits are used; these animals are readily obtained, while the five female mice, of specific age and weight, required for the Zondek-Aschheim test are not always available. Provided that the rabbit is not less than 12 weeks old, the age and weight are of no consequence. It is essential to be certain that ovulation has not taken place recently before the test is done, and that the rabbits are not pregnant. To ensure this, rabbits should be kept isolated for twenty days. It is also recommended that each rabbit should be isolated to avoid the possibility of pseudo-ovulation. Mortality among the rabbits has been a negligible factor. Morning specimens of urine were examined. Sterile precautions in injection of urine are not necessary.

CONCLUSION

The test is simple, rapid, and as reliable as the Zondek-Aschheim test.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

PRIMARY LARYNGEAL DIPHTHERIA

Respiratory obstruction in a child may not be considered to be diphtheria in the absence of a membrane on the pharynx, and this may lead to the mere performance of a tracheotomy without the administration of diphtheria antitoxin. On one occasion I saw a child *in extremis* with respiratory obstruction on whom no diagnosis had been made, but on which a tracheotomy had been performed. The child died, and I have always wondered whether that child had laryngeal diphtheria. I think the following case is worth reporting, because I was able to see a membrane on the vocal cord on making a direct laryngeal examination, though no sign of a membrane was present in the pharynx.

An infant, aged 5½, was admitted to the hospital at 7 p.m. because of difficult respiration. The pharynx was normal in appearance. The house-surgeon considered that a tracheotomy was not then necessary, but informed me of the child's admission. At 10 p.m. I saw the child. At 9.45 a catheter had been inserted into the nostril and oxygen was administered continuously; epigastric dipping and retraction of the intercostal spaces were present; the child was cyanosed and restless.

I injected novocain and made an incision. The haemorrhage was profuse, the child's pupils dilated fully, and breathing ceased. So I plunged the knife into the trachea and inserted a Jackson's tracheotomy tube. The child would not breathe and the pupils were still dilated, so I placed the tube from the CO_2 cylinder in the tracheotomy tube and did artificial respiration. After some minutes breathing began. I then passed a Flagg's laryngoscope, and found the centre of the right vocal cord covered with a white membrane; the house-surgeon (Dr. E. D. F. Forster) injected 26,000 units of anti-diphtheria serum, and transferred the child to the fever hospital.

In the fever hospital the medical officer of health for Darlington, Dr. G. A. Dawson, took charge of the child on the morning of July 12th, and he kindly sent me the following report:

On examination the temperature was 99.6°, pulse 142, tonsils much enlarged and injected, no membrane or deposit visible. At 4 p.m. on July 12th he was highly excited through respiratory distress; the tube was withdrawn, and a small piece of diphtheria membrane the size of a sixpence was removed by forceps, and 40,000 units of anti-diphtheritic serum was given intravenously. . . . On July 14th at 7 a.m., after a fit of coughing, cyanosis became very marked, due to tracheal obstruction. Dr. Dawson was summoned, and removed the tube and introduced dilators moistened with a solution of 15 per cent. sodium carbonate. A tough membranous tracheal cast 3½ in. long by 1/2 in. wide was removed by the use of forceps, giving immediate relief. The child made an uninterrupted recovery, and was discharged from hospital on August 20th. Dr. Dawson adds a note saying, "Every case of laryngeal obstruction of catarrhal origin should, in my opinion, be looked upon and treated as diphtheria, by the early intravenous administration of large doses of anti-diphtheritic serum."

Had the true nature of the condition been recognized antitoxin would have been given before the child was admitted to hospital, but, as it was, the condition was not recognized until three hours after admission. In tracheobronchial diphtheria the best treatment is a low tracheotomy, with repeated aspiration through a catheter attached to a suction machine such as all laryngologists now have. Such a machine should be kept in the patient's room, and should be used by the nurse. Bronchoscopy via the tracheal wound can easily be performed if necessary.

After doing a tracheotomy it is unwise to flood the lungs with oxygen or with air, and so the small hand CO_2 cylinder, as now used by all anaesthetists, ought to be always present, and immediately on opening the trachea CO_2 ought to be administered. Thus modern methods of endoscopy constitute a scientific diagnostic approach; but, in the absence of endoscopy, it is safe to treat a case of acute respiratory obstruction due to an unknown cause as diphtheria, and so administer the antitoxin early.

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AN UNUSUAL METHOD OF REMOVING A FOREIGN BODY

On August 4th a man aged 46 was referred to me by his doctor with the following history. His wife died some years ago, and recently he had been much disturbed by nocturnal emissions. In an effort to restrain testicular activity he had, on July 30th, pulled his scrotum and testes through a case-hardened steel ring, which he could neither slide off nor cut through. Before seeking medical advice he had tried to divide it with a hammer and cold-chisel, but had been unable to make any impression on the metal. On examination, the base of the scrotum was found to be constricted by a metal ring of an internal diameter of 1.15 inches; its external diameter was 1.9 inches, and its depth 0.7 inch. The ring fitted sufficiently loosely to allow it to be turned, and a probe could be passed beneath it. The skin had been abraded by its sharp edges, and the whole scrotum was oedematous.

The man was admitted to hospital, and cold compresses were applied in an effort to reduce the oedema and permit of the withdrawal of the ring. As this manœuvre did not appear likely to succeed, preparations were made to cut through the hardened steel. The hospital engineer was called in and advised that the only thing likely to succeed was a carborundum wheel driven by an electric motor. He procured the apparatus and asked me to make arrangements for protecting the scrotum from the heat by drawing a strip of sheet asbestos through between the ring and the skin and by playing a constant stream of water over the surface that was being cut. He also warned me that the apparatus, when working, produced a stream of sparks which would necessitate protection both for the patient and for the operator's eyes.

The patient was anaesthetized and a further effort was made to squeeze the oedematous fluid from the scrotum and to slide off the ring. My efforts to do this having failed, I asked the engineer to take charge, another surgeon and myself assisting him. The sheet asbestos was duly introduced, the ring was firmly grasped in a screw wrench, and mackintoshes were arranged to catch the sparks. A stream of water was played over the line of section, and the instrument was brought into play. The heat generated was surprising, and the stream of sparks was projected for fully six feet. Approximately fifty minutes was taken to cut through the ring in two places so that the halves could be separated and removed. Very little damage was done to the scrotum.

Although this was the engineer's first excursion into the realms of surgery, it was apparent that he had mastered the art of cutting hardened steel under awkward conditions. The fact that he was able to do so without producing trauma speaks very highly for his manipulative skill. The patient was sufficiently recovered to leave hospital less than twenty-four hours after the operation. The ring has been presented to the museum of the Royal College of Surgeons.

Bournemouth. A. Basil Rooke, F.R.C.S.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

SOUTH INDIAN BRANCH

Etiology and Treatment of Sprue

At a meeting of the South Indian Branch, with the president, Major-General C. A. Sprawson, I.M.S., in the chair, Dr. K. Narayanamoorthi, Research Fellow in Medicine at the University of Madras, read a paper on the cause, symptomatology, and treatment of sprue.

Dr. Narayanamoorthi said that a close and careful study of thirty-three cases of sprue treated at the School of Tropical Medicine, Calcutta, and of forty-five cases treated at the Government General Hospital, Madras, had been made. Etiology seemed to turn on the point that the infection was much more common in adults, both among the Europeans and the Indians; the disease affected the fairly well-to-do classes rather than the coolie classes. There was a history of some form of dysentery, amoebic or bacillary, but the patients were not addicted to alcohol or tobacco. Depressing circumstances, such as mental worry, fatigue, and insomnia seemed to precipitate the onset. Fairly often there were three phases in the course of the disease, from the bacteriological point of view, the first being a post-Flexner bacillary infection, the second the occurrence of streptococci on the tongue or in the stools, and sometimes in the urine, and the third a phase of infection by the *Monilia psilosis* (Ashfordii). The symptoms were different in the three phases. The serums of patients suffering from sprue were found to give a positive agglutination reaction with Flexner's bacillus to a titre 1 in 160. Streptococci (often haemolytic) and Monilia in a majority of cases had been isolated. The speaker was inclined to consider that the symptoms of sprue indicated a post-dysenteric phenomenon.

The onset of the disease was slow and insidious; untreated or improperly treated cases of chronic dysentery appeared to develop into the clinical condition of sprue. Loss of appetite, soreness of the tongue, progressive emaciation, extreme weakness, distension of the abdomen, diarrhoea, and varying degrees of anaemia—the severest resembling, and often indistinguishable from, a true Addisonian anaemia—had been observed. The disease on the whole was afebrile, but, of late, cases had been noted at Madras with pyrexia of a typhoid type. The serum of these patients gave a 1 in 100 positive reaction against *B. faecalis alkaligenes*, and a negative one to the typhoid and paratyphoid bacilli. *B. faecalis alkaligenes* had been isolated from stools in these cases. The pyrexia was thought to be of the nature of a septicaemia, as in the case of typhoid. The diagnosis of sprue in the above cases was based upon (1) the clinical symptoms; (2) *x*-ray examination after a bismuth meal; (3) a fractional test meal; (4) estimation of the total fat and fatty acids in stools; and (5) the bacteriological examination of stools and urine for non-lactose fermenters, streptococci, and Monilia. To gauge the prognosis a complete cytological examination of blood, the van den Bergh test, estimation of the organic and inorganic calcium content of the serum, and of the blood cholesterol had been undertaken. The van den Bergh test was found to give an indirect positive reaction of 1.5 to 6 units of bilirubin. Calcium deficiency had not been found in all these cases; the normal calcium in the Indian, from the speaker's figures, seemed to be below 8–10 mg.

A high protein diet, including milk, eggs, fruit, bananas, oranges, bael-fruit, sapotas, tomatoes, greens, onions, and radishes, was very effective in treatment. Autogenous vaccines prepared from the isolated organisms, liver

therapy, ventriculin (in those with liver failure), and autohaemic injections were also found to be very useful With insulin therapy a remarkable improvement in weight had been noted in our cases Dr Lucy Wills had stated that marmite had given excellent results as regards the anaemia, but, so far, the speaker was not in a position to give an opinion All the symptoms, with the exception of the anaemia, were controlled by the outlined treatment in a great majority of the cases The anaemia presented a blood picture of the pernicious type, it was found to persist, despite all methods used for bringing about haematopoiesis Tetany had not been noticed in these cases

Reports of Societies

THE LARYNGOSCOPE IN MEDICINE

At the annual general meeting of the Medical Society of London on October 12th, Mr HERBERT TILLEY was inducted into the chair, and proceeded to deliver his presidential address on the subject of "The laryngoscope in medicine"

Mr Tilley began by outlining the history of the instrument, and went on to speak of the value of the laryngeal mirror in clinical medicine, and some of the developments to which it had given rise He gave instances of some tentative work in this direction by the early laryngologists, and referred to a meeting of the Medical Society of London on December 15th, 1862, at which, following a paper read by Dr Gibb on "Illustrations of the practical applications of the laryngoscope," Dr Streeter mentioned that some ten or twelve years previously his own larynx had been examined by Babington at a place within a hundred yards of the society's rooms Mr Tilley wished to emphasize the work of the early laryngologists of this country, though, he added, possibly because they had not grasped the great opportunities of the use of the laryngeal mirror, the waters of laryngology were never seriously troubled until the day of Manuel Garcia's discovery in 1854 Garcia, who was not a surgeon nor a scientist, but a teacher of singing, made his discovery in Paris and came to London, where he published it, and where he spent the rest of his life, dying in his 102nd year Mr Tilley described how the idea of the mirror came to Garcia while he was walking in Paris, how he immediately put it to the test of experiment, and with what joy, in Garcia's own words, he "saw the glottis wide open before me and a portion of the trachea" Mr Tilley, through the courtesy of Mr Albert Garcia, was able to exhibit the original mirror, a jealously guarded heirloom in the Garcia family So great was the impulse which Garcia's observations gave to the study of diseases of the larynx that, said Mr Tilley, only a captious and pedantic critic would deny him the title of Father of Laryngology

After mentioning the work of Turck and Czermak and other early users of the laryngoscope for medical purposes, he described the debt which laryngology owed to Morell Mackenzie, whose two volumes, *Diseases of the Throat and Nose* would always remain a classic for accuracy of observation and clarity of description Mackenzie's diagnostic acumen was only surpassed by his marvellous dexterity At the same time, there was a great mistrust of the innovation in the great teaching hospitals, whose throat departments at that time were as a rule entrusted to junior surgeons or to physicians with no intimate knowledge of laryngology It was a common thing in those days for a student to leave his hospital and begin practice knowing little or nothing of diseases of the throat, with the consequence that his patients had to seek advice at the special hospitals, whose establishment incidentally deprived the general hospitals of a great deal of clinical material But thanks to the work of Henry Butlin and several others whom he named, in due course, one by one, the staffs of the large teaching hospitals recognized the situation, and placed their ear, nose, and throat departments in charge of men highly qualified in general medicine and with special training and experience in this branch of work Finally, Felix Semon founded the Laryngological Society of London Its success was almost instantaneous, and the Section of Laryngology, into which it was eventually transformed, had been, and still was, one of the most active of the Sections composing the Royal Society of Medicine Next to Morell Mackenzie, early English laryngology owed more to Semon than to anyone else He fought strongly against the prejudice which this new department of medicine had engendered, and on his retirement from practice he generously handed over the handsome testimonial presented to him to establish the Semon Lecture In concluding the historical part of his subject, Mr Tilley said that to those of them who had some experience of those difficult years it seemed incredible that a graduate in surgery in the University of London might now take the M S degree in otolaryngology

Turning to laryngology and clinical medicine, Mr. Tilley said that it was hardly necessary before such an audience to speak of the laryngeal mirror as an indispensable instrument, but even at this time of day the importance of an apparently trivial laryngeal symptom was often overlooked Chronic hoarseness or an alteration in the normal voice might be due to an intrinsic cause, or it might be a local manifestation of a general disease, or, again, it might result from a distant but restricted lesion What a tragedy lay in the tardy diagnosis of the causation of what seemed so trivial a symptom as slight chronic hoarseness, for the disease spread, and, when pain or slight stridor supervened, it was probable that only complete removal of the larynx would save the patient's life He pleaded once more that it should ever be remembered that chronic hoarseness of more than three or four weeks' duration demanded a laryngoscopical examination, because the pathological factors which might cause the symptoms were all more or less serious With regard to hoarseness as a local manifestation of a general disease, the laryngoscope might show slight primary congestion of one vocal cord, an early and typical manifestation of laryngeal tuberculosis due to a primary lesion in one or both lungs Without the laryngoscope many weeks or months of valuable time might be lost With regard to distant restricted lesions, not an uncommon example was aneurysm of the aortic arch Slight hoarseness might be the one and only early symptom of intrathoracic growth Central nerve lesions affecting the vagus should not be forgotten Again, chronic laryngitis might be a prominent symptom in certain diseases of the kidney, or might result from local factors, such as septic conditions of the nasal accessory sinuses, the tonsils, or the teeth But in such diseases as he had mentioned the laryngeal symptoms might be one of the earliest manifestations, and the laryngoscope provided the clinician with the only means by which the mind could be made alert to the various possibilities

Mr Tilley then went on to speak of developments which had followed the laryngoscope He mentioned Kirstein's work, and also that of Killian For all time the name of Killian as the founder of the method of which the late Chevalier Jackson was the most brilliant exponent would be remembered The demonstrations of direct endoscopy which Professor Chevalier Jackson carried out during his visit to London in the autumn of 1930—including one at the Medical Society of London—would be fresh in the

recollection. Mr. Tilley said that he had himself visited Professor Jackson's bronchoscopic clinic, and had seen many cases in which, by the removal of adherent mucus, freer aeration was secured. Professor Jackson had truly said that physicians might inspect the chest, palpate, percuss, and auscultate, and, with the aid of *x* rays, look through it, and while it redounded to their credit that they more often than not made an accurate diagnosis, it was equally true that this must be tentative until the lapse of time perhaps brought about a further development of symptoms which placed it beyond question. But to make the diagnosis early, direct inspection of the gateway of the lungs would often save the physician's time, and save also considerable mental and physical suffering to the patient, possibly even his life. The bronchoscope had again and again detected early malignant growth in the bronchi, and it was known that 87 per cent. of malignancy in the lung commenced in that region. These growths were of a relatively low degree of malignancy, which, after removal, might be very slow in recurrence, though, the speaker said, after experiences in which there had been recurrence many years subsequently to the first operation he would never use the word "cure" with reference to such cases.

"In conclusion," said Mr. Tilley, "one is sometimes tempted to wonder whether those handmaids of medicine, the laryngoscope and her younger sisters the bronchoscope and the oesophagoscope, have not reached their limits of use. But I am optimist enough to believe that in the direct inspection of the lower air passages and the oesophagus there remains a large field for the willing and earnest worker who aims to advance the science and art of medicine. He will find comfort in the words of the greatest of all Teachers: 'There is nothing covered which shall not be revealed'; and the student, furthermore, will gain encouragement if he grasps the truth—and perhaps the warning—embodied in those lines of Keats: 'So on our heels a fresh perfection treads, Born of us, but fated to excel us.'"

Mr. Tilley concluded his address by showing a large number of lantern slides, chiefly illustrating conditions revealed by the laryngoscope. He also exhibited a whole range of foreign bodies of surprising diversity which had been removed at various times from the air passages of patients.

Sir StClair Thomson proposed a vote of thanks, and referred to his long association with Mr. Tilley, dating back to 1893. The resolution was seconded by Mr. E. B. Waggett, who said that it had been very interesting to hear, within the compass of one address, of the various stages through which laryngology had advanced, capturing the service of such things as radium, *x* rays, the direct method, and so forth; but all these things, to those of them who had grown old in this branch of medicine, came as a natural growth or succession. Looking back, however, one comparison forced itself upon his mind—namely, that in his own young days the number of people who could see in the laryngoscope was only a few dozen, whereas now in almost every small town there was to be found a capable laryngologist.

ACUTE INFECTIOUS FEVERS

At the meeting of the Brighton and Sussex Medico-Chirurgical Society held on October 1st, Dr. Duncan Forbes gave his presidential address on the acute infectious fevers. He referred to the pandemic diseases and the high mortalities caused by these in England in comparatively recent times. With regard to the endemic diseases, the encephalitis following vaccination, small-pox, measles, etc., was shown to be both histologically and clinically distinct from encephalitis lethargica. The fact that encephalitis post-infectionism was not known to attack infants under 1 year of age seemed to render unnecessary any departure by public vaccinators from the old and thorough methods of the vaccination of infants of past years. The abandonment of the present pseudo-compulsory and cumbrous system was advised, and its replacement by free vaccination against small-pox and free immunization of infants against diphtheria at convenient centres. As an argument in favour of the immunization of the infant it was pointed out that 1 in every 13 infants born in Brighton contracted and 1 in every 153 died from diphtheria before reaching the age of 15. Immunization was well worth while up to 7 years, saving 1 in 29 from attack and 1 in 463 from death before that age. With regard to measles, whilst school closure to delay epidemics from the cold to the warmer months was advocated, the exclusion of contacts appeared to do no good, but rather harm, as whilst the exclusion of individuals did not prevent all susceptibles being infected, it allowed contacts to play during school hours with children under school age. Measles did little harm to healthy children over 5, and should be regarded as a useful form of vaccination. Puerperal fever was attributed as often due to interference, and frequently unnecessary interference, by the midwife and doctor. Isolation hospitals, as their name implied, were established for segregation rather than for treatment. Except in small-pox they had utterly failed in controlling the spread of disease. The danger of segregation as distinguished from the cubicle isolation of scarlet fever and measles was pointed out. Isolation hospitals should be used for diagnosis and treatment of diphtheria, complicated scarlet fever, typhoid fever, puerperal fever, cerebro-spinal fever, and ophthalmia neonatorum, in all of which institutional treatment was necessary. Typhoid fever could be nursed in general hospitals if the nurses were protected by vaccines as they were in isolation hospitals; there was no danger of rendering a nurse more liable to attacks from diphtheria or typhoid by immunizing her whilst nursing these diseases. In conclusion, Dr. Forbes remarked on the futility of the old methods of disinfection, and advised the laundering of pillow slips and sheets with a spring clean as an effective substitute.

At the annual meeting of the Royal Academy of Medicine in Ireland, held on October 2nd, the following officers were elected: *President*, Professor T. G. Moorhead *General Secretary*, Dr. T. P. C. Kirkpatrick. *Secretary for Foreign Correspondence*, Mr. William Doolin.

The North of England Tuberculosis Society, being the Northern Branch of the Society of Medical Officers of Health, has held five meetings during the past year—one at Stannington Sanatorium, two at the Medical Institute, Newcastle-upon-Tyne, one at Wolsingham Sanatorium, and one at Barrasford Sanatorium, when officers were elected for the ensuing year.

The National Adoption Society has issued a report covering the two years 1929 and 1930, during which 121 boy infants were happily settled as compared with 332 girls. The hope is expressed that prospective adopters will consider the urgency of need in respect of boy babies, a very large number of whom await adoption. A hostel at Connaught House, Acton Lane, was opened in the late summer of 1930 for the temporary care of babies for whom suitable adopters have yet to be found. It is anticipated that the society will now have to raise an additional annual sum of £500, since the expenses of the hostel cannot be met out of the present income, and parents' contributions are too often inadequate. Further information may be obtained from the secretary of the society, 4, Baker Street, W.1.

Reviews

DISORDERS OF THE THYROID

The borderline between health and disease is difficult to define, but as knowledge grows conceptions of disease alter, and many states, compatible with a normal or nearly normal existence, are being recognized as the early stages or mild forms of the more serious states that have for long been regarded as diseases. This is the aspect of diseases of the thyroid gland that LUCIEN DAUTREBANDE takes in a monograph entitled *Physiopathologie de la Thyroïde*,[1] and, in addition, he is pleading for a wider use of iodine in the treatment of thyroid disorders. There is little that is new in the chapters on physiology and pathology, but these sections of the book present the subject in a kindly critical manner and deal fairly with the work that has been accomplished in many countries. They are worth reading, for they show clearly what is known, and point out the large gaps in our knowledge.

In the diagnosis of the various thyroid disorders the author relies almost entirely on estimations of the basal metabolic rate, and if clinical states do not fall into line with metabolic rates they are either ignored or the case is classified among "Les Discordances." A patient who presents the clinical manifestations of a simple goitre, but whose metabolic rate is raised, is classified as an example of "mild toxic adenoma"; and a patient with symptoms of intoxication, but with a normal or low metabolic rate, is placed among the simple goitres or the cases of hypothyroidism. To have two classes of "toxic adenoma," mild and severe, may be helpful in the grouping of cases, but is surely unsound if there is no essential difference between them. The author appears to believe that there is no essential difference between the various types of thyroid disorder, for he seems to have the wide point of view, gradually gaining ground among those interested in thyroid disease, that the gland is in some way a deficient gland no matter what the clinical picture that develops. It seems the more unnecessary, then, for him to subdivide his cases to a greater extent than usual. Under each heading there is an admirable collection of case reports, and it is probably for the sake of the grouping of these that the diagnostic differentiation is somewhat overdone. As with diagnosis so with treatment; the basal metabolic rate is used as the indication for more treatment or for the cessation of treatment, and is the criterion by which treatment is judged. Dr. Dautrebande must have at his command more accurate methods of estimation of metabolism than are attained in most clinics, and he must obtain basal conditions more surely than most workers are able to do, if his conclusions are justified and if his regulation of treatment in this way is sound. The difficulty in obtaining basal conditions in observations on human beings is sufficient to throw doubt on the validity of his conclusions, both as to diagnosis and to treatment. Diseases of the thyroid gland continue, as a rule, for many years, or for most of a lifetime, during which the clinical manifestations vary within wide limits, and the metabolic state also is subject to great variation; the author recognizes this, but has been unable to resist labelling his patients as examples of one or other variety of thyroid disorder.

It is in the use of iodine that the author has a definite contribution to offer. He has failed in Belgium to find patients who are made worse by iodine, and considers that iodine is useful in the treatment of patients with nodular goitres, as it is generally agreed to be in those with frank exophthalmic goitre. This is not a new conception of iodine therapy, but his opinion, after careful study, is of value. As a rule he uses iodine in much the same way as other workers who consider treatment by it to be of much greater value than a pre-operative measure, except that he uses larger doses than are usual in this country. When, however, the patient is not showing further improvement, or is relapsing, with two or three administrations a day, he obtains further improvement by means of the same daily amount given in small doses several times a day, even as often as fifteen times in twenty-four hours. The author has already published his method of subdivided dosage, but it deserves a careful trial in this country, and the book will be of service if its publication results in confirmation of the good effects that are claimed for this method of administration. The monograph concludes with an extensive and valuable bibliography.

[1] *Physiopathologie de la Thyroïde. Diagnostic et Traitement des Goitres.* Par Lucien Dautrebande (avec la collaboration du Dr. Lemort). Paris: Masson et Cie. 1931. (Pp. 326; 36 figures. 40 fr.)

A HARVARD SURGICAL TEXTBOOK

The average textbook of surgery tends to be very stereotyped in its presentation, and it is probable that on account of this the "saturation point" in the publication of such volumes is fast approaching; but that there is room for originality even in a textbook is amply demonstrated by the appearance of a new volume from the Harvard Medical School.[2] This has been edited and largely written by Dr. JOHN HOMANS, and is compiled from lectures and other writings of the staff of the school, which includes such internationally well-known names as those of Cushing, Osgood, and Richardson. Homans, using the information provided in these lectures, has reduced the material to a uniform style of presentation, which is both exceedingly attractive and original; indeed, we have rarely had such pleasure in reading a technical book of this type, and can appreciate that the author, as he states in the preface, "found the task of writing it a joyous one," as that of reading his composition certainly is. It would be difficult to describe accurately the "atmosphere" which the author has created, if the word dare be used in connexion with a scientific work, yet undoubtedly the colloquial language of the lecture theatre and the little personal touches which appear here and there throughout the book do give it a very unusual and individual character. This will, perhaps, best be explained by quoting from one of the short historical sketches which precede each chapter, and not only add to its educative value, but help to fix the interest of the reader; these are intended to be informal, often anecdotal. Some of the matter is inevitably merely diverting, but most of it is a tale of the classic work of great men, living and dead. Thus

> "Nicholas Andry (1741), a French professor of medicine, coined the name, orthopaedia—the straight child—for the book of his ripe old age, and some eighty years later another Frenchman, Delpech, wrote a great work 'L'Orthomorphie,' and became the true founder of the specialty; he performed the first subcutaneous tenotomy. His remarkable career was cut short at the age of 55, when he was shot by one of his patients upon whom, it is said, he had operated for varicocele, a tragic commentary upon an operation which has never borne a very good name. But if orthopaedic surgery was born and baptized in France, it was not of pure French stock. On one side its lineage must be traced to the bone-setters, who in England and Wales were particularly skilful and influential. In John Hunter's day, a Mrs. Mabb drove her carriage and pair into London to take charge of the dislocated limbs of the nobility and gentry."

Such passages abound throughout the book, and afford relief to the more descriptive and solid paragraphs, which, however, are so well written as to need little help in this

[2] *A Textbook of Surgery.* By John Homans, M.D. With a special bibliographical index, and with illustrations by Willard C. Shepard. London: Bailliere, Tindall and Cox. 1931. (Pp. xii + 1,200; 513 figures. 40s.)

respect. Lest it be thought that the systematic and scientific aspects of the subject might have suffered any eclipse on account of the style adopted, it must be recorded that they are dealt with in a most adequate manner, practically the whole realm of surgery being covered, with an excellent sense of proportion. In smaller print at the beginning of each chapter the salient points in the anatomy and physiology are recapitulated, and in some instances definitions of special terms are given. There are few points of surgical interest which are not touched upon, even the rarer diseases receiving a short paragraph; and, where matter for controversy arises, the author's summing-up is particularly well balanced, and indicates a judicial mind of wide experience. In addition to a good general index, there is a really useful bibliographical index, not too exhaustive for the practical needs of the student, and yet full enough to contain all the essential references.

The illustrations demand separate consideration, and the author and artist are to be congratulated upon their choice and lucidity. So accustomed have we become to the photographic half-tone illustrations in American textbooks, which, while perfectly reproduced, sometimes tend to obscure the main feature by their very excellence, that the line drawings appearing throughout this book only emphasize its distinctiveness, and form a fitting corollary to the text. Like the text, too, they are at times unconventional—for example, drawings to illustrate the types of accident in which certain fractures and dislocations are sustained. Even the radiograms have been reduced to line drawings and, interestingly enough, have lost nothing of lucidity or teaching value in the process.

Altogether this is an excellent textbook, and one that may be very cordially recommended to the student searching for escape from the stereotyped presentations of the subject with which he is so familiar.

HIGH BLOOD PRESSURE

In *Arterial Hypertension*[3] Dr. E. J. Stieglitz gives a comprehensive review of the common condition which is responsible for 140,000 deaths from cardiac failure annually in the United States of North America. While quoting Allbutt, who condemned the term hypertension, he prefers this to high blood pressure, as the underlying factor is in the arterial system and not in the blood, but he regards the adjective "essential" as particularly obnoxious on account of the inference that the etiology is of minor significance merely because it is obscure, whereas treatment depends on recognition of the responsible factors. These are numerous, and are summed up by the statement that "the etiology of hypertension is anything which irritates the arterial musculature"; there are, he considers, two phases of causation: the "irritating" factors, such as heredity, which is irrevocable, past renal damage, and previous infection, and the "perpetuating" factors—namely, vascular fatigue and the resulting hyperirritability. The symptoms of high blood pressure are due to complications caused by arterial disease; these are impairment of the local circulation, with resulting tissue anoxia, starvation, and imperfect removal of metabolic products. A hopeful view is nevertheless taken as regards prognosis, which is dealt with in considerable detail. In connexion with the reduction of blood pressure by vaso-dilator drugs attention is drawn to the effect of sodium nitrite given by the mouth a relatively insoluble nitrate, such as erythrol tetranitrate, which is slowly broken down and absorbed by *Bacillus coli* in the intestinal tract, a change accelerated by the presence of vascular fatigue, and so the hyperirritability. The administration of 5 to 10 grains in capsules three times daily is followed by a very gradual fall of blood pressure, and as this occurs the dose is reduced. A comparison of the results obtained in this way with those produced by sodium bromide showed that more permanent benefit followed bismuth therapy. This volume represents lectures given for some years at Rush Medical College, and reviews the literature reflected in a list of more than eleven hundred references.

[3] *Arterial Hypertension*. By Edward J. Stieglitz, M.S., M.D. Edited by I. Woolvatt, M.D. London: Milford, Oxford Univ. Press. 1930. (Pp. xvi + 280; 21 figures. 25s. net.)

AN OUTLINE OF THE UNIVERSE

Mr. J. G. Crowther in *An Outline of the Universe*[4] has, in 376 pages, put a girdle round the space-time continuum in which our poor small earth pursues its bewildered and elliptical course. Whether the universe be finite or infinite, a concourse of protons and electrons mutually attracting and repelling each other or an idea in the mind of God, a material fact or a mathematical fancy, there are some things known about it which should perhaps be as important to the average man and woman as the Davis Cup or the probable winner of next year's Derby. As the author points out in his preface, there has recently been an excessive concentration on the particular and a dangerous neglect of the general. For every specialist the universe is bounded by his specialty. We are running the risk of becoming more specialized than the ants and the bees. Man has arrived at the top of the zoological tree by freely exploiting his adaptability to environmental demands. He has preserved his anatomically primitive forelimb from the doubtful advantages of specialized function, and so has avoided travelling the monotonous path of the tortoise and the cow. If his forelimb becomes an extension of the gear lever of a machine, his stomach a receptacle for synthetic foods, his special senses detector valves for mechanical vibrations, then he may in the end be extinguished as were the great orders of reptiles in the Mesozoic period. One complexity leads to another, one specialization to another; but regression to an earlier, more primitive state is an infantile method of flight. What is needed is a return to the Greek ideal of the harmoniously balanced man: "The old idea of comprehensiveness waned until to-day it is hidden by the inco-ordinated pile of knowledge gained by specialization."

Mr. Crowther's book is a praiseworthy attempt to restore this idea of comprehensiveness. The way of restoration has already been shown by H. G. Wells, who in his masterly syntheses of the ancient and modern worlds has done more than any living writer to present to the common reader a unity out of the apparent diversity of known facts. If a man would know what the universe is like, what island universes are, what is the nature of stars and planets, how the modern atomic theories were formed; if he wishes for information about heredity, evolution, physiology, the work of Pavlov, the mentality of apes, or the origin of civilization—then he should read this book.

There is nothing undreamt of in Mr. Crowther's philosophy. "Mysticism," he says, "is the product of those who fail to understand, the substitute for comprehension and the margarine of philosophy." "Human behaviour to the objective observer is in principle completely describable in these terms"—that is, in terms of excitation and exhibition. "It is more important to produce a large surplus of wealth than to study how wealth could best be used." "Since political is secondary to productive technique the fate of the future rests on production." How he piles it on! Has it not occurred

[4] *An Outline of the Universe*. By J. G. Crowther. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1931. (Pp. xvi + 376; 150 illustrations. 12s. 6d. net.)

to him that it is very difficult for one set of conditioned reflexes to explain another set of conditioned reflexes in terms of conditioned reflexes? It is the insoluble problem of the behaviouristic school of psychology. Let the cobbler stick to his last and Mr. Crowther (we say it in all respect) to his science.

THE EFFECTS OF ALCOHOL

It is very difficult, perhaps impossible, to write a book about alcohol, and the biological and social effects it may produce, without bias. Probably, therefore, such a book when composed by a considerable number of authors with their varied experiences and opinions may be preferred to one by a single author, or by two authors closely associated in their views. Further, when a book of such multiple authorship is subject to a dual editorship, under the general supervision and authority of an investigatory committee consisting, besides the authors, of other eminently qualified persons, impartiality and the scientific point of view may be approached as nearly as is possible. A volume of such a character, produced under such auspices, is *A Review of the Effects of Alcohol on Man*,[5] recently published by Victor Gollancz. The list of persons responsible for it need not here be given; they are all recorded, with their respective spheres, at the beginning of the book itself. It should be said, however, that the volume is moderate in size—three hundred pages in all—beautifully printed, well paragraphed, sufficiently indexed, and with a useful and fairly complete bibliography to each chapter. It does not purport to record any original research, but professes to give an impartial and up-to-date review of the effects of alcohol on the human body and mind, and of the part it plays in relation to disease and the practice of medicine. It is manifestly impossible, even if it were desirable, to summarize such a book, and a little difficult to indicate the fullness of its contents. Every part of it is carefully written and documented, and each of its chapters has its peculiar merits. Naturally, it does not result in any dogmatic pronouncement, and its conclusions are not seriously different from those which are now mainly agreed and recognized by medical men and others who have seriously studied the matters with which it deals. There are some evidences of differences of opinion on minor questions among its various authors, but it reveals a uniform tone and general agreement when viewed as a whole. By many readers, no doubt, Chapters IV and V, on the mental effects of alcohol and its relation to mental disorder, and the last chapter, on heredity, may be considered the most important. Throughout one gets the impression that, in the conscious striving after a judicial attitude, everything that could possibly be said in favour of the use of alcohol has been noted down; but, especially if read in connexion with such a book as that on *Alcohol and Human Life*, by Dr. Courtenay Weeks, noticed in our columns two years ago, it will prove a valuable work of reference and a volume which will, as claimed in its preface, "assist the unprejudiced person who wishes to survey the whole field of evidence and form his own opinion."

NOTES ON BOOKS

In their *Introduction to Mental Hygiene*,[6] Professor Ernest R. Groves and Phyllis Blanchard have attempted to synthesize what may be called the "mental hygiene movement," and the result, if not completely satisfactory—as could hardly be expected—is certainly interesting and helpful. Although at times the authors seem to be unduly discursive, and perhaps necessarily superficial, yet they have compiled a volume of very considerable practical value, which indicates the main lines of preserving mental health in spite of difficulties encountered in various environments and at different times of life. The book is correctly named, since it should form an introduction to larger textbooks on some of the many topics dealt with in detail.

Ritual: Psycho-analytical Studies,[7] is a translation into English by Dr. Douglas Bryan of the second edition of the German book in which Dr. Theodor Reik discusses from the Freudian point of view four forms of religious ceremonies—namely, couvade; the puberty rites of savages; Kol Nidre (part of the programme of observing the Jewish Day of Atonement); and the Shofar, or Ram's Horn. For the most part the book represents an attempt to trace in these observances a psychological basis—the gratifying of certain instinctive demands. The argument in the case of couvade (a ceremonial retirement of the father to bed after childbirth) is that there is implicit in it a latent infanticide motive, the overcoming of which marks a step forward to a new orientation in which individual demands are to be subordinated to those of the family. In his examination of the puberty rites of savages Dr. Reik draws some interesting parallels between the mental life of primitive humanity and that of neurotics. Circumcision, a hostile act, represents the symbolic punishment and prevention of incest, and the ritual "killing" denotes the punishment and prevention of parricide. This is followed by a "resurrection" stage, opening the way for a new and legitimate sexual life. The two Jewish ceremonials are analysed similarly, the Kol Nidre being interpreted as a release from unconscious obligatory strivings, and the Shofar as a warning against parricidal urges, as well as a promise of expiation of past guilty desires of this kind. The intensely deep analysis and the ingenuity of interpretation may render the general conclusions unacceptable to some, but as an illustration of the Freudian outlook on certain trends discoverable in many forms of religion the book is admirable. It will stimulate thought, even if it does not induce agreement.

The third edition of the *British Waterworks Year Book and Directory with Statistical Tables*, 1930–31,[8] just published by the British Waterworks Association, contains a mass of information relating to waterworks undertakings in Great Britain and Ireland, and in some of the British waterworks over-seas. The book is divided into three parts: (1) directory, (2) statistical tables, and (3) general information. Particulars of 871 water undertakings are recorded as compared with 285 in the 1928 issue. The value of the directory part has been enhanced by cross-references to the names of towns and places within the limits of supply of the larger water undertakings. The statistical tables furnish particulars as to sources of supply; extent of catchment area; storage or subsidence reservoirs; walls and springs; and engine power.

The Annual Charities Register and Digest[9] gives essential information of the societies, associations, and other bodies that provide relief in all kinds of affliction and distress, whether temporary or permanent. We have frequently remarked in these columns on the intelligence, care, and lucidity that distinguish this handbook, the thirty-ninth edition of which has just been published.

We have received the Proceedings of the second Argentine Congress of Surgery[10] held at Buenos Ayres under the presidency of Dr. Eduardo Belaustegui from July 13th to 19th, 1930. The principal subjects for discussion were the post-operative complications of appendicitis and the treatment of peptic ulcer, Pott's disease, mammary cancer, and sacro-coxalgia.

[5] *A Review of the Effects of Alcohol on Man*. London: V. Gollancz, Ltd. 1931. (Pp. 300; 3 figures. 8s. 6d. net.)

[6] *Introduction to Mental Hygiene*. By Ernest R. Groves and Phyllis Blanchard. London: Gerald Howe, Ltd. 1930. (Pp. vi + 467. 16s. net.)

[7] *Ritual. Psycho-analytical Studies*. By Theodor Reik. With a preface by Sigm. Freud. Translated from the second German edition by Douglas Bryan, M.R.C.S., L.R.C.P. The International Psycho-Analytic Library. London: L. and V. Woolf, the Hogarth Press, and the Institute of Psycho-Analysis. 1931. (Pp. 367. 21s.)

[8] London: British Waterworks Association, 173, Rosebery Avenue, E.C.1. (£1 1s.)

[9] London: Longmans, Green and Co., Ltd. 1931. (8s. 6d. net.)

[10] *Congresos Argentinos de Cirugia*. Buenos Ayres: A. Guidi Buffarini. 1930. (Pp. lxviii + 1,140; illustrated.)

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INSURANCE SICKNESS CLAIMS

In June last the Ministry of Health issued to every insurance medical practitioner, to Insurance Committees, and to others, a memorandum on certification of incapacity for work. As the result of certain investigations that it had undertaken, the Ministry concluded that the main cause of the great increase in admitted claims to sickness and disablement benefit of recent years was laxity of certification on the part of insurance practitioners. This was a very serious charge to make, and its seriousness was not much mitigated by the statements that the great majority of insurance practitioners were not involved in the charge, and that in the case of most of those who were so involved it was a misunderstanding of the insurance position, or a misplaced humanitarianism, rather than wanton carelessness, or any less worthy motive, that was at the bottom of the error. It seems clear that the broadcasting of such a memorandum could be justified only if, in the opinion of the Ministry, the conclusions stated therein were unequivocally established, and if the offences against which it was directed were at least widespread among insurance practitioners. The memorandum was issued without any consultation with those who had a right to be heard before they were publicly accused, and we believe its issue was without justification on either of the grounds just stated. Immediately, in the *Journal* of June 20th (p. 1078), we commented upon the memorandum itself, and on the circumstances of its issue; and what was then said has renewed importance in view of the fact that the Insurance Acts Committee has now issued a considered reply, which has been sent to the Ministry, is to be placed before the Panel Conference on October 22nd, and was printed in the *Supplement* to our last issue.

There is no dispute as to the fact that there was a great increase in the number of admitted claims to sickness and disablement benefit during the years 1922 to 1929, as compared with similar claims between 1913 and 1921. It is the nature and cause of this increase which it is desirable to discover, for, if it were to continue, it must lead either to the bankruptcy of many approved societies, or to a radical reconsideration of the actuarial basis on which national health insurance was originally established. This basis, though the best possible under the circumstances, was admittedly drawn from an insufficient volume of experience, and may yet have to be reviewed. Nor is there any dispute as to the other facts which are set out in the Ministry's memorandum. It is the inferences drawn from those facts which are challenged. We believe the Ministry's inferences to be erroneous, and regard the alternative and contrary inferences set out in the reply of the Insurance Acts Committee as being not only much nearer the truth, but now well established.

Certification as to the moment, or day, at which incapacity for work actually begins or ends can rarely be a matter of absolute exactitude. It is, moreover, admitted that, from the commencement of the national health insurance system, there have always been some cases in which, for a variety of reasons, practitioners have certified as incapable of work persons who are not incapable in the technical sense of the Insurance Acts and Regulations. Insurance practitioners themselves have suggested ways in which such improper certification should be dealt with and prevented. These things being accepted, and ignoring some other factors which the Ministry of Health dismisses as of no account, but to which the Insurance Acts Committee attaches a certain degree of minor importance, the difference between the Ministry and the Committee is broadly this. The Ministry says that the *increase* in the number of admitted claims to benefit during the last eight or nine years, as compared with the previous similar period, is due to an increase in the laxity of medical certification, while the Committee says that it is due mainly to an increase in the number of legitimate claims made by insured persons. It is clear that the effects under consideration could have been brought about by either of the alleged causes, but surely there can be no doubt about the relative probability of these causes. To the question, "Why should the standard of certification of practitioners suddenly have deteriorated in the year 1922 and have continued on a lower plane ever since?" the Ministry offers no answer. To the corresponding question, "Why should the legitimate claims of insured persons have begun to multiply in the year 1922 and have continued at a higher rate since then?" the Insurance Acts Committee gives a reply stating categorical reasons which appear convincing.

We need not attempt to summarize or recapitulate here the facts adduced or the arguments used by the Insurance Acts Committee in support of its thesis. The reply itself should be read, with the emphasis placed on the major propositions and explanations set out above. The general considerations all point to the one conclusion; and such statistical evidence as has been brought forward by the Ministry appears either to be insufficient to allow of any reliable inferences being drawn therefrom, or to be compatible with, or favourable to, the explanation put forward by the Insurance Acts Committee. For instance, the facts that the increase is not in the duration of claims, but in the number of persons claiming, that it is in short illnesses and not in long ones, and that it is among the younger insured persons and not the older, are all consistent with the contention of the Insurance Acts Committee, and appear inexplicable on that of the Ministry. Further, from the fact that the average duration of incapacity claim is less than three weeks, it seems necessarily to follow that, on reference after the tenth or twelfth day,

and allowing a further four or six days before examination on such reference actually takes place, a substantial proportion of persons under certification will, in the ordinary course, then have declared off the funds or be found not incapable, and that therefore no sinister significance need be attached to this.

In face of such facts and considerations it is hard to understand why the Ministry should have dismissed as a quite inadequate explanation of the increase "a tendency of persons incapable of work, who would not have claimed in earlier years, to claim under present conditions." Even stranger was the remark that "it has never been suggested" that such cases "are sufficiently numerous to have a substantial effect." In our previous article on the Ministry's memorandum we said: "On the contrary, this *has* been suggested, and is here and now suggested, as producing a substantial effect, and even as being a main factor in the situation." We would now go further. It appears to be established beyond reasonable doubt that this is *the* main factor.

HEALTH MATTERS IN PARLIAMENT

To the relaxed mind, as the Faraday celebrations reminded the public, great and valuable thoughts often come. Neither Ministers nor Members of the late Parliament had much chance of such inspiration. With an exiguous majority, in part unsecured by any firm ties and with an overloaded programme, the Labour Government drove Parliament hard, continued its first session more than a year, multiplied committees of inquiry, and overtaxed the standing committee system of considering Bills. In the few weeks that the National Government directed Parliament, pressure on Members' time and attention was still greater; leave of absence was all but unprocurable. This overcrowding of the programme has not produced commensurate output of first-class legislation. Some Bills were rejected or held up "in another place." Some were abandoned by their authors. Some which passed into law are patchwork measures, of no permanent validity. The struggle to cope with the immediate task, and the unstable balance of parties, prevented men seeing ahead. Even at the end of July, 1931, scarcely any Members descried the monetary crisis or the departure from the gold standard.

So distracted and overworked a Parliament was not likely to make a great advance in health legislation, and no public result did in fact ensue from the Government's institution of an inquiry into the correlation of all forms of national insurance. But the House of Commons was sympathetic to pleas for improvement in public health services. When it received from the House of Lords the Mental Treatment Bill it carried this invaluable measure to provide for the remedial treatment of uncertified cases. Members who voiced the old suspicions of alienists and of the Board of Control had few supporters. The Government also carried a Housing Bill, which should facilitate slum clearance. In the Road Traffic Bill it incorporated an obligation on motorists to declare their physical fitness, and also an obligation, though an incomplete one, to provide for payment to hospitals for treatment of certain road casualties. Less success attended the Poisons and Pharmacy Bill, which failed to pass this session because of the conflicting demands from farmers and chemists. Maternal mortality was upon the conscience of the House, but the large scheme for national preventive measures, foreshadowed by the Labour Government, had not been seen before the Dissolution.

Health was more often and better discussed on the Ministry of Health Estimates than it had been in the preceding Parliament, when these debates became monopolized by wrangles about poor relief. The abnormal increase in claims for sickness benefit, the fear that some approved societies might not be able to provide all the benefits they had promised, were fully debated in the Commons. Psittacosis, the provision of doctors for the Army, the recognition of Indian medical degrees, the future of the Royal Veterinary College, and the proposed municipal supply of radium in Hull, were subjects which the House debated keenly. The interest in health and medicine of Mr. Arthur Greenwood himself was never in doubt, and was signalized on April 9th, 1930, by his announcement that the Government was prepared to pay up to £250,000 towards the establishment at Hammersmith of the British Post-Graduate Hospital and Medical School. Scottish public health received due attention. Parliament passed an Act making larger monetary provision for medical service in the Highlands and Islands. Another Act, promoted by Dr. Walter Elliot, facilitates the supply of milk to Scottish school children.

In the House of Lords Lord Dawson and Lord Moynihan have contributed brightness as well as authority to medical debates. In the Commons the medical profession was represented more numerously than ever before, and it became possible for the Parliamentary Medical Committee to be restricted to Members or Peers with a professional qualification. A Socialist Medical Group also appeared, which, inspired by the late Dr. Ethel Bentham, conducted a preliminary campaign in favour of a national medical service. The British Medical Association's proposals for a general medical service were received and noted by the Government and by medical Members, but were not publicly discussed in Parliament. Mr. Somerville Hastings's Bill for regulation of proprietary medicines, introduced last session, did not secure facilities. Bills presented by non-medical Members for the "protection of dogs" against experiment and for the registration of osteopaths went no further towards the Statute Book. In brief, the late Parliament was well disposed towards medicine, and desirous of improving public health. An overcrowded programme, and a lack of clear direction, made this good will less fruitful than it might have been. In the Parliament which is called to assemble on November 3rd lack of money and preoccupation with the national emergency may preclude much further advance in health legislation.

RURAL HYGIENE IN EUROPE

The Council of the League of Nations, at the first meeting of its recent session, received an interesting report from the European conference on rural hygiene, held lately at Geneva under the presidency of Professor Pittaluga, director of the National School of Medicine at Madrid. The most striking part of the report concerns the methods of furnishing effective medical assistance to the rural populations. The view was unanimously expressed that 2,000 was the maximum number of persons who could be given proper attention by a duly qualified medical practitioner. In Germany there is, on the average, one physician to 2,317 persons in the rural districts, while in cities the proportion is 1 to 786. The conference was informed that, despite the introduction of the motor-car and the telephone, the average area served by a physician in the rural districts of Germany is about 10 square kilometres, as compared with very nearly 40 square kilometres half a century ago. In Italy there is one medical *condotto* (a doctor appointed to attend the indigent, who are entitled to free medical treatment and drugs) to 3,603 inhabitants, not exclusively rural; but when account is taken of that part of the population which has no recourse to the *medici condotti*, the number of persons served by each doctor is far less and approximates to the standard proportion. It was also considered desirable by the League conference that the number and distribution of pharmacists and doctors who dispensed their own drugs in rural districts should be such as to ensure that all prescriptions for the population were rapidly dispensed, and, further, that rural doctors should be in a position to utilize the services of centres of diagnosis and specialized treatment. Such centres for various purposes —maternity and child welfare, tuberculosis, venereal diseases, cancer, and school hygiene—exist in all European countries. Sharp differences of opinion were apparent as to the part which such centres should take in giving treatment. In Germany no treatment whatever is given at the centres; in France, anti-venereal treatment alone is given, while in some countries all necessary specialized treatment is furnished. An adequate scheme of rural medical assistance was held by the conference to imply hospital facilities (one hospital for a population of between 20,000 and 30,000). also the availability of medical specialists, who should keep in touch with the patient's doctor, informing him of the results of the examination and treatment, and, finally, the service of laboratories, the simpler examinations and analyses being made in the hospital laboratories and the more complicated in specially equipped institutions. In the ideal plan of medical assistance visualized by the conference, a many-sided collaboration is necessary, including the public authorities, the medical profession, the health insurance organizations, the mutual benefit societies, and bodies engaged in voluntary social work. It was pointed out that in Great Britain, France, and Germany national health insurance, with public assistance for non-insured indigents, is a means of bringing effective medical service to the rural populations. In Italy the system of *medici condotti*, already explained, is employed. Out of 20,000 doctors in Italy more than half participate in this service. The methods of attracting doctors to rural districts were discussed; these include, in various European countries, the employment of doctors by insurance institutions, their employment by public assistance authorities for the treatment of the poor, and by health authorities for vaccination and other preventive work. In some areas, like the Highlands and Islands of Scotland, other measures are adopted, such as the assurance of a minimum salary, and the provision of lodging, means of transport, payment of mileage, and payment of medical school fees, on condition that the recipient shall undertake practice in a rural area for a given period. Some of these methods are also used to ensure a sufficient supply of nurses and midwives. In Italy an endeavour is made to attract doctors to the countryside by raising their salaries and by limiting free treatment to the indigent; in that country the doctor is entitled to a pension on retirement, and in case of death by an infectious disease contracted on service his children are provided for by the State. Many other interesting recommendations were made with regard to public health services in rural districts. The scheme envisaged includes the setting up of a primary health centre, the simplest agency adapted to the public health needs of the smallest rural area, and a secondary health centre, which would be a more fully developed organization than the primary, on account of its greater completeness of equipment, larger personnel, and wider scope of work.

UROBILIN AND UROBILINURIA

Urobilin, discovered by Jaffé in 1868, is a substance of interest in connexion with all haemolytic diseases—such as pernicious anaemia and haemolytic jaundice—and also with many diseases of the liver. We knew that this pigment was derived from bilirubin, the iron-free part of the haemoglobin molecule, which, when red blood corpuscles are destroyed because they are old or because of some disease, was carried to the liver for excretion in the bile. We knew, too, that in the intestine bilirubin was normally acted on by micro-organisms and converted into urobilinogen, a colourless compound easily oxidized into urobilin. These matters were clear, but the puzzle had always been to account for the occurrence of urobilinuria in a variety of diseases. Many explanations have been offered in the past, such as local formation of urobilin in the kidneys from excess of bilirubin in the circulating blood, and local formation in the liver, both under similar circumstances and also in hepatic damage or insufficiency. Hayem's old dictum of urobilin as *un pigment du foie malade* has often been quoted. In recent times local formation by cells of the almost omnipotent reticulo-endothelial system has naturally been suggested. Finally, there is the very old hypothesis that urobilin is absorbed into the blood from the intestine (especially when present in the bowel in excess) and, escaping the clutches of a damaged liver, reaches the kidneys for excretion in the urine. The problems involved attracted many workers, but remained unsolved. In 1925 Elman and McMaster,[1] working at the Rockefeller Institute, investigated the subject in animals with great thoroughness and with new and improved experimental methods.

[1] Elman, R., and McMaster, P. D.: *Journ. Exper. Med.*, 1925.

Their results showed, first, that microbic action is essential for the changing of bilirubin into urobilin, and, secondly, that urobilin is formed in only two situations in the body—in the intestine (the chief site), and in the biliary tract—but only if microbic infection of the bile exists. Urobilin from the intestine reaches the blood when the liver is damaged and partially incompetent, or when (as in the haemolytic anaemias) urobilin is formed in excess in the intestine, and, when absorbed, passes the liver simply by first overloading it. In supporting this view, Rolleston and McNee[1] conclude that "urobilinuria is not pathognomonic of any one morbid condition, its main diagnostic significance, apart from its occurrence in haemolytic anaemia, pernicious anaemia, and chronic haemolytic jaundice, being that some bile is entering the intestine, and that the functional activity of the liver is either very considerably impaired or that there is infection of the bile ducts." It is thus seen that the testing for, and recognition of, urobilin or urobilinogen in the urine has a very definite importance in clinical medicine; and for this reason we welcome the very complete recent monograph by Marcel Royer of Buenos Ayres dealing with the whole physiology and pathology of urobilin.[2] This monograph of nearly 200 pages covers the entire subject so thoroughly that no criticisms seem worth while. Moreover, each chapter is followed by a comprehensive international bibliography brought right up to date. Royer's book certainly gives to us for the time being the last word on all the possible relations of urobilin to clinical medicine.

FATHER DAMIEN

We do not know what demand there may be for another "life" of Father Damien, who gave up his life to the lepers of the North Pacific Ocean, nor does Miss Irene Caudwell think it necessary to offer any apology for the appearance of *Damien: The Leper Saint*.[3] Yet, as the actions of the just always "smell sweet and blossom in the dust," this pious tribute to the hero's memory is sure to be welcome. His doings were the subject of a good deal of controversy at one time, in which R. L. Stevenson took a share, but there is no excuse for a renewal of the argument now. Miss Caudwell draws a taking picture of the gentle philanthropist who gave health and life itself to help his fellow men. Joseph de Veuster—Father Damien as he was to be—was born in 1840 of peasant stock in the neighbourhood of Malines and Aerschot, place names which were to assume such a sinister sound in the great war. He was always a quiet child, and early showed his religious proclivities. He was educated at the University of Louvain. His brother, also a priest, had been selected to go to Hawaii, and, on his being struck down by typhus, Damien volunteered to go in his place. He had a tedious five months' voyage, and landed in 1864 at Honolulu. A decree of banishment for lepers was promulgated in 1865. The lepers were sent to the island of Molokai, and in 1873 Damien asked his ecclesiastical superiors to send him there in spiritual charge of them. He was then thirty-three years old, and for the next fifteen years he devoted himself to the lepers, dying himself of leprosy in 1889. When his death became known in England a movement was started to commemorate his life and death, and to carry on his work among lepers. King Edward VII, then Prince of Wales, presided at a public meeting at which it was decided, among other things, that a Damien Institute should be established for the study of leprosy, and that a detailed inquiry should be made into the condition and betterment of lepers in British India and other British Dominions. He had not lived in vain, for the interest which his romantic self-devotion had aroused led to widespread investigations and discussions, so that leprosy is no longer the hopeless disease which it was when Father Damien first landed in Molokai.

[1] *Diseases of the Liver, Gall-Bladder, and Bile Ducts.* By Sir H. D. Rolleston and J. W. McNee. Third edition. London: Macmillan and Co., Ltd. 1929.

[2] *L'Urobiline à l'état normal et pathologique.* Par Marcel Royer. Paris: Masson et Cie. 1930. (Pp. 196; 46 figures. 30 fr.)

[3] *Damien: The Leper Saint.* By Irene Caudwell. London: P. Allac and Co., Ltd. (6s. net.)

ADVERTISEMENTS OF FOOD PRODUCTS IN AMERICA

The American Medical Association has established a special committee to control the food advertisements that appear in its journal, in the same manner as the Council on Pharmacy and Chemistry already controls the drug advertisements. The reasons for this step are explained by the editor, Dr. Morris Fishbein, in a recent article.[1] The new knowledge of nutrition that has grown up during the last twenty years has had a pronounced effect on advertising in medical journals. Formerly, the chief substances brought to the notice of the profession by this means were pharmaceutical preparations and biological products, but in recent years the advertisement of food products has increased steadily, and to-day the space occupied by the latter type almost equals that occupied by the former. As Dr. Fishbein points out, our knowledge of nutrition is not only new, but very incomplete. Yet, notwithstanding the lack of exact information on which to make definite claims for various natural as well as synthetic food products, both the medical profession and the public of the United States have been deluged with announcements concerning the health-giving qualities of such preparations. No one will be surprised to learn that the committee set up by the American Medical Association to regulate the advertisement of foods has found its work strenuous, time-consuming, and extremely difficult. The credulous and lop-sided attitude of the public towards diet is a direct encouragement to exaggerated claims in advertisement. "The American people," Dr. Fishbein says, "are given to all or nothing policies in what they do for health. If they are told that the consumption of a certain amount of orange juice is healthful because it provides vitamin C and tends to overcome acidosis, they are likely to drink so much orange juice as to upset the digestion and to make impossible the taking of additional necessary food substances. If they are told that vitamins are healthful, they buy anything for which a vitamin claim may be made." Hence the phraseology of the advertiser is extravagant in order that he may impress the group to which he appeals. The general purpose of the committee is "to prevent or discourage unwarranted, incorrect, or false advertising

[1] *Journ. Amer. Med. Assoc.*, vol. xcvii, No. 2, p. 83.

claims in the promotion of food products, and thus to protect the public and medical profession against deception by untruthful or fraudulent health, nutritional, or other advertising claims for food." It is gratifying to learn that almost every reputable manufacturer of food products whose claims have been under scrutiny has voluntarily modified his advertising propaganda to meet the demands of the committee. "It is only the manufacturer of a speciality on the borderline between the food and drug field, whose existence depends on the promotion of a single food, who hesitates in modifying the claims that are made."

INGENIOUS DEVICES

The year's harvest of invention has been on view for the past fortnight at the Central Hall, Westminster, in the annual exhibition of the Institute of Patentees. About 400 new ideas, every one of them worked out in some visible and tangible form, prove that Mother Necessity is still fecund. The visitor has no means of knowing the names of any of the inventors; they are all anonymous, and indicated only by numbers. It would be interesting at least to know their sex, and as to that there is no guidance. It is possible that the novel form of trouser-presser is the idea of a woman, and that the improved box for carrying face powder owes its origin to a man. Tennyson makes some slighting remark about the absence of women from the inventive field, and a modern playwright makes one of his characters say that women cannot have inventive genius or they would long ago have devised something to abate the horrors of "washing up." But a number of the present devices are intended, if not to eliminate that greasy performance, at least to save much domestic drudgery. Much ingenuity has also been brought to bear upon beds, invalid and other, as though someone had suddenly realized that, as most people spend at least one-third of their lives recumbent, it is worth while making them as comfortable as possible. It may be doubted whether any position in bed except the recumbent one is really comfortable, but here are back rests to enable a person to sit up without the use of additional pillows, and other thoughtful devices for ameliorating the lot of the bed-ridden. Another inventor has thought of mitigating the unpleasant experience of being called in the morning by linking the alarm clock to the gramophone. Then there are those pieces of furniture which tumble at a touch into something else—beds which become bookcases, and chests of drawers which change into grand pianos. One little piece of combination work is a walking-stick which transforms itself into a tripod camp stool, and from that into a bathing raft. But it is the motorist for whom inventors toil hardest. What with anti-dazzle headlights, automatic car hoods operated entirely from the driving seat, unpuncturable tyres, cars which give the alarm when tampered with by an unauthorized person, signalling devices, direction indicators, motorists' caps embodying a complete inspection lamp, the motorist is well served indeed. Few of the exhibits have any medical interest, except, perhaps, an adjustable thread-tension device for eliminating the practice of shuttle-kissing—that is, sucking the weft through the eye of the shuttle—which is so dangerous to the health of the weaver.

THE B.C.G. TRIAL AT LÜBECK

In the *British Medical Journal* of June 6th we published, at page 986, an impartial review of the circumstances of the B.C.G. tragedy at Lübeck, so far as these had been brought to light, together with some discussion of the difficulties in the way of any attempt to elucidate the affair. It will be recalled that during a period of two months, from February 24th to April 25th, 1930, the B.C.G. strain of tubercle bacillus was administered to 249 newly born infants at Lübeck. Of these many developed acute tuberculosis during the next few weeks and died; others developed subacute lesions, while a considerable proportion remained perfectly well. The total death roll up to the beginning of the present year was 75. This tragic episode has again been brought into prominence by the trial which opened on October 12th before the Superior Court at Lübeck. The defendants answering to charges of criminal negligence and manslaughter are: Dr. Ernst Altstaedt, chief of the Lübeck Health Board; Professor Max Klotz, chief physician at the children's hospital; Professor George Deycke, medical superintendent of the municipal general hospital; and a nursing sister who was employed in the laboratory, Fräulein Anna Schütze. The case for the prosecution rests in the main on reports upon the material collected and examined by Professor Ludwig Lange in the laboratories of the Reich Health Office in Berlin, and on the testimony of other tuberculosis experts, who have studied the virulence of the Lübeck vaccine. Much difficulty was experienced in obtaining suitable cultures for examination, since the B.C.G. subcultures and the vaccine in Professor Deycke's laboratory had been destroyed. Needless to say, the proceedings at the trial are being followed with eager attention by the German medical profession.

INSTITUTE OF MEDICAL PSYCHOLOGY

The Tavistock Square Clinic, now in its twelfth year of work, has for several years been faced by the necessity for expansion and consequent removal from its original premises. The proposal to change its name to "The Institute of Medical Psychology" has recently been carried into effect, and the Board of Trade has sanctioned the legal alteration in title. Financial considerations have so far made the acquisition of larger premises impossible, but it is hoped that this step may be taken before long. The clinic has for the last five months been obliged to keep its waiting list closed because of the number of patients awaiting treatment; we are informed that it will, however, be reopened very shortly.

The Lord Chancellor has appointed Dr. Arthur Rotherham, now a Senior Commissioner of the Board of Control, to be a Chancery Medical Visitor of Lunatics, in succession to Sir Robert Armstrong-Jones, who has retired.

We regret to announce the death in Dublin, at the age of 88, of Sir John Hawtrey Benson, a former President of the Royal College of Physicians of Ireland, and consulting physician to the Royal City of Dublin Hospital.

NATIONAL RADIUM CENTRES

REPORT OF THE RADIUM COMMISSION

The second annual report of the Radium Commission, published this week, records its proceedings from September 1st, 1930, to August 30th, 1931. As directed by the Treasury, however, the financial statement covers the period of the financial year—April 1st, 1930, to March 31st, 1931.

During the twelve months under review the Radium Commission was constituted as follows:—*Commissioners:* Viscount Lee of Fareham (chairman), Mr. Comyns Berkeley (vice-chairman), Mr. H. L. F. Fraser, Professor G. E. Gask, Professor A. J. Hall, Dr. G. W. C. Kaye, Mr. W. Ernest Miles, Professor J. M. Woodburn Morison, Mr. Carlton Oldfield, Professor Sidney Russ, Lieut.-Colonel A. B. Smallman. Professor Russ is scientific secretary to the Commission, and Miss K. Griffiths office secretary. The office of the Commission is at 5, Adelphi Terrace, Strand, W.C.2. Ten full meetings of the Commission have been held, in addition to numerous sub-committee meetings, visits of inspection, and conferences with various outside bodies and representatives of hospitals. The report is as follows.

Summary of Progress

The year has been largely occupied in developing the National Radium Centres. In a certain number of places good work in radium therapy had already been carried on for some years before the setting up of this national system—notably in Manchester, where a Radium Institute was established in 1915, and also at Aberdeen, Birmingham, and Cardiff, which have been for several years centres under the Medical Research Council scheme of research in radium therapy. In these places there was already suitable accommodation, together with a trained and experienced staff, equipped and competent to take up and carry out the requirements of the Commission. Other places were less developed, and such radium as was already in use was not concentrated in one institution, nor was it under the control of any specially qualified staff. Indeed, at the time the Commission was set up, the number of medical men throughout the country with sufficient knowledge and experience of radium therapy to take control of a National Centre was very limited, and certainly quite inadequate. Since the Commission's scheme was launched, however, a number of qualified candidates have taken up this special branch of medicine, and, by courses of study at various centres in this and other countries, have prepared themselves for the position of radium officers.

Development of Policy of Concentration

National Radium Centres.—In accordance with its already declared policy, the Commission has systematically developed its plan of concentration of radium therapy at certain hospital centres, each of which had been nominated by the medical faculty of the local university. In thus co-operating with the Commission the medical faculties have in many cases had difficulties to surmount, especially where a selection of one out of two or three local hospitals had to be made. In one instance only has this concentration at a single hospital proved impracticable—namely, at Glasgow, where the population of the area to be served (over 2,000,000) is so large that its needs justified and demanded a departure from the original plan of a single hospital centre. The Commission therefore decided to treat Glasgow as an exceptional case, and to institute two National Centres there—one at the Western Infirmary and the other at the Royal Infirmary. This policy has received the full approval of the medical faculty of the university and of the two hospitals concerned.

Regional Radium Centres.—Owing to the uneven geographical distribution of universities with medical schools and complete clinical courses, the existence of which had determined the location of the twelve National Radium Centres, it became apparent that there were considerable areas in England which could not be adequately covered by any of them. These lacunae lie chiefly in the East Anglian and South-Western districts, and are beyond even the wide area from which the great hospitals in London necessarily draw their cases. The Commission has consequently given careful consideration to the needs of these areas, in order to determine how best to provide them with radium, whilst at the same time ensuring that the conditions under which such subsidiary centres will be administered should approximate to the same standards of efficiency as those maintained at the National (University) Centres. In pursuance of this policy the authorities of certain hospitals in each such area have been provisionally approached and asked whether they would be willing, and in a position, to provide the requisite facilities for the establishment of a Regional Radium Centre, if they should be invited by the Commission to do so. The matter is, in each case, still under consideration, and no definite arrangements have yet been made, but it is hoped that in the near future these gaps in the national organization may be filled, whilst preserving the main policy of the Commission that radium therapy should, at the present stage, be concentrated so far as possible at centres which are adequately staffed and equipped.

Rental Charges.—As stated in the Commission's first report, a rental of 2 per cent. per annum of the capital value of radium and containers loaned has been charged to centres, in order to cover the overhead expenses of the Commission without having to encroach upon the funds collected for the purchase of radium. Owing, however, to the National Centres being in various stages of development, the Commission has, during the past twelve months, received rental on only a proportion of the radium purchased by the Trust, and is therefore not yet in a position to determine whether, and if so when, any reduction in the percentage charged can properly be made.

Progress at National Centres

During the past year visits of inspection have been made by subcommittees of the Commission to each of the National Radium Centres. The main object of these visits was to obtain first-hand information as to the way in which the work of the centres was developing, and to ascertain (*a*) whether any outstanding difficulties were being experienced, (*b*) whether the centre had sufficient (or too much) radium for its needs, and (*c*) how far the centre was in a position to satisfy the requirements of the Commission in the way of carrying out the definite lines of policy laid down.

It may be said at the outset that the visiting subcommittees have been able to report to the Commission that they found in all the centres a fine spirit of co-operation in this national work and a keen desire to assist the aims of the Commission. Some centres, as already mentioned, were more advanced than others, which had had exceptional difficulties in the way of organization and of economics to solve; but even in the case of Newcastle, where abnormal conditions have prevailed, these obstacles have been largely overcome.

It is not proposed in this report to go into details of these visits, but some indication may be given of the varying stages reached in the initiation and development of the centres forming part of the national scheme. The

new organizations have had, perforce, to be fitted into the working arrangements of big hospitals (generally of 500 beds and upwards), and it says much for the spirit of adaptation in such hospitals, all of which are "voluntary," that the requisite arrangements have so successfully been made

Scottish National Centres

Aberdeen (University of)—The radium therapy department at the Royal Infirmary had been reorganized in such a way as to ensure that the closest co-operation should exist between the surgeons in charge of the patients and the radium officer, pathologist and physicist. This centre had just completed its arrangements for the formation of a radon centre, and the apparatus in charge of the physicist was then under tests preparatory to being put into use. A scheme for the organization of teaching at this centre was approaching completion. Information was obtained that there was no waiting list as cancer patients were always placed upon an emergency roster for immediate treatment.

Dundee (University of St Andrews)—It was found that no radium officer had yet been appointed at the Dundee Royal Infirmary. The visiting committee was also informed that for the last six months the number of cancer cases, both in private practice and at the hospital, had been markedly fewer than for a long time previously. This is contrary to experience elsewhere in Scotland, and the reasons are not yet clear.

Edinburgh (University of)—The new radiological block at the Royal Infirmary affords the fullest facilities for all kinds of x-ray work. The main question with which this centre has lately been concerned has been whether a new and special radium institute was necessary. One of the outstanding difficulties was that the Infirmary had not sufficient beds and in consequence it had a considerable waiting list of cancer patients. In order to relieve this position, and at the same time to give effect to the radium policy of the Commission, certain definite proposals have been approved, and are now being adopted. These may be summarized as follows: (1) Cancer patients suitable for treatment should be admitted at once; (2) while being prepared for treatment they should be accommodated outside the wards in another institution suited for this purpose; (3) the actual radium treatment should be carried out in the Infirmary wards only; (4) after treatment they should be transferred back to the associated institution for their period of early convalescence or to await further treatment for which they would be readmitted to the Infirmary if the necessity should arise. The visiting committee was also informed that efforts were being made to dissuade some of the smaller towns in the neighbourhood from starting independent schemes for radium treatment which might prejudice the policy of concentration of such work in Scotland.

Glasgow (University of)—The single centre originally nominated by the medical faculty had been established at the Western Infirmary, and a radium officer had been appointed to organize the work. It was ascertained, however, that, whilst under this arrangement the approved allocation of two grams could not be fully utilized, there were a number of patients waiting for treatment for whom accommodation could not be provided. Subsequently, as mentioned above, the Commission decided that a second National Radium Centre should be formed at the Royal Infirmary.

Welsh National Centre

Cardiff (University of Wales) is the centre for Wales, and a visit to the nominated institution (the Royal Infirmary) showed that its organization was making good progress, and had been strengthened by the appointment of a radium registrar. At this centre the radium therapy is under the control of a radium committee which consists of members of the Medical College and of the staff of the Royal Infirmary. The radium registrar sees all the cancer patients, has entry to the cancer wards, and attends all operations upon such patients.

English National Centres

In England there are eight such centres, including Mount Vernon Hospital and the Radium Institute, London, which latter are looked upon as one centre, and recognized as a post-graduate school for the whole country.

Birmingham (University of)—There has been a Medical Research Council centre at the General Hospital since 1921, and here again an organization has existed for some years to cope with the special requirements of the work. Recently this National Centre has been equipped with a radon installation which has been placed under the charge of the professor of physics at the university. This plant had recently been assembled, and at the time of the subcommittee's visit was undergoing preliminary tests. The subcommittee was informed that £1,200 had been collected for the purpose of building and equipping the hut in which the radium was stored and the process of purification carried out. This National Centre had been in touch with no fewer than seventeen hospitals in the three counties of Warwickshire, Staffordshire and Worcestershire, all of which had sent in applications for radium supplies. It had been suggested that the basis of recognition of any of these hospitals should be that at least one member of the staff should have had experience in radium treatment and a course had been arranged at the General Hospital for the necessary instruction to be given. Here again it was learnt from the hospital organization that they were doing their utmost to carry out the policy of the Commission with regard to concentration.

Bristol (University of)—The organization at this centre has been mainly the work of Mr. Hey Groves, who, in addition to being professor of surgery in the university, is also one of the surgeons on the staff of the Bristol General Hospital. Although the clinical work of the centre is concentrated at the Royal Infirmary, there has been the fullest co-operation between its staff and that of the General Hospital, the honorary visiting staff being composed of eight members drawn jointly from the two institutions. A whole-time radium officer has also been appointed, and is consulted in all cases in which radium treatment is advised both as to methods and to dosage. Three wards have been set aside at the Royal Infirmary for radium patients. The visiting committee formed a favourable impression of the organization at this centre. Not the least gratifying feature is the knowledge that the policy of the Commission has brought about a closer understanding between the two large hospitals, and facilitated the co-ordination of their activities.

Leeds (University of)—Here an entirely new radium department has been organized at the General Infirmary, and a whole-time radium officer has been appointed. This centre has obligations not only to the Commission, but also to the Yorkshire Council of the British Empire Cancer Campaign which is actively supporting it by the loan of radium and by sharing to some extent in the expenses of the new department. It draws patients from a large and densely populated area, and is faced with a shortage of bed accommodation, especially for women patients suffering from malignant disease. Efforts are being made to cope with this deficiency.

Liverpool (University of)—Here the treatment of cancer patients with radium has had to be entirely organized at the Royal Infirmary, but in the comparatively short time that has elapsed since this work has been taken in hand good results have been achieved. As at other centres the pressure on the available bed accommodation is a serious factor and although twenty-four beds are at present allocated to the treatment of cancer patients by radium, this number is not sufficient to accommodate all those awaiting treatment. Plans were being discussed to deal with this situation.

Manchester (Victoria University)—There has been a radium institute associated with the work of the Royal Infirmary since 1915, and there is no need to refer to the excellent work which has been systematically pursued there since.

Newcastle (University of Durham)—At this centre arrangements for the development of radium therapy at the Royal Victoria Infirmary, Newcastle-upon-Tyne, are still in the initial stages, largely owing to the difficulty of raising funds. It is, however, expected that financial support from the British Empire Cancer Campaign may enable this centre soon to play its proper part in the national organization. A scheme has already been approved under which £15,000 will be provided by the North of England Council of the British Empire Cancer Campaign, on condition that the Royal Victoria Infirmary will provide £5,000. This total sum of £20,000 will be spent over a period of seven years, and is designed to cover the structural works necessary and the expenditure on new permanent members of staff qualified to carry on a radium centre on approved lines. The Cancer Campaign has also agreed that the balance (£10,000) of the £25,000 which it is

expected the fund will ultimately reach shall be devoted to local research work. The work of the local Radium Institute, and the administration of the research fund, will be under the joint control of a committee representing the University of Durham College of Medicine, Royal Victoria Infirmary, and the North of England Council of the British Empire Cancer Campaign.

Sheffield (University of).—Although a considerable amount of radium work has been done at this centre, the increased work entailed by the acquisition of the national radium has necessitated some reorganization and the appointment of a radium officer. It was apparent that the successful solution of the problem of concentrating the radium therapy at the Royal Infirmary was largely due to the good will shown by two other large hospitals—namely, the Sheffield Royal Hospital and the Jessop Hospital for Women—and the radium officer of the centre is now in charge of the radium at both of these institutions.

Radium Supply

The total amount of radium ordered, or approved to be ordered, by the Trust now amounts to 24.9 grams. The total amount delivered by the supplying company (up to August 31st, 1931) amounts to 21.8 grams. Of this total about 20.7 grams have been already allocated, and about 17 grams actually delivered to centres. This last figure is not quite so high as was estimated in the Commission's previous report, but, owing chiefly to present financial conditions, at least three National Centres (Mount Vernon Hospital, Edinburgh, and Newcastle) have been unable to take up the full amount of radium originally asked for and allocated to them, whilst three centres (Bristol, Liverpool, Newcastle) are not yet ready to take over the supplies of radium allocated to them for the purpose of their radon installations. With the foregoing exceptions, the amount of radium actually in use at centres is well up to anticipation.

National Post-Graduate School of Radiotherapy

Mount Vernon Hospital (Northwood) and the Radium Institute, London.—Several visits of members of the Commission have been made to this centre during the period under review, and it is gratifying to record the spirit in which the proposal for this joint school has been accepted by both institutions and brought to what must be considered a satisfactory stage. Already two courses for post-graduate students have been organized and carried through. On the other hand, it must not be supposed that attendance at these courses, which are necessarily short in duration, can give the surgeon, or even the surgeon-radiologist, sufficient knowledge and experience to enable him efficiently to practise radium therapy without the advice and assistance that he should receive from a specialist radium officer of the kind referred to below. A third course is being held this month, and it has also been arranged that some of the lectures in connexion with the Cambridge Diploma in Medical Radiology and Electrology shall be given at the school. The actual treatment of cancer patients is carried out on similar lines at the two institutions, and there is a close co-operation between them upon all aspects of the subject—namely, clinical treatment of patients, teaching, and research. It is also worthy of note that this post-graduate school has, on the research side of its work, received the support of the Medical Research Council and of the British Empire Cancer Campaign. It is, however, very regrettable that the work of all kinds—clinical, teaching, and research—at Mount Vernon Hospital is at present greatly hampered by lack of funds. Indeed, out of a total of 150 beds only 70 can at present be used owing to financial stringency.

National Radon Centre, Radium Institute, London.—As previously stated, the Radium Institute has undertaken to produce national radon, from radium loaned for this purpose by the Commission, for the benefit of such National Centres and other institutions as are prepared to observe certain conditions with regard to its use. Such radon will be supplied at a uniform flat rate of one shilling per millicurie for the use of non-paying patients. The main conditions are: (1) the applications for national radon must come from an institution, and not from an individual; (2) the institution must be able to satisfy the authorities at the Radon Centre that its staff is sufficiently experienced in the use of radon; and (3) the staff of the institution must be prepared to keep records of cases (including "follow-up") on the radium national forms and to furnish to the Commission a summary of the results on prescribed forms at the end of each period of twelve months. (Specimens of all such forms can be obtained from the offices of the Commission, 5, Adelphi Terrace, W.C.2.)

The Four-Gram "Bomb"

In the first report of the Commission [summarized in the *Journal* of October 18th, 1930, p. 656], it was announced that the bomb loaned to the Westminster Hospital had been definitely assigned to the task of trying out the methods of deep radium therapy, or mass irradiation, in cases of malignant disease which, owing to their situation or their inaccessibility, were unsuitable for other treatment. At that time the available information as to the value of deep radium therapy in this type of case was by no means extensive or convincing. Moreover, from the few centres in other countries in which this form of treatment had been carried out, exact records of the results were difficult to obtain, and such as were available showed so many variable factors, as regards both the type of cases dealt with and the combination with other forms of treatment, that it was not possible for the Commission to form any clear estimate of its clinical value. Some authorities spoke favourably of it, others had tried and abandoned it. In allocating the bomb to Westminster Hospital, therefore, it was stipulated by the Commission that its trial should be strictly limited in scope, and that preference should be given to cases of malignant disease in three regions only—that is, breast, stomach, and prostate—in connexion with the two latter of which, at any rate, the ordinary methods of surface therapy had hitherto proved inefficacious. These conditions have been loyally observed by the Westminster Hospital, but the results, over a period of more than a year, clearly confirm—what has also been the experience abroad—that this form of radium therapy, under present conditions of knowledge, cannot be recommended for treatment of cancer in these regions. Nor, at the Westminster Hospital, were any better results obtained in the few cases of deep-seated cancer of other organs in which this method was tried. It was therefore felt by the Commission that the continued use of the four-gram bomb in its present form was not only uneconomic but unwarranted. This whole subject of surface therapy by means of radium bombs is one which is only very partially explored, and the Commission, in conjunction with King Edward's Hospital Fund for London, is at present engaged in considering what the policy for the future should be. The Commission is aware that in some centres abroad—notably in Paris, Stockholm, and New York—more favourable views prevail as to the merits and possibilities of bomb treatment in certain regions of the body, and authoritative statistics on this subject will be awaited with interest.

Radium for Research

Under the terms of its Charter, the Commission has two main obligations imposed upon it in administering the national radium, and, whilst it has considered that its most pressing duty is to "promote the treatment of

the sick throughout Great Britain," it has also taken steps to forward the "advancement of knowledge of the best methods of rendering such treatment." With this latter object in view it has allocated one gram of radium element to the Medical Research Council and 0.18 gram to the National Physical Laboratory. The policy of making such allocations to large corporate bodies which are in touch with individuals specially qualified to conduct the kinds of research work involved seems to offer many advantages, and the Commission is confident that the radium will thus be used to the best advantage. It is an encouraging sign of the activity of experimental research in radium that, within a few months of completing the arrangements with the Medical Research Council, ninety-five per cent. of the loaned gram had been allocated to research groups.

Care and Custody of Radium

The Commission has from the first laid great stress upon adequate precautions for the safe custody of the national radium, and upon the observance of the most rigid care in its use, and has issued memoranda to all the centres enjoining their adherence to certain prescribed rules.

In a few cases insufficient care has been taken, and small quantities of radium have been lost. This is regrettable, and suitable action has been taken, but a far more serious consequence, in one or two isolated instances, has been unnecessary injury to the health of the individual charged with the duty of handling the radium. In the special instances noted two not uncommon causes may have contributed to the unfortunate result. On the one hand, the keenness on his work of a radium officer may lead him to neglect some of the necessary precautions designed for his own safety, and he may not become conscious of the injury to his health before it is well established. Moreover, even when periodic blood tests have been made, the results of such tests have not in all cases been adjudicated by those who are competent to judge their significance, particularly in the early stages, and it is the view of the Commission that for the protection of the personnel the reports of the periodic blood counts made at regular intervals (at least twice a year) should be submitted to one of the physicians of the hospital concerned, who should be appointed by the board of management to have medical charge of the radium staff.

On the other hand, there are the perennial difficulties of hospital finance. Radium officers are expensive, and sometimes unforeseen, additions to the staff. Moreover, they require exceptional periods of rest, which means that they must have substitutes capable of carrying on their work. This is not always easy to arrange, financially or otherwise, and radium officers, being usually young and keen, either minimize the risk to which they are exposed, or, knowing the financial difficulties, hesitate to make representations on their own behalf. The Commission feels a special concern with regard to this matter because it has good reason to believe that routine work with radium should involve no real risk to operators, provided that the accepted precautions are strictly observed by all concerned—including the hospital boards.

Radium Officers

This whole question of radium officers, so vital to the efficient working of the National Radium Centres, presents great difficulties—particularly in the present condition of voluntary hospital finance. In some quarters it would seem that the importance and proper functions of a radium officer are imperfectly appreciated, and even when the necessity of such an appointment has been recognized, the special training required is apt to be rated unduly low. For example, it has sometimes been thought that any young doctor who has paid a flying visit to the chief radium centres—at home or abroad—could thereby acquire sufficient knowledge and experience, not only to take charge of large quantities of radium, but also to advise surgeons with regard to its clinical use. This is a large and risky assumption, and one which would not be for a moment endorsed by leading radiologists. The most authoritative opinion is now inclined to lay down that, in order to become a radium officer in the full acceptance of the term, it is desirable that an otherwise qualified candidate should be trained at a recognized centre, under skilled radiologists, for a period of not less than twelve months. To satisfy this ideal requirement would, of course, entail the acceptance of an additional financial burden which it might be increasingly difficult for new or potential centres to contemplate, and yet it must be of vital importance, both to the Commission and to the public, that the national radium should be utilized only under the best conditions—so far as it is humanly possible to provide them.

Clinical Records and Summary Cards

The forms of clinical record drawn up by the Commission, in consultation with members of the Radiology Committee of the Medical Research Council and British Empire Cancer Campaign, and of King Edward's Hospital Fund for London, are now being used by all National Centres, and have also been adopted by other institutions, both in this country and elsewhere. The Commission attaches the greatest importance to the accurate keeping of these records, which should, at the end of five years, provide full and uniform details of a very large number of cases upon which some definite conclusions as to the value of radium therapy may properly be based by competent authorities. Visiting committees of the Commission were very gratified to find that in all centres care was being taken that the records should be properly kept and filed. In consultation with Professor Major Greenwood, the Commission has now drawn up statistical summary cards which have been issued to all centres. Each case of malignant disease treated with radium will be summarized on one of these cards, which will be returned to the Commission once yearly for the compilation of national statistics on a scale which has never before been available in this country.

The Commission nominated Mr. Comyns Berkeley as its representative at the third International Congress of Radiology, which took place in Paris from July 26th to 31st, 1931.

Conclusion

In its first report the Commission emphasized the importance of caution in estimating the value of radium in the treatment of malignant disease, and the danger of creating hopes, the realization of which, in the present state of knowledge, can hardly be anticipated. The Commission can base its judgements only upon ascertained facts, which alone provide a foundation for any real scientific progress in the therapeutic use of radium. At the same time the unwillingness of the Commission to adopt optimistic conclusions must not be misunderstood, and its present opinion may fairly be summarized as one of hopeful expectancy. It realizes to the full the excellent results which radium therapy often achieves in cases of malignant disease affecting certain regions of the body—in particular, the uterus, the breast, the mouth, and the skin. Moreover, even in those cases in which permanent cure cannot be reasonably expected, the amount of pain and distress which can be alleviated by the use of radium makes the treatment well worth while. On the other hand, cancer affecting other organs has not reacted to radium treatment with correspondingly happy

results, and the Commission's note of caution was specially intended to emphasize the danger of generalizing from success in a few areas of the body to success in every part thereof.

The great need at the present time is reliable information with regard to the value of radium as a method of treatment, when practised by those who have the necessary knowledge to use it properly. Time, and a sufficient volume of accurate and uniform records, are essential to the solution of this problem, and, as the Commission has already indicated, a period of five years at least from the inception of the national scheme will be necessary before any confident verdict can be given.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY

The annual general meeting of the Medical Sickness, Annuity, and Life Assurance Society, Ltd., was held at the First Avenue Hotel, High Holborn, W.C., on October 7th, when Dr. F. C. Martley, chairman of the board of directors, presided.

Chairman's Address

Dr. Martley said that in spite of the present financial position of the country the society's business had progressed smoothly. The fact that the premium income of the Sickness Fund exceeded the previous year's by some £6,000, making a total of £72,000, proved that the society was in a thoroughly virile state. Though the increase of numbers at risk had raised the sum of sick pay to be provided and an increase in the total disbursed during the year, the amount was well within the expectation. The business in connexion with the life assurance fund continued to show a satisfactory increase now that people were beginning to realize more and more the value of life assurance as an investment, apart from its value as protection to dependants against disaster. In cases where it was not possible to pay the whole premium in one sum the society had arranged to receive monthly instalments, a concession much appreciated by members. The practice-purchase scheme, started for the purpose of assisting young men entering on their careers with the necessary money for the purchase of a practice or a share in a partnership, was progressing favourably, and no bad debts had been incurred. In fact, during the past year several members had repaid the whole sums borrowed earlier than was required under their agreements. The house-purchase scheme had also proved a great success, and the hopes expressed last year of the expansion of this business had been realized. By rigid economy they had been able to show a slight reduction in the administration expenses. As the business extended it had been found necessary to provide the manager, Mr. Sutton, with an assistant. The investments were constantly under review by the directors, and everything possible was done to ensure the safety of the society's funds. In spite of the depreciation in some of the stocks, others had appreciated so much that in the aggregate the society's investments marked at the prices on June 30th were £9,561 in excess of those prices, without taking into account the reserve fund of £9,000. The sickness and life funds had increased by £80,973, and the total funds were £766,607.

Acting on the advice of the actuary, the directors were again able to propose the payment of an interim bonus on all with-profit policies for permanent sickness and accident insurance and life assurance becoming claims during the year July 1st, 1931 to June 30th, 1932. Inasmuch as the financial situation had changed completely since June 30th, and in view of the society's quinquennial valuation in June next, the directors had carefully considered future policy as regards bonus, and their ideas had been summarized in a statement issued by one of the leading British insurance offices, pointing out that in the event of a financial catastrophe it might be necessary to suspend temporarily the declaration of bonus. It was hoped that by the time the society's valuation came along the position would be clearer; he considered it only fair, however, to point out to members what steps might have to be taken. The depreciation of securities was, in the main, artificial, since there was no question of their intrinsic value; apart from such depreciation, the society was in a most flourishing state; the new business since the beginning of July was well in excess of that in the corresponding period of last year. In concluding his address Dr. Martley paid tribute to the loyalty and efficiency of the whole staff, and added a special word of praise to Mr. Sutton.

The annual report for the year ended June 30th, 1931, was adopted unanimously. Dr. F. C. Martley and Mr. R. J. McNeill Love were unanimously re-elected to the board of directors, and Messrs. Harber, Sturges, and Fraser were reappointed auditors.

The recommendation was unanimously approved for the payment of an interim bonus on all with-profit policies for permanent sickness and accident insurance and life assurance becoming claims during the year July 1st, 1931, to June 30th, 1932.

MOTOR CARS FOR 1932

THE OLYMPIA SHOW

[From our Motoring Correspondent]

(Continued from page 674)

An inspection of the cars now on view at Olympia confirms the general summary of the present trends in the motor industry outlined in this column last week. There is no question that the 1931 Exhibition will go down in history as the Show of "economy" cars. This is evidenced not only by the large number of vehicles of from 7 to 10 h.p., but also by the fact that several manufacturers hitherto chiefly associated with cars of high power are on this occasion giving greater prominence to lower-powered vehicles. Thus, at the Rolls-Royce stand a 20–25 h.p. model, as well as the older 40–50 h.p., is shown; at that of the Daimler Company special attention is being drawn to a 16–20 h.p. car; while the Lanchester Company, hitherto building powerful eight-cylinder vehicles, has now introduced a light six-cylinder car of 15–18 h.p. This tendency to cars of lower horse-power is also well indicated by a recent return issued by the Ministry of Transport, which shows that of the vehicles being sold to-day about 36 per cent. are of from 7 to 10 h.p. (R.A.C. taxation rating), 38 per cent. between 11 and 15 h.p., and 17 per cent. between 16 and 20 h.p., only 9 per cent. being over 20 h.p. Put another way, 74 per cent. of present-day cars pay an annual tax of not more than £15.

Car Prices as Low as £89

The year 1931 will also stand out as marking the fulfilment of a long-established expectation—that of the production of a practicable little four-cylinder car to sell at the round figure of £100, this being the Morris Minor two-seater, which, although introduced early in the year, makes its first appearance at Olympia. Another notable production in the ultra-cheap car line is the Rover Company's 7 h.p. Scarab, which, with a rear-mounted two-cylinder air-cooled engine, is to be sold as a four-seater at the low figure of £89. The Jowett continues to be the only other car fitted with a two-cylinder engine, while the Trojan stands alone as the user of a two-stroke motor, which, moreover, is mounted at the rear of the chassis. Another interesting feature is the choice several manufacturers are now giving purchasers of two sizes of engine (and consequently two rates of annual tax) for the same model of car. Thus, as two examples, those

who favour the Morris Cowley may have an engine rated at either 11.9 h.p. (£12 tax) or one of 14-32 h.p. (£14), while the six-cylinder Hillman Wizard is available with either 15.7 h.p. or 20.9 h.p. engine.

Changes in Mechanical Details

It is now possible to deal at greater length with some of the tendencies in the mechanical details of chassis. Following its usual plan, the *Autocar* has devoted one of its Show numbers to a buyer's guide to the British and foreign cars on the market in this country, accompanying it with an interesting analysis of chassis characteristics. From this it would appear that the writer's reference to the increasing popularity of cars with four-cylinder engines is not quite correct, for, according to our contemporary, cars with six or more cylinders have advanced from 77 to 78.3 per cent., while those with four-cylinder engines have declined from 23 to 21.7 per cent. It may be pointed out, however, that the percentages relate not to the number of cars on the road, but to that of the individual models now being manufactured. When actual numbers are taken into consideration it will be found that "fours" will next year most likely be in the majority, and, in any case, will run the "sixes" a very close race. Another interesting detail brought out by the analysis referred to above is that engines with overhead valves are the most popular type, and are steadily gaining over those with valves at the sides of the cylinders.

Mention was made last year of one striking change that has for some time been taking place in motor engineering practice—that of substituting coil-and-distributor ignition for the long-used and reliable magneto, the necessary current being drawn from the battery of accumulators now provided on all cars in connexion with the engine-starting and lighting equipment. The writer has previously expressed his views on this matter of ignition, but no good purpose can be served by offering any further resistance to the modern form, which must have proved itself reliable in view of the fact that it is now found on 80.2 per cent. of cars as against only 67.5 per cent. last year, magnetos having fallen in the interim from 25.2 to 14.5 per cent. A further indication of the reliability of the modern ignition is indicated by a greater tendency to rely on it entirely, for, while a year ago 7.3 per cent. of cars, to ensure certainty of ignition, were provided with dual methods of furnishing the spark, the proportion has now fallen to 5.3 per cent. Despite this, it may not be amiss to give a reminder of the need for regular inspection of the accumulators in order that, owing to lack of charge, or of acid, or to sulphation of the plates and terminals, they may not fail at a critical moment.

Another change in motor constructional practice is that of locating the petrol tank at the rear of the chassis and transferring the fuel therefrom to the carburettor, either by means of a small pump or by a vacuum tank, this change being noticeable on many of the small cars as well as on the larger. Thus, from 80 per cent. during the past year rear petrol tanks have jumped to 85 per cent., with a corresponding fall in the engine scuttle variety.

Central Control and Four-speed Popularity

On the transmission side of the chassis the analysis confirms the statement already made that four-speed gearboxes are rapidly taking the place of those with only three speeds, the former being this year found on 64 per cent. of cars as compared with only 55 per cent. during the past season. Gearbox control is also definitely veering in the direction of the centrally located lever, the proportion of cars so fitted having progressed from 71.5 to 75 per cent. When they were first introduced there were many who thought that gear-changing by the left hand would present some difficulty, but this has proved not to be the case. Not only so, but the fact that it enables the driver to reach, and dismount from, his seat without disturbing a passenger is proving just one of those little points that add to the comfort and convenience of motoring.

Similarly as to road wheels, the wire type has advanced in popularity from 66 to 74 per cent.; the steel disk variety, although occupying second position, has fallen from 15.75 to 13.2 per cent., while the once universally used wood artillery wheel is practically no longer found on British cars, the 1.75 per cent. with which it is credited being due to its continued employment on certain American cars. Four-wheel brakes are now standard practice, and it is to be noticed that hydraulically or vacuum-operated brakes are no longer confined to large cars, but have been adopted on some of the smaller vehicles.

Some Comments on Accessories

Apart from the large number standardized on the majority of modern cars, accessory fittings have always been an attractive feature of the exhibition; and, as there are nearly three hundred stands in this section, it goes without saying that there is no lack of variety and type. Recent legislation and orders regarding noise, thief-proof locks, and prevention of fire—it still does not appear to be generally known that all private garages are now required by law to be provided with either a fire extinguisher or a supply of sand—have resulted in the introduction of many new accessories.

There are also improvements in side windows for traffic-signalling purposes. In this connexion it seems strange that direction indicators, of which there are many varieties on the market, do not appear to have achieved any marked degree of popularity in this country, whereas in Germany and in many Continental countries they are now in practically universal use. When one reflects on the matter, it seems strange that British motorists should continue to rely on putting out their hand through the window to give following drivers an indication at a time when it is possible to do this by a device only needing the movement of a small lever on the steering column. Not only is the sticking out of one's hands an inconvenience, particularly in bad weather, but at night it often proves ineffective, while an indication of an intended turn to the left cannot be given unless there is a passenger at the side of the driver. Although not yet in sight, the time must come when direction indicators on both sides of a car will be deemed a necessary adjunct of all British vehicles. Although the demonstration held by the Royal Automobile Club at Cambridge during September last showed that the dazzle problem has not yet been completely solved, there is a growing use of dipping headlights and of full- and dim-light bulbs, while spotlights to assist driving at night, and particularly in misty and foggy weather, are finding increasing favour.

The "Servicing" of Motor Cars

Additional evidence of the endeavours of the motor industry to facilitate the use of cars is manifest by the development of the Service and Garage Equipment Section of the exhibition, in which will be found a wide variety of tools and mechanical devices for enabling garages and service stations quickly and efficiently to meet the requirements of car users. Flat rates for such periodical needs as washing and oiling, engine decarbonizing, tyre inflation, and brake testing and adjusting, etc., are increasing in vogue, and medical motorists visiting this part of the Show will realize how great is the part now being played by "servicing" in all that concerns easy car maintenance and the reduction of repair bills.

Cars for Medical Men

With so many makes and models of cars on view, it is, of course, not an easy matter to pick out those which may be said to be specially suitable for the use of doctors. There are medical men, especially in these days of reduced incomes and heavier taxation, who will find one of the "baby" cars amply meet their needs. Others will require more roomy vehicles, and still others—particularly those whose practice lies in hilly districts—more powerful vehicles. It is noticeable that more and more makers are taking up the construction of the "baby" car, for, in addition to the Austin Seven, the Morris Minor, and the Singer Junior, there are now a Standard Little Nine and

the 10 h p Hillman Minx, the prices of which, for a four seated saloon, range from £152 10s to £155 One of the surprises of the season is the production by the Crossley Company of a 10 h p car, which, as may be gathered from the fact that its price is £265, has been introduced not with the object of competing with the popular priced vehicles, but of providing a small edition of the more powerful Crossley six-cylinder cars

The Armstrong Siddeley and Austin Cars

Judging from the writer's experience, however, it would seem that the majority of doctors are to day covering their motor requirements by either a four- or six cylinder car of a maximum of 16 h p , hence, it is proposed to review briefly some of the more noteworthy vehicles which fall into this category Taking them roughly in alphabetical order, the first to be mentioned are the productions of the Armstrong Siddeley Company, which is continuing to build four models of six cylinder cars—12 h p , 15 h p , 20 h p and 30 h p This concern has for some years been equipping some of its vehicles with a special form of pre selective, self changing, four speed gearbox, which dispenses with the usual form of change speed lever It is interesting to note that this has proved so satisfactory in actual use that the makers have now decided to adopt it as the standard practice on all their different models It may be added that the 12 h p car is now being produced in two types—one with four speed gear box and V shaped radiator, and one, known as the Economy model, which differs in that it has only three speeds and has a flat fronted radiator, and which in saloon form is offered at the attractive price of £260, or £5 more if provided with a sunshine roof

For many years past the Austin Motor Company, Limited, has made a practice of adhering to a set programme of models—7 h p and 12 h p four cylinder, and 16 h p and 20 h p six cylinder—introducing improvements only as and when they are found possible, and not merely at show time A somewhat unexpected departure was, however, made by the Austin Company early in 1931 by the introduction of a light six cylinder car, known as the Harley " Twelve Six, to sell at the low figure of £193 Although the new car, which, while called a " Twelve," is subject to an annual tax of £14, immediately achieved great popularity, it is making its first appearance at Olympia at the present Show In standard saloon form its price is unchanged, but a new *de luxe* type, with leather or moquette upholstery and with sunshine roof, listed at £225, has been added to the range As regards the other sizes of cars, various detailed improvements have been introduced, despite which it has been found possible to reduce the prices slightly Notwithstanding the attention which the ' Twelve Six " has attracted, it is worthy of note that its reputation for reliability and long service remains such as to warrant the continued production of the 12 h p four cylinder car, and this in spite of the fact that its price is at least £63 more than its newer stable companion The Austin Six Sixteen—a favourite with many medical men—has also been considerably reduced in price as well as provided with a wider choice of bodywork

Cars from Coventry

Just as it was for many years the hub of the British cycle trade, Coventry may be regarded as the centre of the motor industry, responsible as it is for the production of quite a number of well known cars, including the Armstrong Siddeley, Daimler, Hillman, Humber, Riley, Rover, Singer and Standard At the stand of the Hillman Company is to be seen a car which since its introduction early in 1931 has become very popular This is the Wizard, as has already been mentioned, which is available at the same price of £270 for the saloon, with either a 15 7 h p or 20 9 h p six cylinder engine The centre of attraction at the stand is, however, the new Minx 10 h p four cylinder vehicle, which marks the entry of the Hillman Company into the field of cars offered at a moderate price—namely, £155 for the " family " saloon and £20 more for the *de luxe* model The wheel base and track of the chassis are such as to enable a body of more roomy dimensions than usual to be fitted, so that four persons may be comfortably accommodated In their class no cars enjoy a higher reputation than those bearing the name of Humber For next year the same three models of six cylinder cars as in 1931—16/50 h p , the Snipe, and the Pullman—are being continued, with improved details and with saloons ranging in price from £425 upwards

The Riley and Singer Cars

Riley (Coventry), Limited, which has for some years concentrated on the manufacture of only two sizes of chassis—9 h p four cylinder and 16 h p six-cylinder—has built up an enviable reputation for highly efficient, reliable, and speedy cars, and although these have hitherto largely appealed to sporting motorists, it is interesting to learn from the makers that the users of their vehicles now include many of the younger members of the medical profession Of the various models of the Riley " Nine the one particularly recommended for doctors' use is the " Plus Ultra coupe—a roomy two seater with a large dickey seat at the rear The coupe top is of the drop-head type, so that in fine weather the car may be used as an open vehicle Various improvements have been effected in the chassis, which is fitted with a silent third " gearbox Special features which will appeal to doctors are the provision of Yale locks to the two cubby-holes in the dash, and to a large locker at the rear, which latter may also be reached from the interior of the car, so enabling any surgical instruments and supplies to be carried in safety

One of the most popular series of Coventry built cars is that of the Singer Company, whose range extends from the 8 h p four cylinder Singer Junior to an 18 h p Silent Six at prices, in saloon form, varying from £150 to £330 The model which will probably make the strongest appeal to doctors is the new ' Twelve Six, which is fitted with a six cylinder engine taxable at £13 and the saloon which with sunshine roof and leather upholstery is priced at £235 Like all the 1932 Singer vehicles, the car is fitted with a silent four speed gearbox and with an improved design of radiator

Next week it is proposed to conclude the report of the 1931 Exhibition by a brief reference to some of the other cars displayed, and also to some of the more interesting accessories in the galleries Readers may be reminded that the Show will be open daily from 10 a m to 10 p m until Saturday, October 24th, and that the charge for admission is 2s 6d on Fridays and Saturdays, and 5s up to 6 p m , and afterwards 2s 6d , on all other days

C J W

Union of South Africa

[From our Correspondent in Pretoria]

Malaria Control in the Union

After two seasons in which malaria reached epidemic proportions, the Government decided that special research was necessary in order to devise more effective measures of control Professor N H Swellengrebel of the Parasitology Department, University of Amsterdam was accordingly invited to conduct such researches during the past summer It was somewhat unfortunate that malaria particularly in the Transvaal was not only very much less prevalent than during the two previous years but actually below that of average years Nevertheless very valuable data were collected and Professor Swellengrebel, in his report to the Union Department of Public Health was able to outline a policy which if acted on ought fairly effectively to control the disease From his investigations it appears that only two of the twenty anopheline species

in the Union are of importance as vectors of malaria—namely, *A. funestus* and *A. costalis*. He urges the necessity for further research to confirm this and other matters, and to elucidate various problems. Should he prove correct, as seems extremely likely, the control of malaria is very greatly simplified, as species sanitation—that is, anti-larval control by dealing with only a few species of anophelines and neglecting all others—becomes practicable. The problem is greatly simplified by the very definite habits of the two malaria vectors. *Funestus* larvae are found only in the grassy, slightly shaded edges of hill streams. It does not occur in seepage areas along hillsides, or in the natural or artificial swamps which occur in the course of the hill streams. It is never found in standing water. The habitat of *costalis* is equally circumscribed. It is found only in sunny, vegetationless rain-water ponds kept from drying by continual replenishment by rains. Roadside puddles and hoof-marks of cattle are among its commonest breeding places. Professor Swellengrebel concludes that, as far as *funestus* and *costalis* are concerned, no malarious areas are better suited for anti-larval control by species sanitation than those in the Union. The very extensive swamps which were hitherto the despair of the sanitarian and the planter may be completely neglected. In fact, partial attempts at draining these have in the past actually made matters worse by providing conditions suitable for *costalis* breeding. Cattle made hoof-marks in the cleared mud, and in the unshaded puddles so formed *costalis* larvae flourished.

Professor Swellengrebel comes to the gratifying conclusion that in no part of the Union need malaria prevent European settlement. It is easily within the power of the settlers themselves to produce satisfactory conditions; the conditions of settlement on land obtained through Government should include an obligation to observe injunctions laid down regarding siting, general construction, and screening of houses, and control of mosquito breeding in furrows and rain-water puddles. Educated settlers have done better than the pauper classes placed on the land, because of their willingness to carry out essential hygienic measures, especially after having learnt the lesson that neglect means malaria.

Malaria is endemic in the Union in the Northern and Eastern Transvaal and in Zululand and Natal. For both these areas special malaria staffing under Government is recommended. In Natal groups of sugar estates should be organized into health committees or similar administrative units which can be held responsible and shall provide the staff for carrying out anti-malaria measures, as is done at present by villages and suburban and residential areas. Professor Swellengrebel considers that a 1/4 per cent. of the gross annual income represents the minimum amount that should be expended by a sugar estate on anti-malarial work in an ordinary normal year. A centralized medical and hospital service for the whole sugar belt is required, and also a system of medical examination of recruited native labour before engagement. A great point is made of the fact that in Zululand much of the adult population is malaria-tolerant because of continued attacks during infancy. Such adult natives are not only virtually insusceptible to malaria, but they do not harbour the infective forms of the parasite, so that they are no danger to a non-malarious community into which they may be imported. With the co-operation of the Government it is therefore recommended that the Natal sugar belt be provided with such malaria-tolerant labour. Praise is given for the present system of trained "native malaria assistants" for the native reserves, who move about giving health talks, advice as to kraal sites, initiating treatment where such is desirable, and keeping up close touch regarding malaria matters between the native population and the authorities. The continuation of this system is recommended. In the Northern Transvaal active settlement of European farmers is taking place. Here a field station for malaria control is recommended. This station is to be fitted out for research, experimental malaria control, the training of staff, and the instruction of persons indirectly taking part in malaria control, such as district surgeons, district health visitors, and school teachers in malarious areas. Steps are being taken by the Government to carry out the various recommendations made. The research station is to be established at Tzaneen by the South African Institute for Medical Research. It will be the headquarters also of the Government malaria inspector and his staff.

Possibility of Spread of Formidable Epidemic Disease by Aviation

The public health authorities have for some time been investigating the potential danger of introduction into the Union of major epidemic diseases by aircraft. The peculiar danger in this connexion is inherent in the fact that very long journeys by air can be made within the incubation period of such diseases. Thus, if no precautions are taken, a passenger in the incubation stage of one of these diseases may leave the aerodrome apparently in good health and reach a distant part of the Union before the condition manifests itself. The disease of particular importance to the Union is yellow fever, which is endemic along the north-western coast of Africa. The vector of this disease, the Stegomyia (Aëdes) mosquito, occurs throughout the Union. The danger of such mosquitos becoming infected by an imported case of the disease is therefore very real. Passengers infected before embarkation or infected at a landing place along the route would readily provide the virus if no precautions were taken. Although man is only infective to the mosquito during the first three days of illness, the rapidity of transport will neutralize this factor, and passengers might quite conceivably land in the Union while still in the incubation stage. In addition, the risk of infected mosquitos being carried from a yellow fever area into the Union must be borne in mind. Such mosquitos might infect persons in the Union, who would then be capable of infecting local Stegomyia mosquitos. The proposed route of the Imperial Airways to the Cape will pass through Egypt, Sudan, Uganda, Tanganyika, and Rhodesia, in none of which has yellow fever been reported. But passengers to the Union from endemic zones might be conveyed by the French route connecting up with the Imperial Airways at Elizabethville or elsewhere. Private and other casual flying from such areas into the Union must also be provided for. The Union Government found it necessary to press for some alterations of the draft of the proposed International Convention for the Sanitary Control of Aircraft, which has been under consideration by the Office International d'Hygiène Publique. The original draft placed sole reliance for the carrying out or enforcing of precautions on the authorities of the country of departure, and, whatever the circumstances, did not provide for a period of quarantine or detention and observation in the country of arrival. The Union is represented in the office by Colonel P. G. Stock. It is understood that, on his representations, the revised draft, which is now being prepared for consideration by the different Governments, will be suitably amended. Special safeguards will be permissible in the case of persons landing in the Union from a yellow fever area.

Scotland

William Mackenzie Medal

The William Mackenzie Medal for 1930 for original contributions to ophthalmology of outstanding merit has been awarded by the custodians, the Glasgow Eye Infirmary, on the advice of a committee representative of the University of Glasgow, the surgeons of the Glasgow Eye Infirmary, the surgeons of the Glasgow Ophthalmic Institution, and the Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow, to Mr. E. Treacher Collins, F.R.C.S. The medal will be presented at the Faculty Hall, 242, St. Vincent Street, Glasgow, on Friday, October 30th, at 8.30 p.m., when Mr. Treacher Collins is to give an address.

Glasgow Post-Graduate Courses

The winter session of the Glasgow Post-Graduate Medical Association will begin on November 4th and end on May 25th, 1932. The range of subjects at the series of clinical demonstrations on Wednesday afternoons includes medicine, surgery, obstetrics, and a number of special subjects; the fee for the course is £3 3s. A series of special lectures will be given on Tuesday afternoons at the Royal Faculty of Physicians and Surgeons, dealing with some of the practical problems of medicine in the light of recent observations and research. The lectures are free to all medical practitioners. The staff of the Glasgow Eye Infirmary has arranged special courses in ophthalmology, and facilities for the study of clinical obstetrics and ante-natal work are offered at the Royal Maternity and Women's Hospital. A course of demonstrations on diseases of the ear, nose, and throat has been arranged at the Ear, Nose, and Throat Hospital from the middle of April to the middle of May, and a course on radium therapy is offered at the Radium Institute of the Glasgow Royal Cancer Hospital. In most of the institutions taking part in the work clinical assistantships are available. Full particulars can be obtained from the secretary, Dr. James Carslaw, 9, Woodside Terrace, Glasgow, C.3.

New Edinburgh Professor

The inaugural lecture of the chair of anatomy at Edinburgh University was delivered on October 6th by Professor James Couper Brash, who has been elected to the chair of anatomy in succession to Professor Arthur Robinson, retired. Professor Sydney Smith, dean of the Faculty of Medicine, presided, and said that Professor Brash was an old Edinburgh student, who had passed successively through the faculties of arts, science, and medicine, and had now returned from Birmingham, where he had been professor for many years. Professor Brash referred to the high level to which teaching in this chair had been raised by its occupants during the nineteenth century. He said that it was now being more and more realized that the analysis of the dead body was a preliminary to the synthesis of the living body. In anatomy they should aim at a reasonable basis in their methods of instruction, remembering that an adequate knowledge of the structure of the human body was essential, some of it directly for practice, and some of it indirectly towards the understanding of other subjects. Anatomy and physiology were two aspects of the same knowledge of man's body, and interpretation gave the soul to anatomy. Some people regarded anatomy as a pure science, sufficient to itself, but the speaker thought that the anatomist, without losing sight of this scientific aspect, should remember that the justification for his existence was the application of his knowledge to the science and art of medicine. John Goodsir, amid his speculations on the geometrical basis of organic form, had had a great passion for accuracy in the measurements and observations on which he based his theories, and the speaker thought he could not do better than keep before him Goodsir's ideals.

Banff District Mental Hospital

At a meeting on September 24th, the Banff County Council appointed Dr. George Macdonald Bell medical superintendent of the county mental hospital at Ladysbridge near Banff, in succession to Mr. John Chisholm, who had been non-medical superintendent. Hitherto the hospital, which has 210 beds, has had only a visiting medical officer. Dr. Bell is 31 years of age, and graduated M.B., Ch.B., at Edinburgh University in 1928. Till recently he has been senior medical assistant in Fife District Asylum.

England and Wales

Guild of St. Luke: Annual Service

The annual service of the Guild of St. Luke, Evangelist and Physician, will, by kind permission of the dean, be held at St. Paul's Cathedral on Sunday next, October 18th, at 3 p.m. Seats will be reserved for medical practitioners and students, all of whom are invited to attend, whether they are members of the Guild or not. Those wishing to take part in the procession should robe in the Chapel of St. Michael and St. George. The Guild of St. Luke was founded in 1864 by medical students. It was meant primarily for themselves and their fellows as a help in the special difficulties and temptations of a medical student's life. It still desires to appeal especially to medical students, but it also serves to keep before the mind of all who deal with the diseases of the body that highest part of man's nature which finds its expression in religion, its object being the mutual encouragement and support of its members in leading a Christian life. Membership of the Guild is open to students and practitioners of medicine who are communicants of the Church of England, the clergy of which are eligible for election as clerical associates. The entrance fee is 1s., and the annual subscription not less than 2s. 6d. or more than £1 1s. Tickets for the service and further particulars concerning the Guild may be obtained from the mission secretary, the Rev. S. D. Bhabha, M.D., 8, Drakefell Road, St. Catherine's Park, S.E.14.

New Radiological Pavilion at Edmonton

A new radiological pavilion, constructed and equipped on the most modern lines, was opened at the North Middlesex County Hospital on September 29th. This is the latest of several recent departures at the great Edmonton hospital, including the installation of a radium treatment centre, which we have noticed in our columns from time to time. The opening ceremony was performed by Alderman G. Marlow Reed, chairman of the Middlesex County Council, which is the authority administering the hospital. The new pavilion consists of two radiographic rooms, one of which is used also for the purpose of *x*-ray treatment, together with a power room, a dark room, a demonstration room and clinic, and the usual dressing cubicles and store accommodation. In the first radiographic room the apparatus consists of a radiographic table with tube above and below, a Gaffe-Bucky grid table for fine bone and abdominal work, and a vertical screening stand fitted with two tubes, one for barium-meal examination at a distance of thirty inches, and the other for chest teleradiography at a distance of two metres. The second room has self-rectifying tubes working at 30 milliamperes for radiography, and is provided also with apparatus for deep *x*-ray treatment, and with

tables and couches to correspond. It is claimed that the transformer in the power room is the most modern in the country; it is a 6-valve, 3-phase, 415-volt machine, fitted with relay switchgear and controls, and the high-tension current is carried through a panel in the wall to an automatic switch in the radiographic room. The dark room is equipped with two sets of thermostatic developing tanks and a drying cupboard, and is approached by a light-trap room with two doors, only one of which can be opened at a time; opposite is a plate room, where all kinds of photography and lantern slide work can be carried out. The film store is in a separate building, made of concrete and steel, and having an automatic sprinkler and alarm. Another room in the pavilion is intended for demonstrations and clinics. It has a silver screen for the cinematograph or the lantern and a balcony for the projecting instrument, and it is furnished for teaching purposes. It goes without saying that every attention has been paid to ventilation by electric fans and air ducts, the prevention of noxious fumes, and the protection of the worker by specially treated walls and doors. In fact, the pavilion, in which many Continental ideas have been incorporated, is a model of what an *x*-ray department should be. It is on a site corresponding with the principal operating theatres of the hospital, and is entirely on the ground floor. On the same occasion a nurses' home extension was opened, in the shape of a large residential block of three stories, providing, with the buildings already in existence, 210 separate bedrooms for sisters and nurses, and extensive arrangements to meet educational, recreational, and culinary requirements. Several members of the county council made brief speeches on the occasion, and prayers of dedication were said by the Bishop of Willesden.

Surgical Instrument Makers at Dinner

The annual dinner of the Surgical Instrument Manufacturers' Association took place at the Holborn Restaurant on October 9th, when Mr. Patrick C. Maw presided over a large company of members and guests. In toasting the association, Mr. H. Guy Drew sketched its fourteen years of history. It was called into being by the necessities of the war, and after the war there was some hesitation as to whether it should be continued. But the need for an organization to encourage British manufacturers, to put forward the special view of the surgical instrument maker, and to deal with post-war conditions such as dumping, the disposal of war stores, and Government and trade union interference, was soon apparent. Mr. Drew said that during its history the association had given close attention to nineteen pieces of projected legislation, and had taken part in sixteen deputations to Government Departments. Mr. Patrick C. Maw, in his reply, mentioned that during the past year an attempt had been made to defeat the wiles of some firms in circumventing the Merchandise Marks Act, and the association was able to give information to the Board of Trade whereby successful prosecutions took place in two cases. Dr. A. N. Gardner proposed the toast of "The Guests," and, in responding, Mr. T. P. Dunhill remarked on the ancient association of the instrument maker and the surgeon. Probably in prehistoric times the same individual made the implement and performed the operation, proceeding to greater refinement in the fashioning of his tool as experience taught him. Then, as time went on, one man, more skilful and sensitive than his fellows, would find his interest concentrating in the making of the tool itself rather than in the use of it. Thus, little by little, the two crafts would diverge. Some surgeons, said Mr. Dunhill, prided themselves upon the simplicity of their implements, and spoke scornfully of complicated devices. But while there was much to be said against over-elaboration, it sometimes happened that the life of a patient depended upon the availability of a complicated mechanism, and the more simple one would not suffice. The speaker added that he believed this country to be unexcelled in the making of surgical instruments, but it was well to learn everything possible from foreign nations, and then to try and go one better. He had often had occasion to admire the ingenious mechanisms which instrument makers had brought to his notice. Mr. A. Melhuish also responded to the toast, and a few further words of appreciation from the point of view of the guests were said by Mr. L. Ferris-Scott.

Correspondence

COMMON INJURIES OF THE KNEE-JOINT

Sir,—In his article on the diagnosis and treatment of common injuries of the knee-joint, in the *Journal* of October 10th, Mr. Naughton Dunn analyses the lesions found in 522 consecutive cases of injury to the knee-joint, of which 179 were diagnosed as lesions of the internal cartilage (139 being confirmed by operation), and 71 of the external cartilage (46 being confirmed by operation). The report of the proceedings of the Section of Orthopaedics at the Annual Meeting of the British Medical Association, at which the paper was read, states that practically all subsequent speakers commented on this proportion of injuries as most abnormally high. My personal experience, based upon a large series of cases, which I analyse in considerable detail in the forthcoming second edition of my book, *Internal Derangements of the Knee-Joint*, leads me, however, to agree with Mr. Naughton Dunn that the proportion of injuries to the external semilunar cartilage has previously been greatly under-estimated.

In my last personal series of 100 consecutive patients upon whom I have operated for semilunar cartilage derangement (39 hospital and 61 private patients), I found it necessary to remove the external meniscus in no fewer than 20 cases (17 in private and 3 in hospital patients). It is interesting to note that 8 of these cases were associated with a lesion of the internal semilunar cartilage, which required removal either simultaneously (2 cases), at a previous operation (5 cases), or subsequently (1 case). One case was associated with a cyst of the external semilunar cartilage, one with ruptured anterior crucial ligament, one with an osteophyte growing from the inner surface of the tibial head, and one with loose body and traumatic arthritis. Of the 20 cases, 12 were thus complicated, which seems to support the theory that lesions of the external semilunar are associated with a greater degree of violence than are lesions of the internal semilunar. It is interesting to observe in this connexion that six of my cases occurred in professional footballers, and I entirely concur with Mr. Dunn in his conclusion concerning the extremely high percentage of injuries to the external semilunar in these players. Indeed, in my last eight operations upon professional footballers for semilunar cartilage lesions, I removed a damaged external semilunar in seven!

The pathological types of lesion of the external semilunae found in my personal cases were as follows. Longitudinal fracture ("bucket-handle" type) (8 cases—complete 7, incomplete 1).—In one of these cases, a lady, there was an associated complete "bucket-handle" lesion of the internal semilunar, which I removed at the same operation. In another, a professional footballer, a "bucket-handle" lesion of the internal semilunar occurred in the same knee two years later, necessitating a second operation. He made a good recovery from the two operations, and has played regularly since. Oblique fracture (4 cases).—One of these was associated with cyst of the affected semilunar, and this specimen is now in the museum of the Royal College of Surgeons of England. Hypermobility without actual fracture (6 cases).—Of these, 5 were associated with a lesion of the internal semilunae (1 "bucket-handle" lesion and 4 hypermobile), and 1 with rupture of the anterior crucial ligament—in a

fessional footballer, who still plays regularly. Anterior end detached and hypertrophied, with loose body—1 case. Detachment of both anterior and posterior extremities—1 case.

One case, which having been operated upon by another surgeon is not included in this series, is of considerable interest. A Cambridge undergraduate was sent to me by the surgeon for an opinion upon his knee. I diagnosed that the external cartilage formed a complete disk, and this was subsequently confirmed at operation. He had had a "snapping" knee as long as he could remember, and other more recent symptoms following an injury.

I am in complete accord with Mr. Dunn in his conclusion that manipulation is rarely, if ever, of any *permanent* benefit in recurrent cases of semilunar displacement in footballers and others whose work or play is strenuous. However, as I mention in my book, *Treatment by Manipulation*, there are certain cases of this nature which do benefit, and it is certainly well worth trying when removal is refused or contraindicated for other reasons. Operative removal is, however, so satisfactory in experienced hands that it should generally be advised; but it should be remembered that this operation is delicate, and often very difficult, and is essentially one for a specialist therein. Under such conditions the proportion of complete cures should be over 90 per cent. Statistics culled from general hospitals of cases operated upon by various surgeons, often with no special experience or interest in this operation, are sometimes as depressing as they are unreliable.

I am rather puzzled by Mr. Dunn's statement: "Accurate diagnosis in many cases becomes more difficult as my experience increases." Surely every surgeon finds that, as his experience of any subject grows, his facility of accurate diagnosis correspondingly increases. If this were the general experience of orthopaedic surgeons, it would be indeed depressing, especially when one envisages the researches of recent years and the strides that the surgery of the knee-joint has made, even since the war. I cannot help thinking that this sentence as it reads (or, possibly, my interpretation of it) in some way misrepresents Mr. Dunn's real views. I note, moreover, that of his series of 522 cases, 147 (more than 25 per cent.) were "indefinite," and, presumably, undiagnosed. This very high percentage enormously exceeds the percentage of indefinite or undiagnosable cases in my own series. Perhaps this may be because Mr. Dunn demands a higher and more accurate standard of diagnosis than mine.

May I, in conclusion, thank Mr. Naughton Dunn for his lucid, helpful, and interesting paper.—I am, etc.,

London, W.1, Oct 10th. A. G. TIMBRELL FISHER.

RHEUMATOID ARTHRITIS

SIR,—The letter of "Crippled," in your issue of October 3rd, again raises a point which is of the greatest importance in the etiology of this particular type of rheumatoid arthritis. For a number of years I have pointed out on various occasions that this special type is practically confined to the female sex, that it begins about the commencement of the child-bearing period, and that usually there is a history of irregular or delayed commencement of menstruation. The disease is progressive, and is usually symmetrical and centripetal in its advance.

I am in agreement with "Crippled" that the removal of septic foci and teeth does not cure the disease, but it certainly often improves the patient's general condition, provided that the removal is performed at the most suitable moment, and that extraction of teeth is not carried out in a wholesale manner. Sepsis *per se*, I am convinced, is not the cause of the disease, and we must look for the *fons et origo* in some other direction.

In a discussion with the late Dr. Strangeways, we were both agreed that this special entity was practically confined to the female sex; that it was associated with atrophy of the muscles, which appeared along with the swelling of the affected joint, if not before; that there was local sweating of skin in joints concerned; and that the temperature was usually subnormal, though the temperature of the affected joint was raised. I have had the opportunity of watching a number of these cases during the last fifteen to twenty years, and it would appear that the disease behaves rather in the same way as disseminated sclerosis—that the primary invasion may be slight but progressive, or it may be more acute and severe; then a "halt" takes place for a period, long or short, before there is a fresh advance of the disease. These "halts" are most misleading, because if one of them coincides with some particular form of treatment one is very apt to attribute the improvement to the treatment. These cases occur among young women who lead an indoor life, especially school teachers, typists, dressmakers, and young married women. I have no recollection of seeing the disease in anyone living an outdoor life.

Further, I believe that, as in the rheumatism of childhood, we must recognize that there is a pre-arthritic debility; by turning our attention to this period of life we shall arrive at the correct etiology of this type of arthritis. I would suggest that investigation should be made along the lines of a deficiency of vitamin B and protein, and an endocrine imbalance between thyroid and internal secretion of ovary, upsetting the basic tripod of sympathetic nervous system, katabolic endocrines, and gonads. Lastly, the distinct and continued improvement of these cases by internal diathermy of the ovaries, as suggested by Cumberbatch and Robinson, quite apart from the presence of pelvic sepsis, is a strong indication that the internal secretion of the ovaries has some bearing on the production of this disease.—I am, etc.,

Harrogate, Oct 6th G. L. KERR PRINGLE.

SIR,—The much higher incidence of true rheumatoid arthritis among females than among males has been mentioned by "Crippled" in the *Journal* of October 3rd. It is an old observation, and a very interesting fact. How can it be explained? Is it possible, up to a point, to do so by the amount of "strain" to which the female is subject from early girlhood to young adult life (the age at which the disease is likely to appear) as compared with the young male? Strain, emotional or physical, but particularly the former, and often both together, is a very intimately connected precursor of rheumatoid arthritis—another well-known clinical fact. In the last case seen, the disease started a few days after the sudden death of a brother; and a serious relapse followed the unexpected death of her mother.

Thinking along these lines, if the life of the female from childhood to childbirth be compared with that of the male, we find the following obvious train of differences. At school, girls work harder and more conscientiously than boys. Their out-of-door life is, even in these days, more limited. Towards puberty the girl develops more rapidly. At puberty the emotional strain is definitely greater. If of the class which leaves school early, the girl takes a business training (typing, telephone, or other), or goes into a shop, office, or factory; this means indoor life, fatigue, and, too often, scanty meals. The boy is much more likely to find work in the open air. Then come courtship and love affairs, happy or unhappy, but always taken more seriously than by the male. Marriage taxes the emotions of the girl especially, and the more so if unhappy; after marriage circumstances are often more

straitened than before. Then pregnancy, and, with childbirth, possibly lowered health, even infection. Rapidly succeeding pregnancies (and it is to be noted that rheumatoid arthritis nearly always picks out the slender type of woman—that is to say, the most active sexually), lactation, the anxiety of bringing up a family, well or sick—all are stresses which the male does not experience. As the family grows, life is often harder and more costly, and the mother bears the chief brunt.

The result is a sum total of long-drawn-out strain—mental, emotional, physical, sympathetic, endocrinal, what you will—to which the male is in no wise subject to a comparable degree. To it some will add infection as the precipitating cause. Is it not possible that here we have the key to the problem of the sex incidence? But, after all, it goes little further than saying that women are more subject because they are females. However, if to carry it in mind helps to emphasize the factor of fatigue, depletion, and so forth, in the causation of the disease, it may help toward more timely preventive measures, and, in treatment, insistence on the all-importance of sufficient rest.—I am, etc.,

Droitwich, Oct. 10th. A. R. Neligan.

Sir,—It is generally admitted that rheumatoid arthritis is an intractable disease, and that its etiology is unknown. Even now it is difficult to differentiate it from other forms of polyarticular arthritis due to various infective organisms. Early diagnosis and treatment are so important, and yet so difficult unless one has some idea of the cause of this condition. In my opinion it is due, in part at least, to nervous shock, causing imbalance of the endocrine glands, or biochemical changes which affect the central nervous system.

It is important to take the history of these cases very carefully as to onset and early symptoms. We are often told that the patient was in perfect health and very active until she had a severe shock, such as a motor or bicycle accident, sudden death of a near relative, financial stress, or an apparently normal confinement. Sometimes, in severe cases, in less than a week there is an acute arthritis affecting the smaller joints, but rapidly spreading to the larger and stimulating an attack of acute rheumatism. The constitutional symptoms may resemble those of Graves's disease or other endocrine imbalance. The disease is progressive, and results in severe crippling and much deformity. In a typical case there is no evidence of focal infection, and treatment by vaccines is absolutely contraindicated. Rest, symptomatic treatment, and psychotherapy are very useful in early cases. The disease seems to die out in time, so that every effort should be made to keep the joints movable and in good position. Dr. Midelton of Bournemouth treated these cases with cautery of the spine, and I have found it a most useful form of treatment in early cases.

Rheumatoid arthritis is found in all classes, and affects chiefly women of child-bearing age. The difficulty of treating these cases in hospital is well known: supervision and suitable surroundings should be available until the disease is arrested. The temperament of most of these patients is characteristic. Before the illness they were usually active in mind and body, and as the condition progresses they seem to develop a certain resistiveness, which is very difficult to overcome, and which retards recovery. To be told or to read that their disease is incurable has a most adverse influence on them, and we should always try to inculcate hope and patience. Cases which appear hopeless sometimes make good recoveries.—I am, etc.,

Buxton, Oct. 6th. Florence Theobalds, M.D.Ed.,
Honorary Physician, Devonshire Hospital.

DOSAGE OF DIPHTHERIA ANTITOXIN

Sir,—In your interesting leading article of October 3rd, dealing with the dosage of diphtheria antitoxin, there is one remark which must appear to many of those engaged in the clinical observation of diphtheria to savour somewhat of heresy. It is stated that: "The clinician cannot well avoid the thought that . . . controlled laboratory experiment offers no justification for dividing the effective quantity of antitoxin into separate doses to be given at intervals." But are you not, in making such a generalization, rather exceeding your terms of reference? If the above statement means only that a large dose should be given as early as possible, then well and good; but if it is suggested that no subsequent injection can be of the slightest value, then it seems to some of us that such an inference is scarcely warranted by the available data.

In the "controlled laboratory experiments" which are quoted, a single dose of toxin—let us say q—was given at a definite instant of time t. It is easy to understand that in order to deal with this definite quantity q in the best possible manner, a suitable amount of antitoxin must be given at the earliest possible moment. But when we are dealing with a human being suffering from malignant diphtheria the state of affairs is surely rather different. In such cases toxin must be entering the blood stream in considerable amounts over a number of days. As evidence for the truth of this statement it seems to me sufficient to remark that the spread of membrane over the fauces in early cases can often be observed to continue for as long as two days after the injection of a large intravenous dose of antitoxin. Nor does your earlier remark apropos of Schick-negative carriers of virulent diphtheria bacilli—that "very little antitoxin is necessary to prevent the ingress into the circulation of further toxin"—seem to me to reduce the value of this observation. In Schick-negative carriers the process of toxin manufacture is apparently never permitted to start, whereas in a patient who presents the phenomenon of a "bull-neck" it is already in full swing. If you go to the Cotswolds you may be able to check the River Thames with a pebble, but you will be less successful at London Bridge.

It seems to me, therefore, only reasonable to suppose that it is highly desirable to *maintain* the concentration of antitoxin at a high level in the blood until all production of fresh toxin has ceased. This cannot be done by a single intravenous injection, because, as Park, I think, has shown, the concentration of antitoxin in the blood, which is maximal immediately after the injection, begins thereafter to fall off in the well-known logarithmic manner—in other words, it is excreted at a rate which is a function of its concentration. A similar relationship is expressed in Newton's law of cooling. In the circumstances many of us will still feel justified, when treating severe cases, in following up an initial intravenous dose with further injections into muscles at suitable intervals. It must, however, be conceded that there is still room for discussing the question as to what constitutes a "suitable interval."—I am, etc.,

London, S.W.17, Oct. 6th. J. B. Ellison.

DIET AND CARIES

Sir,—In a leading article on diet and caries, in the *Journal* of October 3rd, you refer to the work of Mrs. Mellanby, who was able, by adding vitamin D to the diet of children, to reduce the incidence of caries to one-third, as compared with a control group. Surely, if this proves anything, it proves that caries is not, essentially, a deficiency disease due to the lack of this particular vitamin; as otherwise the improvement should have been *much* greater—something approaching 100 per cent., allowing just for errors of administration and so forth. It was the

dramatic improvements that took place on the administration of vitamin-containing foodstuffs to vitamin-starved animals which definitely proved the theory of deficiency diseases, not just the improvement of a percentage. Every dentist recognizes the increased incidence of caries at puberty, during pregnancy, and after the acute infectious fevers, circumstances in which diet deficiencies, in this direction, cannot be causative; besides which, Professor Howe has produced caries in monkeys through starvation of vitamin C. On the other hand, Mrs. Mellanby's results show that diet, though not the important factor, is related in some way with caries.

When it is realized that the subject of nutrition is not summed up in the word diet, but includes the whole of the metabolic equation—intake of food and oxygen, in the one direction, and output of energy in all its forms in the other—and that for perfect function these two sides must balance, all the difficulties disappear. As it is impossible to build up a diet containing an excess of vitamins C and D which does not contain basic elements in plenty, and, conversely, any diet deficient in these will at the same time be deficient in basic substances, is it not possible that the balance here may have been responsible for the improvement of the teeth of these children? This would account both for the lessened incidence of the caries, and also for the fact that one-third of the children did not share in this improvement. In these latter, even the diet change was insufficient to balance the equation, it being attacked only from the one side.

I suggest that the output side of the metabolic equation must also be considered; and when we remember that the expenditure of energy includes not only that utilized in voluntary effort, physical and mental, but also the involuntary expenditure, which has been estimated as consisting of some 75 per cent. of the daily total, we see the importance of this in obtaining a balance. Further, as this involuntary expenditure is utilized in both physiological and psychological channels, in growth and development, in the digestive, respiratory, and circulatory functions, in emotional disturbances, in the defence against bacterial invasions, and in the conscious and unconscious mental conflicts, we realize that in an upset in this equation we can include all the causes of caries with which dentists are familiar.

A difficulty in balance in the one direction will bring about an excess of acids which, in neutralization, will use up basic salts required for special purposes in the body economy, but which, in these circumstances, must be done without. An upset in the opposite direction will lead to an excess of alkali, which in the absence of sufficient acid to neutralize it will need elimination; in both cases, according to biochemical laws, deleterious effects will be produced upon the dental tissues—caries or pyorrhoea, according to the direction in which the equation is disturbed. In my Cartwright prize essay of the Royal College of Surgeons I have stressed the essential antagonism of these two conditions, which needs something more than a diet deficiency to explain. In these circumstances, then, where decent hygienic conditions will not assure a balance, as in one-third of the children in Mrs. Mellanby's experiment, the matter may be rectified at the point of the common denominator—the acidosis or the alkalosis—by seeing that there exists sufficient cheap acid or base to neutralize any excess.

When it is understood that the whole matter of metabolism, as also of the reactions of the body to the emotions, and the defensive mechanism of the body, is regulated through the endocrine autonomic system, it will be seen, not only how interrelated these functions are, and how the threshold of efficiency depends upon a perfect balance of all its parts, but also why dental lesions are so commonly associated with functional disturbances elsewhere in the body, and associated in a certain definite way—for example, caries with achlorhydria (*pernicious anaemia*), pyorrhoea with hyperchlorhydria (*gastric ulcer*)—not, primarily, as cause and effect, but along lines of a *common etiology*.

All these are matters of extreme interest, which are not elucidated by a conception of dental lesions as disease entities dependent upon diet deficiencies, but are only understandable when we visualize them as parts only of a disease picture due to a fundamental upset of the endocrine autonomic system, as the basis from which imbalances of the metabolic equation arise.—I am, etc.,

F. W. BRODERICK, M.R.C.S.,
Bournemouth, Oct. 3rd. L.R.C.P., L.D.S.

BIOLOGICAL NATURE OF THE VIRUSES

SIR,—In your issue of October 3rd, under the above heading, Dr. Dale is reported to have made certain remarks which, taken together, appear self-contradictory, while some of them are, I think, rather mistaken. He admitted that we might be forced to the conclusion that some viruses were too minute in actuality to be considered as living organisms, but he hoped the alternative view of regarding them as enzymes might be avoided. Why, incidentally, he should "*hope*" this is not stated; but, in any case, I fear his hope is destined to disappointment. He said, further, that no evidence is available that any enzyme has the properties of a virus, or any virus those of an enzyme. He regards such a possible non-living virus as a toxin or stimulant, according to circumstances, being capable of transmission in either case. Yet in both cases he postulated, as the special characteristic of such an agent, the power of imposing on the "infected" cell ("affected" would perhaps be better) "an altered metabolism," which can lead "to its own reproduction" (by "its" here, I take it, the virus is meant).

Now in the first place, while some bacteriologists regard toxins as being in many respects closely analogous to enzymes, a true toxin is a specific, poisonous, metabolic substance more or less deadly to certain cells other than the type which produces it. Moreover, it does not affect the cells producing it in any way, and it certainly cannot, so far as we know, induce other cells to produce it. Further, one can hardly regard a toxin as imposing an altered mode of functioning upon a cell; it just poisons it, kills it, and that is the end. This is very different from the behaviour of most viruses. It is quite true that neither do the ordinary listed ferments, whose chemical reactions are well known, behave like viruses. There are undoubtedly, however, many more enzymes, especially concerned with cell metabolism itself, which remain still unknown. An agent, therefore, which is admittedly closely concerned with cell metabolism, even though it has the properties of a virus, is much more likely to be of the nature of an enzyme rather than of a toxin.

The bacteriolysin (bacteriophage) is one case in point. Many regard this process as of the nature of an impressed transmissible alteration in the function of the nutrition of the particular types of bacteria (the "nutritional vitiation" view of Bordet), which, in the case of the more resistant individuals, is hereditary—that is, can be passed on to subsequent generations. This would certainly seem to indicate the operation of an abnormal type of enzyme. Again, at the other extreme of the virus group, from my own work I have not the slightest doubt that the "Rickettsia" granules (which are indubitably closely associated with the virus itself) constitute nothing more than the residuum of an altered abnormal type of digestion of the blood in the louse. This, again, presupposes the existence of an abnormal ferment. And other cases could be cited.—I am, etc.,

Walton-on-Thames, Oct. 11th. H. M. WOODCOCK.

THE TERM "CONGENITAL"

SIR,—With reference to Mr. M. Melgrave's useful suggestion (October 10th, p. 681), that the above term in relationship to syphilis acquired before or at birth requires revision, may I be allowed to say that in my opinion there would still be some ambiguity about the precise meaning of the word "connatal," which he proposes to be used for cases of infection which occur at the time of birth. This word may equally well be applied to infections contracted *in utero*, since one of its dictionary meanings is "born with," whereas I believe there would be no ambiguity about the term "intra-natal," a word already in general use in connexion with other forms of obstetric injury to newborn infants.—I am, etc.,

London, W.1, Oct. 10th. ERIC PRITCHARD.

A PLEA FOR BRITISH SPAS

SIR,—One aspect of the present financial situation, of considerable special importance to the sick and to the medical profession, and of practical interest to the public generally, appears to have attracted little attention. I allude to the enormous numbers of the wealthier classes who, partly obeying the dictates of fashion and partly through ignorance and prejudice, have adopted the practice of residing abroad for cures at spas or sanatoriums, or of wintering abroad to escape the so-called rigours of the English climate. It must be confessed that in adopting this course they have often been guided by the advice of members of our own profession. It is certain that in the enormous majority of cases sojourn abroad is unnecessary, and that those who do not desert this country have rarely any reason to regret their action, but, on the other hand, are frequently much more rapidly restored to normal health and full working capacity.

Sun treatment has no specific action on tuberculous disease. In many sunny countries the incidence and virulence of tuberculosis much exceeds that of the disease in England. Continuous exposure to sunlight is, in my opinion, decidedly contraindicated in tuberculosis, and where sun treatment is required it may be administered with complete success in this country if combined with ultra-violet light from artificial sources. Anyhow, it is merely an aid to cure, and not essential for recovery.

It is a humiliating thought that foreign spas are alleged to be superior to English ones; and, even if their alleged superiority can be established, surely the remedy is not to admit defeat, but to so improve our English institutions that the stigma shall be for ever removed. The present is an admirable opportunity for effecting this improvement, but for the effort to be successful the whole-hearted sympathy and support of the medical profession is essential. The attractions of foreign spas and winter resorts are depicted so skilfully and alluringly that many are better known than those in this country, and the English doctor is often at a loss to know where similar benefits at home may be readily obtained, and with equal advantage to his patient. It is surely high time that some independent and influential medical body should undertake this task, investigate our resources, and be prepared to advise English medical men who need help in such matters. I suggest that the British Medical Association, with its unequalled means of obtaining the necessary reliable information, might proceed to do this, to the advantage of patients and public alike.

Before advising patients to go abroad for treatment, or simply for purposes of escaping from the English winter, I would appeal to my colleagues to inquire carefully whether the interests of their patients would not be at least as well served by remaining at home; but, if they are satisfied that England must be left, let them at any rate consider the claims of other parts of the Empire. The claims and advantages of the Channel Islands, Malta, the British West Indies, South Africa, and even distant New Zealand, should not be ignored. An enormous amount of British money must be lost to the country and its exchequer annually, which is needlessly enriching foreign, if friendly, rivals, and is sadly needed at home.

The present is an admirable opportunity for checking this serious and needless injury to our country, and, while placing the interests of the patient first, I do hope that an earnest endeavour will be made to ensure the best for the patient without loss to the country to which he is doubtless proud to belong, and which at a time like the present needs and should claim the help of every Englishman, be he sick or well. The patriotic and splendid example of our own Royal Family again points the way to what is a duty to us all. For obvious reasons I withhold my name, but enclose my card.—I am, etc.,

October 10th. MEDICAL SUPERINTENDENT.

INJURY AND SPORT

SIR,—Mr. Rowley Bristow's disclaimer in your issue of September 26th (p. 588) is, I think, hardly necessary if the full context of the pertinent sentences of the paragraph be taken. It is as follows:

> "Thanks to certain ingenious technical modifications introduced by Dr. Morton Smart, his apparatus produces a far more comfortable current than the unmodified faradic current. It can therefore be used at an earlier stage of recovery than its prototype. The credit for introducing *this current as a routine procedure for injuries requiring* muscle movements and re-education is chiefly due to Mr. Rowley Bristow, and the apparatus is therefore often called by his name. The Morton Smart coil, the Smart-Bristow coil, and the Bristow coil (as it will be called hereafter) are one and the same."

The words in italics have been omitted by Mr. Bristow in his quotation, and these, with the other sentences, give, I think, full credit to Dr. Morton Smart for the original invention and use of this apparatus; but some credit is certainly due to Mr. Bristow as an orthopaedic surgeon for calling for its routine employment in suitable cases.

I was present at the discussion of the Section of Electro-Therapeutics of the Royal Society of Medicine in 1923, and heard Mr. Bristow's generous disclaimer on that occasion, and was fully aware of the exact position of affairs as then recounted. Hence the careful wording of the paragraph above quoted.—I am, etc.,

London, Oct. 9th. C. B. HEALD.

EXERCISE IN DIABETES INSIPIDUS

SIR,—I am wanting to make some simple investigations into the effects of exercise on the secretion of urine in diabetes insipidus. Should any of your readers know of a boy or young male adult who has the complaint, and who at the same time is willing to come into hospital for a week for such investigations to be carried through, I should be most grateful to hear from them. Dr. T. R. Elliott has kindly offered to take such a case into his wards in University College Hospital for the period of the investigation. The patient would, of course, be relieved of travelling and other expenses.—I am, etc.,

E. B. VERNEY.

Department of Pharmacology, University College, Gower Street, W.C.1, Oct. 12th.

Obituary

R. WALLACE HENRY, B.A., M.D.

Past-Chairman of the Representative Body, British Medical Association; Consulting Ophthalmic Surgeon, Wycliffe Society, and the Leicester School for Myopes

By the passing of Dr. R. Wallace Henry, on October 10th, the medical profession loses an outstanding figure, and one whose personality and activities must be well known to a very large number of medical practitioners. Although it was obvious that Wallace Henry had been ailing during the last two or three years, he was occupied with his professional and public duties up to a week before his end, which came as the result of arterio-sclerosis, at the age of 64.



R. Wallace Henry

Robert Wallace Wesley Henry was a native of Dublin, coming of a stock which had produced many well-known Methodist ministers in successive generations. He was a student at Trinity College, Dublin, taking the B.A. degree in 1891, the M.B. and B.Ch. in 1892, and the M.D. in 1895. He was resident surgeon at the Birmingham and Midland Eye Hospital. The writer of this memoir well remembers him in 1896 in Leicester, where he had started in practice as a specialist in ophthalmology. In those days he was of a shy and retiring disposition, and it was only gradually that his colleagues began to discover his capacity and common sense. He was regular in attendance at medical meetings, a frequent contributor to the scientific discussions, and was honorary secretary of the Section of Ophthalmology when the British Medical Association held its Annual Meeting in Leicester in 1905. In this capacity he began to find himself, and, although his name does not appear on any of the local committees of that meeting, yet the writer well remembers the unobtrusive valuable services he rendered at that time.

But it was at the time when the National Insurance Bill was introduced that Henry, at a meeting of the local profession, demonstrated his powers; and the position as an outstanding personality was accorded to him in the short space of one afternoon. Ever since that day he has held the affectionate admiration of his local colleagues, for he showed such a capable grasp of the points and ramifications of the Bill, and explained them so fully and concisely, that it became clear that he was head and shoulders above all others present. For his services he was publicly given a set of silver plate when the Act became law. About this time he became honorary secretary of the Leicester and Rutland Division of the Association and also its representative in the Representative Body, holding the former post till 1930, when again he received a presentation from his colleagues, this time a portrait in oils, which was handed to him at a very largely attended dinner. The passing of the Health Insurance Bills brought medical politicians other problems to solve, and Henry was a leading spirit in a group who formed the Leicester Union of Medical Practitioners. One important section of this was a plan to take over a large existing provident dispensary from lay control and transform it into the Leicester and Leicestershire Public Medical Service, managed and financed by medical practitioners only. Henry became first chairman of this, which is still a flourishing organization, and has been a pattern which other areas have copied. In 1912 the ancient Leicester Medical Society elected Wallace Henry as its president, and the manner of holding that office further enhanced his prestige. About this time he was making his mark in the central work of the B.M.A. His practice and his local public work were both so great that he had no spare time, and he used to say that the only form of sport in which he engaged was medical politics.

Then came the war. On August 4th, 1914, Henry was rung up and told that he had been marked down to undertake the duties of registrar of the local base hospital, which carried with it the rank of major. He protested that he was no soldier (which appeared certainly true when he first got into uniform), but, throwing himself into his duties in his characteristic manner, he made such a success of the job that he was twice mentioned in dispatches, and promoted to the rank of brevet lieutenant-colonel. After the war he became more and more a force in London, although he had a large and increasing practice in Leicester, but he still found time to keep up his scientific work, even in the whirl in which he lived. Of his work in the headquarters of the Association others who have more knowledge of it must write, but still he took on more in Leicester, for he became a member of council and a warm supporter of the newly founded Leicester University College. So keen was he on this that he undertook the chairmanship of the Hostel Committee, and also endowed a prize in biology, limited to the children of medical practitioners. Even yet other objects interested him. He was president of the Leicester Literary and Philosophical Society and president of the Leicester

Personal Health Association ; he was also a keen Rotarian, being president of that for one year, and was honorary ophthalmologist to the Guild of the Crippled and the Wycliffe Society for the Blind.

In this crowded but nevertheless happy life there was little time for rest or exercise, so is there any wonder that his vascular system showed signs of giving way? Appealed to by his friends, he did cut out some of his evening meetings, but still he did too much, for he "enjoyed doing it, and really it does not fatigue me." Always fond of music, he enjoyed concerts or musical evenings at home, when he could find time for them. The features of his public life which most gained the admiration of his friends were the extraordinary facility by which he could read through a voluminous document and pick out the essential and the weak points in it ; the marvellous memory by which he could assimilate, digest, and retain its contents (the criticisms which he levelled were never purely destructive—there were always, in addition, constructive proposals) ; the tact by which he did not lose friends when opinions were sharply conflicting ; and the devotion to the medical profession, with intense loyalty to his collaborators. He was a good public speaker, for he took pains to consider what he was going to speak about, and he was particularly happy and humorous in after-dinner oratory. He is survived by Mrs. Wallace Henry and a son and daughter. The gap he leaves will indeed be difficult to fill. A. V. C.

Dr. H. B. Brackenbury, Chairman of Council writes:

One knew that for some time past Wallace Henry had not been in very good health ; nevertheless, the news of his death came as a real and severe shock. Apart from what it means to the Association, it leaves one with a sense of grievous personal loss. This makes it very difficult to write about the man. What adjectives can one most properly apply to him? Those which first spring to one's mind are, reliable, wise, kind. Always one found him willing to contribute, willing to advise, willing to help ; and always his help was greatly worth having, and his advice well worth the fullest consideration. Long ago his qualities became known to his processional colleagues in the town and county in which he carried on his practice, and, beyond the medical profession, he was trusted in a remarkable degree by those who had responsibility for local administration and who were interested in schemes for social welfare. In the central work of the British Medical Association he was indefatigable for many years, and his sterling merits, without any very striking incidents to display them, were widely appreciated by his colleagues, so that he was elected first as Deputy Chairman and then as Chairman of the Representative Body. His value to the Association in these offices was great. He spared no effort to fill them worthily, and was even meticulous in the thought and care which he devoted to preparation for the duties which he was called upon to accept and perform. Ever since, he has been ungrudging and zealous in his work for the Association, both locally and centrally, especially as a member of Council and of the Organization, Ophthalmic, and other Committees. His colleagues on the Council have long regarded him as one of the most valuable and respected of its members, and latterly his position has been such that no one has been held in more truly affectionate regard. The profession collectively and his friends individually will feel his loss more than can, at the moment, be realized.

The Treasurer, Mr. N. Bishop Harman, writes:

The news of the death of Mr. Wallace Henry will come as a shock to many of his colleagues. It was only last week that he attended the meeting of the Ophthalmic Committee. We knew he was suffering from much physical weakness, and we were filled with admiration that, despite this handicap, he was able to maintain his mental force and sound judgement at its accustomed high level.

During a busy life as an ophthalmic surgeon he managed to play many parts, and to play them as though each was the essential interest of his life. A recognition of this by his colleagues came when he was elected Chairman of the Representative Body in 1921. The trust reposed in him by the promotion to this high and responsible office was amply justified. He proved himself diligent in his attendance on the many committees of the Association through which so much of the hard labour of medical affairs is performed ; and at the great account of these activities at the yearly meeting of the Representative Body he displayed such a frank and genial disposition, and withal such a mastery of business, as marked him out as an ideal chairman.

In later years his interest in Association affairs was mainly centred in the Ophthalmic and Building Committees. He may be fairly described as the father of the Ophthalmic Committee. Certainly he was the prime mover in its formation, and its first chairman. Through his work and his early exploration of future possible developments there came the formation of the National Ophthalmic Treatment Board, which bids fair to secure the rightful place of ophthalmic medical practitioners in this branch of medicine, and to provide for the many a necessary form of medical treatment in a manner that is both economically and medically satisfactory. His interest in the success of this work led him to make considerable sacrifice both of time and of money. He refused a tempting offer of practice rather than risk jeopardizing the success of this Association scheme.

As an ophthalmic surgeon in a great industrial centre he did much to assist researches that aimed at ameliorating the lot of operatives whose occupation entailed close and continuous eye work. He carried out, at the instance of the Medical Research Council, experiments in the provision of special forms of spectacles for those workers in hosiery factories who were required to undertake the difficult and trying form of manipulation known as "linking." The results of that work have proved a boon. He also gave much attention to the effect of disease on the light sense, and the apparatus he devised for measuring this sense and its variations showed a high degree of ingenuity and practical adaptability.

The work that he began and did will not cease with him. Others will carry it on, and justify his enthusiasm for it. But we shall miss his rugged yet kindly features in the Council chamber and the committee room, and be sufferers from the loss of his shrewd judgement and wise counsel.

The Medical Secretary writes:

The Association has been hard hit recently in its central personnel. Within the last few weeks we have had the deaths of E. B. Turner and W. E. Dixon, both of whom filled a very conspicuous place in the central ranks of the Association, and now comes the death of one who was just as well known and who seems just as irreplaceable. By the fact of being Chairman of the Representative Body (an office which he held from 1921 to 1924) Wallace Henry had to take an active part in practically every committee of the Association, but, both before he took that office and since he laid it down, his work for the Association was great and invaluable. Others will speak of his work in Leicester and the Midlands, but it was that work which trained him for central activities and made him so useful here. It was largely the fact that he had trained his own men so well and had attained such a position

of influence in his own area that made him so useful at headquarters. There was hardly a practical problem that arose centrally which the Leicester men, under his guidance, had not already thought out. This was particularly the case with contract practice problems. The work of the Association on that side has been greatly influenced by the practical experience gained by Wallace Henry and his colleagues in the organization of what is undoubtedly the most successful example of a public medical service that exists in this or probably any other country.

He was secretary of his Division for nineteen years, representative with short intervals from 1909 to 1929, secretary of the Midland Branch from 1922 to 1926, president of the Midland Branch 1926–27, and chairman of the Leicester and Rutland Division in 1930. In our central work he was particularly active on the Medico Political and Organization Committees, of both of which he had been a member since 1919. In addition to being a very useful member of every committee on which he ever sat, he was certainly one of the most popular—a position attained partly by the knowledge we all had that he never spoke unless he had something useful to say, but also by his friendliness and courtesy. As Chairman of the Representative Body he was a great success, handling the difficult business very firmly, but always in a way which gave offence to nobody. He was rightly proud of the position of influence he had attained in the profession, and I shall always remember the night I spent with him on the occasion of the presentation of his portrait by his Leicester colleagues in April, 1930. I think he regarded that as the highest honour he could possibly receive, because, as he said, there is no testimony so valuable as that of the people amongst whom one lives and works. The profession in Leicester and the Midlands regarded Henry with deep affection as well as respect, and this feeling was shared, I think, by everybody who ever worked with him. I cannot refrain from saying how much he was helped and cheered by the support of his wife, who had so often to give him up to the service of his profession, even when they both knew that his health was precarious; and I feel from my knowledge of him that he would have liked to know of this little recognition of an affection and support which he valued so much.

Dr MARSHALL HAVER died at Northallerton, Yorks, on September 30th, at the age of *50, after a long illness*. He had only recently begun work at Northallerton, his previous practices having been at Driffield and Ancaster. After graduation as M.B., B.S. at Durham University in 1905, he spent some years on a cable ship, and then on a large sheep ranch in Patagonia, as medical officer, returning to England to take up private practice. He was for some years a medical officer to the Driffield Cottage Hospital, and medical officer of health for the Driffield rural district. A colleague writes: Dr. Haver will be greatly missed by those who were privileged to be associated with him, for his quiet and genial personality was loved alike by patients and friends. He leaves a widow, but no children. The sympathy of all who knew him will be extended to her and to his father and sister, who live in Sunderland.

The following well-known foreign medical men have recently died: Dr. ALDRED SCOTT WARTHIN, professor of pathology, director of the pathological laboratory, Ann Arbor, and editor of *Annals of Internal Medicine*, aged 64; Professor CONSTANT PICOT, collaborator with the late Professor D'Espine in a well-known work on diseases of children; Dr. ROBERT CLYDE LYNCH, laryngologist, of New Orleans, from a motor accident, aged 50; Dr. JOSEPH ADDISON STUCKY, formerly president of the American Academy of Ophthalmology and Oto-Laryngology, from a motor accident, aged 73; and Professor GOLOVINE, a leading ophthalmologist at Moscow.

Universities and Colleges

UNIVERSITY OF LONDON

At the meeting of the Court of the University of London held on October 7th, Lord Macmillan was unanimously re-elected chairman for the session 1931–32, and Mr. S. L. Lowry deputy chairman for the same period.

At the September matriculation examination 91 passed in the first division and 393 in the second division, while 35 took the supplementary certificate in Latin.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The next series of eight lectures and demonstrations on *tropical medicine*, which are intended for men and women who intend the medical profession proceeding to the Tropics, will be given by Lieut.-Col. G. E. F. Stammers from October 21st to 30th. These courses, in addition to providing simple rules for guidance in regard to preparation for life in the Tropics and personal hygiene, will also embrace a short account of some of the more common diseases, with advice on measures of protection against such diseases and simple methods of self-treatment. Particulars can be obtained from the secretary, London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE

The following entrance scholarships have been awarded:

Senior Entrance Scholarship in Science: G. W. Hayward and A. Jones (equal). Junior Entrance Scholarship in Science: L. H. Hoffer. Entrance Scholarship in Arts: E. P. Mountford. Jeaffreson Exhibition: G. H. Darke. Shuter Scholarship in Anatomy, and Physiology: J. Smart.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examination indicated:

D.P.H.—Part II.: S. Canter, R. F. Corlett, J. Hatton, E. W. Jones, J. N. Parrington, L. G. Thomas, F. J. Welton, E. B. Whittingham.

UNIVERSITY OF GLASGOW

The following candidates have been approved at the examination indicated:

Final M.B., Ch.B.—Anne C. Muirhead, Eleanor B. Aldrich, W. S. Bell, P. Binnington, N. Burrell, M. D. Black, J. C. Burr, A. M. Brown, C. M. B. Cade, A. Cameron, R. Cameron, D. Cassie, R. M. Crain, W. N. S. Donaldson, A. T. Elder, Mabel Fisenbacher, J. B. Fleming, A. B. Fordyce, A. C. Forrester, P. K. Fraser, Janet C. B. Fre[illegible], Muriel O. Gibson, D. L. H. Hay, J. Hosgood, G. H. Johnston, R. Laird, J. Lamb, G. C. Lamond, J. Laughton, R. Livingstone, R. L. Low, R. J. Lumsden, A. Lyall, D. MacDonald, T. J. B. MacGeoghan, D. M. Mackechnie, R. B. M'Millan, J. S. M'Nair, D. W. MacNish, H. J. MacPherson, A. O. Maclodrum, R. Maxwell, T. W. Miller, W. L. Milne, G. B. Morton, H. M. Munro, H. G. Neil, H. B. Oliver, W. T. W. Paxton, A. W. Purdie, J. L. Rentoul, J. Renwick, W. A. Roxburgh, A. Russell, N. Sinclair, J. B. K. Smith, Jean G. P. Stephen, H. Stevenson, J. S. Stewart, H. Stirling, F. W. Thomas, J. S. Topping, J. B. Wallace, J. H. Wardrop, R. A. Wilson, G. Wright.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examination indicated:

First Medical—Part I. Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology.

H. D. Clarke (passed on high marks), F. A. Smyth, A. G. Tuckey, J. B. H. M'J. Horgan, J. A. Lavery, F. C. Roulette, D. G. Wilson, Ethel S. Wilson, Una M. Irwin, E. W. McCutcheon, W. A. Clarke, T. J. M'Gegg.

PHARMACEUTICAL SOCIETY

The Hanbury gold medal of the Pharmaceutical Society of Great Britain has this year been conferred upon Dr. Hermann Thoms of Berlin for his services to the science of pharmacy, and the Perera medal to Mr. H. G. Rolfe. The Jones Prize scholarship has been awarded to Mr. F. E. Read, and the winners of the three Leverhulme scholarships were Messrs. P. Crease, H. W. Bartlett, and J. J. C. Gage.

A special course of lectures on [illegible] will be given in chemistry to modern pharmaceutical problems, by Messrs. Frank Woods and F. L. Pyman, the staff of the pharmacological laboratories, in the lecture theatre, 17, Bloomsbury Square, on October 22nd and succeeding Thursdays, at 5.30 p.m. Admission to the first lecture without ticket; admission to subsequent lectures by ticket only. Tickets of admission to the course (fee 10s.) may be obtained on application to the secretary, 17, Bloomsbury Square, W.C.1.

The Services

No. 14 STATIONARY HOSPITAL DINNER

The twelfth annual dinner of medical officers of No. 14 Stationary Hospital, B.E.F., will be held on Friday, December 11th, at the Trocadero Restaurant, Piccadilly, at 7.15 for 7.45 p.m. Colonel C. R. Evans, D.S.O., will be in the chair. The address of the honorary secretaries is 39, Devonshire Place, W.1.

DEATHS IN THE SERVICES

Lieut.-Colonel Robert George Hetherington Tate, R.A.M.C. (ret.), died after a short illness at Louth, Lincolnshire, on July 17th, aged 52. He was educated at Trinity College, Dublin, where, after a distinguished student career, he graduated B.A., M.B., B.Ch., and B.A.O., in 1902, and obtained the M.D. degree and the D.P.H. in 1903. After acting as resident medical officer at Steevens's Hospital, he studied mental disorder at Londonderry, Omagh, and Banstead. He entered the R.A.M.C as lieutenant in January, 1906, and during his service in India he was officer in charge of hygiene and sanitation (Ambala area), and assistant to the C.M.O., Lahore Division, as officer in charge of the central laboratory. He went to France with the 6th Division in September, 1914, and in the first few months was twice blown up in the front line, after which he served as assistant to the C.M.O. of Étaples area, then of the Trouville area, and in 1918 was second in command of the 72nd General Hospital. In 1919 he was medical officer in charge of hygiene for the whole area of lines of communication. He was twice mentioned in dispatches, was appointed brevet-major in 1915, and acting lieutenant-colonel in 1917. From 1920 to 1923 he was assistant to the C.M.O. (Scottish Command) as officer in charge of hygiene. From September, 1923, to April, 1926, he was in charge of the military hospital in Newcastle, Jamaica. He retired from the R.A.M.C. as lieutenant-colonel on July 3rd, 1926. For the last five years he had been an assistant county medical officer for the Lindsey County Council, and resided at Louth.

Medical News

Professor D. P. D. Wilkie will deliver a lecture before the Harveian Society of London, entitled "The surgery of the spleen," on Thursday, November 19th, at 11, Chandos Street, W.1, at 8.30 p.m.

A meeting of the Royal Microscopical Society will be held at B.M.A. House, Tavistock Square, on Wednesday, October 21st, at 5.30 p.m. Papers will be read by Dr. R. S. Clay, Mr. T. H. Court, and Dr. G. M. Findlay.

The annual general meeting of the Society of Medical Officers of Health will be held at 1, Upper Montague Street, Russell Square, W.C.1, to-day (Friday) at 5 p.m. Dr. C. Killick Millard, M.O.H. Leicester, will deliver his presidential address on the legislation of voluntary euthanasia.

A meeting of the Medico-Legal Society will be held at 11, Chandos Street, W.1, on Thursday, October 22nd, at 8.30 p.m. Dr. D. H. Geffen, medical officer of health, Enfield Urban District Council, will read a paper entitled "Causes of suicide." A discussion will follow.

The eighth dinner of the Royal Northern Hospital Past and Present Residents Dining Club has been arranged for Friday, October 30th, at Frascati's Restaurant, Oxford Street, W., at 8 for 8.30 p.m. The president, Mr. F. W. Harlow, will take the chair, and Mr. A. M. Zamora will be the guest of the evening.

The annual dinner of the Prince of Wales's Hospital Reunion Association will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, November 26th, at 7.45 for 8 p.m., with Dr. J. Browning Alexander in the chair. Price of dinner (exclusive of wines) 12s. 6d.; no tickets will be issued. Members are asked to notify the secretary, Dr. Bertram H. Jones, 47, Queen Anne Street, W.1, of their intention to be present, stating number of guests.

The annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held on the evening of Saturday, November 21st, at the Trocadero, with Sir Norman G. Bennett in the chair. The members of the staff will be "at home" to all past and present students of the hospital on the same day from 9.30 a.m. to 5 p.m. Cases illustrating the scope of the work undertaken by the hospital, especially the treatment of children and the young, will be shown, and the various departments of the hospital and school will be open for inspection. Medical practitioners are cordially invited.

The Liverpool annual cathedral service in aid of the Royal Medical Benevolent Fund will be held at 3 p.m. on October 18th; preacher, the Right Rev. Bertram Pollock, Bishop of Norwich. The Lord Mayor and Lady Mayoress will attend. Members of the medical profession and their friends are cordially invited to this service. Tickets may be obtained from the honorary secretary, 28, Rodney Street, Liverpool.

In response to requests from those interested in archaeology and anthropology the exhibitions arranged in connexion with the Centenary Meeting of the British Association, at the Wellcome Historical Medical Museum, 54, Wigmore Street, W.1, will remain open until Saturday, October 31st. The museum will be open each day, excluding Sundays, from 10.30 a.m. to 5.30 p.m., admission free. The Egyptian exhibition includes the results of past seasons' excavations carried out by the Egypt Exploration Society at Tell-el-Amarna and Armant.

The October monthly missionary travel talk on the wireless will be given next Sunday, October 18th (St. Luke's Day). The speaker, Dr. Agnes Fraser, was for twenty-five years the comrade and helper of Dr. Donald Fraser, in the Scottish mission in Livingstonia, Nyasaland. Her talk on "Doctoring in Central Africa" will be given in the National B.B.C. programme from 4 to 4.15 p.m.

The Fellowship of Medicine and Post-Graduate Medical Association announces that the following lectures will be given at the Medical Society of London, 11, Chandos Street, Cavendish Square: October 21st, at 4 p.m., Mr. Kenneth Walker, "Prostatic enlargement" (no fee); October 19th, at 8.30 p.m., Dr. Maurice Davidson, "The clinical aspects of pulmonary fibrosis," and October 21st, at 8.30 p.m., "Intrathoracic new growths," in connexion with the series of M.R.C.P. evening lectures; fee for each lecture, 10s. 6d. A free post-graduate demonstration will be given at the Royal Waterloo Hospital on October 21st, at 3 p.m., by Dr. Kenneth Playfair, on "The value of the electrocardiograph in diagnosis"; and on October 23rd, at 2 p.m., at the Miller General Hospital, S.E., Mr. Arthur Gray will give a free demonstration of gynaecological operations. From October 19th to 31st a course in diseases of children will be given at the Hospital for Sick Children, occupying the mornings only, fee £5 5s. Courses during November will include medicine, surgery, and gynaecology, at the Royal Waterloo Hospital; neurology, at the West End Hospital for Nervous Diseases; ophthalmology, at the Royal Westminster Ophthalmic Hospital; and proctology, at the Gordon Hospital and St. Mark's Hospital. Copies of all syllabuses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The series of post-graduate clinics arranged by the University of Sheffield was resumed on October 9th at the Royal Hospital, Sheffield, and will be continued till November 6th. From November 13th to December 11th they will be held at the Royal Infirmary. The clinics are open free to all medical practitioners.

A course of post-graduate demonstrations will be given at the Manchester Hospital for Consumption, Hardman Street, Deansgate, Manchester, on Wednesday afternoons at 4:30, commencing on November 4th, when Dr. H. R. Clarke will discuss the diagnosis and treatment of early pulmonary cases. All graduates and students of medicine are invited to attend. Tea will be served at 4.15 p.m.

The autumn session of the South West London Post-Graduate Association will open at St James Hospital, Ouseley Road, Balham, S.W., on Wednesday, October 28th, at 9 p.m., when Dr. R. G. Canti will give a film demonstration of tissue growth. The lecture demonstrations will be continued on succeeding Wednesdays until December 16th.

At a meeting of Southwark practitioners, held at the Evelina Hospital on October 6th it was decided to form a Southwark medical society. The meeting was addressed by Dr. A. F. Heald, organizing secretary of the London Panel Committee, and Dr. G. de Swietochowski, president of the Paddington Medical Society. Dr. E. Stungo was elected chairman, and Dr. J. McFadden treasurer and secretary.

The Socialist Medical Association, which was formed a year ago, has been granted affiliation to the Labour Party as a Socialist society, and is also affiliated to the International Socialist Medical Association. It includes in its programme "a socialized medical service, both preventive and curative, free and open to all." Further objects are the dissemination of the principles of socialism within the medical and allied services, and the stimulation of interest in health questions among members of the Labour, Socialist, trade union, and co-operative movements. The secretary is Dr. C. W. Brook, 72, Balham Park Road, S.W. 12.

Messrs. Ernst Leitz (Wetzlar) have recently completed their 300,000th microscope, which, in accordance with their usual custom of dedicating each 50,000th microscope to a famous scientist or institution, has in this instance been presented to Professor Dr. Ludwig Aschoff of the Pathological Department, Freiburg University, Germany. The following is a list of former dedications to eminent scientists and institutions on the completion of each 50,000th: German Sanatorium for Consumptives, Davos; Robert Koch; Paul Ehrlich; Professor Heidenhain; Institut fur Schiffs- und Tropenkrankheiten, Hamburg.

The October issue of the *Leprosy Review*, the quarterly publication of the British Empire Leprosy Relief Association, contains a valuable survey of the work of the League of Nations in connexion with the campaign against leprosy. Dr. Stanley Smith contributes a report on the progress in the Kigezi district of Uganda, and Dr. R. G. Cochrane comments similarly as regards Kenya, Zanzibar, and Tanganyika. Practical details of treatment are recorded by Dr. F. G. Rose, medical superintendent of the Mahaica Leprosy Hospital, British Guiana. Dr. Davidson of Emjanyana mentions that he has been using large doses of alepol, but has had to discontinue them owing to the severe general and ocular reactions. The report can be obtained from the offices of the Leprosy Relief Association, 29, Dorset Square, N.W.1, price 2s.

A further tribute to the memory of the late Professor W. E. Dixon is to be found in the issue for September 26th of the *Archivos de Medicina, Cirurgia y Especialidades* of Madrid, where he is described as one of the most eminent men of science in the United Kingdom.

Professor Pavlov has obtained 184,000 roubles from the Soviet Government to complete the building of his biological station at Koltouchi, near Leningrad.

On the occasion of the twenty-fifth anniversary of his professional activities, the students and friends of Professor Luigi Devoto, the founder and director of the Milan clinic for occupational diseases, have founded a prize of 10,000 lire, to be awarded every two years to the best work on industrial pathology. The work, which must be written in Italian, English, French, Spanish, or German, must be sent to R. Istituto Lombardo di Scienze e Lettere, Milan, by December 31st. Non-Italian competitors must send an abstract of their work in Italian or French.

In 1930 Vienna possessed 4,732 medical practitioners of whom 500 were women, and 1,823 dentists, or a proportion of one doctor to 380 inhabitants and one dentist to 1,000 inhabitants.

Letters, Notes, and Answers

All communications in regard to editorial matters should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proof.

All communications with reference to ADVERTISEMENTS as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange for all).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aetiology, Westcent, London*.
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westcent, London*.
MEDICAL SECRETARY, *Mediscera, Westcent, London*.

The address of the Irish Office of the British Medical Association is 16 South Frederick Street, Dublin (telegrams, *Bacillus, Dublin*; telephone, 62350 Dublin); and of the Scottish Office, 7 Drumsheugh Gardens, Edinburgh (telegrams, *Associate, Edinburgh*; telephone, 24361 Edinburgh).

QUERIES AND ANSWERS

Survival after Prostatectomy

Mr. W. S. DICKIE, F.R.C.S. (Middlesbrough) writes: A man has just died aged 93. He had a pro-tatectomy done twenty-three years ago. I should be glad to know of any cases of longer survival.

A Special School Needed

"A. R." writes: Five years ago I attended a boy of about 6 years of age. His people said he was "rather funny-tempered." I found that he was slightly cretinous, and treated him with thyroid which acted very quickly. His father carried on the treatment, and I saw him once or twice when he told me how the child was going on. He was attending a preparatory school, and was very backward at his work. He has just gone as day scholar to a grammar school, and the other boys have found that he is slightly different from them, and are giving him rather a bad time. This is gradually throwing him back, and his father has asked me what he can do in the matter. I would like to know of any school that looks after this sort of youth. The boy is now 11. Reasonable fees can be paid.

Prophylaxis of Lumbago

Dr. E. PROTHEROE SMITH (Redditch) writes in answer to "S. L." (October 3rd, p. 637): This complaint is most commonly due to fibrositis around the sacro-iliac joints, associated with some arthritis, and giving rise to subluxation of those joints. I have for many years had attacks as described by "S. L.," and have found benefit from deep massage, radiant heat, Droitwich brine baths, and long courses of salicylates, but I have most faith in Salts (Birmingham) sacro-iliac belt—first recommended to me by Mr. Naughton Dunn—which holds the pelvis in a firm grip, is comfortable to wear, and enables me even during an attack to get about, drive my own car, and play golf. It is, of course, essential to eliminate nasal and oral sepsis—a case of mine was cured by extraction of one septic tooth. I have learnt to associate highly coloured and strong-smelling urine with the probable onset of an attack. For the immediate relief of pain I recommend dry cupping (by pump), novalgin, and gorun tablets.

Income Tax

Cash Basis—Sale of Practice

"A. C." has been advised that he will have to make up accounts on a bookings basis for the fifteen months to June 30th, 1931, when his sole practice was sold. He points out that he had brought that debts unpaid when a practice was sold were capital and not taxable.

*** Such debts are not taxable as income in the years in which they are received. It therefore A. C. was not required to deduct from the cash basis for the final periods he would include as income of those periods the

whole of the cash received thereon, but would not pay on the amount of the subsequent receipts As it is, his last accounts will exclude cash received in those periods in respect of earlier fees, but will include the value of fees for work done in those periods but paid for later Probably the ultimate difference will not be substantial

Cost of Maid

"D R" asks what is the general proportion of the cost of a maid's services—covering board and lodging in addition to keep—where she is employed partly on the professional portion of the premises

*** No general rule of any validity can be laid down, because so much must depend on other circumstances—for example, the size of the practitioner's family may considerably affect the ratio of private to professional employment Probably one half is a fairly common basis, but would never, or very seldom, be exceeded, and might be an excessive allowance in many cases

Earnings of Wife

"S M E" earns about £500 a year from panel and private practice, and his wife earns about £120 a year from professional (mostly locumtenent) work They use the same surgery etc but are not in partnership Can they claim to be assessed separately?

*** On the facts there appear to be two distinct practices and we consider that the earnings should strictly be assessed separately But provided that the facts are briefly stated to the inspector of taxes, and that "wife's earned income relief" is claimed the result is the same The relief in question for 1931 32 will be an addition of £45 to the married personal allowance of £150, making £195 in all

Cash Basis

"R T" is a partner in a firm which has for years been assessed on the basis of cash takings The inspector of taxes now insists that the "bookings" basis shall be applied after this year

*** In our experience a departure from the cash basis is not insisted on where there is reasonable ground for assuming that the true income is fairly steady—at any rate, is not showing a definite upward tendency Calculating liability from bookings and deducting a proper amount for bad debts and allowances is a troublesome task, because it implies some scrutiny of each debt outstanding at the end of the year to value it properly All this work is thrown away if the income of the practice is steady But if it is increasing then the cash income tends to lag behind the value of the bookings with the result that the cash basis is too lenient to the taxpayer If "R T" can show that the value of the year's work of the practice is *not increasing* we suggest that he again urges on the inspector the large amount of really valueless work he is asking to have done Unfortunately it is beyond dispute that the cash basis is not legally correct and that, strictly, outstanding bookings should be valued each year

Guide to Income Tax

"J A K" asks whether there is any book dealing with income tax from the general practitioner's standpoint

*** No We are not aware of any such publication, though some of the small guides contain classified information with regard to expenses deductible in the case of professional profits and similar assistance

LETTERS, NOTES, ETC.

Unilateral Convulsions in ? Diphtheria

Dr N M Mian writes I was called to attend one night a child suffering from fever duration one day On physical examination, the child had dyspnoea, and there were spasmodic convulsions present on the left arm and leg The child had fever (104° F) and looked very seriously ill Occasionally a peculiar shrill voice was also produced, and it appeared as if it was due to a spasm of the larynx Lungs were quite normal and pulse quick and full After excluding all the diseases characterized by spasmodic convulsion I suspected diphtheria, and so examined the throat. A definite cellulo plastic exudate was found covering the fauces and appeared to be extending downward into the pharynx and larynx Keeping the latter finding in view, I commenced treatment for diphtheria The very first dose of diphtheria antitoxin had so marvellous an effect on the health of the child that convulsions stopped next morning and dyspnoea became considerably less severe The dose when repeated, brought about normal temperature, calm and quiet breathing, and disappearance of the diphtheric membrane from the fauce The child recovered completely in about a week, and is, up till now, hale and hearty

St Mary's Hospital Dinner

Dr C M Wilson (dean of St Mary's Hospital Medical School) writes In your account of the annual dinner you refer to me as a defiant optimist, and proceed to do your best for me in that lonely role What I actually said was that the size of a medical school is ultimately determined by the size of the hospital attached to it and that if the board of management would provide a sufficient number of beds I would undertake that the expansion of the school did not lag behind I did not say that the Rugby club reached the final for the first time in its history Though my activities on behalf of that club have been exaggerated by the credulous, I am not ignorant of its history The club had been in the final half a dozen times before I entered the school.

Prescribing British

Dr Ian E McCracken (Gosforth) writes: There must be a considerable importation of Continental waters in bottle into this country, and while there appears to be no doubt about the value of these waters when drunk fresh from their source, yet doubts have been expressed as to their value after bottling and transportation For many years past a prominent physician at a leading Continental spa had been advising a patient of mine to drink a bottle of the spa water daily in the intervals between his periodical visits there In September of this year, however, this same physician wrote to me saying that he was convinced that the bottled spa water was valueless, and that as an alternative he was now prescribing for all his patients an equivalent quantity of plain boiled water to which had been added a squeeze of lemon and sufficient tea to produce a pale sherry-coloured beverage I give my experience in this connexion in the hope that others may feel that without detriment to their patients, they may help the reduction of imports

A Disclaimer

Dr Hubert Norman (Camberwell House, S E) writes May I correct a statement which has appeared in the press with reference to the Salvage case? I have been reported as stating that this man suffered from a peculiar form of insanity, which is liable to appear soon after the age of puberty, to reach its apex about the age of 23, and then to wane and pass away in the course of years Any such statement was published without my knowledge or authority and it is not descriptive of any form of insanity with which I am acquainted

Testimonial to Sir Ronald Ross

Further contributions to the Ross Award Fund since June 30th, including £1,000 from Mrs E B Holt (Brigg, Lincs), have brought the total amount to £15,409 1s 6d Donations should be sent to Lloyds Bank, Ltd, 110, High Street, Putney, S W.15

Medical Golf

There were seventy five entries for the Medical Golfing Society's meeting at Prince's, Sandwich, held by kind permission on October 10th and 11th The various competitions resulted as follows *Singles* v *Bogey*—Michael Smyth (6), 6 up, 1 H P Kolesar (scratch), 2 up, T A Torrance (plus 3), 1 up *Bogey Foursomes*—R W. Bristow and W H Lamplough won, after a tie with D S Gordon and L C Budge, at 4 up A C Rusack and H E Scoones, 1 up *Canny Ryall Cup*—H Gardiner Hill won with the very fine score of 71 plus 1 = 72 George Dawson 82 less 9 = 73, second L C H Budge (89 less 14 = 75) and H Chapple (85 less 10 = 75), third T. A Torrance, 73 plus 3 = 76

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 51, 52, 53, 54, 55, 58 and 59 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 231

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

333 Serous Meningitis and Infectious Mononucleosis

The former concept of "serous meningitis" was abandoned when the bacterial origin of inflammatory processes was demonstrated, but more recently some cases of "aseptic meningitis" have been recorded. A. Hecht Johansen (*Acta Med. Scand.*, July 27th, 1931, p. 269) records a case of infectious mononucleosis in which grave meningeal symptoms occurred at the onset of the illness. Johansen considers that the sequence of symptoms may assist in elucidating the etiology of this condition. A man, aged 28, was admitted to hospital suffering from "continued fever." Two weeks earlier he had had severe headache, drowsiness, and impairment of memory. He worked for one week, in spite of increasing headache and a morning temperature of 100.4° F., which rose at night to 102° or 103°. There were no rigors or sweating. He lay curled up, with closed eyes, and complained of agonizing headache. There was lassitude and some stupor with nuchal rigidity, but no dysphagia or sore throat, and no evidence of visceral disease, ear involvement, or ophthalmoplegia. Kernig's sign was present. The cerebrospinal fluid was clear but under pressure, and the cell count was increased; no bacteria were found, and the Wassermann reaction was negative for it as well as in the case of the blood. A differential blood count showed a definite lymphocytosis. An acute tonsillitis ensued, with a greyish exudate on tonsils, but no diphtheria bacilli were found. The tonsillar sloughs persisted until the third week after admission. The patient recovered completely after five weeks' illness. Johansen suggests that other cases regarded as "serous meningitis" associated with sore throat were actually cases of infectious mononucleosis, and that blood examinations should always be made.

334 Cardiac Influenza

H. L. G. Gérard (*Thèse de Paris*, 1931, No. 297), who records 17 cases in patients aged from 18 to 71, states that cardiac influenza consists almost entirely of functional disturbances, which may be nervous, myocardial, or neuromuscular (bradycardia). These functional disturbances do not as a rule outlast the period of toxi-infection, but in exceptional cases they may persist for a long time. In rare instances they may give rise to symptoms of severe cardiac insufficiency, which generally clears up under appropriate treatment without leaving any trace. The effect of influenza on pre-existing heart disease is extremely variable, but a possible aggravation must always be expected. The likelihood of recrudescence of infections such as syphilis or acute articular rheumatism must also be considered. The prognosis should always be guarded, even if the attack is slight.

335 Erythema Nodosum as a Tuberculosis Problem in School Children

A. Wallgren (*Nordisk Medicinsk Tidskrift*, August 1st, 1931, p. 493) regards as a bygone stage the teaching that erythema nodosum is a closed form of tuberculosis, for the investigations of recent years have shown that tubercle bacilli are often demonstrable in the swallowed sputum. Since the autumn of 1929, he has examined for tubercle bacilli the contents of the stomachs of 27 school children, between the ages of 7 and 14, suffering from erythema nodosum. In 12 instances he found tubercle bacilli, which had evidently come from a focus in the lungs. Only slight, or even negative, *x*-ray findings were recorded in 10 of these cases. In 10 other cases there were moderately well-defined *x*-ray changes in the lungs, and in the remaining 7 cases these changes were extensive. The more marked the *x*-ray changes in the lungs, the greater was the frequency with which tubercle bacilli were found in the contents of the stomach; among the 10 children in the first group, whose lungs showed few or no *x*-ray signs of disease, there was only one whose stomach contained tubercle bacilli. It is thus possible, by means of *x*-ray examinations and a search for tubercle bacilli in the contents of the stomach, to form a fairly definite opinion as to the infectiousness or the reverse in any given case of erythema nodosum in a school child. In order to ascertain the course of the disease when there is an open primary pulmonary focus associated with erythema nodosum, the author has repeated the examination of the contents of the stomach from time to time, of 6 children thus examined two months after the acute stage of the erythema nodosum, as many as 5 still harboured tubercle bacilli in the stomach. One child, in whom tubercle bacilli were repeatedly found, did not become negative in this respect till six months after the appearance of the erythema. It probably takes about half a year for a primary open tuberculous focus in the lung of a child to close, and during this interval the child should not be allowed to infect his healthy school fellows, but should be given sanatorium treatment.

336 Abdominal Pain and Skin Diseases

I. R. Trimble (*Journ. Amer. Med. Assoc.*, June 13th, 1931, p. 2010) calls attention (with notes of 15 cases—13 children, 2 adults) to a syndrome which is of importance in the differential diagnosis of acute abdominal conditions. It is characterized by the occurrence of the erythematous group of skin diseases (purpura, erythema, and urticaria) with abdominal and arthritic pains, angioneurotic oedema, and the presence of albumin, blood, and casts in the urine. The skin manifestations were the most constant, idiopathic purpura occurring in 14 instances, erythema in 6, angioneurotic oedema in 6, and urticaria in 5. Abdominal pain, sometimes severe, was present in all but two of the cases, and almost invariably preceded the appearance of the skin manifestations. Haemorrhages, small or large, in the bowel and mesentery may be revealed at an exploratory laparotomy, and are the obvious cause of the pain. Eight of the cases were accompanied by albumin, blood, and granular casts in the urine. The similarity to allergy in these cases is striking, but without bacteriological and immunological investigations the theory that these conditions are manifestations of an allergic phenomenon is not proved. All the patients recovered.

337 Asystole due to Right Ventricular Stenosis

E. S. Mazzei (*Rev. de Méd.*, July, 1931, p. 493) believes that the term asystole should only be employed in cases of total cardiac failure, and, since this is not always present, the terms right or left asystole are more correct. In 1906, Bernheim described a special type of right asystolic due not to dilatation, but to stenosis of the ventricle, which is caused by a marked deviation of the interventricular septum to the right. In this condition, named the syndrome of Bernheim, there are two periods of development. The first has an anatomical stage which is latent, insidious, and without clinical manifestations, and a clinical stage of more rapid evolution, characterized by the signs and symptoms of muscular incapacity of the ventricle. The second period also may be divided into two stages: that of obstruction attributable to stenosis, and the asystole proper. During the first of these there appear signs of retardation of the circulatory return in the venae cavae, such as dilatation of the veins of the neck and slight cyanosis of the face; these manifestations gradually extend to the extremities. In the second period, the terminal one, disturbances of the pulmonary circulation supervene. The characteristics of the syndrome then are: progressive right ventricular stenosis; failing of the ventricular myocardium; and displacement of the

ventricular septum, which in time increases the stenosis and adds more and more to the myocardial insufficiency. Post-mortem findings fully explain these signs and symptoms, and the pathological anatomy and pathogenesis of the condition are described. Short notes of two cases are also given.

338 Pseudo-Neoplastic Syphilitic Hepatitis

A. CADE and M. MILHAUD (*Journal de Méd. de Lyon*, August 20th, 1931, p. 487) state that in addition to the ordinary syphilitic perihepatitis, and the rarer purely gummatous type, there is a third form of syphilitic sclero-gummatous hepatitis which may produce hypertrophy and deformity, simulating a hepatic or extra-hepatic tumour, demanding surgical intervention. This so-called "surgical" type may assume a pseudo-neoplastic form, when cachexia follows changes in the shape, volume, and consistence of the organ. It may simulate primary cancer of the liver, or a secondary metastasis from another organ, and the differential diagnosis is often difficult. A specific history, and the clinical stigmata of chronic syphilis, are often absent. Splenomegaly is a very important indication, but this is not always present. Slow growth and minimal changes in the general condition suggest the possibility of syphilitic hepatitis, and the Wassermann test must always be employed. Exploratory laparotomy does not always determine the diagnosis, and it may be necessary to try anti-syphilitic treatment, preferably mercury and bismuth, which will usually give a favourable result unless they are employed too late. The authors have collected twenty-three cases. In a married woman, aged 46, there was a tumour of the left hepatic lobe, with chronic progressive nephritis; the spleen was not palpable, though the Wassermann and Hecht reactions were strongly positive. Full courses of neosalvarsan and of mercuric cyanide were given, and the tumour diminished in size. Nine months later the patient had a course of acetylarsan. Albuminuria and anasarca persisted, but the tumour had disappeared. Eighteen months later the urine was normal; the general health was excellent, but there was slight persistent oedema of feet. The Wassermann and Hecht reactions remained strongly positive.

Surgery

339 Mammary Enlargement following Prostatectomy

E. CONDOLEON (*Zentralbl. f. Chir.*, July 18th, 1931, p. 1821), who eleven years previously (ibid., No. 36) had published two cases of enlargement of the mammary glands following prostatectomy, has seen a similar case in a man, aged 62, who noticed bilateral mammary enlargement five months after suprapubic removal of adenoma of the prostate. The enlargement, which was somewhat tender, lasted a few months and then gradually subsided. [illegible]heimer (*Deut. med. Woch.*, 1927, No. 21) published [illegible]ear cases under the title of "Gynaecomasty following [illegible]omy." The occurrence of these five cases makes [illegible] that the association of prostatectomy and [illegible]nlargement is not a mere coincidence, and [illegible] explanations. According to the first, the [illegible]n internal secretion which inhibits the [illegible]he male breast; the second explanation [illegible]ation of the vasa differentia, usually [illegible]omy, disturbs the testicular function [illegible] mammary glands.

[illegible] child

[illegible] in Diabetes

[illegible] 104° F.) (*New Zealand Journ. of Surg.*, [illegible]liar shrill[illegible]ut that, since the discovery [illegible]d to surgical treatment in [illegible]ases charagreater than in non-diabetic [illegible]phtheria, anty in 73 cases of diabetes [illegible]c exudate w operative mortality in [illegible]be extendirent. The necessary [illegible]eeping the lost-operative acidosis [illegible]aling of tissues when operating on diabetic cases are as follows: a good state of general nutrition in the patient, abundant glycogen storage, freedom from ketosis, and a not unduly higher sugar content of the blood. The patient should not be dehydrated, since this predisposes to ketosis. Local anaesthesia is the most satisfactory; ethylene with gas and oxygen is reasonably safer, but chloroform and ether must be avoided. Insulin should be given three or four days before the operation, and a special daily diet containing at least 100 grams of high-grade, easily assimilated carbohydrate per day. About three hours before the operation, the patient should be given half to one ounce of oatmeal in the form of gruel, with two teaspoonfuls of glucose, preceded by a dose of insulin. After the operation, acidosis must be controlled by large amounts of insulin, and carbohydrate must be freely given, with 300 c.cm. of 10 per cent. glucose-saline solution by rectum immediately. Gangrene is the gravest surgical complication of diabetes; it occurs in about 3 per cent. of cases, and is most common in patients over the age of 60. The sequel known as "diabetic acute abdomen" is an occasional feature of marked ketosis or incipient coma, and may closely simulate an acute inflammatory abdominal condition of the abdomen. The differential diagnosis is difficult, and if any reasonable doubt exists, an exploratory laparotomy is justified.

Surge[illegible]was due to[illegible]d to surgical treatment in [illegible]ases charagreater than in non-diabetic [illegible]phtheria, anty in 73 cases of diabetes [illegible]c exudate w operative mortality in [illegible]be extendirent. The necessary [illegible]eeping the lost-operative acidosis [illegible]aling of tissues when

BELL (*Australian and* [illegible] and puls[illegible] 1931, p. 92) points [illegible]ases charac[illegible]ulin, the risks attache[illegible]c patients are very little [illegible]s. The operative mortali[illegible] 74 per cent., while the tota[illegible]eneral cases was 2.41 per [illegible]es for the control of severe [illegible] facilitating the satisfactory h[illegible]n

341 Intermittent Traction in Operations under Spinal Anaesthesia

[illegible] been a[illegible] (*Journ. Amer. Med. Assoc.*, June 13th, 1931, p. 2029) calls attention to the value of intermittent traction in spinal anaesthesia as a means of overcoming the uncontrollable vomiting reflex which is caused by the downward traction on the liver and stomach necessary to obtain adequate exposure. This annoying reflex can be almost abolished, it is stated, by a method of intermittent traction in which the patient assists in obtaining the required exposure by periodic straining on breathing out forcibly under compression. With forceps on the fundus of the gall-bladder the patient is instructed to strain or blow into a compression apparatus, thereby causing the liver to descend into the wound, where it is held by the forceps. After a few minutes' interval of natural breathing to allow the diaphragm to accommodate itself to the new position, a repetition of the straining causes the liver to descend further; after another interval at a third attempt the patient generally brings the liver sufficiently far down into the wound to allow of its rotation outward, thus affording complete exposure of the gall-bladder and common duct. The lesser curvature of the stomach may be similarly revealed by downward intermittent traction on the transverse colon and mesocolon. It is important to avoid too much traction, and to allow sufficiently long rest periods so that the diaphragm may accommodate itself to the new position of the liver or stomach.

342 Primary Synovial Tumours of Joints

D. M. FAULKNER (*Surg., Gynaecol. and Obstet.*, August, 1931, p. 189) reviews 27 cases of primary synovial membrane tumours of joints (a relatively rare condition) recorded in the literature, and reports 2 personal cases. These neoplasms may be divided into two groups, according as giant cells are present or absent. Their predilection for the knee is remarkable, 25 of the cases being of that joint. The etiology is conjectural, and some hypotheses are advanced as to their causative factors. A type of tumour, the myloplaxoma of the French, which was found in 10 cases, is described. These are not usually malignant. Excepting the synovioma described by Smith and the endotheliomata by Wagner, the tumours without giant cells are all defined as sarcoma of different types, and seem to be more malignant than those with the cells. Diagnosis is difficult, and is rarely made [illegible] operation. Though the prognosis is usually [illegible] these neoplasms, it must be guarded, for [illegible] known to cause death or to recur. [illegible] directed to preservation of life, saving [illegible] tion of joint function. As the possibi[illegible]

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is slight, conservative surgery is justified. In single, pedunculated tumours, early excision of the tumour and pedicle with resection of the synovial base of the pedicle should be made. In diffuse tumours, joint resection and arthrodesis are indicated. A course of radiotherapy should always follow operation. If, after conservative measures, the tumour recurs with invasion of other tissues, high amputation should be performed at once.

343 Gall-Bladder Function after Operations on the Stomach

Symptoms suggestive of gall-bladder disease sometimes follow gastric operations; since in many of these cases the food is passing directly from the stomach to the jejunum, it is possible that these symptoms are due to the absence of the normal reflex emptying the gall-bladder by the stimulus of duodenal contents. H. KALK and K. NISSEN (*Deut. med. Woch.*, July 17th, 1931, p. 1232) have therefore made a cholecystographic study of several cases after gastro-jejunostomy. In all cases the gall-bladder, sharply outlined by tetraiodo-phenolphthalein (injected intravenously), was seen to empty promptly when a meal consisting of egg yolk and cream entered the jejunum. In order to prove that this was purely a jejunal reflex, a similar meal mixed with barium was introduced directly into the jejunum by means of a duodenal tube. The gall-bladder emptied as before, though there was no reflux of the meal into the duodenum. The passage of the tube alone did not cause this effect, neither did the gall-bladder empty when egg yolk and cream were introduced into the stomach in a case of complete pyloric stenosis (before operation). It is concluded, therefore, that emptying of gall-bladder does not necessarily depend on a stimulus the duodenum.

Operative Treatment of Pott's Paraplegia

R. GIRDLESTONE (*Brit. Journ. of Surg.*, July, 1931, 21) advocates early decompression for Pott's paraplegia in adults. This may take the form of laminectomy, costo-transversectomy, or both, but stabilization by bone-grafting of the diseased part of the spine is an essential complement of decompression. Children suffering from spinal caries, if kept at rest long enough, with the spinal column relieved from strain and with metabolism stimulated by open-air conditions, rarely develop severe paraplegia, and can be cured without operation; but in the case of adults operative treatment is generally indicated. The cure of Pott's disease depends on good general health of the patient, and the restoration of spinal stability; by combining grafting with laminectomy the stability of the spine is increased. Paraplegia generally comes on in the first few months of Pott's disease, and the pressure almost always arises from an abscess, granulation tissue, or bone that is accumulating in front of the theca. If the paraplegia advances quickly or progressively during immobilization, decompression is relieved by costo-transversectomy or laminectomy, or both, and in addition a twin graft fixation should be performed to bridge the opening and counteract the local loss of laminae and spines. Early decompression removes the risk to the cord from prolonged pressure, and avoids the complications of paraplegia; the grafting, which helps to complete local immobilization of the spine, protects the spinal column from further erosion, and promotes healing of the lesion. In cases where *x* rays show a spherical, or fusiform but nearly spherical, prevertebral abscess, costo-transversectomy is performed first, and is followed a fortnight after by a graft, which is combined with laminectomy unless the paraplegia is improving. In cases where the paraplegia comes on late in the history of Pott's disease the prognosis is not good, although a case is reported which shows that operation even in a very late stage may be worth while. The technique of grafting is fully described in conjunction with laminectomy, and details are given of twelve cases where the combined operation with or without costo-transversectomy has been performed. In many cases complete recovery is reported; in others considerable improvement followed, but in three instances little or no improvement was seen. After operation the patient remains on his frame or plaster bed for three or four months.

Therapeutics

345 Emergency Treatment of the Alcoholic

I. D. WILLIAMS (*Journ. Nerv. and Ment. Dis.*, August, 1931, p. 161) believes that, in the treatment of alcoholism good methods of metabolic readjustment can be effected without the absolute withdrawal of alcohol, which frequently brings on attacks of delirium tremens. The therapy aims at securing better control of the sympathetic system, which, in this condition, has become entirely disconnected functionally from its cortical and organic control centres. Prompt catharsis is instituted by enemas, high irrigations, and saline cathartics for two or three days in order to reduce the water content of the body. The author claims that this is a true detoxicating process, though it is not directed against any specific toxin, which, indeed, he considers does not exist in alcoholism. In very acute cases in which Kernig's sign or other meningeal phenomena are present, lumbar puncture is indicated to reduce the ventricular pressure and to allow the removal of excess of fluid from the brain. The author argues that experience in poliomyelitis and other infectious conditions within the skull has proved the value of this procedure, and it may therefore be considered likely to be useful in the toxic encephalitic process of alcoholism. As regards medicinal treatment, a mixture of belladonna and hyoscyamus with the fluid extract of xanthoxylus, is recommended, in order to tone up the sympathetic nervous system. Great care in watching the effects of this medication is necessary in view of the possibility of individual idiosyncrasy. Alcoholic drinks may be administered at first with small amounts of water in order to satisfy the psychological demand. It is pointed out that the mere deprivation of alcohol does not remove the effects of previous indulgence, nor destroy the desire for it. By such definite and specific medical treatment as described the craving is reduced or abolished, and the patient is thus brought into a receptive state for the commencement of psychotherapy.

346 Toxoid Immunization against Diphtheria

H. H. RAY (*Amer. Journ. Med. Sci.*, August, 1931, p. 251) is satisfied that the toxoid immunization of children against diphtheria is safe and reliable. He has tried this method in the case of 358 children; of these, 333 received 2 c.cm. of toxoid, 98 per cent. being rendered Schick-negative, while twenty-five received 1 c.cm., and of these only 84 per cent. were immunized. In this series the toxoid was given in two injections of 1 c.cm. on each occasion, at an interval of ten days, and this routine was found satisfactory. The toxoid preparation contains approximately fifty times the amount of media and bacterial protein present in the toxin-antitoxin mixture. The fact that it is resistant to heat, retains its antigenic power, is non-toxic, and is free from horse serum makes it, in the author's opinion, a most desirable preparation. Both local and general reactions followed; their incidence was associated with the age of the patient, the varying possibilities of sensitization to the protein of the diphtheria bacillus of the media proteins, and the differing background of allergy in each case. Children under the age of 8 reacted much less frequently than those who were older. Ray concludes that from 90 to 98 per cent. negative Schick reactions may be expected after the administration of a total dose of 2 c.cm. of toxoid. If a dose of 1 c.cm. alone is given, the number of Schick-negative results usually falls below 90 per cent.

347 Indications for Acetylcholine

I. DAINOW (*Rev. Méd. de la Suisse Romande*, July 25th, 1931, p. 520) briefly reviews the action of acetylcholine, a derivative of choline, on man and animals; in the latter it acts markedly as a dilator of the arteries and arterioles. On this property are based its therapeutic indications. Acetylcholine is the treatment of choice in arteritis, intermittent claudication, Raynaud's disease, and post-operative trophic troubles of the extremities; it has also been used with beneficial results in numerous other conditions,

such as arterial embolisms, cerebral softening due to embolism or arterial spasm, varicose ulcers, scleroderma, and lead colic. The vaso-dilatation is particularly intense in the cutaneous region, feeble in the renal and splanchnic zones, and absent in the pulmonary area. The dose therefore varies from 10 grams to 1 gram daily according to the seat of the disease. The salt employed is the hydrochlorate, and this should be administered subcutaneously; intravenous injections are dangerous and should be avoided; intramuscular injections are less active, and oral administration and local applications are ineffective. Acetylcholine acts only as a vaso-dilator when the blood contains a relative excess of potassium; if an excess of calcium is present its action is reversed. Its use is therefore contraindicated after perifemoral sympathectomy, an operation which modifies the calcium-potassium ratio.

348 Treatment of Undulant Fever

G. S. Schilling, C. F. Magee, and F. M. Leitch (*Journ. Amer. Med. Assoc.*, June 6th, 1931, p. 1945) record a case of undulant fever in a farm labourer, aged 23, in whom the diagnosis was temporarily obscured by a positive agglutination of *B. typhosus* in a 1 in 40 dilution. *Brucella suis*, however, was isolated from the blood and faeces, and the agglutination test was positive in a dilution of 1 in 160. A highly concentrated, relatively soluble autogenous antigen was prepared, and after the intragluteal injection of 1 c.cm. there was a complete and permanent subsidence of the infection in forty-eight hours.

Neurology and Psychology

349 The Nerve Factor in Allergic Reactions

It has long been thought that psychic stimuli influence the occurrence of asthmatic attacks, but owing to the recent interest taken in the part played by allergy in this and similar diseases, the nervous factors have become neglected. F. Diehl and W. Heinichen (*Münch. med. Woch.*, June 12th, 1931, p. 1008) have sought scientific proof of the influence of the mental state by producing a skin reaction with a specific allergen injected intracutaneously, and injecting a second exactly similar dose while the patient was under hypnosis. The size of the second reaction in relation to the size of the first could be increased or reduced at will, by suggesting to the patient that it should cause more, or less, itching and burning than did the first injection. All the factors were controlled carefully, and it was found possible to increase or reduce the area of the reaction by as much as 60–80 per cent., although the normal variations according to the authors are not more than 15 per cent. They conclude that even where a definite allergen is found to be the cause of asthma or urticaria, psychic factors should not be lost sight of in treatment.

350 Treatment of Spinal Ependymal Gliomas

Owing to the dangers incurred in removing intramedullary tumours, treatment by *x* rays has been advocated, surgical measures being restricted to decompressive laminectomy. H. Cairns and G. Riddoch (*Brain*, June, 1931, p. 117) believe that certain intramedullary gliomas can be completely removed without serious permanent injury to the cord. Some spinal gliomas grow rapidly, are richly supplied with blood vessels, and are not sharply demarcated from the surrounding nervous tissue; such tumours are not favourable for surgical removal. Other ependymal gliomas, however, are quite circumscribed and of slow growth. Two such cases are fully described in which considerable recovery of spinal function followed complete excision of the tumours. In one instance the growth extended from the fourth cervical to the third thoracic segment; in the other, from the third to the fifth thoracic segment. Both tumours were quite circumscribed, and were bounded by a layer of compressed fibrillary neuroglia. The cord presented a fusiform swelling at the seat of the growth, and in one case there was slight dislocation of the posterior columns at the site of maximum swelling. Each tumour was connected to the cord by delicate strands, presumably of neuroglia. The cases differed greatly in symptomatology; the symptoms are discussed, and the immediate effects and results of treatment are reported in detail. Accuracy of diagnosis before operation and the need for long and patient after-treatment are emphasized. The authors conclude from these two cases that operative enucleation should have its place in the treatment of at least some intramedullary tumours.

351 Avertin Anaesthesia in Neurological Surgery

In intracranial surgery the inhalation of ether tends to induce swelling of the brain, post-operative vomiting, and pneumonia. W. E. Dandy (*Journ. Amer. Med. Assoc.*, May 30th, 1931, p. 1860) has therefore for a year been using almost exclusively avertin anaesthesia by the rectal method for all major operations on the brain and spinal cord. In more than 250 major cranial operations of every type there has been no mortality due to the anaesthetic, no case of post-operative pneumonia, and no immediate or remote deleterious effect. Moreover, owing to the absence of swelling of the brain it has been possible to reduce the size of cranial exposure in removing tumours, particularly in the case of growths affecting the hypophysis. Avertin was found particularly valuable in the cerebellar approach for partial section of the sensory route in trigeminal tic douloureux, while the complete removal of cerebello-pontine tumours was facilitated, and rendered more safe. Within five or ten minutes of the introduction of avertin into the rectum the patient passes into a sound, peaceful, and apparently natural sleep. Awakening is gradual, without nausea or vomiting usually, and the duration for several hours of loss of memory tides over the most uncomfortable part of the post-operative period. Owing to the length of the anaesthetic influence all necessary shaving of the head may be performed after the avertin has been administered, without encroaching upon the time required for the operation. Dandy remarks that previously reported unfavourable effects seem to have been due to overdosage; he regards the safe dose as being 90 to 95 mg. for each kilo of body weight. Rarely is a greater dose required, and the limit is 100 mg. per kilo; for an ill-nourished patient a dose as low as 50 or 60 mg. is sufficient for complete anaesthetization. Pulmonary lesions, chronic nephritis, and hypertension do not contraindicate its use. There is a marked drop in blood pressure, but this is unimportant, and need not be countered by adrenaline; no secondary depression ensues, and the blood pressure, having returned to the normal after the short depression period, remains steady.

Obstetrics and Gynaecology

352 Child-bearing and Pulmonary Tuberculosis

A. Leyland Robinson (*Journ. of Obstet. and Gynaecol. of the British Empire*, Summer, 1931, p. 338) remarks that Great Britain, despite the attention paid to the ordinary consumptive, makes no attempt to provide for treatment of the pregnant tuberculous woman. Pregnancy reduces the chance of admission to a sanatorium; on the other hand, active tuberculosis is rightly regarded as a bar against admission to the ordinary maternity hospital. He records the conclusions gained from 200 replies to a questionary sent to tuberculosis specialists (not gynaecological or obstetrical specialists), of whom forty were residing abroad in countries among which Germany and Austria are not included. The questions concerned the influence of child-bearing on pulmonary tuberculosis, and the broad general deduction seemed justified that the chances were 5 to 1 against pregnancy proving harmless to a tuberculous woman. Three-quarters of the reporters agreed that child-bearing, especially if repeated at short intervals, had a definite effect in causing development of tuberculosis previously "latent"; any apparently beneficial effect on tuberculosis during pregnancy was usually annulled after delivery. With few exceptions lactation was held to be

contraindicated, and the routine induction of abortion was rejected Induction of abortion, useless and possibly dangerous in late pregnancy, was recommended by a consensus of opinion in a small minority of cases of active disease Indications for it were (1) an early active lesion discovered in early pregnancy, (2) reactivation of a quiescent lesion in early pregnancy, and (3) the association of a mild tuberculosis with an obstetric complication reducing the patient's resistance It was clear that in general the tuberculosis expert had little practical experience of the result of therapeutic abortion, and Robinson advocates that in each case in which induction of abortion is contemplated there should be consultation between the practitioner tuberculosis officer, and obstetrician Therapeutic facilities are inadequate, there should be prolonged sanatorium treatment and discipline, skilled obstetrical supervision artificial pneumothorax when required avoidance of another conception for some time, with spacing of future pregnancies, abstention from suckling and special precautions with regard to infection of the child

353 Tumours of Mesentery Complicating Pregnancy

F Vozza (*Ann Ostet e Ginecol* May 31st 1931, p 501), who records a personal case, illustrates the rarity of the association of mesenteric tumours and pregnancy by the fact that he could find only nine other cases on record, all the patients recovered after operation According to Szenes, 52 per cent of all mesenteric tumours are benign, and 48 per cent malignant, metastases however, are rare In none of the cases was the diagnosis made before operation, the condition being mistaken for an ovarian tumour or a subserous uterine myoma Vozza's patient was a woman, aged 34, in the third month of pregnancy, she had suffered from attacks of abdominal pain for the previous two months, and presented a fluctuating and slightly tender tumour in the left lower quadrant of the abdomen A diagnosis of dermoid cyst of the ovary was made, and laparotomy was performed A tumour about the size of an orange was found between the layers of the mesentery, and on examination after removal proved to be a neurolipoma The patient made a good recovery and the pregnancy continued its normal course

354 Treatment of Gonococcal Vaginitis

In view of the fact that the vagina is less sensitive to heat than the vulva and perineum Dr C R Elliott has devised a means for the continual application of heat to the vagina at a temperature not tolerated by the external parts F C Holden and W S Gursef (*Amer Journ Obstet and Gynecol*, July 1931, p 87) describe this method, in which a bag is introduced into the vagina, and then distended to the required pressure with water at 115° to 120° the heat is increased by three quarters of a degree each minute until a temperature of 130° is reached This heat is maintained for the remainder of the hour In a patient having a normal mouth temperature the thermometer reading in the urethral meatus was 104°, in the bladder 104 1° in the anterior rectal wall 106°, and the posterior rectal wall 104° The heat from the bag is thus distributed in all directions Examination by speculum after treatment shows that the hyperaemia caused a marked increase in the cervical and vaginal secretions After two treatments the cervix is softened, and becomes shorter and broader, thereby causing a widening and shortening of the cervical glands The majority of cases showed a leucocytic increase This method of treatment has been found successful in cases of salpingitis, pelvic cellulitis and tubo ovarian or pelvic abscess The marked increase in the pelvic circulation causes a more rapid revolution in a shorter period of time than with any previous method adopted Since a temperature lethal to gonococci can easily be maintained for an indefinite period of time it proved an excellent treatment for gonorrhoea So far 5,233 treatments have been given in about 500 cases with only one severe burn, which was due to the negligence of a nurse The method is employed in association with rest in bed, bowel hygiene, and sedatives as needed With former methods of treatment the patient was discharged free from symptoms and pyrexia, but with *gonococci* still present, and a persisting pathological state of the tissues By the use of the hot water bag efforts are directed more towards a cure by causing absorption of the pathological exudates and removing the infecting organism, thereby preventing recurrence in the future

355 Transverse Cervical Caesarian Section

After performing 427 cervical Caesarian sections L E Phaneuf (*Surg Gynecol and Obstet* August, 1931, p 202) concludes that the transverse incision offers three distinct advantages it avoids encroaching on the uterine musculature and allows placing of the incision entirely in the lower segment the bladder separation need not be carried so far downwards and repeated operations are simpler to perform In this method the abdomen is opened by a median incision about 6 inches long The peritoneal cavity is entered between the bellies of the recti, and the lower uterine segment is walled off with gauze 1 c cm of gynergen is injected into the thigh muscles at this time The uterine peritoneum is incised transversely above the bladder reflection, and a transverse median incision is made as low as possible in the cervix The child is delivered by raising the head with the hand and pressing the fundus In breech presentations the infant is extracted by the feet and 1 c cm of pitocin is now injected into the thigh muscles If there has been no labour, or if the cervix is but slightly dilated, the placenta and membranes are expressed through the incision, if the cervix is fully dilated, the cord is replaced in the uterus and delivered by pressure through the vagina after closure of the cervical incision in two layers The peritoneal edge at the bladder reflection is sutured to the uterus above the incision The *gauze is now* removed the omentum brought down and the abdominal wall closed in two layers This operation can be readily performed under local infiltration and spinal anaesthesia

356 Ligature of the Ovarian Vein in Post-partum Pyaemia

F v Mikulicz Radecki (*Zentralbl f Gynak* June 13th, 1931 p 1897) agrees with Martens's recent advocacy of the Trendelenburg operation of venous ligature in puerperal pyaemia and with his preference for the extraperitoneal approach He records a successful case in which he is convinced transperitoneal operation would speedily have proved fatal The patient, who had three rigors from the seventh to the tenth day after labour, had signs of pulmonary infarction and staphylococci in blood culture she was in an almost moribund condition when, under spinal anaesthesia, the left common iliac and left ovarian veins were ligatured extraperitoneally Pyrexia had ceased a fortnight later The operation was confined to the left side because the left parametrium only was thickened, and the ovarian vein was found to be displaced to the outer side of the kidney A purulent metastasis in the left kidney pouch was drained at the same time

357 Vaginal Hysterectomy

F Montuoro (*Riv d Ostet e Ginecol Prat* July 1931 p 275) remarks that vaginal hysterectomy although now rarely performed in France (its original home) has recently gained an increasing vogue in other countries he cites the reports of four Austrian and German surgeons who record over 650 vaginal hysterectomies for fibroma with no mortality The abdominal route affords an easier operation, and one in which in certain cases conservative excisions of parts of the uterus only are facilitated but the operative risk is considerably greater By the vaginal route the shock is less and there is less danger of infection of the peritoneum It is indicated whenever possible, in cases of adiposity or cardio-renal disease the risk of post operative hernia or adhesions is diminished Admitting many contraindications to vaginal hysterectomy such as very large myomata, fixation of the uterus, and narrowness of the vagina, Montuoro concludes that the vaginal route is preferable in many cases in which the easier abdominal operation is undertaken n

Pathology

358 Estimation of Renal and Hepatic Function

M. Einhorn, W. H. Stewart, and H. E. Illick (*Med. Journ. and Record*, July 15th, 1931, p. 56) record their experience with uroselectan sodium, skiodan (a monoiodomethane sulphonate of sodium), and thorotrast (thoriumdioxysol). They found that 40 grams of uroselectan sodium in 100 c.cm. of water, injected intravenously, causes no untoward symptoms, and facilitates the radiographic study of the kidneys, ureters, and bladder, thus frequently obviating the introduction of opaque media into the bladder. The renal function can also be studied by determining the specific gravity of the urine one hour after the uroselectan administration, and estimating the precipitate after the addition of a few drops of nitric acid: a high specific gravity and large precipitate indicate good renal function, while but little increase in specific gravity and no precipitate show poor function. Uroselectan sodium is strongly antiseptic and its presence in urine prevents decomposition; though useful in urography it was found to be unsuitable for hepatography. Since its rectal administration causes bowel irritation, this method is contraindicated for urography, and skiodan, which contains 50 per cent. of iodine in firm combination, is preferable. Its aqueous solution is neutral, it is sterilizable by boiling, and it can be given either intravenously or rectally. Its antiseptic properties are similar to those of uroselectan, but it does not increase the urinary specific gravity, and there is no precipitate with nitric acid. Investigations in hepatography with thorotrast, administered intravenously, reveal its value, since in one patient the gall-bladder became visible within half an hour of the first injection, and remained so for two weeks after the third injection. In another patient the liver, spleen, and gall-bladder were visible fourteen days after the last injection, and carcinomatous metastases in the liver have been demonstrated by this means.

359 Erythrocyte Agglutinogens

F. Plattner and H. Hintner (*Wien. klin. Woch.*, July 3rd, 1931, p. 882) have been unable to confirm the observations of Hallauer and others that specific agglutinogens are only loosely attached to the stroma substance of the red cells, and may be completely or partially removed by washing repeatedly in normal saline solution. They find that the group specificity cannot be removed by washing, and cannot be regarded as having only a loose adsorptive connexion with the stroma; it forms an inseparable structure detail of the stroma substance. On the destruction of this stroma substance the specific isoagglutinogen probably passes into the extract, but from this it cannot be taken up into structural combination with foreign cells of another group, probably because [illegible] it in their structure. The isoagglu[illegible] corpuscle cannot be regarded as independent [illegible] there is no place for [illegible]a of the four human blood groups [illegible] inable properties can be differentiated by a superficial layer [illegible] ntigens. The stroma [illegible] soluble substances A and B; the [illegible]e not merely to be dis[illegible] independent agglutina[illegible]me [illegible] stinction lies deeper.

360 The Reticulo-Histiocytic Apparatus and Fat Metabolism

[illegible]Barelli (*Arch. dello Ist. Biochim. Ital.*, May, 1931, 215) finds that the endoperitoneal injection of oil, or of an III in an oily solution, does not cause in the rat the [illegible]ressive changes such as were first described in the [illegible]elium of the rabbit's ear by Fischer-Wasels and Ward. Contrary [illegible]he view held by some pathologists the stainable fat is always [illegible]nt in the secondary follicles of the rat's spleen. In [illegible]eripheral portions of the spleen of normal rats, [illegible]n some of those treated in various ways with injec[illegible] of oil and dyes, the author observed all the stages in the development of distinct [illegible]l stages from the reticulum cells with dislodging-shaped [illegible]ophil granules to young leucocytes with explain [illegible]12 [illegible] and sudanophil granules, which [illegible] the origin of the sudanophil granulocytes in the circulation. In several rats injected with vital stain or Sudan III in oil solution, giant-cell metaplasia was seen in the spleen. Study of the cell destruction in the secondary follicles showed that this followed a marked seasonal rhythm, being pronounced in the autumn, but absent or nearly so in spring and summer; this may explain the divergent views as to the function of the secondary follicles. Barelli has studied histological sections of fatty deposits in the liver from the seasonal standpoint, and finds that scanty deposits occur more frequently in the winter, while in the summer the deposits are abundant.

361 Humoral Changes in Insulin Hypoglycaemia

As a result of experiments on dogs to which large doses of insulin were administered, some being also anaesthetized, F. Rathery and J. Sigwald (*C. R. Soc. de Biologie*, July 16th, 1931, p. 1074) conclude that large doses affect the various plasma elements. Convulsions, observed in some of the animals, or signs of intolerance were independent of the anaesthesia, the insulin dosage, or the drop in the glycaemia. The plasma chlorine figure was constantly raised; the corpuscular and spinal fluid chlorine contents were variable. The urea was increased, and also the blood albumins, the latter not invariably. Changes in the spinal fluid sugar were variable and appeared more slowly than those of the glycaemia. The tension of the spinal fluid was lowered. Increase of the insulin dosage intensified the hypoglycaemia, and apparently exaggerated the symptoms, without influencing the increase of the plasma chlorine.

362 Blood Chemical Changes in Streptococcal Septicaemia

In order to ascertain the cause of death from streptococcal septicaemia in rabbits, R. W. Linton (*Journ. Exper. Med.*, August 1st, 1931, p. 223) performed experiments on 17, and describes the clinical changes which occurred in their blood. A broth culture of *Strep. haemolyticus* was employed. The animals were classifiable in two groups according to the clinical type; there was a fulminating form of disease, with an average survival of 61 hours following the injection of 0.5 c.cm. of the broth, and an acute form, in which the average survival period was 6 days and the dose of broth 0.4 c.cm. The blood sugar figure dropped at a constant rate, but did not reach the level of hypoglycaemia; glycogen was present in the liver at death. The CO_2 capacity was markedly lowered at first, and then returned to a somewhat higher level until the terminal stage, when the acidosis became very marked. Inorganic phosphorus was notably increased at the end of the disease, the rise being greater in the acute group. Calcium showed terminal decreases, which were less in the acute cases; non-protein nitrogen and creatinine were greatly increased in the terminal stages of both groups. The immediate cause of death apparently was severe renal changes due to the large amount of acid produced by the micro-organism.

363 Simple Test of Renal Function

A. Hellfors (*Deut. med. Woch.*, July 10th, 1931, p. 1193) describes a simplified technique for estimating the ability of the kidney to excrete alkalis. Before the first morning meal a specimen of urine is collected, the patient emptying the bladder as completely as possible; 15 grams of sodium bicarbonate in 400 c.cm. water is given by the mouth. Another specimen of urine is collected 1½ hours later, and a third half an hour after the second; a few drops of phenolphthalein solution are added to each, and should give a pink colour to the third, if not the second specimen, if the renal function is adequate. The test is recommended by reason of its simplicity, but gives no information as to the degree of renal failure. If the test is negative (no red colour in the third specimen) it should therefore be followed up by further tests; if positive, these are unnecessary. The alkaline urine in some cases of cystitis or pyelitis is a source of error, and there must have been no recent therapeutic administration of sodium bicarbonate.

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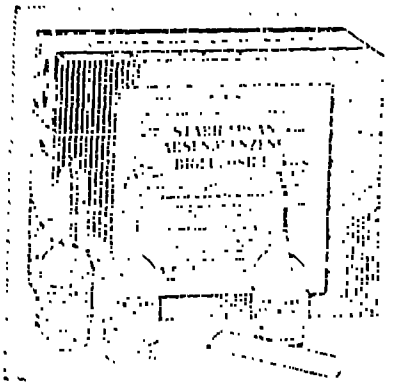
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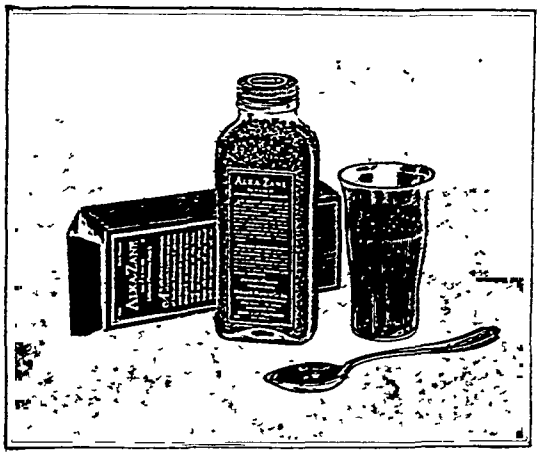
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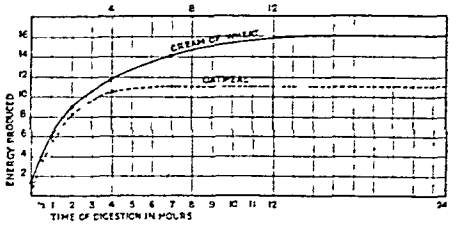
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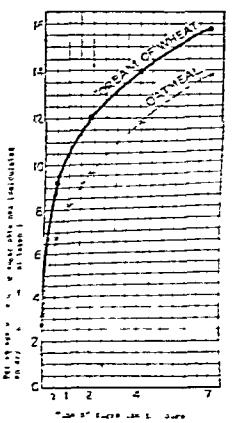


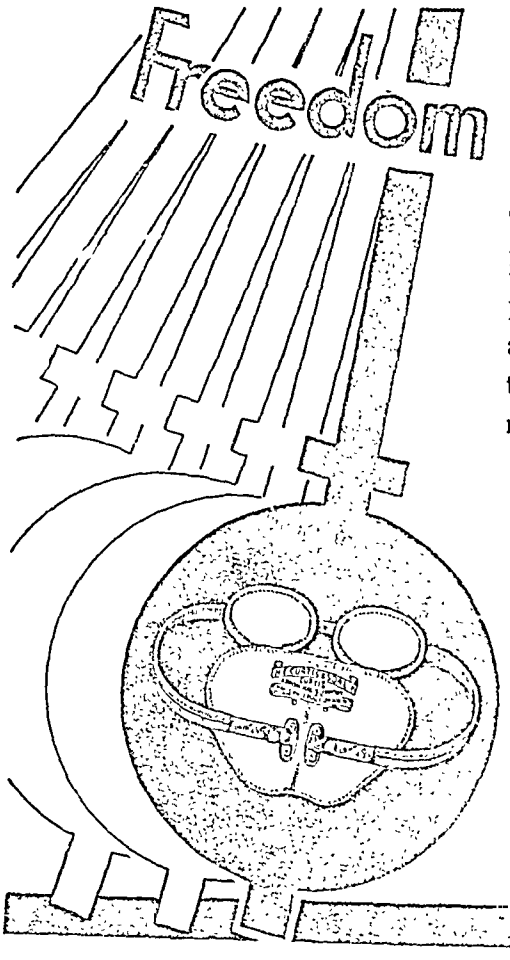
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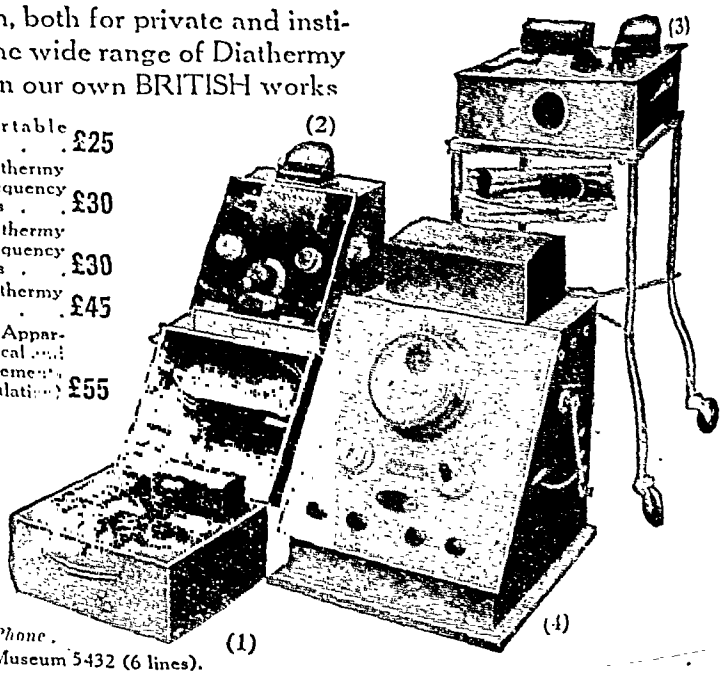
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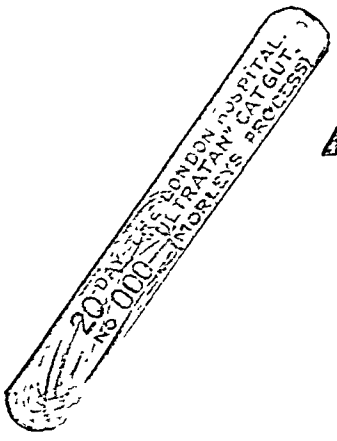
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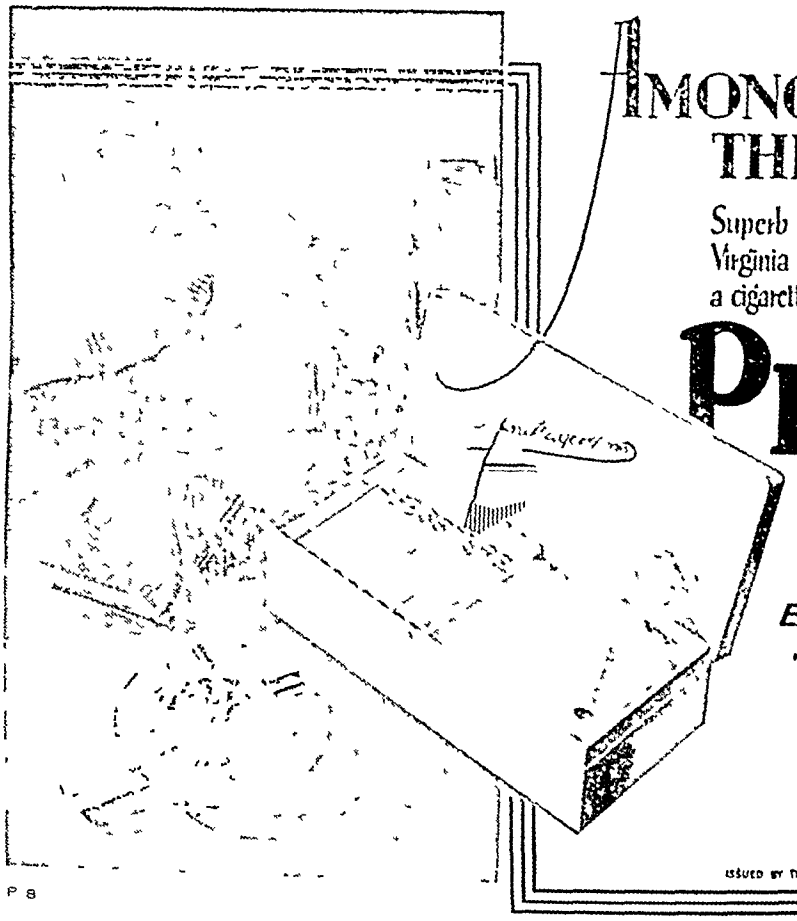
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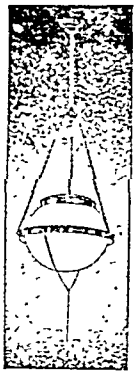
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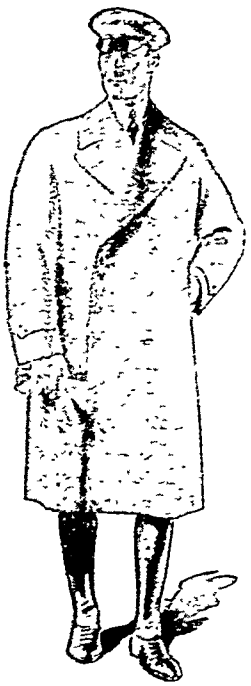
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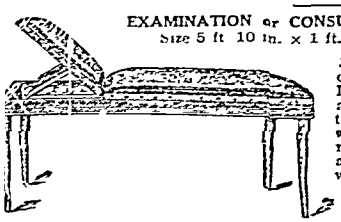
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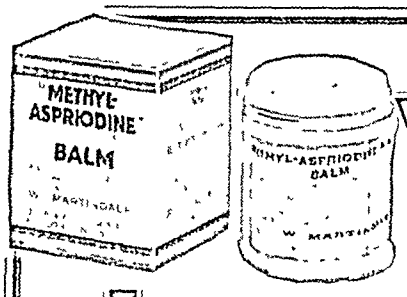
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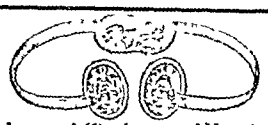
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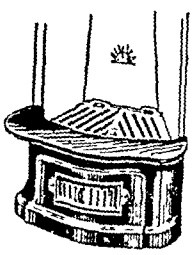
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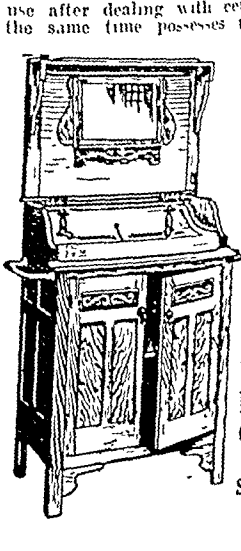
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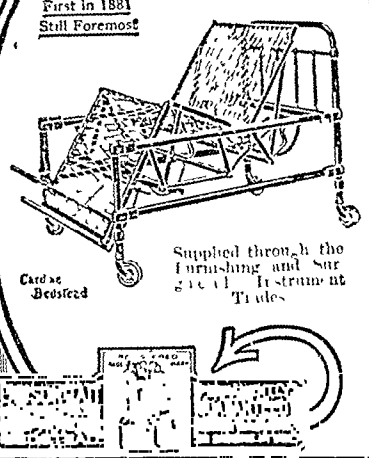
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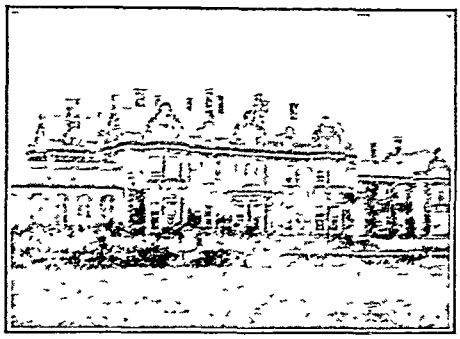
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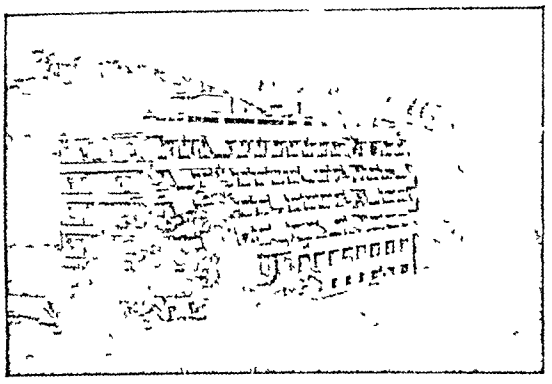
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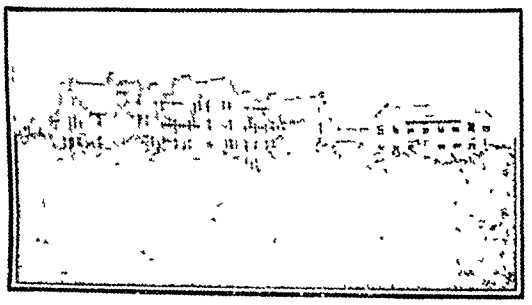
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	4.45 p.m. **R. G. GORDON**, M.D., F.R.C.P. Royal United Hospital, Bath The Significance of Psychological Insight in Diagnosis and Treatment	5.45 p.m. **J. R. REES**, M.D. Deputy Director The Nature and Scope of Psychotherapy	
	GEORGE RIDDOCH, M.D., F.R.C.P. The London Hospital The Diagnostic Significance of some Nervous Symptoms	Treatment: Physical and Functional Re-education and Adaptation	
	A. R. REDFERN, M.B., Ch.B. Author's Theory of [illegible]	Persuasion and Suggestion	
	The Biology of the Endocrine System	Mental Analysis	
	The Function of the Endocrines in Child-hood	Mental Analysis	
	[illegible]	[illegible] with Practical Demonstrations	
	4.45 p.m. **W. LANGDON BROWN**, M.D., F.R.C.P. The Investigation of the Endocrine System with its Glands	5.45 p.m. **EDWARD A. BENNET**, M.D., D.P.M. Anxiety States	
	Psychoneuroses associated with Endocrine Disorders	**C. H. BEVAN-BROWN**, M.B., Ch.B. Hysteria	
	[illegible]	**HENRY V. DICKS**, M.D., M.R.C.P. Simulation; Psychological Treatment	
	The Psychology of Freud and Psychoanalysis (2)	**H. CRICHTON-MILLER**, M.A., M.D. Self-Analysis	
	W. A. POTTS, M.A., M.D. Psychological Aspects of Stammering and Allied Defects	**R. D. GILLESPIE**, M.D., M.R.C.P., D.P.M. Guy's Hospital Therapeutic Persuasion	
	Jung's Theory and Technique		
	2.30 to 5 p.m. Demonstration of Intelligence Testing by **Miss C. A. SIMMINS**, M.A., Hon. Psychologist		

5.15 p.m. each evening. **Description of Cases, with Discussion,** by Members of the Staff.

FEE for the Course - Medical Graduates £2 2s. 0d.
Medical Students (i.e., unqualified) 10s. 6d.

Tickets for the Course to be obtained in advance from the Hon. Lecture Secretary of the Institute.

These Lectures are open to Medical Students and Graduates only.

GUILD OF ST. LUKE,
EVANGELIST AND PHYSICIAN
(FOUNDED 1864)

The ANNUAL SERVICE will be held at ST. PAUL'S CATHEDRAL on Sunday, October 18th, 3.15 p.m. Preacher: Rev. F. K. MOZLEY, A.B.D. Canon in Residence.
All Medical Students and Practitioners are invited to attend. Those wishing to take part in the procession should robe in the Chapel of St. Michael and St. George.
A certain number of seats will be reserved. Tickets for these may be obtained from the Hon. Secretary, Rev. S. D. PHIPPS, M.D., Drakefell Road, St. Catherine's Park, S.E.14.
The Lord Mayor and Lady Mayoress will attend the Service.

SOCIETY OF APOTHECARIES OF LONDON
MASTERY OF MIDWIFERY

Examinations will be held beginning Monday, December 14th, 1931, and Tuesday, May 17th, 1932.
For regulations, apply to the Registrar, Apothecaries' Hall, Water Lane, E.C.4.

F.R.C.S.(Edin.).
Will PREPARE COURSE with Anatomical (Cadaver and Living Models) and Surgical Pathology Demonstrations for next Exam. will commence shortly. PRIVATE TUITION at any time.—H. C. OPPEL, F.R.C.S., Surgeons' Hall, Edinburgh.

MARLBOROUGH COLLEGE,
Near MACCLESFIELD, CHESHIRE.
Vacancies in CAREERS FOR GIRLS. General Education to Matric., etc. Special Terms to Medical Men. Apply LADY WARDEN.

M.D. THESIS.

Advice and legitimate assistance by an expert in preparation of Theses.—Address No. 1001, M.A., House, Tavistock Square, W.C.1.

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD. Estab. 1922. Cases now in residence treated at 30 *Earl's Court Square*, S.W.5, and in residence, in the *Summer holidays*, at Miss BEHNKE'S house on the Chilterns.

Pre-eminent success in the education and treatment of stammering and other speech defects."—*Times*.
"The results in some cases are correct and perfectly effective."—*Guy's Hospital Gazette*.

STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9
of Miss BEHNKE, 30, Earl's Court Sq., S.W.5.

The East London Hospital for CHILDREN, Shadwell, E.1

There will be a demonstration of Clinical cases on Wednesday, *October 21*, at 4.30 p.m. to which you are cordially invited. Tea at 4 p.m.

The National Institute of Child PSYCHOLOGY

CLINICAL ASSISTANTS

Vacancies for Clinical Assistants open to Medical Men and Women. Must have had previous experience with children. Attendance required one afternoon weekly. Period of appointment, six months, renewable.
Vacancies for one Clinical Assistant with Biochemical experience.
Full particulars of experience to the ADMINISTRATOR, The National Institute of Child Psychology, Robert Browning's House, 19, Warwick Crescent, W.2.

Royal East Sussex Hospital, HASTINGS (120 Beds)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). The appointment is for a period of six months.
Salary at the rate of £150 per annum with board and residence.
Candidates must be duly registered Medical Practitioners and must send their applications with copies of recent testimonials immediately to
WILFRED G. KEMSLEY, Secretary.

Cardiff Royal Infirmary.
[illegible]
(Not more than 150 Beds)

Applications are invited for the post of HOUSE SURGEON to the Orthopædic Department of the above Institution. The post is for six months, but may be extended for a further six months. The post is open to ladies.
Salary is at the rate of £75 per annum with board, lodging and laundry.
Candidates must have had previous experience of [illegible].
Applications, forms may be obtained from the undersigned, and must reach me not later than Monday, November 2nd. The appointment commences on November 16th.
[illegible] HUGHES, M.D.
Secretary.
October 12th, 1931.

Hospital of St. John and ST. ELIZABETH
60, Grove End Road, N.W.8

Applications are invited for the post of RESIDENT HOUSE SURGEON. Only those applicants will be considered who are registered. Salary at the rate of £[illegible] per annum with full board.
Applications should be addressed to the Secretary, and must reach him not later than Monday, October 26th.
E. DUDLEY HOBBS, M.A.
Secretary.

The Lady Chichester Hospital, HOVE (ELIGIBLE)
FOR FUNCTIONAL NERVOUS DISEASES
(92 Beds)

JUNIOR HOUSE PHYSICIAN required for three months. £1 [illegible] per week. Valuable experience for [illegible] Medical Women. Preference given to those who have taken [illegible] Diploma.
Applications to be sent to the Secretary, 119, Ship Street, Brighton.

Darlington General Hospital
(120 Beds)

Wanted SENIOR HOUSE SURGEON. Male. Fully qualified. Salary £175 per annum, [illegible] and laundry. Surgical, Medical, Eye, Ear, Nose and Throat. Short [illegible] possible.
Applications, stating age, [illegible] experience, and enclosing copies of three recent testimonials to be addressed to the undersigned not later than October 24th.
C. LIDDLE, [illegible].

The Kidderminster and District GENERAL HOSPITAL (120 Beds)

HOUSE SURGEON REQUIRED

Salary £120 per annum with [illegible] board and lodging. Applications with not more than three testimonials to be sent to the Hon. Secretary, Mr. F. SCOTT SMITH, Chief Street, Kidderminster.

The Sheffield Royal Hospital.
(340 Beds)

There are two vacancies for Residents:
OPHTHALMIC HOUSE SURGEON, £120 per annum.
ANÆSTHETIST, £80 per annum, rising to £160 in six months.
Applications to—W. H. BOOTH,
Superintendent & Secretary.

Eastern Dispensary, Leman St., E.1

Applications are invited for the [illegible] OPHTHALMIC SURGEON. Candidates must be Fellows or Members of a Royal College of Physicians or Surgeons of [illegible] and Licentiates of the King's and Queen's College of Physicians in Ireland.
GEORGE W. HOLE,
October 15th, 1931. Secretary.

Southend Victoria Hospital
SOUTHEND-ON-SEA (200 Beds)

JUNIOR HOUSE SURGEON required [illegible]. Salary £[illegible] per annum, [illegible] laundry. Applications, stating age, [illegible] to be sent to the undersigned not later than [illegible].

Redlands Hospital for Women
(Elsie W. B. [illegible])

[illegible] Wanted, HOUSE SURGEON. Experience [illegible] Salary [illegible] per annum. [illegible] Applications, with copies of testimonials, to be sent to [illegible] Medical Secretary.

dministrative County of LONDON.

HOSPITAL SERVICE.

e LONDON COUNTY COUNCIL invites
ications for appointment to the under-
ioned positions. The persons appointed
be required to carry out such duties as
be assigned by the Medical Superintendents
should occasion arise, to assist at any of
other establishments under the control of
Council The successful candidate will be
ired to live in the Hospital. There is no
mmodation for married men or for women.

ASSISTANT MEDICAL OFFICERS.

lary £350 a year, rising by annual increments of £25 to £425, together with board, ng, and washing Candidates must be qualified Medical Practitioners of at least year's standing Experience in a resident intment in a General Hospital is desirable

ST LUKE'S HOSPITAL, Lowestoft (on sea front) (210 beds) For non pulmonary adult and female cases Light treatment and X-ray facilities Experience in the treatment of tuberculosis is desirable

HIGH WOOD HOSPITAL FOR CHILDREN, Brentwood, Essex (370 beds) Experience in the treatment of tuberculosis is desirable

DOWNS HOSPITAL FOR CHILDREN, Sutton, Surrey (360 beds) Experience in administration of anæsthetics is essential

GROVE PARK HOSPITAL, Lee, S E 12 (322 beds) Experience in the treatment of pulmonary tuberculosis is desirable.

HOUSE PHYSICIANS

ary £80 a year, together with board, ng, and washing Appointment is for six hs only in the first instance, but may be ded for a further period of six months to a maximum of two years provided not more than 12 months are spent at one tal Candidates must be qualified Medical itioners without necessarily having had ous hospital experience

NG GEORGE V SANATORIUM, Godalming, Surrey (Two appointments) (232 beds) For early cases of pulmonary tuberculosis in men

ms of application may be obtained (stamped ssed foolscap envelope necessary) from the cal Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S E 1, must be returned by October 30th. Candi should specify the position or positions ahich they desire to apply Canvassing alifies Inquiries for further details as to nature and scope of the duties should be ssed to the Medical Superintendents at the ctive Hospitals

MONTAGU H. COX,
Clerk of the London County Council.

lministrative County of LONDON

LONDON COUNTY COUNCIL invites applications from registered Medical Practitioners the position of MEDICAL OFFICERS at Lane, Brixton (Boy's) and Clapham Park s') Residential Schools for Mentally tive Children The salary of the joint ion at present is approximately £110 a The duties will include attendance at chools at least once every week on a fixed and at such other times as may be necessary Candidates must reside within easy reach e schools In the case of women, marriage mates contract of service An application form, giving details, may be obtained aped addressed foolscap envelope necessary) the School Medical Officer (S D 5), The ty Hall, Westminster Bridge, S E 1, and be returned by October 31st nvassing disqualifies

MONTAGU H COX,
Clerk of the London County Council.

ity and County of Kingston-UPON HULL

LABY ROAD INSTITUTION (HOSPITAL)

ASSISTANT MEDICAL OFFICERS.

e Corporation of Hull invite applications Medical Practitioners for the appointment so Assistant Medical Officers (single) at the e-named Hospital

mmencing salary at the rate of £300 per um for a probationary period of one year, ther with an allowance of £150 for board residence outside the Hospital.

e Hospital Section contains 540 beds, and quipped with modern X ray and Radium irtments

pplicants must be under the age of 40 years form of application, together with conditions ppointment and a list of duties, may be ined from the undersigned, to whom com- d applications should be returned not later 10 a m on Monday, October 26th

R RAINES,
alth Dept., Acting Medical Officer of
Guildhall, Health.
Hull October 5th, 1931.

Administrative County of LONDON.

HOSPITAL SERVICE

The LONDON COUNTY COUNCIL invites applications for appointment to the undermentioned positions The persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendents and, should occasion arise, to assist at any of the other establishments under the control of the London County Council The successful candidates will be required to live in the Hospital, unless otherwise indicated.

ASSISTANT MEDICAL OFFICERS

(a) ST. JOHN'S HOSPITAL, St John's Hill, S W 11—Preference will be given to candidates who possess the Diploma in Psychological Medicine. Psychiatric experience is essential.

(b) ST. GEORGE-IN-THE-EAST HOSPITAL, Raine Street, Wapping, E 1.

The salary of Assistant Medical Officers is £350 a year, rising by annual increments of £25 to £425, together with board, lodging, and washing Candidates must be duly qualified Medical Practitioners of at least one year's standing, and have held a resident appointment in a General Hospital for at least six months There is no accommodation for a married man or a woman

HOUSE PHYSICIANS AND CLINICAL ASSISTANTS.

(a) ST OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S E 16—Two House Physicians Salary £80 a year, together with board, lodging, and washing. There is no accommodation for a married man.

(b) ST. MARY ABBOTS HOSPITAL, Marloes Road, Kensington, W 8—Clinical Assistant (non-resident, woman only) Salary £100 a year, with meals when on duty. Gynæcological experience is desirable

Candidates must be qualified Medical Practitioners, without necessarily having had previous Hospital experience

Appointment is for six months only, in the first instance, but may be extended for a further period of six months up to a maximum of two years, provided that not more than twelve months are spent at one Hospital.

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division 4a), The County Hall, Westminster Bridge, S E 1, and must be returned by November 6th Candidates should specify the positions or position for which they desire to apply. Canvassing disqualifies Inquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendents at the Hospitals.

MONTAGU H. COX,
Clerk of the London County Council

Urban District of Finchley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council of the above named District invite applications from Medical Practitioners for the position of Assistant Medical Officer of Health and Assistant School Medical Officer, at a salary of £600 per annum, rising by annual increments of £25 to £750. Experience in Infant Welfare, Ante-Natal, and School Medical Work is essential, and the possession of a Diploma of Public Health will be considered an additional qualification. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination. Termination of engagement will be at one month's notice on either side.

Forms of application may be obtained from the Medical Officer of Health, 3, The Hawthorns, N 3, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than Monday, November 2nd.

Canvassing, either directly or indirectly, will be regarded as a disqualification.

Council Offices, H WOOD BARTER,
Finchley, N.3. Clerk of the Council.
October 16th, 1931.

Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

RESIDENT MEDICAL OFFICER required November 1st, HOUSE PHYSICIAN required November 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum, respectively, and the appointments are for six months Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by October 28th The accommodation at the Hospital does not permit of women Graduates holding these appointments

H. W. BURLEIGH,
Secretary & General Superintendent.

[AMENDED ADVERTISEMENT]

City of Birmingham

PUBLIC HEALTH COMMITTEE

LITTLE BROMWICH ISOLATION HOSPITAL WITTON SMALLPOX HOSPITAL

MEDICAL SUPERINTENDENT OF INFECTIOUS DISEASES HOSPITALS

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment

The Little Bromwich Hospital has accommodation for 466 patients, mainly scarlet fever and diphtheria cases, while the Witton Smallpox Hospital can accommodate 100 patients

The salary will commence at £1,000 per annum, including emoluments (a house, deductions, and rates) valued at £130 per annum and will rise by two biennial increments of £50 to a maximum of £1,100 per annum There may be shortly a general reduction of Corporation salaries, and the terms of this appointment will be subject to the same revision as may apply to existing officers holding similar appointments The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme and to the candidate passing a medical examination, and will be subject to three months' notice on either side Form of application and further particulars may be obtained from the Medical Officer of Health, The Council House, Birmingham, to whom applications, stating age whether married, experience, and qualifications and accompanied by copies of three recent testimonials, should be addressed not later than Wednesday, November 4th

F. H. C. WILTSHIRE, Town Clerk
The Council House, Birmingham
October 9th, 1931.

Lancashire County Council

APPOINTMENT OF ASSISTANT TUBERCULOSIS OFFICER (FEMALE)

Applications are invited for the post of Male Assistant Tuberculosis Medical Officer (unmarried) for the High Carlet Sanatorium (112 beds) Salary £450, rising by two annual increments of £25 to £500 per annum together with the following emoluments board, furnished apartments, fuel, light, and laundry (At present there is an emergency deduction of 5 per cent from this salary)

Applicants must be registered Medical Practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council Candidates must have held House appointments for at least six months in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis

The possession of a Diploma in Public Health and practical experience in X Ray work will be deemed additional qualifications for the post

Contributory Superannuation Scheme is in operation, with medical examination for entrants

Forms of application, terms of appointment, and list of duties, can be obtained from the undersigned. Closing date, October 30th All letters must be marked on the outside "Assistant Tuberculosis M O"

GEORGE ETHERTON,
County Offices, Clerk of the County Council
Preston.

Nuneaton General Hospital.

(80 Beds.)

Applications are invited for the post of HOUSE SURGEON Salary at the rate of £150 per annum, with board, lodging, and laundry, and certain other emoluments amounting to £60 per annum roughly The appointment is for six months in the first instance, commencing On December 1st next

Apply to the Secretary of the Medical Staff at the Hospital before October 26th

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON Salary £150 per annum. Twelve months' appointment Vacant November 1st The Hospital is reorganised for the purpose of taking the POWS Applications to be received by the Secretary on or before Tuesday, October 27th

Merthyr General Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER for six months To commence duties early in November next Experience in administration of Anæsthetics desirable. Salary £150 per annum, with board and residence, and laundry Applications with copies of three recent testimonials to Honorary Secretary, Honorary Medical Staff, Merthyr General Hospital, Merthyr Tydfil

Royal Victoria Infirmary,
NEWCASTLE UPON-TYNE. (662 Beds.)

The House Committee has declared a vacancy in the office of HONORARY ASSISTANT PHYSICIAN as from *October 27th.*

According to statutory provision every candidate must be a registered Graduate in Medicine of any University *recognized* by the General Council of Medical Education and Registration of the United Kingdom, or a Registered Fellow or Member of one of the Colleges of Physicians of the United Kingdom, provided that he is practising as a Physician and not as a General Practitioner.

Applications, stating age, qualifications, and previous experience, must be sent to the House Governor & Secretary, Royal Victoria Infirmary, Newcastle upon Tyne, not later than Saturday, October 31st

The appointment will be made on Thursday, November 5th

Candidates may, if they so desire, forward to each member of the House Committee a copy of *their application and testimonials.*

Personal canvassing will be considered a disqualification for office

S. DUNSTAN,
Oct 8th 1931 House Gov. & Sec.

The London Female Lock HOSPITAL,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the post of HOUSE SURGEON (female) Salary at the rate of £150 per annum, with furnished rooms, full board, and washing Candidates, who must be doubly qualified and duly registered, should send in their applications by the first post on November 2nd (*accompanied* by copies of three recent testimonials), to the Secretary, from whom further particulars can be obtained The appointment is for six months commencing December 1st Preference will be given to candidates having previous obstetric experience

By Order of the Board,
HY. J EASON,
October 9th, 1931. Secretary

The Staffordshire General INFIRMARY, STAFFORD

Applications are invited for the post of HOUSE PHYSICIAN (either sex) which will be *come vacant at the end of October*

Candidates must be *duly qualified and registered* under the Medical Acts Salary at the rate of £150 per *annum, with board, residence,* and laundry The appointment to be held for at least six months

Applications stating age, accompanied by copies of three recent testimonials, should be forwarded at once to the undersigned

Stafford A E COLLINS,
October, 1931. Secretary.

St. Mary's Hospital, W.2.

Applications are invited from *duly qualified* Medical Practitioners for the post of RESIDENT *ANÆSTHETIST, which falls* vacant Nov. 1st

Salary £150 per annum, with board and residence

The successful candidate will be *eligible* for re appointment Copy of the regulations may be obtained on application to the undersigned.

Last date for receipt of applications, which should be accompanied by testimonials, not exceeding three in number, is Tuesday, October 27th

W. PARKES, Secretary.

Royal Infirmary, Blackburn.
(240 Beds—Five Residents)

RESIDENT HOUSE PHYSICIAN (male) required at a salary of £175 per annum, with board residence, and laundry, etc. In *addition* to Medical Wards to be attached to Eye, Ear, Nose, and Throat Department To commence duties November 1st.

Applications, with copies of testimonials, stating age, nationality, *experience, etc, to* be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn Gen Supt. & Secretary.

This *Institution is recognised for the* surgical practice required for the F R C.S. Final Examination.

The Queen's Hospital for CHILDREN, Hackney Road, London, E.2.
Telephone Bishopsgate 6305 and 2857.

CLINICAL ASSISTANT required in the Orthopædic Department. Attendance every Thursday at 1.30 p.m., and occasionally in the Operating Theatre on Saturdays at 9.30 a.m. Lunch provided. Honorarium 5s. per attendance to cover expenses. Applications, stating age, qualifications, and experience, should be addressed to the undersigned on or before October 31st.

CHARLES H. BESSELL,
October 8th, 1931. Secretary.

Isle of Wight County Mental HOSPITAL.

MEDICAL SUPERINTENDENT required; must be qualified, registered, and must have had experience in a *similar* Institution, and not over 40 years of age

Salary £600, rising by annual increments of £25 to £700, with partly furnished house, light, laundry, garden produce, part fuel, and privilege of purchasing from Stores Emoluments valued for superannuation purposes at £166 per annum. The person appointed will be required to act also as Medical Officer of the County for the Mental Deficiency Committee at a salary of £50 per annum.

Applications, stating previous experience, qualifications, age, etc, to be received by the Clerk to the Visiting Committee on or *before* November 7th, endorsed "Medical Superintendent," and to be accompanied by three recent testimonials Selected candidates will be written to.

JAS H. GREEN,
Clerk to the Committee.
Whitecroft, Newport, Isle of Wight

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.
(350 Beds)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, with board, residence, and laundry.

The appointment will be made for twelve months if possible

Previous Hospital experience necessary.

Applications, with copies of two recent testimonials, to be sent to the undersigned immediately. By *Order,*

W STEVENSON,
Secretary and House Governor.
October 12th, 1931.

The Glasgow Royal Maternity AND WOMEN'S HOSPITAL.

The Directors invite applications for the post of RESIDENT MEDICAL OFFICER AND REGISTRAR, which becomes vacant on January 1st, 1932 Applicants should have had experience *as House Surgeon in a General Hospital and also in an Obstetrical Hospital.*

The salary will be at the rate of *£300* per annum, with board and lodging

Applicants must lodge twenty copies of their application and testimonials with the Secretary not later than October 30th. Canvassing is forbidden.

146, Buchanan St., JOHN McKECHNIE,
Glasgow. Secretary.
October 14th, 1931.

Leeds Maternity Hospital,
HYDE TERRACE, LEEDS. (108 Beds.)

Applications are invited for the position of *SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON.*

Salaries payable:
Senior House Surgeon—£52 per annum.
Junior House Surgeon—£26 per annum.

The appointments are to be for a period of six months, in the first instance, from November 1st to April 30th, 1932.

Applications are to be sent to the Secretary, The Medical Faculty, Leeds Maternity Hospital, Hyde Terrace, Leeds, on or before Monday, October 26th.

S. W. BARNES,
October 12th, 1931. Secretary.

The Royal Infirmary, Sheffield.
(500 Beds)

The Weekly Board of [illegible] plications for the post of SECOND ASSISTANT [illegible]
The salary attached to [illegible] annum, with board and residence.

The Resident Staff numbers 14, and after six months' service salary is at the rate of £100 per annum.

Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO W. BARNES, F.C.I.S.
General Supt & Secretary.
Board Room. October 5th, 1931.

Minehead and West Somerset HOSPITAL, MINEHEAD, SOMERSET.
(56 Beds.)

Applications are invited for the post of *RESIDENT MEDICAL OFFICER (male or female)* to this Hospital.

Duty to commence on December 1st. Appointment for a period of six months. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies *of three* recent testimonials, to be sent to the undersigned not later than November 5th.

W. H. P. RODDA, Secretary.

Derby County Mental Hospital,
MICKLEOVER, near DERBY.

RESIDENT JUNIOR ASSISTANT MEDICAL OFFICER

Applicants must be registered Practitioners male, not more than 30 years of age, and unmarried. Salary £350 per annum, *rising by* annual increments of £25 to £450 per annum together *with* emoluments (board, lodging, laundry, and attendance) An additional £50 *per annum* will be given to the holder of the D.P.M The appointment is subject to the provisions *of the Asylums Officers Superannuation Act, 1909. Preference* will be given to applicants who have held a resident appointment in a General Hospital. Forms of application and particulars can be obtained from the Medical Superintendent, and should be returned not later than October 22nd.

Royal Waterloo Hospital for CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There is a vacancy for the post of HONORARY *SURGICAL REGISTRAR* at the above Hospital Candidates must be Fellows of the Royal College of Surgeons, and would be expected to call on members of the Hon. Medical Staff, a list of whom would be furnished on request Preference will be given to candidates having had experience of Special Departments Particulars regarding the appointment can be obtained from the undersigned, to whom applications should be sent, not later than October 28th, with not more than three recent testimonials.

J H. TEASDALE, Secretary

Bradford Royal Infirmary.

One HOUSE PHYSICIAN and two HOUSE SURGEONS (male) wanted for December 1st

Candidates must be single and legally qualified Salary £135 per annum each, with board, residence, and washing

There are 215 beds and six resident posts

Applications, stating age, qualifications, and previous *experience (if any),* with copies of recent testimonials, to be received by the undersigned not later than October 27th

J. J BARRON, Secretary.
October 12th, 1931.

Edinburgh Hospital and DISPENSARY FOR WOMEN AND CHILDREN.
(Whitehouse Loan, Edinburgh)

Applications are invited from Medical Women for the post of HONORARY SURGEON to the Ear, Nose, and Throat Department of the above Hospital. Duties to commence in November

Applications, with five copies of testimonials, to be sent to the Hon Secretary on or *before* October 30th, from whom further particulars may be obtained.

King's College Hospital.

The Committee of Management invite applications for the post of JUNIOR SURGICAL Applications, with copies of *three* testimonials, should be sent before *October 24th* to the House Governor, King's College Hospital, Denmark Hill, S.E.5, from whom particulars of the duties may be obtained. The present Senior Surgical Registrar is a candidate for the appointment.

Burslem, Haywood, and Tunstall WAR MEMORIAL HOSPITAL

Wanted, JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £140, with board and residence. Must be fully qualified

Applications, *stating* age and experience, together with copies of *three recent* testimonials, to be sent to me.

Public Offices, F. C. POWELL, F.C.I.S.
Price Street, *Burslem. Secretary*

Hospital for Women at Leeds.

HOUSE SURGEON, to commence duties on November 1st next Salary at the rate of £160 per annum, together with board, quarters and laundry. The appointment is for six months Applications, with copies of testimonials, should be sent to the undersigned not later than October 23rd next

B. L JEFFERSON,
Honorary Secretary to the Faculty.

Worthing Hospital.

Applications are invited for the post of RESIDENT *MEDICAL OFFICER,* now vacant The appointment is for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, *giving* age, qualifications and experience, with copies of three testimonials, to be sent to the Secretary at once

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	SOMERSET COUNTY COUNCIL. *(Assistant Medical Officer)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association)*	
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary, South Australian Branch, B.M.A. House, 205, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 196, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr. J. P. MAJOR, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

October 14th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Manchester Royal Infirmary.
CENTRAL BRANCH, Roby Street, MANCHESTER.

HOUSE SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is tenable for nine months, commencing forthwith, three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, October 22nd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Samaritan Free Hospital for WOMEN, Marylebone Road, N.W.1.

[illegible] d for the post of [illegible] period of six months [illegible] 10th next. Salary at the rate of £100 per annum, with board, lodging, and washing. Previous experience as House Surgeon essential. Applications, stating age, accompanied by copies only of testimonials, must reach the Secretary at the Hospital on or before Thursday noon, Oct. 29th.

G. H. HAWKINS, Secretary.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications, with copies of testimonials, endorsed "House Surgeon" to be addressed to the Chairman of the Board of Management. Post now vacant.

H. R. NORTH, Secretary.

West London Hospital, Hammersmith, W.6 (234 Beds).

Applications are invited for the post of HONORARY ASSISTANT SURGEON to the Genito-Urinary Department. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to his other duties, to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies of testimonials, must reach me not later than Thursday, October 22nd. Candidates must attend the meeting of the Medical Council on Friday, October 23rd, at 4.30 p.m., and prior to that date, call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board of Management but, nevertheless, must send copies of their application and testimonials to each member thereof and, if so notified, be in attendance at a meeting of the Board at 5 p.m. on Tuesday, October 27th, when the election will be made.

H. A. MADGE, Secretary.

Mansfield and District Hospital.

The Board [illegible] above Hospital (140 [illegible] for the post of HOUSE OFFICER (male). Duties to commence on December 1st next. Also for the post of HOUSE SURGEON (male). Duties to commence on January 1st, 1932.

Salaries at the rate of £150 per annum, with residence, board, and laundry.

The appointments are for six months, and are renewable.

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

September 21st, 1931.
ARTHUR H. LIMB, Secretary.

Royal Eye Hospital,
St. George's Circus, Southwark, S.E.1.

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital. The appointment is in the first instance for a period of six months, with board and residence, as from December 1st. Salaries: House Surgeon at the rate of £150 per annum; Assistant House Surgeon at £100 per annum. Candidates must be registered Practitioners.

Applications, with copies of three recent testimonials, should be sent to the Secretary at the Hospital, not later than Friday, October 30th.

F. E. D. ALTON, Secretary.

Bedford County Hospital.
(124 Beds.)

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited for the [illegible] of CASUALTY OFFICER AND HOUSE SURGEON (with charge of 25 beds). Salary £120 with board, residence and laundry. Candidates (male) only must forward applications stating age, nationality, etc., together with copies of testimonials, to the undersigned, as soon as possible.

FRANK INCH,
Oct. 9th, 1931. House Com. & Sec.

(Appointments continued on p. 58.)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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Tel.: MUSEUM 9861 (4 lines).

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ASSISTANCIES.

Wanted.—Outdoor, Lady Assistant, in working-class Practice, Lancashire Salary £300. Commission midwifery and operations. Allowance of £42 per annum, upkeep of own car. Excellent self-contained house, furnished, essentials, free.—Address, No. 6455, B.M.A House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor, by well-qualified woman doctor. Aged 29. Experience Hospital and G P. References. Can drive car London preferred, not essential —Address, No. 6251, B M.A. House, Tavistock Square, W.C 1.

Wanted.—Assistantship, Temporary or Permanent, by Woman Doctor; 5½ years' experience in private and panel Practice; anæsthetics Able to drive car —Address, No. 6456, B.M A. House, Tavistock Square, W C.1.

Wanted.—Assistant, male, indoor, mixed Practice South Wales £300 all found, except laundry. Recently qualified preferred Car kept. Dispenser Usual bond State age, nationality, etc —Address, No. 6312, B M A House, Tavistock Square, W C 1.

Wanted. — Assistantship by woman M D (Lond). Aged 28 Varied hospital experience and some G P. Own car Preferably within 60 miles of London — Address, No 6465, B M A House, Tavistock Square, W C 1

Wanted. — Assistantship, indoor, by woman doctor, aged 29, M B, Ch B Edinburgh. Experience hospitals and general practice. Free end of October.— Address, No 6451, B M.A. House, Tavistock Square, W C 1.

Wanted.—Assistantship, London or Southern Counties, by Scot, aet. 33, married, M B Edin. (1924); six years' G.P. Ex H P., keen; well-received; used sole charge. Own car Free as required.—Address, No. 6474, B M A. House, Tavistock Square, W.C.1.

Wanted immediately, young Welsh speaking ASSISTANT, with some experience of midwifery Abstainer. Able to drive. Usual bond. Salary £300, indoor.— Address, No 6412, B.M.A. House, Tavistock Square, W C.1.

Wanted immediately, Assistant, outdoor; gentleman; English or Scottish, single, salary £400 p.a.; for Country Town Practice. State age and essential particulars —Address, No. 6469, B.M.A House, Tavistock Square, W C.1.

Wanted. — Indoor Assistant, male, single, British, for general and panel Practice in Co. Durham. Very little night work. Salary £250—£300. Would suit rec. qual man State age and essen parties.— No. 6436, B M A House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, in small industrial town in North, to live in, with one of the Partners. Suit recently qualified man. Salary £265. Usual bond.— Address, No 6314, B M.A. House, Tavistock Square, W C.1.

Wanted.—Woman Doctor, M.B., D P H., Part I D.O M.S., skilled Refractionist, would ASSIST doctor with Refractions and other Eye work. Remuneration by arrangement — Address, No. 6475, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, with or without view, Scot, aet. 33, M.B.Edin. (1924), married. Own car. Keen. Excellent panel and private experience. — Address, No. 6467, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, age about 30, English or Scot, to live at Branch Surgery (furnished). London Suburb. £350 p.a., with commission on Mids.—Address, No. 6459, B M A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, in Glamorgan Colliery Practice. Salary £400 p.a., with rooms and attendance. Single, British.—Address, with particulars, No. 6472, B M A. House, Tavistock Square, W.C.1.

Wanted, December 1st, Assistant, indoor, with view, bachelor. Country Town, 35 minutes' London. Large panel. Able to drive car. £350 —Address, No 6202, B M.A. House, Tavistock Square, W.C 1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted immediately, Assistant, male, British. Country Practice, Northumberland. Small car provided. Salary £300 p.a., indoor.—Address, No. 6457, B M.A. House, Tavistock Square, W.C.1.

Wanted.—Male Assistant (outdoor). Lincolnshire Practice. £400, with car allowance. Must have good references. State age, qualifications, etc. — Address, No. 6455, B M.A. House, Tavistock Square, W.C.1.

Wanted. — Nov. 2nd, married ASSISTANT for London area. Salary £30 per month, commission mids., furnished house, coal, and light. Interview.—Address, No. 6427, B M A. House, Tavistock Square, W.C.1.

Assistant (man or woman), indoor, wanted. Country town, Midlands. Public Health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essential particulars are stated. — Address, No. 6221, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, preferably with view on easy terms, by M.B., Ch.B., F.R.C.S.(Edin.), aet. 36 yrs., Scot, single. 3½ yrs.' Hosp., 2½ yrs.' G.P. exp. Excellent references. Small capital available.—Address, No. 6417, B M.A. House, Tavistock Square, W.C.1.

Assistantship required by M.B., aged 26, 2 years' G.P., panel and private. Keen and energetic, not afraid of work. Can take charge of branch. Well received. Excellent refs. — Address, No. 6418, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, with view to Partnership in busy London (E.) Practice. Must hold Dental qualification as well. Excellent opportunity.—Address, No. 6224, B.M.A. House, Tavistock Square, W.C 1.

Assistant (indoor) wanted at once; £300 p.a.; all found, except laundry. Mixed Practice in Newcastle-upon-Tyne.—Address, No. 6120, B.M.A. House, Tavistock Square, W C.1.

Assistantship wanted, outdoor, by Scot's Graduate, 35, married. Conscientious; thoroughly reliable. Available November, earlier for interview.—Address, No. 6232, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Practice, London, E. To live in. Salary £250 per annum. — Address, No. 6411, B.M.A. House, Tavistock Square, W.C.1.

Clinical Assistant required for Private Mental Hospital in London. Resident post. Small salary. Duties light, ample free time for Post-graduate work or for obtaining the D.P.M. For further particulars —Address, No. 6404, B.M.A. House, Tavistock Square, W.C.1.

Doctor (Egyptian Christian), L.R.C.P. and S., L.R.F.P. and S., aged 28, single; in England since 1924; ex H P. in Scotland; locum H.S and Anæsthetist for 2 months, then H.P.; keen; total abst.; exc. refs.; desires ASSISTANTSHIP; free next week.— No. 6438, B.M.A. House, Tavistock Sq., W.C.1.

Medical Woman's Practice. — Wanted, a Woman ASSISTANT, with view to early Succession. Excellent scope for surgery. State age, experience, and qualifications. — Address, No. 6127, B.M.A. House, Tavistock Square, W.C.1.

Ophthalmic Surgeon in Country Town, requires young keen ASSISTANT (male).—Full particulars of qualifications, age etc., to No. 6461, B.M.A House, Tavistock Square, W.C.1.

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Dispenser - Bookkeeper, woman (Hall), now at liberty, would take remuneration in return for board and lodging. Experienced, capable, and bright—Address, No. 6401, B.M.A. House, Tavistock Square, W.C.1

Doctor recommends young gentlewoman (25), for post of STATIONARY-RECEPTIONIST to Doctor. London or suburb preferred. Experienced in shorthand typewriting, correspondence, etc.—Apply, Miss DAVIES, 48, Clifton Gardens, N.W.11

Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5855, The DISPENSERS' BUREAU, 15, Landsdowne House, 171, Shaftesbury Avenue, London, W.C.2

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Experienced Practitioner, retired, would TAKE SURGERY HOURS duty for busy Practitioner in Metropolitan area, mornings or evenings. No visiting.—Address, giving full particulars, No 6424, B.M.A. House, Tavistock Square, W.C.1.

Gentlewoman desires post as NURSE SECRETARY with Doctor, S.R.N., C.M.B. — Address, No. 6466, B.M.A. House, Tavistock Square, W.C.1.

Lady Secretary desires any useful Occupation 2 or 3 hours daily; shorthand, typewriting, accounts. Would attend invalid reading, shopping, sewing 10/- per hour, plus fares.—Address, No. 6429, B.M.A. House, Tavistock Square, W.C.1.

Lady Secretary (35), desires POST. Resident or non-resident Shorthand, typing, accounts, and statistics Experience with mental Specialist Excellent references.—Address, No 6431, B.M.A House, Tavistock Square, W.C.1.

Male Dispenser-Bookkeeper, 42, desires post, Yorkshire, West Riding, or London. Good refs. (one ten years) Moderate salary. At liberty.—Address, No 6419, B.M.A. House, Tavistock Square, W.C.1.

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The Royal Army Medical Corps ASSOCIATION, 85, Fecleston Square, S.W.1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, etc., without charge to prospective employers. Orderlies, Porters, Caretakers,

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Wanted. — Partnership, after short prelim Assist by M B, aged 30, in good mixed Practice, with good panel £1 000 up Cap avail Exceptionally good qual in better class also in panel Practices—No 6421 B M A House Tavistock Sq, W C 1

Wanted. — Experienced hard-working G P ag 35 married requires salaried PARTNERSHIP Succession or offer Premium by arrangement, security given South or Midlands preferred — Address No 6462, B M A House Tavistock Square, W C 1

Wanted. — Partnership in non-panel non dispensing Practice in brewing district (not seaside) Share about £1 000 p a Advert 34 married M A B M B Ch Oxford, M R C S L R C P (exp Medicine and Anaes)—No 6422 B M A House Tavistock Sq, W C 1

Wanted —Partnership in well-established Practice, sea or country M R C S L R C P Middlesex Aged 38, married 12 years experience G P House to rent Capital available No agents—Add, No 6428 B M A House, Tavistock Sq, W C 1

For Disposal.—Share producing £1 250 and larger share later, in old established mixed PRACTICE in attractive Midland Suburb Two years' purchase.—Address, No 6432, B M A House Tavistock Sq, W C 1

For Sale.—Half Share in sound, old-established industrial Practice South-side town on North East Coast Total receipts (1930) £2,780 (club £700 p a included) Panel nearly 2 000 Visits 50 or 60 annually at 2 gns Excellent opportunity for energetic man Hospital shopping centre Total receipts not under £1 000 House to rent, 2 3 recep, 5/b beds Usual offices Free any time in next few months—Address, No 6402, B M A House Tavistock Square W C 1

Wanted.—Scotland or England. —Town PRACTICE Income £1 700 p a half from panel Good house, with professional accommodation, garden, and garage, to rent Branch surgeries not essential Good school essential Capital available — Address, No 6425, B M A House, Tavistock Square, W C 1

Wanted at once, by Indian doctor, working-class PRACTICE with panel about 2,000, preferably in or near London Manchester, Sheffield or other big town Capital available —Address No 6457, B M A House, Tavistock Square, W C 1

Wanted. — Good middle-class PRACTICE, income £1,000—£2 000 in Richmond, Kingston, Putney, or similar place in or near London Modern, convenient, 6 bed room house — Address No 6218, B M A House, Tavistock Square, W C 1

Wanted.—Practice, about £2,500 to £3,500 with scope by two partners Panel 2 000 upwards Midlands or South preferred Capital available —Address No 6456 B M A House, Tavistock Square W C 1

Wanted. — London, Home Counties or South Coast town Practice and Panel PRACTICE, £1 000—£1 200 Capital available — Address No 6410 B M A House, Tavistock Square W C 1

Wanted.—Practice or Partnership, succession in London, about £2 000 or more p a, including substantial panel Ample capital (cash) available—Address No 6473, B M A House, Tavistock Sq, W C 1

Wanted.—Small Practice, with assistantship, 5 to 15 miles from Charing Cross with comfortable home to rent or Lease—No 6414, B M A House, Tavistock Square, W C 1

East Lancs Town. — For Sale, old-established PRACTICE, with Best Class Private Industrial and Panel Connection about £720 p a Panel 650 Price £2 000 (Little goodwill) Residence and Surgery at a reasonable Rental Good investment Would consider letting Apply, Income Expert, 68 Spencer St, Tavistock Square, Hackney (Telephone Museum 5)

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Further particulars from SIRLATHER & HOGAN, Farm Road, Edgware.

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BIRMINGHAM SUBURB.—Middle-class PRACTICE with great scope Receipts last year £700 Small select panel Excellent house, 2 reception, 6 bedrooms Garage and large garden Premium—Practice, house, and drugs—£1,100 Genuine sacrifice.—No 283

MANCHESTER — RESIDENTIAL SUBURB — PRACTICE Cash receipts last year £1 243 Panel 530 Plenty of scope Charming modern house recently built for Practice 5 bedrooms 2 reception rooms Garage and garden For sale or may be rented on lease Premium—Practice—1½ years' purchase.—No 288

CHESHIRE TOWN.—Old established PRACTICE Average cash receipts £1 420 p.a. Panel 2 000 Good scope Nice house 3 reception 5 bedrooms Garage and garden Premium—Practice—£2,200.—No 293

LIVERPOOL — Old established Middle-class PRACTICE Cash receipts over £2,000 p.a. Panel 900 Excellent house 2 reception 7 bedrooms garage and garden, to rent.—No 276

LANCS TOWN near MANCHESTER.—PARTNERSHIP in good Practice Cash receipts 1930 £2 452 Panel nearly 2 000 House available 3 reception 5 bedrooms garage Rent £63 p.a. Premium—Half share—£1 500 (to include drugs, fittings, and debts).—No 286

CHESHIRE TOWN near COUNTRY.—Old established PRACTICE Cash receipts last year £1,784 Panel 1 300 Excellent house, 2 reception 4 bedrooms rent £60 p.a. Premium 1½ years' purchase (less panel reduction).—No 299

NEAR LIVERPOOL.—PRACTICE offering scope Cash receipts £500 p.a. Panel 550 Good house, 2 reception, 5 bedrooms Garage and garden Rent £70 p.a. Premium £650, or near offer.—No 287

LANCS TOWN.—Old established PRACTICE Average cash receipts £1 175 p.a. Panel 1 460 Excellent house to rent 3 reception, 6 bedrooms Garage and garden Premium £1,600, payable by arrangement.—No 232

MEDICAL WOMAN'S PRACTICE.—SEASIDE TOWN.—Cash receipts last year £632 Panel 465 Excellent rooms at £36 p.a. Premium £850 or near offer.—No 274

MANCHESTER — PLEASANT RESIDENTIAL SUBURB.—Old established PRACTICE Average cash receipts £685 p.a. Panel over 600 Much scope Excellent house, 2 reception, 4 bedrooms, garage and good garden to be sold or may be rented for a period on lease Premium 1 years purchase Vendor retiring.—No 246

NORTH WEST COAST — SEASIDE RESORT — Old established PRACTICE Cash receipts 1930, £874 Small select panel Excellent freehold house, 5 bedrooms Garage and garden.—No 266

NEAR PRESTON.—PRACTICE offering scope Cash receipts 1930, £625 Panel 250 Good house, 2 reception 4 bedrooms Rent £70 p.a. Premium £800, or near offer.—No 254

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £965 p.a. Panel 710 Excellent house in pleasant district 2 reception, 4 bedrooms Garage and garden Premium 1½ years purchase.—No 298

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NEAR MANCHESTER — PLEASANT TOWN, largely residential — Old established PRACTICE. Average cash receipts £995 p.a. Panel 902 Appointments not included £100 p.a. Great scope Excellent detached house (freehold) 3 reception, 5 bedrooms Garage and garden and tennis court Premium—Practice—1½ years purchase.—No 234

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BIRKENHEAD.—PRACTICE with great scope Cash receipts about £700 p.a. Panel 900 Good house 3 bedrooms, garden Premium—Practice—£800, or near offer.—No 285

MANCHESTER.—Old-established PRACTICE. Cash receipts 1930 £688 Panel 578 House on main road, 2 reception 5 bedrooms, and garage Premium—Practice—1½ years purchase.—No 264

LANCS TOWN, near Country.—Old established PRACTICE Cash receipts last year £1 125 Panel 1 080 Excellent house 3 reception, 6 bedrooms Garage and large garden Premium—Practice—£1,250.—No 291

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1 LONDON SOUTH EAST—Very old established chiefly middle class PRACTICE held by Vendor (who is retiring) for 21 years Average gross cash receipts £1 200 but there is very good scope for increase Panel of 745 Fees from 2 6 No midwifery Semi detached house in very good repair with 2 reception 6 bedrooms, etc Surgery and waiting room Good garden Excellent educational facilities Premium for Practice and House £2 500

2 PARTNERSHIP—LONDON SUBURB (EAST)—In a thickly populated district on the confines of the country the half share of a very old established lucrative Practice averaging over £4 900 p a (last year £5 074) is offered owing to the retirement of the senior partner Good lists and panel of 4 870 Expenses light Little midwifery House, with good accommodation and garden Rent £50 p a Premium 1½ years purchase by instalments

3 MIDDLESEX—Within ten miles of London—Very old established middle and working class PRACTICE in pleasant and increasing residential district Cash receipts average £1 560, including panel of about 1 500 Very attractive house with 6 bedrooms etc, and large garden Garage Rent £125 p a or freehold for £2 500 Separate surgery accommodation 6 minutes away Rent £70 p a, including rates and taxes Premium 1½ years purchase

4 WITHIN TEN MILES OF LONDON—PARTNERSHIP—The third share of an old established good middle and working class Practice is for disposal offering excellent future prospects Cash receipts last year amount to nearly £2 700 including panel of nearly 1,500 Suitable house available at low rent Premium £2 000

5 WITHIN SIX MILES OF THE BANK—Old established working class PRACTICE producing for the last 12 months £2 300 including panel of over 800 Appts with at least £160 Visits from 2 6 Low rent Suitable flat can be rented or bought Surgery Premium £4 000 cash

6 HERTFORDSHIRE—DEATH VACANCY—Old established unopposed country PRACTICE averaging for past few years £700 p a including panel of 600 Situated in beautiful district near large town Modern detached House with 2 reception 4 bedrooms Garden orchard and paddock of 3 acre Rent £55 p a Premium £1 000, [illegible]

7 LONDON SUBURB (S E)—PARTNERSHIP—Third share of very old established non panel Practice in pleasant residential suburb, is for disposal through serious illness of retiring partner Remaining partner has been in the practice for many years Cash receipts average over £4 500 p a Two suitable houses available (Price freehold £2 000 and £1 400 respectively) Premium £2,974, £1,500 down and balance by instalments

8 NORTH WEST COAST—SURGICAL PARTNERSHIP—In a popular residential seaside resort the half share of middle and upper class Practice is offered to a suitable gentleman possessing the F R C S as the retiring partner does the surgical work the remaining partner the medical side Receipts average nearly £5 000 p a Beautiful house in its own grounds with ample accommodation Price, freehold, £3 000 part on mortgage or would be let on lease at £175 Premium 2 years purchase

9 LONDON S E—Well established mixed class PRACTICE, averaging for past three years £3 885 Panel of 3 900 and appt worth £200 p a Fees from 2 Mid 30 to 2 gns Suitable house, in very good repair with 2 reception 6 bedrooms ample professional accommodation garage for 2 cars Good garden Rent on lease £90 p a Premium £7 500 £5 000 down and balance by arrangement

10 PARTNERSHIP—In a most desirable outlying residential suburb of London a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1 200 p a, in an old established good mixed class Practice averaging just over £10 000 p a Very good house, with ample accommodation Rent £150 p a Premium 2 years' purchase cash

11 LONDON W—Old established good middle class PRACTICE averaging over £2 500 p a Medium sized panel Visits mainly 10/6 Mid wifery discouraged Suitable house, with ample accommodation Vendor has freehold property Price £1 650, or will be let on lease at £150 p a Premium 1½ years' purchase

12 PARTNERSHIP—SOUTH WALES near large Town—A one third or two fifth share in a well established and good middle and industrial Panel Practice producing for last 12 months £3 174 Panel of 1,750 Suitable house with 4 reception and 4 bedrooms, Electric light Garage can be rented on lease Premium 1½ years purchase part by arrangement

13 MANCHESTER—Mixed class PRACTICE averaging over £1,200 Suitable for couple of much energy having neglected work Panel of about 550 Fees 5 6 to 7/6 House, 3 reception 5 bedrooms etc Garden Garage Price £2,700 Premium 1½ years purchase payable by arrangement

14 SOUTH AFRICA—Within 100 miles of East London—Increasing PRACTICE in very pretty Township near sea coast producing last financial year £1 066 Practically all fees cash Climate excellent No night work and little or no visiting Living cheap Bungalow residence in 3/4 acre of productive garden Price £750 £400 on mortgage, or rent on lease £72 p a Premium £550 Sport of all kinds

15 BORDERS OF SHROPSHIRE — Old established good middle class PRACTICE, situated in attractive district, and averaging over £1 600 p a, with selected panel of 400 Fees from 3/6 to 30/ Very good house, in excellent repair, with very fine garden and containing 3 reception, 6 to 8 bedrooms, etc Garage Price for freehold £2 000 £1 000 on mortgage Premium 1½ years purchase Very excellent lighting and sanitation Excellent prospects of surgery

16 KENT—NURSING HOME and small private Practice conducted by latter offering excellent scope if desired as it has not been developed situated in very pretty district within 15 miles of London Fees receipts last year £1,100 Beautiful house (11 bedrooms etc) standing in 24 acres of garden, tennis lawn, etc Price for freehold goodwill £2 100

17 BORDERS OF BERKS AND HANTS—In a delightful country agricultural district, within reach of market town and railway mixed class PRACTICE averaging about £850 p a, including panel over 400 Visits 5/ to 10/6, in decline Fees Old fashioned House contains 3 sitting, 7 bedrooms, bathroom, etc Large garden Garage Rent £50 p a on lease Premium £1 100

18 SURREY—PARTNERSHIP—A two fifths share is offered in a first increasing good mixed class PRACTICE having large open practice, and situated in a developing residential district within easy reach of town Gross cash receipts for past 12 months all returned £1 500 Panel (which can be much increased) 550 Fees from 2 gns Suitable house with 2 reception, 3 bedrooms etc Garden Garage Price £1 250 part on mortgage Premium 2 year purchase

19 DEVON—PARTNERSHIP—Half share of very old established Purely Panel Country Practice, offering scope and situated in pretty part within reach of large town Cash receipts last year £ including appts and panel of 880 Visits 3/6 to 21/, and extra House contains 2 reception, 4 bedrooms bathroom etc Garden Garage Rent £30 p a Premium £2 000 Hunting shooting fishing, etc

20 MIDLANDS—COUNTY TOWN—PARTNERSHIP—A one third share (with increase to one half later) is for disposal in a partly (with increase to one half later) is for disposal in a partly sound well established mixed class Practice owing to the retirement of the senior Partner Gross cash receipts nearly £4 879 p a (last year £4 437) Panel of 1,344 Consultation 3 6 up to Visits 5 to 21/ Very suitable house, with 3 reception 6 to 7 bedrooms etc Garden Garage Rent on lease £100 p a Electricity Schools and sport Premium 2 years' purchase

21 NORTH DEVON & CORNWALL BORDERS—Very old established unopposed Country PRACTICE in beautiful district near coast Cash receipts average just over £1,100 p a, including appt and panel of 330—Suitable house available Premium £1 600 to include drugs etc Hunting, golf fishing, etc

22 LANCS—LARGE TOWN—Old established better and middle class PRACTICE, producing last year over £1 400 including panel of 970 Visits 2/6 to 10/6, with medicine extra Suitable house with 2 reception, 6 bedrooms, etc Garage, garden Rent on lease £90 p a. Premium £2 050

23 SOUTH OF ENGLAND—Pleasant Town near Coast—Very old established middle and upper class PRACTICE Cash receipts average nearly £1,750 p a, including panel of 500 Visits 3/6 to 21/ Very little midwifery House, including consulting room waiting room and dispensary, in well situated part of town Price freehold £1 000 and dispensary, in well situated part of town Price freehold £1 000

24 CATHEDRAL CITY (NORTH)—PARTNERSHIP—Third Partner required in very old established lucrative and increasing middle and working class Practice Cash receipts for past three years average £4 544 p a (last year £4,911) including panel about 4 000 A fifth share is for disposal, with increase to a third later Suitable [illegible] am 2 years' purchase

25 [illegible] MILES OF FAVOURITE TOWN—[illegible] PRACTICE offering large scope Cash receipts for last 12 months £1,532, including panel of over 1 000 Fees from 3/6 Mid from 2 gns Exceptionally fine House in about 4 acres of ground, with tennis lawn fruit and vegetable [illegible] 3 reception, 6 bedrooms etc Freehold £1 [illegible] purchase

26 [illegible]—PARTNERSHIP—A half share is offered in good mixed class Practice having considerable scope for increase Average gross cash receipts for the past three years £4,000, last year £4,273 Panel of 3,500 Fees from 3/6 to 7/6 Midwifery 1½ to 7 gns, about 50 cases Very good house with 4 reception 6 bedrooms, etc, and 1½ acres of garden Price for freehold £2 500, or would be let on lease From 14 years purchase

27 MANCHESTER—Semi residential Suburb—Very old established non dispensing mainly middle class PRACTICE averaging £2 500 p a, including small selected panel of 440 which latter is capable of extension Visits 5/ upwards Only about 20 cases of Midwifery Price from 5 gns Well situated house with good accommodation Price (freehold) £1,600 Premium £3,750

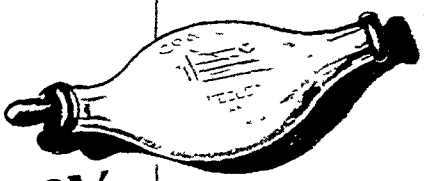
28 LINCS — PLEASANT MARKET TOWN—PARTNERSHIP—A half share with possible succession in two years' time Average income for past three years £1 900, including appointments and panel producing £500 Advice and medicine 5/ upwards visits from 5/ Very few midwiferies from 2 to 3 guineas Large house with garden and garage Price freehold only £1 200 Sport of all kinds and excellent schools for boys and girls Premium 2 years' purchase, payable £1 000 down remainder by arrangement

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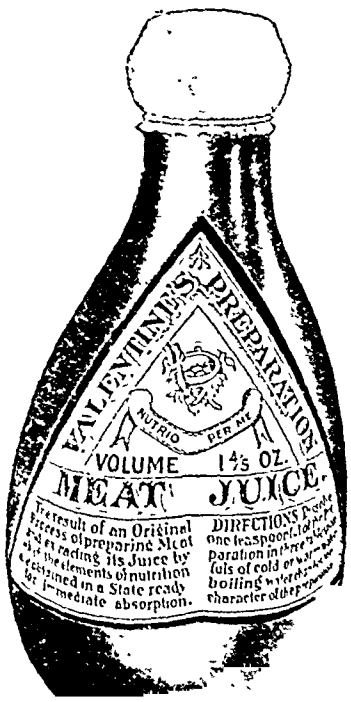
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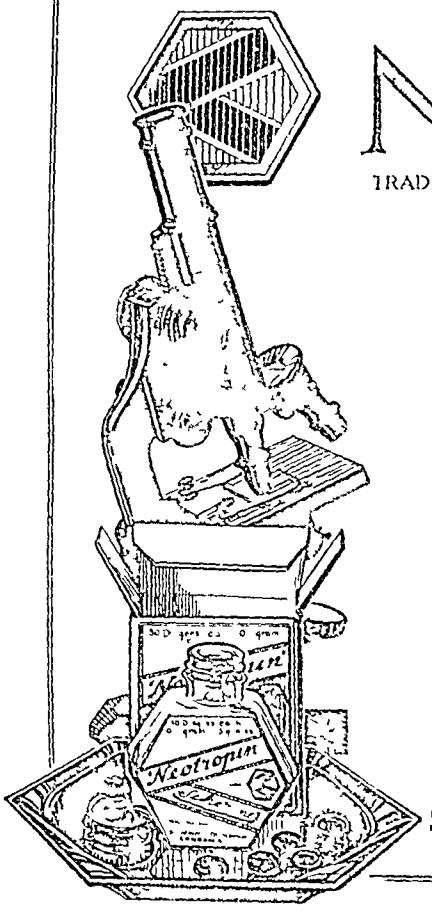
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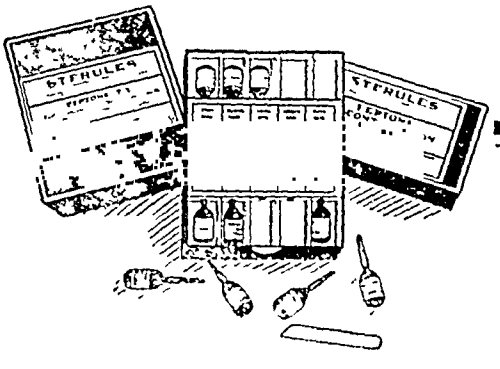
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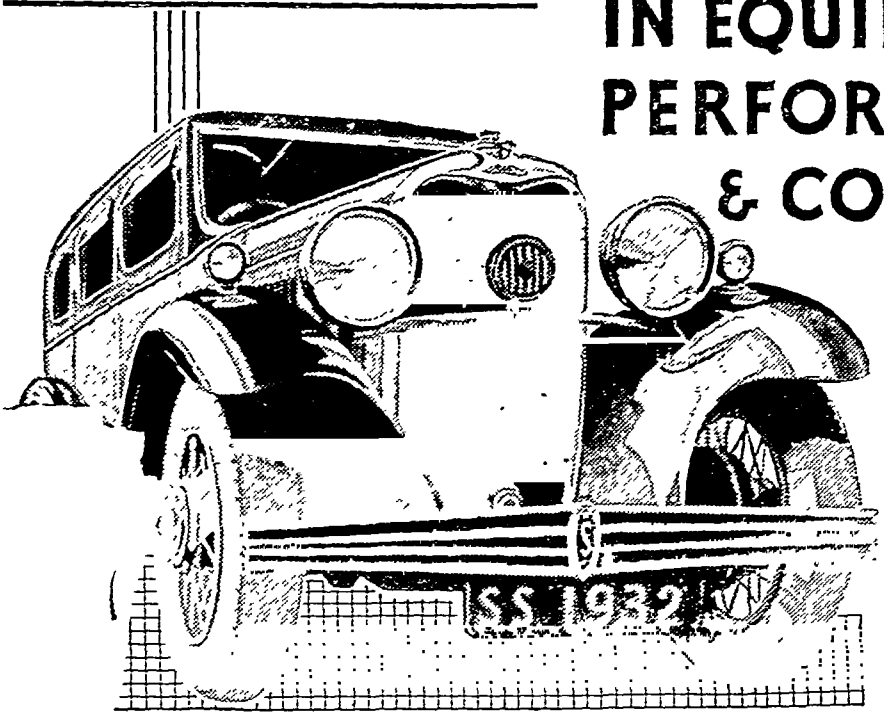
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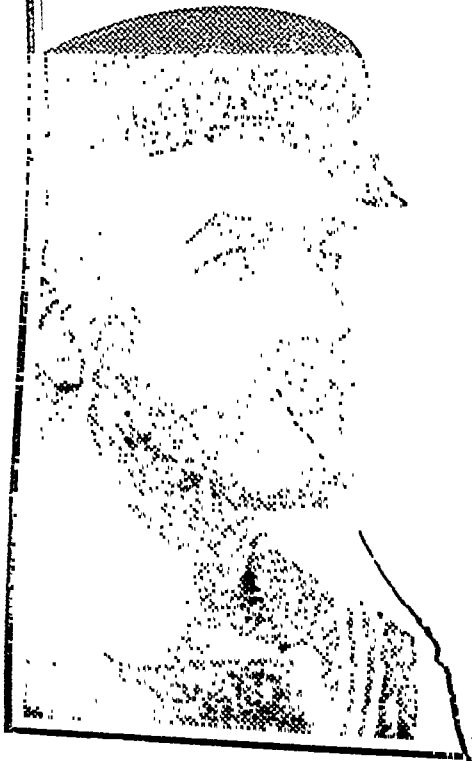
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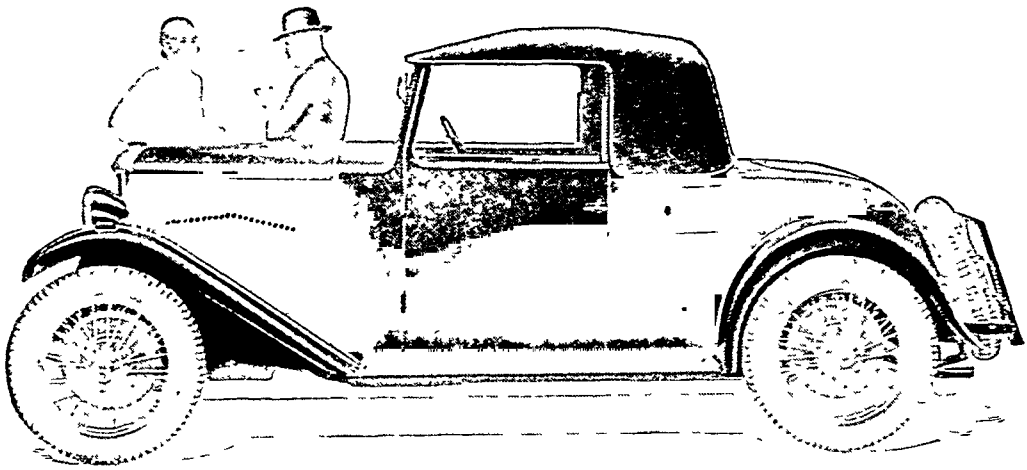


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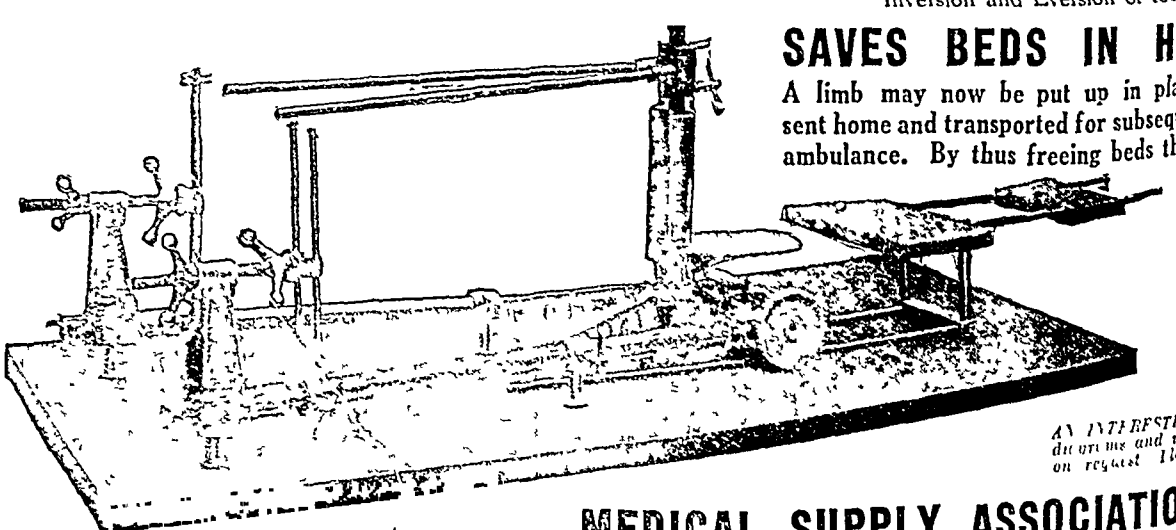
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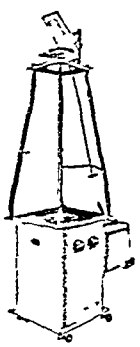
	Question	*Answer*
1	Is aluminium a normal constituent of vegetable and animal life?	The majority of investigators are agreed that aluminium is definitely a normal constituent, and some are of the opinion that it is even an essential constituent of animal life
2	Is aluminium, whether introduced into the system either by the mouth as in food for example, or by subcutaneous injection, absorbed and returned, or does the body reject and eliminate all excess?	The answer is in nearly all cases to the effect that there is no appreciable absorption
3	Is aluminium harmful in the sense of producing toxic disturbances directly or indirectly of gastro intestinal origin, or alternatively in the sense of depriving food-stuffs of their nutritional or hygienic value?	The majority of investigators are definitely of the opinion that small doses of aluminium compounds (some 50 mg.) are completely innocuous, and may be taken continuously without ill effect. The German State Board of Health specifically mentions 1·600 mg. as being completely harmless to human beings. It is generally accepted that aluminium has no effect on the nutritive quality of food-stuffs
4	Is aluminium dissolved from utensils in the normal process of cooking to any important extent?	Opinion is agreed that traces of aluminium are undoubtedly dissolved especially with certain food-stuffs of an acid or alkaline nature, but the quantity is extremely small
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WITH THE HELP OF

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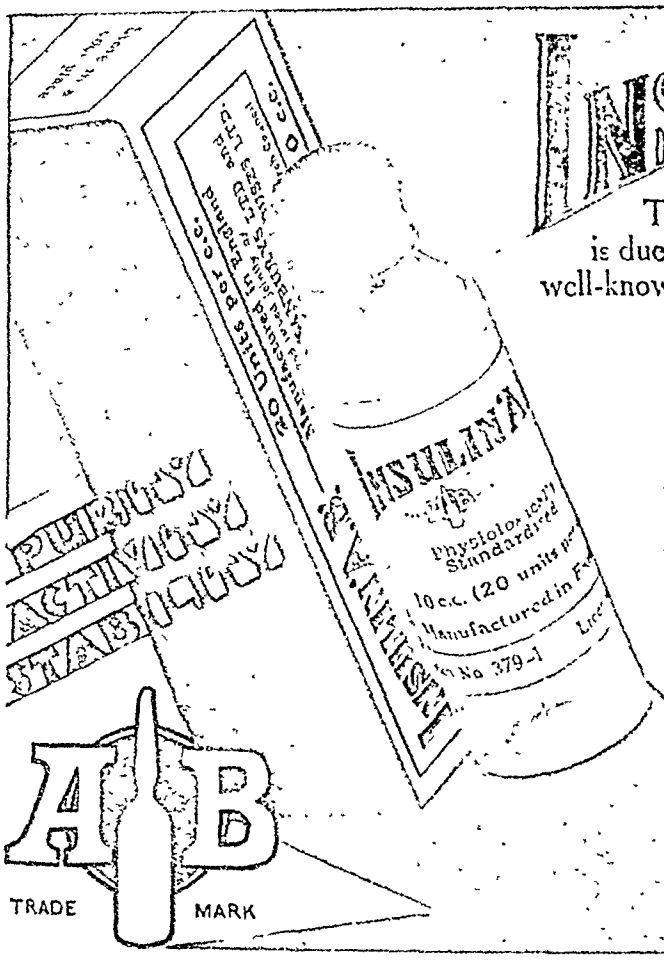
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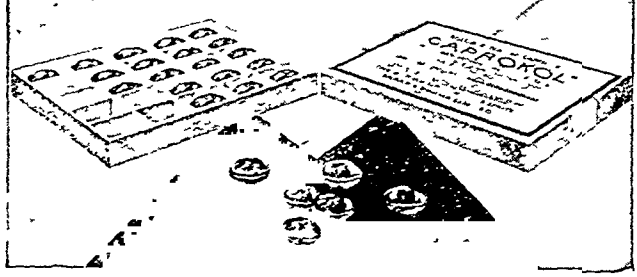
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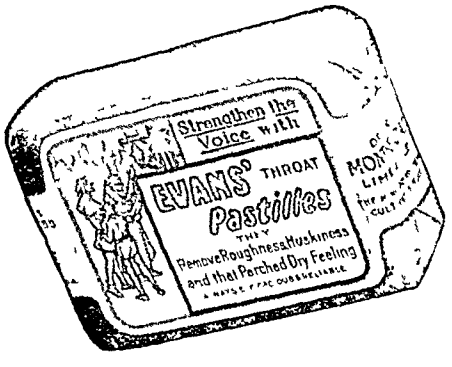
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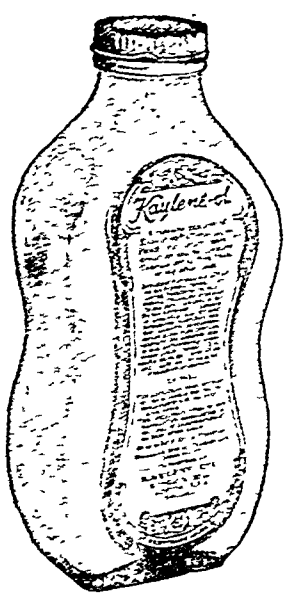
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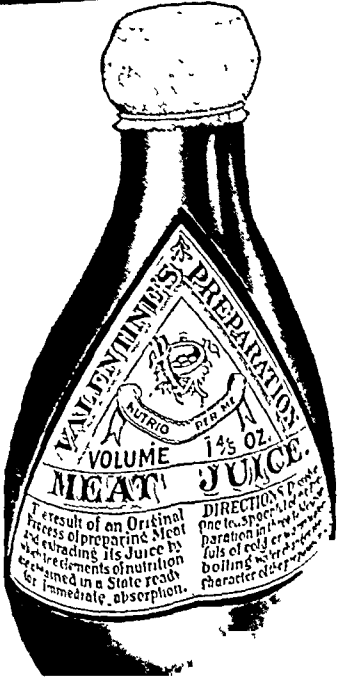
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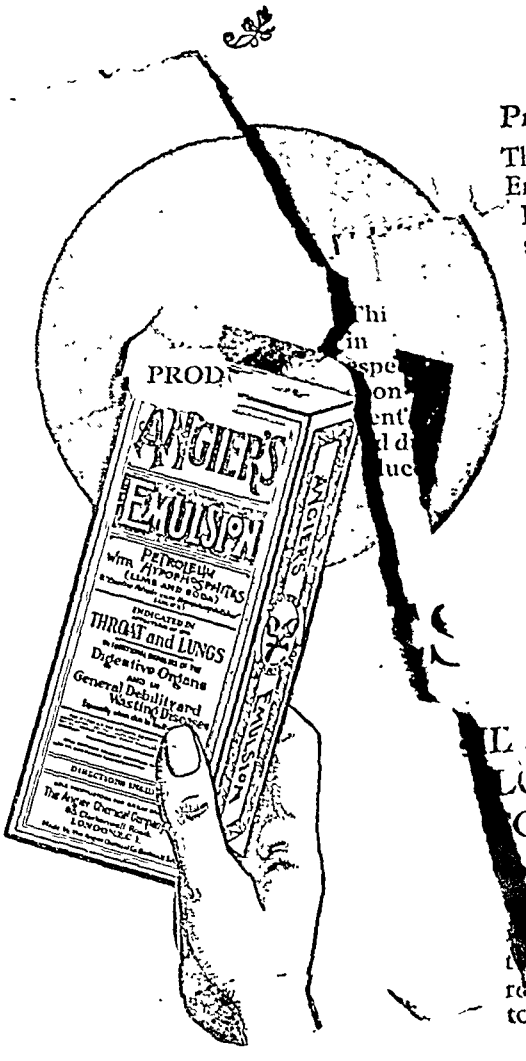
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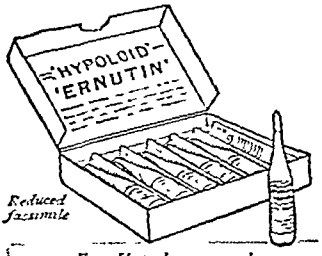
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The Harveian Oration

ON

HARVEY: THE MAN, HIS METHOD, AND HIS MESSAGE FOR US TO-DAY

DELIVERED BEFORE THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, ON OCTOBER 19TH, 1931

BY

ROBERT HUTCHISON, M.D., F.R.C.P.
PHYSICIAN TO THE LONDON HOSPITAL

the short time at my disposal I propose to direct ention to some aspects of Harvey's character and per-ality, to the intellectual atmosphere in which his great covery came to birth, and to the message which he has our own day.

The main biographical facts of Harvey's life are well own to everyone here, and Sir Wilmot Herringham, in his cinating Oration two years ago, gave us some interest-details about the Harvey family. When all is said and e, however, we really do not know very much about n, for, as Sir Wilmot said, Harvey had a singular acity for slipping through life unnoticed. We do not n know whether he attained that happiness at home ich, according to Dr. Johnson, is the ultimate result all ambition; for he was childless, and Mrs. Harvey is y a shadowy figure in the background of his life. It is ity that he had no Boswell. If he had, we should not y have known many more details of his walk and versation, but we should have had more of his preg-nt sayings, such as those recorded by Aubrey: "that n is but a great mischievous baboon," and "that the ropeans know not how to order or govern their women, that the Turks are the only people who use them ely," and of those *obiter dicta* scattered throughout his tings—"Many things are discovered by accident"; den were first let to cultivate philosophy by wondering what they saw," and so forth. As it is, we might say Harvey as the present Poet Laureate has said of kespeare:

hat we know little of his human relationships is one of the sed facts about him. That we conjecture much is the alty a nation pays for failing to know the genius when he ears."

CHARACTER OF HARVEY

Fortunately, however, the main outlines of Harvey's racter are writ large in his works, indeed few scientific ters are more self-revealing.

And first of the characteristics so revealed I would his *love of truth*. There is no word commoner in his tings than "truth," and we may be sure that none s oftener on his lips. "My trust," he boldly declares, s in my love of Truth"; or again, "I avow myself the tsan of Truth alone." Like all great discoverers he ms to have had a flair for truth, and that "fanaticism veracity" of which Huxley spoke, and doubtless he s ready, as Huxley also was, to follow the truth into atever abyss it might lead him. It was one of the atest compliments that he ever paid to the Fellows of s College that he assumed that in this matter they were -minded with himself. "I even ventured to hope," says, "that I should have the comfort of finding all t you had granted me in your sheer love of truth, ceded by others who were philosophers like yourselves." Next perhaps to his love of truth was his *reverence Nature*, which seems to mean in him the same thing reverence for the Creator. He appears to have had at Einstein calls a truly religious feeling in face of ture. "Nature, perfect and divine, is ever in the same ngs harmonious with herself." "Nature ever labours h foresight and intelligence." "That which is in conformity with Nature is right." "There is nothing either more ancient or of higher authority than Nature." "In Nature, just as there is nothing lacking, so there is nothing superfluous." These, and many similar quotations which might be made from his writings, reveal his attitude. In his reverence for Nature he reminds us indeed of some of the great poets. He would have perfectly understood Nature as the "Old Nurse" and would have subscribed heartily to the affirmation that "she never yet betrayed the heart that loved her."

Equal to his love of truth and his reverence for Nature was his *charity*, using the word in the scriptural sense. Of no man can it more truly be said that he envied not, vaunted not himself, was not puffed up. "Whilst I think the industry of everyone deserving of commendation," he says, "I do not remember that I have anywhere bepraised my own." He did not "behave himself unseemly," for, as Willis pointed out, all his public actions known to us were marked not only by propriety but by grace, and it was as true of him as it was of his royal master on the scaffold, that he "nothing common did nor mean." He sought not his own and was not easily provoked. Even when his papers and scientific records were destroyed by the mob—which he says was the worst crucifixion he ever had to endure—his only comment is: "Let gentle minds forgive me, if, recalling the irreparable injuries I have suffered, I here give vent to a sigh." Finally, he thought no evil ("to return evil speaking with evil speaking I hold to be unworthy of a philosopher," he said), but, as we have seen, rejoiced in the Truth.

Imagination, if by that we mean the creative faculty of the mind whereby it moves outside experience, was not so conspicuous in Harvey as it has been in many famous discoverers. The *De Motu* shows little of it. His argument in that great book proceeds forward, almost in pedestrian fashion, from position to position, till at last he is driven, as it were against himself, to see the truth; and his other book, the *De Generatione*, shows fancy rather than imagination. He was not one of those who saw a truth before he proved it. His mind did not take a sudden imaginative leap from the particular to the general, as Darwin's did, nor did he use all his faculties together to reach a result intuitively by a process hardly to be observed or analysed. He was more like Hunter in his love of facts, but he saw quickly the significance of facts within his experience, and perhaps that also is imagination.

Few great men, said Dr. Arnold, have lacked *humour*, and there are indications that Harvey was not wanting in this priceless gift, though his humour was probably of a sub-acid and rather sardonic sort, and his laughter would not be the "sudden glory" of Hobbes. There is humour in his description of his discovery of an egg in the dead body of Mrs. Harvey's parrot, which had all its life been supposed to be a male, and his account of his visit to the reputed witch at Newmarket is also full of it in a quiet way. His contemporaries evidently had some trust in his humorous sense, as is shown in Selden's amusing description of the cure of a person of Quality "with two devils in the head" in which he secured Harvey's co-operation. He was able also to see humour even in little things.

"How pleasantly are we moved to laughter," he writes in the *De Generatione*, "when we see the poor hen following to the water the suppositious brood of ducklings she has hatched, wandering restlessly round the pool attempting to wade after them to her own imminent peril, and by her noises and various artifices striving to entice them back to the shore."

His sense of humour must have been of value to him, not only in furnishing him with hints of truth, but in enabling him to face with equanimity the prejudices of

his Galenic contemporaries, just as Galileo, no doubt, found it helpful in facing the Inquisition and in enabling him to murmur, as he rose from his knees after his recantation, "*Eppur se muove.*" For humour, as Mr. Graham Wallas reminds us, is a powerful instrument for clearing away what Carlyle described as "the dead pedantries, inveracities, and accumulated dung-mountains" of scientific as well as of social, political, and religious thought; nor need we have any doubt that Harvey was always able to recognize in himself what W. K. Clifford called the still small voice that whispers "Fiddlesticks."

Reflecting upon the sense of humour in Harvey, it is permissible to regret that it is a quality not more abundant in scientific workers and writers. It would save us from much pedantry and dullness, from much solemn trifling calling itself research, and it would make scientific literature immeasurably more readable.

Love of truth, reverence, and charity, with some tincture of imagination and humour—these were the chief features of Harvey's personality; but to complete the picture we must add moral courage—which Michael Foster said is an essential part of the scientific character—patience, and reflectiveness. It must have required much moral courage to attack the Galenic stronghold, and it is no wonder that Zachary Wood apostrophized him as "Truly a bold man, indeed, O disturber of the Quiet of Physicians! O Seditious Citizen of the Physical Commonwealth!" His patience was shown not only in the carrying out of his investigations, but in his reluctance to make them public. He always bided his time. He was like Darwin, who waited twenty-nine years for the results of a single experiment, and all of whose work on evolution was published after he was 50. In his slowness to publish he resembled other great men of his time and of the next century—Galileo, Newton, Bacon, Cavendish, and Gauss. How different from us to-day, with our "preliminary notes" and disputes as to precedence in discovery! Lastly, he was a reflective philosopher. Like Hunter, his delight was to think. We are told that he would withdraw himself to the leads of his house in town, or to caves in his garden in the country, in order to indulge in contemplation. Surely in this, also, he has a lesson for our unreflective time.

Personality in Science

I have dwelt at some length upon the main features of Harvey's character because, in so doing, I believe that I am strictly fulfilling the injunction laid upon me to-day to commemorate the benefactors of this College. For, whilst we are grateful to our material benefactors, we owe an equal debt of gratitude to those who have conferred upon us the benefaction of their example. Of these Harvey himself is chief, but the College has reason to be thankful that it has never wanted amongst its Fellows men who were like-minded with him, but who—mute, inglorious Harveys as they were—lacked the touch of genius, or perhaps only the opportunity, which would have made them famous as he is.

In these days, when it is the fashion to denigrate great men, it is pleasant to remember that no one has yet seriously attempted to belittle Harvey. William Hunter, it is true, tried to depreciate his share in the discovery of the circulation, but he made no reflections on Harvey's character, whilst the curious statement made in a letter from Izaac Walton to Aubrey that Mr. Warner had told Lord Winchester that he (Warner) "had first found out the circulation of the blood and discovered it to Dr. Harvey, who said that 'twas he himself that found it," may probably be dismissed as apocryphal. No, on this our festival let us boldly praise famous men, and on St. Luke's Day let us be grateful, not only for the great discoverer, but for the man who exhibited in his character so many of the virtues of the Beloved Physician.

Apart from these domestic reasons, peculiar to this College, there are wider considerations which make the study of the character and personality of Harvey, as of those of all great discoverers, of interest. What part, we may ask, does personality play in the highest scientific work?

In art, of course, the personality of the artist is everything, and the same is true of literature—the style is the man himself. But in the case of science the influence of personality is not so obvious. There is a tendency, indeed, to regard scientific men as machines who discover facts and laws by a purely intellectual process with which character has nothing to do. This, surely, is too narrow a view. Truth is as many-sided as human nature, and requires the whole man to discover it. The great scientist must not only love truth as Harvey did, but he must have a feeling also for the beautiful and for the good. For truth is perceived by the emotions as well as by the intellect, and the poet and the discoverer are to some extent one. Moral qualities also are required, such as honesty and a sense of justice. Of course, all scientific men do not possess these qualities. There is no type of mind which can fairly be described as scientific, for there is no intellectual specialization *ab initio*, and scientific men are as full of prejudices and weaknesses as others; Harvey himself, let us be thankful, was neither saint nor sage. In proportion, however, as the emotional and moral elements in his personality are developed and cultivated will be the likelihood of the investigator attaining to the truth. In the words of Pascal, "It is only the great souls who attain to the utmost limits of science," or, as Harvey himself put it, "Nor does God give that which is most excellent and chiefly to be desired—wisdom—to the wicked." The real investigator must have faith, hope, and charity: faith in the object of his quest and in his power to reach it; hope to enable him to overcome all obstacles in his way; and charity, that is love of the truth, and, in medical science especially, love also of mankind.

And if personality is important in the attainment of truth it is surely equally important as Truth's advocate. The comparative absence of opposition to Harvey's discovery was no doubt partly due to the disarming modesty with which, like Lister, he gave it to the world, just as on the contrary Pasteur's aggressive cocksureness aroused the resistance of his contemporaries. But if personality is of importance in science in general, it is even more important in medicine, which is both a science and an art, and in the application of medical science in practice the personality of the doctor is as dominant as that of any other artist. Nor is its importance likely to lessen in future, for as investigation ceases to be individual, and becomes more and more collective, so will it be essential to have leaders who, by their personality, can attract and control the subordinate workers.

If, then, personality is so important both in our science and in our art, it is surely matter for congratulation that our College, in selecting Members for the honour of the Fellowship, has always considered not intellectual attainment alone, but the character and quality of the whole man.

The Intellectual Climate of the Seventeenth Century and of To-day

But Harvey's gifts of character and intellect, notable though they were, would not alone have enabled him to make his great discovery, and, like all innovators, he owed much to his predecessors. It is not usually difficult to trace the pedigree of great ideas—Einstein's theory is, perhaps, an exception to-day—for discoveries rarely spring to life full-grown like Minerva from the head

Jove. What Harvey owed to his predecessors in antiquity, and especially to Aristotle, has been shown by our learned registrar, Dr. Raymond Crawfurd. He derived much from the Italian anatomists, and no doubt also from his contemporary Galileo, the real founder of modern science, while his probable debt to Bacon and to Gilbert has been pointed out by Sir William Hale-White. All this is now familiar ground, and I do not propose to go over it again, but as "we are more children of the age we live in than of our own fathers," Harvey must be regarded as having been fortunate in the climate of opinion, to use Glanvil's phrase, in which his discovery came to birth. It has not always been so, of course. It is possible for a discovery to be born into an uncongenial mental climate, as Servetus and Semmelweis, to mention only two examples, found to their cost. But in Harvey's case the time was ripe for the man. Standing between the sixteenth and the eighteenth centuries, the seventeenth partook both of the credulity of the one and the scepticism of the other. It owed much to the Renaissance and more, perhaps, to the Reformation. It was a time of great awakening and renewal—the *Instauratio Magna* of Bacon. Scepticism and doubt, the active doubt which Goethe praised, were replacing credulity and dogmatism. Men were learning to trust reason rather than authority, to assert the liberty of individual judgement, to set the natural above the supernatural, and to look to the future rather than to the past. The imagination of the age had been kindled by the Copernican Theory and by the new orientation of man to the universe which it brought about, as well as by the geographical discoveries of the preceding epoch. The century owed much, also, to its great poets. It has been well said by Buckle that it was no accident that Shakespeare preceded Newton, for the poets not only stimulated imagination, but led men back to nature. Finally, as Dr. R. O. Moon has shown, it was an age greatly indebted to its philosophers, to Bacon, Descartes, and Spinoza especially, who created a spirit of scepticism and inquiry. Stimulated by their ideas, more men than ever before were turning away from the barren controversies of religion and devoting themselves to scientific pursuits, and these men animated and encouraged one another.

The practical results of the new outlook were also becoming apparent. Modern anatomy and physiology had already come to birth with the publication of Vesalius's great work only a generation before Harvey. Chemistry was emerging from alchemy, just as astronomy had already done from astrology, and in the early years of the century the science of physics also sprang into being. Nor was the revolt from authority seen only in science; it was being carried by Bacon into philosophy, by Hobbes and Glanvil into metaphysics, by Cromwell into politics, and by Harrington and Algernon Sydney into the theory of government. It was a time, in short, when anything seemed possible.

It is interesting to contrast the spirit of the age of Harvey which I have depicted with that of to-day. Like him we live in a period of great unrest—political, social, and economic—but in our own age there has been a destruction of values, a throwing down of standards, and removal of moral and intellectual landmarks of which the seventeenth century knew nothing. As a recent writer has said:

> "Behind both the good and the evil manifestations of that age lay a philosophic absolutism and a certitude of conviction now lost. Even those men who had shaken off some prejudices and particular beliefs retained the conviction of the eternal and absolute validity of truth and duty—a conviction of the dignity of man and of the worth of his work still illuminated human thought."

The effect of the moral and intellectual chaos of our age has been disastrous to the arts, and to some extent to literature, but it has not yet affected science. It may be, as Sir Frederick Andrewes suggested in his Oration more than ten years ago, that Western civilization is now in a state of decline, but that science, as has always happened before, is affected last. We may even have to look in future to science for our poetry—and indeed there is more of the spirit of true poetry in the writings of the modern cosmogonists than in all the anthologies of neo-Georgian verse. But if the march of science shows no signs of slackening, at least we have lost the scientific optimism which inspired Bacon's *New Atlantis*, and which was shown even more conspicuously by the scientific writers of the mid-nineteenth century. We are to some extent disillusioned with the results that science has yielded us. We are not so sure that the "Universe is friendly" after all, and that human life may not be merely "a discreditable episode in the history of one of the meaner planets," nor have we yet adjusted ourselves to the discoveries of modern astronomy any more than many men of Harvey's time had adjusted their beliefs to the great discovery of Copernicus. But this attitude is not likely to diminish the zest with which medical science in particular is pursued to-day. Never, on the contrary, has there been a time when conditions were more favourable for it, or when it and the practical benefits it brings were more sought after, for in our day the doctor has replaced the priest. This very popularity, however, has its own dangers. What we have to fear is the influence of the mass-mind, of the increasing importance attached to quantity rather than to quality in life, the undervaluation of knowledge for its own sake, and the exploitation of discovery for commercial ends. We may suffer, also, from the deflection of science by the pull of the politician, the philanthropist, and the press.

On the other hand, in all that concerns the apparatus of knowledge we have immense advantages compared with the seventeenth century. In Harvey's day there were no laboratories; scientific societies were only being founded, and scientific journals did not exist. The diffusion of new knowledge was slow and difficult, and investigators communicated their ideas and discoveries mostly by correspondence. How different it is to-day, when we have more laboratories than trained men to work in them, when societies have multiplied to a point when it is difficult to get audiences to attend them, and when our scientific periodicals are counted by the thousand. But these things also have their drawbacks. In Harvey's time Latin was the *lingua franca* known to workers in science in all countries. To-day anyone who aspires to be a scientist must know two or three modern languages besides his own—to say nothing of American. The accumulation of knowledge, too, is overwhelming. Look round this room in which we are met. It is a noble library indeed, but is it not also a mausoleum? And how many facts which men are at present hunting for, and theories which are even now being put forward as new, lie already buried in these shelves? No, we do not suffer to-day from starvation of the intellect: our danger rather is that science may become suffocated in its own secretions; and that a remedy should be found for this congestion and plethora of the scientific body is one of the most pressing needs of our generation. Again, in the time of Harvey there was no specialism, and it was still possible for a man to say that he took all knowledge as his province. Now specialism has been carried to the point of a vice, and the right hand of science does not know what the left is doing. We may agree with Sir Arthur Keith that specialism is inevitable as medical science evolves, but none the less we may be permitted to regret it. For specialism, however favourable to the

accumulation of facts, is bad for the philosophy of knowledge The worker in one province is too absorbed to notice what those in other provinces are about, indeed, the terminology of the different specialties is now become so esoteric that other workers cannot understand it if they would There is, in consequence of this, too little speculation and too little use of the imagination, and, compared with the wealth of knowledge and the brilliance of observation which it exhibits, most scientific literature is barren in ideas It would be good for us all, perhaps, if there was a close time in laboratory work and the publishing of papers for, say, five years, in order to give us leisure to digest the huge accumulation of knowledge which we already possess and to think out new lines of advance

Certainly the men of the seventeenth century, considering their inferior opportunities, did in this respect much better than we They showed more imagination, they were less afraid of speculation, and, alike in the solidity of its substance and in the perfection of its form, their work compares favourably with ours It is true, of course, that our times are unpropitious to reflection, and we may well say, with the Victorian poet, though with better reason even than he

> 'But we brought forth and reared in hours
> Of change alarm surprise—
> What shelter to grow ripe is ours?
> What leisure to grow wise?'

But let us take courage again from the example of Harvey He also lived in troublous times, yet he was able to abstract himself from the turmoil around him, and in thought and meditation to possess his soul in quiet

Conservatism in Medicine

It might have been supposed that Harvey's great discovery, born into such a congenial intellectual climate, would have been accepted everywhere and at once, yet we know that in fact, some time elapsed before the truth was generally recognized There was nothing new, however, in this Truth has always had to fight its way "How difficult it is, said Pasteur "to obtain the triumph of truth Jenner, Simpson, Lister, and Darwin all had the same experience It may be, as Mr Wilfred Trotter would have us believe, that the truly scientific mind is altogether unafraid of the new, but, if so, the truly scientific mind must be rare For history shows that prominent men of science have often themselves been the chief opponents of new truth Simpson opposed Lister, Liebig opposed Pasteur, Owen opposed Darwin In the seventeenth century Bacon rejected the Copernican theory, and poured scorn on the work of Gilbert on the magnet Even Harvey, as we know, refused to recognize the demonstration of the lymphatics We may flatter ourselves that new truth would have a better chance to-day, but the long neglect of Mendel's work, and that of Henri Fabre, should be a warning to us

This conservatism of science is at first sight surprising, and it is of interest to inquire into the causes of it Archibald Pitcairne ascribed the opposition to Harvey's discovery simply to ignorance and jealousy, whilst a recent American writer Mr Stern, using the language of modern psychology, has attributed it to such mental factors as fear reactions in the presence of the unknown and difficulty of reconditioning behaviour pattern along with cultural influences such as the power of tradition and authority, and ignorance of the experimental method On the other hand, a modern English critic of science, Dr Murray, thinks that the excessive conservatism of medical men is largely due to our habit of "laying down the law," as he puts it, to our patients I prefer, however, to all these explanations, the simple one of Bagehot that "the greatest paradox to human nature is the pain of a new idea"

But, none the less, a great deal may be said in defence of the conservative attitude It may be a good thing for truth to fight for its existence, for it is only by prevailing that it is proved to be truth As Dr Johnson said, "It is open to any man to state what he believes to be the truth, and it is open to any other man to knock him down, martyrdom is the test" We may even call Harvey himself as a witness in the defence of conservatism "The authority of the ancients" he says, "is not to be readily thrown off," and again "Everything is not to be received at once with an unthinking credulity" We speak with approval of the virtue of the open mind, but there is also something to be said for the closed mind, for it is often forgotten that an ever-open mind is like an open drain, it is apt to be the receptacle of a great deal of rubbish There are times when we should have the courage to say of the new, "This is not true, or, if it is, it has no right to be" Especially in medicine is a reasonable conservatism to be commended We dare not hazard the lives of the patients entrusted to us on the chance of a new theory being sound, or a new drug both useful and safe We must first prove all things—and that takes time—and if there were more conservatism and less credulity in our profession we should be saved from the ephemeral fashions in pathological doctrine and in methods of treatment which do so much to bring contempt upon our art

I would therefore venture to claim it as not the least of the services of this College to Medicine, that we have always, alike in matters of policy and of practice, adopted an attitude of wise conservatism

Observation versus Experiment

It is one of the duties of the Harveian Orator to remind his hearers of Harvey's injunction that they should "study and seek out the secrets of Nature by way of experiment" However necessary in Harvey's day, this exhortation has become superfluous in our own The experimental method has gone from one triumph to another, and now dominates the whole field of science, and its services to medical science in particular were eloquently brought before us by our late President, Sir John Rose Bradford, when he delivered his Oration four years ago But to those whose work lies in the clinical field, Harvey's advice must always have seemed a counsel of perfection For how is one to apply the experimental method at the bedside? The imperious demands of practice leave little leisure for the planning and carrying out of experiments whilst the claims of humanity restrict the application of the method in the case of the individual patient. It need excite no surprise, therefore, that some of the most earnest investigators in our science have suggested that a special class of clinicians—spoken of as research physicians—should be called into existence who should devote their whole time and energies to searching out the secrets of disease by the experimental method both in the laboratory and in the ward This is not the occasion on which to discuss this proposal in detail It is easy to see practical difficulties and objections, but on the day of all others it is a proposal which, in principle, should secure our sympathy We may be certain that Harvey would have approved it Indeed, it is difficult to imagine a position which would have been more to his own taste and more adapted to his abilities than that of "research physician"

But whilst we welcome any plan which offers a chance of increasing the application of experiment in practice of medicine, it does not follow that we must turn our back

upon the old traditional clinical method of observation. The respective merits and scope of the two methods, experimental and observational, have lately been discussed by some of the acutest minds in our profession, and I do not intend to reopen the controversy, though it may be well to point out that the two methods are not mutually exclusive. Harvey himself was a great observer. This is apparent in all his work as an investigator, and had his projected volume of medical observations ever seen the light of day we may be sure that he would have appeared as a great clinical observer also. Devoted though he was to the experimental method, he frequently urges the duty of observation. "Diligent observation is requisite in every science," he says, "and the senses are frequently to be appealed to." And again, "We are of opinion that for the acquisition of truth we cannot rely on the theories of others, except there be added thereto a diligent course of observation." It has been said by someone that in experiments we question Nature; in observation we only listen to her. True, but we shall question Nature in vain unless we listen to her replies. In other words, there is no real opposition between experiment and observation, for experiment is only observation carried out under artificially limited conditions and on a selected group of phenomena.

Nor can we agree with those who would have us believe that no further advances by purely observational methods are to be looked for. It may be that in countries of the temperate zone the clinical field has been so thoroughly gleaned that there would seem to be little chance of anything which mere observation can detect remaining unknown. We must remember, however, the saying of Bacon that, "noble inventions may be lying at our very feet and yet mankind may step over without seeing them." Even in recent years new diseases and "clinical syndromes" have been discovered and their natural history described by the observational method. It will suffice to mention epidemic encephalitis and acrodynia (pink disease) as examples. The fact also that such an obvious and striking phenomenon as the Babinski reflex has only been recognized since many of us here present were students should suffice to give us pause. No, the possibilities of clinical observation are not yet exhausted. In the domain of tropical medicine, for instance, great though the advances in recent years have been, there is still much field-work to be done. Clinical observation, going hand-in-hand with experiment, is throwing fresh light on the problems of epidemiology, whilst the enormous progress which this century has seen in psychological medicine has, from the nature of the material, been almost entirely along observational lines, and there is also scope for the study, by observation, of purely subjective symptoms, such as pain. Of the three members of the clinical triad—diagnosis, prognosis, treatment—the first is certainly coming to depend more and more upon the help of laboratory methods, but pure observation can still do much in the other two. The comparative neglect of prognosis especially is surprising, and any young Fellow of the College who is prepared to devote a lifetime to the collection of his observations, might, in his later years, produce a treatise on the subject which would make our whole profession his debtor. It is the same with therapeutics. Pharmacology has done much for us, and many recent advances we owe to laboratory experiment, but in the last resort any method of treatment must stand or fall by its actual results in practice, and it is here that we are in need of more extensive, accurate, and controlled observations. For if the observational method is to yield results of any value, either in the sphere of treatment or any other, the observations must be accurate and controlled. It is a just reproach to clinical medicine that so often what passes for observation is really only an "impression," and that observation, even when accurate, is not checked by a sufficient number of controls. This, however, is not the fault of the method, but of those who employ it.

Neo-Hippocratism

I have mentioned some special directions in which the observational method can still render us good service in the advance of knowledge, but, taking a wider view, I think there is reason to believe that in the immediate future still greater demands will be made upon it.

If one surveys the field of medical science to-day, and tries to estimate the direction in which the currents of contemporary thought are moving, one cannot help being impressed by the signs of a return towards the Hippocratic outlook. This new way of looking at medicine, or rather this revival, with modifications, of an old way, is called by its adherents by various names—"constitutional medicine," "the science of the individual," or "neo-humoralism," according to the element in it which seems most important to the particular observer, but it may perhaps be conveniently described as "neo-Hippocratism." The Hippocratic doctrine was founded, it will be remembered, upon the four humours and upon the *vis medicatrix naturae*, and careful clinical observation was its method of investigation. The doctrine of the humours though it dominated medicine for centuries, has long been abandoned, but neo-Hippocratic medicine deserves the title of neo-humoralism in so far as it attaches a great importance to the body fluids. It is in this respect to be regarded as a revolt against the solidism preached by Cullen in the eighteenth century, and later established on a scientific basis by the work of Virchow and of Bichat. It recognizes that all the phenomena of life are derived from physico-chemical reactions in the fluids of the body, and that a disease is often due, not, as the morbid anatomy school teaches, to the changes found in the organs after death, but rather to subtle alterations in the physical and chemical properties of the fluids, to which as one of its tasks the early recognition by biochemical the changes in the tissues are secondary; and it sets itself methods of the changes in the fluids, with a view to arresting the disease before structural modifications have taken place.

Neo-Hippocratism also attaches great value to the *vis medicatrix*. It is vitalistic as Hippocratic medicine was, and not mechanistic like the medicine of Harvey's epoch. It sees in adaptation a principle as important in biology as the principle of the conservation of energy is in physics. It regards this purposive striving of the organism to adapt itself to the environment, and to heal and restore itself when diseased, as marking off all living things from the inorganic world, and is in sympathy with Sydenham's definition of disease as "an effort of Nature, striving with all her might to restore the patient by the elimination of the morbific matter." It finds in the cause of a disease not a single agent, but a "constellation of conditions" in the environment to which the organism is seeking to adapt itself, and it attaches just as much importance to the soil as to the seed. In this, also, it is true to the Hippocratic tradition, which always regarded disease as endogenous rather than exogenous.

It lays great stress, too, on the fundamental unity of the living body, and on the interdependence or integration of its parts. It considers it to be the essential vice of specialism that it tends to concentrate attention on the parts and to ignore the whole. It holds that the very unity of the organism limits the value of the experimental method as opposed to the observational, in so far as it proceeds by an arbitrary isolation of phenomena in order to investigate them.

The circulation of the blood is, for the neo-Hippocratist, one of the chief modes by which the integration of the

body is achieved, for through the medium of the blood every cell is able to influence every other, even the most remote. Integration is also maintained by the endocrine hormones carried by the blood, and to an even greater extent by the vegetative nervous system.

Upon the degree of perfection of the integration of the individual organism thus brought about, and its constitutional balance, depends in large measure, according to this view, its capacity for adaptation, and therefore its power to resist those unfavourable conditions in the environment which make for disease. Disease is regarded as a disintegration of the organism; healing as a reintegration of it

But whilst the body is in this sense one and indivisible, it is not a mere sum of its constituent parts. The organism is more than this—it is a resultant or synthesis, *a quid novum*, which must be studied both in health and in disease as a whole This individualistic outlook is characteristic of Hippocratism, both new and old. It is, however, another plank in the neo-Hippocratic platform that whilst the human body is one and indivisible, no two human beings are alike Man is not one, but a diversity of creatures One man differs from another, not only in his inborn hereditary character, but morphologically in his "anatomical personality," functionally in his "physiological personality," and, most of all perhaps, psychologically, in his mental and nervous reactions and peculiarities Hence there arises a restoration of the idea of constitutions, which played so large a part in Hippocratic practice, and which has never entirely disappeared from medical thought It is a doctrine of constitutions, however, no longer based upon the supposititious four humours but upon measurable morphological and functional differences in individuals, and upon the results afforded by biochemistry and endocrinology.

Of the three factors which go to make up personality, or the "human biotype"—morphological, neurochemical, and psychological—by no means the least importance is attached by the adherents of neo-Hippocratism to the last. It is, indeed, one of the most significant dogmas of the school that the mental factor in disease must never be lost sight of, as it has so often been both by the "solidists" and by the exponents of "experimental medicine," but that, on the contrary, it is of the first importance to consider it in any effort to restore the whole man to health

If this is the direction in which contemporary medicine is moving, it follows, surely, that fresh demands will be made upon clinical observation, though we may have to look at our material in new ways The clinician will be restored to his pride of place, for it is he alone who can consider the patient as a whole. Clinical intuition and judgement, so often disparaged by the experimentalist, will rise again in esteem as the faculties by which alone the different factors concerned in the disintegration of the personality can be evaluated, whilst the methods of the laboratory will be reserved for confirmation and correction.

The new outlook will also demand a new anatomy—an "individual" anatomy—which will take account of the great morphological variations which may yet fall within the limits of the normal, and a new clinical physiology, which will study the functional variations in human beings and the reactions of different individuals to changes in environment. In this way the material will be gathered for what the neo-Hippocratists call "the science of the individual"

New methods of treatment also must follow, along with a reintroduction of older methods which have fallen too much into disuse. Treatment by protein shock and by blood transfusion, and a revived interest in blood-letting, are some of the results of neo-humoralism, and the employment again of what used to be called anti dyscrasic methods, and of alteratives, may follow. At all events the neo-Hippocratic attitude to disease is more hopeful than the feeling of therapeutic impotence engendered by the doctrines of the morbid anatomy school.

The Need for Bridge-makers and Generalizers

I have dwelt at some length on what appears to be the orientation of Medicine to-day and the fresh scope which it offers for observational methods, but, of course, all prophecy is vain. The invention of a new instrument, or of a new method, might suddenly do as much for medicine as the telescope did for astronomy or the introduction of logarithms for mathematics. It may be that we are on the eve of some such revolutionary development If it comes, it will probably spring from outside our own science, and from the sphere of physics or chemistry, and we may have difficulty at first in apprehending it We need, therefore, at the present day, not only observers and experimentalists, but bridge-makers, who will mediate between the laboratory and the bedside, and who will interpret and apply the work of the pure physiologist, physicist, or chemist, in so far as it bears upon practical medicine. Such men have always been few, and they must tend to get fewer as the sciences ancillary to medicine become more and more specialized; but the greater the divorce of medicine from pure science the more are such bridge-makers necessary. How they are to be found and trained, and what position they are to occupy, are questions for the future, but that men capable of acting as liaison officers in the scientific army are necessary there can be no doubt. Nor can it be doubted that they could contribute materially, if not spectacularly, to the advance of medicine.

But most of all we need thinkers. Observation and experiment can give us facts—have, indeed, given us too many facts. What we require is men with imagination, men of the contemplative type of Harvey, fertile in hypotheses, who can see the interrelation between the facts, and who can bind them into manageable sheaves and induce from them those generalizations which we call natural laws.

Great generalizers, of course, are men of genius, and cannot be produced to order They flourish in some epochs more than in others, for there are, as Bacon said, waste tracts in time as well as in space. It may be that we are in such a waste tract now Certainly men of great imaginative genius do not seem to be relatively so abundant as they were in the time of Harvey, perhaps the intellectual climate of to-day does not favour their appearance. I have already spoken of the restlessness and distractions of our day and their unfavourable effect on thought, and one might add to this obstacle the contempt for the humanities and for pure knowledge characteristic of a civilization directed to merely material ends. It may be doubted, too, whether our present methods of education are favourable to the production of men of the type we most need. To give up early the humane studies and take to specialism is not the way to train the imagination, and tends to result in the production of skilled technicians rather than of educated men. Be this as it may, there is reason to expect that the clinical atmosphere will be more favourable to the production of generalizations than that of the laboratory. For the gifts of judgement and insight, the power to see the wood and not merely the trees, so necessary for fruitful generalization, are just those required by the diagnostician. The clinical atmosphere, however, must be a wide one, for specialism is not conducive to the broad and general view.

I would conclude, Mr. President, by urging upon all the toilers in the field of medical science the necessity

r unity. We need every worker, whether at the bedde or in the laboratory, who is sincerely seeking the uth as Harvey understood it, for in the house of Science ere are many mansions. Let us not say I am of Paul, d I of Apollos, and I of Cephas ; let the experimentalist ot despise the clinical observer as superficial, nor the inician the laboratory worker as narrow ; nor let oth contemn the thinker as visionary and unpractical. et me rather exhort all, as I am bidden this day in larvey's name to exhort the Fellows of this College, that ey continue in love and affection among themselves.

TOXIC GOITRE: THE COURSE OF THE DISEASE, AND ITS TREATMENT*

BY

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During the last ten years, much study has been devoted o the problems of exophthalmic goitre, and much has been written on the subject. There are three lines along vhich developments have occurred that seem, especially, o have affected our conceptions of this disease and the reatment of the patients. These three lines are:—(1) the orrelation of the morbid anatomy of the thyroid gland vith the clinical conditions of the patients, (2) the therapeutic use of iodine, (3) the development of surgical reatment. The changes in the thyroid gland that ccompany the clinical conditions are very varied, and he numerous histological studies of material removed at peration, and obtained by experiments on animals, have proved of value. Following the work of Marine[1] [2] on animals, Rienhoff and Lewis,[3] working on patients, have been able to clarify this subject and to present a conception of the structural changes in the gland that can be correlated with the clinical pictures seen in patients. The relation of iodine to the pathology of toxic goitres is still unsolved, but the empirical employment of this substance in the management of cases has been a valuable step forward in treatment; and the development of surgical skill and judgement now offers possibilities of successful treatment that are among the most dramatic in medicine.

Morbid Anatomy and Symptomatology

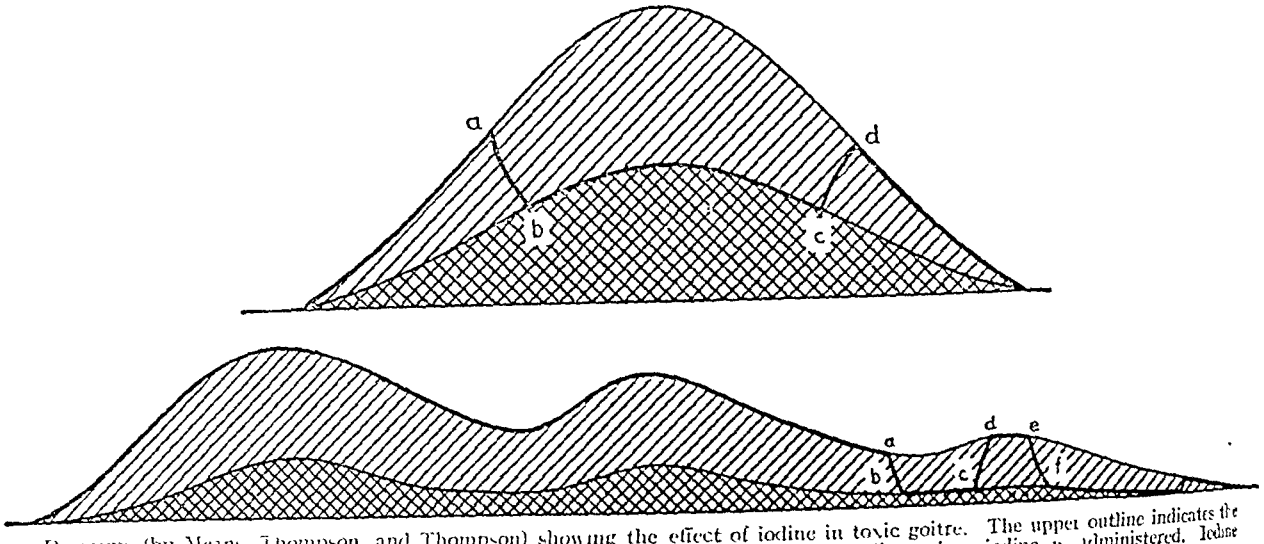
The suggestion, made by Plummer,[4] that the cases could e divided into those of true exophthalmic goitre and hose of adenoma with hyperthyroidism or toxic adenoma, as of value in the development of our knowledge, it it now appears that this separation is arbiary and artificial, and that the changes which the yroid gland has previously undergone are the essenl factor in deciding the clinical picture and the gland icture in a case of goitre with symptoms of intoxication toxic goitre. Marine showed that increased activity the gland is accompanied by hypertrophy and hypersia, and that involution to the normal resting condition urs when the activity diminishes. Rienhoff[3] removed tions of the thyroid gland from patients who were ering from typical exophthalmic goitre, who had had previous thyroid disturbance, and who had not received line ; iodine was then administered, and at a suitable e partial thyroidectomy was performed, and the terial removed compared with that removed previous the iodine treatment. In this way he showed that the nical improvement that resulted from the iodine, the so-called iodine remission, is accompanied by an involution of the gland, a change in its structure that brought it nearer to a normal gland, but he demonstrated also that, while the gland in general showed this involutionary change, portions of it, usually lobules, might show hyper-involution, with the formation of areas of acini distended with colloid and resembling colloid goitre, or of colloid cysts, or of areas of degeneration with loss of acinar arrangement and with colloid diffused throughout the area. On the other hand, there were areas where involution failed to take place, where islands of gland remained in the stage of hypertrophy and hyperplasia typical of the condition before the remission occurred, while the surrounding gland showed the general involutionary changes and approach to the normal structure. To these islands remaining in the stage of hyperplasia he applied the term hypo-involution. Around the areas of hyper-involution the gland structures are compressed, and there is fibrous tissue giving the appearance of a capsule, formed possibly by interlobular and intralobular septums, and possibly by replacement fibrosis. These areas of hyper-involution may be single or multiple, and the gland then resembles the nodular gland, commonly found in patients of middle age with toxic goitre. These structural appearances, found by Rienhoff in the iodine remissions, are identical with those found in patients following spontaneous remissions.

There are patients, usually young women, who, with no evidence of previous thyroid trouble, develop the typical picture of exophthalmic goitre, and in the course of a few months, or longer, recover apparently completely. There are others, with a similar onset and initial recovery, who relapse, perhaps repeatedly. There are others who never quite recover, but in whom the condition subsides only to light up again and again with greater or less severity over a number of years. In those with repeated relapses or exacerbations the thyroid gland is usually found to be nodular. There are still other patients, who, when they come under observation for the first time because of toxic symptoms, present a nodular gland. We know that the gland responds to physiological stimuli, such as puberty, pregnancy and lactation, by increased activity ; and it responds in a similar way to pathological stimuli, such as infections ; but in both conditions signs of thyroid intoxication are rare, and the gland usually returns by involution to a normal condition. If the involution is not perfect, and areas of hyper-involution and of hypo-involution result on repeated occasions without the occurrence of symptoms of intoxication, then a nodular gland might be expected to develop in time. This accounts for those patients in whom such a gland is found on the first appearance of toxic phenomena. The absence of nodules and of fibrosis is not evidence that hypertrophy, hyperplasia, and involution have not occurred, but a nodular goitre is good evidence of a past history in which the thyroid gland has had to respond to stimuli and then has involuted, perhaps repeatedly and over a number of years. These nodules are not adenomas, but true adenomas may occur, though much more rarely ; and pathological processes, other than those that result from the involutionary changes described by Rienhoff, are met with in glands associated with toxic goitre, such as the small fibrous gland described by Williamson and Pearse[4] as primary arterio-capillary sclerotic goitre, and the large gland resembling that of simple colloid goitre. But an advance has been made, and we are in a better position to understand the condition of our patients.

The cause of the disease is unknown, but it cannot be doubted that there is some stimulus that causes increased activity, with hypertrophy and hyperplasia, of the gland, and manifestations of hyperthyroidism or thyroid intoxication. The stimulus, whatever it may be, will vary in

* Read in opening a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

strength. A gland that is healthy previous to the stimulation of its activity is capable of responding with marked increase of activity, and, consequently, with manifestations of severe hyperthyroidism or intoxication; but a gland that has undergone hypertrophy and involution, perhaps many times, and that is altered in structure, with numerous areas of hyper-involution and degeneration, is not capable of reacting with the same vigour, and the degree of intoxication will therefore be less for equal degrees of stimulation. These nodular goitres are usually found in middle-aged persons, whose organs and tissues are not able to stand the stress of thyroid intoxication as can those of a young adult. Even a moderate degree of intoxication will, in the elderly, produce auricular fibrillation, though in a young girl it would only have produced a tachycardia. In the same way the vasomotor system, the digestive organs, the excretory organs, and the higher cortical functions, are profoundly disturbed in the elderly by a grade of hyper-activity that is easily borne by the young. In the elderly such stresses and strains may cause changes that overshadow the evidences of the thyroid disease, and that threaten the life of the patient. Dunhill[7] has suggested that by variations in the strength of stimulus, in the capacity of the thyroid to react, and in the state of the organs of the patient, it is possible to account for the varying symptomatology of the disease. These factors can account for many of the variations in symptoms, but there are still large gaps in our knowledge.



Diagrams (by Means, Thompson, and Thompson) showing the effect of iodine in toxic goitre. The upper outline indicates the hypothetical course of the disease when iodine is not administered, the lower outline when iodine is administered. Iodine commenced at (*a*) and (*e*), iodine stopped at (*c*).

Iodine

Since Plummer and Boothby[8] in 1923 awakened renewed and widespread interest in the subject of iodine in the treatment of thyroid disease, by pointing out its value in the pre-operative management, much work has been done, and much has been written, on this subject. We are still ignorant of the mode of its action, and there is still much controversy as to its value. There is general agreement that by its use the severity of the disease can, in many cases be profoundly lessened, and that, by administering it for a week to ten days before operation, the risks of operation are materially diminished. There is general agreement that it is not curative, and that the course of the disease is not shortened by means of it. Some observers maintain that after ten days or so it loses its effects, and that it is useless to give it for a longer period, while others believe that by its continuous administration the disease runs its course at a lower level of activity. It is difficult to reach a clear decision on these problems. There is ample evidence that the thyroid glands of fatal cases, and the glands removed at operations, contain very variable amounts of iodine[9]; and it is reasonable that the effect of iodine administration will be greater in a patient whose thyroid gland is almost completely lacking in iodine stores, and will be less striking in a patient whose gland already contains large stores of available iodine. During the course of the disease spontaneous remissions and relapses are continually occurring, and iodine cannot prevent these, though there is much to suggest that it modifies the severity of the relapses. If a relapse occurs in a patient who has been taking iodine continually for many months, and the administration of the iodine is then stopped, the severity of the relapse is immediately increased, and it is again lowered by re-administration of the iodine. The iodine content of the blood is being studied by many workers, and when the methods for its quantitative estimation are more satisfactory, so that reliable figures are available for the different phases in the course of the disease, it is possible that this subject will be clarified.

By repeated estimations of metabolic rates during iodine administration, Means, Thompson, and Thompson have come to conclusions that agree closely with our clinical experience. They say:

"In any given patient at any particular time iodine will reduce the intensity of the thyrotoxicosis, but the disease seems to continue even though in a modified form. Iodine does not reach its cause, but merely alters its effects. There seems to be a course which will be followed when iodine is supplied another when it is not."

Our practice is to give iodine continuously, and I am convinced that by it, and by rest in bed, and by the numerous other details of management, which I do not propose to enter into now, we bring our patients to a minimum of thyroid intoxication, and an optimum condition for operative treatment, at a time after the commencement of iodine treatment which may be much longer than the ten days so dogmatically stated in the literature. When operative treatment is unnecessary, iodine is one of the most valuable methods of treatment available.

Prognosis

In 1930 I published[10] an analysis of the results of treatment in 50 cases that had been carefully observed in wards during 1920-1925, and in which the results, after a period varying from five to ten years, had been obtained. The group of cases treated by operations on

roid gland and the group treated by means other than gical were roughly comparable, and it was concluded t in a number of the younger patients whose thyroid nds show no evidence of previous disease, recovery y take place without surgical treatment, but that sur- al treatment is indicated in those with nodular goitres, l in those who do not improve rapidly, or continue to apse and become chronically ill in spite of satisfactory nagement, and in those who for financial or other sons cannot submit to adequate observation and treat- nt. During the years 1926–1930 I have tried to profit the lessons of the previous period. The groups of es are, therefore, in no way comparable, as the patients re urged to submit to the treatment indicated, and ich less difficulty was experienced in obtaining consent surgical treatment than was experienced in the earlier riod. In 1931, the results of treatment were ascer- ned in 86 patients who were in the wards during the riod 1926–1930, and these are shown in the table along ch the results for the period 1920–1925.

Results of Treatment

Years.	Total No.	Surgical					Non-Surgical				
		Good	Poor	Bad	Died	Total	Good	Poor	Bad	Died	Total
1920–25	50	15	5	1	3	24	10	4	2	10	26
1926–30	86	29	15	1	3	48	13	11	1	13	38
	136	44	20	2	6	72	23	15	3	23	64

It will be seen that there is no striking difference. The ortality in those treated by operations on the thyroid nd is halved, but it is little altered in those treated by n-surgical methods. If the patient is capable of full rk, the result is classed as "good"; if working with fficulty, it is classed as "poor"; and if leading an valid life, as "bad." It will be seen that the propor- on of poor results is increased in the second period in patients treated either by surgical or by non-surgical ethods. With a few exceptions, *x* rays and radium were t employed.

Of the thirteen deaths in the group treated without erations on the thyroid gland, only one was inevitable; e patient had what were probably multiple secondary rcinomatous growths in the abdomen. One patient re- used operation and discharged herself, but had had the sease for eight years, during which treatment should ve been possible. Two others died before they could brought to a suitable condition for operation, and had en ill for 18 months and 5 months, respectively, before mission. Eight patients improved so satisfactorily that ration was not considered necessary, but they relapsed died, and in three of them the deaths followed opera- s carried out in other hospitals. In the case of the training patient, who was extremely unstable mentally, subject to repeated attacks of tetany, we did not ider that any operation on the thyroid gland was to succeed in improving the condition, but she was tted to another hospital and died, following an ation. In ten, or possibly eleven, of these thirteen , therefore, the lives of the patients might have been if treatment had been carried out earlier to diminish mount of functioning thyroid gland tissue.

h high proportion of "poor" results in the second el is to some extent due to the fact that sufficient time has not yet elapsed for the full effects of treatment tl manifest. Undoubtedly some of these results will ll be classed as "good." Even when this factor is ed for, the high proportion of "poor" results to nd" results of surgical treatment is worthy of notice.) the ca[illegible]ded into age groups, it is found that the proportion of "poor" results increases with the age of the patient; and when the cases are subdivided according to the duration of the disease before admission to hospital, it is found that the proportion of "poor" results increases with the duration of the disease. The figures are too small to be of statistical value, but the "poor" and "bad" surgical results together expressed as the percentage of surgically treated cases in the age groups 20-29, 30-39, 40-49, and 50-59, are 20 per cent., 36 per cent., 27 per cent., and 46 per cent. respectively; and in the groups with durations 1-4 years, 5-9 years, and 10 years or over, they are 31 per cent., 33 per cent., and 57 per cent. respectively. It is reasonable to expect that the older the patients the greater will be the deleterious effect of the illness on the various organs and functions, and the less likely are they to be restored to the health they previously enjoyed, but it is not fully appreciated that the longer the thyroid intoxication continues, even if it is of a very mild degree and interrupted by numerous remissions, the less likely is the patient to be restored to health.

In considering prognosis, etiology must be taken into account. The fundamental cause of the disease is unknown, but in many cases the factor that finally brings about the manifestations of thyroid intoxication is clear. In some patients it is an infection, in others mental strain and worries, in others sexual disturbances; frequently it is a combination of two or more of such factors. If the intoxication is mild and the patient is brought under medical care early, and the causal factor can be removed, there appears to be a possibility of recovery without an operation on the thyroid gland. In ten of the thirteen cases in which the results have been classed as good, and in which thyroidectomy was not performed, there was a definite association with attacks of tonsillitis, and the condition improved strikingly after tonsillectomy; they were all mild cases; the average age of the patients was 29 years, and the average duration of symptoms 2½ years. In one case appendicectomy was performed in addition, and in another, treatment with *x* rays contributed to the recovery. The longer the duration of symptoms the more difficult it is to discover a causal factor, and the factors that can be discovered are such as must be experienced by most people in the course of their lives, but the incidence of the disease is small. It is reasonable to suppose, therefore, that there is a constitutional factor. Examples of two generations being affected, and of two or more members in the second generation, are sufficiently frequent to indicate that the constitutional factor may be inherited and inborn. The following cases illustrate this:

Mrs. J., aged 62 years. Always nervous, and eyes always rather prominent. In 1918, aged 50 years, 3 years after menopause, exophthalmic goitre diagnosed. July, 1921, B.M.R. −70 per cent., partial thyroidectomy; November, 1921, B.M.R. +20 per cent., further partial thyroidectomy; June, 1922, B.M.R. +15 per cent., further partial thyroidectomy. 1931, in fair health.

Jessie J., daughter of Mrs. J., aged 31 years. Developed exophthalmic goitre in 1920, when aged 20 years. August, 1922, B.M.R. +45 per cent., partial thyroidectomy; June, 1926, further partial thyroidectomy. 1931, doing full work, tired and nervous at times.

Mary J., daughter of Mrs. J., aged 23 years. Developed exophthalmic goitre in 1926, aged 18 years. September, 1929, tonsillectomy. 1931, recovered well, now married and has a child.

J. O., aged 11 years. His mother had exophthalmic goitre when aged 17 years; she recovered without operation, but always nervous. In 1928, when aged 10 years, he developed exophthalmic goitre. October, 1929, B.M.R. +60 per cent., ligature of superior thyroid arteries; November, 1929, treatment by radium. December, 1929, died.

Warthin[11] has discussed this factor and speaks of it as the Graves' constitution, but at present it must be regarded as theoretical, because it cannot yet be recognized in the absence of the disease. It appears as if this factor is strong in some patients so that no other factor is needed to produce the disease, but that in other patients it is less strong, and in them some additional factors are necessary. The prognosis will be influenced by these considerations, and the restoration to health, even after thyroidectomy, will be less complete the stronger the constitutional factor. In some of the cases in which the result is recorded as "poor," the patients gave histories of nervousness and excitability all their lives, and appeared to have been below the normal standard of physical efficiency before the onset of symptoms of thyroid intoxication. This was clearly a factor in the results in the two following cases:

Mrs A B, aged 55 years. Nervous and excitable all her life. In 1923, aged 47 years, developed exophthalmic goitre; symptoms more severe following tonsillitis in 1922. January, 1923, tonsillectomy, continued to be nervous and excitable, and unable to do her work. April, 1928, B M R +20 per cent., very emotional and mentally depressed, and these symptoms were more prominent than those of thyroid intoxication, which were mild. April 1928, partial thyroidectomy. 1931, improved, no evidence of thyroid intoxication, but always grumbling and unhappy, and not able to do her house-work.

Miss F B, aged 46 years. Never strong, always tired, numerous fainting attacks, frequent tonsillitis. In 1905, aged 20 years, developed exophthalmic goitre, remissions and relapses frequent, and very emotional. 1926-1929, repeated attacks of tetany caused by emotion, but no disturbance of calcium metabolism, no alkalosis. July, 1926 tonsillectomy; July 1929, B M R +40 per cent., x-ray treatment; August, 1930, B M R +30 per cent., partial thyroidectomy. 1931, no tetany, but emotional storms, and unfit for any exertion.

Treatment

From the analysis of the results of treatment in the 136 patients, who have been carefully studied and followed, it seems clear that surgical treatment is indicated in most cases severe enough to be admitted to the wards of a general hospital. Of those selected as suitable for treatment without operation, nearly a third relapsed and died after discharge from hospital, so that it would appear difficult to decide when it is safe to allow such cases to return home away from close observation and experienced treatment; and the logical conclusion is that it is safer to operate at the earliest suitable opportunity than to hope for spontaneous recovery. So long as cases present themselves for treatment at the stage in the disease at which they now come to us, some means of reducing the amount of functioning thyroid tissue is necessary to save life and restore efficiency. As alternatives to surgical treatment there are x rays and radium, but both methods require such long courses of treatment, and are at present so comparatively uncertain in their results, that operation by a surgeon with special experience of operations on the thyroid gland is preferable, to save time and to avoid the risk of serious relapse during the course of radiation. Unfortunately, such surgeons, in whose hands the operative treatment has a negligible mortality, are to be found only in a few centres in this country. Even in their hands the proportion of "poor" results is greater the longer the duration of the disease and the older the patients; and it would seem unnecessary that they should be called upon, as they are at present, to perform an extremely difficult task when an earlier operation would be easier and safer, and the result for the patient would be better. If treatment by x rays or by radium were more easily controlled and more certain, these difficulties could be to a great extent avoided by commencing treatment as soon as possible after the diagnosis is made, by utilizing either x rays or radium to diminish the amount of gland tissue, by giving iodine to reduce the intoxication, and by removing any causal factors that can be discovered. If this were done while the case was mild and the patient still fit for work, the delay in obtaining the desired result, due to the longer time required by radiation as compared with operation, would not be important, and the number of late cases and severe cases, which can only be treated efficiently by means of thyroidectomy, would be so reduced that the few surgeons of sufficient experience could attend to them. Perhaps treatment by radiation is already sufficiently advanced to permit of this policy being adopted, and such treatment should certainly be tried if the case is seen early, and if the best surgical aid is not available.

Conclusions

Cases of thyroid intoxication, or toxic goitre, should be treated as early as possible by removing any causal factors that can be discovered, by the administration of iodine, and by reduction of the amount of functioning thyroid tissue. This can be accomplished with the greatest certainty by operative treatment, but if a surgeon with special skill and experience in such cases is not available, treatment by x rays or radium should be tried while the case is still mild and the patient able for work.

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PSYCHIC PAIN AND THE PSYCHOSES*

BY

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Taking the psychoses as a whole, the psychiatrist scarcely fail to gain the impression that external stre... play but a relatively small part in their deve'opm... Financial disaster, the loss or inaccessibility of a belo... object, persistent domestic strain, the pangs of phys... disease, the loss of social esteem, and even the disgr... of imprisonment for some delinquency—such traum... events might reasonably be expected seriously to u... the psychic equilibrium; but generally speaking they... not have this effect. They may, and often do, b... about enduring psychic pain, and tend, no doubt, ... diminish efficiency; but they are usually met ... courage, endurance, or resignation, for life has to... accepted as it is; we know that it can never be mou... after the pattern of our own desires. Should, indee... psychosis develop under severe stress, some pre-exi... abnormal sensitivity or some inadequacy in meeting... demands of everyday life would probably be reveale... the history. A negative history of recent trauma ... not, of course, exclude the possibility that external c... may have taken a part in the causation of a psyc... In all cases it is necessary to make an exhaustive in... into the past, with a view to discovering the exte... which the symptoms manifested can be traced to ...

* Paper read to the Section of Neurology at the Annual ... of the British Medical Association, Eastbourne, 1931.

vironmental influences which have cramped the instinc-
ve-emotional life, with the result that the patient has
come incapable of meeting the stresses of everyday
xistence. Especially is investigation directed to the early
ife, when the seeds of a neurosis or psychosis are apt to
e sown by injudicious (though, perhaps, well-meaning)
arental handling of the child. Curiously enough, it is
ot necessarily the stern parent type which does the most
harm, but rather the over-indulgent; since the latter gives
he child an entirely wrong impression of the actualities
f life. The children of rigid Victorian parents often
merged from the ordeal of their upbringing as reasonably
djusted and efficient personalities, with an elastic and
olerant outlook.

Predisposition to Psychosis

These psychogenetic studies have both scientific and therapeutic value, and it is in no sense the purpose of this brief communication to belittle their importance. At the same time, we know that many individuals have been submitted (perhaps from early life) to conditions quite as traumatic as those which may be discovered in the history of some psychotics, without, however, exerting any notable effect upon their capacity to make a normal adjustment to life. We are thus again driven to the conclusion that there must be some predisposition in the subjects of a psychosis which renders them peculiarly liable to succumb to the inevitable stresses of life; and it is the purpose of this paper to consider, in very general terms, the nature of the defect in these patients which favours the development of a mental illness.

Psychic Pain

It is necessary to recognize that psychic pain, discomfort, or "unpleasure," is an inevitable and necessary element in life. It may, indeed, be said that consciousness came into the world as pain. In plants it is unnecessary to assume the existence of consciousness, since in these the conative impulses, which are mainly concerned with assimilating the material necessary to the metabolism of vital existence, do not take the form of seeking movements but "of a continuous appetence continually satisfied." It is otherwise in motile organisms. Writing on the psycho-physiology of hunger, Turro observes that the discomfort of hunger or thirst has for its cause the impoverishment of the internal *milieu*, and, in consequence, the distress of the cells of the organism. The internal *milieu* is not an inexhaustible storehouse; its supplies have to be continually renewed, and a time arrives when either the quality or the quantity of the internal resources is insufficient to supply the cellular avidities; the unique means, then, of repairing the deficit is to seek for the reincorporation within itself of the elements which it lacks. "At this stage," to quote Turro, "this psychic tendency, which impels to seek without what is lacking within, is what constitutes the feeling of hunger—an echo of physiological distress and, at the same time, the dawn of psychic life." Thus psychic pain or discomfort—pure feeling without cognition—is an essential, primordial, indispensable, and innate element in the process of life. It is the symbol of some physiological change within the organism, an impeded conative tendency, or an alteration in the environment, and its function is to stimulate action which will bring about a restoration of the normal equilibrium. Discomfort, and not pleasure, is the primary stimulus to vital activity. Pleasure is essentially a negative stimulus in that it either does not stimulate movements, or, if it does, only such as tend to prolong the present state of affairs. The whole of life may be described as a series of behaviour cycles, beginning, as we know, at the moment an infant is ushered into the external world, with a state of discomfort, and ending, if the actions performed are successful in furthering the conative impulses, in a state of pleasure. Such is the affective substratum of living reaction; a simple enough mechanism it would seem, but, nevertheless, it is upon its adequacy that the harmonious development of the psyche would seem to depend.

The enormous development of the intelligence and reasoning power has succeeded in opening a wide chasm between man and animals, but in spite of our impressive intellectual achievements and discoveries we have never been successful in making life an easy matter. It has merely become more complicated. No doubt human beings have more comforts, amenities, and diversions than their forefathers, but it is a pure illusion to suppose that the difficulties of life will be diminished by making it our sole concern to see that external conditions are favourable. The difficulty of life, from the amoeba up to the human being, is so obviously a constant factor, consisting as it does solely in the effort which is indispensable to being alive at all.

The Ideal Therapeutic Aim

Thus it would appear to be part of the scheme of things that life should manifest itself as a struggle to maintain, restore, and reproduce itself, in an environment which inevitably must include forces inimical to its continuance. Even supposing that external events played an important part in the causation of the psychoses, it is evident that but little could be done in the way of preventing these illnesses. It is true that psychotherapy often resolves itself into the provision of an artificial environment, in which the patient can be relieved of the inevitable tension of daily life; but this cannot be described as curative treatment. The ideal therapeutic aim is to disentangle the inner life of the patient so that he is enabled to meet the difficulties of life with confidence, courage, and good humour.

The Schizophrenic State

Unfortunately, such treatment is limited in its scope, and is inapplicable to the schizophrenic patients who comprise the majority of the chronic cases in our mental hospitals. In these patients we have an inadequate and diseased conative-affective mechanism—a mechanism which I have described above as the essential, primordial, and indispensable element of life. They are lacking, indeed, in the ability to maintain, restore, or, in many cases, to reproduce themselves—for adolescence, betrothal, marriage, or child-bearing often produces a psychosis. The picture of regression presented by a group of advanced schizophrenics is a peculiar one indeed. These patients have altogether renounced the pain and the struggle of life. They live in a world of strange fantasies, shun social contacts, are indifferent to their environment, comfort, or appearance; many have to be dressed and fed; and were it not for nursing care they would cease to exist. They live in a state of complete spiritual isolation from their fellows; they have lost all appreciation of values; for wealth, success, knowledge, art, culture and even love, mean nothing to them.

Some years ago, Jung suggested that the products of schizophrenic thought activity, so difficult to understand, so twisted and distorted, resemble very closely the normal dream activities. He expressed the view, indeed, that if the dreamer should go about performing actions we should have the clinical picture of dementia praecox. This observation is particularly interesting as recent studies at the Maudsley Hospital have led to the conclusion that the physiological condition in psychotics resembles that obtaining during sleep in the normal individual. This work was dealt with briefly in the paper by Dr Marsh. Now, however grotesque the dream, and however impressive or ridiculous the part played by the dreamer, the

latter, as far as I am aware, always remains conscious of his own identity. It would seem that the schizophrenic is in this respect much the same as the dreamer. That is to say, hidden by the delusional fantasies is the normal ego which, on occasions, is apt to reassert itself. Every psychiatrist has seen this happen when a patient is visited, in bodily illnesses, or in cases that unexpectedly recover. In these cases it is often found that the patient has an astonishing memory of all that has taken place during the period of his psychosis. It has always seemed to me to be rather curious that the highest and most recently acquired cognitive functions—mental efficiency and memory—should be preserved in these cases. One might think that, in view of educational pressure and the dreadful examinations which young people are called upon to pass, a kind of premature mental enfeeblement might result in many patients. Yet this is not the form taken by adolescent cases, many of which occur in those of brilliant intellects to whom the passing of examinations is mere child's play. What we see in our adolescent patients is not the deterioration of the most recently acquired functions, but rather of the oldest and most essential functions—namely, those of instinct and feeling, the inharmonious development of which is responsible for the symptoms exhibited.

Intellect and Instinct

It has to be recognized that intellect, as distinguished from feeling and emotion, is not an indispensable element of life. Intellect is more or less of a luxury, and a high intelligence is of less importance than a stout heart—that is to say, a vigorous, balanced, and harmonious affective life. In view of the considerable incidence of mental disorders in civilized communities, both within and outside the mental hospitals, it is perhaps justifiable to inquire whether there is not some increase in the incidence of those who are the subjects of some constitutional vitiation of the organic processes concerned with the development of the "springs of action"—that is to say, of the instinctive-emotional life.

PUERPERAL SEPSIS: THE IMPORTANCE OF EARLY TREATMENT

BY

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Anyone, seriously engaged in the study of puerperal sepsis, who possesses experience of a large number of cases, must realize the value of early treatment. The recognition of this fundamental principle in respect of other diseases—for example, appendicitis, intestinal obstruction, syphilis, and diphtheria—has been the one and only means of reducing mortality from these diseases.

In the treatment of puerperal sepsis the method of glycerin irrigation, as practised at this hospital, has been proved to be entirely harmless to living cells, and has established its claim to be regarded as the most efficient remedy at our disposal. Since this is so, why should not this method of treatment be applied at an earlier stage, in the ante-natal period for example, as well as on a larger scale at an earlier period in the puerperium, instead of postponing treatment until the uterine tissues become hopelessly infected and the blood stream invaded? The death rate from puerperal sepsis is not only practically stationary, but is far too high. Many women are left with a legacy of chronic invalidism, and swell the ranks of those who attend gynaecological clinics, when, by early and adequate treatment, any serious complication could have been prevented. Many even go into labour with sepsis already established, in spite of ante-natal care and in spite of our present-day knowledge of bacterial infections and antiseptics.

The following are the reasons, in my opinion, for the present unsatisfactory state:

1. Too much stress has been placed on the fact that the phenomena of the so-called normal puerperium are of a physiological character.

2. There is a widespread belief, unwarranted by the facts, that puerperal sepsis is always characterized by fever, the result of bacterial infection of the raw uterine surface.

3. Treatment is in many cases not begun early enough, nor is it continued until every symptom and sign of sepsis has disappeared, and the uterus has been restored to its normal condition.

4. Most important of all, and as a corollary to No. 3, early symptoms and signs have been too long neglected by medical attendants in maternity cases.

With regard to the first reason, it must be borne in mind that after labour the raw uterine surface is an open wound; as in the case of other wounds, simple reactionary or inflammatory changes must occur in the course of healing. These reactionary changes are at a minimum in cases where the uterine surface is left perfectly clean and where it remains clean. After labour, however, placental remnants and blood clot frequently remain attached to the uterine wall, and only gradually are they extruded. So long as they remain in the uterus they are undoubtedly a potential nidus for infecting organisms of varying degrees of virulence.

The line between what may be regarded as physiological and normal on the one hand, and pathological on the other, is too fine to be drawn; the one may merge insensibly into the other. I contend that for every case of severe puerperal sepsis there are hundreds where a minor degree of sepsis exists unrecognized, but which nevertheless leads to untold suffering among women. This leads me to the second of the reasons given above—namely, that there is too widespread a belief that puerperal sepsis is always a febrile disease. Nothing could be further from the truth, and, until we rid our minds of this fallacy, little progress will be made towards combating the risks of maternity.

In every published list of statistics a temperature of 100.4° F. is regarded as the sign of puerperal sepsis. There are many instances, some to our sorrow, in which we have wasted valuable time and have exposed our patients to the greatest risk, through too blind an acceptance of this current teaching. Temperature, as an index of early pathological changes in the uterus, is by itself a thoroughly unreliable guide. All the signs of pathological inflammation must be taken into account, and, if we must take pride of place to one, surely it should be to the pulse rate.

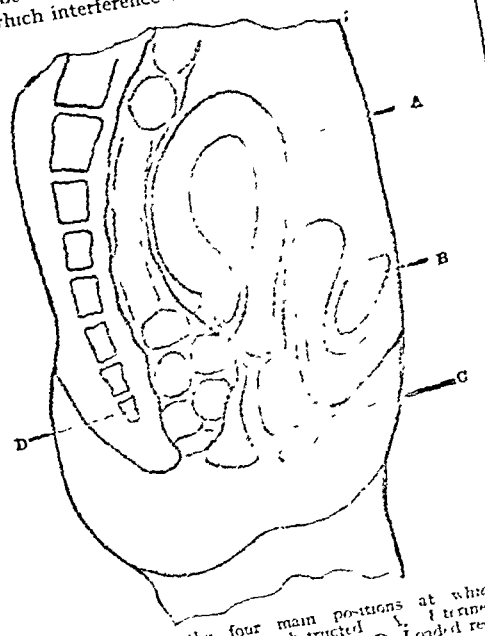
A recent case which came under our notice will illustrate what I have just written. This patient had a normal temperature, but her pulse rate ranged from 104 to 120. At the end of four days her temperature rose to 101, and, as the standard of morbidity had been passed, active treatment was begun. The patient, however, died of septicaemia.

In my experience it is exceptional for cases of puerperal sepsis to develop pyrexia at the outset. Many patients have offensive lochia, red lochia, and purulent discharge and yet for some days remain entirely apyrexial. Further, while severe cases of puerperal inflammation are due to bacterial invasion of the raw uterine surfaces, there are a much greater number where inflammatory changes occur as a result, purely, of the retention of placental fragments

lood clot, and, as I have stated, those are the cases requently lead to chronic invalidism among women. tunately little or nothing is done at the very time much could be done, and the most favourable opportunity to deal with them is lost. Following labour or rriage, much blood and serum, together with fragof placenta, normally continue to escape from the ; for several days. Anything that interferes with atural drainage will undoubtedly give rise to signs symptoms; we must learn to recognize these, for are certainly the earliest heralds of possible trouble

A full appreciation of their significance will enable begin early and efficient treatment, by which alone n hope to reduce maternal mortality.

will be seen from the diagram there are various , at which interference with free drainage may occur.



Fetch showing the four main positions at which the ine secretions may be obstructed A. Uterine wall Cervical canal C. Swollen perineum. D. Loaded rectum

ese may be grouped under two headings: (1) intra- ne, and (2) extrauterine.

the first group the interference may occur in the is itself This may be the result of an unhealthy ition of the uterine wall antedating conception, or ıay be caused by trauma produced by the finger, ps, curette, styptics, or hot intrauterine douches. rference with free drainage may also occur owing to ruction of the cervical canal by fragments of blood and placental tissue, or by a swollen oedematous lution of its wall. Cervical obstruction is most likely ccur in the early stages of the puerperium, and calls immediate inspection. If conditions are such that rough examination is impracticable in the patient's ne, she ought to be sent to hospital without delay, ere active treatment may be begun.

Another matter that has some bearing, not only on the intenance of free drainage during the puerperium, but) on the subsequent health of the uterus, concerns position of that viscus. At the end of the first week the puerperium, when the uterus is again returning the pelvis, there is a danger of retroversion; it is im- tant, therefore, to correct this tendency by placing the ent in the prone position at frequent intervals, in ution to adopting the semi-Fowler position. Among extrauterine causes of interference with free drainage may be mentioned the following: a loaded rectum, an over-distended bladder, and oedematous vaginal walls in association with pelvic cellulitis or oedema of the perineum. The first is sufficiently obvious, and is easily remedied, but a note of warning is necessary here—the patient's symptoms may be due, not to the toxic absorption from a loaded bowel, but to interference with free escape of discharges from the uterus; in such cases special attention should be paid to measures calculated to improve subsequent free drainage. I have discussed this question, however, in greater detail in a paper read before the Royal Society of Medicine in 1924.

I have stated above that in my opinion active treatment is not begun soon enough, nor is it continued as a rule until the uterus has been restored to a perfectly healthy condition. The truth of this has been borne in upon me as the result of having had to deal with many cases admitted to hospital after the usual expectant or conservative treatment had been tried, and had been found wanting.

In cases where thorough glycerin treatment has been commenced early enough I have met with no instance where this method has failed to relieve uterine obstruction and to induce free and efficient drainage. Not only so, but during the last eighteen months, treatment at this hospital has been more thorough and prolonged, and has not ceased until the uterus has been restored to a perfectly normally functioning organ, and until all cervical erosions have been completely healed. By way of illustration I would like to mention a severe case which was recently admitted on the eighth day of the puerperium The cervix was lacerated and eroded, and there was extensive pelvic cellulitis. The patient was treated on 135 occasions, 29,450 c.cm. of glycerin being given After forty-six days the cervix had entirely healed. The detailed technique has been fully described in several previous papers.

Lastly, I would enter a plea for the recognition of the earliest symptoms and signs of puerperal disease. These have been too much neglected. It is becoming increasingly evident that every stage from pregnancy to the labour room and during the post-natal period, must be more closely watched. Actually, many women go into labour with sepsis already established. In order to minimize the risks, cervical erosions should be noted early in pregnancy, and steps be taken to treat the condition. Treatment should be carried out by regular instillations of glycerin, one inch within the cervix, throughout pregnancy, in order to reduce inflammation as much as possible. The presence of *B. coli* in the urine requires treatment in the cervical canal, and when a coliform infection of the urine exists, a similar infection will frequently be found in the lower genital tract. The treatment of both uterus and bladder, where such an infection has been present, should be actively continued during the puerperium. There is a further field for glycerin treatment in the toxaemias of pregnancy, where, after a fair trial, domiciliary treatment has failed and the patient has reached the limit of intoxication

Cases which demand treatment fall into two groups

(1) Those patients who suffer from headaches, drowsiness, oedema, increasing blood pressure and jaundice, and whose urine contains tube casts and albumin, and

(2) Those who suffer from haemorrhage

These patients should be sent into hospital early for efficient treatment Failure to do so permits progressive damage to occur in the organs, such as the kidneys and liver, and may endanger the patient's life Experience of years has taught us that the living-in ward is a surgical ward, and that it contains many cases which deviate from the normal.

What are the chief signs and symptoms which, if detected early, reduce the mortality and morbidity? They are:

(1) A temperature of 99°, and a pulse rate of 90 ;
(2) Uterine colic ; and
(3) Abnormal lochia.

With regard to the first, valuable time may be lost if the textbook standard of morbidity—namely, a temperature of 100.4°—is awaited. It is our practice to institute drainage by glycerin as soon as ever the temperature rises to 99°, or the pulse rate to 90.

Given an empty uterus, devoid of inflammation, and in good position, the patient will be free from pain. Should pain be present, a cause for it can always be found if sought for ; almost invariably that cause will be interference with free drainage. Pain is the cardinal symptom, and tenderness is the cardinal sign of an obstructed viscus, yet many medical practitioners still labour under the delusion that it is natural for a woman to suffer from after-pains for the first few days of the puerperium. These after-pains are really symptoms of a slight interference with the free escape of fluids from the uterus, and, as such, are a danger signal. If not relieved within twelve hours, active steps should be taken to encourage free drainage ; otherwise, the case may end in disaster.

The presence of offensive lochia is another indication for early treatment, especially since many of these cases do not in the early days show pyrexia. Profuse lochial discharge means, as a rule, inflammation of the uterine wall, and accordingly demands early treatment. As a general rule, it may be laid down that the red lochia should cease in a healthy woman about the sixth or seventh day, and those cases which do not conform to this rule should receive hospital treatment until all signs of inflammation have disappeared.

Early and efficient treatment along the lines that I have indicated would undoubtedly save many lives, and would lessen the number of those who frequent gynaecological out-patient clinics. It would obviate many useless curettings, and hysterectomy would be less frequent.

To illustrate the type of case in which glycerin treatment has been found valuable, I append the following figures taken from a recent six-month period. They relate to a total of 208 deliveries occurring in this hospital.

	Number of Cases	Average Number of Treatments per Patient
1 Cervical erosion	107	112
2 Secondary albuminuria	10	46
3 Bacillus coli infection	60	75
4. Ante partum haemorrhage	6	36
5. Placenta praevia	3	10
6 Internal manipulation	3	6
7. Forceps deliveries	10	8
8. Retained placenta	6	36
9 Post-partum haemorrhage	8	14
10. Retained membrane	12	18
11. Uterine colic	31	32
12 "Three nines"*	45	24
13 Offensive lochia	20	32
14 Secondary haemorrhage	20	18
15 Puerperal thrombo-phlebitis .	8	64

* Increased temperature (99° or over), increased pulse rate (90 or over).

The majority of the 208 patients suffered from more than one of the above pathological conditions. The amount of glycerin used in each case varied from a few cubic centimetres to 200 c.cm., injected once or three times daily either into the uterine cavity or cervical canal.

A recent list from the gynaecological wards over a three-month period showed that 33 patients were discharged with healed cervical erosions, the average number of glycerin treatments being 26, and the average number of days in hospital being 19.

I wish to thank Sir Almroth Wright, Dr. Leonard Colebrook, and Professor Robert Donaldson for their great help in the study of this disease, also Drs. Harold Carter, Joyce E. M. White, and Margaret E. Anderson, for assisting in the treatment.

SOME COMMON COMPLAINTS AMENABLE TO SPINAL TREATMENT

BY

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Any attempt to explain the benefits from spinal treatment must be highly speculative. There are many easy but incorrect explanations. We must put aside any claim that the results are due either to bone-setting or to the breaking down of adhesions. The force used in manipulation is not sufficient to break down adhesions, and there is not the resultant pain and swelling which we would expect. There are various reasons why improvements are not due to bone-setting, for here is claimed the replacement of a luxated or dislocated vertebra which was presumably impinging on a spinal nerve as it emerged through the intervertebral foramen, whereas it is well known that the spinal nerve does not fill up the whole lumen of the intervertebral foramen, but only a small proportion of it ; thus any slight mis-alignment of one vertebra is not likely to cause direct pressure on the corresponding nerve. Moreover, it ought to be possible by means of *x* rays to demonstrate not only the malposition of a vertebra, but that condition rectified after the manipulation. We have not been able to do so, and our own opinion is that there is no displacement ; but there may be a fixation or limitation of movement due to some static cause, and any sound heard during a spinal manipulation, as usually carried out, is due merely to a separation of the articular surfaces, and not to the replacement of anything that has been out of place. Indeed, in Case 1 (under Dr. McNee) *x*-ray examination was made before and immediately after the manipulation. The second series of photographs showed that the tilting had apparently been overcome. At one or two subsequent examinations the good position seemed to be maintained, but the radiologist, by making a slight change in the position of the patient, was able to reproduce in a photograph the exact tilting of the fourth lumbar vertebra which was seen at the first examination.

Luck may be a factor—the luck of some new form of treatment producing a favourable impression on the patient who returns at subsequent sittings prepared for better and better results. This factor, however, is unknown in other methods of treatment, where a psychological stimulus is used to influence physiological processes. But with the spinal treatment we are able to break into the abnormal chain of circumstances, using a physical stimulus at a definite part. When we have on the one hand some ailment or disability, and on the other hand contracted tissue giving rise to pain on pressure round particular parts of the spine, whether as a reflex from the former or whether the former is a reflex from the latter, if we are able to break in on the reflex arc, perhaps we can upset the whole

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nd give relief The patient's statement as to whether e is relieved cannot be proved or disproved. Neverheless, we can watch the state of the tensioned tissues the back As these become soft and loose they come less tender to touch, with possibly an abatement f the concomitant symptoms. Thus, in Case VII, with lyspepsia, from careful palpation of the back, where the only objective symptoms were available, we could feel hat the tissue tension was much less on the patient's econd and third visits, and we assumed that her lyspeptic symptoms were easier, this being confirmed by her own statement.

The essential thing seems to be to relax the tissue tension in the back. We have done it in cases similar to the above by diathermy alone and by massage alone, with the same results. The virtue of the spinal manipulation is that this relaxation is more quickly obtained. Whether ultimately it may be shown that the effects are brought about through some influence on the sympathetic nervous system is merely a suggestion. All we prefer to state at present is that we can sometimes influence certain complaints by restoring to normal some correlated tissue tension or want of mobility at certain levels of the spine.

Some Common Ailments amenable to Spinal Treatment

It can readily be understood how certain painful conditions may be affected by spinal treatment. Thus in coccydynia many patients trace the symptoms back to an accident or fall on the base of the spine, and on examination the tip of the coccyx may be found bent forward. A backward pull on the lower segment of the coccyx will often ease the condition, and I have known a patient completely cured at a single sitting after many months of misery and discomfort Sciatica and lumbago are often alleviated by manipulation of the lumbar and sacro-iliac articulations. It is possible that on occasions a sacro-iliac condition may cause a referred pain in the knee simulating internal derangement of the knee-joint. One patient, a nurse, had practically completed arrangements to enter a nursing home for removal of the internal semilunar cartilage, when her matron asked my advice A sacro iliac condition was diagnosed, and after a suitable manipulation the knee symptoms disappeared, and have not reappeared after a lapse of ten years That, however, is the only case which has ended so satisfactorily at my hands.

Passing further up, we note briefly how the stiff back following sprains or strains may be benefited by a general loosening-up of the whole spine, a procedure which is coming to be more and more practised by orthopaedic surgeons. Intercostal neuralgia may be relieved by freeing up the appropriate vertebrae and ribs, a stiff neck may call for treatment to the cervical region, and headaches associated with occipito-atlantal conditions very often clear up in a surprising manner after the joint condition has had proper attention.

Then we come to cases where the connexion between the spine and the complaint is not so apparent.

CASE I

Miss A aged 19, saw Dr J W McNee at University College Hospital for pain which warranted an *x*-ray examination of the urinary tract No calculus was discovered, but the radiologist reported from an examination of the films that there was tilting of the fourth lumbar vertebra to the left side and Dr McNee asked me to try the effect of spinal manipulation On examination, the tilting of the fourth lumbar vertebra could be felt, and there was distinct loss of motion between the fourth and fifth lumbar vertebrae. A suitable manipulation was given, and two days later the patient said she was already easier. Some gentle treatment was given that day, and after a week she said that not only was her backache better, but that the pain in her groin had gone She resumed work, but returned on three occasions for a little further treatment. Within six weeks from the commencement of treatment she was working from 9·30 *a.m.* till 9 *p.m.* without any pain; the motility of the fourth and fifth lumbar vertebrae was now well maintained, and during her last period her menstrual pains, generally severe, had been very much less in intensity.

Gynaecologists are faced daily with a very perplexing problem—the woman with pain in her back, but who at the same time has some slight deformity or displacement of the uterus. All other measures having failed, she has been sent up to have an operation on the uterus, and, if after that the backache persists, she will be labelled "neurotic" for the rest of her life. The practitioner has asked for help, and the problem is to know what to do. Some cases may benefit from an operation, but the majority of gynaecologists admit that many of them are not gynaecological cases at all. A special plea is put forward that such cases might have a trial of spinal treatment before operation is finally decided upon

CASE II

Mrs C., aged 38, under Professor F J Browne, Obstetric Unit, University College Hospital Medical School, had a history of backache for several years There was some backward displacement of the uterus, and she had been sent in to have this remedied in the hope that the backache would be cured Examination of the back showed a general stiffness of the lumbar region, and after a few treatments the backache disappeared, and she was discharged as cured

It is quite possible, though it is merely a suggestion, that spinal treatment may have some effect on the ligaments of a mal-placed uterus, or on its vascular supply in a case of enlargement, because from the following we know that profound impressions can be made on the pelvic organs

CASE III

Mrs W saw me several times during the menopause on account of severe pains and floodings Treatment was directed to the lumbar region and each time before she left the room she said that both the pain and the haemorrhage were much less In fact the haemorrhage very often stopped

CASE IV

This patient was a single lady, aged 30, who had never menstruated regularly, her last period, which was only slight, having occurred two years previously. Three treatments were given to the lumbar region, after which she wrote: "I had a successful period of five days since my last visit."

In metrorrhagia the results are most encouraging.

CASE V

Miss M. was sent up from the country for treatment for another condition, but after she started coming to me her doctor discovered that she suffered violent pains during her periods, she had suffered from the commencement of menstruation, but the pains lately were tending to become worse. It was suggested that on her next visit I might arrange at the same time to have the opinion of a gynaecologist, but after further consultation we agreed to try spinal manipulation, provided examination indicated that line of treatment Accordingly, at her next visit an endeavour was made to mobilize the whole lumbar spine there being a general rigidity in that area Within ten days she wrote "I know you will be glad to hear that I had a very good time last week practically no pain at all in the back or anywhere else I have never felt quite so well before at those times, it seems too good to be true

CASE VI

Miss B., aged 17, was sent by her mistress Her periods commenced when she was 14, occurred every fortnight or three weeks and lasted seven days She always had pain in front of the stomach on the first day of her periods. This was usually accompanied by sickness, and she had to lie down

during that day. Examination showed limitation of movement between the third and fourth lumbar vertebrae. She had two treatments at a week's interval, and when seen on the third occasion had just got over a period which, she said, was the best time she had had in her life. After two more treatments, carrying her over the next period, her mistress wrote: "I am happy to have to report about my maid that her period arrived before she got home on Wednesday. She was able to keep about that evening, and was only sick twice the next day, kept about, did her work, and ate her food apparently quite normally . . . altogether since being treated by you she has been much less moody, and much more cheerful than she has been since her periods first started—more like the happy child I first knew when she was still at school."

While dealing with the lumbar region it may be mentioned that manipulation of these vertebrae often has a very marked influence on constipation, and it is not unusual to find that people who have not had a motion for years without the use of medicine are able to return to normal habits.

Certain disorders of the alimentary tract seem to be related to the dorsal spine. For instance, there is the person who complains in a vague way of indigestion. He has pain or discomfort after food, not at any particular time after food, but he has discovered that he must be careful what he eats. He may probably say that he has no appetite or feels sick. Faddy about his food, he will not take the general run of food provided for the rest of the family. Very often he goes on a "diet," either prescribed by his medical adviser or made up by himself with the help of books and well-meaning friends. All this only goes to prove that the patient is miserable and unhappy; it does not necessarily prove that he is a neurotic subject. In such cases one often finds tenderness on either side of the spine in the mid-dorsal area, but more generally on the right side, and the corresponding vertebrae show a want of motility. Freeing up of these vertebrae may materially alter the patient's outlook and get rid of his discomfort.

Case VII

Mrs. A., aged 40, complained that for the last two years life had been a misery through sickness, loss of energy, and sleeplessness. She could not take ordinary food; in fact, she had been "put on a diet" by a physician six months previously, so she had the trouble of preparing separate food for herself and her husband. Treatment was given to overcome certain tissue tension which was discovered in the mid-dorsal region. After the second treatment she commenced to take ordinary food, and very soon resumed full ordinary diet, but said she had to avoid mutton fat. She soon gained seven pounds, slept soundly, lost her miserable feelings, and took altogether a brighter outlook on life. Instances of this nature are frequently happening.

Herpes zoster is mentioned in connexion with the dorsal region, because the only two cases I have treated were related one to the upper and the other to the mid-dorsal vertebrae. In both cases the patients were women, and the rash fully developed. They each had one treatment, and the subsequent events were similar. In each case the pain went within a few hours, and although the irritation remained they were grateful to be free from pain.

Reference ought to be made also to asthma, but, although spinal treatment often does produce a profound influence, there are many more cases where it has no effect, or at any rate produces no lasting beneficial effect.

Case VIII

Mr. S., aged 49, had been chief officer in a large liner, but was forced to give up his job on account of asthma. This was partly owing to the fact that the asthma was worse at sea, and he found that he was easier in London than elsewhere. Extreme heat or cold affected him, and he was worse at night. He had dysentery twelve years ago, which lasted five years, and then the asthma became unbearable. Nine years ago he had rheumatic fever, being in bed for three months, but had no asthma while the fever persisted. He also noticed that during bouts of malaria he had no asthma. As he took aspirin for malaria he discovered that this drug helped his asthma. It is worth noting that up to the age of 21 he was doing hard manual work as a sailor. Only after that, when he assumed the more sedentary habits of a ship's officer, did the asthma show itself. He had his first treatment on April 30th, 1930, and this was intended to loosen up the whole of his dorsal spine and free the ribs. At the same time he was encouraged to do hard work in his garden. That night he was more comfortable than he had been for a very long time. Up to the middle of May he had altogether six treatments. On October 3rd he wrote: "In reply to your inquiries I am glad to be able to say that I am very much improved in health. I have not had a single bad spell since I had your treatment, although I have had some slight attacks, which yielded readily to the simple remedy of aspirin and inhalations of burning powder. . . ." In March, 1931, he consulted me about something else, but said that his asthma was still well under control.

TWO CASES OF SARCOMA FOLLOWING KNOWN TRAUMA

BY

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It is stated in Ewing's *Neoplastic Diseases* that "trauma often seems to be the sole tangible factor in originating many tumours. By trauma is here understood a single or repeated more or less contusing, crushing, or lacerating injury." Below are recorded two cases of malignant tumour formation in association with two different types of known trauma—indirect and direct. In both cases the growth proved to be sarcomatous.

The first case presents several points of considerable interest, because the patient was under continuous observation from the time of one single definite injury to the time of amputation of the affected limb. That this observation was complete may be seen from the fact that, during this period, not only was the joint *x*-rayed twice, but it was also opened and explored, and the only damaged structure therein removed. The type of growth recorded is a comparatively unusual one.

Case I

Synovial Sarcoma following Indirect Trauma

A single woman, aged 41, jumped off a chair on March 30th, 1930, and experienced for the first time an intense pain on the medial aspect of her right knee. The joint became locked in a semi-flexed position; rapid swelling of the joint ensued, and the condition was diagnosed as dislocation of the medial meniscus. This was treated by reduction and splinting. On this time the swelling was excessive, and in spite of treatment did not subside during the subsequent seven months. The joint continued to be swollen and painful, the patient was admitted to hospital, where, in view of the extent of synovitis present, extension was applied for ten days, after which the joint was opened and explored. All the internal structures were found to be normal, with the exception of the medial meniscus, which was ruptured horizontally, and was consequently removed. On examination it showed no pathological macroscopical change.

In December the patient was discharged with the note "Knee still slightly swollen."

In January, 1931, she was readmitted with increasing swelling of knee. The joint was grossly swollen, but there was no evidence of intra-articular free fluid, and the anterior patellar surface was easily palpable. A bivalved plaster was applied and the patient confined to bed. Large doses of potassium iodide had no effect on the local condition;

Wassermann reaction, the von Pirquet test, and a provocative injection of gonococcal vaccine gave negative results; there were no special alterations in the blood count.

On March 12th the *x*-ray report was: "Slight periostitis of the lower end of the femur—joint appears normal. No evidence of new growth on tibia or femur." At this time no fluid was obtained by needle exploration of the joint.

By March 20th the swelling had increased, the maximum diameter being 22 inches. A large, hard, discrete, freely movable lymph node was discovered in the right groin. In view of tentative diagnosis of sarcoma, weekly doses of deep rays were given, without avail.

On April 2nd the limb was amputated through the middle third of the femur. Convalescence up to date has been uneventful, but skiagrams of the chest show several areas suggestive of secondary deposits.

Description of Specimen.—Right lower limb amputated through middle third of femur. Knee-joint grossly swollen; overlying skin atrophic, healed operation scar visible over inner aspect; maximum diameter, 23½ inches. Patella displaced medially, softened, and extensively invaded. Joint cavity filled with a white, waxy, homogeneous growth, the limits of which are determined by a fibrous zone approximately following the distended joint capsule. The tissue is almost uniform in consistency, except for an area of hyaline-colliquative degeneration at the postero-external aspect of the lateral femoral condyle. The medial meniscus is missing, and the lateral semilunar cartilage is extensively infiltrated with growth, as are the articular cartilages—particularly in the region of the degenerate area.

Microscopical Report.—"A round and spindle-celled sarcoma of joint capsule—probably synovial in origin."

The interest of this case lies in the history of what may be termed an indirect type of trauma, the resulting symptoms of which steadily merged into those of a neoplasm, while a careful exploration of the knee-joint undertaken only four months before amputation showed no evidence of tumour formation.

The second case presents a history of the direct type of trauma, and here the symptoms of a haematoma insensibly merged into those of a sarcoma.

Case II

Sarcoma of Peroneal Intermuscular Septum following Direct Trauma

In December, 1930, a married man, aged 37, while getting on to a bus, knocked his right leg just below the knee; within two days a large, hard bruise appeared, which steadily increased in size.

In February, 1931, a piece of the tumour was removed, and on microscopical examination it was found to be a spindle-celled sarcoma.

In March, 1931, the patient was admitted to hospital with a lump about 3 by 1½ inches by 1 inch lying on the heads of the peroneal muscles and over the upper third of the shaft of the right fibula. The tumour was freely movable laterally, but not vertically. The overlying skin was reddened and bore a centrally situated recent operation scar. The lesion was not tender or hot, and there was one small gland just palpable in the corresponding groin. The tumour, together with its associated muscles, was freely excised.

Description of Specimen.—Reddish-brown tumour lying in the deep fascia, encapsulated from surrounding muscles; edges firm and well defined. No areas of haemorrhage were seen; the lump was almost entirely solid, and showed a faintly whorled cross-section. There was no apparent invasion of surrounding structures.

Microscopical Report.—"Spindle-celled sarcoma of leg, apparently arising in deep fascia not actively invading muscle; but the growth cells vary a good deal, and the tumour contains many wide vascular spaces."

I should like to acknowledge my indebtedness to Mr. R. Lyte, under whose care these patients were, for permission to publish details of their cases.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

PAIN IN THE ARM AND A DEAD TOOTH

I venture to publish the following personal experiences in case they should be of general interest.

In 1924 I began to suffer from pain in the left arm, acute enough to wake me every night during three weeks. This pain was a continuous ache deep in the arm, with tingling and numbness of all the fingers, and with exacerbations that interfered with any other activity. I could not further localize the pain, and could only compare the sensations with those in a limb that has been "asleep." I concluded that there was some disturbance of the innervation of the brachial artery. Sometimes there occurred also fibrillary spasms in the left pectoralis major muscle. I tried various remedies without success, and then had my teeth *x*-rayed in the search for a septic focus. Sure enough the first left upper molar had an apical abscess. This tooth had had the nerve removed nine years previously, and was then stopped. After its extraction the pain in the arm ceased and I ascribed it to toxic neuritis.

Five years later I had the first left upper bicuspid tooth stopped. Something went wrong, the nerve was destroyed and the roots were cleaned out and stopped, the latter process being quite painless. A few weeks later the old pain in the arm returned, and I consulted the dentist, who informed me that there was periapical inflammation around the stopped tooth. I elected to have local anaesthesia for the extraction, and he employed a "sulcus injection." As the left half of my upper lip seemed to swell up and disappear, I was astonished to find that the pain in my arm had *gone*. About twenty minutes after the extraction I tested the left half of my upper lip and found that pin-pricks were without effect until the corner of the mouth was reached, and the same held good for hot and cold sensations. Wondering if tactile anaesthesia affected the same area, I was astonished to find that I could feel the touch of cotton-wool over the whole upper lip.

I decided to look up the literature on the trigeminal nerve, and found a paper by Margaret Gerard (*Archives of Neurology and Psychiatry*, ix, 1923). According to this investigator the nerve fibres from the Gasserian ganglion enter the pons, and some end there. But a large proportion descend in the medulla and cord, and reach as far as the second cervical segment. The fibres ending in the pons are those conveying tactile sensations from the face, whereas those going down into the spinal cord convey sensations of pain and of heat and cold. Now these latter sensations were the very ones affected by the sulcus injection which abolished the pain in the arm. I then tried to find out the nerve supply to the brachial artery, but the only reference I could find in Cunningham's *Anatomy* was to a twig given to the artery by the musculocutaneous nerve from the fifth and sixth cervical segments. These segments also supplied the pectoralis major muscle. As the pieces in this puzzle fitted so well I consulted Keiller's *Anatomy of Nerve Tracts of the Brain and Cord*. Keiller states: "The sensory nuclei of the fifth nerve are connected by association fibres with the seventh and twelfth motor nuclei for face and tongue reflexes, and probably also with the motor nuclei of the brachial plexus." The pain in the arm and spasms in the pectoralis major muscle seem, therefore, to be due to long-distance disturbances from the trigeminal nerve. This would explain their localization in a way that the theory of *toxaemia* from a septic focus does not.

The phenomena suggest to my mind that disturbance in a tooth causes facial neuralgia, but that when the nerve to that tooth is destroyed then sensory stimuli from neighbouring structures can cause pain at unexpected distances from that tooth. Since the second tooth was extracted the pain in the arm has been absent.

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PSEUDO HERMAPHRODITISM

The following example of an unusual condition appears to merit record

On June 14th, 1931 an Arab tribeswoman aged 25, presented herself at the Royal Hospital, Baghdad, stating that she had never menstruated and complaining of abnormal external genitalia

Examination showed the following abnormalities An ill-developed mons veneris—pubic hair of female distribution—labia majora normal—a penis with well-formed crura and glans one and three quarter inches long, projecting between nymphae which formed a prepuce open ventrally The penile external urinary meatus was deficient ventrally and its lips were continued as the well marked margins of a shallow groove which terminated at a urinary meatus of the female type in the normal position and from which she urinated Per rectum no uterus could be felt A depression, on pressure not more than 1½ inches deep, lined by mucous membrane much puckered at its extremity, represented the vagina

In general development, the patient conformed more to the male than to the female type A radiograph of the pelvis was taken by my colleague Dr A C Norman, who reports On the whole the picture of the pelvis tends to the female type, but it is not quite so open as the average female I have seen much narrower female pelves, however"

The patient volunteered the statement that for two days in each month she experienced a feeling of malaise with low backache She requested (*a*) removal of the penis, and (*b*) the formation of a vagina She has been married for four years

Laparotomy under intrathecal tutocain showed, after careful search no evidence of the presence of uterus, ovaries, or tube, either above or below the pelvic brim On the left side, just below the pelvic brim, was a well-formed testicle, the size of a large walnut, with epididymis and a vas deferens which, after a sinuous course, petered out near the bladder base These structures were all retroperitoneal, with the normal vascular connexions for a testicle in this position

The abdomen was closed and the rudimentary penis was removed with the diathermy cautery because (1) it was a useless organ which the patient stoutly affirmed never became erect during attempted coitus with her husband, and (2) under tribal conditions it would not be possible for her to change her sex She was discharged from hospital on July 3rd

It would be interesting to know how experts would classify this case I feel that some would probably be inclined to regard it as one of hypospadias in a male with non descent of the testes and cleft scrotum

I am indebted to the Inspector General of Health Services, Iraq for permission to publish this note

G S Woodman, F R C S Ed
Chief Surgical Specialist to the Government of Iraq
Baghdad

Reports of Societies

INDICATIONS FOR PREMATURE TERMINATION OF PREGNANCY

At a joint meeting of the Section of Obstetrics and Gynaecology with the Sections of Medicine and Psychiatry of the Royal Society of Medicine on October 16th, with Mr Bright Banister in the chair, a discussion on medical indications for the premature termination of pregnancy was opened by Dr L S T Burrell (Section of Medicine)

Dr Burrell said that he proposed to deal with indications associated with disease of the lungs Taking first the question of pulmonary tuberculosis, he thought it would be agreed that in a patient in whom the disease was arrested there could be no objection to a normal delivery at term Most people had been infected with pulmonary tuberculosis at some time, but the lesions had healed completely. Where there was liability to recurrence the problem was different The child of tuberculous parents lived in danger of infection ; he would become accustomed to periods of ill-health in one of his parents, he might be treated as a pariah by other children whose parents dreaded infection, and he would be deprived of the parental kisses and caresses which were enjoyed by the normal child But, legally, members of the medical profession were not allowed to consider the case from the child's point of view. They must only consider the effect of pregnancy on the mother In cases of acute and progressive tuberculosis of the lung he was strongly of the opinion that pregnancy should be terminated if the woman was seen before the fourth or fifth month Pregnancy was usually well tolerated by these women, but parturition was followed by a flare-up, which might end fatally If the mother survived, the disease usually became fibro-caseous, and she died within three or four years When the pregnancy had reached the fifth month it was usually as well to let the woman go to term, premature labour would do her nearly as much harm at this stage as normal delivery, and the child deserved some consideration in the circumstances With the fibro caseous type of the disease, in which the patient was just holding her own but no more, any additional stress might tip the scale against her Often women returning home from a sanatorium in this state became pregnant, and in his opinion pregnancy should be terminated in the early months in the interests of the mother But here again if pregnancy had reached the fifth month before she was seen it was just as well to let her go to term, because the shock of premature labour would be nearly as great as that of normal delivery In the chronic fibroid type of phthisis, where the disease was arrested, and where the patient showed no reaction to strain, it was justifiable to leave the pregnancy alone Where the child was not desired the parents would be inclined to urge all the arguments against pregnancy in a tuberculous woman, but if the physician felt that the case was one which he knew from experience would entail no undue risk for the mother he had no medical reason for intervention In non-tuberculous cases, such as pulmonary carcinoma, actinomycosis, and asthma, it was not usually necessary to terminate pregnancy unless the heart was failing—for example, in chronic bronchitis or asthma Pregnancy usually benefited patients with asthma, though they were made worse by parturition.

Dr T F Colton said that it was generally agreed that the primary cause of heart failure among pregnant women was mechanical, the crippled heart was unable to carry the load of the increased weight and the displacement of the diaphragm Treatment depended on the prognosis If congestive failure was anticipated, pregnancy should be terminated during the first three months Where the heart was enlarged or fibrillating during the early months of pregnancy the patient should be treated with rest and digitalis, and abortion should be induced as soon as the condition of the heart would permit In the later months of pregnancy a patient with congestive heart failure might as well be allowed to go to term, since the shock of premature labour provided the greater risk These women would stand an anaesthetic as well as non-pregnant heart cases, and the modern tendency was to feel less anxiety about anaesthesia in patients with cardiac lesions Active rheumatic infection arising during pregnancy might lead to heart failure if the infective process became quiescent, pregnancy should be terminated before the third month In women with chronic valvular disease of the heart who were not actively infected the immediate prognosis was not unfavourable and they might go through one or two pregnancies with-

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affecting the course of the disease, but repeated pregnancies tended to shorten life. If increasing breathlessness of cardiac origin, or mitral stenosis with haemoptysis, or oedema had been conspicuous signs before pregnancy there was a danger of congestive failure. The tendency in recent years was to allow more heart cases to go to term, but practitioners must be vigilant for the type of woman who would be injured by pregnancy. He thought that the work of ante-natal clinics would be improved by association with the cardiac department of a hospital.

Professor Beckwith Whitehouse (Birmingham) said that there was no doubt that the induction of abortion was distasteful to most British obstetricians. In law the life or health of the mother formed the only grounds upon which labour should be induced. On a five-year basis the total number of induced abortions in eight London and provincial hospitals was only 267, an average of just over 50 yearly, or 6 per institution. On a similar basis of 16,592 private and hospital patients the number of premature terminations of pregnancy during the early months of gestation was only 112, or 0.6 per cent. Inductions of labour for pelvic disproportion were not included in this series. Was this standard of practice correct, or were obstetricians adopting an attitude which was not in the best interests of the physical and mental well-being of their patients? There could be little doubt that abortion was being induced to-day on so-called therapeutic grounds which were not regarded as indications in the generally accepted sense. He submitted figures of the indications for operation given in reports on 600 cases collected from eight London and provincial hospitals over five years. Apart from major indications, such as pulmonary tuberculosis and cardiac disease, which he left to other speakers, he drew attention to the large number of minor indications, which included rapidly repeated pregnancies; previous operations, especially on the pelvic floor; tendency to prolapse of the pelvic viscera; mental states, such as previous puerperal mania, suicidal states, and bad mental family history; general debility; asthenic states; severe anaemia. Most practitioners would agree that rapidly repeated pregnancies did not justify intervention; but were we making the fertile woman a slave to childbirth? Contraception often appeared to fail in such cases. Where there had been a previous operation each case must be decided on its merits; if the pelvic floor had been recently repaired it was certainly a temptation to terminate pregnancy. He always induced labour where the mother had a malignant neoplasm, since pregnancy exercised a stimulating effect on malignant cells. In cases of mental disease eugenic as well as therapeutic questions arose.

Mr. Eardley Holland compared a series of cases of induced labour among hospital patients with a similar series in private practice, and found the reasons for intervention to be rather different in the two groups. Among the hospital patients 65 per cent. of the pregnancies interrupted before the child was viable were terminated for cardiac disease, chronic nephritis, or pulmonary tuberculosis. Among those interrupted later in pregnancy the commonest reasons for induction or Caesarean section were albuminuria, eclampsia, chronic nephritis, cardiac disease, and diabetes. In all the hospital cases, in short, the pregnancy was terminated because labour would have been injurious to the mother. In private practice the proportion of debatable or minor indications appeared to be higher. He had performed induction on private patients for such conditions as arthritis deformans, hypothyroidism and hyperthyroidism, a history of previous eclampsia, cardiac disease, pulmonary tuberculosis, controlled diabetes mellitus, mental disturbance, and congenital syphilis with an inveterate positive Wassermann reaction; haemophilia and idiopathic epilepsy were conditions on account of which patients sometimes appealed for induction of labour. He had terminated pregnancy in a neurasthenic woman with enteroptosis whose child had recently had an unsuccessful operation for hare-lip, whose father had just died, and whose husband was leaving for India. In his experience the physician was more likely than the obstetrician to take a humane view and consider the interests of the mother, possibly because the physician had been trained to consider the patient and the obstetrician the infant. If it was impossible to guarantee that the patient was faced with no increase of risk, it was scarcely justifiable to make her go through a labour which she feared to face.

Dr. H. Yellowlees said that the psychiatrist, unlike the physician or obstetrician, had to consider the patient as a whole. It was impossible to give lists of psychiatric reasons for the induction of labour. Dr. Percy Smith, writing in the *British Medical Journal* of January 9th, 1926, had described seventeen cases in which the termination of pregnancy had been considered on mental grounds, and this might be regarded as psychiatry's classical contribution to the subject. In ten cases the decision had been in favour of induction, and in seven against, but it was not possible to define the exact grounds on which these decisions had been reached. Dr. Smith himself had said that only medical considerations should be allowed to weigh, but it was not always easy to decide which indications were purely medical. Colonel J. R. Lord, in 1927, gave the following indications for termination of pregnancy: to save life; to cure ill-health; to prevent disease. At a discussion held in Nottingham in 1928, it was agreed that termination of pregnancy seldom improved the mental state of the mother, and for that reason the psychiatrist often preferred to wait for physical indications. On the other hand, psychiatric indications were sometimes all-important; but each case must be judged individually. A speaker at the Nottingham discussion had said that eugenic data were insufficient to allow of the child being taken into consideration in deciding whether pregnancy should be terminated in a mental case.

Dr. G. W. B. James said that the course taken must depend to some extent on the mental symptoms. Termination of pregnancy was seldom justified, for example, in a case of neurosis, unless, perhaps, it was an anxiety or an obsessional neurosis. The general indications were to save life, to alleviate mental illness, or to prevent mental ill-health. If possible, the patient should be moved into hospital for observation, and he thought it was desirable that maternity hospitals should keep a room for the admission of these patients. Under hospital conditions mental symptoms often disappeared. Loss of insight was a common symptom, by which was implied the loss of the patient's hold upon reality. The fact that termination of pregnancy seldom benefited the patient's mental state might be because it was usually left too late. Psychiatry always insisted on early treatment, and this principle should be applied equally to psychoses in pregnant women. If a woman in her second pregnancy began to lose insight and to drop in weight, eventually becoming psychotic, the psychiatrist seldom demanded termination of pregnancy unless some physical indication arose. Recovery nearly always followed three or four months after labour; but was it not possible that with early termination of the pregnancy it might occur much sooner? Continental experience suggested that it would. Psychiatrists were not justified in giving a psychosis the opportunity to become fixed.

Dr. Crichton Bramwell referred again to pregnancy complicated by heart disease. He mentioned a series of eighty-two cases which had gone to term, and among

which five deaths had occurred. One of the five had died of pulmonary embolism, and the other four had been cases of auricular fibrillation. He agreed that, with cases of auricular fibrillation in which congestive heart failure was anticipated, pregnancy should be terminated if the patient was seen before the fifth month, but that after that she should be allowed to go to term. He thought Caesarean section valuable in some cases; it avoided the strain on the heart of the last month of pregnancy, and allowed of sterilization. Heart failure should always be treated and overcome before pregnancy was interfered with.

Dr. W. A Potts (Birmingham) said that at the Hallam Hospital, West Bromwich, it was possible to take patients in for observation in the way advocated by Dr. James. He believed that in a large percentage of mental cases it was possible to find septic foci which were to some extent responsible for the condition. The decision with regard to termination of pregnancy should depend on the site of such foci and the thoroughness with which they could be treated. Septic teeth, for example, should be treated early; if there was any danger that dental treatment might give rise to miscarriage it was evidently preferable that this should occur during the first few months of pregnancy. Non-specific therapy was sometimes valuable, such as T.A.B. vaccine, or, in pregnancy, an anti-streptococcal serum. It was now recognized that throat infections were allied to puerperal sepsis, and the use of such a serum might diminish the risk of puerperal sepsis later.

Dr. Percy Smith said that in his published cases, referred to by Dr. Yellowlees, the decision to terminate pregnancy had been reached after weighing the whole history. He drew attention to some of the difficulties of admitting the patient for observation under the last amendment of the Lunacy Acts. At present, unless the patient was capable of expressing herself as willing to submit to treatment, she had to be certified before she could be admitted.

Dr. B. Dunlop emphasized the importance of eugenic considerations, which, he said, had received little attention during the discussion. If there was good reason to suppose that the child would be defective it could not be regarded as justifiable to allow it to be born. He referred to a paste now widely used in Germany and Russia to procure abortion, and anticipated an increase in the number of abortions once its use became generally known.

Dr. Leonard Findlay agreed that the child had come in for little consideration during the discussion. As a paediatrician he thought it calamitous to allow the birth of the child where the mother was suffering from active pulmonary tuberculosis. He was surprised that Mr. Eardley Holland should regard an inveterate Wassermann reaction as grounds for the termination of pregnancy where the patient was a congenital syphilitic. He had never heard of a third generation transmission of the spirochaete. He considered deaf-mutism of one or both parents to be a far more serious indication for intervention, and a family history of haemophilia was another sound reason. The method of choice was Caesarean section with sterilization. Mental deficiency was not usually inherited, and it was rare to get more than one case of mental deficiency in a family, except with certain familial degenerations.

Dr. E. Stolkind said that he knew of no diseases due to septic teeth, and that far too many teeth were taken out at the present time. Women who did not wish to have children frequently went abroad for induction of labour, and many of them were really ill, and had been advised to have no more children. He did not believe that it was ever possible to say when pulmonary tuberculosis was quiescent; there was always a liability to relapse, and women with this disease should be helped to avoid pregnancy.

In replying, Professor Whitehouse said he had found that if a pregnant woman with early psychotic symptoms was threatened with a visit to a psychiatrist the symptoms often cleared up.

THE DOCTOR IN WAR

At a meeting of the United Services Section of the Royal Society of Medicine on October 12th, the presidential address was delivered by Lieut.-Colonel E. M. Cowell, D.S.O., the first Territorial Army medical officer to be elected to the presidency. Colonel Cowell devoted the first part of his address to a brief history of military surgery, and afterwards proceeded to speak of a recent departure in connexion with air ambulance units.

In the historical part he said that in ancient Egypt the military surgeon was held in high esteem, less so in ancient Greece, though Hippocrates advised those who desired to become surgeons to join the army and follow it. In the Roman Army Julius Caesar bestowed the rights of citizenship upon his doctors. It appeared that Roman naval surgeons received double pay as a special inducement to enter that service, for the Romans hated the sea. In the Eastern Roman Empire, where army organization reached a high level, medical corps were established. In feudal times in Europe nothing was done for the common soldier. The Crusades did not contribute to any extent to the advancement of military medical science, but Colonel Cowell indicated a few landmarks in history, such as the establishment of the Order of the Knights of St. John at the end of the eleventh century, the accompaniment of Edward I by a number of medical men on his invasion of Scotland, the establishment of military hospitals in France in the sixteenth century, the mention of a hospital ship at the time of the Spanish Armada, the improvements in the service in France under the stimulus of Cardinal Richelieu, and the fact that in seventeenth century England Thomas Willis, William Harvey, and Richard Wiseman were surgeons to the army, and at a later time Percivall Pott and John Hunter—the latter, though brilliant as a surgeon, not a success as a military administrator. The speaker, with a mastery of compression, carried on the story to the Franco-Prussian war. He then added a few words on military nursing, mentioning the women who rendered aid to military heroes in Homer's *Iliad*, the Order of the Sisters of Charity, founded in the Thirty Years' War, and, finally, the magnificent work of Florence Nightingale.

Air Ambulance Units

In the second part of his address Colonel Cowell spoke on the question of air ambulance. Recently, he said, the Order of St. John and the British Red Cross had taken up this matter, and air ambulance detachments were being formed under that organization. The first machine—a Desoutter monoplane—had been presented anonymously to the Surrey Branch of the British Red Cross Society, and was established at Croydon aerodrome. It was capable of taking two lying cases or one lying and one sitting case, and the operation of loading, through the port window, could be very expeditiously performed in forty-five seconds. It was a very comfortable machine, entirely enclosed, and, in the speaker's view, compared very favourably with the "avions sanitaires" which he saw on attending an air ambulance demonstration in Paris at the end of July. One of these was just capable of carrying one stretcher, and the poor patient had about as much room as if he were in his coffin.

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Colonel Cowell concluded with a cinematograph demonstration illustrating the Desoutter monoplane at Croydon—loading, taking off, and landing. It was shown making its first flight with the Red Cross mark on June 4th of this year. It was able to achieve a speed of 120 miles per hour, and could take off and land in as little space as any other light aeroplane. It resembled the two-seater Ford ambulance car, which was so useful in the war. He added that the ambulance machine was available to transport civil cases to and from any place at any time.[1]

Air Vice-Marshal J. McINTYRE (Director of the Royal Air Force Medical Service) congratulated Colonel Cowell on a most interesting address. The evacuation of sick and wounded by the Air Force had so far been limited to Eastern countries, where ordinary means of transport scarcely existed. There was no special Air Force ambulance. What was used in a big evacuation was a large troop carrying machine, which conveyed the sick and wounded—principally the sick—over considerable distances. Otherwise small general purpose machines were employed, capable of carrying one stretcher case, and perhaps one or two sitting cases. Certain types of machines had spares which enabled them to be fitted to take stretchers. Another method by which sick had been evacuated was by strapping them on the top of the fuselage, but that was not a device which he favoured.

Lieut.-General Sir H. B. FAWCUS (Director-General A.M.S.) gave it as his opinion that air ambulance transport in the next war, whenever it might come, would be an absolute necessity. He was certain that the method on which Colonel Cowell had been working was one which was likely to ensure air ambulance transport at the beginning of a war. Before the last war, in 1913, there was a strong movement to get motor ambulances for work in the field, but no success was forthcoming. The war had not been going on for very long, however, before it became most evidently necessary to have motor ambulances, and these were obtained without difficulty and in very large numbers. He was sure that if the country went to war again without air ambulance transport, there would be the same outcry, the same necessity, and the same result.

Surgeon Vice-Admiral BOND (Medical Director-General R.N.) proposed a vote of thanks to Colonel Cowell, which was heartily accorded.

[1] Inquiries should be addressed to the Air Ministry, any air transport agency, or the Rollason Aviation Company, Croydon Air Port.

INDIVIDUAL PSYCHOLOGY AND THE SYMPATHETIC MECHANISM

At the first meeting of the session of the Medical Society of Individual Psychology, on October 16th, Dr. W. LANGDON BROWN delivered the annual address from the chair. It was reported that the membership of the society had risen to fifty during its inaugural year.

Dr. Langdon Brown prefaced his address by explaining that he was not a trained psychologist; he had been brought up in an entirely materialistic school of medicine, but having started by applying physiological principles, he was forced by the logic of necessity to pay regard to the underlying psychology. He considered that a striking feature of twentieth century medicine was a return to the cult of Aesculapius, which might be summed up as baths, fresh air, dream analysis, and psychological explanation. A very important part of treatment under the ancient cult was the interpretation of dreams by priests, and from this there developed a more or less definite psychotherapy. No doubt dreams did sometimes, to those who watched them carefully, betray the condition of the body. There was much in the temple ritual which might seem like quackery to-day, but he would prefer to call it psychotherapy adapted to the needs of former times. After all, reason was a more recent human acquisition than the emotions, and our forefathers for thousands of years depended for healing on magic alone. For himself the significance of this modern return to Aesculapius was the recognition of the importance, not only of the disease from which the patient suffered, but of the patient who suffered from the disease, together with his reactions, his environment, and his hereditary tendencies. It was by the combined attack on the physical and psychological side that medicine would make advances in the future. So far medicine had given scant consideration to the way in which man adapted himself to the social environment; and, after all, man entered this world much more completely equipped to deal with the life of internal relations than to deal with environment.

Passing on to speak in particular of the work of the late W. H. R. Rivers, to whom he paid a high tribute, Dr. Langdon Brown said that Rivers had extended the work of Hughlings Jackson, who described three levels of the nervous system—the reflex, the sensory and motor, and the psychological—as representing three successive stages in development. Rivers postulated a number of different layers within the highest level. The development of the individual mind, he considered, led to the formation of consecutive layers, indicative of increasing reality and self-control, but each individual started out equipped in the lower levels with earlier racial tendencies held more or less in abeyance by the higher levels. The control of the higher levels in dreams and in disease was lessened, and the older and more primitive methods of thought reasserted themselves. Thus one could see how easy it was for a sick person to believe in magic. Rivers considered that a mental event could be relegated to the unconscious either by a conscious act of volition or by an unwitting suppression. The latter he regarded as a normal incident in development. Thus the higher levels of the nervous system were reached on the stepping-stones, not only of our dead selves, but of our long dead ancestors. It was clear that the nervous system originated before anything which could be called consciousness appeared, and that the sympathetic nervous system worked quite apart from consciousness, remaining for ever beyond the control of the will. It retained certain features of the primitive nervous system, both in structure and in function. The effects of sympathetic stimulation were all designed to activate the body for a struggle and increase its power of defence, while parasympathetic stimulation in general replaced the display of kinetic energy by the storage of potential energy. The sympathetic was katabolic, directing the stream of energy outwards; the parasympathetic anabolic, directing it inwards. When these were distributed to the same structures their actions were always antagonistic. When the one was stimulated the other was inhibited, and the rhythm of life depended upon the balance between the two. The predominance of the parasympathetic in sleep was further shown by the occurrence of "accidents," such as asthma, enuresis, and emissions. It might be asked on this theory how to account for the parasympathetic effects that were seen in overwhelming pain and fear, such as collapse, syncope, and loss of sphincter control. Rivers had pointed out that the lowly organism possessed another method of defence—namely, immobility—which took the form in some animals of shamming death, and might prevent detection by foes. These two reactions—on the one hand immobility, and on the other preparation for fight or flight—obviously admitted of no compromise. To attempt to combine the two would be fatal. If one of them prevailed, the opposite group

was inhibited. The sympathetic co-operated with the adrenals, the thyroid, and the pituitary; the parasympathetic with the glands of the digestive organs and their annexes, and possibly with the parathyroid.

Dr. Langdon Brown went on to emphasize the importance of recent work on the close association between the pituitary, which was the leader of the "endocrine orchestra," and the hypothalamus lying immediately above it. Cushing had said that no other single structure of the body was so deeply protected, centrally placed, and well hidden as the pituitary. Here was the mainspring of primitive existence—vegetative, emotional, and reproductive—on which, with more or less success, man had come to superimpose a cortex of inhibitions. It was abundantly clear that however the sympathetic nervous system was brought into action, it stimulated the expression of certain emotions, preeminently fear, with tachycardia, sweating, blanched extremities, and the like. Psychoneuroses might express themselves at any one of the three levels: at the psychical level as an obsession; at the sensory motor level as a paralysis, contracture, tic, or anaesthesia; and at the visceral level as various vegetative neuroses. The state of continued fear, whether recognized or not as such by the sufferers, was capable of producing the symptoms of which they generally complained. Sympathetic irritation by stimulating the mesenteric nerves might inhibit peristalsis and cause intestinal stasis. Therefore an adequate rationale for existence, whether a happy marriage, an absorbing profession, or even a political agitation, might have remarkable effect on the symptoms of visceroptosis.

In the concluding part of his address, Dr. Langdon Brown took as an illustration and gave a striking analysis of the life and writings of the late D. H. Lawrence. He noted that one literary critic had declared that Lawrence's influence upon the younger generation would be overpowering, but Dr. Langdon Brown doubted this. Lawrence had great literary gifts which were fatally crippled by a psychoneurosis, and, to a generation of minds undamaged by the war and by the scarcely less disastrous peace that followed it, he should be given no more than his proper place. In his closing passage Dr. Langdon Brown said that Sir James Mackenzie had defined symptoms as the disturbance of normal reflexes. A normal reflex was certainly purposive, and should be painless. Through a chain of conditioned reflexes man associated ideas and achieved consciousness. This consciousness appreciated that a disturbance of the normal reflex was painful, and, being still purposive, proceeded to investigate the cause of the pain. The dog licked his bite, the burnt child dreaded fire, but from such simple defensive reflexes as these were built up elaborate associations of ideas until, in the process of social evolution, certain individuals became set apart to be epicritic on other people's protopathic sensations, and to try and rectify these disturbed and therefore painful reflexes. "There is thus no break in the chain between simple reflexes and the evolution of the medical profession. Behold us here assembled as the last link in a long chain of conditioned reflexes!"

Dr. F. G. Crookshank, in proposing a vote of thanks to Dr. Langdon Brown, said that the address had united a broad humanity with a wealth of clinical interest and scientific knowledge. If there was one danger which attended the growth of individual psychology it was that in their observations of psychological mechanisms they might be a little oblivious concerning the sympathetic and other mechanisms. By his analysis of the case of D. H. Lawrence, Dr. Langdon Brown had shown how perfectly the philosophy of Adler illustrated that strange life story.

VOLUNTARY EUTHANASIA

The annual general meeting of the Society of Medical Officers of Health was held on October 16th, when Dr. C. Killick Millard, medical officer of health for the city of Leicester, was installed president. Dr. Millard immediately proceeded to deliver his presidential address, the unusual theme of which was "The legalization of voluntary euthanasia." He prefaced it by saying that he had been surprised to learn how much agreement there was on the subject in the medical profession and outside, and he read endorsements which he had received from some medical men in Leicester and elsewhere to the effect that the principle underlying the practice of euthanasia was ethically sound. He also coined an epigram which he placed at the forefront of his address: "The great task of medicine is to prevent disease, and, failing that, to cure disease. If it fails in both, science, at least, enables us to shorten the sufferings caused by disease."

Vast numbers of human beings, said Dr. Millard, were condemned to end their earthly existence by a lingering, painful, and often agonizing form of death. Much of the "sting of death" lay in the prolonged physical suffering which preceded it; death itself was regarded by both patients and friends as a "happy release." The serious increase during recent years of mortality from cancer had definitely increased the proportion of painful deaths. Voluntary euthanasia, the subject of his address, excluded everything save euthanasia which was desired by the person concerned; he was not proposing that imbeciles and mental defectives should be painlessly deprived of life, that old people who had become a burden to their relatives should be quietly sent to the lethal chamber, or that anyone who wished to do so should be allowed, still less encouraged, to commit suicide. His proposition merely was that individuals who had attained to years of discretion, and were suffering from an incurable, fatal, and painful disease, should be allowed by law, if they so desired and if they had complied with the requisite conditions, to substitute for the slow and painful death a quick and painless one. This should be regarded, not merely as an act of mercy, but as a matter of elementary human right. It was conceded already in the case of animals, and neglect to "put the poor creature out of its pain" would be regarded as actual cruelty.

The proposal was not new. In Sir Thomas More's *Utopia* euthanasia was encouraged in the case of those suffering from an incurable disease. Many of the ancient philosophers were definitely in favour of it. Pliny, for example, declared that it was one of the greatest proofs of the bounty of Providence that it had filled the world with herbs by which the weary might find a rapid and painless death. Dr. Millard was at pains to distinguish between legalized voluntary euthanasia and suicide. The difference was as real as between the sacrifice of life for one's friends and suicide as a means of escape from difficulties, or between killing in war and private murder. He discussed the views as to suicide held by primitive and more advanced peoples, as well as the strongly antagonistic attitude of Christianity, which was reflected in secular law, where suicide was still regarded as a felony. But he quoted the present Dean of St. Paul's (*Christian Ethics and Modern Problems*):

"It seems anomalous that a man may be punished for cruelty if he does not put a horse or a dog 'out of its misery,' but is liable to be hanged for murder if he helps a cancer patient to an overdose of morphine. . . . I confess that in this instance I cannot resist the arguments for a modification of the traditional Christian law which absolutely prohibits suicide in all circumstances."

The ethics of suicide, in Dr. Millard's view, depended almost entirely upon the motive prompting the act, and

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pity rather than censure should be the predominant sentiment in certain cases But legalized voluntary euthanasia would come into quite a different category as an act which was rational, courageous, and often highly altruistic Dr Millard had drafted a Bill to make voluntary euthanasia legal A person desiring euthanasia would make an application stating that he had been informed by two medical practitioners that he was suffering from a fatal and incurable disease as defined in the Act and that the process of death was likely to be protracted and painful He would also state that his affairs were in order, that his near relatives had been informed, and that he knew of no valid reason why he should not be granted the necessary certificate This application would be duly attested by a magistrate, and accompanied by two medical certificates—one from the regular attendant, and the other from an independent practitioner The application and certificates would be sent to an official appointed for the purpose who would satisfy himself that all was in order The case would then come before a court of summary jurisdiction at which any objections would be heard, and the court if satisfied, would issue the necessary permits, one to the applicant to receive euthanasia, and the other to a medical practitioner to administer it Only practitioners licensed for the purpose would be eligible as euthanisors " The procedure would be governed by regulations made by the Home Secretary or Minister of Health The usual method would be to swallow a narcotic draught, and a prescribed procedure would be followed, or, in cases where the patient was unable to swallow, the lethal dose could be administered hypodermically An independent and official witness would need to be present and to countersign the certificate which would be filled up and signed by the euthanisor Dr Millard admitted that the number of persons at first who would take advantage of the Act was likely to be very small, but by degrees as people became accustomed to the idea, the numbers would increase Doubtless as in the case of cremation, the movement would be helped by the example of a few outstanding men and women He discussed the ethical practical and legal objections and in particular the precautions which would have to be taken to prevent possible abuse relating to life insurance He protested that his suggestions should not be regarded as Utopian in view of the drastic and revolutionary changes which had come about during recent years, such as the innovation of summer time the legalization of cremation and the toleration of birth control

The vote of thanks to the president was proposed and seconded respectively by Professor Bostock Hill and Dr Charles Porter the former remarking that he was glad, on the whole that it was not the rule to discuss presidential addresses

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At a meeting of the Paddington Medical Society on October 13th a discussion on vertigo was opened by Dr Wilfred Harris from the general medical and neurological aspects Mr M E Vlasto from the aural aspect, and Mr F A Juler from the ocular aspect The report of the National Health Insurance Acts Section on Memorandum 329 I C of the Ministry of Health was adopted It was decided to form a Section for Collective Research

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The Academie de Medecine of Paris has been authorized to accept a legacy of 300 000 francs from M Isaac Leon Ricaux for the foundation of two annual prizes to be awarded to Frenchmen or foreigners for the best work on the cure of diabetes and tuberculosis

The first four numbers of the two hundred and thirty fourth volume of the *Biochemische Zeitschrift* have been dedicated to Professor P Rona on the occasion of his sixtieth birthday

Reviews

COMMON DISEASES OF THE NERVOUS SYSTEM

Dr T J Nattrass is to be congratulated on producing a very readable book, *The Commoner Nervous Diseases*[1] It is described as for general practitioners and students, and should prove extremely useful to both classes of readers His first chapter deals with the examination of the patient, and is a model of clearness and orderly thinking It cannot be too strongly emphasized that the same scheme of examination should be rigidly adhered to in every case it is only by such work that students can hope to make themselves scientific members of the profession In his chapter on disseminated sclerosis the author refers to a toxin destroying the myelin sheath, he might have mentioned that this is probably a lipase, and that its action might be inhibited by quinine It is rather doubtful if the theory that spirochaetes in the aorta exert a toxic effect in tabes dorsalis is to be taken seriously—fully 85 per cent of general paralytics show a syphilitic aortitis without necessarily showing tabetic symptoms We are glad to see the appearance of a loss of sensation on the centre of the face given as an early sign of tabes, because this is not sufficiently widely known When dealing with the treatment of dementia paralytica, reference might with advantage have been made to tryparsamide, the results of which are every bit as good as those with malaria, and the mortality practically nil With malaria there is nearly always in any series a mortality of about 10 per cent The more recent treatment by diathermy we think merits a trial for it is easily controlled and secures high temperatures

The chapter on epilepsy is well done, it is admittedly difficult to discuss such a big subject as the etiology of the epilepsies in a page or two The author does not emphasize that epilepsy commencing after the age of 30 is almost invariably organic and not idiopathic We would have liked to see some mention of both dehydration and the ketogenic diet in the treatment of epilepsy The latter has been shown to be of great use in children and adolescents, and it is at this stage that treatment, if it is going to be of any value, must be instituted Vascular lesions of the brain are very well dealt with The chapter on epidemic encephalitis emphasizes the profound difference between the mental sequelae in children and in adults In discussing migraine, the author might perhaps have mentioned the interesting fact that approximately 60 per cent of epileptics have a migrainous heredity, compared with 17 per cent among normal people Only 14 per cent of epileptics have an epileptic heredity, whereas 7 per cent of normal people have It is questionable whether a short chapter devoted to the psychoneuroses in a book of this character serves any useful purpose Practitioners assuredly want a more detailed account of these conditions than Dr Nattrass supplies We are inclined to think that the term ' minor psychoses ' might be used instead of ' psychoneuroses ' and the term " neurasthenia " quietly abandoned Such a variety of ill defined conditions are grouped together under the heading that it has ceased to have any real use apart, perhaps, from the sense in which Freud uses it These, however are criticisms of what are really small points The author has done his work well and the production of the book reaches the high standard we always expect from the Oxford Medical Publication-

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[1] *The Commoner Nervous Diseases* By J Nattrass, M D F R C P London Oxford University Press 1931. (Pp 218 19 figures, 2 plates 12s 6d net.)

DISEASES OF CHILDREN

Several new foreign works dealing with various aspects of diseases of children may conveniently be reviewed together. The most recent addition to the Monographs on Paediatrics Series is by Professor M. Metzger and Dr. A. Héraux, and covers the first days of the newly born.[2] The preliminary sections deal with the general hygiene of the normal newborn infant, with very practical details for management and feeding, and the special cases of the underweight baby, the overweight baby, and the Caesarean baby receive careful attention. The second half of the book gives an account of the disorders of the infant in the first few months of life, under the main headings of gross syndromes, infections, haemorrhages, birth injuries, and malformations, while a very good section is included on the clinical manifestations in the infant resulting from various disorders in the mother. The authors have also added a series of forty clinical records, illustrating various points brought out in the course of the book, and these are a valuable addition to a volume which, even without them, is packed with useful information and practical advice.

Professor J. Cathala, in his Pathology of the Infant,[3] covers the same period in the life of the child, but his book is addressed mainly to students at the beginning of their work in a paediatric department, and is necessarily more elementary and much briefer. The title is in many ways a misnomer, for, although diseases of the newly born are considered from the aspect of departure from the normal physiology of this period of life, the author also deals with clinical features, such as the physical examination, signs, and symptoms, and concludes with a short chapter on treatment on very general lines. As an introduction to the study of paediatrics, however, this small volume can be recommended, and the English medical student might well attempt the very straightforward French in which it is written.

With Professor P. Nobécourt's latest addition to the series he is publishing, dealing in this new work with affections of the haemo-lymphopoietic organs and of the blood,[4] the reader comes upon a typical French monograph. Here are the author's clinical lectures arranged so as to deal with the subject in a systematic manner without necessarily covering the whole ground. Each chapter is based upon a definite case or cases, and the substitution of the written for the spoken presentation is associated with an abundance of illustrations, both of patients and of charts. The main parts of the book deal with three themes—anaemia, purpura, and glandular enlargement—and from these main presenting signs the author develops the finer classification to embrace leukaemia, the haemorrhagic diseases, lymphadenoma, etc. The clinical descriptions, the carefully indicated steps in diagnosis, the detailed information about treatment, and the discussion of etiology and prognosis are all achieved in the masterly manner which is now well recognized as an essential feature of Professor Nobécourt's contributions to this branch of medicine. He makes no claim to have solved many of the problems which still exist in regard to the blood disorders of childhood, and yet the solution of such problems undoubtedly lies in such a volume as this, packed from start to finish with personal observations of carefully studied clinical material. The index is surprisingly good when one remembers that French publications so often neglect this important feature; in the other two books mentioned above the index could be greatly improved.

The last member of this group comes from Germany, Dr. W. Pflüger contributing the seventh and final volume of the large work on practical differential diagnosis, edited by the late Professor G. Honigmann, under the title of Differential Diagnosis in Paediatrics.[5] The subject is considered along the usual lines, beginning with the newly born and the infant, and thus on to the small child and the older child. For the most part the sections deal with various leading symptoms and signs, such as vomiting, jaundice, convulsions, etc., and the concluding chapters on the specific fevers are particularly good. The absence of any illustrations is a serious drawback, and even without this disadvantage it is doubtful whether the book can bear comparison with the well-known work by Feer on the same subject, in the same language. The general production is otherwise good, the print clear, and the index very good.

A SURVEY OF PHARMACOLOGICAL PROGRESS

Recent Problems in Pharmacology,[6] an amplification of the textbooks, by Professor Hans Handovsky, is the twenty-fifth of a series of volumes on recent scientific progress appearing under the editorship of Professor Liesegang. The author has aimed at giving an account of pharmacological progress during the years 1914–29. He estimates that the pharmacological literature during this period amounted to 90,000 publications, and out of this overwhelming mass of material he has selected 1,636 references. The text of the work only occupies 188 pages. These figures indicate that the author has expended a very great amount of labour in the preparation of his volume, and that the material has been rigorously sifted. Closer study confirms these impressions, for an examination of the references shows that they are remarkably complete, and that they have been chosen in an unbiased manner from the literature of all countries. The text is so condensed that it makes difficult reading, but as the volume supplies pointers to all important recent work it will prove a very valuable work of reference for pharmacologists. The author has treated his subject from the functional point of view, and deals in turn with the pharmacology of different systems. Thus the titles of some of the earlier chapters are: "Pharmacology of energy exchange," "Pharmacology of the metabolism of water and of ions," and "Pharmacology of the autonomic nervous system." It is impossible to give any short account of the contents of a book such as this, which is an example of extreme compression. The author has covered an enormous field, and has summarized all the most important recent advances in pharmacology. It is the kind of summary that could only be compiled by an author outstanding both for his industry and for his learning.

VOCATIONAL GUIDANCE

Not very long ago it would have been true to say that the choice of an occupation or a career for a boy or girl leaving school was almost entirely haphazard. For some years past, however, a good deal of trouble has been taken by, or on behalf of, local education authorities,

[2] *Les Premiers Jours du Nouveau-né.* Par Marcel Metzger et Andre Héraux. Monographies de Pédiatrie et de Puériculture. Paris: Gauthier-Villars et Cie. 1931. (Pp. xi + 444; 40 charts. Paper cover, 40 fr.; Bound, 45 fr.)

[3] *Pathologie du Nourrisson.* Par Jean Cathala. Collection des Imitations Médicales. Paris: Masson et Cie. 1931. (Pp. vi + 194. 22 fr.)

[4] *Affections des Organes Hémo-Lymphopoïétiques et du Sang.* Par P. Nobécourt. Clinique Médicale des Enfants. Paris: Masson et Cie. 1931. (Pp. xi + 432; 125 figures. 60 fr.)

[5] *Differentialdiagnostik in der Pädiatrie.* Von Dr. med. W. Pflüger. Praktische Differentialdiagnostik, Band vii. Dresden u. Leipzig: T. Steinkopff. 1931. (Pp. ix + 160. RM.11.50.)

[6] *Pharmakologie in Modernen Problemstellungen: Eine Ergänzung zu den Lehrbüchern.* Von Dr. Hans Handovsky. Dresden u. Leipzig: T. Steinkopff. 1931. (Pp. xii + 224. RM.17.50.)

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associations of teachers, the Ministry of Labour, and by individual head masters and head mistresses, in the placing of school-leavers in what are believed to be appropriate posts. Local authorities have, in fact, been empowered by legislation to organize such assistance to boys and girls since the year 1910, and much has been done by some of the larger authorities, and considerable success has been achieved. Latterly, the aid of the National Institute of Industrial Psychology has been increasingly sought in these efforts; and a great deal of information about the work of this institute in the direction indicated is to be found in a volume entitled *Methods of Choosing a Career*,[1] by Mr. F. M. Earle, and some other members of the staff of the institute. There is a preface by Dr. Charles S. Myers, the principal, and a foreword by Lord D'Abernon, the president, who remarks that "a vast number of young people tumble into their occupations by chance, instead of being guided into them on grounds of suitability, and that many of these, year in and year out, are doing work for which they are not naturally fitted. To the community this represents an incalculable loss in efficient service; to the individuals concerned it means needless discontent, irritation, and strain." Any attempt, therefore, to estimate the value, and improve the methods, of vocational psychology in determining the occupations best suited to adolescents is of great interest and public importance.

The book has been planned so as to be valuable both to the cultured layman and to the psychological expert. It is a full study of an experiment rendered possible by the benevolence of the Carnegie United Kingdom Trust, in the course of which six hundred boys and girls leaving the elementary schools in a certain part of London were given advice by the institute as to their occupation in life, the results being followed up over a maximum period of four years. There was a control group of the same number, where careers were similarly followed up, but who had merely received the ordinary, but careful, advice often given by the education and employment authorities in such circumstances, without the help of the institute. The difficulties of conducting such an experiment, and the allowances that have to be made for disturbing factors at every stage, must be apparent. A perusal of this book will make it evident that they were greater even than might have been supposed. Yet the results obtained were extremely encouraging, and fully justify the tentative submission, in an appendix, of a working plan for the establishment of a general scheme of vocational guidance on the lines adopted in this experiment. The co-operation of many persons is necessary, and not the least essential of these is the school or private doctor. "The importance of an adequate medical examination is indicated by the fact that about 15 per cent. of the children examined by the institute proved to be aiming at occupations for which they were unsuited on medical grounds." The school doctor is, of course, primarily concerned only with ensuring that the physically unfit child receives treatment, but his position with regard to vocational guidance is bound to become increasingly recognized, and, indeed, in Brussels he is definitely used in this connexion.

The aims of the experiment and its scheme in general are first described, then the different methods of examination, of formulating advice on the basis of the information obtained, and of conveying this advice to parents and children. Some of the details given are of the utmost interest and value. The book then goes on to refer to the study of the occupations which present themselves, and sets out the nature and methods of the study of the after-careers of the children, both of those who had received or had not received the institute's advice, and of those who had or had not followed the advice so given. The general results of this following up are described, and the data are elaborately analysed. The analysis takes two forms: one the form of case study, which will certainly be most instructive to the non-expert reader; the other the form of statistical tables which are intended primarily for the detailed consideration of the technical expert. In a final chapter the whole experiment is reviewed, and some indication given of its great practical value, and of the ways in which its lessons may be applied.

"Vocational guidance is not, and never can be, the literal interpretation of the square peg and round hole metaphor: it is not so inhuman. . . . Studies such as these are necessary to lay the foundations of a more objective system of vocational advising, but they do not indicate a mechanistic conception of human life. . . . The value of the experiment lies, therefore, in the extent to which it makes clear the nature of the problem, and shows how a necessary piece of social work which has been begun on an empirical basis may be extended on a more secure scientific foundation by the introduction of psychological methods."

[1] *Methods of Choosing a Career.* By F. M. Earle, M.Ed., B.Sc. Edited with a preface by Charles S. Myers, M.D., F.R.S. With a foreword by the Right Hon. the Viscount D'Abernon, G.C.B., G.C.M.G. London: G. G. Harrap and Co., Ltd. 1931. (Pp. 334; illustrated. 12s. 6d. net.)

EARLY THEORIES OF SEXUAL GENERATION

In the title of Professor Cole's volume on the *Early Theories of Sexual Generation*[1] there is nothing to indicate that the book differs from the semi-popular works on biological subjects which are issued in considerable numbers at the present day, and which doubtless have their use in disseminating an interest in scientific problems. Professor Cole's book is in a different category. It is a solid piece of historical research, carried out with scrupulous attention to accuracy and completeness, and it will, without doubt, occupy the position of a standard work of reference for those who take more than a superficial interest in the subject. Professor Cole refers to the common mistake of confining a historical narrative, whatever phase of science may be under discussion, to its more salient and striking features; such a method leads to erroneous conceptions, and these can only be avoided by a complete examination of all the facts. Theories of sexual generation lend themselves, more than is the case with most subjects, to the undesirable practice of culling the interesting details and ignoring their more prosaic but indispensable setting. This mistake will not be made here; it need only be said that the reader will find in the author's chapters on the history of the spermatozoa, the Preformation Doctrine, epigenesis, and the theories of fertilization and development, matter of absorbing interest, handled with genuine historical instinct. One may be allowed, by way of an aside, to make a reflection suggested by some of the old theories advanced on the subject of sexual generation. The following are among those which have been held by men of scientific standing: Generation is dependent on putrefaction of the ovary, or of the semen; spermatozoa are miniature human beings; the ovum contains a miniature human being; spermatozoa are animal parasites belonging to the genus Cercaria (Cuvier); the sexual elements in Adam and Eve contained, in ever diminishing miniature, every individual of the entire human race. Malebranche (1674) the philosopher truly remarks in reference to the last-named theory, that "the vision of the soul is indeed more comprehensive than that of the body." As a less philosophical comment, it may be suggested that it is wise to take the theories of scientists *cum grano salis*.

[1] *Early Theories of Sexual Generation.* By F. J. Cole, D.Sc., F.R.S. Oxford: The Clarendon Press. (Pp. x + 230; 21 figures, 1 plate. 15s. net.)

NOTES ON BOOKS

The second volume of *Recent Advances in Analytical Chemistry*[9] is devoted, according to title, to inorganic chemistry. It also includes a section on micro-analysis, and on the analytical examination of water and sewage. The presentation is generally in the form of abstracts of published papers, and some compression of detail has thus been unavoidable. More precise detail is furnished in the chapters dealing with the rare elements. In the chapter on water and sewage an account is given of the oecology of the living organisms developed in various forms and degrees of pollution. This is a subject usually much neglected, but one of great importance. The book is very comprehensive in reference to new methods; it includes a complete bibliography and an adequate index.

The recently published Proceedings of the Second National Congress[10] organized by the Italian League for the Campaign against Cancer, and held at Bologna last January, contains papers on the etiology of tumours, cancer, and tuberculosis, constitution and cancer, oncogenic disequilibrium and histogenic chemotherapy, and diagnostic and curative centres in Italy for malignant growths, as well as short communications dealing with the experimental, clinical, pathological, and statistical aspects of the question.

The first part of Messrs. Merck's *Annual Report*[11] for 1931 does not record any new drugs of outstanding importance, but contains notes on various subjects that are of general interest. Acetylcholine and other choline derivatives are finding increasing use on the Continent. A number of authors have reported favourably on the action of acetylcholine in various forms of arterial spasm, and Dejean found that it relieved migraine. Ephedrine appears to be finding an increasing use; about thirty references are given to papers on this subject. In addition to its well-established action in the allergic diseases, ephedrine has been found useful in preventing or in combating circulatory collapse, and in particular that due to lumbar anaesthesia. It has also been used to replace adrenaline in local anaesthesia, and is stated to produce no side actions. Finally, it has been used successfully in biliary and renal colic. The reports on the use of ergotamine include a number which mention the danger of the production of ergot gangrene. Antoine, however, suggests that the gangrene which sometimes occurs in puerperal septicaemia is due, not to ergotamine, but to gangrene-producing amines which originate in the febrile puerperium.

[9] *Recent Advances in Analytical Chemistry*. Vol. ii: Inorganic Chemistry. By C. Ainsworth Mitchell, B.Sc., F.I.C., Editor. London: J. and A. Churchill. 1931. (Pp. xiv + 452; 26 figures. 15s.)

[10] *Atti del Secondo Convegno Nazionale*. Pubblicati a Cura del Comitato Ordinatore. Bologna: L. Cappelli. 1931. (Pp. ix + 508; illustrated.)

[11] *E. Merck's Annual Report* (English edition). Darmstadt: E. Merck, *Chem. Fabrik*. 1931. Part I.

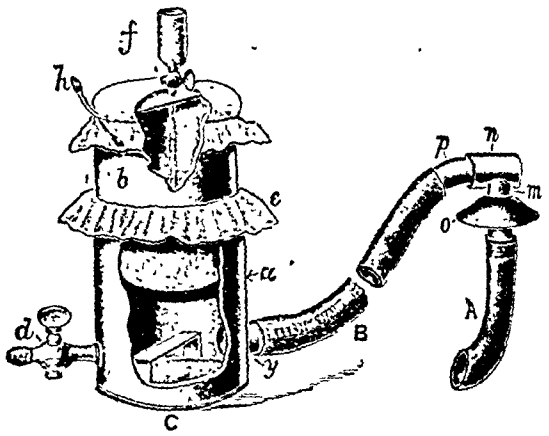
PREPARATIONS AND APPLIANCES

An Ether Inhaler and Jaw Support

Dr. G. A. Metcalfe (Bedford) writes: The apparatus here described is designed to give an efficient ether anaesthetic in cases where it is essential to keep the apparatus out of the surgeon's way. It is simple in construction, easily sterilized, portable, needs no special skill to use, and gives a full view of the face. It consists of an airway (A) connected through a wide-bore rubber tube (B) with the inhaler (C). The patient breathes in and out through the whole apparatus with perfect freedom. The tube is long enough to allow the inhaler to be placed in any desired and unobtrusive position.

The Airway.—The usual Phillips rubber type is used with a modification of the metal mouthpiece. This, made in two sizes, consists of an angled tube, the oval limb (*m*) of which takes the rubber airway. The round limb (*n*) projects at right angles to the mouth, and is designed to take the pipe (*p*) of the tube (B). It is short enough to fit below a Schimmelbusch facepiece, and can be used as an ordinary airway. To prevent breathing otherwise than through the airway an obturator (*o*) of rubber is slipped on to the oval limb, and fits between the teeth and lips. A spring nose-clip is used for the nose.

The Tube comprises about two feet of half-inch internal bore stout rubber tubing. Its upper end is connected with a curved metal pipe (*p*), which fits into the round limb of airway, and can be rotated in any direction desired. This allows of free choice of position of inhaler without danger of kinking the tube.



The Inhaler consists of a metal pot (*a*) weighted at its base, into which slips a cylinder (*b*). Near the base of (*a*) a wide-mouthed pipe (*y*) opens, which leads to the tube (B), and acts as the respiratory vent. A second small pipe (*d*), entering at the opposite side, acts as an intake for oxygen or ether vapour. The cylinder (*b*) is open at the lower end, and carries with it into (*a*) one or two layers of lint (*l*); these stretch across its mouth, and form a diaphragm upon which the anaesthetic drops. The friction of the lint holds the cylinder at any desired height, and the total volume of the inhaler can be altered by varying the position of the cylinder. Across the upper end is a strut, with a hole in the centre, which acts as a bracket for the drip funnel (*f*). The end is covered with a layer of lint, held in position by a spring clip (*h*), and pierced by the funnel. The inhaler consists, therefore, of two chambers, into the inside of which the anaesthetic is dripped, and through which the patient breathes.

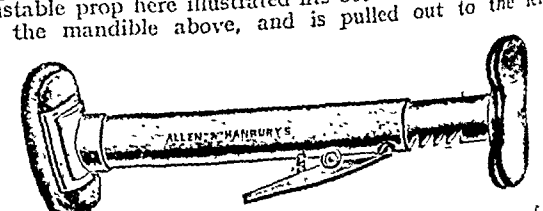
Method of Use

Induce in the ordinary way; when the anaesthesia is deep enough, pass the airway, and adjust the obturator and nose-clip. Continue with the ordinary mask for a few moments longer. Fit the curved pipe (*p*) to the airway, turned in the desired direction. Let the ether drip through the funnel with tap open. Later, turn the tap on the funnel to allow a steady feed, and fill the funnel as required; fit the intake pipe to an oxygen or ether vapour supply if desired. For large patients a piece of gamgee may be clipped over the cylinder, but if breathing is agitated it is advisable to remove the top covering altogether, and push the cylinder in. For children one layer of lint on the diaphragm is all that is necessary.

Only a small quantity of anaesthetic is required. The jaw must be kept well forward to close the mouth and ensure a free airway, and a jaw prop, such as Cave's, or that here described, is a very useful adjunct in many cases. Perfect aeration is obtained, and anaesthesia is smooth and economical. The apparatus can with advantage be used for all other anaesthetics.

A Jaw Prop

With an artificial airway in position it is often necessary and sufficient to hold the chin up in order to obtain a free air passage while administering an anaesthetic. The simple adjustable prop here illustrated fits between the clavicle below and the mandible above, and is pulled out to the length desired, where it automatically fixes itself by means of its ratchet. The ends are grooved and padded to fit the [illegible] and the upper end is made to rotate so that it can [illegible] into line with any part of the ramus. It is sometimes necessary to hold the prop in position by means of tape [illegible] round the neck.



The ether inhaler and jaw prop have been made for us by Messrs. Allen and Hanburys, Ltd., 48, Wigmore Street, London, W.1.

BROOKMANS PARK STATION (L.N.E.R. main line). [illegible] Tavistock Square, W.C.1.

British Medical Journal

SATURDAY, OCTOBER 24th, 1931

THE CLINICIAN'S PRIDE OF PLACE

The annual Harveian Oration at the Royal College of Physicians naturally and properly offers each year a tribute of eulogy and appreciation to the memory of a great name, and repeats the time-honoured exhortation to the Fellows of the College to seek out the secrets of nature and to cultivate the excellent virtues of mutual affection and charity. The discharge of these pious responsibilities once accomplished, the Orator of the occasion is left with a large measure of liberty, and his task is to use this liberty to some selected end not altogether remote from the official text committed to his charge. It is therefore quite within the fitness of things that in the Oration of 1931 Dr. Robert Hutchison has felt himself free to review some of the features of medical life and work in the modern generation, to sharpen his comments on these by a reference to the virtues of a former age, and to inquire how at the present day the search for truth in the field of medicine may be most effectively promoted.

Not all that Dr. Hutchison observes is pleasing to him. In some not unimportant respects the present generation, he considers, has declined from the standards of its fathers; much modern work is impressive by its volume rather than by its weight; and haste and exhibition are cultivated at the expense of intelligent interpretation and sound judgement. Further, and this may perhaps be regarded as the most unkind of his comments, he adds the accusation of a lack of humour, and we may gratefully acknowledge that, certainly in this respect, he himself endeavours in genial fashion to atone for our deficiencies and to encourage us by his example. Perhaps not quite seriously he suggests that the writing and publication of scientific articles and papers should be suspended for the period of five years, in order that time may be secured for the culture of the imagination and for the emergence of ideas. Haste to secure priority of publication, he argues, is little likely to be associated with fruitful contemplation or deliberate thought, and he may claim in his support both the modern assertion of the value of mental quiescence and the ancient experience of the Psalmist, "while I was musing the fire kindled." For this indictment few will deny some measure of justification. Surely, however, there is another side to the shield. If it is true that a state of "moral and intellectual chaos" is a note of the present age, not less true is it that there exists to-day a very firm conviction that there are many things yet to be known, and a very resolute and practical determination to know them. Moreover, it may be doubted whether the advent of the genius for whom Dr. Hutchison longs, and who is to bring order out of the confusions which oppress us, will be hindered or delayed either by the further accumulation of facts or by the vagaries of those whose discretion is not that of the angels.

In the discussion of two of the issues proposed by Dr. Hutchison little if any help can be obtained from the record of the past. Happily or unhappily, it is on modern experience and judgement that we must decide both the relation of laboratory tests to clinical work and the degree to which specialization may advantageously be cultivated. Not for the first time Dr. Hutchison stands firmly for the necessity and value of the clinician, whose "pride of place" he recognizes has had to suffer some measure of challenge from the laboratory expert and the specialist, and whose methods do not pretend to the dramatic quality of those of the experimental physiologist. Indeed, the Harveian injunction to seek out the secrets of nature "by way of experiment" cannot, except in a very limited sense, be applied at the bedside, for here it is the welfare of the individual patient rather than the establishment or demonstration of general propositions that commands the field. Such an admission, however, is not to allow that the clinician stands outside the scientific boundary, or that no extension of knowledge, or new discovery, or illuminating generalization, is to be expected at his hands. Dr. Hutchison produces ample reasons to deny this suggestion, and in our own time the work of the late Sir James Mackenzie, to quote no others, is surely a convincing illustration of the value of observation on facts as nature presents them, and apart from the limiting influences of artificial and experimental conditions. In clinical work the problem is the individual man—anatomical, physiological, and psychological—and it is the clinician alone who is in a position to survey the whole of the field, and thus to obtain a sound basis for judgement.

If, as is suggested, the clinician has in recent days suffered in "his pride of place" the question may be asked whether in some measure he has not himself to blame. Has he not too readily yielded to others methods of observation which he might quite reasonably have cultivated himself? Is it really essential that all specimens of clinical material, which, as a matter of routine, are now largely passed into the laboratory, should receive a particular judgement, or that relatively modern aids to observation—such as the micro-cope, the ophthalmoscope, the laryngoscope, and the sigmoidoscope—can be profitably used only by a limited group of experts? That in such studies there may be occasions when the most experienced judgement available is required, all will allow, but this does not exclude the value of a less extensive proficiency and the more a routine practice is cultivated the higher rises the proficiency level. The clinician claims that his method is that of "observation." Opportunities for "observation" have enlarged and multiplied. Has the clinician always proved himself equal to these new occasions? Certainly the more he acts as the mere collector of the observations of others, rather than as a first-hand observer on his own account, the more his

"pride of place" is likely to suffer eclipse. If he claims to survey the whole field, let him survey it so far as possible with his own eyes, and not with the eyes of others; the ideal may not be completely attained, but as a ruling motive it will contribute to a constantly improving standard of achievement.

Dr. Hutchison regrets the growth of specialism, though he allows that it cannot be avoided; his objection is that, while favouring the accumulation of facts, specialism is bad for the philosophy of knowledge and prejudicial to a healthy use of the imagination. It is, of course, useless to regret the inevitable, and no one will deny that the cultivation of special branches of medical study and work has meant not only an increased knowledge of facts, but also an increased ability to relieve human suffering, and if the imaginative faculty has suffered in the process, the loss is not without its compensations. In the practice of specialism as a form of medical activity the manifest danger is the tendency to forget that the patient is one and indivisible, and that no true estimate of his needs can be based, either scientifically or safely, on an examination which, however brilliant or modern may be its fashion, is admittedly limited and incomplete in its survey. In other words, whatever the experts in some specialized departments may say about organs or functions, the care of the patient—and this is the supreme claim—must rest on some broader and more comprehensive outlook. In a growing recognition of this truth, and in a consequent appreciation of the value of accurate and comprehensive observation as a basis for knowledge and judgement, Dr. Hutchison detects an increasing tendency to recognize that the physician is essentially a student of nature, and that he must take Nature as he finds her. Experiments and laboratories and specialists have indeed much service to render, but neither in the interests of individual patients nor in the movement towards fullness of truth can the traditional and established habit of clinical observation be allowed to decline from its pride of place.

TOXIC GOITRE

That the thyroid gland in health exerts a considerable influence on the rest of the body is well known. This function is variable, and subject to alteration in response to stimuli of a physical, chemical, or psychological nature. Much of the physiological action of the thyroid gland is still obscure, and it is rather from the pathological changes in the gland associated with certain clinical phenomena that the greater part of our knowledge of its activities has been derived. From the time of Reverdin and Kocher the profound effect on the whole body of the removal of the gland in man and animals has been established, together with the relief obtained by feeding or grafting thyroid tissue; and clinical observations have led to the separation of a series of forms of hypothyroidism or myxoedema of operative or spontaneous origin. The conditions accompanying the over-active phase of disturbances of the thyroid have also received much attention from both clinicians and pathologists. Until recently these states of hyperthyroidism have remained confused, owing to the variable classifications adopted, according as one or other of the many clinical and histological phenomena has been given prominence. Rienhoff, who has himself contributed a great deal to the elucidation of the pathology of the thyroid gland, points out[1] that this confusion was inevitable, until, first, a means became available by which the presence and degree of hyperthyroidism could be measured mechanically, thus eliminating the personal equation of the clinician; secondly, until a drug was found by which the active stage of the disease could be made less active; and thirdly, until controlled observations were made of the association between the gross and microscopical changes in the thyroid gland and the various phases of intensity of the disease and the fluctuations of the metabolism of the patient.

Estimation of the basal metabolism has now afforded the clinician a sound method by which to follow closely the increase and decrease in the metabolic rate; and by the use of iodine it is possible to control to a notable degree the active phase of the morbid process. As a result of the correlation of clinical data and histological changes, it can now be definitely laid down that hyperthyroidism is associated with an increase of the parenchyma of some part of the gland, together with a decrease in the amount of colloid. Hypertrophy of the epithelial cells is accompanied by hyperplasia, causing an infolding of the epithelium lining the follicles. With the remission produced by administering iodine, a striking change takes place in the microscopical structure of the gland. The infolding of the epithelium is smoothed out, the epithelial cells are shrunken and flattened, the follicles become more spherical and regular in size, and are distended with colloid. In contradistinction to the hypertrophy and hyperplasia observed in the active phase of the disease, this change has been termed "involution," accompanying as it does the inactive phase of remission of the disease process, and tending to bring back the gland to a more normal appearance. In some regions of the gland the process of involution goes further, and produces large, colloid-containing cysts or groups of dilated colloid-containing acini indistinguishable from colloid adenomata. These areas of hyper-involution may be seen in naked-eye sections of the gland, and even palpated as nodules on its surface. We have thus obtained guidance in interpreting the macroscopic and histological appearances of the thyroid gland in Graves's disease, which is characterized by spontaneous exacerbations and remissions. The increased activity is accompanied by increase of the areas of hypertrophy and hyperplasia, the remissions by involution with reversion to colloid formation, and often hyper-involution with cystic degeneration, so that an actual negative phase may take place in parts, such as occurs in the goitre of hypothyroidism. Increase of interstitial fibrous tissue may be found—the scars of former disease. Thus, in

[1] Rienhoff, W. F., jun.: *Medicine*, 1931, x, 257.

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gland from a patient with long-standing disease, the ppearances may be complicated and bizarre, but we ow have a clue to help us in elucidating them

The permutations of hyper- and hypo-thyroidism are sponsible for the diverse symptoms of dysthyroidism t is the nodular element which probably has caused ost confusion In more than half of 109 cases of odular goitre with long standing hyperthyroidism udied by Rienhoff and Lewis the morbid process was rictly limited to certain specific regions of the gland, ne tumours representing the product of the processes of ypertrophy and hyperplasia, and of involution In nother large group the nodular element was composed f regions of hyper involution In only 8 per cent were ue benign neoplasms or true adenomata found incidentally in a thyroid diffusely involved in the hyperophy and hyperplasia, so that the nodules in 92 per nt of the cases were not neoplasms in any sense, nd therefore cannot be termed "adenomata" Terms ich as "toxic adenoma" and "hyperfunctioning denomatous goitre" are misleading and incorrect if *pplied to the whole range of nodular goitre* Rienhoff refers that the clinical diagnosis should be nodular oitre with or without hyperthyroidism, as the signs nd symptoms suggest, or, in case the enlargement is mooth and diffuse, diffuse goitre—with or without yperthyroidism In accord with Dunhill,[1] Professor rancis Fraser, who opened the discussion on this bject at the Annual Meeting of the British Medical ssociation at Eastbourne, used the term "toxic oitre" to cover all cases of hyperthyroidism formerly alled exophthalmic goitre and toxic adenoma His aper is published at page 739 of our present issue

Ideas on the effect of iodine in the treatment of hyroid disease have lately undergone considerable odification When reintroduced by Plummer in 922, iodine therapy was shown to have a most striking ffect in rapidly preparing the patient for operative reatment, lessening the severity of the disease, and himinishing the operative risk The present position eems to be that at any phase of the disease iodine will educe the intensity of the thyrotoxicosis, but the isease seems to continue, even though in a modified orm Iodine does not reach the cause, therefore, lthough profoundly altering its effects It is Professor raser's practice to give iodine continuously, and by ombining it with rest in bed to bring the patient to minimum of thyroid intoxication and an optimum ondition for operative treatment The time taken to each this state may be much longer than ten days When operative treatment is not necessary, iodine is one of the most valuable methods of treatment available Treatment by x rays will often control the morbid rocess, especially in younger persons whose thyroid glands show no evidence of former disease It is to he surgeon, however, that we must look for help in lealing with the established disease Professor Fraser holds that surgical treatment is indicated in patients with nodular goitres, in those who do not improve rapidly, or continue to relapse and become chronically ill in spite of satisfactory management, or in those who, for financial or other reasons, cannot be submitted to adequate observation and treatment All along there have been advocates of surgery, but unfortunately the results of surgery are not uniformly good Much progress, however, has been made, and by special care of the patient before, during, and after the operation, by improved methods of anaesthesia, and by delicate handling of the site of operation, increasingly satisfactory results are being obtained

Yet something more is needed than successful removal of a large portion of the gland Many of the problems of thyrotoxicosis are still unsolved Their causation is almost unknown Infections—coccal, even tuberculous and syphilitic—may play a part, mental worry psychic trauma, endocrine and sexual disturbances may also be contributory factors Is the thyroid more commonly diseased than the other endocrine glands, or is it that the signs of its disturbance are more easily recognized The thyroid secretion affects the fundamental rate at which the cells of the body live There may be a different constitution of the cells of some, making them more susceptible Professor Fraser adduces evidence of a hereditary tendency In the established case the aspect of chronic scare is obvious to the layman in the bus It is the early cases that are difficult to diagnose *In health there must be a variable secretion to meet the* calls of everyday life, the variations may probably be considerable, and still within normal limits It is to be hoped that increasing knowledge will bring about earlier recognition of departures from the normal and that they may be sooner treated, with relief by medical means partial control by radiology, or with restoration to health by timely and skilful surgery

[1] *British Journal of Surgery*, 1930, xvii 424

THE TRAFFIC IN NARCOTIC DRUGS

The annual report of the British Government to the League of Nations for the year *1930* on opium and other dangerous drugs is reassuring as regards the control of the traffic in narcotics in this country, but the seizures made in the United States, in Egypt, and in certain British Colonies and India show that there is little or no reduction in the illicit traffic generally The conclusion derived from the evidence available is that if only all the Governments, by legislation and administration, gave effect to the obligations involved in the Opium Conventions of 1912 and 1925, the contraband trade could be brought under control if not entirely extinguished The Dangerous Drugs Acts 1920 to 1925, have loyally carried into effect the treaty engagements of the British Government and might serve as models for other Governments to follow It is claimed in the report that "drug addiction is not prevalent in Great Britain" Raw opium and coca leaves are, of course, not produced here and the only ports for their importation are London Liverpool and Southampton Only two British firms both in Edinburgh are licensed to manufacture morphine and 49,637 ounces of morphine and its salts were manufactured during the year 1930 The same two firms

were the only ones licensed to make heroin, and 4,197 ounces of that alkaloid and its salts were produced during the year. One firm only, situated in Battersea, is licensed for the manufacture of cocaine, and 12,490 ounces of that alkaloid and its salts were the amount of the year's output. There were no seizures of illicit drugs of any importance in Great Britain. On the other hand, 100 kilograms of heroin were seized at Rotterdam in the course of transit between Constantinople and Hamburg, being part of a wholesale contraband trade financed by a wealthy gang of Japanese drug traffickers. Information was obtained that requests had been received by London firms for an illicit shipment of 1,400 kilograms of heroin to Shanghai. In 1930 63,634 lb. of raw opium were imported into Great Britain, more than half being Turkish, and about one-third of Indian origin ; 3,673 ounces of cocaine were imported, mostly from Germany and Holland ; 4,653 lb. of raw opium were exported, mostly to the United States. Last year 21,593 ounces of morphine were exported from Great Britain, or little more than half the amount exported in the previous year, and there was a similar reduction in the legitimate exports of heroin. On the other hand, the exports of cocaine in all its forms showed an increase from 3,920 ounces in 1929 to 5,510 ounces in 1930. Reference is made in the report to the London Conference in 1930 of representatives of countries manufacturing narcotic drugs which sought to determine quotas of the world's legitimate requirements to be apportioned to each. That method of limitation has, however, been rejected by the more recent conference held at Geneva, at which fifty-seven States were represented. This conference has drafted a new convention to supplement the provisions of the Hague Opium Convention of 1912, and that of Geneva of 1925, in order to give effect to Article IX of the earlier convention and secure "the limitation of the manufacture of narcotic drugs to the world's legitimate requirements for medical and scientific purposes."

STANDARDIZATION OF VITAMIN D

A short monograph on the quantitative estimation of vitamin D by radiography has been prepared by a group of workers at the National Institute for Medical Research.[1] The authors have shown that the curative effects of vitamin D on the epiphyses of rachitic rats can be divided into a scale containing twelve recognizable stages. There is an approximately linear relation between the effect produced and the logarithm of the dose of vitamin, and doubling the dose causes a rise of approximately two stages in the scale of healing. The dose required to produce full healing (Stage 12) is therefore about forty times as great as the dose that produces the smallest recognizable effect (Stage 1). The standardization of vitamins has long been notorious for its difficulty. The slightest variation in technique produces wide differences in the results obtained, and individual variation remains as a possible source of error even when all errors in technique have been eliminated. The fact that vitamin D produces a graded action over such a remarkably wide range of dosage is an additional difficulty attending its estimation. The authors in their report have considered in detail all the chief sources of error. The basis of their method consists in comparing the action upon pairs of rats of the substance to be tested and that of a standard preparation of irradiated ergosterol. They claim that with twenty pairs of rats a value with a probable error of 8 per cent. can be obtained. This is a remarkably high standard of accuracy for vitamin estimations. Biological assay is a very young science. It is specially distinguished for the unexpected number of difficulties and sources of error with which workers are beset, and the report under consideration illustrates this point very clearly. It is, however, certain that no serious advance can be made in the study of any substance unless some method can be devised for its accurate measurement. Hence the authors of this report are to be congratulated on having accomplished a very laborious but useful task.

[1] Medical Research Council. Special Report Series, No. 158. The Quantitative Estimation of Vitamin D by Radiography. By R. B. Burbillon, H. M. Bruce, C. Fischmann, and T. A. Webster. London: H.M. Stationery Office. 1931. (1s. net.)

FOOD PROBLEMS

The economic importance of maintaining New Zealand lamb in a sound condition during its transport to this country may be gathered from the estimate that a saving of 1 per cent. in the total loss of weight in an annual season's export would result in the gain to the industry of nearly £100,000. The problems relating to frozen meat have recently been studied by the Food Investigation Board under the Department of Scientific and Industrial Research, and some two years ago, as narrated in the Board's report for 1930,[1] an expedition went to New Zealand, under the leadership of Dr. Ezer Griffiths, to make a comprehensive scientific survey of the trade in frozen mutton and lamb, including the factors influencing bloom and quality. It appears that a considerable percentage of New Zealand lamb carcasses are originally defective in bloom owing to such ante-mortem causes as breed, age, nutrition, and lack of rest before slaughter. After slaughter the carcasses are hung for varying periods on a cooling floor, where their temperature falls to near that of the surrounding atmosphere. They are next frozen in refrigerating chambers, and when they have fallen to chamber temperature are stacked in refrigerating stores for periods ranging from one week to four months, until the time for shipment. Transport from the store to the ship is effected in insulated railway wagons or lighters. The ships usually discharge in London, where the meat, after further cold storage ashore and subsequent conveyance by insulated vehicles, reaches Smithfield market. At the original refrigerating stores in New Zealand batches of lambs of similar history were selected and used in subsequent stages as material to illustrate the effects of various conditions on the quality and bloom of the meat. It emerged that loss of weight not only partly determines the degree of loss of bloom, but also, as noted above, that it is an important monetary consideration. At the present time 80 per cent. of the beef imported into Great Britain comes in the chilled state from South America. When shipped from ports on the River Plate it reaches this country in twenty to twenty-eight days. If a trade was established to import chilled beef from Australia to Great Britain, the beef would have to be maintained in the chilled state for voyages of about forty days. To test this point experimen-

[1] Report of the Food Investigation Board for the Year 1930. London: H.M. Stationery Office. 1931. (3s. net.)

ALAWAI & [illegible]
BROOKMAN'S PARK STATION (L.N.E.R. main line). [illegible] Tavistock Square, W.C.1.

were carried out for the Board with beef at 0° C. and air humidity of 79 per cent. In still air after forty-two days the meat was found to be sour and penetrated by moulds. In fanned air, under conditions otherwise similar, the beef was perfectly sweet after sixty days, and the growth of moulds was insignificant. The precise optimum conditions of humidity and air flow have still to be determined, but a period of sixty days would more than suffice for Australian chilled beef to be safely landed in this country, and the further investigation of the problem may open the way to a new industry. Among many other topics dealt with in the report are the freezing of living tissues, acetaldehyde in plant metabolism, the scientific basis of curing, evaporation from eggs, the corrosion of tin and iron, the liver fat of fish, the detection of the dew point, and disease in stored apples.

SCIENCE AND THE PUBLIC

A paper read at the annual meeting of the American Medical Association by Dr. A. C. Ivy of Chicago[1] discusses an important matter to which the attention of the medical profession and others in this country might well be more effectively directed. The address is entitled "A deficiency in present-day education," but its point is not thereby distinctly indicated. It may be stated thus. Admitting that, in the common phrase, this is the age of science, and that the achievements of physical and biological and medical science are generally recognized, how is it that the teachings and methods of science are not universally accepted and acted upon, and that so large a number of presumably well-educated people still fall victims to the most manifest superstition and fraud, and even develop an enthusiasm for anti-medical and anti-scientific crusades of various kinds? "Does society think scientifically? . . . or does science have to persuade, 'sell' or even propagandize society to receive its discoveries and truths? . . . The dawn of scientific understanding in society is still awaited . . . there exists among the most enlightened peoples an emotional hostility to biologic and medical science."

One of the chief problems of the medical profession is "to bring about a better understanding of scientific medicine in society, to let society know that truth is the motive of medical science, and that facts, not beliefs, determine truth." The analogous, indeed the same, position in the ecclesiastical sphere, has manifested itself in no uncertain fashion, and there, too, it is evident that a surviving anti-scientific atmosphere still prevails, and that the task of the scientific thinker is not easy. Dr. Ivy asks, "Is present-day formal education coping effectually with this problem?" He concludes that there must be some deficiency in present-day education. Perhaps this is true in this country, as it is said to be in America. Science is more than ever before taught in our secondary schools, and, in some sort, in a large number of our elementary schools. In too many institutions, however, the teaching is confined to physics and chemistry, and even these are taught with stress upon their mathematical aspects and the multiplication of practical and meticulous details. The examining bodies who conduct general school and matriculation examinations are largely to blame for this. Two immediate reforms which should be made are the introduction of biology, leading up to and including human physiology and hygiene; and the stressing of scientific thinking and scientific method throughout, rather than the acquirement of a knowledge of more or less advanced detail. Members of the medical profession are largely educators themselves, and collectively they have much influence with those who control or guide education—both teachers and administrators. They certainly might do more than they have done to bring about such reforms as these.

[1] *Journ. Amer. Med. Assoc.*, August 29th, 1931, p. 587

FOUNDERS OF VITAL STATISTICS

In our time official statisticians are so active, and so many mathematicians have devoted their attention to statistics, that the subject of population is, to the uninitiated, suggestive of dreadful tables of figures and still more dreadful algebra. One may think regretfully of the days when people were less learned and wonder whether they were more entertaining—an impious thought, no doubt, but a natural one. Dr. Bonar's charming volume[1] will bring comfort to those who are interested in the history of ideas but care little for the technicalities of statistical methodology. He introduces us first to Giovanni Botero, who anticipated a leading idea of Malthus by more than two centuries, then takes up the less adequate conceptions of Raleigh and Bacon and the theories of Hobbes and Harrington. None of these writers were or could be statisticians in our sense of the word, but two of Harrington's contemporaries, John Graunt and William Petty, laid the foundations of a new order. Dr. Bonar puts these two remarkable men side by side in an interesting way; some of us would rate John Graunt a little higher and William Petty a little lower than he does. To speak of Graunt as "a city magnate," perhaps conveys a slightly exaggerated impression of his commercial status, while to say that Graunt "was rather discoverer than inventor," but that Petty was "a born inventor," while true in the sense in which Dr. Bonar is using the words, may seem to disparage the scientific originality of Graunt's work. Perhaps, also, the antithesis of Graunt as "the city magnate" and Halley "the distinguished astronomer" is too pointed. Of the three English founders of vital statistics, Graunt, Petty, and Halley, we should rank Graunt first in originality and scientific insight. Halley, who was a better-trained mathematician, and had access to better data, than Graunt, no doubt reached more accurate conclusions, while Petty's practical range was much wider. But Petty was not a scientific man at all in the sense that Graunt was. Dr. Bonar's account of Süssmilch is delightful; much the best we have seen. The old Prussian army chaplain was an attractive figure—"a man of kindly, lovable nature as well as of a solid good sense that seldom failed him and a genuine anxiety to reach the truth. His opinions on theology and politics were not allowed to bias his statistics; but perhaps because so frankly revealed, they have obscured the real value of his services by creating the impression that bias was probable." Hume, Price, and Arthur Young are, for various, non-statistical, reasons names more familiar to English readers than Süssmilch, but upon each Dr. Bonar has much, both interesting and

[1] *Theories of Population from Raleigh to Arthur Young.* By James Bonar, M.A., LL.D., F.B.A. London: G. Allen and Unwin, Ltd. 1931. (Pp. 253. 10s. 6d. net.)

instructive, to say. Poor Richard Price is no doubt better remembered as a target for Burke's rhetoric than for any other reason, but is it quite correct to say that "we are largely indebted to him for Burke's political philosophy"? Many would maintain that Burke's finest political thinking was done before the French Revolution took hold of his imagination.

METHODS OF MEDICAL EDUCATION

The nineteenth series of the valuable *Methods and Problems of Medical Education*,[1] which are distributed to teachers and administrators in medical schools and hospitals, is entirely devoted to teaching and research in medicine in the division of biological sciences in the University of Chicago. The inclusion of medical education as a whole in the division of biological sciences has come about in the following way. In 1901 the trustees of Rush Medical College transferred to the university the pre-clinical subjects, including pharmacology, pathology, and hygiene. In 1916 Mr. Abraham Flexner of the General Education Board was invited to make recommendations for a complete medical school, and as a result all the branches of medicine, except psychiatry, are now located in the quadrangles of the university, and the clinical departments are organized almost exclusively on the basis of full-time appointments, the conviction as to the desirability of this plan having strengthened rather than diminished. The activities of the school are here described in twenty-five articles, accompanied by numerous plans and photographs of the departments. The intimate relation of medicine to biology as a whole is aimed at, and, while it is recognized that most of the students will become practitioners, arrangements for research and for the training of a continuous supply of investigators in the various branches of medicine are provided. The special foundations for medical research are described by the professors of pathology and biochemistry, Dr. H. G. Wells and Dr. A. B. Hastings, and their activity is shown by the record of four hundred papers from the Otho S. A. Sprague Memorial Institute, and about a hundred articles from the Douglas Smith Foundation, both of which are under the direction of Professor H. G. Wells. The history of neurological teaching is interesting: at first the professor of neurology devoted himself to fundamental questions relating to the structure and function of the nervous system, without any immediate reference to clinical applications; in 1907 the department of neurology was merged in that of anatomy, and all medical students are taught the rudiments of neuro-anatomy, and those who so desire are encouraged to undertake neurological research. In 1927 an additional division of neurology, now under the direction of Professor Percival Bailey, was established; there are two assistant professors of neurology attached to the department of medicine: but the neurological work is carried out in seven rooms in the surgical clinic, one of which is a large histo-pathological laboratory. Professor Bailey while believing that it is neither necessary nor desirable that every neurologist should operate upon his patients points out that the history of neuro-surgery clearly shows that whoever operates upon the nervous system should be a trained neurologist. As long ago as 1897 Bechterew of St. Petersburg described neurology as in a transitional period akin to that experienced by ophthalmology, gynaecology, and oto-laryngology. Among the other articles, attention may be drawn to that on medical social service by Professor Ruth Emerson, who tells the reader the kinds of cases, such as those of hyperthyroidism, cardiac disease, and tuberculosis, which are specially followed up into their homes. In an article on the degrees conferred, Dr. B. C. H. Harvey says that the thesis for the M.D. is regarded as indispensable on account of the critical ability, sound judgement, and training fostered by the labour thus spent.

[1] *Methods and Problems of Medical Education.* Nineteenth series. New York: The Rockefeller Foundation. 1931. (Pp. 220; illustrated.)

The Mitchell Banks Lecture will be delivered by Sir Robert Jones, Bt., in the theatre of the Medical School at Liverpool University on Thursday, November 19th, at 4 p.m. The title is "The problem of the stiff joint."

We regret to announce the death, at the age of 79, of Sir Edward Marriott Cooke, K.B.E., M.B., late Commissioner of the Board of Control, and formerly superintendent of the Worcester County Asylum, Powick.

MEDICAL CANDIDATES AT THE GENERAL ELECTION

The following members of the medical profession have been nominated as candidates for election to the House of Commons at the forthcoming General Election on Tuesday, October 27th.

ENGLAND

London Boroughs

Dr. C. R. Cooke-Taylor (L.N.), Camberwell (Dulwich).
Sir Henry Jackson (C.), Wandsworth Central.
Dr. W. J. O'Donovan (C.), Stepney (Mile End).
Dr. Esther Rickards (Lab.), Paddington North.
*Dr. A. Salter (Lab.), Bermondsey West.

English Boroughs

*Mr. Somerville Hastings (Lab.), Reading.
Dr. G. B. Hillman (C.), Wakefield.
Dr. A. B. Howitt (C.), Reading.
Dr. J. W. Leech (C.), Newcastle-upon-Tyne (West).
Dr. W. S. Russell Thomas (L.), Ilford.

English Counties

*Dr. Christopher Addison (Lab.), Wiltshire (Swindon).
Dr. F. G. Bushnell (Lab.), Somerset (Taunton).
*Dr. F. E. Fremantle (C.), Hertford (St. Albans).
Dr. L. Haden Guest (Lab.), Buckinghamshire (Wycombe)
*Dr. H. C. Haslam (C.), Lincolnshire (Horncastle).
Dr. R. A. Lyster (Lab.), Hampshire (Winchester).
Dr. G. V. Worthington (Lab. Nat.), Gloucester (Forest of Dean).

WALES

Welsh Counties

*Dr. J. H. Morris-Jones (L. Nat.), Denbigh (unopposed).
*Dr. J. H. Williams (Lab.), Carmarthen (Llanelly).

SCOTLAND

Scottish Burghs

*Dr. W. E. Elliot (C.), Glasgow (Kelvingrove).
*Dr. T. Drummond Shiels (Lab.), Edinburgh (East).

Scottish Counties

*Dr. R. Forgan (New Party), Renfrew (Western).
*Dr. Joseph Hunter (L.), Dumfries.

THE UNIVERSITIES

*Sir Ernest Graham-Little (Ind. Nat.), London University.
*Professor T. Sinclair (C.), Belfast (Queen's) University (unopposed).

* Denotes member of the late Parliament.

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THE RELATION OF FOREIGN SUBSTANCES TO THE HUMAN BODY*

BY

G GORDON BRUCE, F R C S

SURGEON, ROYAL ABERDEEN HOSPITAL FOR SICK CHILDREN, ASSISTANT SURGEON, ABERDEEN ROYAL INFIRMARY

Man is constantly beset by dangers from cold and storm, by pathogenic organisms, and by the impaction of moving objects, and from the remotest times foreign bodies and hateful missiles have penetrated his tissues and lodged in his body. It has been affirmed that military surgery had its origin in the treatment of wounds inflicted by darts and arrows during the siege of Troy, and some of the earliest surgical instruments were designed for the extraction of arrow heads in the long Peloponnesian war over 400 years before the Christian era. But all foreign bodies are not of a harmful nature, in the Middle Ages they served as ornaments and charms to heal disease and to avert evil spirits, and at the present time they are deliberately inserted into the body in the course of many surgical operations.

On the Surface of the Body

Precious stones and gems set in gold have from time immemorial enhanced the charms of the most beautiful women of the age, and in the far distant past, 5,000 years before Christ, the pre-Dynastic women of Egypt wore necklaces of cornelian and agate, amulets in faience, and bracelets inlaid with lapis lazuli and fastened by flowers made of gold. In Peru the wearing of ornaments was not confined to the gentler sex. When the royal offspring had reached the season of manhood, the Inca, addressing them affectionately as "Children of the Sun," pierced their ears with a golden bodkin, which was allowed to remain until an opening had been made large enough for enormous pendants, which gave them, with the Spaniards, the name of Orejones. This ornament was so massy in the ears of the sovereign that the cartilage was distended nearly to the shoulder, producing what seemed a monstrous deformity in the eyes of Europeans, though, under the magical influence of fashion, it was regarded as a beauty by the natives. The Botocudos, a savage Brazilian tribe, practised similar customs, and inserted wooden plugs into the lower lip and lobes of the ear, causing great protrusion of the lip and a wide repulsive mouth.

In mediaeval times superstition vied with religious fanaticism throughout Europe and Asia; talismans and amulets were worn by the devout, and the relics of saints were more valuable than gold or precious stones. An enlightened age may scoff at the beliefs and superstitions of the Middle Ages, but the plague, or Black Death, which spread over Europe and wiped out a quarter of the population, may well have driven men's thoughts to charms and talismans which happily might avert the impending calamities of mankind. Nor did Great Britain escape from the superstitious practices of the times. "Pooh," said Raleigh, "I wear an amulet and have a spell of art magic at my tongue's end." In Scotland, necklaces of coral beads are thought to possess magic powers, and in the marriage ceremony the finger ring still holds as prominent a place as it did amongst the superstitious marriage rites of the ancient pagan world. Poisoned rings are said to have been the invention of the Italians, who inserted the poison in a receptacle where the jewel is usually set. Attached to the inner surface of the ring was a sharp point which, when the hand of the wearer was grasped, scratched the flesh and injected the poison. Rings were also used for carrying strong poisons secretly, such as arsenic and corrosive sublimate, and in this manner many were enabled to commit suicide after being imprisoned.

An animal's hide, substituted for human skin, is the most amazing of all foreign substances found on the surface of the body.

Macgowan[1] states that traders in the Chinese Empire kidnap a boy, skin him bit by bit, and transplant on the denuded surfaces the hide of a dog or bear. The subject must be rendered mute by destruction of the vocal cords, made to use all fours in walking, and must be submitted to such degradation as to blight all reason. The process is so severe that only one in five survive. A "Wild Boy" exhibited in Kwangsi, had the entire skin of a dog substituted and walked on all fours. It was found that he had been kidnapped, and his proprietor was decapitated on the spot.

The Papuans of Dutch South Guinea have a peculiar custom of fastening into the muscles of the right arm a certain portion of the flesh of a boar and of allowing it to remain there, to fester slowly, putrefy, and wither. They profess to gain strength from the animal in this manner.

In the Tissues

Small sterile bodies are soon encapsuled and become sufficiently inert to escape our notice and our memory. Needles may travel for a considerable distance from their point of entry. In 1802 Dr. Lettsom spoke of an old lady who sat on a needle, it passed from the injured leg to the other, from which it was extracted. Cases of tetanus have arisen from air-gun pellets and spicules of wood. Infected objects cause local suppuration and if near the surface, soon become extruded, but shrapnel or shell case, lying in the deeper tissues or impacted in bone, remain embedded in the depths, and may excite recurrent attacks of inflammation. During the great war, anaerobic organisms were carried into wounds by missiles bearing threads of khaki and particles of the actual soil of the battlefield. Many of us have not forgotten the pale, restless men, scarcely recovered from the initial shock and haemorrhage of their wounds, the emphysematous limbs, and the grey green muscles which discharged a thin, offensive, putrid pus characteristic of the most tragic of all infections.

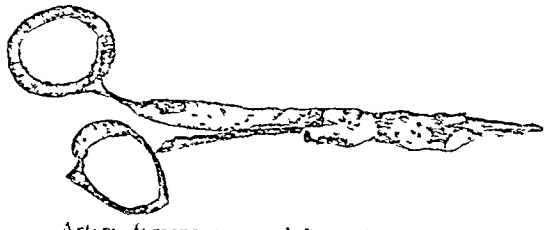
What is the relation of foreign substances to malignant disease? Chimney sweep's cancer has been traced to particles of soot, repeated applications of tar have caused epitheliomata, cancer of the tongue has followed irritation from a denture, and the pressure of a pipe stem predisposes to tumours of the lip. Yet there are no grounds for supposing that metallic bodies which have lain for many years in the tissues play a part in the etiology of malignant disease. Tissue reactions undoubtedly occur. Foreign bodies excite a growth of fibrous tissue, Lane's plates have led to the formation of adventitious bursae, and cases of paraffinoma of the rectum have followed the treatment of prolapsed piles by paraffin injections.

Results in modern surgery depend on the asepticity of suture material which can be left with safety in the closure of wounds. In the past, buried ligatures were a common source of sepsis, and secondary haemorrhage from large vessels was not unusual, but with the dawn of the aseptic era septic ligatures have been forgotten, and foreign bodies are now freely used in surgery. The fractured ends of bones are fixed in apposition with plates, screws, and intramedullary bone pegs, skull defects are closed with sheets of metal, and innumerable silver clips control haemorrhage from small bleeding vessels in cerebral operations. Within recent years radium needles and radon seeds have been used in the treatment of certain types of malignant disease. But our methods are not yet fool proof, and a lurking fear still haunts a surgeon's mind that he unwittingly may leave a gauze strip drainage tube, or artery forceps in the peritoneal cavity. Such delay the healing of wounds and may cause intestinal obstruction. Lester Williams[2] reports a case of acute intestinal obstruction due to a drainage tube left in the abdomen twelve and a half years before.

In August 1912 an appendicular abscess was drained with a rubber tube the appendix was removed three weeks later and the patient made an excellent recovery. He was readmitted in January 1925 suffering from intestinal obstruction. A tubular structure was discovered passing from the right iliac fossa into the left side of the pelvis. This proved to be a piece of rubber tubing 15 cm. in length and 1 cm. in diameter. The distal part of the tube, together with three

* A paper read before the Aberdeen University Medical Society.

feet of the small intestine, had passed through an aperture in the root of the pelvic mesocolon The bowel was reduced and the opening in the mesocolon closed, the patient made a good recovery Moynihan[3] mentions an interesting case a woman underwent an operation for appendicitis Three years later the abdominal cicatrix gave way and thirty-four strips of gauze were extracted one by one The operator had not dressed the wound himself, but had ordered that one strip of gauze should be introduced daily This was done most conscientiously and, as he had omitted to direct the daily removal of the strip, thirty-four were introduced but never removed, the wound ultimately healed over them Metal instruments ulcerate into neighbouring organs In 1922 Dr Leach of Beauly presented to the surgical museum of Aberdeen University a pair of pressure forceps removed from the rectum of a woman thirteen years after a hysterectomy



Artery forceps removed from the rectum

had been performed for a myoma weighing 11 lb In the interval the woman had suffered attacks of partial intestinal obstruction The forceps lay embedded in the posterior wall of the rectum and on removal was found to be deeply eroded

Central Nervous System and Organs of Special Sense

Although a seemingly trivial wound has caused death, amazing degrees of trauma have been borne without a fatal issue

In the famous "American crow bar" case[4] a premature explosion drove a tamping iron, 43 inches long, 1¼ inches in diameter and 13½ lb in weight, completely through a man's head He did not lose consciousness, and walked up a flight of stairs to have his wound dressed His convalescence was uneventful but it is said he was no longer capable of performing the duties of a foreman An equally wonderful case is described by Dubrisay,[5] of a man aged 44, who forced a dagger 10 cm long and 1 cm wide into his brain He held the dagger with the left hand and with a mallet in his right, he drove the dagger inwards An attempt at extraction failed He was then placed on the ground, and held by two persons while traction was made with a carpenter's pliers The dagger refused to move He was then taken to a coppersmith's where he was fastened by rings to the ground, and strong pincers were placed over the dagger and attached to a chain which was attached to a cylinder revolved by steam force At the second turn of the cylinder the dagger came out During the extraction the patient remained perfectly cool and complained of no pain He soon returned to work

During the great war, lacerated scalp wounds, depressed fractures of the vault, and long-infected tracts containing fragments of bone, projectiles, and disintegrated brain substance, presented interesting problems in surgery. Although the accurate localization of foreign bodies gave a decided impetus to surgical attack and careful debridement of the scalp and cranial bones afforded a promising results, wounds with dural perforation showed a high immediate mortality from meningitis and encephalitis. This mortality was ultimately reduced by Cushing's method of "catheter suction," by means of which debris and small foreign bodies were removed and fragments of bone or shell case were discovered in the depths of the wound It is interesting to note that recovery has followed the extraction of foreign bodies from the ventricles

Although the eye is protected by the lids and by the projecting margins of the orbit, foreign bodies frequently enter the palpebral fissure or penetrate the globe of the eye Particles of steel or chips of stone become embedded in the cornea, and a beetle's wing, diaphanous and invisible to the naked eye, may excite a puzzling reaction. Peculiar accidents have followed a simple operation an ophthalmologist in Glasgow describes a case in which a piece of silver plating became detached from an iris forceps during a cataract operation and fell into the anterior chamber. The eye had to be removed. Very rarely a foreign body is retained in the vitreous or retina for a long period without loss of vision. Snell records a case in which a piece of steel was embedded close to the optic disc with retention of sight. It was visible by the ophthalmoscope eighteen months after the accident, and no diminution of sight was apparent The danger of sympathetic ophthalmia from an eye containing a foreign body is well known.

Small foreign bodies are frequently found in the nasal cavities of children. Hickman[7] gives an instance of a steel ring which for thirteen years had lain in the naso-pharyngeal fossa. Waring[8] mentions the case of a hotel maid who carried a rhinolith for twenty-five years, the nucleus was found to be a cherry stone. A pea, impacted in the nose, has been known to sprout

Children have the habit of inserting small objects into their ears. Winterbotham[9] reports an instance in which a cherry stone was removed from the meatus auditorius after lodgement of sixty years. Acute suppurative meningitis, and cerebral abscess have followed perforation of the tympanic membrane

A case is recorded in Schmidt's *Jahrbucher* of a boy who introduced a carob-nut kernel into his ear On the next day incompetent persons attempted to extract the kernel but caused only pain and haemorrhage In the afternoon the auditory canal was found red and excoriated, and deep in the meatus the nut was seen covered with blood In a few fever and delirium ensued, and chloroform had to be given before the nut could be extracted It was found that the agglutination of wax and blood had increased its size Unfortunately coma and signs of meningitis appeared, and four days after the operation the patient died

Cardio-vascular System

The heart may be penetrated by missiles from without or by needles migrating from the oesophagus It has been said that the contracted heart of a healthy man is as rigid as the biceps of an athlete, and that a foreign body which threatens to pierce the organ may be turned aside in its course. Death is not always instantaneous, but secondary haemorrhage, septic complications and embolism frequently lead to a fatal issue Curran[10] mentions the case of a soldier who, in 1809, was wounded by a bullet which entered the body to the left of the sternum between the second and third ribs There was little haemorrhage from the wound, and he survived fourteen days. The bullet was found in the pericardium A remarkable degree of tolerance is shown to metallic objects, bullets and needles have lain for twenty years encysted in the wall of the heart Foreign bodies, penetrating the chest wall, are drawn inwards by the action of the heart muscle.

Osler[11] reports the following case. A medical student while on the spree, thrust a pin into his heart The pericardium was opened and the head of the pin was found outside the right ventricle An attempt was made to extract the pin, but it passed into the heart and, it is said, caused the patient no further trouble

Leriche[12] relates the history of a boy who fell on the point of a needle His mother felt in the third interspace a minute elevation which moved with every beat of the heart Two hours later Leriche found that the needle had been driven inwards, and now lay in the thin wall of the auricle He extracted it and closed the cardiotomy wound with a single stitch The child recovered

With the advent of the great war, surgeons were given an unparalleled opportunity of studying the movements and course of foreign bodies which were capable of migrating from their point of entry. It became possible to compare the incessant whirling of a shrapnel ball in the right auricle with the slow swing, during systole and diastole, of a piece of metal in the left ventricle of the heart Small shot and rifle bullets traverse the arterial or venous systems Pellets, entering the left auricle, have found their way to the small peripheral arteries, and a rifle bullet, penetrating the left side of the heart has come to rest in the femoral artery, causing ischaemic gangrene of the limb Projectiles travel with or against the venous current. A shell fragment, displaced from the

ALAWAY & [illegible]
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phery, may reach the heart or enter the pulmonary
tut, and a piece of metal, seen oscillating in the right
cle, may be found a few minutes later in the right
vein. Foreign bodies causing menacing symptoms
uld be removed, and a deliberately planned operation
a fair chance of success.

orge von Manteuffel extracted a projectile from the
erior wall of the right ventricle in the case of a woman
21. After the pericardium had been opened, the entrance
nd of the bullet was seen upon the right ventricle 6 cm.
the apex. A blood stream, 50 cm. in height, spurted
each diastole. The orifice was closed by a silk suture
the bleeding stopped. The bullet was felt in the posterior
l of the right ventricle 1 cm. from the coronary artery.
heart was now lifted up by means of two fixation sutures,
the operator cut down upon the bullet, which he pressed
between the thumb and the left index finger. The second
nd, which bled but slightly owing to digital compression,
sutured, and the patient made a good recovery.

Respiratory System

The accidental inspiration of a foreign body has frently resulted in asphyxia and death. Crile has shown
t foreign bodies in the upper part of the larynx, by
tation of the terminal branches of the superior laryn-
l nerves, may give rise to serious and often fatal
lapse from reflex inhibitory action of the heart or
piration. A young man of 23, who was anaesthetized
order to extract a tooth, had a cork placed between
teeth to keep his mouth open. The tooth was extracted
slipped, together with the cork, into the pharynx. The
th was ejected in an effort at vomiting, but the cork
ered the larynx, and after violent struggles the patient
d from asphyxia in an hour. History relates that
ldren, while playing with toy balloons which they
late with their breath, have by inspiration reversed
em and have drawn the rubber of the balloon into the
ening of the glottis, causing death. Fatal results have
en averted by a violent fit of coughing, inversion of the
dy, or by tracheotomy. Foreign bodies may remain
many months in the larynx without the patient's
owledge.

Lennox Brown,[14] on examining a woman for suspected
ryngeal carcinoma or phthisis, found a tooth-plate impacted
the larynx. She had lost her false teeth during an attack
vomiting twenty-two months previously and, finding her
th missing, assumed that they had been thrown away with
e vomit.

Gould and Pyle[15] reported an ingenious criminal device
ic discovery on an Indian prisoner of a heavy leaden bullet,
inch in diameter, led to an inquiry, when it was ascertained
at the ball served in the formation of a recess at the base
the epiglottis. The ball is allowed to slide down to the
sired position and retained for half an hour at a time. This
eration is repeated many times daily until a pouch results
which criminals contrive to secrete jewels and money in
such a way as to defy the most careful search, and without
terfering with speech or respiration.

Coins, tacks, pins, beans, and collar studs may pass
rough the glottis and enter a bronchus. Young children
ffer most frequently on account of their habit of testing
ll things with their mouths. The act of coughing,
ughing, or crying may cause a small object to be drawn
nto the larynx. After an attack of choking, characterized
y cyanosis and aphonia, the irritation subsides; and a
pasmodic cough with muco-purulent sputum may suggest
ulmonary tuberculosis.

Lilienthal[16] reports the case of a boy of 6, who developed
ttacks of dyspnoea and cough immediately after tonsillec-
omy, when suction by means of a rubber tube had been
mployed. Numerous physicians had been consulted and
arious diagnoses made. Five months later an opaque body,
he size of a bean, was seen under the fluoroscopic screen
n the upper part of the chest. With each cough or expulsive
ffort the object flew upwards towards the neck, dropping
ack to its original position in the interval. A fragment
of rubber tubing, which must have been detached during the
revious operation, was extracted with the aid of the broncho-
scope.

An infected parenchymatous focus, surrounding a foreign
body in the lung, may give rise to pneumonia, abscess,
or gangrene.

Lapeyre[17] mentions an elderly gentleman who, while
smoking a cigarette, received a sudden slap on the back,
causing him to start and to take a deep inspiration. The
cigarette was drawn into the right bronchus, where it remained
for three months. Pneumonia supervened, and two months
later, during a violent fit of coughing, the cigarette was
expelled enveloped in a wavy, mucus-like mass.

Smallpeice[18] reports the case of a baby in which a flower-
spike of grass, 1½ inches long, passed through the upper air
passages and lung tissue, and was removed from a swelling
below the angle of the right scapula. A sinus led directly
into the right bronchus.

During the Boer and the Russo-Japanese wars, bullet
wounds of the lung seldom required surgical treatment;
but, with the advent of the great war, surgeons were
soon disillusioned by the high mortality caused by large
jagged projectiles, whose edges were plastered with debris
and pieces of clothing. If death did not take place in
the first two days from open sucking wounds, haemorrhage
and sepsis took a heavy toll at a later date. In the
extraction of foreign bodies from the lung, it is interesting
to contrast the open methods of Duval, Tuffier, and others
with the close method of Petit de la Villéon.

Alimentary System

"There is a providence which watches over innocence
and folly," and it is surprising how constantly foreign
bodies, if uniform in contour, pass through the oesophagus
and, after a brief rest in the stomach, travel through the
pylorus, the ileo-caecal valve, and are passed per rectum.
Hundreds of coins are swallowed by children, and operative intervention is seldom necessary. A lunatic in
England swallowed 10 oz. of screws and bits of crockery,
all of which were passed by the anus. One of Forille's
patients swallowed an entire set of dominoes. Fear of
robbery has often led to the swallowing of money or
jewellery. Vaillant, the celebrated doctor and antiquarian,
after a captivity of four months in Algiers, was pursued
by Tunis pirates and swallowed 15 medals of gold, on
arriving at Lyons he passed them all per rectum. But
fortune has not always smiled so kindly if we credit the
fate of the fourteen pages of Mahomet the Second, whose
bellies were ripped open in search of a stolen melon.
Foreign bodies with sharp edges may abrade or perforate
the oesophageal wall, causing a suppurative mediastinitis,
and many fatalities have followed the swallowing of
artificial dentures. Needles and fragments of bone,
migrating from the oesophagus, have penetrated the liver,
the heart, the aorta, and the portal vein. There are
many cases on record in which injury to the gullet or
stomach has taken place in the juggling process of knife-
or sword-swallowing. In 1502 Florian Mathias removed a
knife, 9 in. long, from the stomach of a man of 36,
followed by complete recovery. Bell performed gastrotomy
on a man who, while attempting a feat of legerdemain,
allowed a bar of lead, 10 in. long, 1½ in. wide, and 9½ oz.
in weight, to slip into his stomach. The bar was extracted
and the man recovered.

Hair balls of great size have been found in the stomach
of hysterical women who have been in the habit of eating
their own hair. Osler[19] describes a specimen in the
medical museum of McGill University, which formed an
exact mould of the stomach. The tumours are often
mistaken for cancer. Many have been diagnosed only on
the post-mortem table.

Powdered substances may cause death through violent
irritation of the stomach, and the ancient belief that gold
leaf and diamond dust were deadly poisons has its origin
in antiquity. The Chinese are supposed to have used
gold as a poison, especially for suicidal purposes, and at
the present day, when a high official puts an end to his
life, it is officially announced "he has taken gold
leaf." Madame de Montespan, one of the favourites of
Louis XIV, a woman of great beauty, died suddenly at
the age of 26, and it was generally believed that she had
been poisoned by powder of diamonds mixed, instead of
sugar, with strawberries.

With the exception of gall-stones and enteroliths, foreign
bodies rarely cause obstruction of the bowel. Nevertheless
a medical man once told me the following tale. A few

years ago he was seized with intense abdominal pain and persistent vomiting; and an eminent surgeon, having diagnosed acute intestinal obstruction, advised immediate laparotomy. But the patient, while awaiting his operation, remembered a lump of cheese hastily swallowed the day before, and with excellent judgement decided that an ounce of ol. ricini would probably relieve his symptoms. A body is most likely to lodge in the lower ileum or caecum, and ulceration of the bowel may lead to a perforation and death, or may induce the formation of an abscess, upon the evacuation of which the foreign substance is safely discharged. Roose,[20] in the *Lancet* of September 9th, 1893, illustrates the passage of an iron teaspoon from the colon through the abdominal parietes. It had been swallowed five weeks before. Intestinal diverticula delay the passage of a foreign body. I have found a fish-bone in a duodenal diverticulum, a piece of paper, such as one finds adhering to ginger-cake, 1/2 by 1/2 in. in the crater of a gastric ulcer, small shot in the lumen of an appendix, and a rabbit's rib projecting through the mucous membrane of the rectum into the cavity of an ischio-rectal abscess.

Inanimate objects are introduced into the rectum to relieve the persistent pain of haemorrhoids, or the intolerable itching of pruritus ani and to gratify abnormal sexual desires. Anal discomfort is often alleviated by the presence of a metallic substance in the rectum, and there is at present on the market a cone-shaped body named "the little wonder" which seldom belies its title.

Poulet[21] gives a comprehensive list of foreign bodies found in the rectum, among which he describes an ale glass, crockery, a fork, the handle of a shovel, a preserve jar, a pepper-box, and a bottle of mushrooms.

Lockhart-Mummery[22] quotes several interesting cases: a monk who to cure a violent colic, introduced into his fundament a bottle of "l'eau de la reine de Hongrie" with a small opening in its mouth by which the contents, drop by drop, could enter the intestine, a Dutch peasant who inserted a smooth stone, 900 grams in weight and 17 cm. long, to relieve a prolapse; a convict at Brest, who introduced a box of tools, which was found in the transverse colon, and contained a piece of gun-barrel, a screwdriver, a saw for cutting wood, and several other instruments.

Cases of poisoning have been reported from phosphorus matches and tobacco.[23] A convict, admitted to Liverpool prison in excellent general health, was found four hours later in a state of collapse with nausea, vomiting, and paralysis of the legs. He had secreted an ounce of cut Cavendish tobacco in his rectum to convey it past the searchers. Nor has the rectum been immune from the methods of torture which darken the pages of mediaeval history.

Female Genito-Urinary System

Transuterine insufflation of the Fallopian tubes, the watchspring pessary, the Grafenberg silver ring, and other ingenious devices enable gynaecologists to maintain an even balance between fertility and sterility. Conception is no longer left to chance, and future generations will doubtless find that the determination of sex is in accordance with their wishes. Foreign bodies, inserted in the treatment of pelvic disorders, have escaped the memory of both doctor and patient. Poulet[24] mentions an interesting case a pregnant woman was examined by a doctor, who suspected carcinomatous degeneration of the neck of the uterus. Capuron, who was consulted, did not believe that the state of the woman's health warranted the diagnosis, and on further examination the "growth" was found to be a sponge, which had been previously introduced into the vagina. There are many cases on record in which pessaries have been retained in the vagina for thirty years. Glass pessaries are not changed by the vaginal secretion, but metal instruments are eroded and become encrusted by calcareous salts. A broken glass douche nozzle, left in the vagina by a careless nurse, has been known to cause temporary domestic unhappiness. Sutures, filiforms, and pieces of catheter and rubber tubing may provide a nucleus for stone formation. A doctor in the North of Scotland, on investigating a calculus removed from the bladder of a woman, found it had formed round a condom *à l'envers*—no history of intercourse by the urethra was forthcoming.

Masturbation is responsible for the motley array of foreign substances found in the genito-urinary system. Feathers, chewing gum, and hair-pins present interesting problems to the cystoscopist; and Cabot[25] describes a case in which a straw, passed in through the urethra, had become engaged in one of the ureters for part of its length.

Pearse[26] mentions a woman, aged 36, who suffered from menorrhagia for ten days and was in a state of great prostration. He found a silk bobbin, which the patient had introduced fourteen years before. She had suffered from attacks of peritonitis and the presence of a urethro-vaginal fistula. She had been married twice, and had been cared for by physicians, but the existence of a body 3/4 inch long had not been noted.

Large objects become impacted in the vagina. Barnella of Innsbruck removed a drinking glass from the vagina by means of a pair of small obstetric forceps. Cloquet[27] describes the necropsy on a woman who had a pewter goblet in her vagina, and notes that lead oxide was found in the gangrenous debris.

Crochet hooks, scissors, knitting needles, and catheters have been used to procure abortion, and death has not infrequently followed perforation of the uterine wall, haemorrhage, and septic peritonitis.

Glaister[28] reports the case of a woman who passed a gold penholder with a sharp grooved point into her uterus. It slipped from her hand and disappeared. A few days later she was seized with intense abdominal pain; the abdomen was explored and the penholder was found beneath the diaphragm.

Zuhmeister[29] describes the case of a woman who used the twig of a tree to perforate the matrix. She thrust it so forcibly into the uterus that the wall was perforated. Although 6 inches long and the thickness of a goose feather, the branch remained for five months in the pelvis without causing any inconvenience, and was finally discharged per rectum.

A description of foreign substances entering the female genital system would be incomplete without reference to the peculiar belief, prevalent among widely different and distant races, that impregnation may follow the entrance of a foreign substance in place of the male spermatozoon. It was no unusual thing for the ancient Egyptian kings to deduce their ancestry from the immaculate conception of a virgin, and to imagine that God (Āman Rā) was their father. The monarchies both of the Huns and of the Moguls were erected on the basis of such superstition, and the miraculous conception of Zingis, ascribed to a virgin, raised him above the level of human nature. Other races give a more explicit history, and state that imprudent exposure to the rays in bathing, or to the dripping of a stalactite has caused a woman to become pregnant. In *The Lady of the Lake* Sir Walter Scott vividly describes the birth of Brian following the impregnation of a virgin mother by dust blown from the bones of the long-departed dead.

Male Genital System

The ancient custom of infibulation of the external genital organs was not uncommon among the Greeks, Romans, and Asiatics. Certain of the religious mendicants in India were condemned to a life of chastity; and in the hotter climates, where nudity was the custom, the person travelled about exposing an enormous prepuce ring, which was looked upon with adoration by devout women.

In September, 1929, a young man inserted his penis through a gold signet ring. He failed to remove it and when he consulted his doctor, the ring lay buried from view in the oedematous tissues of the penis, which was exquisitely tender and of a deep purple colour. After slipping a piece of fine tin-foil through the ring to protect the penis, I relieved his embarrassment and alarm by dividing the ring with nibbling forceps.

A few years ago a man inserted his penis into the neck of an earthenware hot-water bottle. He failed to withdraw it and, although he got rid of the greater part of the bottle by chipping it off with a hammer, he required the assistance

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is doctor in removing the jagged stone ring which encircled penis and resisted all attempts at removal till fixed in a

n November, 1927 a boy was admitted to the Royal rdeen Hospital for Sick Children suffering from a cicatrix rounding the penis and a urethral fistula His doctor orted that he had been called to see the boy, and had oved a piece of string tied tightly round the penis The d had ulcerated into the urethra, and had almost severed body of the penis The boy suffered from nocturnal iresis

Other foreign bodies found in the male urethra in ate a prurient tendency Gross[30] found three caudal tebrae of a squirrel in the centre of a vesical calculus was discovered that the patient had practised urethral sturbation with the tail of this animal

Terrilon[31] describes the case of a man of 24, who introduced pencil into his urethra It remained there for fifteen days l then passed into the bladder Following successive empts to break the pencil he had violent chills and an ense evening fever On the thirty third day Terrilon oved the pencil by operation, but the patient died of a vesical abscess

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THE HEALTH OF LONDON

REPORT FOR 1930

The annual report[1] of London's county medical officer of ealth and school medical officer, Dr F N Kaye Menzies, hows once again how wide is the province of the chief ealth official in a great city From vital statistics to rivate wells, from the purity of milk and water to precautions against sewer explosions, and from the provision of rescue homes to handicraft classes—all these and many other matters come under his supervision It is no mall tribute to Dr Menzies and his staff, as well as to he progress of preventive medicine, that the death rate in he civil population reached last year so low a figure as 1 6 per 1 000 Every cause of death showed a lower igure than in the previous years, with the exception of measles The spring of 1930 included the end of the biennial epidemic, and therefore the statistics for that year show a large number of deaths from respiratory complications Since another epidemic of measles is due this winter, it is of interest to note the relatively enormous death rate that this disease entails the deaths in 1929 were 206, and in 1930 they numbered 1,027 Even this epidemic was less severe than that of 1928

Vital Statistics

The population in the County of London at the time of the census in April last is given as 4,396,821, an increase of about 100,000 on the census figure in 1921 The birth rate, as in the previous year, was 15 8 per 1,000—the lowest on record On the whole, the year 1930 was a healthy one, epidemic diseases were comparatively rare, and mortality from influenza was particularly low Conditions were favourable to infant life, the deaths under 1 year of age being only 59 per 1,000 births There was, however, a marked increase in deaths attributed to cirrhosis of the liver The mild type of small pox continued unabated, but there were only ten deaths No virulent small-pox occurred The case mortality for diphtheria was 3 3 per cent, a slight increase, which may perhaps indicate a slackening off in the use of anti toxin—a measure which was stressed by the Ministry of Health in 1922 and 1923, with the result that the death rate diminished notably in 1923, 1924, and 1925 There were 293 notifications of puerperal fever and 740 of puerperal pyrexia during the year—a slight decrease on 1929 The death rate from puerperal fever and other accidents of childbirth was 3 33 per 1,000 births, rather more than half being due to puerperal fever

One fatal case of anthrax is reported in an employee at a flour and grain wharf, its origin could not be traced Of 88 notified cases of cerebro-spinal fever, 75 were confirmed, and 51 of these patients died, a further 29 deaths occurred in unnotified cases or cases notified in 1929 There were 45 confirmed cases of adult encephalitis lethargica, of these, 16 patients died The whole of the special accommodation for these cases at Winchmore Hill (50 beds) was occupied at the end of the year and so great was the number waiting admission that 115 more beds are to be provided The report of the school medical officer, which appears as a separate publication[*] this year contains a survey of the disease among children. There were 4 deaths among 30 proved cases of polio-myelitis and polio encephalitis

The year 1930 was marked epidemiologically by one unprecedented disease in the town—yellow fever A fatal case occurred in a laboratory worker who was engaged in research on this disease, there were two other severe cases and three milder cases, but these patients recovered It was thus shown that species of mosquito other than *Stegomyia fasciata* can carry the disease, that the infection can penetrate the unbroken skin, and that laboratory work which involves handling apparatus contaminated with infected blood is extremely dangerous The investigation was therefore stopped

There were 6,908 deaths from cancer—a slight increase—with a death rate per 1,000 of 1 57. The tuberculosis death rate was 0 87 per 1,000 living

Common Lodging Houses

The report contains an interesting historical survey of the attempts made to provide lodgings for seamen and the peculiar difficulty of the Chinese seamen There are now 152 licensed common lodging houses, and 22 seamen's lodging houses, the supervision of these entailed 7 582 day visits and 212 night visits by the inspectors during the year Opium smoking has now practically ceased in the lodging houses, owing to the operation of the by laws and the Dangerous Drugs Acts A census of homeless persons in the city, taken on February 14th—a cold night—showed 54 men and 25 women in the streets 14 855 persons in common lodging houses 631 men 117 women, and and 18 children in free shelters and homes 724 men and and 18 children in free shelters and homes 724 men and 16 women in casual wards and 5 014 men in Rowton houses There has been a steady decrease in the number of homeless persons except for the low figures obtained during the latter years of the war Apparently very few women are really homeless nowadays The lodging houses are very much cleaner than they used to be, and there was

[1] London County Council Annual Report of the Council 1930 Part I vol iii London P S King and Son Ltd 1931 No 2880 (1s)

[*] See *British Medical Journal* October 3rd, p 612.

no occasion during the year to make formal examination of a person suspected of being verminous.

Milk, Water, and Food

The routine investigation of samples of milk was transferred on July 1st last from the laboratory where it was formerly done to the council's own laboratories at Park Hospital; this change produced a saving of approximately £650 per annum. It is not surprising to learn that the number of cowsheds in the county has diminished—from 738 in 1888, the year of the council's inception, to 50 in 1930. It is, perhaps, surprising to learn that there are still so many, and that some of them are situated in Stepney and Bethnal Green; these are necessary for the supply of milk to Jews in accordance with the rules of their religion.

The bacteriological laboratory examined specimens of tap-water and main supply, and found that the water of London maintains its high standard of purity. The chemical laboratories have examined many samples of stores, and specifications have been revised so as to bring them closely into touch with modern conditions and requirements. The volume of analytical work has greatly increased, and the duty of examining drugs has been added to the work of the council under the Local Government Act, 1929. The samples investigated during the year cover a wide range, including air, disinfectants, various metals, foods of all kinds, water, wax, soap, fertilizers, condensed milk, oils, shampoo preparations, and boiler deposits. Some of the milk supplied to children in elementary schools was found to be rather dirty, generally owing to careless handling, though its composition was usually good. Quite a number of hospitals and other institutions in the London area still have private wells, and forty-five analyses of the water were made during the year. Experience with outdoor baths has shown a great improvement when the water is filtered and chlorinated; a clear, practically sterile water can be maintained for months, despite the use of the bath by large numbers of unsupervised bathers.

Venereal Disease and Tuberculosis

The London and Home Counties scheme, which came into operation in 1917, has continued to work well, and the clinics have shown an increase of new cases on the previous year. A very large number of non-venereal patients come for examination, and the number of pathological tests made has increased from about 17,000 in 1917 to nearly 160,000 in 1930. During the year the clinic at the London Hospital was transferred to the council; now run as an all-day clinic (every day of the year) under the directorship of Dr. T. Anwyl Davies, it has proved an unqualified success.

The council provides residential treatment for all tuberculous patients who are likely to benefit from it, while chronic and acutely ill cases are accommodated in the council's hospitals. The Local Government Act, 1929, makes it possible for the council to distribute its patients more satisfactorily than it could before. Nearly 6,000 adult cases were recommended for residential treatment during 1930, and just under 5,000 of these were sent to sanatoriums or observation beds. Of 1,121 children recommended for treatment, 1,068 were accepted. A number of patients were also sent to Papworth and Preston Hall; the council has arranged to pay the difference between the patient's value as a wage-earner and his cost of maintenance. The Burrow Hill Colony at Frimley, which was reorganized in 1929 for youths between 14 and 19 years old, maintains about 40 beds for the council and trains specially selected boys in gardening, with a view to their future employment as "improvers" in the council's parks. Particulars obtained in 1929 of the 1,324 surviving adult patients who had been discharged from treatment in 1924, showed that 65.4 per cent. of the A and B1 cases, and 55.6 per cent. of the total, were at work. Special efforts are made to provide suitable employment for all ex-patients who are fit for it; for those unfit to do ordinary work there are handicraft classes in several boroughs; the council pays the instructor, and other expenses are paid by voluntary contribu-

Mental Deficiency

At the end of the year the council had 3,712 mental defectives in its institutions, 100 under guardianship, 2,592 under supervision, and 36 in places of safety awaiting action. Special attention was paid during the year to the period of life at which defectives were brought to notice; practically all the feeble-minded were notified by the Education Committee when they left special schools for the mentally defective. As would be expected, very few of this group were notified under the age of 7, and very few of the idiot group over the age of 16. An analysis has been made of 80 feeble-minded and 50 imbecile persons taken at random as they were dealt with under the Mental Deficiency Acts, with a view to finding out the cause alleged by the parent. In the feeble-minded group the list is headed by fright and worry during pregnancy and injuries in infancy. The first of these also appears much more often than any other cause in the imbecile group. In 70 per cent. of this group the alleged cause depends on extrinsic factors, whereas in the feeble-minded group the percentage is only 42.5. This suggests that the parents of imbeciles are often more intelligent than those of the feeble-minded. Of all the causes suggested, none could be taken as a serious contribution to etiology. The investigation also showed a larger proportion of congenital defects and abnormalities in imbeciles than in the feeble-minded, many of them being closely associated with the defect. Apart from squint and dental disorder, no undue incidence of disease was found among the children attending the occupation centres of the London Association for Mental Welfare.

Miscellaneous

The report gives a table classifying the cause of blindness in both sexes. The largest group was due to internal inflammations of the eye, which are more common in men than in women; choroiditis and choroido-retinitis are almost twice as common in males, whereas iritis and irido-cyclitis are twice as common in females. Senile changes, the next large group, are much more often found in women, no doubt partly because of their greater longevity.

Of the 5,000 certified midwives with London addresses, 900 gave notice of intention to practise in the county during the year. Of the 284 cases of puerperal fever investigated during the year, 62, with 11 deaths, were in the practice of midwives, and 88, with 19 deaths, in the hands of medical practitioners. Of 760 cases of puerperal pyrexia, 154, with 16 deaths, were in the hands of midwives, and 150, with 11 deaths, in the hands of doctors. In midwife practice there were 1,369 cases of inflamed eyes, of which 321 proved to be ophthalmia neonatorum; 293 other cases were not notified by midwives. Special courses of demonstrations and lectures were provided for midwives.

During the year forty-two nursing homes applied for registration; eight applications were withdrawn when the council's requirements were explained, and registration was refused to two others. On the whole, the homes have been satisfactory, and there has been considerable improvement in general cleanliness and orderliness. At the end of 1930 the council had under inspection 1,773 homes for infants, and in a number of cases overcrowding and sanitary defects were notified and put right.

Automatic devices for detecting poisonous and explosive gases were put to the test, and it was found that they required manipulation by a skilled man, and that, for purposes of detection only, the ordinary miner's lamp was better in the hands of workmen than these elaborate devices. The air in the river subways has been systematically tested; the average carbon monoxide content in Blackwall was 21.5 parts per 100,000 under the worst conditions, occurring about 10 a.m. on weekdays in summer. New fans were therefore installed in September.

Finally, to complete its remarkable catalogue of activities, the council has undertaken observations of visibility from the County Hall at midday. It is hardly surprising to learn that the visibility is greatest in [illegible] and September.

MOTOR CARS FOR 1932

THE OLYMPIA SHOW

[From our Motoring Correspondent]

(*Concluded from page 716*)

Although a general reference has already been made to the downward tendency of car prices, and, where these have not been changed, to the better value offered than last season, it may not be without interest to deal a little more fully with the price question in order to give some idea of the wide selection that is available to medical men.

Prices for 1932

Last year the figure of £450 was taken as the outside limit which the average doctor was likely to desire to pay. This year, as a result of a combination of circumstances—the many reliable and convenient cars available at a lower figure, coupled with the need for economy owing to reduced incomes and higher taxation—the outside limit may now be safely lowered to £350, although this is not to say that more expensive cars are not worth every penny that is asked for them.

Beginning at the lower end of the scale, there is a choice of five of the "junior" class of car, the cost of any of which does not exceed £150. The number of vehicles available in the £151 to £200 category has increased from fourteen to twenty-two, and includes such well-known productions as the Morris Cowley and Morris Major, Rover, Ford, Austin "Twelve-Six," Citroën, Renault, and the Standard Big and Little "Nines." At £201 to £250 the number of models has dropped from fifteen to twelve, seven with four-cylinder and five with six-cylinder engines, notable productions in this group being the 10–30 h.p. Fiat and the 12 h.p. Rovers and Singers. Six-cylinder cars also predominate in the £251 to £300 group, numbering thirteen, compared with only nine with four cylinders. Prominent among them are the Armstrong-Siddeley 12 h.p. three- or four-speed cars, the new 10 h.p. Crossley, the 15 h.p. Morris Oxford, the 16 h.p. or 21 h.p. Hillman Wizard, the 17 h.p. Vauxhall Cadet, the Riley "Nine," the 15.7 h.p. Wolseley, and the Austin 12 h.p. four-cylinder and the "Sixteen-Six." Finally, in the £301 to £350 category there is a choice between eleven makes of cars, all, with one exception, of the six-cylinder type, including the new Star Comet 14 h.p. and the 17.7 h.p. Morris Isis. While these prices relate to the standard saloons, the majority of which are now provided with sunshine roofs without extra charge, most manufacturers are including a car with a coupé body and dickey seat in their respective ranges. This type generally costs a little more than the standard saloon.

In connexion with prices it may be added that Messrs. Mann Egerton and Co., who cater specially for doctors in London as well as at their four establishments in the Eastern Counties, have just issued a handy 1932 *Car Buyer's Guide*. In this the makes of cars are set out in alphabetical order, with descriptions of the various types of coachwork available. The most popular cars are dealt with exhaustively, and particulars are given of cars which can be specially recommended for professional and private use by medical men.

More British Cars

Continuing a brief review of the principal British cars on the market, the Alvis Company is still building three sizes of chassis—12–50 h.p. four-cylinder and "Sixteen" and "Twenty" six-cylinder—only slight detail improvements having been found necessary. This applies also to the Crossley Company's 16 h.p. and 20 h.p. six-cylinder vehicles. The chief new departure of this concern, as has previously been mentioned, is the introduction of a high-grade 10 h.p. four-cylinder model, the prices of which range from £265 for a family saloon to £310 for a semi-sports coupé. The Star Company of Wolverhampton, while continuing to build only six-cylinder cars, has added a new Comet "Fourteen" to its range, this being priced at £345 either as a saloon or as a coupé. Among its features, common to the 18 h.p., 21 h.p., and 24 h.p. models, are a system of four-wheel jacks permanently attached to the chassis, which has "one-shot" lubrication, a four-speed silent-third gearbox, and a patent signalling window for the driver.

Morris Cars

No report of the Show would be complete without a reference to the cars of the Morris Company, probably the most widely used of all vehicles in this country. Its 1932 programme is notable for the extended range, as well as for several improvements, and, above all, for slightly lower prices. Important changes applying to all models are a new design of radiator, wider bodies, Pytchley sliding sunshine roofs, "eddy-free" fronts to all saloons and coupés, Lockheed hydraulic four-wheel brakes on all but the "Minor" models, and, on all six-cylinder vehicles, automatic shutters to the radiators, and four-speed, twin-top gearboxes. Those requiring a car moderate in first cost and subsequent maintenance will be interested in the new Morris Family Eight, which is an enlarged edition of the Minor, its wheel base of 7 ft. 7 in. allowing a body with ample room for four persons to be mounted on the chassis. In addition to a saloon at £152 10*s.* there is an attractive coupé at £175. The Cowley has been improved in many ways, and, as previously mentioned, may now be had with either an 11.9 h.p. (£12 tax) or 14–32 h.p. (£14 tax) four-cylinder engine at the one price, ranging from £179 10*s.* for the fixed-head saloon to £190 for the coupé. The 14 h.p. six-cylinder Morris Major has been largely redesigned, and is now available with five styles of bodywork, at prices from £199 to £245. A favourite with medical men is the 15 h.p. six-cylinder Morris Oxford, which has not only been improved, but has been reduced to £255 for the saloon and £275 for the coupé, both with sunshine roofs. For those in need of a car of greater power and with more roomy bodywork there is the 18 h.p. Morris Isis, to the range of which a sports coupé at £350 has been added.

The Rover and the Standard

Although the new Rover 7 h.p. Scarab car, with two-cylinder air-cooled engine at the back and designed to sell at the low figure of £89, is an interesting production, it is too small to appeal to many doctors. On the other hand, the 10–25 h.p. four-cylinder Rover, built on what may be termed normal lines, is attractive from the point of view of price (from £179 upwards) and from the sturdy, up-to-date character of the construction and the neat bodywork. This company has introduced a 13 h.p. light "six" known as the "Pilot," the saloon of which costs £225 in coachbuilt form and £5 more with Weymann bodywork.

A make of car that has proved extremely popular during the past season is that of the Standard Motor Company. Four models are being produced, each of which will appeal to the medical profession. Where first cost is a consideration the Little or Big "Nine" four-cylinder will be found up to date in every respect. The Little "Nine," which sells at £155, has a three-speed gearbox, while the Big "Nine," which costs another £50, not only has a larger engine and bodywork, but is equipped with a four-speed, silent-third change-speed gear. On the six-cylinder side there is a "Sixteen" at £235 and a "Twenty" at £325, both of which will well repay careful study.

Other British cars to which attention may be drawn are the 7.9 h.p. and 8.9 h.p. Triumphs and the 12 h.p. six-cylinder Scorpion made by the same Company; the 17 h.p. Vauxhall Cadet, which has now a three-speed synchro-mesh gearbox, and the 12 h.p. Hornet and 16–60 h.p. Viper cars of the Wolseley Company: both of these are six-cylinder vehicles, the first-named ranging in price from £160 to £245 and the larger model from £285 to £309.

American and Canadian Cars

Although there is a falling off this year in the number of American and Canadian cars on the British market, most of the well-established types remain. Occupying a

leading place among them is the Buick, the three models of which are all fitted with "straight-eight" engines. The most popular type is the 26 h.p. Dominion five-seated saloon which, listed at £398, is now fitted with a three-speed synchro-mesh gearbox as standard, instead of at an extra charge. The Chrysler Company is continuing to produce four-, six-, and eight-cylinder cars. The cheapest model is the 16–56 h.p. Plymouth at £275, while a popular type is the 20–63 h.p. six-cylinder De Soto at £325. A familiar American car is the 18.2 h.p. Essex Challenger, which has not only been improved in detail, but is now being offered at prices ranging from £195 for the five-seated saloon. Although supplied only at an extra charge, an innovation on the Essex cars is a free-wheeling device controlled by a separate auxiliary lever, which is stated to render gear-changing an easy matter, even for novice drivers.

Popular Italian and French Cars

Among the well-known Italian cars is the Fiat, which is now being produced or assembled in this country. Attention is being concentrated on a 10–30 h.p. four-cylinder chassis fitted with six types of bodywork, and two models of 18–55 h.p. six-cylinder vehicles. Only detail changes are noticeable, these being chiefly directed towards rendering the brakes more powerful, improving the springing, and making the engine accessories more accessible. Among the oldest of the French cars on the British market are those of the Peugeot Company; for 1932 only 10 h.p. four-cylinder models are being offered, one with the usual form of suspension by semi-elliptic springs, and one in which the front road wheels are independently mounted on a transverse spring. Prices for saloons range from £169 to £209. The Renault firm, in keeping with the tendencies of the times, has reintroduced a "Ten" four-cylinder car and added a 12 h.p. "Six" to the range, both of these being offered at attractive prices. Cars of higher power are also made, the largest being a 40 h.p. "straight eight." Hitherto the Renault cars have always had a radiator of the firm's own design, but this has now been altered to the more popular shape.

Although of French design the Citroën cars, which are popular with many medical men, have been built in this country for some time. Both the four- and six-cylinder models are being produced with slightly larger engines, while many detail improvements have been introduced. A notable change is the increase in the wheel track, which enables much larger and wider bodies to be fitted. The range now includes seven-seated saloons and limousines.

Special Motor Bodywork

Despite the fact that what may be termed standardized bodies as supplied by the car manufacturers are of excellent design and well equipped, there is a tendency, even among the makers of the popular-priced vehicles, to supply a chassis on which purchasers may have mounted the bodywork of their own choice. Thus, a feature of the exhibits of the carriage-builders is the increasing attention given to bodies for relatively small cars, among the makers being the New Avon Body Company and the Swallow Coachbuilding Company. While saloons are the most numerous, there is a noticeable increase in closed and drop-head coupés, a good example of the latter being shown by Martin Walter, Limited, on an Austin Sixteen-Six chassis. Mann Egerton and Co. are among the firms devoting attention to the construction of special bodywork for doctors' use; this year, however, all the cars they exhibit are of relatively high horse-power. The smallest is a 16 h.p. Sunbeam, with an attractive six-light saloon body, the front seats of which, although of the twin-bucket type, are so constructed that they can be lined up to accommodate three persons.

The Accessory Section

One of the features of the gallery section at Olympia is the remarkable variety of fittings now available for use on motor vehicles. Nowadays it has become the fashion to mount the electric horn on the front of the radiator; of these horns there are several patterns. Although the dazzle problem has not been completely solved, there are many designs of dipping lamps and reflectors which diminish the trouble. The numerous exhibits of modern forms of ignition equipment indicate that no pains are being spared to produce components that shall give reliable service. A similar remark applies to sparking plugs, among which the Lodge and K.L.G. are prominent. Lodge Plugs, Limited, show duplicates of the plugs used on the world's fastest aeroplane and motor boat.

Winter Motoring Requirements

Held opportunely in the late autumn, the motor show serves to demonstrate the many useful aids to winter motoring that are now available—for example, the various stoves and radiators for heating the garage in winter, so that no trouble may arise from the freezing-up of radiators and cylinder jackets. Gamage's stand shows a number of these appliances, as well as radiator muffs, which doctors will find useful in very cold weather. The only alternative to heating the garage during the winter months is to add some form of anti-freezing glycerin compound, such as that known as Zero, to the water in the radiator. At a time when fogs and snow may be expected there is much interest in the exhibits of special fog lights and chain attachments for tyres, such as the Parsons, the Grippit, Griff, and Pladdey, any of which can be obtained from a general motor accessory firm. It should be borne in mind that a spare set of electric bulbs carried on the car may save much inconvenience should any failing in the lighting system occur.

Finally, a reminder may be given of a legal requirement that does not yet appear to be generally known—namely, that all private garages, even if the only petrol in them is that in the tanks of the cars, must be provided with a supply of sand, or with a portable fire extinguisher, of which there are many patterns available at a relatively small cost. Although the risk of fire in private garages may not be great, negligence in this matter may lead to difficulties with the motor insurance companies.

C. J. W.

Scotland

Royal College of Physicians of Edinburgh

As announced formally in another column, the celebrations arranged in connexion with the two hundred and fiftieth anniversary of the founding of the Royal College of Physicians at Edinburgh on St. Andrew's Day (November 30th), 1681, will not now take place. At a meeting of the Fellows of the College, held last week, it was resolved that in view of the national situation the celebration of this anniversary should be indefinitely postponed. The honorary Fellowship of the College will be conferred on certain distinguished physicians as originally arranged.

New Edinburgh Professorship

The inaugural lecture of the recently established Edward Clark chair of child life and health at Edinburgh Edinburgh University was delivered on October 16th by Professor Charles McNeil, the first occupant of the chair, in the anatomy theatre of the University. Taking as his subject "The scope and need of teaching in child life and health," Professor McNeil said that the gift of this endowment by the trustees of the late Mr. Edward Clark had raised the status of an important medical subject, and given it a secure position in that medical school. The name of the chair was well chosen, for it included not only diseases of children, but the child himself, and this wider scope corresponded to the wider duties now undertaken by the doctor in his practice. One of the most important causes of the advancement of the study of disease in children had been the foundation of special hospitals for children in the second half of the nineteenth century. The Great Ormond Street Hospital for Sick Children in London had been founded in 1852, and a few

ALWAY
BOOKMAN'S PARK STATION (L.N.E.R. main line).
Tavistock Square, W.C.1.

years later, in 1858, the Edinburgh Children's Hospital was opened on a site which was now the western boundary of the Royal Infirmary. It was a common remark that the sick child could not tell what he felt wrong with him, and that this must create special difficulty for the doctor. This seeming disadvantage, however, might be an advantage in throwing the doctor back upon a more careful clinical examination and saving him from misleading information. The main difficulty in regard to children was that the reactions of the child's body to disease were often different from those in the adult; thus it was rare to find in the child, with its active growing tissues, diseases such as pernicious anaemia, cancer, ulcer of the stomach, and those chronic degenerations of the heart and blood vessels that beset the worn-out body in later years. On the other hand, the child was subject to some diseases from which the full grown body was more or less immune, such as the infectious diseases of childhood, inflammatory infections of the bones, meningitis, and other inflammations of the brain and cord of which infantile paralysis was a good example. It was a fairly true general statement that mature age was the time of degeneration, while childhood was the time of bacterial infection. There were various important diseases that were common both in childhood and in maturity, but assumed a different clinical form in the child. The best example was tuberculosis, which in mature years predominated as a slow, progressive inflammation of the lungs, but in the child assumed a great variety of quite different clinical aspects, although the causal tubercle bacillus was the same and entered the body by the same channels. The teaching of this subject ought to give a clear account of the fundamental processes of growth, both physical and mental; it had to cover the common diseases of childhood, both surgical and medical, but in addition to disease it ought to deal with the care of the child in health. He did not know of any medical school in which there was a longer course of teaching in this subject than three months, but he thought that the foundation of this chair offered an opportunity to review the teaching programme. In his opinion the health of children was far more satisfactory to-day than it was fifty or even twenty years ago. This improvement had been effected largely in two ways—namely, by the great reforms in public sanitation and by the diffusion of knowledge among mothers regarding the care of the child. There was still a great amount of sickness and death in the first few years of life which he believed to be largely preventable. The most hopeful work along this line was to study and teach the rules and conditions by which the health of the child might be preserved, and this task of educating the people belonged to the doctor and the nurses engaged in medical practice. The foundation of this chair should be a stimulus to more active study and to more efficient teaching.

Scottish Universities' Representation in Parliament

The first members to be elected to the new Parliament were the three representatives of the four Scottish Universities, who were nominated at a meeting held in the Upper Library Hall of Edinburgh University on October 13th, Sir Thomas Holland, Principal and Vice-Chancellor of the University, presiding, and acting as returning officer. For health reasons Sir George Berry, M.D., who has represented the Universities as a Unionist member for several years, did not seek re-election. The nominations lodged were those of John Buchan (Unionist), who is well known as an historian and author, and has acted as a representative of the Scottish Universities since 1927, Dugald McCaig Cowan (Liberal), at one time head master of North Kelvinside higher grade school, who has published a number of books on educational subjects, and has represented the Scottish Universities since 1918; and A. Noel Skelton (Unionist), a member of the Scottish Bar, who has represented Perth in Parliament for the past seven years, and on the recent formation of the National Government was appointed Under-Secretary of State for Scotland. After the prescribed time for lodging nominations had elapsed, Sir Thomas Holland said that as no more than three nominations had been received for the three seats, he declared Mr. Buchan, Mr Cowan, and Mr. Skelton duly elected members of Parliament. He added that as no new candidate had been nominated, a sum of approximately £1,000 in postages alone would be saved to the Universities.

Special Schools in Scotland

The Dalton special school for invalid children, situated between Blantyre and Cambuslang on the outskirts of Glasgow, was opened on October 16th by the Rev T F Harkness Graham, chairman of the county council medical services subcommittee. Sir Henry Keith, chairman of the Lanarkshire Education Committee, presided. There was no branch of education, said the Rev Harkness Graham, in which more hopeful advance had been made than in the provision afforded for teaching those who were physically or mentally handicapped. Dr John Jardine, assistant secretary to the Scottish Education Department, described the school as admirably equipped for all the purposes for which it was intended. He thought that these special schools which were being built in Lanarkshire compared favourably with any in the world. At the present time in Scotland provision was made for some 5,500 children with physical defect, and for some 3,800 who had some mental defect. This was distinctly in advance of what had been done in England. These special schools had a great influence on Scottish education, and had considerably modified the system of education for the normal child, for it had been discovered in teaching the mentally backward that a great deal could be done in educating the child by way of hand and eye training, so that the conclusion had been reached that this method of training should be introduced to a larger extent in the education of the ordinary child. The Dalton special school is the fourth of this type in the county of Lanarkshire, and has been built at an estimated cost of £26,000. It is of one story, triangular in plan, with eight class rooms and accommodation for 230 children. The scheme of teaching includes departments for woodwork, metal work, cobbling, cookery, laundry, and housewifery, and the class rooms all face south. The rooms are constructed on the open-air principle, with baths and dressing rooms. A rest shelter and a remedial gymnasium are also provided.

Residence Hall at St. Andrews

The University Court of St. Andrews University has opened Deans Court as a residence for students, supplementing the accommodation already provided at St Salvator's Hall. The building was opened for occupation on October 9th. It occupies the site of the ancient lodging of the archdeacon of St Andrews, opposite the ruins of the cathedral, and is one of the most picturesque dwellings in this old university town, having an old world air and a large garden. It accommodates some fifteen students, and is under the supervision of the wardens of the neighbouring St Salvator's Hall.

Gifts to Scottish Infirmaries

The directors of Arbroath Infirmary recently made a public appeal for increased support for this institution in view of a probable financial deficit on the current year's account. It was stated that since the extension of the Infirmary at a cost of £18,000, the expenditure had increased greatly and the committee was now faced

with a debt of £2,480, so that if greater public assistance was not forthcoming the hospital would have to be partially closed. As a result, Mr. W. W. Webster of Denley, president of the Infirmary, has given a donation of £1,000 to its funds. A sum of £1,050 has been presented to the Royal Infirmary at Inverness by an American visitor to the Highlands of Scotland, Mr. E. Hulsert Litchfield, in memory of Mrs. Edward H. Litchfield of New York.

Ireland

Vital Statistics for Northern Ireland

A review of the vital statistics for Northern Ireland has recently been published by His Majesty's Stationery Office. The estimated population of Northern Ireland in 1930 is given as 1,244,000, a decrease of 2 per cent. since 1923. During the fifty years 1841–91, the population of the Province declined by some 25 per cent.; then followed a period of thirty-five years during which small increases occurred, the peak for this century being reached in 1922, when the population was 1,269,000. According to the report the present tendency towards decline seems to be temporarily checked, owing to the less favourable conditions affecting emigration to the United States and to the Dominions. Such indications as there are point to a probable maintenance of the present population for a period of years, or, at any rate, to only a small decline during the next decade. Except for the violent fluctuations which took place during the war and immediately afterwards, the birth and death rates have declined fairly steadily throughout the past twenty-five years. The birth rate per 1,000 of the population last year was 20.8, and the death rate 13.8. It is noteworthy that the standardized death rates for 1925–27 were about 35 per cent. lower than those for 1890–92. Attention is drawn to the relatively high death rates for females in Northern Ireland. In the years 1926–29 they were, on an average, about 96 per cent. of the rates for males, the corresponding ratio for England and Wales being about 81 per cent. The extent of the failure to make use of existing medical facilities is indicated by the number of uncertified deaths, no skilled medical advice having been obtained during the last illness. In some counties in Northern Ireland the proportion of such cases exceeds 25 per cent. of the total. In the present generation there has been a material decline in the death rate among infants, both male and female. The death rate among male infants is still the higher. In spite of high rates of unemployment the marriage rate has been well maintained in the Province in recent years, but the number of Roman Catholic marriages in the period 1924–28 was apparently the lowest recorded in Northern Ireland. While only 6 per cent. of the marriages in the Province take place in registrars' offices, there is a marked tendency for the proportion to increase. Comparison with the Irish Free State shows that the fertility of married women is less in Northern Ireland. During the past thirty years the cancer death rate has increased by over 40 per cent., although it is considerably lower than the rate in Great Britain. During the same period the cancer rate in the Irish Free State has increased by 80 per cent., but it is still below that for Northern Ireland.

Belfast Health Report

At a meeting of the Belfast Corporation Public Health Committee the medical superintendent of Purdysburn Fever Hospital reported that during the two weeks ended September 26th, 70 patients were admitted and 53 were discharged, leaving 137 patients in the hospital. The sanitary report for this period showed that 5,079 inspections had been carried out. Draft by-laws for the protection of meat from contamination were under consideration, and a copy of the draft by-laws was directed to be sent to each member of the committee and to the secretary of the Master Butchers' Association for their information. A letter was read from the Ministry of Home Affairs approving of the conditions of appointment of city veterinarian, and instructions were given that applications for the position should be invited by public advertisement.

Medical Witnesses and the Workmen's Compensation Act

In a recent case under the Workmen's Compensation Act in the Dublin Circuit Court, a medical witness asked the judge to require him only to give evidence on facts as he had been brought to the court by subpoena. The judge agreed that he was within his rights in his request, but asked why he was taking that course. The witness replied that he objected to the discourtesy of the injured man's solicitor, who wrote to his client telling him "to get a report from his doctor" instead of communicating directly with the witness by letter or otherwise. The judge agreed that the action was discourteous, and the witness, having made his protest, then elected to give all the evidence in his possession without restriction. Commenting further on the subject after the hearing of the case, his lordship said that without the co-operation of the doctors in these cases—assistance which was always generously given—the work of his court could not be carried on. Solicitors, he declared, should recognize that, and they should not ask a doctor to appear in court and give evidence for the ridiculous sum of £1 11s. 6d., but should arrange to give medical men appearing for their clients a reasonable fee for their expert opinions.

England and Wales

Vital Statistics for 1930

Part I (Medical Tables) of the Registrar-General's Statistical Review of England and Wales for 1930 is now on sale at H.M. Stationery Office, price 7s. 6d. net. Among the leading facts disclosed in this volume the following may be mentioned. The birth rate for the year 1930 was 16.3 per 1,000 persons living at all ages, the actual number of births registered being 648,811. The rate is the same as that for the preceding year, which was the lowest birth rate recorded since the establishment of civil registration in this country. The death rate was 11.4 per 1,000 total population, the lowest death rate recorded. It compares with 13.4 for the year 1929 (a year having an epidemic of influenza and a high mortality from respiratory and circulatory diseases), and a previous low record of 11.6 in the years 1926 and 1923. The favourable death rate is largely attributable to the less severe weather in the first quarter of the year, the difference for the two years being very marked, the first quarter of 1930 having a rate of 13.4, whereas the figure for the corresponding quarter of 1929 was 20.9. The deaths of infants under 1 year of age were equal to a rate of 60 per 1,000 live births, the lowest recorded for England and Wales. The previous low record was 65 for 1928, while for 1929 the figure was as high as 74. The rate of 60 in 1930 was, however, for the two sexes, the figures for the sexes separately giving as wide a difference as 68 for males and 51 for females, taken respectively on a basis of live births in the same sex. As regards specific diseases, the crude rate for cancer was 1,454 per million living, against 1,437 for 1929. If, however, allowance is made for differences in the age constitution of the population, the comparative mortality from cancer has been almost

AT ... PARK STATION (L.N.E.R. main line). ... Tavistock Square, W.C.1

ationary during the last few years. The death rate from uberculosis (all forms) further improved to 898 per illion living, the lowest figure recorded. The mortality f women from puerperal sepsis and accidents of preg- ancy and childbirth was 4.40 per 1,000 live births, com- ared with 4.33 in the previous year. Of the component gures, sepsis was again somewhat higher at 1.92, as gainst 1.80, but "other accidents of pregnancy and hildbirth" showed a slightly better figure at 2.48, against .53 for 1929. The rate for suicide again showed a small ncrease to 127 per million (the highest figure recorded) rom 126 in the previous year, the rate for males rising rom 183 to 185, and that for females from 73 to 74. Deaths resulting from accidental injury by mechanical ehicles on roads, as returned by H.M. coroners, were ,404 as against 4,492 in 1927, 5,251 in 1928, and 5,799 n 1929. Exclusive of collisions between two types of ehicles, the deaths caused by motor cars were 1,643 gainst 1,660 in the previous year; by motor van, lorry, tc., 1,273 against 1,162; by motor cycle, 1,286 against 1,162.

"Unity in Medicine"

At the opening meeting of the Pathological Society of Manchester Professor Fletcher Shaw gave the presidential address, entitled "Unity in medicine." To the present generation, he said, it seemed incomprehensible that anyone could reach the *Medical Register* without a training in medicine, surgery, and midwifery, and yet, until so recently as 1886, licences to practise these subjects separately could be obtained. The president then outlined the history of each of these branches, showing how widely separated they were in early times, and how how gradually approached nearer and nearer together, until at length the Act of 1886 allowed no man to be registered who had not been trained and examined in all three subjects. The factor which did more than anything to show the importance of a general training in the elementary sciences, in anatomy and physiology, and in all branches of medicine—no matter what licence the student aimed at—was the creation of private medical schools. William Hunter's in London was the most famous, and the popularity of this and similar schools compelled the hospitals to found schools of their own. In the provinces, Turner's school in Manchester was the first founded outside London, and it still existed in continuous succession as the Medical Faculty of the Manchester University. When once this fusion between these branches had been accomplished, it might have been expected that they would remain fused. Unfortunately, this was not so; all these subjects were still included in the students' curriculum, but during the period of fusion other forces were at work, which diverted the post-graduate work of these students, and tended to keep them in separate watertight compartments; these forces were the rapid advance in knowledge and the formation of special hospitals. The special hospitals did little harm at first, as the members of the staffs treated all types of patients in private practice, but gradually there arose groups of men interested only in special branches, who spent the whole of their post-graduate lives in the practice of that branch. This was bad for patients and for teaching, as each teacher tended to look at a subject from his own particular angle, and without reference to any other. This specialization affected even the basic subjects—anatomy, physiology, and pathology—and in many schools they were taught without any relation to each other or to the clinical subjects. With regard to the future, Professor Fletcher Shaw advised that more and more attention should be given to the teaching of anatomy, physiology, and pathology, and students should be encouraged to take an honours degree in physiology after passing the ordinary anatomy and physiology examination. The teachers of these subjects, however, should be chosen as much for their ability to teach as to do research work; they should themselves have received a good clinical post-graduate training, and during all their teaching career should keep in touch with clinical work, otherwise they lost contact with what was most required by medical students. No more special hospitals should be founded; only special departments of general hospitals. Many special hospitals were doing excellent work, and their old reputation was an asset. These should not be scrapped or their identity lost by amalgamation; rather, when rebuilding had to be carried out, a scheme should be formed whereby they became grouped together, each with its own name, funds, and lay board, but with complete freedom of medical service, so that members of one staff could be called in consultation with the others, and patients freely transferred. England, Scotland, and Ireland each possessed its Royal College of Physicians and of Surgeons, and now there was a College of Obstetricians for the whole country, each college with its own special regulations and tests. Candidates for hospital staff appointments in different centres reached their goal by different means; in some, stress was laid upon post-graduate clinical experience; in others, upon special qualifications. But no hospital or college required its candidates to produce evidence of post-graduate training in medicine as a whole. By a combination, these colleges could insist upon a broad general training in medicine for all candidates for consultant rank. A primary examination after the pattern of the Primary F.R.C.S., or an honours degree in physiology, would guarantee special training in the basic subjects. After qualification, a year or eighteen months of resident work, equally divided between the three main branches, followed by a clinical examination ranging over the whole subject of medicine, would ensure a broad general training. After this, each candidate could fulfil the special requirements of the particular College he wished to enter. If this were done, it would ensure clinical teachers with an improved general training, who would be less likely to teach in separate watertight compartments of specialties.

Bristol University Cardiac Research Centre

The autumn issue of the *Bristol Medico-Chirurgical Journal* contains a review by Dr. Carey Coombs of the work of the University Centre of Cardiac Research from 1927 to 1931. Since its inauguration in 1926 by a subcommittee of the Science Committee of the British Medical Association, steady progress has been made with this investigation, and reports have been published from time to time in these columns, the last report appearing in the *Supplement* of July 18th. Dr. Coombs remarks that, since the inquiry is as yet incomplete, only one fact may be legitimately claimed as having been established; but this is one of the highest importance—namely, that the incidence of rheumatic infection of the heart in the city of Bristol is six times as high as that in the surrounding country. The actual figures are: Bristol, with its population of about 400,000, contains 750 children with about disease; while in the surrounding country, with about 1,100,000 inhabitants, there are only 350. Steps are now being taken to find out whether Bristol is singular in this respect, or whether the other great cities of Britain are similarly afflicted. As regards ulcerative endocarditis, the conclusion has been strengthened that there is present an infection of the inner surface of the heart, not of the heart wall itself—an "accidental" implantation of bacteria from the intracardiac blood stream. It follows that this condition is for the most part a terminal infection, indicating a fatal failure of resistance, which may be local or general, or both; it cannot be cured and can only very seldom be arrested. After enumerating

the various lines of research which are being prosecuted at present, Dr. Carey Coombs, envisaging the future, emphasizes the need for rendering the department of medicine in the university more efficient by bringing into existence a university hospital, or a system of hospitals, with the adequate academic departments; the present university centre of cancer research would then be absorbed naturally into the new scheme.

The Shortage of Dentists

Professor C. S. Gibson, F.R.S., of Guy's Hospital, distributed the prizes on October 6th, at the Birmingham University Dental School. The serious shortage of dentists with which the country is likely to be faced was referred to by Mr. Malcolm Knott, who occupied the chair and gave an address. The dental profession, he said, had passed through trying times in the last ten years, but they felt sure the sacrifices that had been made were not in vain when they could say that in future no man could enter dentistry except through a long and intense hospital training. Since the Dentists Act, 1921, a Dental Board had been set up, not only to control and discipline all dentists, but also to make provision for the care of the teeth of the nation. The result had been a great improvement in the status of dentistry and the opening up of new or the extension of existing avenues. If the health of the people was to be properly attended to there must be a considerable addition to the number of those now entering the profession. To make good the losses on the *Register* by death and retirement an average of 625 dental surgeons should be added to the *Register* each year. They were not getting anything like that number—in 1930 the number was only 256. Professor Gibson, in addressing the students, said that dentistry had progressed in every way during the last generation. As science advanced, fresh problems had to be faced and fresh facts had to be explained; and not only had dentistry advanced in knowledge, but also the utility of the profession was becoming far better understood. It must also be remembered that dentistry was looked upon by the past generation as purely a craft; he wished to emphasize the fact that dentistry was not merely a craft, for although workmanship had a great deal to do with it, there was an academic side which allied it to the medical profession. The problems which had to be faced could often only be dealt with by means of research, and he felt that there was a great opening in dentistry for research work. The Dental Board had assisted during the last few years by giving grants, and he hoped that the Birmingham Dental School would in the future be able to grapple with some of these problems and so take a leading part in the solution of difficulties which presented themselves to the dental profession.

Central Midwives Board

At the October meeting of the Central Midwives Board for England and Wales a letter was reported from the Association of Inspectors of Midwives drawing attention to an apparent contradiction between Rule E. 20 and Rule E. 21 (5), inasmuch as Rule E. 20 requires the summoning of medical aid "in all cases of illness of patient or child, or any abnormality," and Rule E. 21 (5) qualifies this by adding "endangering the child's life" and in this connexion pointing out that local supervising authorities have questioned the summoning of medical aid for talipes, which does not endanger the child's life. The association suggested that the substitution of the word "crippling" in Rule E. 21 (5) for "endangering the child's life" would remove the contradiction. A communication was read from the matron of Queen Charlotte's Hospital enclosing a letter she had received from Mr. A. W. Bourne, senior obstetric surgeon to the hospital. He stated that after discussion and consultation with the hospital bacteriologist, the medical staff had decided to abolish the use of antiseptics for swabbing the vulva during the lying-in period in normal cases. Also, that apart from being of little or no value in the prevention of infection, the continued use of antiseptics caused soreness and irritation, which might actually favour the development of the septic condition of the skin. The Board decided to inform the matron of Queen Charlotte's that, whilst having no desire to prescribe the technique at the hospital, it had to be borne in mind that the hospital was an institution at which the training of pupil midwives was approved, and that, whatever technique was employed there, the pupil midwives must receive adequate instruction in the Rules of the Board regulating the practice of midwives, including, of course, Rule E. 8, to which they had to conform in practising domiciliary midwifery. Approval as lecturer was granted to Dr. Eva Joyce Newton, Clapham Maternity Hospital, and to Dr. Charles David Read, Maternity Nursing Association. It was agreed that one of the members of the Board be invited to inspect the examination at Leeds, Manchester, and Newcastle in November or February next.

Correspondence

"WHAT IS LIFE?"

SIR,—Perhaps you will allow me to make a few remarks on your article on this subject in the *British Medical Journal* of October 10th, as the writer of it has partly misunderstood my own contentions, to which the article mainly refers. It is not as a philosopher, but as a physiologist, that in my recently published book I criticized the mechanistic theory of life. Philosophy only comes into the argument in my defence of biology against the intrusion of what seems to me bad philosophy, which has driven physiologists into vain attempts to interpret life on either mechanistic or vitalistic lines.

The argument of the book is not that life is "matter in a superphysical state" (to quote the article), only to be understood by philosophical reasoning, but that if we apply to a living organism the conception of matter we have thereby made it impossible to interpret scientifically the phenomena we are dealing with, because we are separating in thought what cannot be separated in observation. What we actually observe is that the phenomena of life express the maintenance of a co-ordinated whole, which includes within itself relations to environment, as well as the mutual relationships of details of internal structure and activity. Hence it is vain to approach the study of life under the presupposition that its phenomena can be separated from one another, as when we separate in thought "living matter" from its environment. Our proper working hypothesis is that the observed phenomena are inseparably connected with one another as manifestations of the whole which we call a life; and it seems to me that this, and neither the mechanistic nor the vitalistic theory, is the hypothesis that has actually worked successfully through the whole history of biology. It is always with relations that we are dealing in biology, and in the definition of these relations we often require physical and chemical methods of the utmost delicacy; but it seems to me mere confusion in thought to suppose that their application leads to any separation of the related phenomena.

From the time of Galileo up to the beginning of this century physicists seemed to be aiming successfully at analysing visible and tangible phenomena on mechanistic principles into separable events and processes. But

mechanistic and vitalistic biological theories were a reflection of this aim Now that it seems evident that mechanistic principles cannot ultimately be applied to what has hitherto been called the inorganic world, physicists are beginning to look toward biological ideas for guidance One of the clearest instances of this is the very deliberate statement by Planck (*Nature*, March 18th, 1931) that " the assumption that the orderly course of a process can be represented by an analysis of it into temporal and spatial constituents must be dropped The conception of wholeness must therefore be introduced in physics, as in biology, to make the orderliness of Nature intelligible and capable of formulation " Planck's conception of life and of its difference from mechanism, seems to be the same as my own —I am, etc ,

Oxford Oct 17th J S HALDANE

CHILD PSYCHOLOGY

SIR —In an annotation in the *Journal* of October 10th, on the National Institute of Child Psychology, the statement appears that it has been a common cause of complaint by Continental and American visitors that there is no provision for the study of medical psychology in general, and child psychology in particular, in London I think it unlikely that such complaints are widespread, and in any case believe them to be totally unjustified The course for the D P M at the Maudsley Hospital has existed for about twelve years, and a special part of it in May is available for those who can only spare a month for a post graduate course These courses have been attended by a considerable number of foreign and colonial graduates In addition to the lectures there is also a large variety of other opportunities for instruction in medical psychology and clinical work in the Maudsley Hospital The Tavistock Clinic (Institute of Medical Psychology) has also for years organized courses for medical students and practitioners, which are largely attended I am, furthermore, in a position to state that some of the leading psychiatrists in America regard the courses of instruction for the D P M in London and elsewhere in England as admirable in scope and arrangement, and as models which might be followed in their own country

As regards the situation in child psychology, there are, in addition to the National Institute of Child Psychology, at least four highly organized and fully staffed clinics in London—namely, the London Child Guidance Clinic, the Child Clinic at the Maudsley, the Tavistock Clinic, and the Jewish Clinic, each of which has been in existence for several years and has treated a great number of maladjusted children At the Child Guidance Clinic, fellowships are open to suitably qualified medical practitioners and also to psychologists At Guy's and other general hospitals there are psychological clinics for children in which much valuable therapeutic and teaching work is being carried out An intensive course of instruction is given by Dr Moodie at the Child Guidance Clinic , at the Maudsley there is a series of lectures on the nervous and difficult child as part of the D P M course, and conferences and clinical instruction are open to social workers and medical men throughout the year , and there are also similar arrangements at the Tavistock Clinic

It would be most regrettable if the impression were created at home and abroad that the behaviour disorders of childhood were neglected by the medical profession in this country Fortunately, this cannot be said to be the case On the contrary, there is abundant evidence to show that both in London and in many provincial centres this branch of psychological medicine is receiving increasing attention —I am, etc ,

Virginia Water, Surrey, Oct 17th H DEVINE

INFECTION BY ANAEROBIC STREPTOCOCCI IN PUERPERAL FEVER

SIR,—In July, 1930,[1] I reported in this *Journal* the culture of strictly anaerobic streptococci from the blood of seventeen cases of puerperal fever—all these cases having been met with in the previous two years As this result was at variance with the experience of other bacteriologists in this country who have investigated the disease—and, indeed, with my own earlier experience also —I discussed whether perhaps the operations of chance had been chiefly responsible for my meeting with so many cases of an unusual type, or whether, at Queen Charlotte's Hospital, where I had encountered most of the cases, there had been an epidemic spread of these infections Reasons were given for rejecting both these hypotheses as unlikely, and I was driven to the conclusion that such cases are really of fairly common occurrence, and that I, in common with other bacteriologists, had often missed them by the employment of unsuitable blood culture methods During the fifteen months since that conclusion was printed I have had the opportunity of investigating, along with my colleagues Dr R M Fry Dr R Hare, and Dr Elizabeth Cooper, a further series of some 220 cases of puerperal fever These were chiefly cases received in the new Isolation Hospital at Queen Charlotte's Hospital at Hammersmith, which was opened in September, 1930—that is, cases derived from the maternity service of Queen Charlotte's Hospital itself and a rather larger number which had been delivered at home or in other hospitals anywhere in the London area or Home Counties

It is of interest to compare the findings obtained in this series of cases with my previous experience Of the 220 cases, 12 have given a culture of strictly anaerobic streptococci from the blood, usually on more than one occasion In only one case was there associated infection by haemolytic streptococci—the anaerobic variety being cultivated alone from the first blood culture, both varieties from the second and third Four of the 12 cases died, and 8 recovered , 7 of them had been delivered at Queen Charlotte's, and 5 elsewhere

The obstetric history of these cases confirms my earlier impression that infections by anaerobic streptococci are particularly prone to follow upon internal manipulation and an exhausting labour In 9 of the 12 cases under consideration such manipulations had been carried out, either for version, or high forceps delivery, or perforation, or for manual removal of an adherent placenta (3 cases) Only one of the 12 had had a normal labour without undue haemorrhage

We are still unable to say exactly what proportion of the cases admitted to the isolation block are infected by these organisms In about 40 per cent of them material from the cervix uteri yields a culture of anaerobic streptococci, and very frequently they are predominant It is, however, quite possible that in some of the cases these streptococci are present merely as saprophytes, and are not really infecting the living tissues Later on, we hope to get evidence on this point by means of tests for antibodies in the patients' bloods Meanwhile, our impression is that these infections are at least as numerous, although happily not so fatal, as those caused by haemolytic streptococci

The source of these infections is being investigated by Miss Cooper in this laboratory It is highly probable in view of the findings of Rosowsky[2] and other workers that they are true autogenous infections by organisms present in the genital tract before labour, and that these only become infective when the discharges have become " corrupted " by suppuration —I am, etc ,

Queen Charlotte's Maternity Hospital Research Laboratories Oct 14th L COLEBROOK

[1] *British Medical Journal* 1930 ii 134
[2] *Zentralbl f Gynäk* , 1912, xxxvi, 4.

RHEUMATOID ARTHRITIS

Sir,—"Crippled" (*Journal*, October 3rd, p. 630), though rightly pointing out the futility of dealing with focal sepsis to the exclusion of all else, is in error when she writes that the sex incidence has been but little stressed. Spender, over thirty years ago, laid great emphasis on this feature, and his observations have been confirmed again and again by subsequent writers. For some ten years or so it is true that the constitutional and diathetic abnormalities of the rheumatoid patient were almost forgotten as the result of the baneful influence of the school of focal sepsis and its adherent bacteriologists. All credit is due to Llewellyn, who, during this phase, constantly insisted on the necessity of regarding the patient as a whole, rather than as one composed of teeth, tonsils, and joints. The succession of dismal failures, coupled with the fact that the majority of true rheumatoid arthritics have no demonstrable focus of infection, has at last stemmed the tide of harmful surgical intervention against which some of us have been struggling for years.

Dr. Poynton's characteristically undogmatic and balanced reply to "Crippled" (October 10th, p. 678) indicates that, although he thinks that some form of microbial activity is necessary for the ultimate outbreak of arthritis, he yet believes that sensitization plays an important part in the production of the disease. There are many such indications in modern literature that opinion is coming to regard the joint manifestations of atrophic arthritis as allergic in nature, and therefore closely related to certain metabolic abnormalities generally accepted as belonging to the allergic group. The fleeting character of the initial joint swellings lends support to the view, and the ultimate pathological changes can undoubtedly be produced by vasomotor disturbances in the absence of a microbial agent. Careful desensitization with any form of protein will, in the early stages of an allergic disease, tend to produce benefit, or even cure. Probably this accounts for Dr. Warren Crowe's happy experiences. It would be interesting to know his precise definition of early uncomplicated cases of rheumatoid arthritis. That he has not had a single failure in their treatment with stock vaccines fills one with hope and amazement.

Our knowledge of rheumatoid arthritis has advanced over that of Kent Spender but little, because we have been side-tracked by insistence on infection as the principal etiological factor. Our additional knowledge is that all true cases of active rheumatoid arthritis exhibit a raised basal metabolic rate, considerably diminished sugar tolerance (some of the curves being exactly similar to those of early diabetes mellitis), and an output of urinary proteose (Oriel), which is capable of causing a flare-up of joint manifestations if introduced subcutaneously even in infinitesimal quantities. The significance of these changes is probably profound, but we must be constantly on our guard against accepting any one or other of them as being necessarily etiologically related to the disease, rather than as further manifestations of an all-embracing malady.

"Putting the cart before the horse" has produced edentulous patients whose oral disease was merely the result of constitutional changes. If we can prevent-untempered enthusiasm from making the same mistake in relation to signs suggestive of allergy we may look forward to some degree of real progress.—I am, etc.,

London, W.1, Oct. 12th. A. H. Douthwaite.

Sir,—It is with the utmost diffidence that I venture again into circles where, I am keenly conscious, I do not belong; but Dr. Poynton's letter has roused a desire to make a further observation.

Taking the disease as a whole, through its entire range from the elderly person to the child, there are two striking characteristics. The first is the great variety of causes, or at any rate of predisposing conditions, which give rise to approximately the same symptoms. One might instance such very diverse factors as influenza, exposure to damp or cold, mental worry or depression, dental and tonsillar infection, over-eating, and childbirth. The second characteristic is that no two cases seem to be alike. The end of the unchecked disease for all is crippledom, but the onset, progress, and reaction to treatment in each case is different. I have been wondering whether these two facts do not both point in the same direction, as indications that the disease is not infective but functional. If it were directly due to a primary infection would one not expect it to run a more regular course? And how can one reconcile this theory with the large number of predisposing conditions? I cannot agree with Dr. Poynton that it is a case of anything that "may just turn the balance against a sensitized patient," because in view of the profound disturbance to the organism as a whole, and the prolonged nature of the illness, it seems to me that something very fundamental must have gone wrong. I should have thought it far more probable that the root of the trouble lay in some functional defect, such as a deficiency of some gland secretion. This would account more easily for the variety of predisposing conditions, as various factors might affect the working of a gland, and thus produce the symptoms; even those cases apparently due to a toxic infection might have been caused by the toxin acting, not directly upon the tissues, but upon a gland. And this theory also leaves a margin for idiosyncrasy in the individual, which would account for the lack of uniformity in the development of the disease. The results of the interesting experiments in blood transfusion recently reported by Dr. W. S. C. Copeman also seem to bear out the idea; and if the disease is really of something the same nature as diabetes, it is the more understandable that it should be so much more serious in youth than in maturity.

A further indication which points the same way is that cases are known of cure by "mental healing." Such cases may be rare, but I, in my peculiar position, have heard of at least two which there seems no reason to doubt. These cases could only have improved if the cause of the trouble was controllable by the subconscious—that is, if it was functional. I put the suggestion forward tentatively, but I think those of your readers who may have studied the work of the late M. Coué will allow the validity of the argument. From these considerations, and from the preponderance of women among rheumatoid patients, it might be thought worth while to keep special observation upon the sex organs in such patients.—I am, etc.,

"Crippled."

October 13th.

JAW TRACTION IN BREECH LABOUR

Sir,—I regret that it was impossible for me to make an earlier protest against the method of jaw traction as described by Dr. Bourne at the end of his paper on "The management of breech labour" (*British Medical Journal*, August 29th). In my opinion it is a bad practice to slip the finger into the mouth and pull on the lower jaw. The finger-tips should be slipped over the upper jaw to the nasal pits, and the pull made on the head itself. It is evident that in this position any pressure that can be exerted is at a greater mechanical advantage, and it cannot tear the mouth.—I am, etc.,

R. C. Buist.

Dundee, Oct. 19th.

BREECH DELIVERY

SIR,—The recent correspondence in the *Journal* on this subject is interesting. As a result of a period of twenty-one years in general practice, the salient fact which has impressed itself upon my mind is the length of time which can be taken, with impunity, in delivering the after-coming head. At first the fear of asphyxia made one hurry, with the result that the child sustained injuries to head and limbs. On three fairly recent occasions the nurse has made a remark to me to this effect: "You took more than five minutes over the head; I was sure you were going to lose the baby." Delivery, of course, must be as quick as possible, but my impression is that there is not so much need for hurry as one is led to believe.

I am not convinced yet that the child can inhale liquor amnii while its head is in the pelvis. As to mortality, my deaths have as yet only occurred in those cases which have been deliberately changed into breech presentations.—I am, etc.,

Church Stretton, Salop, Oct. 6th. H. GOOCH, M.B.Lond.

SIR,—In the recent very interesting discussion on breech labour in the *Journal*, has there not been a slight tendency to over-emphasize the importance of the technique of the actual delivery, and to minimize the fact that most breech labours are preventable? Few will deny that the best of all treatments for breech cases is not to have any. A certain residuum indeed there will always be—surprise confinements, versions performed deliberately for obstetrical reasons (a gradually diminishing group), failed external versions, and errors in ante-natal diagnosis. But the fact remains that the vast majority of breech labours are preventable by a proper ante-natal vigilance. Our attitude, then, should be less one of complacency at a difficult breech case brought to a successful end by our dexterity, than one of a chastened humility that there should have been any call for a display of our prowess. It is good to win a cause, but it is better still to win it without a fight.

There are only two kinds of breech delivery: the easy and the difficult. And the important thing is that (except in multiparae with small babies and capacious passages) it is usually quite impossible to tell before labour into which class a given case will fall. The child may come tumbling into the bed unaided, or it may present the torso of a Hercules and the head of a philosopher, and its delivery reduce the unfortunate attendant to a state of nervous and physical prostration. The easy cases can be delivered successfully by any sensible method, but the difficult cases cannot be made easy by any technique whatever. They are inherently difficult, notwithstanding comforting counsel to "keep cool and all should be well." However coolly one may start a difficult case, one is apt to finish very hot indeed. If Mr. Alec Bourne finds the bringing down of extended arms "a most difficult manœuvre," it will probably be equally difficult for most other people. Let us then determine to reduce the number of our breech cases to a minimum, and to approach that minimum with a full consciousness of the hazards involved for mother and child.

Lastly, a stillborn child and a mother with a complete rupture of the perineum is even yet a distressingly common combination. While we have but a limited control over the welfare of the child, the integrity of the rectum is so completely in our power that this minor catastrophe of breech delivery should be almost unknown. A snip with scissors on each side of the vagina at the back part (a simple thing spoiled by a cumbersome name—episiotomy), and the rectum is safe from the most determined efforts to bring down extended arms. The snips are easily sutured. They heal well, and if they do not it is of little consequence. Let them always be done in primiparae. They will be done unnecessarily sometimes, but better ten unnecessary episiotomies than one torn rectum—I am, etc.,

Wisbech, Oct. 13th. A. J. HAWES.

RESUSCITATION OF THE NEWBORN

SIR,—In a paper in your issue of October 17th on the treatment of pneumonia by CO_2 inhalation, Professor Yandell Henderson makes the statement that I have adopted the American methods of resuscitation of the newborn by CO_2 inhalations and refraining from swinging and dipping the infants in cold water, etc.

I should be glad to know when these methods were begun in American maternity hospitals, and what literature is available on the subject. My investigations on the loss of heat and shock in the newborn date from 1924, and were published in the *Proceedings of the Royal Society of Medicine* in 1925 (vol. xviii). Further investigations on the treatment of asphyxia by inhalations of CO_2 and oxygen were published in the *Lancet*, August, 1927, and the *Practitioner*, June, 1931. I know of no literature published on this subject previous to my earlier papers. In a tour of the chief American maternity hospitals last year I did not find anywhere that all forms of artificial respiration had been abandoned, and that CO_2 and O_2 was used as a substitute.

I write this letter partly in defence of British research and partly because my methods of treatment of the newborn were very much criticized. Now time has proved their value.—I am, etc.,

London, W.C.1, Oct. 20th. A. LOUISE MCILROY.

DIPHTHERIA CARRIERS

SIR,—In the *Journal* of October 10th, Dr. George Chesney suggests that the nasal carriers described by me ought to have been labelled "nasal diphtheria," and, as such, effectively isolated. In support of this contention he quotes the definition of a carrier given in the Medical Research Council's publication on diphtheria. I would refer him to the context of that definition, where I read: "Thus difficulty may be experienced in deciding when a case is a carrier or a very mild case of diphtheria. The distinction is artificial" (p. 334). Thus I have included as carriers those patients who harboured diphtheria bacilli in the nose and yet exhibited neither membranous inflammation nor toxaemic symptoms. This attitude is readily supported by Goodall, who states, "A large proportion of carriers present some pathological condition such as rhinitis" (*Infectious Diseases*, p. 218). In this connexion I would also refer to the report on the diphtheria carrier clinic at Guy's Hospital (L. W. and R. J. Cann, 1927).

A number of nasal infections in Burton-on-Trent were, in fact, called nasal diphtheria, and isolated in hospital. These were characterized by actual membrane formation, other severe nasal lesions, or else by constitutional symptoms. The cases which attended for treatment at the clinic as "carriers" were quite free from constitutional disturbance, and the local nasal lesions were slight. As hospital isolation is the only effective isolation in an industrial community, and as the available accommodation was urgently required for the treatment of faucial diphtheria, Dr. Chesney will quite readily understand why the treatment of the cases in dispute had to be carried out elsewhere. Simple exclusion from school was not enough, and the daily supervision and treatment at the school clinic probably rendered them as harmless to the

community as hospital isolation would have done. Here I must remind Dr. Chesney that the policy of effective isolation has signally failed to control diphtheria, and that the modern hospital treatment of diphtheria has for its main object the prevention of mortality. I do not therefore favour, as a rule, the removal to hospital of cases of mild nasal infection with diphtheria bacilli, for the only good effect would be to dilute the percentage mortality rates. Dr. Chesney will not accuse me of despising these nasal conditions if I agree with him as to their tendency to form foci of infection in the community. It is, however, difficult to discover them until after the damage has been done. A few may be detected at random by medical inspection of school children, but the majority will escape, and, as in my own experience, many precisely similar lesions will be found which will never yield a positive swab.

Attempts to control diphtheria by isolation of carriers (or mild cases) have failed, and the attainment of a Schick-negative community will only be the fruit of tremendous labour. So diphtheria must remain in our midst, but the elimination of diphtheria mortality should not be an impossible ideal, since we are all agreed on the efficacy of prompt diagnosis and treatment in faucial and laryngeal diphtheria.—I am, etc.,

Public Health Department, Ayr, Oct. 12th. JAMES GRANT, M.B., Ch.B., D.P.H.

COMMON INJURIES OF THE KNEE-JOINT

SIR,—In a leading article in the *Journal* of October 10th the question is raised of whether joints from which one or both menisci have been removed are more or less liable to arthritis than their fellows, twenty years later. This is a question which would have been dealt with in the opening paper on "Treatment of common injuries of the knee-joint" had time permitted. The cases which one sees with osteo-arthritis of the knee are so often those giving a history of cartilage injury in early life, for which no operation was advised, that it seems reasonable to suppose that this has resulted from or been aggravated by repeated trauma to the joint. Such experience as I have is very definitely that in selected cases of recurrent lesions of the knee-joint, only surgical treatment can restore normal function, and that operation is also the safest insurance against later arthritis.—I am, etc.,

Birmingham, Oct. 17th. NAUGHTON DUNN.

UROBILINOGEN

SIR,—During the past few weeks I have been surprised to find the extreme prevalence of a positive reaction for *urobilinogen* in the urines of many people with disordered health. For years past, in the routine examination of urines, I interpreted the obtaining of a negative reaction for urobilin as indicative of no great hepatic disorder. From symptoms and other clues, however, I felt I should have got a positive reaction.

Although aware of Ehrlich's benzaldehyde reaction for urobilinogen, I was under the impression that the tests were equivalent. I was surprised, therefore, some three weeks ago, to find in the urine of a patient suffering from indefinite abdominal signs a strongly positive urobilinogen reaction when all other tests were negative. Since then I have been testing out in all kinds of illnesses, and find a positive—and sometimes the only positive one—in many cases taken recently ill. The reaction of most of the urines was alkaline, and acetone was present in the majority. My greatest surprise was to find it positive in the case of loss of vision in a man, aged 60, who came for glasses, where the urine was clear like water, with a specific gravity of 1001. He had also arterio-sclerosis and high blood pressure. Other eye cases seen recently—catarrhal conjunctivitis in one eye with herpetic eruption on the lips in a young patient with myopia—gave a very strong positive reaction; and in still another, with inflammation of the uveal tract, a positive reaction was also obtained. In colds, catarrhs, skin eruptions of the erythema multiforme type and dermatitis herpetiformis, of which I have seen several in the past weeks, and many other seasonal complaints, the reaction was frequently present.

This points to damaged hepatic cells[1] which are unable to deal with the urobilinogen which is returned from the colon. Its significance is that of marked putrefaction in the lower bowel.[2] The further significance is that in cases which seem to have no evidence of an etiological factor—obscure eye inflammations, obscure skin disorders, neurological cases, cardio-vascular disorders—the finding of this test positive is indicative not only of injured hepatic cells, but also of an unsuspected bowel toxaemia. Influenza and measles have been recognized for a long time as leaving a residuum of intestinal auto-intoxication which makes convalescence so tardy.

What if it should be found that such reaction is positive prior to the onset of such illnesses? May it not stand in relation to these disorders at least as a partial etiological factor? Whether the frequency with which I have found it positive in the past few weeks is associated with the season, time will show. But that such a condition can go on silently and hidden may indicate the link in a chain of evidence, which has been accumulating, of the great part bowel poisons play in various diseases.

Tests of the urines for bile salts (Hays) were sometimes very faintly positive. Van den Bergh's tests to find the form of bilirubin present have not been done—that is, direct, indirect, and biphasic. It is said[3] that it takes a considerable time before the injury of the hepatic cells and the accumulation of sufficient bilirubin in the blood give a positive reaction in the urine. The renal threshold for bilirubin is raised in haemolytic jaundice.

That the above interpretation may not be the true one I am fully aware. Thus bilirubin, from destruction of blood corpuscles by haemolysins, can be formed in other parts of the system besides the liver; and the production of bile can be increased even by 100 per cent. from other materials than haemoglobin by simply feeding with large carbohydrate diet.[4] However, I regard the interpretation as worthy of consideration. In about a dozen of the cases recently seen giving a positive Ehrlich reaction, Mutch's tyramine reaction was done to see if there was any abnormal bacterial action (carboxylase) associated with the presence of a positive Ehrlich reaction. Several gave positive reactions; but as sometimes it was not a pure ethereal extract which was obtained I could not rely on the results.—I am, etc.,

Darlington, Oct. 8th. R. CHALMERS, M.D., F.R.C.S.Ed.

THE LARYNGOSCOPE IN MEDICINE

SIR,—May I be allowed to point out a source of misunderstanding in the abridged report of my presidential address on the above subject, which you have done me the honour of publishing in your current issue? At page 703, paragraph 4, line 7, the "intrinsic cause" to which reference had been made was primary carcinoma of a vocal cord. If this be not mentioned, the sentence below commencing with "What a tragedy . . ." must be very

[1] Beaumont and Dodds: *Recent Advances in Medicine.*
[2] Bassler: *Diseases of the Alimentary Tract.*
[3] Beaumont and Dodds: Loc. cit.
[4] MacLeod's *Physiology.*

ambiguous. In regard to the second paragraph on page 704, the scriptural quotation I had in mind was from St. Mark, iv, 22: "For there is nothing hid which shall not be manifested."—I am, etc.,

London, W., Oct. 17th. HERBERT TILLEY, F.R.C.S.

FATS AND PEPTIC ULCER

SIR,—I think a really good negative is worth a score of inconclusive positives. I had a gastro-jejunostomy in 1918 for pyloric obstruction due to healed duodenal ulcer. I had contracted this trouble at the beginning of the war, and it had accompanied the whole of my military service. From earliest recollection I have had a fat intolerance. As a child I would never eat fat, and as an adult I avoided the least trace. One or twice I forced myself to eat fat, but the result was intense discomfort followed by vomiting. Milk, if drunk in quantity, caused very pale stools loaded with fat. Even now I have to take the greatest care in avoiding anything that is at all greasy. The only exception is butter; I can take a fair quantity of that.—I am, etc.,

Manchester, Oct. 15th. M.D.LOND.

HUNGER PAIN AND PRESERVATIVES

SIR,—That butter does not now contain preservatives I am pleased to know, and the blame which I attached to that food is to be attributed to certain proprietary articles that were banished at the same time. Not knowing what did contain preservatives I excluded everything which was not fresh in the literal sense of the word. With this dietary, hunger pains have gone, but they can again be induced by eating food with preservatives. Several years have gone by since I discovered my sensitiveness to adulterated food, and what perhaps is singular is that, with the passage of time, the sensitiveness has not abated.

Besides ourselves America is partial to preserved foods, whereas France depends largely on local produce, and if preservatives are a factor in the provoking of duodenal ulcers these disorders should be less prevalent with the French. If the requisite statistics are available they would be of value in assessing the influence preservatives have with those gastric troubles that are the bane of middle age.—I am, etc.,

London, W., Oct. 9th. JAMES FORREST.

THE TERM "CONGENITAL"

SIR,—In reply to Dr. Melgrave (October 10th, p. 681), I cannot quite appreciate his difficulty with regard to the use of the term "congenital." The word means "born with," and may quite properly be used as an adjective for syphilis acquired during ante-natal life, because the infant is born either with the disease or with the spirochaete in its body. It is a term which has nothing to do with hereditary transmission, and can no more be confused with "hereditary" or "inherited" than the term "ante-natal." As regards the term "connatal," to express infection acquired during the process of birth, I agree with Dr. Eric Pritchard that the word "intranatal" is one which, for several reasons, is more suitable.—I am, etc.,

London, W.1, Oct. 16th. W. M. FELDMAN.

SYNDROMES OF THE JUGULAR FOSSA

SIR,—I have just returned from a short holiday to read with interest Mr. N. Asherson's letter in the *Journal* of October 10th (p. 680), and can say with certainty that the tumour was not of tuberculous origin, nor did the petrous portion of the left temporal bone show any evidence of destruction. Unfortunately, we could not obtain permission for a more complete post-mortem examination. Our aim in writing the note published in the *Journal* of September 26th was to stress the difficulty in the diagnosis between a penetrating squamous carcinoma and a chordoma.—I am, etc.,

E. T. RUSTON, M.B., Ch.B.

Pathological Department, Royal Surrey County Hospital, Guildford, Oct. 15th.

PHYSICAL EDUCATION IN SCHOOLS

SIR,—In your report in the *Journal* of October 10th of Lord Dawson's address at Epsom College, it was particularly pleasing to read Lord Dawson's admirable remarks on the great value of properly conceived physical education. Those of us who ended our school days before the war, and suffered much at the hands of the time-expired sergeant of marines, with his squad drill and German gymnastics, may little realize the great developments that have taken place, largely as the result of the stimulus of the Board of Education, in the development of physical education in schools. A full physical examination often reveals errors of posture and physical defects, which will disappear during a boy's school life if properly cared for in a well-controlled course of physical training.

I have for the last few years been connected with the large day school at the Polytechnic in Regent Street, W., and have been enabled to see the good results obtained and borne out by records. I have asked the director of education at the Polytechnic to allow any medical practitioner who is interested to call in and see both boys and girls at work in either of the gymnasiums in the main building or the extension off Great Portland Street. Major Worswick is very pleased to extend this invitation, as the gymnasiums are in almost constant use by the schools between 10 a.m. and 4 p.m. each day.—I am, etc.,

London, W.1, Oct. 13th. T. PEARSE WILLIAMS.

BRITISH DOCTORS AND BRITISH HEALTH RESORTS

SIR,—In his very timely letter headed "A plea for British spas," published in the *Journal* of October 17th, "Medical Superintendent" writes:

> "The attractions of foreign spas and winter resorts are depicted so skilfully and alluringly that many are better known than those in this country, and the English doctor is often at a loss to know where similar benefits at home may be readily obtained, and with equal advantage to his patient. It is surely high time that some independent and influential medical body should undertake this task, investigate our resources, and be prepared to advise English medical men who need help in such matters."

This was one of the purposes for which the Committee for the Study of Medical Hydrology in Great Britain was formed, and as a national appeal has been made to British subjects not to go abroad without real need, the following brief account of the origin and work of the committee may be of present interest.

Partly owing to the already crowded state of the medical curriculum, and for a number of other reasons which need not be stated here, the subjects of medical hydrology, climatology, and physiotherapy in general are given very little attention in the medical schools in this country, and are certainly not systematically taught as they are in most Continental medical schools. To fill this gap a committee, consisting of medical men from practically all the British spas and from London, was formed, and they in turn drew up a panel of lecturers, all of whom have expert knowledge of climatology and spa treatment. These lecturers are available to give addresses, illustrated by film and lantern slides, to any medical school or medical society. It should be clearly understood that the

function of this committee is education, and not advertisement. The panel includes lecturers from London as well as from the spas; the list is sent to medical societies on application, and they have free choice of lecturer. The lectures deal with the nature of, and indications for, spa treatment, as well as the grounds for selection of a particular spa and the steps to be taken by the practitioner who wishes to send a case for treatment.

It is hoped that the scope of the committee's work will be considerably extended by the decision of the British Spas Federation at its last meeting to offer special facilities to parties of medical men, and of fourth and fifth year medical students, to visit certain of the British spas. For such parties a day's programme will be arranged, of which the principal features will be a conducted tour round the spa bathing establishments, with a lecture-demonstration on the general principles of spa treatment and on the types of cases suitable for treatment at the various spas.

"Medical Superintendent" suggested that the British Medical Association might undertake to investigate our resources for spa treatment and to advise English medical men who need help in such matters. I am quite sure that any assistance the Association can give in the common interests of patients, medical profession, and health resorts alike, either by way of investigation or publicity, would be very welcome. There is need for such help, particularly in the case of health resorts other than the spas, which are not represented by any organization, though it may be noted that very useful information is given in the section on "Spas and marine health resorts of Great Britain, Ireland, and New Zealand" in the *Medical Directory*.

I shall be glad to forward full particulars concerning the above-mentioned lectures and the facilities offered for visits to the spas to the secretaries of any Branches or Divisions of the British Medical Association, or of any other medical societies.—I am, etc.,

GEOFFREY HOLMES,
Honorary Secretary, Committee for the Study of Medical Hydrology in Great Britain.

11, Ripon Road, Harrogate, Oct. 19th.

BRITISH GOODS FOR HOSPITALS

SIR,—Might I ask members of the medical profession to do their best to carry out the request of the Prime Minister to buy British goods? For years I have tried to impress upon the staffs of hospitals with which I am connected the desirability of buying British goods, especially catgut, rubber gloves, drugs, and appliances. At the present time these are bought largely from foreign sources, possibly through carelessness. It is true that sometimes foreign articles are cheaper than the home products, but that is because the trade of their own country is protected, and the traders have acquired half (or more than half) of our trade, and can therefore manufacture in larger quantities. If we individually try to increase our markets at home, then we will be able to manufacture in larger quantities, and prices will come down.

It may be argued that charitable institutions should buy in the cheapest markets, and that they should take no share in party politics; but this is not a question of party politics, it is one of national expediency; and charity, even in charitable institutions, begins at home. Any money going abroad at the present time increases the trade balance against us, and we, as members, can each do our part in urging hospital secretaries, stewards, and the matrons of the smaller hospitals to give the work to our own people.—I am, etc.,

London, W.1, Oct. 16th. DUNCAN C. L. FITZWILLIAMS.

VACCINATION AND ECONOMY

SIR,—Among the many suggestions that have been made to save public money in these hard times there is one which I have not yet seen put forward, and I therefore venture to do so. I think that a considerable sum might be saved by reducing the expenditure on vaccination against small-pox. Not for one moment do I doubt the efficacy of Jennerian vaccination against this disease, but the law enforcing compulsory vaccination has been almost a dead letter for many years, and very few up to the present are a penny the worse. There is indeed plenty of small-pox in this country, but it is of the mildest possible variety. We have been told that our endemic small-pox may at any time alter its character and become virulent, but so far, although rife for a number of years, this has not happened. All the virulent cases of the disease which have occurred during the last twenty years have been imported from abroad, and the sporadic outbreaks resulting from them have been easily controlled by systematic vaccination and isolation of contacts. As long as small-pox is a notifiable disease—and a notifiable disease it must remain—virulent cases imported in the future will be amenable to the same measures. It is, however, a waste of public money to provide vaccination at the public expense for all and sundry. In my opinion public vaccination should be restricted to: (1) contacts with a case of virulent type; (2) members of the various public services (Navy, Army, etc.), who are likely to be sent abroad. If vaccination by public vaccinators were restricted to these categories the amount of money expended by the State could be reduced to less than one-tenth of what it costs at present.—I am, etc.,

H. HALDIN-DAVIS, M.D., F.R.C.P.

London, W.1, Oct. 19th.

Universities and Colleges

UNIVERSITY OF OXFORD

At a congregation held on October 15th the following medical degrees were conferred:

D.M.—R. M. Humphreys.
B.M.—M. W. C. Oldfield, J. H. Hunt, N. L. Rushby.

UNIVERSITY OF LONDON

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC DIPLOMA IN PUBLIC HEALTH.—Katherine Barnett, R. E. Barrett, H. L. W. Beach, Sarah Boyle, E. Cochrane, May P. Cowell, H. A. Crouch, N. J. England, D. W. G. Faris, Marguerite M. Fenn, H. S. Gear, J. E. Howard, I. J. Jones, G. C. Kelly, T. C. Lonie, Hazel Machado, G. R. Marcano, Hilta I. C. Pfister, S. M. Rafi, Dorothy M. Rees, Florence M. Rhodes, J. T. N. Roe, A. P. Ross, B. M. Roy, C. R. Selous-Jones, S. P. Srivastava, A. T. Till, Sarah M. F. Walmsley, W. J. Webster.

UNIVERSITY OF SHEFFIELD

At the congregation held on October 14th the following medical degrees were conferred:

M.B. AND CH.B.—J. E. Edson.

UNIVERSITY OF DUBLIN

TRINITY COLLEGE

At the Autumn Commencements of Michaelmas term, held on October 13th, the following degrees in the Faculty of Medicine were conferred:

M.D.—G. M. Irvine, H. B. van der Merwe.
M.B., B.Ch., B.A.O.—M. E. Kirwan.

UNIVERSITY OF GLASGOW

At the graduation ceremony held in the Bute Hall on October 17th the following degrees were conferred by Principal R. S. Rait:

M.D.—*J. Fine, *D. R. Hamilton, W. D. Allan, T. J. Steven, J. Stirling.

M.B., Ch.B.—*R. J. Lumsden, *Anne C. Aitkenhead, *W. S. Bell, *W. A. Roxburgh, *A. T. Elder, *A. Lyall, Eleanor Badenach, P. Binnington, N. V. Birrell, M. D. Black, J. C. Blair, A. M.

rown, C M Burnie, A Cameron, R Cameron, D Casey, R M. rang, B Sc , W N S Donaldson, A Eschbacher, J B Fleming, B Fordyce, A C Forrester

* With commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

quarterly council meeting was held on October 15th, when ie president, Lord Moynihan, was in the chair.

Mr Ronald Yates Stevenson was introduced, and signed the oll of Macloghlin Scholars. Diplomas of membership were anted to P S Bassalyi, H N. Gregg, G S Malik, Sosa attnew, A Shafi, and G. Steane.

Sir Percy Sargent and Mr. Wilfrid Trotter were re-elected embers of the executive committee of the Imperial Cancer esearch Fund

It was reported that ten out of twenty candidates were iccessful at the primary examination for the Fellowship, hich was held at Melbourne in August. It was also reported iat ten candidates had applied for admission to the primary amination for the Fellowship to be held at Toronto on ctober 20th and following days

Annual Meeting

The annual meeting of the Fellows and Members will take ace at the College, Lincoln's Inn Fields, W.C , on Thursday, ovember 19th, at 3 p m. Copies of the annual report to land before the meeting can be obtained on application the secretary of the College. Motions to be brought forward the meeting must be received by the secretary not later an November 9th.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

a meeting of the College, held on October 14th, Sir Norman alker president, in the chair, it was resolved that, in view the national situation, the ceremonies in connexion with e celebration of the 250th anniversary of the foundation the College be postponed to a future date to be determined the College.

CONJOINT BOARD IN SCOTLAND

e following candidates have been approved at the examina- as indicated

FINAL PROFESSIONAL.—O Rosset, Jean V Rosset, C Hoole, O E R Chavasatne, W E MacDougall, J I Meikle, R F Hudecek, B Taylor, D K Cowan, J G Thomson, F Ludeni, S E terson, A V Piens, L J Scott, A A McNish, J Jansen, R Gupta, D Tolmie, D Houston, F C John, A J Ritchie, Taylor, E J Ratnavake, A I Sayed, L Lumbinoon, T Innasagam, A P. McDonald, D. D W Wardyaperu, Lt-c D Scott

D P H.—Hannah M M Elder, W E Orchard, E J G Wallace, ie thy M Taylor, J Thomson, C P Hay, H S Chaturvedi, ssie I Rose Anna M M Kerr, Winnifred N. Henderson, Elizabeth Nimmo, Margaret B McLaren, D J. Campbell, M Sokolovitch, A Burgess. *Part I* W E Faulkner, D M Alston, F A Tost G A H Gumley, Jessie M Jamieson, Elizabeth R. mieson, Elizabeth S Walker, R P A. Macaulay, J W Gordon, Gorman

The Services

DEATHS IN THE SERVICES

rgeon General Thomas Grainger, C.B , Bengal Medical rvice (ret), died at the Bolingbroke Hospital, London, on ptember 21st, aged 68. He was born on December 25th, 62, the son of Mr. Robert Grainger of Dundonald, and was ucated at Queen's College, Belfast, where he took the M.D., th honours, M Ch , and B A.O. of the Royal University of land in 1884 Entering the I M.S. as surgeon on October t, 1885 he became surgeon major after twelve years' service, d six months later got a special promotion to lieutenant-lonel for his services in the Tirah campaign. He attained e rank of colonel on December 3rd, 1909, and that of rgeon general on May 25th, 1914, and retired on April 29th, 18 He served on the North-East Frontier of India in e Sikkim campaign of 1888, and was present at the forcing the Jelapla Pass (medal and clasp), on the North-West ontier in the Hazara campaign of 1891 (clasp) ; and in e Tirah campaign of 1898, when he took part in the tions of Dargai, and of the Sampagha and Arhanga Passes, id the operations in the Bara Valley, was mentioned in spatches in G G.O No. 244 of 1898, receiving the frontier edal with two clasps, and a special promotion to lieutenant-lonel For the next ten years he served in civil employ in engal, where he was for a long time civil surgeon of urshidabad He received the C.B. in June, 1911, a good rvice pension on April 2nd, 1914, and was made honorary rgeon to the King on April 1st, 1915.

Obituary

SIR J. HAWTREY BENSON, M.D., LL.D.

Past President, Royal College of Physicians of Ireland

As briefly announced in our last issue, Sir J. Hawtrey Benson, M.D., F.R.C.P.I., died at his residence in Fitzwilliam Square, Dublin, on October 9th, at the advanced age of 88. He was the second son of Professor Charles Benson, M.D., of 42, Fitzwilliam Square, a former President of the Royal College of Surgeons in Ireland. His mother was a daughter of Mr. Maunsell Andrews of Raheny House, King's County. Concurrently with his Arts course, John Hawtrey Benson studied medicine at the Royal City of Dublin Hospital and at Sir Patrick Dun's Hospital, as well as in the schools of the Royal College of Surgeons and Trinity College, Dublin, taking his M.B. degree at Dublin University in 1865, and proceeding a few years later to the M.D In 1866 he obtained the L.R.C.P.I. diploma, and in 1874 was elected to the Fellowship of the Royal College of Physicians of Ireland.



In 1866 he was appointed honorary assistant physician to the Royal City of Dublin Hospital, and two years later was promoted honorary physician, a position which he held until 1894, when he retired from the active staff and was elected consulting physician to the hospital. For over forty years he held the appointment of medical adviser in Ireland to the Colonial Office, retiring from that office in 1926 In 1910 he was elected President of the Royal College of Physicians of Ireland, and held that office again in 1911. He received the honour of knighthood in March, 1912, and in July of the same year the honorary degree of LL.D. was conferred on him by Dublin University. In 1871 he married Dorothea, daughter of the Rev. Thomas Power, incumbent of Templeree, County Tipperary, and formerly rector of Clashmore, County Waterford, who died in 1923. He had no children.

[The photograph reproduced is by Lafayette (Dublin).]

R. M. MANWARING-WHITE, M.D., F.R.C.S.Ed.

President, Lancashire and Cheshire Branch, British Medical Association

The news of the unexpected death of Dr. Richard Manwaring-White of Northwich, at the age of 52, came as a great shock to the people of Cheshire, and especially to his fellow medical practitioners over a large area, by whom he was held in the highest esteem He was the second son of the Rev. E. R. Manwaring-White, vicar of Mendlesham in Suffolk, and from Pocklington School, York, proceeded to Edinburgh University, taking the M.B., Ch.B. degrees in 1903 He held the appointment of house-surgeon at the David Lewis Northern Hospital at Liverpool under Mr Monsarrat, and the appointment of house-physician under Dr Warrington at Liverpool Children's Hospital He afterwards sailed to China as a ship surgeon, and spent some time in Hong-Kong, where he wrote his thesis for the M.D , which he took in 1906. In the following year he began practice at Northwich, and took his F.R.C.S Ed. in 1914. At the outbreak of the war he volunteered for service, but was refused on three occasions. His senior partner, Dr. Dorman, was accepted,

and Dr. Manwaring-White had to work a very large practice single-handed. Notwithstanding this, he took on more work to release others for service, and, in addition, was surgeon to the British Red Cross hospitals at Winnington and Witton Vicarage, as well as being doctor to the Gadbrook Works, where the employees were manufacturing T.N.T. Later he went to Blackpool as medical officer to the Red Cross Hospital, and subsequently, at the request of Sir Robert Jones, he went to assist at the Orthopaedic Hospital at Alderhey, Liverpool, where he remained until the end of the war. He was surgeon to the Victoria Infirmary, Northwich, and to the Mid-Cheshire Orthopaedic Clinic. He was certifying factory surgeon, surgeon to the Post Office and to the police at Northwich, and held various appointments to industrial undertakings in the neighbourhood, notably to the works at Lostock of the Imperial Chemical Industries.

Here was a man doing the work of two men, yet he found time to attend meetings of all sorts—Annual Representative Meetings, Branch Meetings, Divisional and executive meetings, and meetings of the Cheshire Panel Committee. His death has deprived the Lancashire and Cheshire Branch of its president and the Mid-Cheshire Division of its representative and former chairman. Endowed as he was with but a frail physique, he never spared himself in the interests either of his patients or of his fellow practitioners. To attend even an executive meeting of the Division he would drive his car through long miles of fog. When the Mid-Cheshire Division was asked to send in a name for the presidency of the Branch, with one accord that of Dr. Manwaring-White was sent. In June he delivered his presidential address, which amply testified to the width and to the depth of his medical knowledge. He was accustomed to think matters out for himself, and was not afraid to criticize the action of headquarters whenever he thought it necessary, and he did it in no uncertain manner. He is lost to the Association, just when his influence was being felt by those with whom he came in contact, and in the Mid-Cheshire Division, for which he did so much, there is no one to take and adequately fill his place.

R. D.

THE LATE DR. CHEARNLEY SMITH

Sir Alexander Houston writes: Many Merchistonians must have read with deep sorrow in the *Times* of the death of Dr. W. Chearnley Smith. The school register reads as follows: "Born 4th June, 1865, played in the first fifteen 1881–84, in the first eleven 1881–84; left 1884. Edin. Univ., M.B., C.M., 1890. St. George's Hospital, London. Served in the South African War as Surgeon Captain, 8th Batt. Imperial Yeomanry 1900–1." And now we must write "Finis, October 18th, 1931." Chearnley Smith was a great athlete, and his handsome face and figure and breezy personality made him seem almost like a god to his admiring school-fellows. Those were the days (1881–84) of giants in the "rugger" world of Merchiston—Tom Anderson, Fred Goodhue, the Neilsons, Macmillans, Scotts, and Jones's. Later, Chearnley Smith played "rugger" for Edinburgh University and, I think, for St. George's and the United Hospitals. Only about a year ago Chearnley, still retaining nearly all the beauty of face and figure and vigour of his youth, told the writer that he had only two athletic regrets: one was that he had never been chosen to play for Scotland—and indeed it was always a mystery to his friends that the selectors passed him over—and the second was that he only got *second* prize for throwing the cricket ball, although he threw well over 100 yards. Since Merchiston and University days I saw Chearnley Smith all too seldom, but the bonds of good-fellowship, of reminiscences of Merchiston and Edinburgh University, remained ever green, as will his dear memory. I am not qualified to speak of his professional attainments, but can well imagine that his patients must have thought his mere presence a finer tonic than all the drugs in the *Pharmacopoeia*. His obituary notice says: "It was his special request that there should be no flowers and no mourning," and so Merchistonians will think of Chearnley chiefly when the sun is shining, and when they are watching great athletic contests and games of skill, in all of which he excelled.

We regret to announce the death of Dr. Herbert Annesley Eccles, on October 4th, at the age of 62. He came of a family long connected with medicine. He was a son of the late Dr. W. Soltau Eccles, and only brother of Mr. W. McAdam Eccles, consulting surgeon to St. Bartholomew's Hospital. From University College School he went to St. Bartholomew's in 1886, and obtained the M.R.C.S., L.R.C.P. diplomas and the M.B. degree of the University of London in 1891, proceeding M.D. in 1893. At St. Bartholomew's he was house-physician to Dr. Samuel Gee, and, later, succeeded his father in practice in Upper Norwood. During the war he became an expert in the radiology of jaw injuries, serving as medical officer in charge of the *x*-ray department of the Croydon General Hospital from 1915 to 1923. He was also radiologist to the Norwood Cottage Hospital, and for two years chief assistant in the *x*-ray department of St. Bartholomew's. Dr. Eccles retired in 1924, and went to live at St. Just-in-Roseland, Cornwall; he will be greatly missed by all his numerous friends, and, in particular, in the county he had made his own.

Medical News

Dr. W. Langdon Brown will deliver the inaugural address before the Abernethian Society of St. Bartholomew's Hospital on Tuesday, November 3rd, at 8.30 p.m., in the medical and surgical theatre. His subject is "Dr. Robert Bridges, the poet of evolution."

On Friday, October 30th, at 5.15 p.m., the autumn series of Chadwick public lectures will be inaugurated in the Great Hall of the British Medical Association, by Dr. F. J. McCann, who will lecture on "The prevention of cancer." Sir William J. Collins, chairman of the Chadwick Trustees, will preside. Among other lectures in metropolitan and provincial centres arranged for the autumn and coming spring will be "The outlook on tuberculosis—now and then," by Sir Robert Philip at Gateshead, November 13th, and "Benjamin Ward Richardson—his life and work," by Dr. J. D. Rolleston, at the Medical Society of London on February 18th. Further information may be obtained from the secretary, Mrs. Aubrey Richardson, at the offices of the Trust, 204, Abbey House, Westminster, S.W.

A series of six "Tales of travel and adventure" (illustrated by lantern slides or cinematograph) will be given in aid of King Edward's Hospital Fund for London at the Portland Hall, Regent Street Polytechnic, on Wednesdays, at 5 p.m., from November 4th to December 9th. Tickets may be obtained from the secretary, King Edward's Hospital Fund, 7, Walbrook, E.C.4, or at the doors.

The National Institute of Industrial Psychology has arranged a course of three public lectures, under the Heath Clark Bequest, on recent research into the causes of industrial accidents. They will be delivered by Mr. Eric Farmer, investigator to the Industrial Health Research Board, on Mondays, November 2nd, 9th, and 16th, at 6 p.m., at the Royal Society of Arts, John Street, Adelphi, W.C. Admission free without ticket.

The sixth Austrian Congress Against Alcoholism will be held in Vienna from November 21st to 23rd, when the special subject for discussion will be the treatment of inebriates, particularly the legislation on this subject.

OKMAN'S PARK STATION (L.N.E.R. main line). [illegible] Tavistock Square, W.C.1.

The following lectures, arranged by the Fellowship of edicine and Post Graduate Medical Association, will be ven in the lecture room of the Medical Society of ondon, 11, Chandos Street, W: October 28th, at 4 p m, r R O Moon, "Heart disease" (no fee), October 26th, 5 p m, in connexion with the M R C P. course, Mr L Gimblett, Medical ophthalmology—with special ference to retrobulbar neuritis, infective diseases of the eal tract, and intracranial lesions", October 26th, at 30 p m Dr J W McNee, "Recent work on diseases of the liver", and October 28th, at 8 30 p m, "Recent ork on diseases of the spleen" (fee for each, 10s 6d, vailable at the lecture room) Free post graduate demon- rations will be given as follows October 27th, at 3 p m, r Leonard Findlay at the East London Hospital for hildren Shadwell, and at 6 30 p m, by Mr Gilbert ubb at the Golden Square Throat Hospital, W Courses November are as follows November 2nd to 21st, edicine surgery and gynaecology at the Royal Waterloo ospital (fee £3 3s), November 2nd to 28th, neurology the West End Hospital for Nervous Diseases, Welbeck reet at 5 p m daily (fee £2 2s), this course will only held if a minimum of ten enter, and early application desirable November 2nd to 6th, proctology at Gordon ospital (fee £1 1s), Royal Westminster Ophthalmic ospital, November 9th to 28th (fee £4 4s) Details other courses will be announced later Copies of Pabuses may be obtained from the Fellowship of edicine 1, Wimpole Street, W 1

A quarterly court of the directors of the Society for chef of Widows and Orphans of Medical Men was held 1 October 14th, when Mr V Warren Low, president, s in the chair The deaths of two of the widows was ported One, who had been in receipt of grants since 126, had received £450, her late husband had been a emb r for four years, and paid in subscriptions £8 8s he other had been on the funds since 1922, and had ceived £750 in grants, her late husband was a member r twenty years, and paid in subscriptions £42 Special ants amounting to £107 10s were voted for the sistance of orphans with their education, and £610 was so voted as a Christmas present to the widows and phans to be paid in December Each widow over 75 ears of age is to receive £15, those under 75 £10 and ch orphan £10 The new Legacy Book was shown and reatly admired The book has been illuminated and grossed by Sir Frederick Hallett, and was acknowledged y all who saw it to be most artistic A cordial vote of hanks was passed to Sir Frederick Hallett for the time nd skill he had expended on the work The society is pen to any medical man who, at the time of his election, resident within a twenty mile radius of Charing Cross articulars may be had from the secretary at the offices, Chandos Street, W 1

The first award of the Colyer prize is due to be made the Royal Society of Medicine in July, 1932 This rize was founded in 1926, to commemorate the twenty ve years service of Sir Frank Colyer as honorary curator f the odontological museum The accumulated income f the fund may be used every third year for the purpose f awarding a prize for the best original work in dental cience completed during the previous five years, by a ental surgeon educated at any recognized dental school n Great Britain or Northern Ireland who has not been qualified to practise more than five years at the date of he award Applications from candidates should be sub- nitted to the secretary 1, Wimpole Street, W, not later han March 31st together with a general account of their s arches both completed and in progress

The issue of *Paris Medical* for October 3rd, which is levoted to neurology, contains an account of the Inter national Neurological Congress held from August 31st to September 5th at Bern, in which the British speakers ncluded Sir James Purves Stewart, who dealt with the neurological and psychiatric symptoms of cerebral umours Messrs Hugh Cairns and Stanford Cade, who liscussed the effect of radiotherapy and radium therapy on cerebral tumours, Dr Graham Brown of Cardiff, who lescribed the tonic responses of the mesocephalon, Dr Denny Brown, the role played by the terminations of the afferent nerves on muscular tonus, Dr S A K Wilson, disorders of tonus at different physiological levels, Dr J G Greenfield, the anatomy of acute non suppurative infections of the nervous system, and Dr C P Symonds, the diagnosis and treatment of syndrome following injuries of the head

Mikrokosmos, the monthly journal for applied microscopy, microbiology, and microscopical technique, published at Stuttgart under the editorship of Dr G Stehli, enters on its twenty fifth year with its October issue

At the close of the second International Hospital Congress, held last summer at Vienna, it was decided that an international hospital association should be formed with the object of bringing about an international exchange of opinion and co operation in all problems and fields of hospital work The association is to consist of two classes of members—namely, those consisting of individuals associated with hospitals in one way or another and those representing firms standing in a business relationship to the hospital, such as architects builders merchants, etc The annual subscription for the first group is 5 dollars, and for the second 10 dollars

Brevet Lieut Colonel A B Harris, T D has been appointed a deputy lieutenant of the county of Essex

The buildings of the Medical Faculty at Seville have been almost entirely destroyed by fire, entailing a loss of about two million pesetas

Letters, Notes, and Answers

All communications in regard to editorial matters should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1**

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QUERIES AND ANSWERS

Lymphadenoma

"PRACTITIONER" writes Can any of your readers suggest treatment for a young man with lymphadenoma The cervical glands are the only Principally involved but his chief disability is due to the fact that his disease is associated with the Pel Ebstein syndrome and for four or five days every three weeks the patient is practically incapacitated by pyrexia and malaise

Oxaluria

Professor A C Frazer Physiological Laboratory St Mungo College (Glasgow) writes If Inquirer (October 10th p 685) would send to me here a sample of the patient's urine passed at 10 p m then two days after another sample of his urine passed at the same time but having that day partaken of a liberal quantity of sweetened diet I perhaps may be able to help him The so-called oxaluria has undergone modification in its origin

Survival after Prostatectomy

Dr Geo P Coldstream (Brondesbury) writes I am glad to be able to tell Mr Dickie of a patient of mine who is 94 years and 6 months of age The late Mr Openshaw removed this man's prostate in October, 1907.

Income Tax

Retirement Cash Receipts

"W P" retired from a partnership as from June 30th, 1930, and took up medical work in another part of the country He has been informed that he will be assessed on the amount of the payments made to him in respect of work done before that date, but not paid for when the last cash account was made up

*** In our view this is incorrect The liability for income from the new work must be calculated without reference to the former income, and the latter should be calculated, as far as "W P" is concerned, just as if he had retired The true basis of liability is the value of the year's bookings, but where the income is reasonably steady year by year the cash income must be approximately the same as the value of the bookings, and is then acceptable on grounds of convenience But just as his bookings cease at the date of withdrawal, so it must be assumed that his cash receipts cease, otherwise the cash basis becomes unfair to the taxpayer That basis is not allowed during the first two or three years of a practice, and the tax is then paid on an amount greater than the cash receipts The revenue should not, therefore, now have tax on the final cash receipts, or it will receive a total tax in excess of what is due

Establishing a Residence in this Country

"Member B M A" has been resident abroad in the past, but has visited this country at, roughly, two yearly intervals In April, 1932, he will take up permanent residence here, and up to August will be receiving pay through the Colonial Office On what basis will he be assessable for 1932-33?

*** On the amount of his income for that year, the previous year's basis does not apply to 1932 33 in the circumstances

"Unity" explains that A intends to take over B's practice as from November 16th, 1931 How should the income tax liability for 1931-32 be dealt with?

*** We presume that A is acquiring the whole and not merely a share of a practice In that case B's liability for adequate period April 5th to November 16th 1931 will be determined by his actual earnings during that period and A will be assessed as having commenced a new practice as from November 16th The method of splitting the assessment for the initial year applies only to cases where one partner remains in the new firm

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LETTERS, NOTES, ETC.

Treatment of Varicose Veins

Dr D Montgomerie Paton (Kilmore, Victoria, Australia) writes For many years I had a large experience in treating varicose ulcers, and the following methods gave 95 per cent of successes For varicose veins below the knee (when too inflamed for a bandage) absolute rest in bed and, orally, 1 drachm of low potency anti-diphtheria serum three or four times a day (200 to 250 units per c cm, B W and Co) The serum is a panhormone medium carrying the animal's complete hormone content for defence and repair of tissues in the presence of the paralysing and proteolysing action of diphtheria toxin on the tissues The bandage was a two and a-half-inch white cotton elastic one, which allowed the skin to "breathe," and kept it dry The length was regulated by the weight of the patient When this bandage was continuously applied it removed all the symptoms of varix, and in time the veins returned to their normal condition If any patient returned, it was through failing to bandage properly, discontinuing prematurely, or wearing the bandage after all the elastic had perished For varicose ulcers all patients were sent to bed, except in those occasional cases favourable to ambulatory treatment They were all treated with the same serum and the same dosage, and were visited generally once a week The ulcers were dressed with normal or anti diphtheritic serum (low potency) or with boric fomentations These were applied on lint cut to the size of the ulcer and covered with oiled silk, with a margin of a quarter of an inch This kept the skin dry The dressing was changed by the patient two or three times a day With this treatment the most callous ulcer began to show, in a short time, granulations, which progressed to complete healing The bandage completed the treatment, but the patient had to continue its use permanently My record case was that of an old lady of 82, who had a varicose ulcer under the outer malleolus for over fifty years This was completely healed, but as she refused to go on wearing the bandage the ulcer broke down, and was again successfully healed. Her family attended to the bandage after that

Phimosis and Circumcision

Dr A. T Brand (*Driffield*) writes. The routine circumcision of male babies, which is so fashionable, is a most objectionable craze, and an unjustifiable mutilation When there is no phimosis, circumcision is obviously uncalled for Where it does exist a simple operative measure which involves no mutilation nor loss of tissue, is available This measure is fully described in my book, *Clinical Memoranda* (Baillière) in the article on "Phimosis" (p 195), so it need not be repeated here

Antimony in Lymphoid Hypertrophy

Dr T P Sturm (Leigh, Lancs) writes As a practitioner who for many years has enjoyed exceptional opportunities of observing the adenoid child, I wish to record an observation which I believe to be of interest In certain cases of simple hypertrophy of the pharyngeal lymph ring in children so marked an improvement follows the administration of small doses of antimony that operative treatment occasionally becomes unnecessary This is an observed fact which seems worthy of further investigation Upon purely clinical grounds I have arrived at the conclusion that antimony enables the tissues of "the catarrhal child" to regain or acquire some power of calcium fixation, the loss of which appears to be the cause of lymphoid hypertrophy

Radiation Therapy

Dr Arthur H Laird (Coventry) writes I have read with interest the review of Dr Kaplan's book on *Practical Radiation Therapy* in the *Journal* of October 3rd The review states "There is scarcely a human ailment for which x rays are not suggested as a cure, and the headings of 'Asthma,' 'Pertussis,' and 'Malignancy of the nose' taken at random, will illustrate the extent to which the author's faith has carried him" The word "however" in the next sentence suggests to me that the sentence above quoted is intended to be taken in the light of rather adverse criticism This seems to me rather like putting one's money on the wrong horse Radiotherapists in this country know quite well that the value of *x* rays as a therapeutic agent is not sufficiently recognized by the average practitioner For example, how many are aware that x rays shorten the coagulation time of the blood? Cases needing operation in which an oozing of blood is to be feared would benefit by x-ray therapy previous to the operation But how many such cases ever reach the x-ray department of our hospitals? I venture to say, very few Further, how many of us know that x rays is the treatment *par excellence* for such conditions as acne indurata, Bazin's disease, or excessive localized sweating? I may add that Dr. Kaplan does not claim x rays as a cure for asthma I quote from his book "In some cases x rays relieve this condition" My own personal experience absolutely justifies such a statement

Lord Derby Hospital for Women

Dr J B Higgins writes I find my name has appeared on the list of the staff of the Lord Derby (St Margaret's) Hospital for Women, Manchester, as the honorary radiologist This is an error, and I have taken steps to have my name removed

Marylebone Parliamentary Election

Dr Arthur Whitfield (London, W 1) writes May I trespass on your space in order to answer numerous inquiries without sending individual replies? I am *not* standing for Parliament as a Socialist candidate in this neighbourhood It is true that, after reading Socialists' speeches and noting their actions, I am apt to "see red," but I have no intention of standing or voting for that colour.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 44, 45, 46, 47, 50, 51, 52 and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 239

BROOKMANS PARK STATION (L N E R main line) Tavistock Square, W C 1

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

364 Tabes in Early Life

W Pires (*Rev. Sud Americana de Med et de Cirurg.*, July, 1931, p 711) regards juvenile tabes as not altogether a rare disease, failure to diagnose it is often due to the fact that it exists without the familiar well defined signs of the adult form of the disease, Rombergism, loss of deep sensibility, and astereognosis being often not marked Optic atrophy is a very important sign, found in 20 out of 34 reported cases incontinence of urine is a suggestive and frequent indication The Argyll Robertson pupil, generally present, is definitely diagnostic of the condition, whereas abolition of the deep reflexes of the lower limbs is common to Friedreich's ataxia and peripheral neuritis, in the differential diagnosis from congenital ataxia, the increased deep reflexes of the latter condition afford a clue except where the diseases coexist Serological tests should always be employed Amaurosis and cerebral disturbances are the most common troubles which bring to notice juvenile tabes, but all symptoms and signs of the adult form may be found Pires reports two cases *in boys 12 years old, in both there was optic atrophy*, incontinence of urine, and lightning pains In one case, in which there was also well marked ataxia, great benefit followed malarial therapy including improvement of the vision, in the other case, where malaria therapy was refused the headache disappeared after a single injection of N A B and bismuth Pires emphasizes the need for watchfulness in diagnosing the condition, while still amenable to treatment

365 Mental Derangements in Hypothyroidism

Ethelene P Hayward and A H Woods (*Journ Amer Med Assoc*, July 18th, 1931, p 164) discuss mental derangements in hypothyroidism, with special reference to their misleading influence on diagnosis This condition sometimes shows its most striking effects through interference with the function of the brain cells The patient may lapse gradually into depression and an anxiety state thought may become slow and bodily movements retarded and the condition is easily mistaken for the depressed type of psychosis Alternatively, there may be irritability and excitement leading to a diagnosis of mania Patients may manifest thought distortion with such bizarre hallucinations and delusions that dementia praecox is erroneously diagnosed In these psychotic cases the physical signs of myxoedema may be present and yet be easily overlooked This is partly due to an insufficient psychopathic knowledge on the part of the physician, and also to the fact that the patient's mental attitude sometimes renders a physical examination difficult or impossible

366 Subacute Influenzal Endocarditis

S A Lofwenberg and H L Goldburgh (*Med Journ and Record* August 5th 1931, p 115) report a case of subacute bacterial endocarditis, with the necropsy findings and a description of the blood culture technique adopted for its recognition The condition is of comparatively rare occurrence An unmarried woman, aged 24, was admitted to hospital on the provisional diagnosis of typhoid fever She complained of fever, headache, weakness, and an infection of the hands, she gave a history of typhoid fever when 7 years old, and of two moderate attacks of chorea later In 1918 she was confined to bed for a fortnight with influenza, and each winter for the last four years she had had attacks of acute tonsillitis Her present illness began with fever and sweating followed by lumbar pain severe headache, moderate nose bleeding, and deafness in the left ear, without any evidence of involvement of other nerves On admission to hospital a provisional diagnosis of subacute bacterial endocarditis was made on account of the history irregular fever, the presence of systolic and regurgitant mitral murmurs enlarged spleen, and the development of petechiae on the skin of the trunk and extremities, with embolic phenomena in the left ear and fingers In spite of the severe manifestations the patient felt well, but gradually became worse until she died forty days after the onset The ultimate diagnosis of subacute endocarditis caused by haemophil influenzal infection was based upon the fact that the organism (*Haemophilus influenzae*) was recovered from the blood and throat culture during life, and from the mitral valve vegetations and blood of both ventricles after death The value of persistent search and repeated blood cultures was shown by the fact that only one out of the six blood cultures in this case yielded a definite growth of the organism.

367 Purpura Haemorrhagica following Diphtheria

J D Rolleston and D G Matthewson (*Clin Journ*, August 5th, 1931, p 370) record a fatal case in a boy, aged 4 years, who after a moderate attack of diphtheria treated by antitoxin developed suppurative cervical adenitis Ten days later an urticarial serum rash followed, *accompanied by swelling of the scrotum* due to fluid in the tunica vaginalis Five days later double otorrhoea ensued, bleeding took place from the mouth and pharynx, and the stools were black On the next day the child showed petechiae and purpuric patches on the abdomen and loins, as well as haemorrhages from the mouth pharynx and rectum The heart hitherto normal developed a cantering rhythm and death occurred next day The necropsy showed numerous haemorrhages in the pharynx and oesophagus the submucous coat and external surface of the stomach the small and large intestines, the liver kidneys bladder and heart The case was of interest first because of the great rarity of purpura haemorrhagica in diphtheria apart from the acute stage and secondly on account of the possible relation of the purpuric eruption to antitoxin Only four previous cases of purpura haemorrhagica in convalescence from diphtheria had been recorded, and all the patients had recovered It was unlikely, that the purpura was due to antitoxin since 24 other patients had had the same brand of antitoxin, but none had shown any evidence of purpura

Surgery

368 Fixation of Iliac Colon by Acquired Bands

A C Jordan (*Brit Journ Radiol*, August, 1931, p 387) describes the methods by which fixation of the iliac colon in the left fossa, and the resulting mechanical obstruction can be radiographically demonstrated Such fixation is an acquired condition, often commencing in infancy as the result of constipation and chronic intestinal stasis it increases in extent if constipation persists until in the adult it may involve three or four inches of the iliac colon By restricting the mobility of the iliac colon the free passage of faeces is prevented so that distension of the proximal colon and caecum takes place with inflammation of the mucous membrane spasm of the muscular coats limiting the calibre of the lumen and consequent partial obstruction to the passage of faeces with resulting secondary changes leading to such complications as peritonitis and duodenal ulcer The condition and its extent are easily recognized with the fluorescent screen after a barium enema when an accumulation can be seen above and below the anchored segment this appears empty or nearly so since the fluid has been extruded from it by contraction of its muscular coats as soon as the distending pressure of the enema has been relaxed If some of the enema is now allowed to run out of the rectum, the evidence of

obstruction is emphasized, since a considerable amount is retained above the constricted portion, causing dilatation of the descending colon; the appearance of the dilated descending colon ending abruptly at its junction with the tethered portion is very characteristic. The consequent retention and irritation of solid faecal matter above the obstruction is regarded as a reason for the iliac colon being one of the most usual sites for cancer, and the condition gives rise to manifestations of digestive disorder and toxaemia.

369 Osteomyelitis of the Hip-joint

R. Sodur (*Rev. de Chir.*, June 6th, 1931, p. 377) reports 49 cases of osteomyelitis of the hip, and gives radiograms of 22 of these cases. He points out that, although common in infancy it occurs less frequently in childhood and adolescence, and is rare in adult life. The general belief is that the origin of the disease is by bacterial embolism, but the author suggests that a generalized infection may be the etiological factor. The lesion at the onset of the infection may be synovial, but is more often bony. In comparing the progress of the disease in the various groups, it was found that the difference depended upon the amount of bony tissue present. In infancy, when there is little bony material, the osteomyelitis develops into an abscess without ankylosis. In adolescence, when there is much bony substance, ankylosis is usual. The 49 cases reported are classified into three groups. The first group comprised 17 cases of osteomyelitis contracted in early infancy. In these the onset was acute, and usually occurred during some infectious disease such as influenza or tonsillitis. Sometimes an abscess develops at the top of the thigh, and this has to be opened. In most cases this heals, and all appears to be well until the child begins to walk, when partial congenital dislocation of the hip is noticed. Treatment should consist of drainage and extension during the acute stage, to avoid, if possible, the partial dislocation. If this occurs, efforts at reduction should not be made until at least a year after the cessation of the active process. In some cases an operation is necessary; this consists in the fixing of the hip-joint by means of a bony buttress. The second group is defined as osteomyelitis of the closed type, contracted in childhood or adolescence; in the 12 cases encountered the onset was acute, with pain in the joint, contraction, and muscular spasm. The symptoms in these cases generally persist for some weeks, and the diagnosis is difficult since the condition approximates closely to tuberculosis, osteochondritis, or arthritis. Treatment should take the form of immobilization and drainage during the acute stage, resection of the head of the femur being reserved for very severe cases. After growth is over, the defective position is treated by tenotomies and osteotomies, and the ankylosis by arthroplasty. The third group—osteomyelitis of the open type during childhood or adolescence—occurred in 20 cases, and the condition was associated with suppuration. The pus was seldom evacuated spontaneously, but, following surgical intervention, the symptoms were quickly relieved. The prognosis is favourable, but recurrence is possible, and when this happens no satisfactory treatment has been found.

370 Osteochondritis Dissecans

K Kissel (*Chirurgja Narzadów Ruchu i Ortopedja Polska*, 1931, vol. iv, Fasc. 2, p. 115) reviews the recent theories concerning the cause of osteochondritis dissecans (Koenig) and expresses the belief that the disease begins as a local aseptic necrosis in the epiphysis. The starting point of the necrosis is an embolus in the epiphysis, originating from a thrombosis of the afferent artery supplying the corresponding segment; this thrombosis may be caused by an injury. The disease has two stages. In the first, when the necrotic focus is still in the epiphysis, there are very few specific symptoms. The second stage, when the necrotic focus has separated into the joint, is characterized by attacks of sudden pain due to jamming of the free articular body between the articular surfaces. In both stages diagnosis is possible by means of *x* rays. In the first stage of the disease the author advises expectant treatment, until the free body separates into the joint; in the second stage an operation is essential. Excellent results without any complications have been obtained in seventeen cases operated on for removal of such free articular bodies from the knee and elbow joints.

371 Familial Elephantiasis of the Gums

A. Mirolli (*Arch. Ital. di Chir.*, June, 1931, p. 401) reports, with photographs, two cases of marked hypertrophy of the gums. The patients, a man aged 28 and his aunt aged 70, were members of a family in whose history this abnormality of the gums was unusually prevalent, for out of 29 members no fewer than twelve were affected in the same way in various degrees. Consideration of the ancestry left the author in doubt as to whether any Mendelian influence could be traced. In all the cases the affection did not start until the second dentition, and there was very little evidence of disease in the teeth themselves. Discussing the various theories propounded to explain these cases, the author is inclined to believe that in his cases a probable explanation was some defect in the hypophysis; this was partly supported by the acromegalic appearance of the aunt. In spite of the rarity of this condition, the author has been able to collect over 50 references from medical literature. In one case salvarsan was said to be useful. Removal of portions of the affected gum showed definite thickening of the epithelium and chorion with slight infiltration.

Therapeutics

372 Continuous Pollen Desensitization

W. T. Vaughan (*Journ. Amer. Med. Assoc.*, July 11th, 1931, p. 90) has employed perennial pollen desensitization, in addition to treatment during and before the seasonal incidence, for the past four years. During 1930 he utilized the three methods in 57 cases, and obtained good results in 21 treated by the perennial form, though some failures were recorded among those treated by the other procedures. He records one case in which there has been no recurrence of ragweed asthma after two years of perennial treatment, concluded in December, 1929. The technique (based on experience of patients in Virginia) consists in building up the patient's resistance with about twenty doses, beginning with a 1 in 5,000 dilution, and increasing to a maximum of 0.5 c.cm. of a 1 in 50 dilution, or until the skin reactions are negative. Throughout the season maximal doses are continued or slightly smaller ones, at intervals of one or two weeks, or, if the symptoms are not relieved, more frequently. After the season, the dose is 0.1 c.cm. of the 1 in 50 dilution, given at intervals of one to four weeks; Vaughan prefers two-weekly intervals. Two or three months before the season, the dose is increased by 0.1 c.cm. of each pollen extract used, up to the maximum. In changing from an old to a new batch of pollen extract, it is advisable to mix the extracts, with a gradually increasing proportion of the new, since reactions may follow the use of more potent allergens. In addition to the obviously greater convenience of spreading pollen desensitization over the year, and the avoidance of dangerous attempts at "rush desensitization" during the season, in sensitive persons, the perennial administration appears to improve the general health of pollen asthmatics out of the season. It acts possibly as a non-specific protein therapy, which lessens the tendency to asthmatic attacks due to infections in winter, or to protein irritants other than pollen. The method also affords a means of beginning treatment of pollen asthma at any time of the year.

373 Salt-free Diet in Psoriasis

O. L. Levin and S. H. Silvers (*Med. Journ. and Record*, August 19th, 1931, p. 179), in a preliminary report, advocate the treatment of psoriasis by means of a salt-free diet; they describe three successful cases. As the result of studying the physiology and chemistry of the

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perspiration in such cases, it was observed that the psoriatic lesions did not sweat, that the acidity of the sweat in other areas was increased, and that there was a distinct tendency to a higher concentration of the chlorides in it. On the basis of these facts the patients were put on a diet consisting mainly of vegetables, fruits, cooked cereals, cream, salt-free bread, cottage and cream cheese, fish, an occasional lamb chop, coffee, and tea. Sweat baths were given to hasten the elimination of salt, and local applications of cold cream, and occasionally of 3 per cent. boric ointment, were adopted. Hospitalization for better control and closer observation is advisable. Encouraging results were obtained in all three patients who had suffered for the previous three years from obstinate forms of the complaint on the extremities, trunk, and scalp resisting the usual methods of treatment. So far there have been no recurrences in any of the three cases reported, the first patient having been free for over seven months; favourable results are being noted in the patients now under observation, especially in those under close supervision. The authors consider this preliminary report justified in order to enable others to try the same lines of treatment.

374 The Rate of Absorption and Elimination of Bismuth

N. Yernaux (*Ann. de Derm. et Syph.*, July, 1931, p. 761) has studied the rate of absorption of bismuth from the tissues by means of radiographical estimations of the masses of drug at the seat of entrance. He finds that there is a time factor which, in the case of bismuth subgallate, is equal to fifty-six days—that is to say, every fifty-six days after injection the amount of bismuth left unabsorbed is reduced by one-half. This can be represented graphically by a decreasing geometrical curve. Other bismuth preparations were found to have different time factors. Again, examination of the analyses of the excretion of bismuth from the body renders possible the construction of similar curves, so that finally complete courses of treatment can be represented graphically, showing the amount and availability of the bismuth in the body. These curves are given in the case of bismuth subgallate (10 per cent. to 15 per cent.) in oily solution, the preparation favoured by the author because it is completely absorbed without encystment, and can be given subcutaneously without pain; its rate of absorption is known, and the intensity and duration of its therapeutic activity can be estimated; and, lastly, it is eliminated equally by the faeces and by the urine, thus protecting the kidneys.

375 Arsenic in Chronic Myelogenous Leukaemia

Potassium arsenite apparently has a specific effect on the haematopoietic organs, and 9 out of 10 cases of chronic myelogenous leukaemia reported by C. E. Forkner and T. F. McN. Scott (*Journ. Amer. Med. Assoc.*, July 4th, 1931, p. 3) showed striking improvement after its oral administration. In one case, in the terminal stage of the disease, no benefit was noticeable. In the remainder the leucocyte count was reduced to approximately normal; the immature cells were markedly reduced, and in some cases disappeared from the blood. The anaemia was arrested, and in several cases the erythrocytic and haemoglobin values became almost normal. The monocytes and basophilic granulocytes relatively increased, and the number of nucleated red cells rose. The size of the spleen and liver was reduced in each case, and in two patients these organs were no longer palpable. Biopsy of the bone marrow suggested a return to red marrow; and the basal metabolic rate decreased to nearly normal figures. Most of the patients improved in weight and general condition. These observations suggest that potassium arsenite is of definite value in the palliative treatment of chronic myelogenous leukaemia. The best results were obtained by the rapid administration of the drug until the desired effect was produced, or signs of intoxication occurred; it was then discontinued for four to six days, and resumed in small daily doses.

Dermatology

376 Carotinaemia Resulting from Restricted Diet

O. L. Levin and S. H. Silvers (*Journ. Amer. Med. Assoc.*, June 27th, 1931, p. 2190) report two cases of non-diabetic carotinaemia which were discovered in a dermatological practice. Most of the cases of carotinaemia (lauran-tiasis cutis) reported in the literature have occurred in diabetic patients and children. The substitution of a vegetable diet for animal foods, which was a widespread practice after the war, was responsible for an increase in the number of people suffering from this disturbing though innocuous condition. The modern dietetic treatment of various diseases and the personal endeavours of patients to reduce adiposity have recently caused more cases to be noted. One of the cases now reported occurred in a woman who had placed herself on a restricted diet for a year, and complained of a gradually increasing yellowish discoloration. There were no other cutaneous complaints, and pruritus was absent. The palms were more deeply yellow than the rest of the body. After limiting the vegetable diet the pigmentation gradually faded, and entirely disappeared. The second patient had been under treatment for acne vulgaris, *x*-ray therapy being combined with internal medication. She had lit her diet almost entirely to vegetables, and had eating at least one pound of carrots and several ora daily. The yellow pigmentation was uniform, except the palms and soles, where it was more pronounced. sclerae and mucous membranes were normal. The ser was an intense golden yellow, but van den Bergh's reacti was negative. In order to emphasize the relationsh between the pigmentation and the diet the patient w asked to increase the amount of carrots and the numb of oranges consumed daily. At the end of two week the deepening and extension of the pigmentation were evident. A month after discontinuance of these foods the pigmentation had noticeably diminished, and in another two weeks had entirely disappeared. Carotene occurs abundantly in nature as an exogenous pigment. It is present in carrots, pumpkins, yellow turnips, parsnips, spinach, lettuce, green and yellow beans, kale, oranges, and eggs. The yellowish colour of butter-fat and subcutaneous fat is also due to carotene, but a diet must be essentially vegetarian to produce carotinaemia.

377 Pityriasis Folliculorum

H. Lawrence and R. Brodie (*Med. Journ. of Australia*, May 2nd, 1931, p. 529) record four cases of a form of skin infestation defined by S. Ayres as "pityriasis folliculorum (demodex)." In this condition there are blotchy areas of the skin of the face and neck, without scaling, but containing large numbers of the *Demodex folliculorum*, a hexapoid parasite. The authors believe that these demodex infections are probably more common than is at present recognized, and that they occur in 0.5 per cent. of all cases of skin diseases in private practice. The treatment recommended is a cleansing lotion containing a mixture of boric and salicylic acids; this is followed by a strong parasiticide ointment composed of camphor, ammoniated mercurial ointment, and spirits of wine. In one instance in which the condition was resistant to treatment, the application of ultra-violet light, followed by fractional doses of *x* rays, proved effective. The demodex concerned in this condition appears to be of a different type from the variety which has been found in some cases of impetigo.

378 Dermatitis from Sweat Bands of Hats

D. I. Macht (*Urol. and Cut. Rev.*, June, 1931, p. 445) records the case of a physician who in two successive years developed severe dermatitis of the forehead with formation of pustules, following the use, on the first occasion, of a Panama hat, and on the second of a Leghorn hat. Extraction of the sweat bands with alcohol and ether led Macht to the conclusion that the bands were finished with a nitrocellular lacquer containing some irritating pigments.

Obstetrics and Gynaecology

379 Ectopic Decidual Tissue in Absence of Pregnancy

J. Schereschewsky (*Arch. f. Gynak.*, March 6th, 1931, p. 241) states that nests of decidual cells have been found during pregnancy in the ovaries, oviducts, pelvic peritoneum, omentum, appendix, and pelvic lymph glands, and also in hernial sacs and in polypi of the cervix or corpus uteri. Such ectopic decidual tissue has been reported in the absence of pregnancy by Schiller, and also by Frankl in a patient aged 54. In a case described by Schereschewsky, a woman, aged 32, shortly after abortion was found to have a polypus protruding into the posterior fornix from a node of ectopic endometrioid tissue in the recto-vaginal septum. The polypus contained scanty gland tissue in a stroma of decidual cells; its structure was similar three months later, after recurrence. The persistence of the decidual reaction is attributable to hormonic influence from the corpus luteum of menstruation.

380 Intramural Pregnancy

V. Malvieff (*La Gynecol.*, June, 1931, p. 337) records two cases of intramural pregnancy. Owing to the rarity of such occurrences, and their complex symptomatology, a precise diagnosis before laparotomy is generally impossible. In 216 laparotomies (Kiev) on abnormally situated pregnancies, only 2 of these were intramural, one being "pure," the other "mixed." The history of these two cases is given in full. The first patient was in perfect health, had had three normal pregnancies previously, and then developed an acute inflammation of the adnexa which was rapidly cured. Several months later the interstitial pregnancy occurred. At the laparotomy the abdominal cavity was found to be full of blood, the ovaries and tubes were normal on both sides. At the left angle of the uterus was found a tumour of the size of a hen's egg. At the site where the tube joined the uterus there was a small rupture, 7 mm. in diameter and 4 mm. deep. Microscopical section of the tumour revealed decidual cells and chorionic villi in the muscular tissue. The cause of the rupture appeared to be complete penetration of all the coverings by chorionic villi. In the second case the woman had been married six months. One period was missed, and then a midwife gave two intrauterine injections of a solution of iodine. One month later the patient was brought to hospital with every appearance of abdominal shock. At the laparotomy blood was found in the abdominal cavity, and a tumour with a ruptured wall was discovered at the left angle of the uterus. Microscopical examination revealed chorionic villi and islets of decidual tissue in the tumour. The coverings consisted of muscle and uterine tissue. Since this patient was a primipara special note was taken as to whether there was a congenital infantilism of the tubes, but nothing abnormal was found. It was natural to suppose that the intrauterine injections of iodine were an etiological factor in this case.

381 Diagnosis of Ruptured Extrauterine Pregnancy

A usual diagnostic method in doubtful cases of ruptured extrauterine pregnancy is puncture of Douglas's pouch. G. Hubinont (*Bruxelles Médical*, August 16th, 1931, p. 1229) points out that the long needle necessary for this operation is not always at hand, and describes a method of entering the pouch through the left iliac fossa, in which an ordinary short needle can be used. The skin, after disinfection, is punctured perpendicularly, and the needle then penetrates the aponeurosis and the muscles, as in regional anaesthesia. This procedure should be conducted cautiously until the peritoneum is reached. The needle is then inserted a few millimetres deeper, and aspiration is begun. Hubinont claims that this method is easier, quicker, less painful, and in certain cases, such as rural confinements, of more assured asepsis than puncturing through Douglas's pouch. A case is recorded in which this diagnostic procedure was successfully employed.

Pathology

382 Detection of Tubercle Bacilli in Stained Films

J. E. Pottenger (*Journ. Lab. and Clin. Med.*, July, 1931, p. 985) has endeavoured to ascertain the length of time that gives the highest proportion of positive results under practicable conditions in searching for tubercle bacilli in stained preparations. The sputum was prepared in various ways; in some cases direct smears were made, in others antiformin was used or a concentration method involving the use of a hydrocarbon, while shaking was done either with or without enrichment, no fewer than [illegible] were stained for fifteen minutes; if [illegible] various degrees. Considera record was made of the author in doubt as to whether and the minute in could be traced. In all the cases 440 specimens were part until the second dentition, and results of differen[illegible] evidence of disease in the teeth as strictly comp[illegible]ing the various theories propounded a tubercle bacillus, the author is inclined to believe of shaking and th[illegible]obable explanation was some defect ting the groups this was partly supported by the acro- less evenly distri[illegible] the aunt. In spite of the rarity preparation made [illegible] author has been able to collect organisms in a few[illegible]m medical literature. In one case The data, however, [illegible] be useful. Removal of portions ment, from which showed definite thickening of the drawn. In direct with slight infiltration. search for five mi[illegible] positive diagnoses [illegible] With methods secu[illegible] positive result is ob[illegible] longer than 15 minu[illegible] results obtained. On[illegible]

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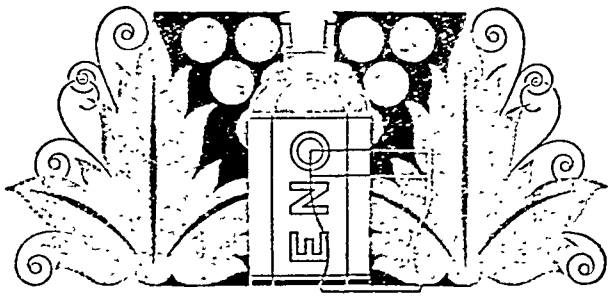
es, and obtaine[illegible]

V. de Lavergne and R[illegible]al form, thou[illegible] *Méd.*, May 6th, 1931, p. 651) find that the duration of the incubation period of spirochaetosis icte[illegible]haemorrhagica in man varies according as it is contracted from water or is of surgical origin. In the former case the incubation is very short, averaging about four days and rarely exceeding ten while in the latter the period is longer, being on the average about fifteen days, and almost always more than ten days. This difference is due to the duration of the incubation period depending mainly on the number of infective organisms and their virulence. In the case of infection due to water a much larger number of organisms are introduced into the system than by any other mode of penetration.

384 Cardiac Output and Oxygen Utilization

I. Harris and I. J. Lipkin (*Edinburgh Med Journ.*, September, 1931, p. 501) report the results of investigating a series of cardiac patients of different kinds, with special reference to the physiological and functional disturbances which were present. They conclude that, apart from gross heart failure, it is impossible to distinguish between a normal and a diseased heart from cardiac output determinations alone. Output values obtained under working and resting conditions are, however, useful in estimating the degree of reserve power, which is highest when the difference between the two sets of values is smallest. There is an inverse ratio between the cardiac output and the utilization of oxygen; this is particularly marked when the output values after work are compared with the corresponding percentage increase of oxygen utilization. The increase of stroke volume that results from work, when related to the greater oxygen utilization, gives a clear indication of the cardiac reserve power. The normal individual reacts to exertion as far as possible by an increase in the stroke volume; the cardiac patient reacts more particularly by a rise in the pulse rate. Auricular fibrillation is characterized by a high percentage of oxygen utilization.

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THE RELIEF OF TOXIC HEADACHES

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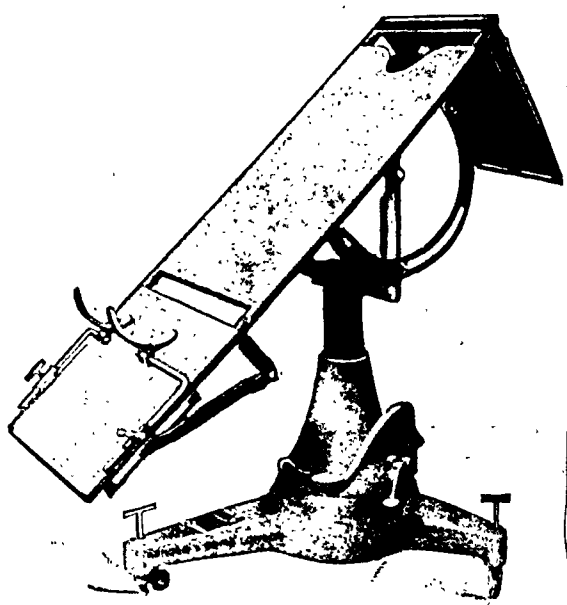
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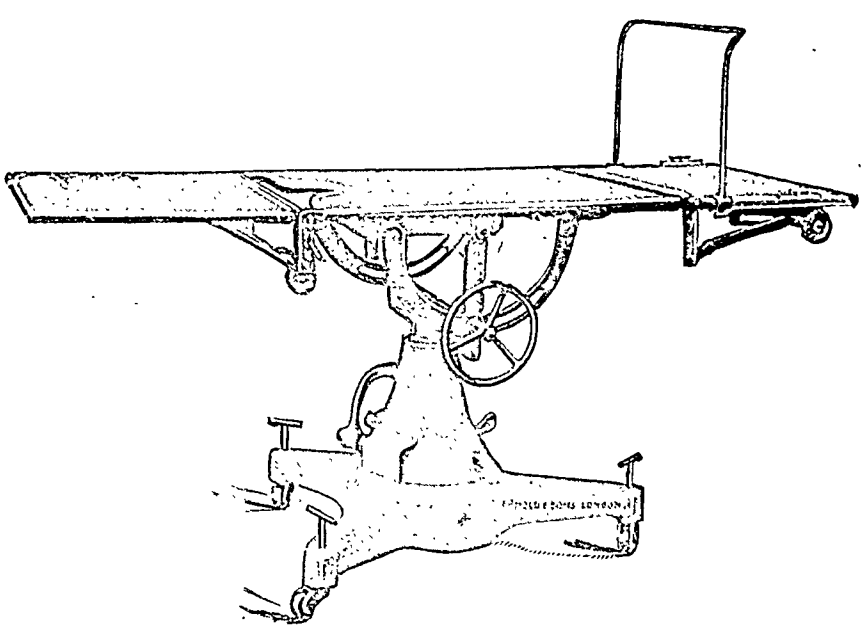
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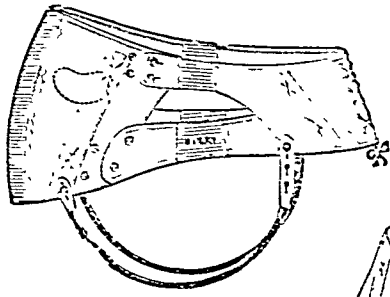
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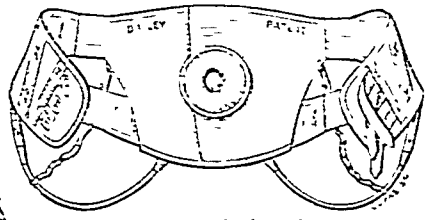
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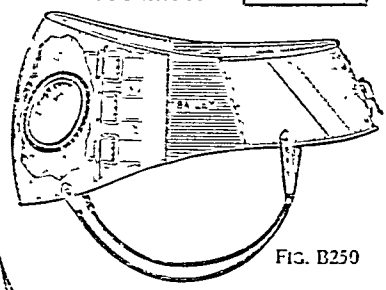


FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.

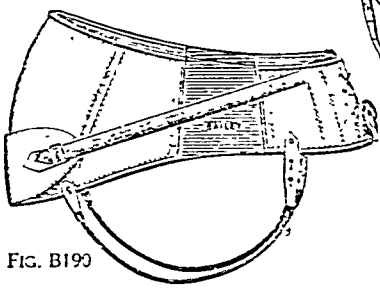
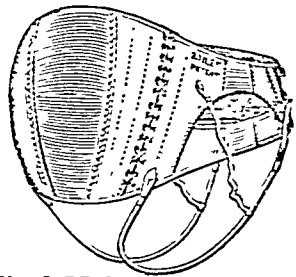


FIG. B190
BELT FOR ENTEROPTOSIS.

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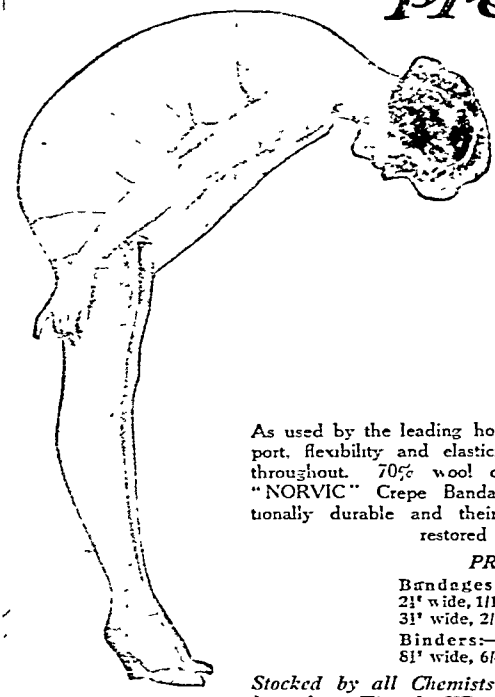
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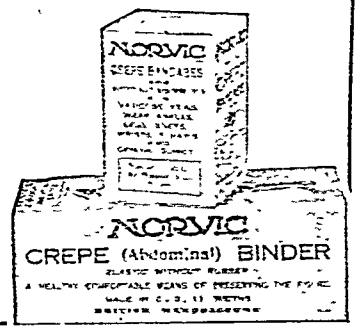


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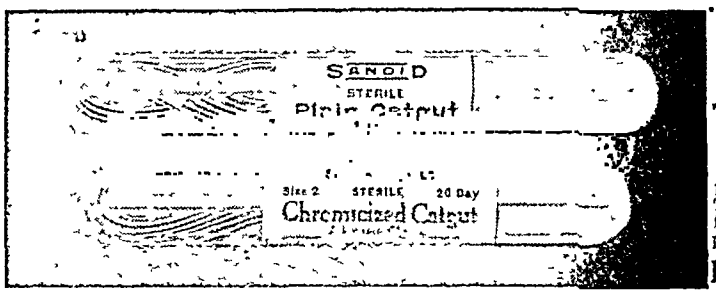
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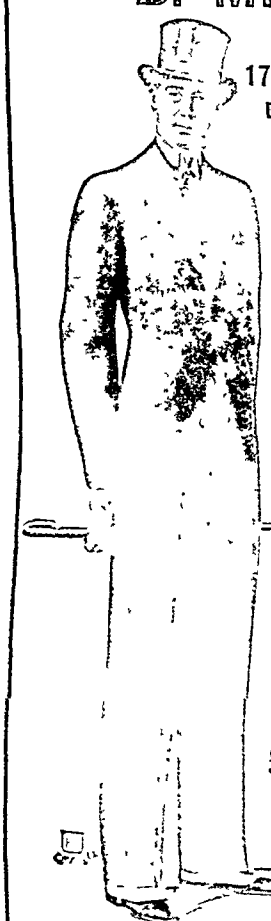
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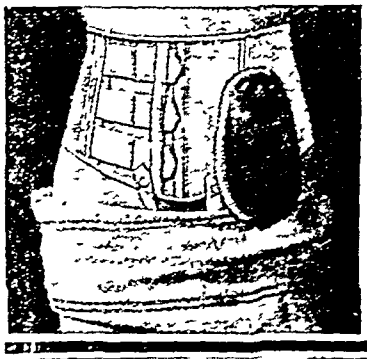
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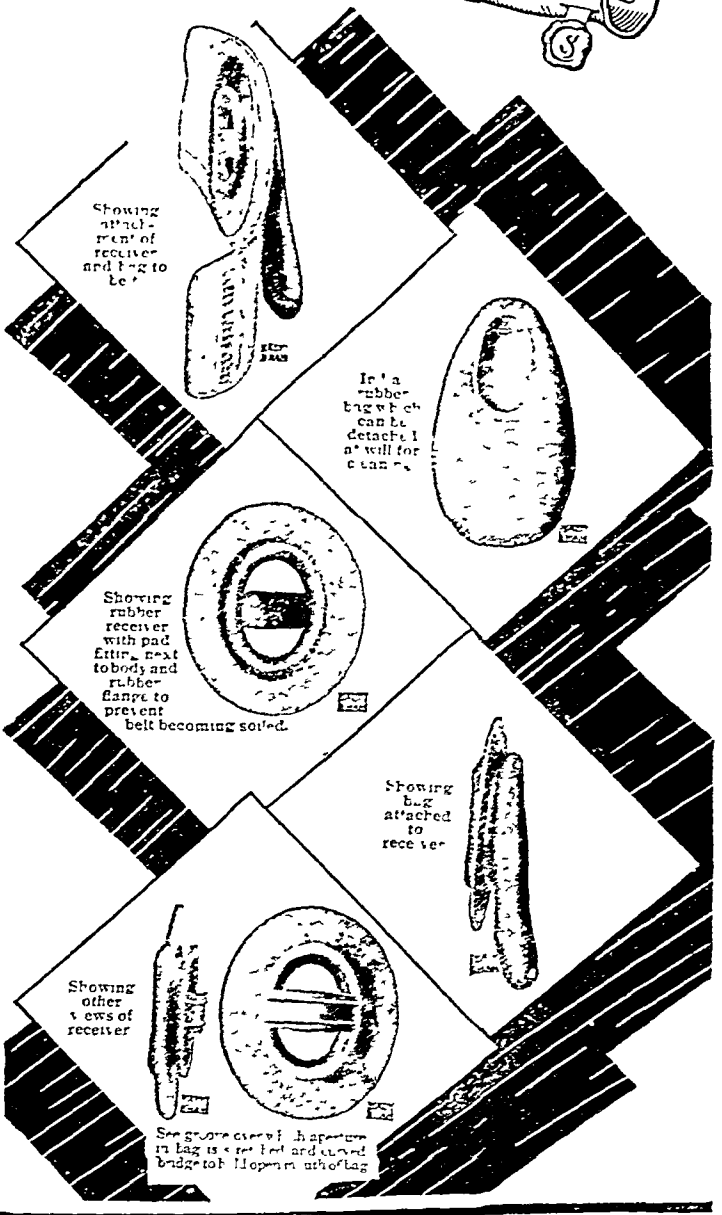
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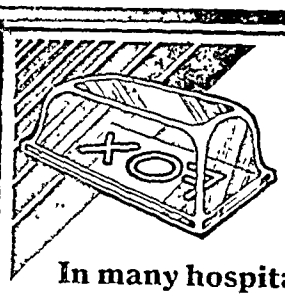
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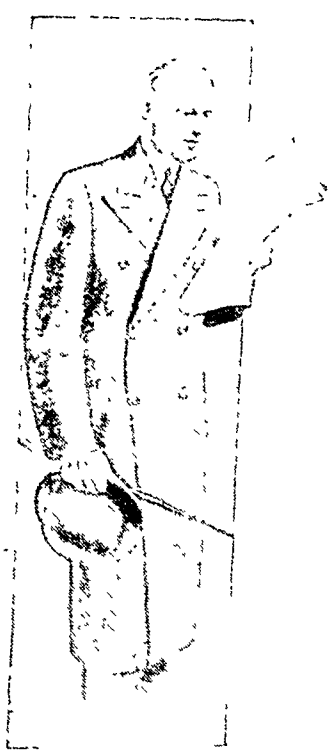


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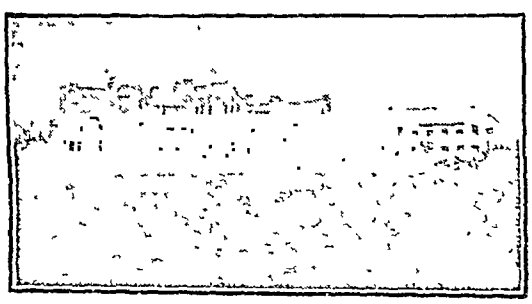
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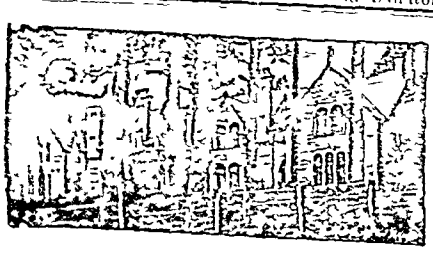
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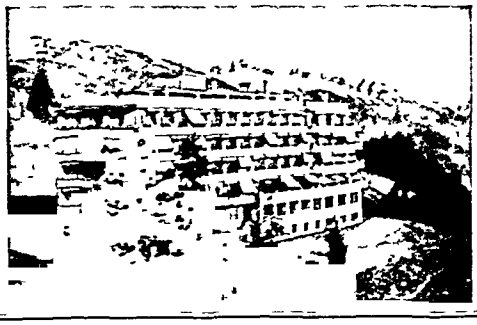
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NORTH-EAST LONDON POST-GRADUATE COLLEGE

The Prince of Wales's General Hospital, Tottenham, N.15.

Morning and afternoon work in Medicine, Surgery, Bacteriology, Pathology, and the Special Subjects. Study-leave, Panel, and individual Courses arranged. Practitioners' general Intensive Courses (limited to 25) held at frequent intervals. Practical instruction in Anaesthetics. Clinical Assistantships.

Prospectus on application to the Dean.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

A SERIES OF WEEKLY DEMONSTRATIONS for medical practitioners has been arranged in the various hospitals of Glasgow from November till May. A COURSE OF LECTURES will also be given in the Faculty Hall weekly from November till February. In addition some SPECIAL COURSES are offered and CLINICAL ASSISTANTSHIPS are available in several of the hospitals. The syllabus may be had on application to the Secretary, Post Graduate Medical Association, The University, Glasgow.

City and County of Newcastle-upon-Tyne

NEWCASTLE GENERAL HOSPITAL

ONE HOUSE PHYSICIAN AND ONE HOUSE SURGEON (Male or Female).

Applications are invited for the above posts. The salary in respect of each of the appointments, which are tenable for six months is at the rate of £150 per annum, with board, lodging, etc.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, to be addressed to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

October 15th 1931

Refraction and the Ordering of Glasses taught by Practising Ophthalmic Surgeon in London. £3 3s. for 10 lessons—Address No. 123, B.M.A. House, Tavistock Square, W.C.1.

County Council of Middlesex.

HILLINGDON COUNTY HOSPITAL.

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

The County Council invites applications for the above appointment. Candidates must be registered Medical Practitioners, and should have held resident appointments in a general hospital.

The gentleman appointed will work under the control of the Medical Superintendent, and will devote his whole time to his official duties.

Salary £250 per annum, together with board, lodging, and laundry. The appointment is for one year only and is subject to one month's notice on either side. At the end of the period of one year's service the successful candidate, if considered satisfactory in all respects, will be eligible upon the recommendation of the Medical Superintendent, for promotion to the post of Assistant Medical Officer. If not so recommended he will leave the Council's service.

Applications, stating (1) age, (2) qualifications, and (3) previous experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than October 31st.

Canvassing, directly or indirectly, will be a disqualification.

No special application forms are provided. Envelopes must be endorsed "Junior Assistant Medical Officer," Hillingdon.

ERNEST S. W. HART,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
October 15th, 1931.

N.B.—Hillingdon County Hospital is a general hospital with accommodation for acute and chronic cases.

Corporation of Glasgow.

PUBLIC HEALTH DEPARTMENT

Applications are invited from registered Medical Practitioners (male) for the post of SENIOR ASSISTANT in the Bacteriological Laboratory. Salary £700, rising to £800 per annum. State present age, and give full details of qualifications and experience in bacteriology, together with copies of three recent testimonials relative to such experience.

The person appointed will be subject to the provisions of the Corporation Superannuation Scheme.

Applications to be addressed to "The City Bacteriologist, 20, Cochrane Street, Glasgow, C.1," not later than Saturday, November 7th.

County Borough of Halifax.

RESIDENT MEDICAL OFFICER

HOSPITAL FOR INFECTIOUS DISEASES

Applications are invited for the appointment of Resident Medical Officer at the Corporation Isolation Hospital. Salary £350 per annum, rising by annual increments of £25 to £450, together with board, residence, and laundry.

Applications must be made on a prescribed form, which may be obtained from the undersigned, and should be sent, together with copies of not more than three recent testimonials, endorsed "Resident Medical Officer," to the undersigned not later than November 5th.

Canvassing, either directly or indirectly, will be a disqualification.

PERCY SAUNDERS,
Town Clerk.

Town Hall,
Halifax.
October 15th, 1931.

ALAWAI & [illegible]
BROOKMANS PARK STATION (L.N.E.R. main line). [illegible] Tavistock Square, W.C.1.

Examining Board in England

IN THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PRE-MEDICAL EXAMINATION

This Examination will commence on Monday, January 4th 1932

SECOND EXAMINATION (OLD REGULATIONS)

This Examination will commence on Thursday, January 7th 1932

FIRST EXAMINATION (NEW REGULATIONS)

This Examination will commence on Thursday, January 7th 1932

THIRD OR FINAL EXAMINATION

This Examination will commence on Monday, January 11th 1932

DIPLOMA IN LARYNGOLOGY AND OTOLOGY

Part I of this Examination will commence on Friday, December 11th, and Part II on Friday, December 18th, 1931

DIPLOMA IN PSYCHOLOGICAL MEDICINE

Part I of this Examination will commence on Friday, December 4th, and Part II on Friday, December 11th 1931

DIPLOMA IN PUBLIC HEALTH

Part I of this Examination will commence on Friday, January 1st, and Part II on Friday, January 8th 1932

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE

This Examination will commence on Friday, January 1st 1932

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY

Part I of this Examination will commence on Friday, February 12th, and Part II on Friday, February 19th 1932

Particulars of these examinations, dates of entry etc, may be obtained from the Secretary, Examination Hall, 8 11, Queen Square, London, W C 1.

HORACE H REW,
October 20th 1931 Secretary

Royal College of Surgeons of ENGLAND

ANNUAL MEETING OF FELLOWS AND MEMBERS

Notice is hereby given that it is proposed to hold a MEETING OF FELLOWS AND MEMBERS at the College in Lincoln's Inn Fields on THURSDAY, NOVEMBER 10th, 1931, at 5 o'clock p.m., and that a Report from the Council will be laid before the Meeting

Fellows and Members can obtain copies of the Report on application to the Secretary, and can if they so desire, have their names placed on the List of those to whom the Report is sent annually

Motions to be brought forward at the Meeting must be signed by the mover, or by the mover and other Fellows and Members, and must be received by the Secretary not later than November 9th

Copies of the Agenda will be issued on or after November 13th to any Fellow or Member who may apply for one

S PERCIVAL COWELL
October 17th 1931 Secretary

City of Coventry.

MUNICIPAL HOSPITAL.

The Public Health Committee invite applications from duly registered male Medical Practitioners for the appointment of SECOND ASSISTANT MEDICAL OFFICER at the above Hospital, which is a modern general hospital of 300 beds The Hospital includes medical, surgical, obstetric and children's wards, and possesses out-patient operating theatre and X-ray plant

The appointment will be for a period of one year The salary will be at the rate of £200 per annum with board residence, and laundry The officer appointed will be required to pay to the Corporation any fees received in connection with his official work

Applications, accompanied by copies of three recent testimonials should reach the undersigned on or before Wednesday, November 4th Forms of application are available on request

A MASSEY, M.D.,
The Council House, Medical Officer of
Coventry Health
October 19th 1931

Bradford Children's Hospital.

HOUSE SURGEON (lady) wanted immediately Fully qualified Salary £120 with board residence and laundry Applications, stating age with recent testimonials, not later than November 4th to—

J W LONGLEY, Secretary Superintendent

Erith Urban District Council.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

The Council of the Urban District of Erith invite applications from Medical Practitioners under the age of 40 years and of not less than three years standing in their profession, for the above appointment

Inclusive salary £500 per annum, rising by annual increments of £25 to £700

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922 and the successful candidate will be required to pass a Medical Examination It is terminable by three months written notice on either side and is also subject to the Council's Standing Orders, Regulations, and Bye-laws governing staff

The appointment is whole time one The duties will mainly consist of work in the School Medical Department but will also include duty in any section of the Health Services of the Council

Experience in the certification of mental defectives and the possession of a registrable qualification in Public Health will be considered additional recommendations

Applications, accompanied by copies of not more than three recent testimonials, must be made on forms obtainable from the Medical Officer of Health, Council Offices, The Oaks Bleyheath, Kent, to whom they should be returned to reach him not later than November 3rd endorsed "Assistant M.O.H."

DOUGLAS S TWIGG
The Oaks, Clerk to the Council
Bleyheath October 17th 1931

County Borough of Walsall.

MANOR HOSPITAL.

ASSISTANT MEDICAL OFFICER

Applications are invited from duly qualified gentlemen for the appointment of Assistant Medical Officer for the above Hospital which contains 300 beds The commencing salary will be at the rate of £350 per annum rising by annual increments of £25 to a maximum of £450 per annum together with the usual residential allowances

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act 1922 from the date of designation by the Council

The person appointed will be required to act under the general direction of the Medical Officer, from whom any further particulars of the appointment may be obtained

Applications stating age, professional qualifications, and experience accompanied by not more than three copies of recent testimonials should be sent to the undersigned not once

C S FOTHERGILL,
Public Assistance Officer
29 Leicester Street, Walsall
October 16th 1931

City of Leeds.

KILLINGBECK SANATORIUM

ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited from registered Medical Practitioners (male) for the post of Assistant Resident Medical Officer at the Tuberculosis Sanatorium, Killingbeck (220 beds) Applicants must be unmarried and preference will be given to those who have held previous Hospital appointments

The appointment will be for one year, at a salary of £250 per annum, with board, residence and laundry

Applications, on a form to be obtained from the Medical Officer of Health together with copies of three recent testimonials endorsed 'Tuberculosis Officer,' should be delivered to the Medical Officer of Health, 12 Market Buildings, Vicar Lane, Leeds, not later than 10 a.m. on Saturday, October 31st

THOS THORNTON,

Royal Halifax Infirmary.

Wanted a THIRD HOUSE SURGEON (male unmarried) Candidates must be duly qualified and registered The appointment will be for six months from November 1st Probable promotion if satisfactory Salaries of Resident Medical Staff are as follows Resident Surgical Officer £250, First House Surgeon, £200 Second House Surgeon, £175, Third House Surgeon, £150 per annum, with residence board, and laundry The Hospital contains 230 beds, has a large Eye, Ear, Nose and Throat Department, Maternity Ward and Pathological Laboratory Particulars of the duties may be obtained from the undersigned to whom applications with copies of testimonials should be sent not later than first post on Tuesday, the 27th instant

A MIDGLEY
October 20th, 1931. Secretary

Administrative County of LONDON

HOSPITAL SERVICE

The LONDON COUNTY COUNCIL invites applications for appointment to the undermentioned positions The persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendents and should occasion arise to assist at any of the other establishments under the control of the London County Council The successful candidates will be required to live in the Hospital unless otherwise indicated

ASSISTANT MEDICAL OFFICERS

(a) ST JOHN'S HOSPITAL, St John's Hill, S W 11.—Preference will be given to candidates who possess the Diploma in Tropical Medicine Psychiatric experience essential

(b) ST GEORGE-IN-THE-EAST HOSPITAL, Lime Street Wapping, E 1

The salary of Assistant Medical Officers is £350 a year, rising by annual increments of £25 to £425 together with board lodging and washing Candidates must be duly qualified Medical Practitioners of at least one years standing, and have held a resident appointment in a General Hospital for at least six months There is no accommodation for a married man or a woman

HOUSE PHYSICIANS AND CLINICAL ASSISTANTS

(a) ST OLAVE'S HOSPITAL, Lower Road, Rotherhithe, S E 16.—Two House Physicians Salary £80 a year together with board lodging and washing There is no accommodation for a married man

(b) ST MARY ABBOTS HOSPITAL, Marloes Road, Kensington W 8.—Clinical Assistant (non-resident woman only) Salary £100 a year, with meals when on duty Gynæcological experience is desirable

Candidates must be qualified Medical Practitioners without necessarily having had previous Hospital experience

Appointment is for six months only in the first instance but may be extended for a further period of six months up to a maximum of two years provided that not more than twelve months are spent at one Hospital

Forms of application may be obtained (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division 4a) The County Hall Westminster Bridge S E 1 and must be returned by November 6th Candidates should specify the positions or position for which they desire to apply Canvassing disqualifies Inquiries for further details as to the nature and scope of the duties should be addressed to the Medical Superintendents at the Hospitals

MONTAGU H COX
Clerk of the London County Council

The Middlesex Hospital and MEDICAL SCHOOL, W 1

Applications are invited for one SURGICAL REGISTRARSHIP The Registrars are attached to Clinical Units of the Hospital, and are responsible for the Clinical notes the carrying out of clinical and pathological examinations, the preparation of material for demonstration, and the co-ordinating of the work in the Pearl Sutton Institute of Pathology with that in the Wards

The appointment will be from January 1st, 1932, to December 31st, 1932, and the successful applicant will be eligible to apply for reappointment, and may retain office for two further consecutive years He is required to attend at the Hospital daily from 10 a.m. to 6 p.m. Salary £300 per annum

Further particulars may be obtained from the undersigned, to whom applications with copies of not more than three testimonials must be sent before noon on Saturday November 14th

By Order of the Board
S R C PLIMSOLL
Secretary Superintendent

Fife County Council

AREA MEDICAL OFFICER OF HEALTH

Applications are invited from duly registered male Medical Practitioners for the appointment of an Area Medical Officer in the County of Fife Commencing salary £650 (rising by £50 of Fife Commencing salary £650 (rising by £600 per annum) The 10 years no less than £600 per annum) The duties are wholetime and the Area are the Chief Medical Officer of Health and are mainly those of clinical work The person appointed will also undertake such other public health work as may be required

Conditions of appointment are in the hands of the subscriber Applications stating age, qualifications, and experience with copies of not more than three testimonials, to be lodged by October 29th.

Counties Buildings, J M MITCHELL,
Cupar County Clerk.
October 16th, 1931

City of Birmingham Mental HOSPITAL

JUNIOR ASSISTANT MEDICAL OFFICER.

The Committee of Visitors invite applications from duly qualified and registered Lady Doctors under 35 years of age for the above post Preference will be given to candidates who have held a resident appointment in a General Hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry) Subject to twelve months' service satisfactory to the Committee, an increase of £50 will be granted at the end of that period, and increases of £25 per annum for each subsequent year of service to a maximum of £450 An additional £50 will be given for the D P M qualification

The appointment will be terminable by three months' notice on either side, and the appointed candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be addressed to the Chief Medical Officer, City Mental Hospital, Rubery Hill, Birmingham, so as to be received by him not later than November 14th

F. H. C. WILTSHIRE,
Town Clerk's Office, Clerk to the
Council House, Committee of
Birmingham Visitors.
October 17th, 1931.

Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.1.

There is a vacancy for the post of HONORARY SURGICAL REGISTRAR at the above Hospital. Candidates must be Fellows of the Royal College of Surgeons and would be expected to call upon members of the Hon Medical Staff, a list of whom would be furnished on request Preference will be given to candidates having had experience of Special Departments Particulars regarding the appointment can be obtained from the undersigned, to whom applications should be sent not later than October 28th, with not more than three recent testimonials

J. H. TEASDALE, Secretary

The Royal Infirmary of EDINBURGH (1,011 Beds)

Applications are invited for the appointment of a CLINICAL ASSISTANT (Non Resident) in the Department of Ophthalmology Emoluments £200 per annum

Previous experience in Ophthalmic work is essential Candidates must undertake to hold office for at least one year

This appointment affords valuable experience to a Graduate intending to specialise in Ophthalmology

HENRY MAW,
Oct 5th, 1931 Secretary & Treasurer

The Salvation Army, THE MOTHERS' HOSPITAL, Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant December 1st. Salary £80 per annum, with board, residence, and laundry

Candidates should have some experience in anæsthetics Applications, with testimonials, must be sent to the Secretary Superintendent on or before November 5th

EDGAR DIBDEN, Secretary-Supt.

Lincoln County Hospital.

Wanted JUNIOR HOUSE SURGEON, male, unmarried Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

Lincoln ARTHUR MOORE,
October 15th, 1931. Secretary Supt.

Great Yarmouth General HOSPITAL (72 Beds)

Applications are invited for the post of HOUSE SURGEON (one of two appointments)

Applicants must be male and unmarried

Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

Royal Free Hospital and London (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.

OBSTETRICAL AND GYNÆCOLOGICAL UNIT.

Applications are invited for the following appointments, vacant on January 1st, 1932:

SENIOR ASSISTANT, part time, £350 (The present holder is an applicant and is eligible for re appointment)

THIRD ASSISTANT, full time, £270, with residence

Applications, accompanied by copies of not more than three testimonials, and the names of not more than two persons to whom reference can be made, should reach one of the undersigned, from whom further particulars may be obtained, by the first post on Monday, Nov. 9th. Nine copies of all documents must be furnished.

REGINALD R. GARRATT, Secretary,
Royal Free Hospital, W.C.1.
LOUIE M. BROOKS, Warden & Sec.,
London (R.F.H.) School of Medicine
for Women, W.C.1.
October 14th, 1931.

Liverpool Maternity Hospital.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management of the above Hospital intimate that a vacancy has occurred for an Honorary Assistant Surgeon.

Candidates for the vacancy are requested to send in their applications, with testimonials in support, together with twenty five complete copies thereof to supply the members of the Board of Management, to the Secretary of the Hospital, Oxford Street, on or before October 30th next All other canvassing disqualifies

A copy of the last annual report and rules of the hospital may be had from the Secretary on application.

The Staffordshire General INFIRMARY, STAFFORD.

Applications are invited for the post of HOUSE PHYSICIAN (either sex) which will become vacant at the end of October.

Candidates must be duly qualified and registered under the Medical Acts. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment to be held for at least six months

Applications, stating age, accompanied by copies of three recent testimonials, should be forwarded at once to the undersigned.

Stafford. A. E. COLLINS,
October, 1931. Secretary.

Bradford Royal Infirmary.

One HOUSE PHYSICIAN and two HOUSE SURGEONS (male) wanted for December 1st

Candidates must be single and legally qualified Salary £135 per annum each, with board, residence, and washing.

There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than October 27th.

J. J. BARRON, Secretary-Supt.
October 12th, 1931.

York County Hospital. (200 Beds)

The post of RESIDENT ANÆSTHETIST AND ASSISTANT HOUSE SURGEON will become vacant on December 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and previous experience, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than November 3rd

H. E. RYAN, Manager.

York County Hospital. (200 Beds.)

The post of HOUSE PHYSICIAN will become vacant on December 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and previous experience, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than November 3rd.

H. E. RYAN, Manager.

Longton Hospital, Staffordshire.

HOUSE SURGEON required immediately. Commencing salary £175 per annum, with board, residence, and laundry, plus certain fees.

Applications, with copies of three recent testimonials, and stating nationality, to be sent at once to the Chairman of Directors, Longton Hospital, Stoke on Trent.

St. Mary's Hospital, W.2

MEDICAL REGISTRAR.

The Board of Management invite applications for the above post.

Candidates for the appointment must be registered Medical Practitioners, and be Members, or Licentiates of the Royal College of Physicians, or Graduates in Medicine of a University in the British Empire

The salary is £200 per annum, with board and lodging provided.

Copies of the regulations for the Medical Registrar may be obtained on application at the Secretary's Office

Applications, with copies of testimonials, should reach the undersigned on or before Thursday, October 29th

W. PARKES, Secretary

Miller General Hospital, Greenwich, S.E.10

Applications are invited for the post of HONORARY PHYSICIAN IN CHARGE of the Department of Psychological Medicine Candidates must be Fellows or Members of the Royal College of Physicians of London, and must hold the Diploma of Psychological Medicine

An honorarium of 20 guineas per annum is allowed towards travelling expenses

Applications, which must be printed or typewritten, together with copies of not more than three recent testimonials, should be sent to the Chairman of the Hospital as soon as possible

October 19th, 1931

Minehead and West Somerset HOSPITAL, MINEHEAD, SOMERSET (50 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female) to this Hospital.

Duty to commence on December 1st Appointment for a period of six months Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than November 5th

W. H. P. RODDA, Secretary

Children's Hospital, Hampstead, College Crescent, Swiss Cottage, N.W.3

Applications are invited for the post of RESIDENT MEDICAL OFFICER. The appointment will be for the period of six months at a salary of £100 p.a., with board, lodging, and washing, and will date from December 1st next Candidates must be registered Medical Practitioners and of British nationality Applications accompanied by copies of not more than three recent testimonials, should be sent to the undersigned not later than November 4th

J. H. JOHNSTON, Lieut.-Col
Secretary

Saint Pancras Dispensary, 39, Oakley Square, London, N.W.1

The post of RESIDENT MEDICAL OFFICER will shortly become vacant Salary £200 per annum, with residence and attendance Candidates (unmarried) must be registered Medical Practitioners. Applications, with copies of testimonials, must be sent to the Hon. Secretary on or before October 27th The appointment will be made on November 3rd next

H. PETER BODKIN,
Hon. Sec.

2, Endsleigh St.,
Tavistock Square, W.C.1.

Fife District Asylum, Cupar, FIFE.

ASSISTANT MEDICAL OFFICER wanted for the above Asylum. Applicants must be duly qualified and registered. Salary £550 per annum, with board, residence, etc The appointment is subject to the deductions of the 1909 Superannuation Act. Applications, in writing, giving full particulars, to the Medical Superintendent.

Dorset Mental Hospital, DORCHESTER.

DEPUTY MEDICAL SUPERINTENDENT required Candidates must have had at least five years' Mental Hospital experience, and should hold a Diploma in Psychological Medicine also desirable Laboratory experience also desirable

Salary £575—£25—£625 a year, with partly furnished house and other emoluments valued at £240. Form of application obtainable from the Medical Superintendent.

October 16th, 1931.

...LAWAI & ...
BROOKMAN'S PARK STATION (L.N.E.R. main line). 2, ... Tavistock Square, W.C.1.

APPOINTMENTS—Important Notice.

Iedical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7 Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd)*	**CONTRACT PRACTICE** *(contd)*
CONTRACT PRACTICE.	LLWYNYPIA CLYDACH VALE, PENYCRAIG GLAMORGAN *(Workmen's Medical Scheme)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society) (Workmen's Medical Scheme)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MAPPY, GLAMORGAN *(Workmen's Medical Scheme)*	**PUBLIC HEALTH.**
EBBW VALE MON *(Workmen's Medical Society)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	NEATH AND DISTRICT *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr I G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary South Australian Branch B M A House 206 North Terrace, Adelaide	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch) British Medical Association P O Box 156 Wellington New Zealand
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon Sec Queensland Branch British Medical Association B M A Building Adelaide St Brisbane	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association, Medical Society Hall East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch British Medical Association No 6 Parker's N S W Chambers St George's Terr, Perth, Western Australia.

October 21st 1931 By Order of the Council ALFRED COX, Medical Secretary

Isle of Wight County Mental HOSPITAL

MEDICAL SUPERINTENDENT required must be qualified registered and must have had experience in a similar Institution, and not over 40 years of age

Salary £600 rising by annual increments of £25 to £700 with partly furnished house light laundry garden produce, part fuel and privilege of purchasing from Stores Emoluments valued for superannuation purposes at £166 per annum The person appointed will be required to act also as Medical Officer of the County for the Mental Deficiency Committee at a salary of £50 per annum

Applications stating previous experience qualifications age etc to be received by the Clerk to the Visiting Committee on or before November 7th endorsed Medical Superintendent and to be accompanied by three recent testimonials Selected candidates will be written to

JAS H GREEN,
Clerk to the Committee
White croft Newport Isle of Wight

The London Female Lock HOSPITAL

283 Harrow Road, London, W 9

The Board of Management invite applications for the post of HOUSE SURGEON (female) Salary at the rate of £150 per annum, with furnished rooms full board and washing Candidates who must be double qualified and duly registered should send in their applications by the first post on November 2nd (accompanied by copies of three recent testimonials) to the Secretary from whom further particulars can be obtained The appointment is for six months commencing December 1st Preference will be given to candidates having previous obstetric experience

By Order of the Board
H J EASON,
October 9th, 1931 Secretary

Mansfield and District Hospital

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male) Duties to commence on December 1st next Also for the post of HOUSE SURGEON (male) Duties to commence on January 1st, 1932

Salaries at the rate of £150 per annum, with residence, board, and laundry

The appointments are for six months, and are renewable

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons

Applications accompanied by not more than three recent testimonials to be sent to the undersigned

September 21st 1931
ARTHUR H LIMB Secretary

Samaritan Free Hospital for WOMEN, Marylebone Road, N W 1

Applications are invited for the post of HOUSE SURGEON for a period of six months commencing on November 10th next. Salary at the rate of £100 per annum, with board, lodging and washing Previous experience as House Surgeon essential Applications, stating age accompanied by copies only of testimonials must reach the Secretary at the Hospital on or before Thursday noon Oct 29th

G H HAWKINS, Secretary

Nuneaton General Hospital (80 Beds.)

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Apply to the Secretary of the Medical Staff at the Hospital before October 26th.

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Wanted, a RESIDENT SURGICAL OFFICER, salary £125 per annum who will be appointed for six months Duties to commence Dec 1st

Candidates must be unmarried and duly registered Previous hospital experience essential

Applications stating age and accompanied by copies of not more than three testimonials to be sent to the undersigned not later than Thursday, November 5th

Canvassing, directly or indirectly, may disqualify

By Order,
W M HUMPHRY
October 13th 1931 Secretary

Queen Charlotte's Maternity HOSPITAL, Marylebone Road N W 1

RESIDENT MEDICAL OFFICER (male or female) required for the new Isolation Hospital (for Puerperal Fever) at Goldhawk Road Hammersmith to commence duty on Dec 1st Appointment for twelve months which may be extended The salary is at the rate of £200 per annum, with board residence and washing Applications with copies of testimonials will be received by the Secretary up to Nov 2nd

ARTHUR WATTS Secretary

Merthyr General Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER for six months To commence duties early in November Experience in administration of Anæsthetics desirable Salary £150 per annum with board residence and laundry Applications with copies of three recent testimonials to Honorary Secretary Honorary Medical Staff, Merthyr General Hospital Merthyr Tydfil.

(Appointments continued on p 51)

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Wanted, an Assistant in a Glamorganshire Practice. No dispensing. Salary £400 per annum, with furnished rooms, attendance, etc. Usual bond.—Address, stating age, references, etc., No. 6508, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, with or without view, M.B.Glas., 28 years, married, 4 years' Hosp. and G.P. Good appearance. Abstainer, energetic anaesthetist. Midwifery.—Address, No. 6515, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, either sex, indoor, English or Scot. Good type town and country Practice, near London. Work light. Car kept. State full particulars.—Address, No. 6516, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Assistantship (Outdoor) with or without view, S. of Eng., by London graduate, aged 28, English, married, abstainer, 5½ years' (spec.) hosp., panel, and private practice. Own car.—Address, No. 6532, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, (outdoor), in or near town, by well-qualified Medical Woman, 5 years' experience. Good midwifery. Accustomed sole charge and dispensing. Free, in town, November.—Address, No. 6624, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted. — Assistant, young, Scots or English, married or single. Small modern flat provided, rent free. Midlands. Salary £350 p.a., half midwifery fees. Car provided for Practice.—Address, No. 6515, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, single, male, for panel and private Practice in London, near the West End. Salary £300 p.a. Indoors. Give particulars of qualifications, age, experience, etc.—Address, No. 6605, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor preferred, in London, by Woman Doctor, M.B.(Lond.), aged 33. Ex R.M.O. Two years' experience general practice. Free end of October.—Address, No. 6617, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, young Welsh-speaking ASSISTANT, with some experience of midwifery. Abstainer. Able to drive. Usual bond. Salary £300, indoor.—Address, No. 6412, B.M.A. House, Tavistock Square, W.C.1.

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Wanted by woman Doctor, Part-time ASSISTANTSHIP, outdoor, or Locum, London preferred. Experience Hospital, G.P. Excellent references.—Address, No. 6615, B.M.A. House, Tavistock Square, W.C.1.

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"The Hill," Harrow-on-the-Hill. IDEAL HOUSE FOR NURSING HOME. High and healthy, with perfect views, well-decorated, detached Corner Residence, with one acre matured garden. 12 beds, 4 reception; usual offices, double garage. £300 down, balance on mortgage; total outgoing, including rent, rates, and taxes, £6 weekly. — Apply EDWARDS, 237, Golders Green Road, N.W.11. Telephone: Speedwell 7305.

To Let, just off Harley Street, beautifully furnished CONSULTING ROOM, part-time, with or without plate, for £40 per annum. Immediate possession.—For further particulars, Address, No. 6511, B.M.A. *House, Tavistock Square*, W.C.1.

To Let, with possession, owing to ill health, 5 years' lease, Doctor's RESIDENCE, 32, Kensington Park Gardens, W.11. Low rent.—Apply, REID, Burdale, Saltcoats, Hayling Island.

Wallington, Surrey, 50, Forester's Drive, detached vacant freehold Bungalow Style HOUSE. Dining, drawing, very large lounge; 3—4 beds.; tiled offices; dble. gar.; motor drive to front; 60 ft. front. Charm. unobstructed outlook. Tel. Ideal Med. Prac.. Sel. unop. new dist. 25 mins. Lond. £1,550.—PERRIMAN. 'Phone: Addiscombe 3340.

Young French Doctor wants to be admitted as a PAYING GUEST in a medical family in London.—Please send terms and particulars to DOCTEUR GUY HALLOT, 11 *Cambarre, Biarritz*.

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For Sale.—Glasgow.—*Operating* Table, oil pump action. Mayo Table. Electric steriliser for instruments and dressings. Anæsthetist's Table. Large Instrument Cabinet, size 5 ft. by 3 ft., Pantostat by Sebill, 2 anæsthetists' stools. Irrigation stand, oxygen stand, tungsten arc lamp, 1,000 candle-power radiant heat lamp. All going cheap for quick sale.—No. 6518, B.M.A. House, Tavistock Sq., W.C.1.

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20, BLOOMSBURY SQUARE, W.C.1. Museum 0431.

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APPOINTMENTS—Contd

City of Birmingham

DUDLEY ROAD HOSPITAL

SURGEON

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment which will be limited to a period of twelve months

The present Hospital accommodation is 626 beds divided into General Medical General Surgical Gynæcological, Orthopædic and Infectious Diseases sections There are completely equipped Pathological and Bacteriological Laboratories, X-ray Electro-therapeutic Massage Ultra-violet and Electro-cardiographic Departments Over 4,000 operations are performed annually

Candidates for the appointment must have had good Surgical experience and be Fellows of the Royal College of Surgeons (England)

The salary will be £750 per annum, furnished quarters rations, laundry and attendance will be provided Alternatively, a cash allowance will be paid if the officer appointed is non-resident There may be shortly a general reduction of Corporation salaries and the terms of this appointment will be subject to the same terms on as may apply to existing officers holding similar appointments The officer appointed will be required to refund to the Council all fees allowances and emoluments (other than the foregoing) received by him

The appointment will be subject to one month's notice on either side

Further particulars of the appointment may be obtained from the Medical Superintendent Dr F W Ellis at Dudley Road Hospital

Applications stating age experience and qualifications accompanied by copies of recent testimonials and endorsed Surgeon should be addressed to Dr Ellis and delivered at his office not later than Monday Noon 31st inst

F H C WILTSHIRE Town Clerk

The Council House Birmingham
October 23rd 1931

Central London Throat, Nose, and Ear Hospital

Gray's Inn Road W C 1

ASSISTANTS IN THE OUT PATIENT DEPARTMENT

There are vacancies for the following

First and Second Assistants for attendance on Mondays at 2 p m

Second Assistant for attendance on Tuesdays at 5 p m

Third Assistant for attendance on Fridays at 2 p m

The duties are to assist the Surgeons in seeing the patients and the posts are honorary ones

Applications for either of these appointments may be for a period of three six or twelve months and should be sent to the undersigned on or before November 7th

RESIDENT HOUSE SURGEON (Male)

There will be a vacancy for a Third Resident House Surgeon, to enter on duty on December 1st next

The appointment will be for a period of nine months three months as Third House Surgeon three months as Second House Surgeon, and three months as First House Surgeon

Remuneration at the rate of £75 per annum

Applications *accompanied by copies of not* more than three testimonials should be sent to the undersigned on or before November 7th

JOHN H YOUNG
Secretary Superintendent

The Royal Gwent Hospital,

NEWPORT, MON (160 Beds)

Wanted a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out patients, and as House Physician

Salary £135, with board lodgings and laundry Resident Medical Staff (five) Eligible for promotion

Large Out patients Department

Applications stating age and qualifications with copies of three recent testimonials to be sent to the undersigned

Applications from ladies not entertained

J K MILLWARD
October 20th, 1931. Secretary Supt.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

LUPE HOSPITAL DARWEN Near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER

Applications are invited from registered Medical Practitioners for the appointment of a Junior Resident Medical Officer at the above Hospital Candidates should be unmarried

Preference will be given to applicants having experience in Midwifery, Gynæcology and Diseases of Children

The appointment will be for one year subject to a further period of six months at the end of that period

The salary is at the rate of £200 per annum subject to an abatement deduction of 5 per cent together with the usual superannuation allowances.

The Hospital comprises 500 beds of which approximately 300 beds are occupied

Applications accompanied by copies of not more than two recent testimonials should be addressed to the County Medical Officer Public Assistance (Hospital and Medical) Department County Offices Preston Lancashire not later than Nov 7th

County Offices GEORGE THEPTON
Preston Clerk of the County Council
October 20th 1931

Welsh National School of Medicine.

YSGOL FEDDYGOL CYMRU

The Council invites applications for the appointment of SECRETARY Applicants must not exceed 45 years of age and should preferably have had experience in educational administration The salary offered is £400 per annum, rising by annual increments of £20 to £500 per annum The person appointed will be required to devote whole time service to the duties of the office Official forms of application and further particulars regarding the appointment may be obtained (stamped addressed foolscap envelope required) from D BRYNMOR JONES University Registry Cathays Park, Cardiff and applications must reach him not later than first post on November 21st

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Royal Hampshire County Hospital, Winchester (158 Beds)

HOUSE PHYSICIAN

Applications are invited from fully qualified men for the above post duties to be taken up on November 1st Six months appointment. Salary £150 per annum with board residence and laundry Candidates who must be of British nationality should make application at once to the undersigned, enclosing copies of three testimonials

HERBERT MASLEN, Secretary

The Hospital for Sick Children,

NEWCASTLE-UPON-TYNE.

The Committee of Management have declared a vacancy for an HONORARY PHYSICIAN

Applications stating date of birth and qualifications are invited for this appointment, and should be sent to the Secretary, Mr NEIL BRODIE 18 City Road Newcastle accompanied with copies of three recent testimonials, on or before November 7th

Canvassing a disqualification

Darlington General Hospital.

(120 Beds)

Wanted SENIOR HOUSE SURGEON (male British) Salary £175 per annum board residence and laundry Special Departments Eye ear No and Throat Must write Orthopædic and D & S P

Applications stating age qualifications and experience together with copies of two recent testimonials to be addressed to the undersigned.

C FIDDLE, Secretary

Royal Hampshire County Hospital, Winchester (158 Beds)

HOUSE SURGEON (additional) Applications are invited from fully qualified men for the above post to take up duties at an early date Six months appointment. Salary £60 per annum with board residence and laundry Candidates who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials

HERBERT MASLEN, Secretary

Queen Mary's Hospital for the
EAST END E 15
Telephone Maryland 2616

Applications are invited from fully qualified and registered Medical Men for the following posts

One RESIDENT MEDICAL OFFICER Salary £200 per annum
Two HOUSE SURGEONS Salary £120 per annum
One HOUSE PHYSICIAN Salary £120 per annum
One OBSTETRIC HOUSE SURGEON Salary £120 per annum
One HOUSE PHYSICIAN AND RESIDENT ANAESTHETIST Salary £120 per annum
One CASUALTY OFFICER Salary £150 per annum

The Hospital contains 217 beds including 50 Maternity Beds, and other Special Departments

Candidates who should previously have held Hospital appointments must send applications accompanied by testimonials to the undersigned not later than Wednesday November 4th The appointments will date from January 1st, 1932 and will be for six months except in the case of the Resident Medical Officer, which will be for twelve months

RAPHAEL JACKSON (Major), Secretary

Queen Mary's Hospital for the
EAST END E 15
Telephone Maryland 2616

There is a vacancy on the Staff of this Hospital for an HONORARY PHYSICIAN to the Psychological Department

He will be required to see Out patients, and the out patient beds will be arranged

Applications accompanied by copies of testimonials from candidates who must be duly registered Practitioners either Graduates in Medicine of a University or Fellows or Members of a Royal College of Physicians should be lodged with the undersigned not later than Wednesday November 4th

RAPHAEL JACKSON (Major), Secretary

Charing Cross Hospital.
ASSISTANT PHYSICIAN

The Committee invite applications for the post of Assistant Physician (male)

Candidates who must be Members of the Royal College of Physicians of London must send in their applications together with copies of three testimonials to the undersigned not later than Monday November 2nd

PHILIP INMAN House Governor
Charing Cross Hospital, W C 2

Assistant Surgeon —The Council
invite applications for the post of Assistant Surgeon to the CHARING CROSS HOSPITAL Candidates who must be Fellows of the Royal College of Surgeons of England should send in their applications together with copies of three testimonials to the undersigned not later than Monday November 2nd

PHILIP INMAN House Governor
Charing Cross Hospital, W C 2

The Stamford, Rutland and
GENERAL INFIRMARY, STAMFORD

HOUSE SURGEON (British male or female) wanted for November 1st for a period of six months Salary at the rate of £200 per annum with board residence and laundry in the infirmary Candidates to forward three recent testimonials with particulars as to age, qualifications and experience to us

STAPLETON & SON,
Stamford Secretaries

Worthing Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER now vacant The appointment is for six months, renewable (determinable by three months notice on either side) Salary at the rate of £150 per annum, with board lodging and laundry

Applications giving age qualifications, and experience with copies of three testimonials, to be sent to the Secretary at once

Southend Victoria Hospital,
SOUTHEND (96 Beds)

JUNIOR HOUSE SURGEON (male) required November 1st six months appointment Salary £150 per annum, board, residence and laundry Apply stating age, qualifications, previous experience with copies of three recent testimonials to the Secretary on or before October 28th

The Queen's Hospital for
CHILDREN,
Hackney Road, London, E 2

The Committee invite applications for the post of SURGEON for the Ear, Nose and Throat Department, with charge of beds Attendance required on Monday and Thursday mornings An honorarium to cover travelling expenses will be paid Candidates must be Fellows by examination, of the Royal College of Surgeons, England

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before November 14th to the undersigned from whom further particulars may be obtained

CHARLES H BESSELL, Secretary
October 20th 1931

The Queen's Hospital for
CHILDREN Hackney Road, London, E 2
Telephone Bishopsgate 6305 and 2837

CLINICAL ASSISTANT required in the Orthopædic Department Attendance every Thursday at 1 30 p m, and occasionally in the Operating Theatre on Saturdays at 9 30 a m Lunch provided Honorarium 5s per attendance to cover expenses Applications stating age qualifications and experience, should be addressed to the undersigned on or before October 31st

CHARLES H BESSELL,
October 8th, 1931 Secretary

York Dispensary.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female) to commence duties as soon as possible

The Resident Staff consists of two Medical Officers whose duties are to visit and attend the sick poor in their own homes, and to assist the Honorary Staff Candidates must be duly qualified registered, and unmarried Some experience of the administration of Anæsthetics is essential Salary £175 per annum, with board, lodging, and attendance, and allowance for laundry Applications, with testimonials, to be sent on or before October 31st to—

4, New Street, JOHN C PETERS,
York Secretary.

The Lady Chichester Hospital,
ROYAL (BRIGHTON)
FOR FUNCTIONAL NERVOUS DISEASES
(62 Beds)

JUNIOR HOUSE PHYSICIAN required for three months at £1 per week, all found Valuable experience for Diploma in Psychological Medicine Preference given to Junior Resident for Senior post later

Applications with testimonials to the Secretary, 117, North Street, Brighton

Burslem, Haywood and Tunstall
WAR MEMORIAL HOSPITAL

Wanted, SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males) Salaries £175 and £140 respectively, with board and residence Must be fully qualified

Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me

F C POWELL, FCIS,
Public Offices, Secretary
Price St, Burslem

Aberdeen Royal Infirmary.

The Board of Directors invites applications for the post of ASSISTANT GYNÆCOLOGIST Six copies of applications and testimonials should be lodged with the Subscriber not later than November 7th

230 Union St, JOHN A McCONACHIE,
Aberdeen Clerk and Treasurer

Bristol Eye Hospital.

Applications are invited for the post of RESIDENT HOUSE SURGEON Salary £150 per annum Twelve months' appointment Vacant November 1st The Hospital is recognised for the purpose of taking the D O M S Applications to be received by the Secretary on or before Tuesday, October 27th

Burton-on-Trent General
INFIRMARY (130 Beds)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male) Salary at the rate of £150 per annum, with board, residence, and laundry

Applications, giving age and qualifications, together with copies of testimonials, to be sent to—

E W THORNLEY, Secretary.

The National Institute of Child
PSYCHOLOGY

CLINICAL ASSISTANTS

Vacancies for Clinical Assistants open to Medical Men and Women Must have had previous experience with children Attendance required one afternoon weekly Period of appointment six months renewable

Vacancy for one Clinical Assistant with Biochemical experience

Full particulars post experience to the ADMINISTRATOR The National Institute of Child Psychology, Robert Browning's House 19, Warwick Crescent, W 2

The National Institute of Child
PSYCHOLOGY

Vacancy for CLINICAL REGISTRAR (honorary) Commencing duties January 1st 1932 Appointment for six months, renewable Duties occupy three afternoons and part two mornings weekly

Applications, to be made in writing to the ADMINISTRATOR, National Institute of Child Psychology, Robert Browning's House 19 Warwick Crescent, W 2

Cheltenham General and Eye
HOSPITALS

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male) at the General Hospital

Candidates must be unmarried have registered qualification in Medicine and Surgery and produce evidence that they are qualified to administer Anæsthetics

Salary £200 per annum, with board lodging and laundry

Applications, with copies of testimonial to be sent in sealed envelopes marked "House Physician," to the undersigned by October 31st

I CUMMING SMITH FCIS Secretary
The General Hospital, Cheltenham
October 19th, 1931

Preston and County of Lancaster
ROYAL INFIRMARY

Applications are invited from unmarried gentlemen, doubly qualified and registered for the post of HOUSE PHYSICIAN Duties in Medical and Ear Nose and Throat Departments Resident staff six

Salary at the rate of £150 per annum with board, residence, and laundry The appointment to be held for at least six months

Applications, stating age nationality qualifications and experience, to be forwarded at once to—

Royal Infirmary, JOHN GIBSON
Preston Supt and Secretary
October 19th, 1931

Liverpool Stanley Hospital

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN

Applications and testimonials addressed to the President, to be sent on or before Saturday November 14th

The canvassing of any member of the Electing Committee will disqualify, but candidates are at liberty to send to the members copies of their applications and testimonials

IRVINE WHITE Hon Secretary

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required Salary £120 per annum, with residence, board etc

Applications, with copies of testimonials endorsed "House Surgeon" to be addressed to the Chairman of the Board of Management Post now vacant

H R NORTH Secretary

Royal Lancaster Infirmary.

Wanted immediately a gentleman as JUNIOR HOUSE SURGEON British

Salary £130 per annum Board, residence and laundry provided

Applications, with testimonials to be sent to the Honorary Secretary, Royal Lancaster Infirmary

The Sheffield Royal Hospital,
(340 Beds)

There are two vacancies for Residents
OPHTHALMIC HOUSE SURGEON. £120 per annum,
ANÆSTHETIST £80 per annum, rising to £100 in six months

Applications to— W H BOOTH
Superintendent & Secretary

BROOKMANS PARK STATION (L N E R main line) Holborn Square, W C

Hospital for Epilepsy and Paralysis Maida Vale W 9

RESIDENT MEDICAL OFFICER required Nov 1st HOUSE PHYSICIAN required Nov 1st

Applications invited for the posts The salaries are at the rate of £150 and £100 per annum respectively and the appointments are for six months Candidates for the post of Resident Medical Officer should be of this or earlier date to take that of House Physician and applications and copies of three recent testimonials should reach me by Nov 5th The successful candidate will be required to wear uniform

H W BULLEIGH
Secretary & General Superintendent

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EAST YORKSHIRE—Near large town—Old established PRACTICE Receipts £1 033 Panel 890 Premium 1½ years purchase House can be rented £64 p a —Apply 2614

EAST RIDING CITY — Old-established PRACTICE Average receipts £500 p a Panel 520 Rent of house £62 p a Premium £800 —Apply 2625

EAST RIDING CITY —Middle and working class PRACTICE Average receipts for the past three years £1 478 p a Panel 850 Premium £2 200 Freehold house may be purchased for £1 000 —Apply 2629

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W J HICKS *Secretary*

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Surrey Hills — Over £600, some Panel at 400 3/6—10/6 Detached house, 6/7 bed, etc —No 8930

Scotland.—N. Glasgow — Over £850 p a Panel 1 500 Appt £75 Fees 5 to 7 6 5 bed 3 recep, etc 1½ yrs purchase —No 8929

Death Vacancy.—W. of England Panel Average £700 Panel about 600 2 partners req 4 bed 2 recep etc to rent Excellent locum in charge —No 8926

Essex —Country, unoppd.—£700 per annum or more Panel £440 Appointment and clubs over £120 Fees 3 6 to 7/6 or more Premium £1 650 with Partnership in time —No 8925

Glos Country. — £1,250 p.a. Panel over 1 100 Clubs £250 Dispensing 3 recep, 5 bed, etc Prem £1,750 —No 8919

Death Vacancy.—Devon Resort. £600 p a or more Panel 500 Fees 2/6 —10/6 Lease to 3 bed, 2 recep, etc, and half acre —No 8916

Eastern County. — £1,900 p a Panel 1 250 Fees 3/6 to 21/ Ample scope Good house 5 bed 3 recep, and large garden Would suit 2 men —No 8914

London, N.E. — Old-established family PRACTICE Over £4 000 p a Panel about 2 000 1/3 share House to rent Fees 2 6 to 6/ —No 8912

Surrey Town — Over £4,000. Panel about 2 000 Appts £630 Fees 5/ to 12/6 1/5 share for sale now —No 8911

Kent.—Within 30 miles. About £2 500 p a 2/5 share after preliminary Asst Panel 1 000 Appts £250 Fees 3/6 to 21/ Good house, garden, garage, etc, to rent —No 8909

East Coast. — Popular resort. About £4 200 1/3 share Panel 2 000 Appts about £200 Visits 5/ up Good house to rent —No 8908

Middlesex Suburb.—Share worth about £900 Good panel Appts £40 Fees 3/6 to 10/6 Good house and garden for sale —No 8907

Kent. — Country, unopposed, about £900 p a Panel 330 Fees 5/6 to 12 6 Appointments £125 p a Premium £1 300 —No 8900

Suffolk. — Over £1,000 p.a. Panel over 600 Fees 4/ to 10/ Appointments £65 p a Good house garden and outbuildings Premium £1 600 —No 8899

Lancs Town. — Over £600 p.a. Panel 270 Fees 5/6 up Good house to let or rent Premium £800 or offer —No 8898

London, S.W.—Central — Over £800 Fees 7/6 to 21/ No panel or dispensing —No 8895

Liverpool area.—About £600 p a. Panel 900 Fees 3 6 to 5/6 Small house Ample scope —No 8894

Kent —Near London.—£2,100 1/3 share, incg to 1/2 Panel 1 660 Fees 4/ to 21/ Good house and garden to rent —No 8892

Central Wales. — Share worth £600 or more. Small panel Non dispensing Good fees Easy terms to good man —No 8885

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YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approx. £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

YORKS.—PARTNERSHIP in busy rapidly increasing town Practice. Receipts £2,500. Panel 1,500. Suitable house available. 1/3 share, with view to succession, 2 years' purchase.

ESSEX.—NUCLEUS PRACTICE in residential locality. Excellent scope for young and energetic man. Suitable house available. Receipts £325. Panel 225. Premium £450.

CHESHIRE.—Well-established PRACTICE with excellent scope for panel if desired. Modern semi-detached house (4 beds), garage. Small panel. Receipts approx. £500. Fees 3/6 up. One appointment worth £150. Mids. 5 gns. Premium open to reasonable offer.

EAST MIDLAN[illegible] better middle-class Practice. 10-roomed hou[illegible] nearly £2,000. Fees 3/- up. Up-to-date [illegible]gery. Premium 1/3 share, with view to larger share £1,300.

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SURGICAL PARTNERSHIP in good-class non-panel Practice, situated in health resort on North-West Coast. Well-situated house in own grounds to rent or sale. Receipts £5,000. Premium for 1/2 share 2 years' purchase. New partner should be F.R.C.S. Remaining partner in on Medical side.

WELSH BORDERS.—Excellent middle-class Town PRACTICE, situated in delightful locality. Good social amenities. Receipts approx. £1,800. Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained. Knowledge of Welsh not essential. Hospital.

LONDON, N.W.—Well-established mixed PRACTICE, mainly better-class, with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 3/6 up. No midwifery. One appointment. Part of house sublet if desired. Vendor has developed better class of Practice at good fees. Premium £1,300 cash.

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NORTHANTS.—Old-established Country PRACTICE, situated in charming locality. Hunting and sport of all kinds. Highly suitable to semi-*retired Practitioner*. *Splendid* house in own grounds to rent or purchase: central heating, electric light, etc. Receipts £500. Panel 400. Premium £550.

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KENT.—Well-established Country PRACTICE, situated in growing locality. Medium-sized house to rent (4 beds). Receipts just over £900 p.a. Panel 331. Fees 3/6 up. Cottage Hospital. Excellent scope. Premium £1,300.

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3. MIDDLESEX. — Well-established mixed-class PRACTICE. Receipts last year £768, panel 250. Nice house, small garden and garage, rent £2 per week. Rapidly developing part. Premium £1,012.
4. LONDON, S.W. (suburb). — Lady Doctor's PRACTICE. Receipts over £500 p.a., including panel 250. Lock-up Surgery, rent 30/- p.w. Prem. £600. Scope for inc.
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6. LONDON, N.—(Near St. Pancras). — Well-established cash and panel PRACTICE. Receipts last year £406, *panel* 350. Rent of surgery £1 weekly, inclusive. Premium £500, including drugs and furniture.
7. LONDON, E.—Old-established Cash PRACTICE, with small *panel*. *Receipts* last year nearly £600. Living accommodation and surgery, rent £65. Vendor retiring. Premium £750. Suit Lady Doctor.
8. N. WALES.—*Third* share of a well-established Practice for disposal. Total receipts £2,000 p.a., panel 1,750. Pleasant district near large town. Suit young active Practitioner. Premium £1,000.
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2. NEAR GLOUCESTER.—*THIRD SHARE* in rapidly growing country town. Up to half share later. Receipts last 3 years, £1,395, £1,507, £1,777. Panel 1,250. Choice of house. Prem. £1,200, including drugs, etc.
3. CORNWALL. — Unopposed Country PRACTICE, near North Coast Health Resort. Over £900 p.a. Good scope. *Price* £1,400 or near offer. Small house to buy.
4. SOUTH-WEST WALES.—Seaside Town, non-industrial. Sound mixed PRACTICE, returning £1,000 p.a. Good house to buy or rent. Panel over 700. Opposition weak. Easy terms for quick sale.
5. GLOUCESTERSHIRE.—Old-established unopposed Country PRACTICE, averaging many years over £1,900 p.a. Panel 1,100. Appts. £211. Prem. £3,000. Good house for sale.
6. SPA PRACTICE.—Small Summer Nucleus, with gd. hse. in Eng. Price £1,250 together.
7. CORNWALL.—Country Town. PARTNERSHIP. One-sixth to one-third of £5,600. Gd. surgical opening for F.R.C.S.. Suit h.s. Or Assistantship with view.
8. LANCASHIRE. — Seaside Town. — Old-established PRACTICE, doing £750 p.a. House to buy. *Good schools.*
9. UNIVERSITY CITY.—*HALF SHARE for sale* at 2 years' purchase. Option of total succession in 1 year, possibly sooner. Receipts over £1,700 p.a. Panel 2,120. Choice of house. Great scope.
10. WESTERN CITY.—Panel of 465 and club, returning about £250 p.a., together, for sale. Good house.
11. Several smaller town and *country Practices*.

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NEAR MANCHESTER—PLEASANT TOWN. Long established PRACTICE. Average cash receipts £965 p.a. Panel 1,902. Appointments not included £100 p.a. Greatly under Excellent detached house (freehold) 3 reception 5 bedrooms Garage and garden, all tennis court. Premium—Practice—1½ years purchase—No 234

WESTMORELAND—UNOPPOSED COUNTRY PRACTICE in beautiful district. Cash receipts last year £1,075 including £780 from panel. Good house 2 reception 4 bedrooms. Garage and garden. Rent £27 p.a. Premium low offer—No 300

CHESHIRE TOWN near COUNTY—Well established PRACTICE. Cash receipts last year £1,784. Panel 1,300. Excellent house 2 reception 4 bedrooms rent £60 p.a. Premium 1 year purchase (less panel reduction)—No 299

LIVERPOOL — Old established Middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception 7 bedrooms garage and garden, to rent —No 276

MANCHESTER — RESIDENTIAL SUBURB. Middle-class PRACTICE. Suitable for two in Partnership (one a good surgeon). Cash receipts 1931 £4,578. Panel 1,400. Two excellent houses with ample accommodation to rent. Premium 1½ years purchase partly arrangement—No 277

BIRMINGHAM SUBURB—Middle-class PRACTICE with great scope. Receipts last year £700. Small select panel. Excellent house 2 reception, 6 bedrooms. Garage and large garden. Premium—Practice, house, and drugs—£1,100. Genuine reason for sale—No 283

MANCHESTER—INDUSTRIAL PRACTICE. Cash receipts £900 p.a. Panel 1,350. Good scope. Excellent house, 2 reception 4 bedrooms, to rent. Premium £1,200 for quick sale—No 301

CHESHIRE TOWN—Old-established PRACTICE. Average cash receipts £1,420 p.a. Panel 2,000. Good scope. Nice house, 3 reception 5 bedrooms. Garage and garden. Premium—Practice —£2,200—No 293

MANCHESTER—RESIDENTIAL SUBURB—PRACTICE. Cash receipts last year £1,245. Panel 520. Plenty of scope. Charming modern house recently built for Practice, 5 bedrooms 2 reception rooms. Garage and garden. For sale or may be rented on lease. Premium—Practice—1½ years purchase—No 282

NEAR LIVERPOOL—PRACTICE offering scope. Cash receipts £500 p.a. Panel 550. Good house, 2 reception 5 bedrooms. Garage and garden. Rent £70 p.a. Premium £650, or near offer—No 287

SOUTH COAST—SEASIDE RESORT—PRACTICE. Cash receipts £685 p.a. Panel 660. Excellent house, 3 reception, 5 bedrooms garage and garden, to rent. Premium—1½ years purchase —No 197

LANCS TOWN—Old established PRACTICE. Average cash receipts £1,170 p.a. Panel 1,400. Excellent house 3 reception 5 bedrooms. Garage and garden. Premium £1,500 payable by arrangement—No 232

NEAR LEESTON—PRACTICE and house. Cash receipts £500. £626. Panel 250. Good house 2 reception 4 bedrooms. Rent £70 p.a. Premium £800, or near offer—No 224

MEDICAL WOMAN'S PRACTICE—SEASIDE TOWN—Cash receipts last year £652. Panel 240. Excellent rooms at £36 p.a. Premium £850 or near offer—No 274

MEDICAL WOMAN'S PRACTICE—LANCS TOWN—Cash receipts last year £451. Panel 300. House 4 bedrooms, 2 reception, to rent at £35 p.a., or would sell for £250. Premium £200, or near offer—No 286

MANCHESTER—PLEASANT RESIDENTIAL SUBURB—Old established PRACTICE. Average cash receipts £680 p.a. Panel over 600. Wide scope. Excellent house 2 reception, 4 bedrooms, garage, and good garden to be sold, or may be rented from a purchaser on lease. Premium 1 years purchase. Very low offer—No 246

LANCS TOWN, near County—Well established PRACTICE. Cash receipts last year £1,122. Panel 1,0[illegible]. Excellent House, 3 reception 6 bedrooms. Garage and large garden. Premium—Practice and [illegible] reasonable offer—No 291

NORTH WEST COAST — SEASIDE RESORT — Old established PRACTICE. Cash receipts 1930 £874. Small select panel. Excellent freehold House, 5 bedrooms. Garage and garden —No 266

MANCHESTER—Old established PRACTICE. Cash receipts 1930 £688. Panel 578. House on main road, 2 reception 5 bedrooms, and garage. Premium—Practice—1½ years purchase —No 294

BIRKENHEAD—PRACTICE with great scope. Cash receipts about £700 p.a. Panel 900. Good house 3 bedrooms garden. Premium —Practice—£800, or near offer—No 295

LANCS TOWN—Old established PRACTICE. Average cash receipts £965 p.a. Panel 710. Excellent house in pleasant district 2 reception, 4 bedrooms. Garage and garden. Premium 1½ years purchase—No 298

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1 MIDLANDS. — Partnership in Practice nearly £3,800 p.a. in beautiful suburb of Manufacturing Town Panel 2,200 House, with 5 bed and dressing rooms, in good residential part, for sale or rent Unlimited scope Excellent Hospitals One third share at first at 2 years' purchase

2 S. OF ENGLAND. — Practice of nearly £1,100 p.a. in delightful residential town in Inland Watering place Panel about 1,100 Very good detached residence (5 bed rooms and attics), with garage and nice garden, for sale or rent Excellent social and educational advantages Scope for increase Premium £1,650.

3 S. COAST. — Practice of nearly £850 p.a. in residential town and health resort Panel 800 House for sale or rent

4 DEATH VACANCY. — HEREFORDSHIRE.—Country PRACTICE, averaging £700 p.a., in beautiful Wye Valley District Panel about 600 House (4 bedrooms), with garden, orchard, and paddock, 3 acres Rent £55 p.a.

5 ABOUT 30 MILES FROM LONDON.—PRACTICE, averaging £275 p.a. (carried on by Medical Woman) in town of 60,000 inhabitants Panel about 200 Detached corner house, with 9 rooms, for sale or rent Any reasonable offer entertained

6 MIDLANDS.—Partnership in Practice over £2,200 p.a. in agricultural district, easy reach of County Town Panel over 1,200 Suitable house at a rental One half share at first at 1½ years' purchase

7 DORSET.—Country Practice of £1,000 p.a. In beautiful part near the coast Panel 682 Detached house (6 bedrooms), with garage and beautiful garden, to rent Hunting, shooting, fishing, etc Premium 1½ years' purchase Suitable for retired Service man

8 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery Panel about 500 Well situated corner residence (5 bedrooms) to [illegible] Premium £900

9 EASTERN COUNTIES. — Partnership in [illegible] £1,250 p.a. in country town Panel 785 Share [illegible] purchase Up to date Cottage Hospital Practice nearly panel Recog[illegible]

10 E. COAST.—Partnership in lucrative Practice [illegible] up to one half 2 years' rent in large seaport town Panel over [illegible] re, £2,500 Good scope for increase

11 W. OF ENGLAND. — Partnership in [illegible] TICE of over £5,250 p.a. [illegible] Country Practice of £1,000 p.a. [illegible] Prem., one fourth share 3,800 Premium, one half share 1½ years' purchase

12 LONDON, S.W. — Small, non-dispensing [illegible] lease to the West End Select PRACTICE of nearly £400 p.a., [illegible] corner house, with ample accommodation, to rent on lease Premium 1 [illegible] years' purchase, or near [illegible]

13 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town Panel 1,100 Very nice well built house (6 bed and dressing rooms) for sale Scope for increase Premium 1½ years' purchase

14 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50 House contains 5 bedrooms Garage and garden Rent £150 p.a. Scope for increase Premium 1½ years' purchase

15 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £700 p.a. and a panel of 650 Good house (6 bedrooms), with garage, and one acre of garden, for sale Premium 1½ years' purchase

16 ESSEX.—Country Practice of £700, including panel and appointments worth about £550 p.a. Premium £1,100.

17 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns Panel 300 Substantially built 9 roomed house for sale Scope for increase. Premium £725.

18 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district No panel House, with 4 bedrooms and fair sized garden, to rent Good scope Premium £700 cash

19 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district Select panel of 200 Excellent well situated detached house (5 or 6 bed rooms), garage, and good garden, to rent Considerable scope Premium 1½ years' purchase

20 E. ANGLIA. — Easily worked Country PRACTICE, averaging £1,360 p.a. Panel 820 Ten roomed house, with garage, large garden and orchard, to rent Scope for increase Premium 1½ years' purchase

21 S.W. ENGLAND.—Third Partner required In Practice, averaging £5,645 p.a. in small Industrial Town Partner must be experienced in Surgery (preferably F.R.C.S.) as there is excellent scope in this direction Panel over 4,000. Semi detached ten roomed house for sale Premium one sixth share 2 years' purchase Preliminary Assistantship

22 LONDON, E. — Branch Surgery doing about £6 weekly in thickly populated area Panel 250 Hours contains 2 bedrooms, etc, rent £130 p.a. Premium 1½ years purchase

23 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort Receipts past year £623 Panel 500 House (7 bedrooms), garage, and half acre of garden, for sale

24 LONDON, S.E. — Partnership in sound Practice of £4,500 p.a. in pleasant suburb No panel Choice of two houses for sale Premium, one third share, 2 years purchase

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British Medical Bureau

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(FOUNDED 1880)

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Practices and Partnerships for Disposal (continued).

25 HOME COUNTIES. — Non-dispensing PRACTICE in delightfully situated Town under 15 miles from London. Receipts last year over £1,200. No panel. Centrally situated house to rent. Premium £2,100.

26 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE about £1,800 p.a., in first-rate Town. Modern detached house (4 bedrooms etc.), garage and garden for sale. Equable climate. Good educational facilities. Premium only £1,250.

27 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and some full midwifery. Well-situated house (6 bedrooms), good garden and garage for sale. Good scope. Premium 1½ years' purchase.

28 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by participating all the year round. Receipts at present £150. No panel or midwifery. House in own grounds, with 6 bedrooms, etc. Price—House and Practice—£1,250.

29 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. Hours available. Applicant should be a capable Surgeon. Premium one third share or one fourth share. 1½ years' purchase.

30 N.W. COAST. — Partnership in Practice £3,500 p.a. in favourite Watering-place. No panel. Good well-situated house (7 bedrooms) for sale or rent. Premium one-half share 2 years' purchase. Partner should be young and hold F.R.C.S.

31 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

32 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £520 p.a. Small panel. No midwifery. Six-roomed house to rent. Premium £750, most of which may be paid by instalments.

33 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven-roomed house, with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

34 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. Premium one-third share £2,000.

35 HOME COUNTIES — Partner required in steadily increasing Practice of between £1,500 and £2,000 p.a. in rapidly growing neighbourhood within 15 miles of London. House with 5 bedrooms etc., garage and garden to rent. Good scope. Premium two-fifths share 2 years' purchase.

36 BIRMINGHAM —Practice about £700 p.a. in residential suburb. Small panel. Well-situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

37 SOUTH AFRICA — Country Practice in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June 1931, over £1,000. Sport of all kinds. Well-built house for sale or rent. Easily worked. Premium £500.

38 MIDLANDS —Partnership in non-dispensing Practice about £4,400 p.a. in first-rate town. Panel 1,544. Good house (6/7 bedrooms) to rent. Premium one-third share 2 years purchase.

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5. WITHIN TEN MILES OF LONDON.—PARTNERSHIP.—The third share of an old established good middle and working-class Practice is for disposal, offering excellent future prospects. Cash receipts last year amounted to nearly £2,700, including panel of nearly 1,500. Suitable house available at moderate price. Premium 2 years' pur.
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18. DEVON.—PARTNERSHIP—Half share of very old established unopposed Country Practice, offering scope, and situated in pretty within reach of large town Cash receipts last year £2 including appts. and panel of 880 Visits 3/6 to 21/-, extra. House contains 2 reception, 4 bedrooms, bathroom, etc den. Garage. Rent £50 p.a. Premium £2,000. Hunting, fishing, etc.
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21. LANCS.—LARGE TOWN.—Old-established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.
22. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 5[illegible]00. Visits 3/6 to 21/-. Very little midwifery. House, [illegible] waiting room and dispensary, in well-situated [illegible] hold, £1,5[illegible] Partner [illegible] middle and
23. CATHEDRAL CITY (NORTH).- [illegible] quired in very old-established [illegible] past three years average working-class Practice. Cash receipts for [illegible] £4,544 p.a. (last year £4,911), including panel about 4,000 fifth share is for disposal, with increase to a third later. Suitable accommodation available Premium 2 years' purchase.
24. NORTH MIDLANDS.—WITHIN 5 MILES OF FAVOURITE TOWN—Old-established good middle-class PRACTICE, offering large scope Cash receipts for last 12 months £1,332, including panel of over 1,000 Fees from 3/6. Mid. from 2 gns. Exceptionally nice house in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc, containing 3 reception, 6 bedrooms, etc. Freehold for sale. Premium 1½ years' purchase.
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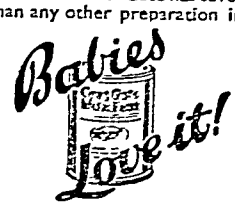




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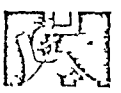
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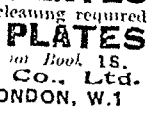
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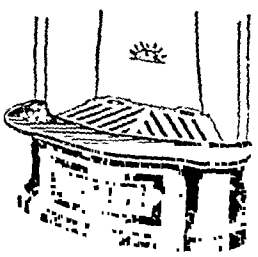
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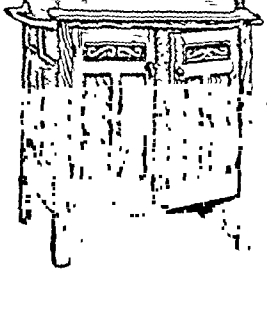
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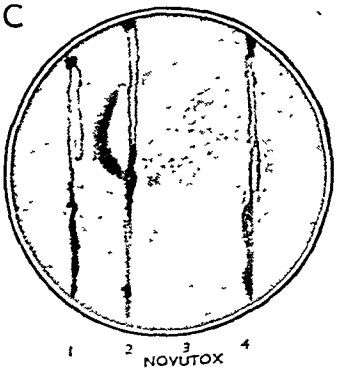
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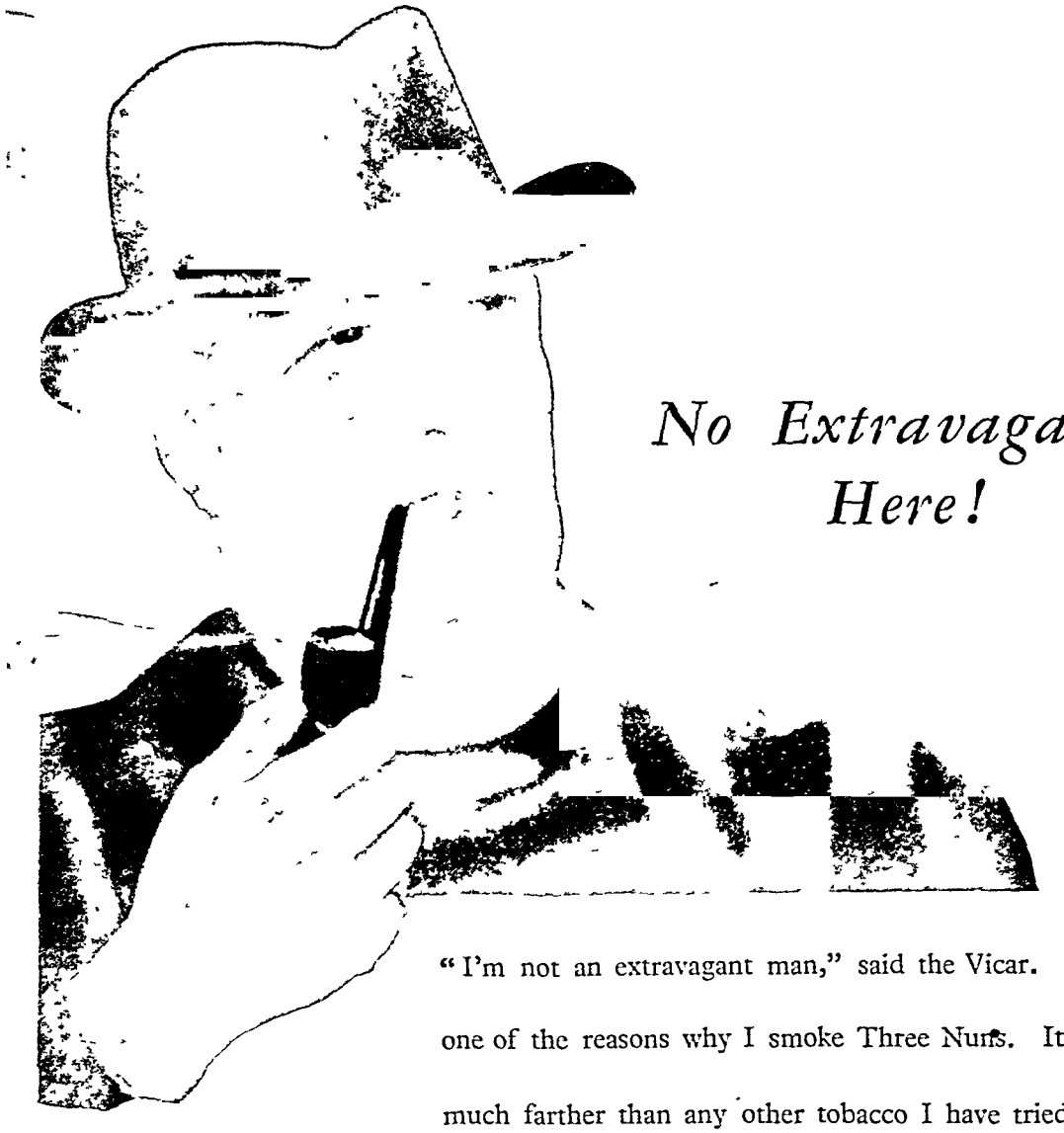
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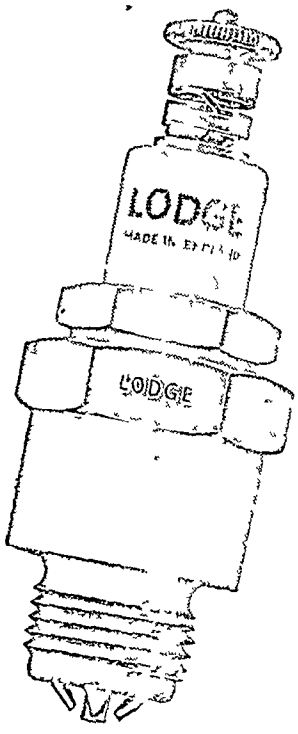
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in BRONZE & ENAMEL—BRASS
also CHROMIUMPLATE Send details for sketch or leaflet

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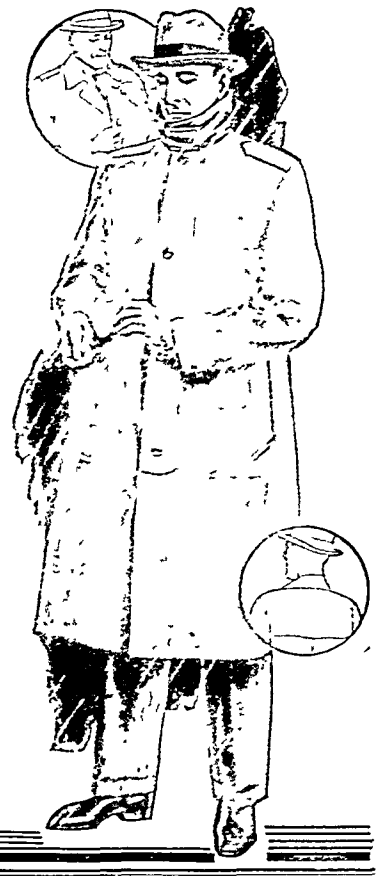
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AT THE AMAZING PRICE OF

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Post free.



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1 Material is absolutely impervious to rain, being of double texture water-proof cloth.

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4 Ventilated yoke ensures every comfort to the wearer.

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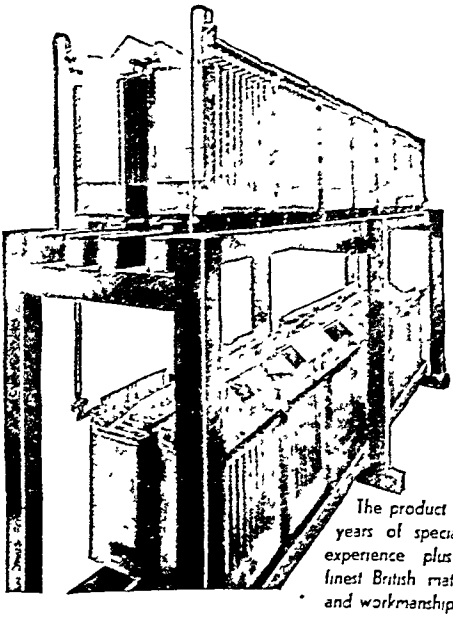
6 An all-British Production that will give years of service.

Post Orders. State height and chest measure

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The product of 25 years of specialised experience plus the finest British materials and workmanship

VITAL!

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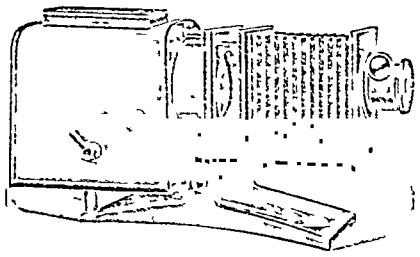
All the surgeon's skill and the nurses' care might be set at nought if the lights should fail at the crucial moment. Guard against this risk by installing an Ediswan Stationary Battery, to keep your lights going in the event of current failure. These batteries cost little to run, little to instal and they last for years We can design one exactly to suit your needs.

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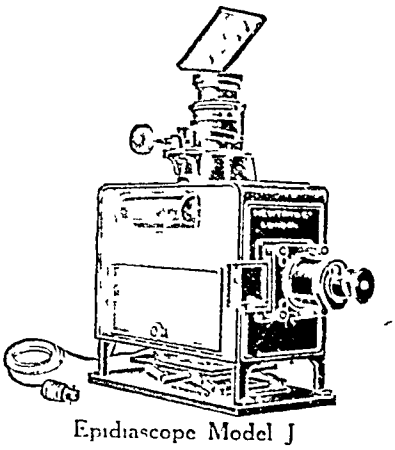
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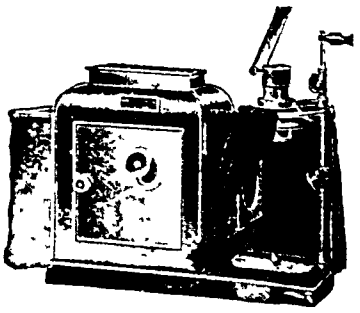
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The "Minerva" Lantern



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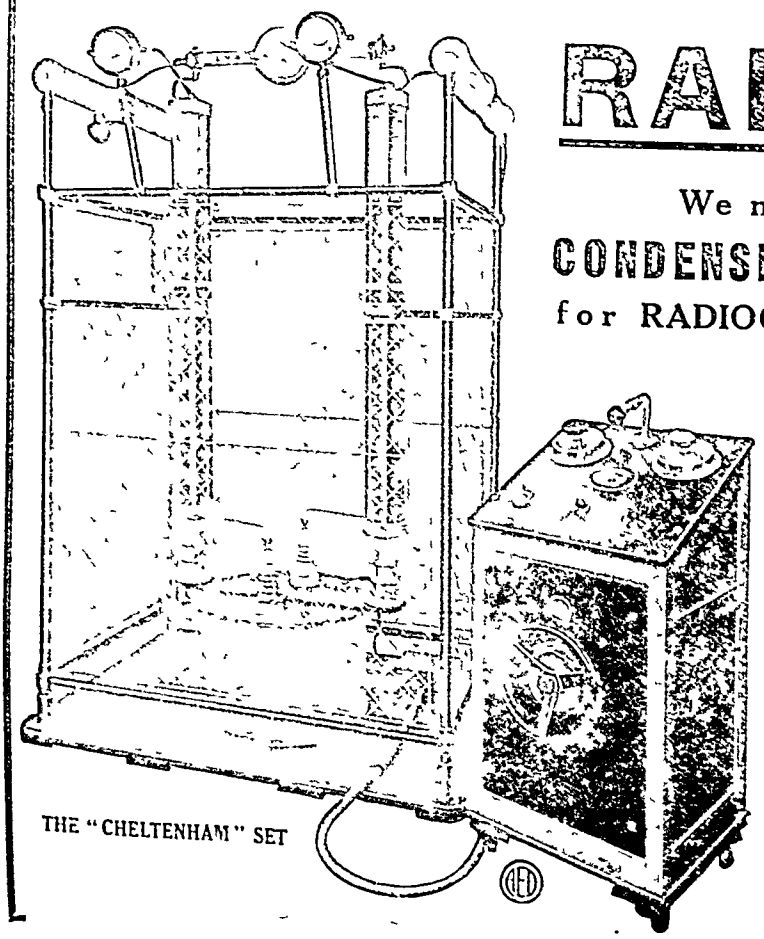
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We manufacture a full range of

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Output between wide limits.
Perfectly silent in operation.
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Absolute efficiency.

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X-Ray Film

A matt film of increased sensitivity

Coated with ultra-speed emulsion. No change in development procedure. Has a surface suitable for pencil or pen notes. May be viewed on illuminator or before window.
No alteration in price.

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TO COUNTER ACIDOSIS



As SALVITAE contains 59% of Potassii et Sodii Citro-Tartras and 30% of Sodii Sulphas it is of great value both in maintaining health and in the treatment of disease, through eliminating deleterious nitrogenous products and favourably influencing circulation, glandular secretions, peristalsis, and metabolism.

The fruit acids of SALVITAE are converted in the system into potentially basic alkaline carbonates, thus enabling the blood to keep the uric acid compounds in solution, and facilitate their removal.

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Sole Agents in the United Kingdom.

Two sizes, 4/6 and 7/-.

Salvitae

A formula that demonstrates its scientific value.

Manufactured by American Apothecaries Co., New York



THE DOCTOR'S CHINA TEA

WHY IT IS PRESCRIBED FOR GASTRIC PATIENTS.

When ordinary tea is out of the question it is essential that only really good China should be drunk. The Doctor's China Tea has won the enthusiastic approval of practitioners simply because it is a perfect blend of a good China leaf with all excess tannin eliminated. It can therefore be prescribed for invalids and dyspeptics with safety—it has no ill after-effects.

Priced at 3/- and 3/8 per lb.
A super quality at 4/2 per lb.

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FOR TOXÆMIAS OF INTESTINAL ORIGIN.

KAYLENE LTD., WATERLOO ROAD, CRICKLEWOOD, LONDON, N.W.2.

Telephone: GLADSTONE 1071 (2 lines). *Telegrams*: KAYLOIDOL, CRICKLE, LONDON

of the greatest assistance

Sphagnol

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APPROVED PEAT OINTMENT

We invite you to test Sphagnol preparations. A sample will be sent to you on receipt of a post card. Peat Products (Sphagnol) Limited (Dept. B 63), 21, Bush Lane, London, E.C.4.

Iodine-Medol

Clinical Data in Cases of Psoriasis

collected over a considerable period, show Iodine-Medol to have given good results in this indication. Iodine-Medol is an *Antiseptic Unguentum* presenting Iodine and Creolin in a form possessing peculiar penetrative powers with high germicidal efficiency. Indicated for use whenever Iodine medication would be employed.

Testing samples and full particulars sent on application to :—

Pearson's Antiseptic Co., Ltd., 61, Mark Lane, London, E.C.3.

FAMOUS BEFORE LISTER

AND STILL APPROVED

Robinson's preparations established their name and fame long before the arrival of modern antiseptic surgery. But in this instance, at least, modern research has only confirmed the practice of long ago.

Robinson's "Patent" Barley and "Patent" Groats in infant and adult dietetics still perform their invaluable function—enabling both infant and adult to obtain the full nutritional value of milk.

ROBINSON'S

"PATENT" BARLEY

AND

"PATENT" GROATS

KEEN, ROBINSON & CO. LTD.,
CARROW WORKS, NORWICH.

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WYLEYS LIMITED WHOLESALE DRUGGISTS COVENTRY *Established 1750.*

ELIXIR BROMO-VALERIAN CO.

Free from any disagreeable taste or odour.

Each fluid drachm (4 c.c.) contains:

Strontii Bromidi - -	5 gr.	Tinct. Adonis Vernalis - -	5 m.
Tinct. Valer. Deodorat. -	10 m.	Tinct. Visci Alb. - - -	5 m.

Useful for functional nervous affections, particularly in controlling epileptic seizures.

Price 5/- lb.

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RHEUMATIC AFFECTIONS

"METHYL-ASPRIODINE"

A single definite Chemical Compound of a Methyl derivative of Aspirin and Iodine, of undoubted value in the treatment of rheumatic affections. Supplied in the form of

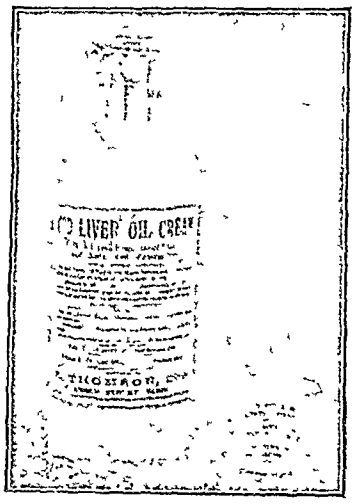
"METHYL ASPRIODINE" BALM - 3/-; LINIMENT - 3/-

Manufactured in London.

W. MARTINDALE, 12, New Cavendish St., W.1.

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COD-LIVER OIL in its most palatable and easily assimilated form is the CREAM prepared by Thomson of Elgin.



It is readily acceptable to children and adults.

Free from the difficulties of taking, usually associated with Cod-Liver Oil preparations.

Contains 50% recently refined Cod-Liver Oil of high vitamin content.

Maximum vitamin efficiency ensured by freshness of preparation every week.

Fresh eggs used in the making enhance nutrient value.

The Lancet, January 4th, 1930, says: "We can recommend this preparation."

Bottles 4/-, 7/-, and 10/-, post free by return.

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'PANOPEPTON'

THE FOOD FOR THE SICK

Supplies directly available energising food; especially designed to make no draft upon the strength of the enfeebled organism.

'PANOPEPTON' contains, in stable agreeable solution, 24% of solids; derived by physiological hydrolysis from prime lean beef and whole wheat, in a scientifically balanced ratio.

'PANOPEPTON' has nourished and restored in many cases where the patient has steadily lost strength on other foods.

SUPPLIED IN 12-oz. BOTTLES.

'ENZYMOL'

A SURGICAL SOLVENT AND ANTISEPTIC

AN EXTRACT OF THE GASTRIC GLAND OBTAINED BY DIRECT SOLUTION, ESPECIALLY PREPARED FOR EXTERNAL APPLICATION.

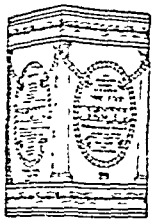
'ENZYMOL' exerts remarkable solvent, healing, antiseptic, and deodorizing action in the treatment of pus cases in general, gangrene, abscesses, sinuses, leg ulcers, etc., etc.

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Has the Ordinary Diet Sufficient Vitamin B?



Laboratory Reports on Bemax and Clinical Sample for personal trial will be sent to any Medical Man on request.

At the request of many correspondents a series of tests were recently conducted at the Bemax laboratories to determine how far the ordinary daily diet is an adequate source of Vitamin B.

The diet chosen for the tests included Eggs, Bacon, Bread, Butter, Beefsteak, Cabbage, Potatoes, Cheese, and a suitable percentage of A and D Vitamin.

The results prove conclusively that such a diet is in fact deficient in B Vitamin and cannot, by itself, meet the nutritional requirements of adults or promote normal growth in children.

Ample evidence is already available to show that partial B Vitamin deficiency results in a progressive deterioration of the digestive system, and may well be the principal cause of the many intestinal complaints which are so common to-day.

Bemax provides an ideal way of supplementing the ordinary diet with an adequate supply of B Vitamin, of which it is the richest known source in B_1, B_{11}, and B_{111}.

Its value as a tonic restorative food can hardly be over-estimated and its use has been attended with striking results in Dyspepsia, Constipation, Sleeplessness, Nervous Debility, Rheumatism, and all B deficiency diseases. As its content of E Vitamin is also exceptionally high it can be used with great advantage in the treatment of Sterility.

Medical Men are invited to write for reports of the tests referred to in this advertisement.

BEMAX

THE NATURAL VITAMIN TONIC FOOD

THE BEMAX LABORATORIES, 23, Upper Mall, Hammersmith, London, W.6.

THE BEST PREVENTION

to invasion by infecting germs in the nose and naso-pharynx

DIMOL SNUFF

Diluted with 10 times its bulk of mucus will kill:

Pneumococci in 30 seconds

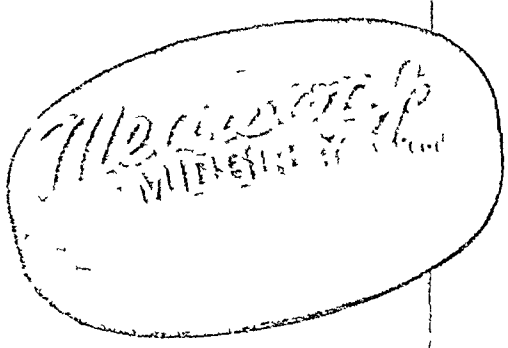
B. influenzae in 30 seconds

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Streptococci in 40 seconds

Prices and particulars will be sent on application to:

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MIDGLEY'S MEDICATED SOAPS

SEBORRHOEA

The Medisoaps specified below are designed for use in Seborrhoea, and are especially valuable for the removal of dandruff. In chronic cases they form excellent adjuncts to treatment with sulphur or salicylic acid.

MEDISOAP No. 18.
Beta naphthol 2½%.
Precipitated Sulphur 10%.

MEDISOAP No. 71.
Resorcin 1½%.
Precipitated Sulphur 5%

MEDISOAP No. 41.
Resorcin 1½%.
Salicylic Acid 1½%.
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MEDISOAP No. 95.
Sodium Biborate 5%.
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For further particulars see 'Prescriber's Index,' sent on request

CHARLES MIDGLEY LTD., MANCHESTER
ASSOCIATED WITH
EVANS SONS LESCHER & WEBB LTD.
LIVERPOOL LONDON



IN NEURASTHENIA.

Every potential neurasthenic is greatly assisted by liberal drinking of "Ovaltine." It is recommended as a between meals beverage or as a mid-day "light lunch," and it displaces tea or coffee with complete advantage.

"Ovaltine" is also invaluable when taken at the hour of sleep Its use in this way has often avoided the need for employing hypnotic drugs.

The value of "Ovaltine" has been proved many times in such cases. It provides nourishment of the right kind, and in a form readily dealt with by the impaired digestive organs "Ovaltine" permits of the liberal ingestion of food without taxing the digestive power.

"Ovaltine" is a complete natural food, yielding in one cupful a greater food value than three eggs. This delicious beverage is unquestionably a tonic nerve nutrient of a high order

A liberal supply for clinical trial sent free on request

A. WANDER, Ltd., 184, Queen's Gate, S.W.7.
Works KING'S LANGLEY, HERTS

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REINFORCED COD LIVER OIL
—BOOTS—

THE therapeutic value of Cod Liver Oil is fully appreciated by the medical profession. It is recognised for its specific action (due to its high content of Vitamins A and D) in Rickets, Affections of the Chest, and diseases arising out of Malnutrition. Reinforced Cod Liver Oil—Boots is a biologically controlled preparation containing five times the normal amount of Vitamin D in addition to the normal amount of Vitamin A. The advantage of a concentrated oil needing only a fifth of the usual dose will be appreciated. Four fluid ounces of Reinforced Cod Liver Oil—Boots, contain the same amount of Vitamin D as one pint of the finest Norwegian oil.

In 4-oz. bottles, 2/6

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TELEPHONE: NOTTINGHAM 45501
TELEGRAMS: "DRUG, NOTTINGHAM"

Full size trial sample free to any medical practitioner, in British Isles, on application by postcard to Boots the Chemists, Station Street, Nottingham.

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OBTAINABLE FROM OVER 900 BRANCHES IN GREAT BRITAIN

The French Natural Mineral Water.

VICHY-CELESTINS

And the other State Springs of Vichy.



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PRIMARY DYSPEPSIAS:
- Hyperpepsia—Intermittent hyperchlorhydria.
- Hypopepsia and apepsia—Dyspepsia arising from disturbance of neuro-motility.
- Intermittent pyloric stenosis, not of organic origin.

SECONDARY DYSPEPSIAS:
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- Toxic dyspepsia (gastro-hepatic).
- Dyspepsia due to enteroptosis.

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- Congestion due to excessive or improper feeding.
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- The diathetic congestions of diabetic, gouty, and obese persons.
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MALARIA AND TROPICAL DISEASES.

DIATHESIS.

The diabetes of fat people. Arthritic obesity. Uricaemia and gout. Rheumatic gout.

URINARY GRAVEL.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ETAT" and the name of the SOLE AGENTS:

INGRAM & ROYLE, LTD.

Bangor Wharf, 45, Belvedere Road, London, S.E.1

And at LIVERPOOL and BRISTOL.

Samples free to Members of the Medical Profession.

For the Treatment of Arthritis and Neuritis

"ARTHRYTIN" Trade Mark

BRAND

Ammonium ortho-iodoxy benzoate

"ARTHRYTIN" possesses an action resembling that of the salicylates, but is much more potent in its effects. It is indicated in all forms of acute arthritis, and has given strikingly successful results in many cases of chronic arthropathy.

Supplied in capsules for oral administration, and powder for intravenous and rectal injection.

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Prepared in the Laboratories of

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IN HÆMORRHOIDS

Operation May be Necessary

ANUSOL

★ ★ ★ ★ In the early stages, medical treatment may result in a cure. During pregnancy, in nephritis, diseases of the liver, operation may be temporarily inadvisable.

Quite often operation will be necessary for permanent relief. In the meantime, much can be done to alleviate pain, reduce congestion and control hæmorrhage, by using Anusol Brand Hæmorrhoidal Suppositories. No opiate or local anæsthetic to dull the pain sensation and obscure the symptoms.

After the operation, Anusol Brand Suppositories soothe and protect the mucous membrane, reduce congestion, relieve pain and itching, promote healing.

Before operation and after, Anusol Brand Suppositories have a well-defined place in treatment. Let us send you a trial supply for use immediately after examination in your consulting room.

BRAND

HÆMORRHOIDAL SUPPOSITORIES

RELIEVE PAIN ★ REDUCE CONGESTION

CONTROL HÆMORRHAGE

British Distributors:

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Manufactured by GOEDECKE & CO., BERLIN

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HORLICK'S MALTED MILK is as popular with the Medical Profession to-day as at any time during its history of half a century. It is a pure, clean, modified milk-food which keeps indefinitely and in any climate. Its cream-like consistency, its palatability, and its ease of digestion and assimilation, make it a safe, bland and soothing diet. Combining the nutritive qualities of pure fresh milk and the soluble extracts of malted barley and wheat, Horlick's is as valuable in infancy as in old age, in illness as in health. The Horlick process conserves the vital qualities of the constituent food materials and at the same time destroys pathogenic organisms. As a substitute for an ordinary milk diet Horlick's safeguards against outbreaks of typhoid and other fevers, septic sore throats, dysentery and other milk-borne diseases. To ensure the benefits of fresh milk without any of its dangers—prescribe Horlick's, hot or cold. Horlick's Malted Milk Co., Ltd., Slough, Bucks.

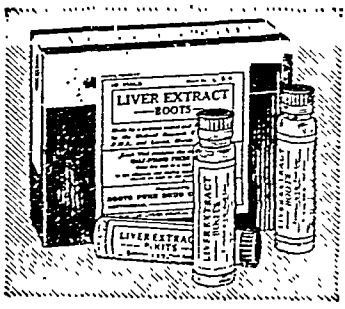
THE VITAMIN B_1 CONTENT OF LIVER EXTRACT

"The results suggest that those liver extracts which are rich in B_1 as well as in B_2 should be included in the list of medicaments available for use in cases in which administration of the vitamin B complex is indicated. Clinical evidence can indeed be adduced that such extracts are of practical value as general tonics, a fact which may be partly attributable to their vitamin content."

Extract from "The Lancet," June 27th, 1931, pp. 1423 and 1424.

LIVER EXTRACT (BOOTS) has been proved to be rich in both Vitamin B_1 and Vitamin B_2.

SUPPLIED IN VIALS EACH EQUIVALENT TO ½-lb. FRESH LIVER



PRICES: Single Vial, 3/- Box of Ten, 30/-

Discount to the Medical Profession

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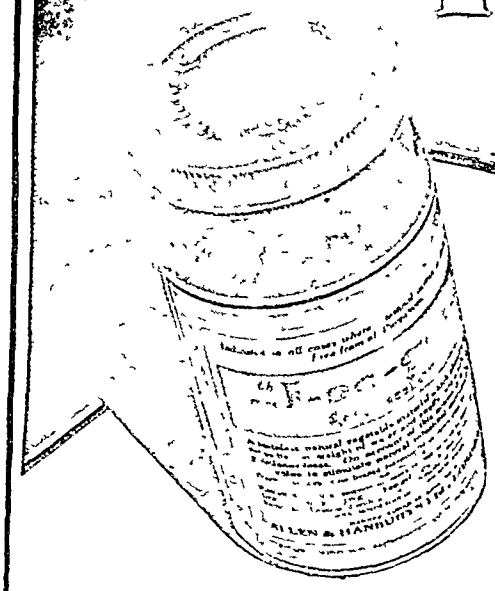
BOOTS PURE DRUG Co. Ltd.,

NOTTINGHAM, ENGLAND

TELEPHONE: NOTTINGHAM 45501

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"I-so-gel" Granules



In bottles at 2/6 and 4/6 each

Indicated in Chronic Constipation, Colitis, and allied intestinal disorders

"I-so-gel" is a natural vegetable material. The granules absorb many times their volume of water and swell into a gelatinous mass which both stimulates natural intestinal movements and soothes inflamed intestinal mucous membrane. Indicated in chronic constipation, colitis, and allied intestinal disorders. Action purely mechanical. Sugar-free. Ideal for diabetics.

Descriptive literature sent post free on application.

Allen & Hanburys Ltd., London, E.2

Telephone: 3201 Bishopsgate (10 lines) Telegrams: "Grenburys Bath London"

Then and Now

1903

"It is unlikely that starch will form a suitable food for young infants."*

1930

"Young infants even as early as the third month will digest appreciable quantities of starch perfectly."†

The paramount importance of starch in infant feeding at a very early stage is generally admitted to-day. Leading practitioners are occupied with the question of the best and most digestible form in which it can be administered.

There is a consensus of opinion in favour of wheat as opposed to oats as a first solid diet, both because its carbohydrate is known to be better tolerated and less rachitogenic than that of oats, and because it has greater digestibility and energy value.

During 1930, a leading biochemical society proved by careful experiment that "Cream of Wheat" was superior to oatmeal. After 4 hours the digestion of oatmeal was almost at a standstill, while that of "Cream of Wheat" continued at a scarcely diminished level for another 4 hours. When digestion was complete, the sugar yield from "Cream of Wheat" was 50% greater, and productive therefore of 1½ times as much energy.

As a first solid diet, as a food for children suffering from indigestion or intolerance of fat, and as a post-operative diet for adults, "Cream of Wheat" can be confidently given.

On receipt of your professional card, Dept W 11, Farr & Johnson, Ltd., 86, Clerkenwell Road, London, E.C.1, we shall be glad to send you a sample of "Cream of Wheat," and fuller details of the above-mentioned tests.

* Written statement by a leading authority on Infant Feeding.

† "*Infant Feeding*," by Clifford G. Grulee, A.M., M.D., LL.D. (J. & A. Churchill)

Marked Superiority

From all quarters there is an appeal to the public to assist the country in the present emergency by demanding the products of British labour, so that we do not import one shilling's worth of goods more than is necessary.

NATIONAL MARK MALT EXTRACT WITH COD-LIVER OIL is manufactured from the finest home-grown barley and pure cod-liver oil on premises subject to Government inspection.

It is guaranteed to be of a uniformly high standard of quality and of standardised content in its principal constituents. It must contain not less than 5% soluble protein, be of at least 1.4 specific gravity, thereby ensuring a high proportion of carbohydrates, include 15% cod-liver oil and have as a minimum 25 Lintner diastatic activity, thus conserving the valuable accessory food factors.



It is certain to give satisfaction and to offer the best value for money.

National Mark Malt Extract is markedly superior to cheaper imported brands of malt extract with varying constituents which make accurate prescription impossible.

National Mark commodities are nationally advertised and widely recognised as home produce of dependable quality.

Buy NATIONAL MARK

MALT EXTRACT WITH COD-LIVER OIL

The product with a National Guarantee.

Made by the leading manufacturers of Malt Extract.

ISSUED BY THE MINISTRY OF AGRICULTURE AND FISHERIES.

SAFE and EFFECTIVE

as a gargle, mouth wash and nasal spray

Of value at this season as a prophylactic measure against communicable respiratory disease.

SAFE . . .

Because it is non-poisonous even if accidently swallowed

EFFECTIVE . . .

Because it destroys bacteria almost instantly on contact

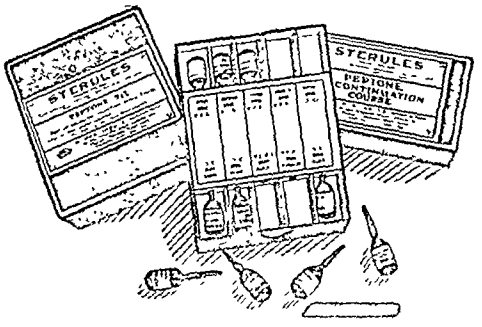


HEXYLRESORCINOL SOLUTION S.T. 37

(Liquor Hexylresorcinolis, 1:1000)

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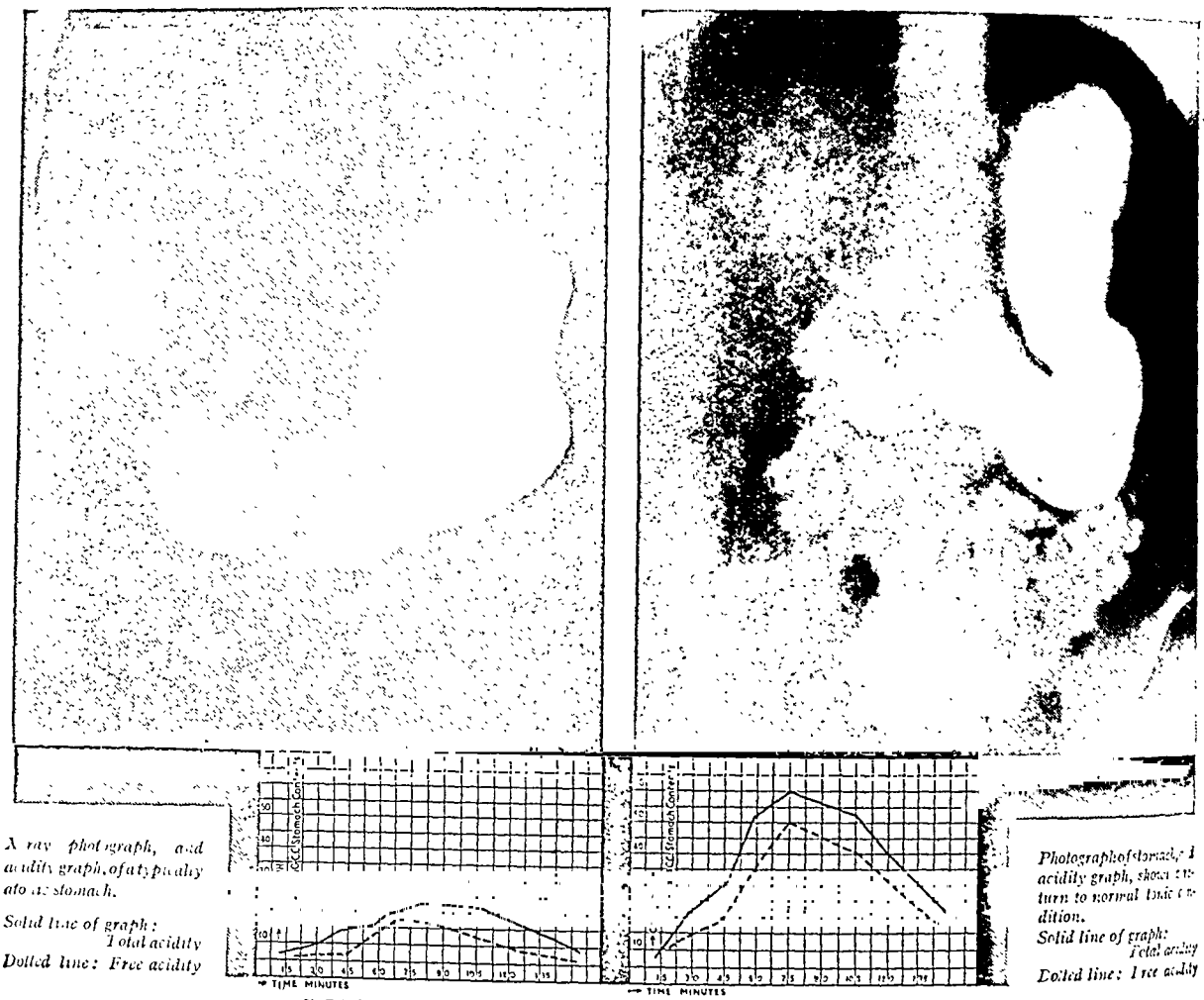
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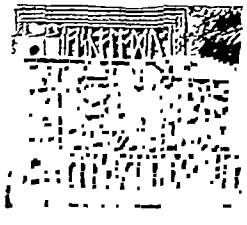
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Remarks
ON
THE PROBLEM OF THE CHILD IN THE TUBERCULOUS HOUSEHOLD*

BY
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MEDICAL SUPERINTENDENT, BROMPTON HOSPITAL SANATORIUM, FRIMLEY, SURREY

Research on the problem of tuberculosis in childhood is a great feature of present-day activities. Facts and figures are pouring in from every civilized country. It might almost seem that the tuberculosis of adults was being neglected and that the best of our attention was being directed to childhood tuberculosis. I think this is in some degree true, and the reason for it is that there is a hazy idea in the air that in the prevention and treatment of childhood tuberculosis lies the key to the problem of the prevention of the disease in adults. This may or may not be true. It is, however, important to realize that the researches on tuberculosis in childhood are not finished; they are hardly started indeed, the results therefrom are as yet but partially digested, and the truths that they seem to show to-day may be profoundly modified as further knowledge is acquired.

The treatment and prevention of adult tuberculosis has been undertaken as a national duty, and Sir Robert Philip, one of the fathers of the movement, in his Malcolm Morris Memorial Lecture claims that the rapid decrease in the mortality from the disease may be ascribed to the work of this movement. His statement may meet with criticism, but no one can deny that the decrease has at any rate accelerated with the movement. Such a national duty involves the tax-payer, through the State, in great expense, and if it is to be enlarged and intensified in the direction of our childhood population, as Sir Robert Philip suggests, this expense must increase.

In addition to the financial burden public health regulations will follow, and laws which are bound to affect the liberties and perhaps the happiness of the individual, both child and adult. Neither financial responsibility nor wise law-giving must be shirked if these are going to be of real benefit to the community, but they must be founded upon *real truths and not upon hasty conclusion. In the mean*while, before any national movement is made, if it is made at all, the general practitioner and the public health official are still day by day confronted with the problem of the child in the tuberculous household; and from the way in which this problem is being tackled, or ignored, in different countries and in different parts of the same country, it would seem that the profession is wandering in the dusk of a thick forest of conflicting opinions, along ill-made tracks where signposts are lacking or else are vague and inaccurate. This is my excuse for opening this discussion. I shall endeavour to give a survey of the facts that seem to have emerged from research up to the present. I have exercised my discretion in picking and choosing, for not all that is printed is worthy of blind acceptance, but I have tried to be unbiased. To this I shall add some constructive ideas on our possible future policy. I expect, and hope, that both my conclusions and my suggestions will meet with fierce and searching criticism, which may winnow away the chaff of inaccuracy and false perception and leave behind perhaps a few grains of real truth.

The profession must approach this problem from two angles—that of clinical medicine and that of preventive medicine. They are two very different view-points and not always harmonious. The clinician's main goal is the welfare of his individual patient, and if he wholeheartedly presses towards that goal he may not see eye to eye with the public health official, whose duty is rather to ignore the individual in his striving for the good health of the community. And since the problem of the child in the tuberculous household is both a clinical and a public health one, it must be approached from both angles; but any conclusions that are drawn, or any suggestions that are made, must satisfy the clinical conscience of the general practitioner and the preventive-medicine conscience of the public official.

I will bring the problem, as I see it, before you in a series of questions. I will endeavour to extract what I think are the true answers to those questions from the works of those who are researching on tuberculosis among children, and finally I will discuss the methods that have been or might be adopted as a result. In order to avoid *the repetition of the rather clumsy phrase "the child in* the tuberculous household," I shall refer to these throughout this paper as "contact" or "exposed" children.

Four Questions

The problem appears to me to be contained in four questions:

1. What is the relation of the incidence of infection, in time and intensity, among contact children to that among the general child population?
2. Does the contact child run greater risks of immediate sickness or death from tuberculosis than the average child?
3. Is the contact child exposed to greater risk of future sickness or death from tuberculosis than the average child?
4. Does the contact child constitute an immediate danger to the community?

I think that if we can find satisfactory answers to these questions we shall know the limits of the task before us.

What is the relation of the incidence of infection, in time and intensity, among contact children to that among the general child population?

In answering this question we find ourselves on fairly certain ground. For the purpose of our present discussion the end of the fifteenth year is taken as the limit of childhood. It is now universally agreed that, for practical purposes, the presence of skin sensitiveness to tuberculin is a proof of infection, and that a positive reaction means that somewhere in the body is a focus of tuberculosis, dormant and non-progressive perhaps, and living tubercle bacilli. It would seem possible that the lesions in question may be quite healed, since it has been shown by McPhedran and others that by annual inoculation living tubercle bacilli can be found in the tissues surrounding completely calcified lung foci and around fibrous apical scars in as many as 24 per cent. of the cases examined. In certain circumstances there may be no skin sensitiveness in infected subjects—for instance, in the later stages of acute and progressive tuberculosis, and during acute intercurrent diseases such as measles. But these exceptions are comparatively rare, and when dealing with large numbers of children, the skin reaction can be used as definite evidence of the presence or absence of infection.

The pioneer work in skin sensitiveness is associated with the name of von Pirquet and his scarification method. I think, however, I may safely state that his method has been superseded by the intracutaneous method of Mantoux by which 0.1 c.cm. of various dilutions of old tuberculin are injected into the skin. Von Pirquet's method is still used and upheld by some workers, but I will not weary you with the literature and figures contrasting the two methods, and simply refer you to Report No. 2 of the Brompton Hospital Research Department.

What is the incidence of infection among the average child population? This is an infinitely variable figure,

* Read in opening a discussion in the Section of Public Health (including Tuberculosis and Occupational Diseases) at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

depending apparently on locality, general and tuberculosis mortality rates, race, and social environment. The highest known figures are those of Hamburger and Monti for Vienna, showing 94 per cent. infected at the age of fifteen, closely followed by Hetherington and others with 81 per cent. for Philadelphia. At the other end of the scale come Taylor's figures from Iowa with 31 per cent. infected at fifteen years of age. Heimbeck on 786 children between five and fifteen gives only 23 per cent., but he has used the Von Pirquet method. No. 2 Report of the Brompton Hospital Research Department gives the incidence of 1,000 children of the London working-class population of 59 per cent. infected at the age of fifteen. This may be taken as a fair average for that locality, but from the variations seen in the different parts of America it is probable that this figure might vary by 15 or 20 per cent. either way in different localities in England.

Contact children show a much higher incidence. As this is a definitely ascertained fact, I will quote only two examples. Opie for the Philadelphia district gives at the age of fifteen: Contact children 90 per cent. infected, non-contact children 64 per cent. The Brompton Research Department No. 2 Report gives: (1) average of all children, contact and non-contact, at the age of fifteen 59 per cent. infected; (2) non-contact children 52 per cent. infected; (3) contact children 82 per cent. infected. These figures speak for themselves, but analysis brings out another important fact. The figures show that by the age of fifteen the incidence is much higher among contact children, but closer investigation reveals that while in non-contact children the incidence increases steadily year by year from birth, in contact children the incidence reaches almost to its summit at a much earlier age. To quote Opie again, at the age of two and a half years among contact children 78 per cent. were infected, a figure very close to the 90 per cent. at fifteen. Among non-contact children 22 per cent. were infected, a figure far below the 64 per cent. at fifteen. The Brompton figures disclose the same, as this table shows:

Age.	Contact.	Non-contact.	All Cases.
	Per cent.	Per cent.	Per cent.
0—5	67	17	25
5—10	77	31	39
10—15	82	52	59

Therefore we may answer our first question by saying that although the incidence of infection is high among the general child population and varies in different localities, the incidence among contact children is much higher and the infection takes place much earlier, almost reaching its highest point during the first five years of life.

Does the contact child run greater risks of immediate sickness or death from tuberculosis than the average child?

Here again we can get a definite answer to our question. The death rate from tuberculosis, and therefore presumably the incidence of clinically recognizable tuberculosis, is definitely higher among contact children than among non-contact. Every investigator from every country agrees on this main point. But that is the only agreement they do reach. The actual figures produced are amazingly variable, and I do not propose to quote them. Some of the Continental figures indicate such a terrible mortality among contact children that one can only hope that they are incorrect. From our own country we have the evidence of Lissant Cox and others in Lancashire, with an experience of 1,486 children, and the Brompton Hospital Research Department Report No. 1 with an experience of 1,192 children of the London working-class population. Both these investigations show a definitely higher mortality from tuberculosis among contact children, but that as compared with the Continental figures the increase is small. This statement needs qualification. It appears, though it is difficult to get accurate figures to prove it, that the risk of death is not equal through all the years of childhood but that it is much greater in infancy, that is to say, up to the age of three. Smellie, in the *Birmingham Medical Review*, quoted by Dixon, shows that the highest mortality in that district is between the ages of one and two years, and Opie and many others have stressed the danger to life of an infection in a child under one.

Those who have given thought to this aspect, notably, among others, Myers of Lymanhurst, are emphatic that the danger lies not in infection, but in continuous infection when the effect of a non-lethal dose may be magnified by being received during the negative phase following a previous infection. Leroy Gardiner's work, published in the *American Review of Tuberculosis*, October, 1930, shows that after a first infection the negative phase probably lasts for at least fifteen days, and from four to six days after subsequent infections. I feel that the foundation of the doctrine of the danger of continuous exposure is probably sound. This would explain the higher mortality and greater risks of infancy, which is a time of more intimate contact with infected parents.

The cause of death is mainly, of course, generalized tuberculosis with meningitis. Smellie gives as the causes of death from tuberculosis in children: Cerebral tuberculosis 51 per cent., abdominal tuberculosis 33, pulmonary tuberculosis 14. The freedom of contact children from pulmonary tuberculosis is further suggested by Agassiz, who states that of 134 children under his care with pure pulmonary tuberculosis, in under 50 per cent. could evidence of direct contact be procured.

Although it has been stated that infection in an infant implies a bad prognosis, Myers, in support of the doctrine of the danger of continuous exposure, says that the prognosis is not bad; he presumably means if the infant is protected from future exposure after the first infection.

We may then sum up our answer to the second question by saying that the contact child is exposed to definitely greater risk of illness and death from tuberculosis than the average child, that the younger the child the greater the risk, and that it is suggested that the danger is due to repeated infections.

Is the contact child exposed to greater risk of future sickness or death from tuberculosis than the average child?

Here we get on to more debatable ground. The surest way to arrive at an answer would be by a "follow up" of a large number of contact children and noting the incidence of and mortality from tuberculosis among them as compared with the general population. This would be a stupendous task, as it would have to cover two generations of research workers and even then might be misleading, since the "followed up" children would certainly be more carefully supervised than the average child. As far as I know no such investigation has ever been attempted. We must try to get at it another way. Among 500 consecutive adult patients passing through the Brompton Hospital Sanatorium at Frimley a history of direct contact could only be obtained in 2.5 per cent. There is every chance of inaccuracy in such an enumeration, and even assuming that the figures are 100 per cent. inaccurate, they would still suggest that childhood contact, so far from being a menace as regards adult disease, may even exert some protective influence. Turning to pulmonary tuberculosis among adolescents, Dr. Lloyd has told me that among 208 consecutive cases of pulmonary tuberculosis in patients between the ages of fifteen and twenty he found 31.5 per cent. who had direct childhood exposure, a much higher figure than that for the adult cases. But against this we have a statement by Dr. Lissant Cox that during a certain period not more than 1 per cent. of the cases

pulmonary tuberculosis between the ages of fifteen and enty-five in Lancashire had been sent to the dispenies in childhood for previous examination. When we nsider the careful way in which contact work is done Lancashire, this can only mean that very few of these olescent cases had direct childhood exposure.

The problem is a very difficult one. We must at all costs oid suppositions and assertions, and confine ourselves facts. For instance, Rathburn, quoted by Myers, states at 4 per cent. of those with the childhood type of pulnary tuberculosis furnish 75 per cent. of the adult type pulmonary tuberculosis of adolescents. I do not know what he bases these exact figures, and certainly Dr. yd's figures might seem to support him. But until are certain, such statements are dangerous and must nder progress.

Opie tells us that by twenty years of age 100 per cent. the population where he has worked are infected, and e figure generally is certainly high. It is also certain at previous infection is necessary in any patient who ffers from the adult type of chronic pulmonary tuberlosis, but we have no evidence as yet that direct exposure childhood in any way influences the incidence of pulnary tuberculosis among adults.

Passing from the question of childhood exposure to the estion of childhood infection, it is quite certain that a rvived infection does carry with it a certain amount of ture protection. This is beautifully demonstrated by me figures of Heimbeck. Of the nurses who were cruited to the tuberculosis hospital at Oslo between 1924 d 1928, 48 per cent. had been previously infected, as own by a positive von Pirquet reaction, and 52 per cent. d a negative von Pirquet reaction (his figures might ve been different if the Mantoux reaction had been used), d of 337 nurses in residence, of whom 152 were nonactors, 53 developed clinical tuberculosis during their aining, and of these no fewer than 51 came from the nonactor class.

Therefore, the only answer we can give to our question that childhood infection does exert a protective inence, but that there is no evidence to show that the tremely early infection, which is the feature of childod exposure, exerts any influence on the incidence of lult disease.

Does the contact child constitute an immediate danger the community?

Our knowledge of the exact vehicles for the transference f the tubercle bacillus from person to person is somewhat agmentary. Calmette suggests that in any infected inividual tubercle bacilli are excreted by the bile. It has lso been demonstrated that there are non-acid-fast forms f the tubercle bacillus which still retain to the full their athogenicity. The possibility of filter-passing forms has lso been investigated. All these suggestions bear imortantly on the question of infectivity, but as long as hey remain in the realm of hypothesis we cannot use them o answer our further question. We must say that, as far s our own present knowledge goes, the contact child not uffering from clinical tuberculosis is not a public danger. Before we can say that they are carriers and spreaders of nfection we must wait for future research.

To sum up the position:

1. Tuberculosis infection is very common among children.
2. The incidence varies widely in different localities.
3. It is much higher among contact children.
4. It takes place earlier in life among contact children.
5. The mortality from tuberculosis is higher among contact children.
6. Infection is more dangerous to infants.
7. It is more dangerous if there is continuous exposure.
8. Childhood infection exerts a protective action as regards adult tuberculosis.
9. Infantile infection exerts no recognized influence on the incidence of adult tuberculosis.
10. The influence of infantile infection on the incidence of adolescent tuberculosis needs further investigation.
11. Contact children, as far as we know, do not constitute a public danger as spreaders of infection.

Constructive Suggestions

Now what constructive suggestions can be made on the basis of these postulates? I have never myself regarded the problem of the contact child to be so all-important from the preventive medicine point of view. Sir Robert Philip ascribes the decreasing mortality from tuberculosis at the present day to our active anti-tuberculosis legislation and activity, but tells us that we are concentrating too much on the pronounced lesions, notably pulmonary tuberculosis. But the decline in infant mortality during the past twenty years has been immeasurably greater than the fall in the general mortality, or than the fall in the mortality of any other age period; it has been more than twice as great. If the fall in the general death rate may be ascribed to our efforts, may not the greater fall in the infantile death rate be ascribed to them too? And may it not be that by tackling the problem of adult pulmonary tuberculosis, and by continuing to do so vigorously, we are making our strongest attack on infantile tuberculosis and tuberculosis as a whole?

But, however much we concentrate on adult tuberculosis, the problem of the child in the tuberculous household will still confront the general practitioner and the public health officer.

The general practitioner must view this mainly as a clinical problem; his duty is towards the child and its parents rather than to the community at large. Is he to examine all the contact children in his practice by the Mantoux reaction for evidence of infection and by the *x* ray for evidence of lesion? No, he should not have to deal with these personally; but these investigations should be made for him, and he should have a knowledge of their results. His duty is to watch, and to turn his attention to the proper hygiene of the home. The importance of this will be realized when we learn from Sir P. Varrier-Jones that there is a complete absence of clinical tuberculosis among 133 children born at the Papworth settlement. He must realize the danger not of exposure but of continuous exposure. That is to say, he must use every effort to sterilize the open case which is the source of contact, and to dilute the infection either by treatment or by segregation, partial or complete. Contact infants must be his especial care in this direction. He must teach the parent and the adult how by attention to a few simple hygienic rules they can minimize the danger to the children almost to the vanishing point. It is not his duty, and would be a waste of his time and injurious to his practice, if he were to say to the tuberculous mother, as did one practitioner of my acquaintance, "You must never see your child again." When the contact children of his practice reach adolescence, then is the time he must be most wise and wary. That is the time when the parent and child need guidance in choice of work, life, and environment. That is the time when the *x* ray will be particularly useful, for McPhedran has said (and he is a man to be listened to) that apical infiltration in childhood and adolescence, although apparently latent, always goes on to definite clinical pulmonary tuberculosis if untreated.

The public health officer will stand behind the practitioner to supply him with such facilities as will help him in dealing with this problem, or to step into the breach with these facilities in the interest of the patient if the practitioner or the parent is neglectful of his duties. I think that he will be wiser if he, too, views the problem from the clinical standpoint. For the answers to our questions fail to show that the contact child is an important public health problem. It will be the public health officer who will draw the attention of the general practitioner to open cases of tuberculosis which are the source of contact to the children in his practice. I would like to see a tuberculin reaction done on every child when it reaches a certain age. It certainly should be done on every contact child, and every positive contact reactor should have the thorax examined radiologically, and the information thus obtained should be filed and recorded for future information and research and should be passed on to the general practitioner. This is essentially the work of the specially trained public health officer. Further, he should be ready to re-examine such children whenever the practitioner thinks it is necessary, and be ready at all times with his special knowledge of the disease and with the facilities at his disposal to give any advice or help that may be required.

These suggestions on the attitude and the duty of the general practitioner and the public health officer toward the contact child may be well enough, but save for the plea for the more extensive use of tuberculin as a diagnostic agent and the x ray, they do not contain anything new. What can the results of present day research, as we have seen them, suggest in the way of improvement? We provide institutional accommodation for the definite case needing treatment. But what exactly is the definite case needing treatment? The boundary between infection and clinical disease is ill defined. Do we go near enough to that boundary in choosing our cases that need treatment? What types of lesions are likely to develop into clinical disease? The adolescent with open and obvious pulmonary tuberculosis is a pretty hopeless problem. If only we knew more about the danger signals, could we not avoid this catastrophe more often? These are, I think, some of the great gaps in our knowledge; and it is in this direction to-day that we need guidance, and in which future research should proceed.

If the answers to these questions are forthcoming, perhaps more cases will be found to have definite clinical disease and to be in need of treatment, institutional or otherwise. But how shall we deal with those who only need preventive treatment? The so-called preventorium is largely used in Canada and the United States, and perhaps we might make more use of it in England. But if we do it must be properly used. I quote from Dr. J. B. Hawes junior, writing in the *American Review of Tuberculosis* in July, 1929, about the Prendergast Preventorium; he says:

> As I study the results of 110 children discharged from our Preventorium I am more convinced than ever that the ultimate success of preventorium treatment depends upon *thorough, aggressive* and *prolonged* follow-up work. No child should ever be allowed to return to a home where it will again be exposed to infection. This should be an absolute rule.

This statement appears to me, if it is a true conclusion, to show that a preventorium is absolutely useless, at any rate as it is conducted in that district. The expense and trouble of such an institution might be saved and, to use Dr. Hawes's words, a *thorough, aggressive* and *prolonged* Grancher system might be substituted instead, or the rigorous enforcement of some such harsh law as they have in Chicago forbidding children to live in the same house as an open case of tuberculosis. No, it does not seem that a limited course of institutional treatment on sanatorium lines can help the problem in any way. A preventorium that I saw in use in Toronto seems to meet the case better. There, contact children are placed, provided they show no evidence of active clinical tuberculosis, and kept and trained and taught until the tuberculosis authorities are satisfied that their home conditions have been rendered as satisfactory as possible. The average stay is three to four months. That seems a reasonable method of spending public time and money for the benefit of the contact child. In general, short courses of enforced hygienic life, and harsh interference with family liberty and happiness, do not appeal to me.

B.C.G. Immunization

Are we going to get help from immunizing processes? Is Calmette's B.C.G. the weapon of the future? No, we must deal very cautiously with B.C.G. It seems to arouse the controversial spirit. There are two questions to be answered. 1. Is it harmless? 2. Does it protect?

The answer to the first question is not certain yet, but we can say that for practical administration, if used according to the technique of Calmette and Guérin, it is harmless. The adverse reports and accusations of its toxic possibilities have come mainly from pure bacteriologists and laboratory investigations, and as far as I can see have no very great practical bearing. Does it protect? In cattle apparently yes, to a certain extent. I must confess that the French figures on the vaccination of children leave me confused and unimpressed, but I should like to quote Heimbeck again, this time on the protective power of B.C.G. Still dealing with the nurses coming to tuberculosis work in Oslo, he found:

> That of 322 non-reactors to tuberculin who were inoculated with B.C.G., 294 became reactors.
>
> In 1924 there were 8 cases of tuberculosis among non-reactors.
> In 1925 do. 25 do. do. do.
> In 1926 do. 14 do. do. do.
>
> In 1927-28 among 44 non-reactors who were vaccinated there were no cases of tuberculosis, and among 12 non-reactors who refused inoculation there were five cases.

He summarizes by saying that previous to 1927 the morbidity among non-reactors was 16 per cent., and in 1927 among vaccinated non-reactors 0 per cent. These are very striking figures. And it is to be noted that a very large percentage of the non-reactors became reactors after vaccination.

These figures do suggest that B.C.G. vaccination may be a useful weapon to tide over the dangerous period of infantile contact and exposure, in conjunction with other methods for preventing continuous exposure to massive infection. These other methods are necessary, for a first infection with ordinary tubercle bacilli or with B.C.G. will confer no immunity that can overcome a massive infection or continuous intense exposure.

Whatever protection is afforded by B.C.G. is admittedly short-lived, and continuous vaccination throughout childhood of all contact children is an impossibility, but re-use on infants might convert the unprotected non-reactor into the partially protected reactor. Myers has stated that in children a high degree of hypersensitiveness to tuberculin is a dangerous sign. This suggests, for those who cannot bring themselves to support the use of B.C.G., the use of the admittedly harmless tuberculin. It would be quite possible for those contacts who showed what was agreed to be a dangerous degree of hypersensitiveness to be desensitized by a course of tuberculin injections.

I repeat that I do not think the problem is so very easy a one as it sounds, and it *seems* to me that the future safety of our children depends on the improvement in

rsonal, familial, and community hygiene; and what stas of possibility are opened up by Professor Mellan- 's lecture on the prevention of disease by the correct eding of children It is obvious that we must not try escape infection for our children, for, dangerous though fection is, it does bring with it protection, and we must old the state of affairs that Heimbeck deplores in his vn country in these words

"Thanks to tuberculosis work, infection in the home is not common and is postponed until the individual goes out work Thus the endeavour to avoid tuberculosis infection childhood has resulted in the transference of a high mor- lity and mortality to just those years when the individual ould begin to work for society in return for what society s done for him in the matter of education in his earlier ars"

Really, it is Nature's problem She will find her own lution, and I think she is solving it, as Dudley Sheldon ggests when he says:

Morbidity equals infection pressure versus herd immunity erd immunity increases with the herd's past experience of the eternal cause of infectious disease, and although infection essure must be greater with the increase of urbanization, rd immunity outstrips it."

THE BROKEN NOSE*

BY

E WATSON-WILLIAMS, *M C*, Ch M

S R IN CHARGE, EAR, NOSE, AND THROAT DEPARTMENT, BRISTOL ROYAL INFIRMARY

(With Special Plate)

broken nose is common enough and regarded often, xcept perhaps by the victim, as matter for mirth rather han for sympathy Fortunately, even in these motoring ays, the majority of our cases are of a mild type when here is no subsequent external deformity, any distortion f the nasal septum can be readily dealt with by sub- mucous re ection Omitting those in which there was no nanifest displacement of the nasal bones, the etiology in wenty seven cases treated personally during the four nonths March to June, 1931, was as follows.

	Mild	Severe
Football	3	—
Cricket	4	—
Boxing etc	1	1
Motoring	2	4
Cycling	1	1*
Falls etc	3	1
No record	6	—
	20	7

* Collision with motor lorry

But the deformity resulting even in the milder cases may be very annoying—to a girl possibly really distressing If it is to be avoided it is important that treatment should be undertaken *early*, since the processes of repair lead to rapid absorption of bone edges, and callus formation may produce an unsightly bossing along the margin of the frontal process of the maxilla, so that a good result is often not obtained by late treatment, even though the bones be re fractured and set Still more important is it that treatment should be intelligent—that is, guided by a proper understanding of the exact nature of the deformity, and the best method of reduction Though it is often easy to see the line of fracture in an ordinary skiagram, the actual displacement in a mild case is not well shown unless resort is had to a stereogram Gross damage is, of course, sufficiently obvious in any good film (Figs 1 and 2 on Plate).

* A Bristol University Post-Graduate Lecture.

In a typical mild case the accident is followed immediately by epistaxis, and very soon by nasal swelling, internal and external, probably with a black eye in addition; it is impossible in these circumstances to estimate damage Local treatment is confined to suture of lacerations, etc In four to eight days the swelling has gone down, nasal obstruction is slight or absent, and one can make out the characteristic deformity (Fig 3 on Plate). The bony nose is bent definitely over to one side, the septum and tip being little affected. If now one attempts simply to push the nose back into place, in all but the most trivial cases this is found unexpectedly troublesome, and a symmetrical appearance is not achieved (Fig. 11) Also, the deformity tends obstinately to recur; internal splints effect nothing, while external splints or padding are often impossible to retain in place If the true mechanism of the fracture dislocation is appreciated, reduction is perfectly simple, and one can almost guarantee that there will be no subsequent deformity

The actual displacement of bone presents three features (Figs 9 and 10)

1 On the side from which the blow fell the lower two-thirds of the nasal bone, and often the anterior sharp margin of the frontal process of the maxilla, are displaced inward toward the mid-line, mainly by rotation round the posterior margin of the fragment as a hinge, with very little backward displacement

2. On the opposite side a corresponding piece of bone, or rather less, is displaced in the same direction—that is, outward—again hinging on its posterior margin

3 In the middle the first fragment has been driven in beneath the second It is lack of appreciation of this imbrication-impaction that is the source of difficulty and failure in reduction Figs 9 to 13 are diagrammatic sections at right angles to the plane of the nasal profile, to explain the common types of displacement and the steps in reduction

Treatment

A general anaesthetic is necessary, and oxygen ether will be found convenient Bleeding is usually slight; if desired, the nose may be lightly sprayed just before induction with 5 per cent cocaine solution and packed anteriorly with gauze wrung out of 1 in 10,000 adrenaline When anaesthesia is complete a post-nasal sponge can be introduced The only instrument needed is a strong forceps, the blades 2 to 2½ inches long and slightly bowed so that only the tips touch. Jansen's longest bone forceps may be used, the common septum forceps is too thick for most noses Before use the tips are well padded by winding on three or four turns of half-inch strapping

Operative Procedure

A.—Into the nostril of the side *toward which* the nose is bent pass one blade of the forceps, pushing it up until the other blade outside the nose is just over the nasal bone Grasp the bone firmly and twist it yet further outward, still round the posterior margin as an axis (Fig. 12). (This step is not always essential, but greatly facilitates disimpaction)

B—In exactly the same manner grasp the other or in-driven bone, and rotate it also well outward to a position corresponding with the first (Fig 13) Sometimes a slight lifting movement is required in addition

C—A finger placed externally can now feel that both bones are freely movable, and that there is a definite gap between them anteriorly With the finger mould the two bones symmetrically together, like the leaves of a double drawbridge, so that they lock in the mid line If necessary, the forceps may be used with one blade up each

nostril during this process to support the bones or to correct any anterior deviation of the septum. Once locked there is no tendency to displacement, and indeed considerable force may be needed for this; no splints are required, and the patient can return home forthwith. If during the ensuing week he thinks the nose is not quite symmetrical he may massage it forcibly into place with the thumb twice daily: this is rarely necessary. In this type of case there is seldom much alteration in the profile, and bilateral symmetry supplies the best test of treatment.

CASE I

Nose broken at football, leading to typical deformity of the simple type (Fig. 3 on Plate). The second photograph (Fig. 4 on Plate) shows the result four days after reduction by the method described, no splints being required.

When the violence has been great the problem is frequently less simple. In addition to laceration of the soft parts the bones may be comminuted and driven backward; the whole bridge of the nose may be knocked flat upright, bend each leg directly backward about half an inch above bend P (Fig. 16). Bend R: at R, two inches back from Q, or somewhat less, bend the wire up and then forward parallel and close to itself (Fig. 17). Bend S: at S, a point slightly in front of Q, bend the wire down at right angles, shaping it to the contour of the nasal profile in the region where support is wanted. Bend T: bend the wire backward at a point that will correspond to the upper part of the vestibule, and then again downward at T (Fig. 18). The distance T R = the distance Q R; S T is equal in length to the distance from the upper end of the fracture to the lower margin of the nasal aperture.

The splint is now ready for insertion. Pass the portion Q R S into the nose, one "leg" on each side of the septum, until the central part P Q presses firmly against the philtrum. With septum or other forceps hold the part Q R in close contact with the floor of the nose, and thrust the portion S T directly upward in the direction indicated by the arrow (Fig. 18); in doing this

TRANSVERSE SECTIONS THROUGH NASAL BONES AT RIGHT ANGLES TO LINE OF PROFILE

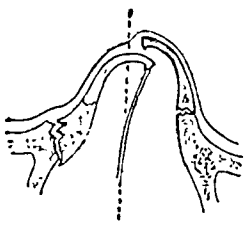


FIG. 9.—Typical "mild" deformity.

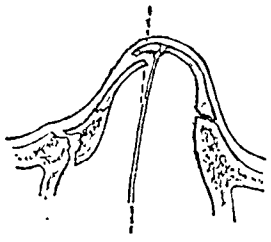


FIG. 10.—Another common type of fracture.

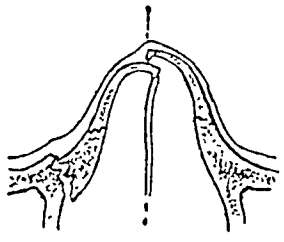


FIG. 11.—Result of replacement without disimpaction.

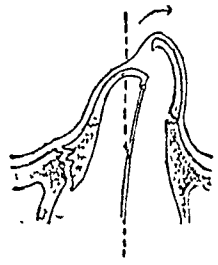


FIG. 12.—First movement of disimpaction.

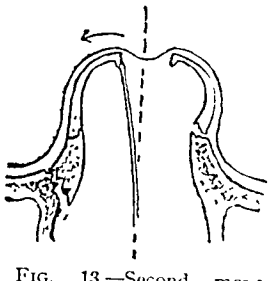


FIG. 13.—Second movement of disimpaction.

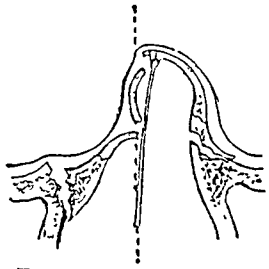


FIG. 14.—Crushing of right side of nose, as in Case III.

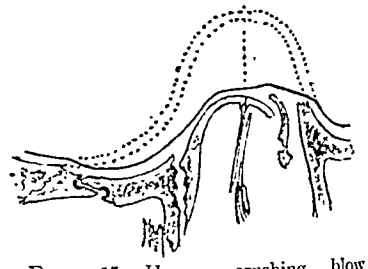


FIG. 15.—Heavy crushing blow involving antrum, as in Cases IV and V.

(Fig. 15). Further, the nasal septum is broken or bent, and occlusion of one or both passages common. Such accidents often lead to serious late deformity, calling for special reparative operative procedures; as, for example, by cartilage grafting, one method of which was described in my article in the *British Medical Journal* of November 28th, 1925.

The need for such measures can be largely avoided by timely reposition; a photograph showing the normal profile, if available, is of considerable value. In dealing with the external deformity one is not troubled by impaction. The fragments are only too mobile; with the forceps they are readily restored to the normal position, but can seldom be retained without support. For this purpose the ordinary nasal splints leave much to be desired; they are difficult to fit, more difficult to fix, and if large enough to be effective still more difficult to withdraw.

To meet this situation I have devised a wire splint which supports the bridge of the nose by counter-pressure on the nasal floor. It is prepared as follows. With narrow rubber tubing, such as that used in the Carrel technique, cover about 16 inches of malleable silver wire of 1/20 inch diameter (= 18 s.w.g.) Bend P: bend the wire in the centre so that it forms a long narrow U, the legs about 1/4 inch apart. Bend Q: holding the U the portion below S is brought up beneath the depressed part of the nose, and the angle Q R S is opened (Figs. 19 and 20). Make sure that the splint really does support the front of the nose when the forceps are withdrawn, that it is securely fixed, and that the nose is symmetrical. Tie the splint below T to the portion between P and Q which rests on the philtrum. Turn the free end outward round the base of the ala nasi to prevent upward displacement (Fig. 21), and cut off any portion that is redundant.

A piece of strapping may be used across the upper lip and projecting part of the splint if additional security is desired. But the splint is genuinely self-retaining, is well tolerated for eight to ten days, does not get foul, and permits of nasal lavage and at least fair nasal respiration. When removal is desired the steps just described are reversed. In these cases, provided antero-posterior reposition is good, there is seldom much difficulty in securing bilateral symmetry; the profile affords the best criterion of success or failure.

CASE II

This patient was attacked by a man armed with a knuckle-duster or a metal bar, and the bridge of his nose was beaten flat. The triangle splint was used for seven days, with the satisfactory result shown (Fig. 5 on Plate).

Case III

A girl was involved in a collision between her cycle and a motor lorry. The deformity resembled the simple type, but radiographic examination showed that the right nasal bone had been crushed in against the septum, and the frontal process of the maxilla fractured off, though the left side of the nose was comparatively little affected (Fig. 1 on Plate; compare Fig. 14). The triangle splint was employed for seven days and a perfect restoration achieved.

The nasal septum can sometimes be reduced into place by forceps pressure and manipulation. Should this fail, it is best at once to resect the damaged portion by the submucous route; for the profile of the nose beneath the nasal bones (except that of the tip) is supported by the anterior edge of the quadrilateral cartilage; and while that is distorted, restoration of symmetry may prove impossible.

Another complication of severe crushing is fracture of the body of the maxilla, the line of cleavage often running from the orbital margin at the maxillary-malar suture downward, inward, and backward (Fig. 15). The large fragment thus detached may become impacted in the antrum which the fracture has opened, producing by distortion of the orbital margin a most peculiar appearance. It may be possible to lever the fragment up into place by passing a blunt instrument up the nostril, taking care that this does not slip upward toward the roof of the nose. If that fails, convenient access may be obtained by an incision in the mucous membrane of the canine fossa, reflecting the periosteum as if for a Scanes-Spicer antrostomy. Where an angle or spike of bone prevents restoration it may have to be clipped off with bone-cutting forceps.

Case IV (Fig. 2 on Plate)

Miss L. was involved in a serious motor accident. I saw her ten days later and found the whole nose had been pushed over to the left, only the tip remaining in the mid-line. The left nostril was completely blocked by the crumpled septal cartilage. The right side of the nose and the adjacent part of the cheek were markedly depressed, with a manifest gap in the orbital margin, the cheek and upper lip were anaesthetic. The skiagram shows the extensive damage to the maxilla, and the opacity produced by blood in the right antrum. Under general anaesthesia the large fragment was levered up into place, where it remained while the second large fragment was elevated; the nasal bones were replaced, and the whole nose now remained firmly set without support; the septal cartilage was resected. The cosmetic result was perfect.

Case V

This lady fell from a ladder, and her nose, coming in contact with the edge of a dresser, was crushed level with the cheeks. A skiagram showed that in addition to comminution of the nasal bones and fracture of the vertical plate of the ethmoid a large piece of the maxilla had been driven into the antrum. In order to reduce the latter it was necessary to approach it via the canine fossa route, to cut off an angle that defied all efforts at reduction, and then to lever it up with a hook passed through the oral incision and an elevator introduced up the nostril. The nose was then restored, and the triangle splint used for ten days. A perfectly straight profile was obtained, the symmetry being well shown in the photograph. (Fig. 6 on Plate.)

Finally, in the most serious cases there may be extensive damage to skin and mucous membrane, or the nose may be almost torn off. Where considerable loss of substance occurs one may have later to undertake elaborate reparative operations—for example, the now well-known tube-graft rhinoplasty that we owe to Sir Harold Gillies. In order to minimize the task of cosmetic restoration we must in the early treatment be guided by two principles. First, preserve every scrap of viable tissue, especially skin and mucous membrane. Secondly, close all wounds, even stitching skin to mucous membrane when necessary for this end, so that healing by granulation with its attendant cicatricial contraction is reduced to the unavoidable minimum. Within the nose we must prevent adhesions between the sides and the septum. A fairly stiff non-absorbent splint is needed, thin enough to be retained without discomfort for days. It can be improvised from a sheet of celluloid, obtained by soaking off the coating of an *x*-ray film in hot water; the thicker celluloid sold for repair of car windows is even better. A very useful splint can be made by folding a piece of strapping "sticky sides in" and dipping in melted hard paraffin wax—for example, ambrine or a good quality candle. It is worth some trouble in the initial stages to avoid extensive intranasal adhesions. At the earliest possible moment such cases should be brought under the care of a surgeon with experience of rhinoplastic technique.

Case VI

This boy was thrown from his motor cycle and brought in unconscious. His nose was crushed, and split in the mid-line, so that the wound gave a good view of the interior. Local

THE SELF-RETAINING TRIANGLE NASAL SPLINT

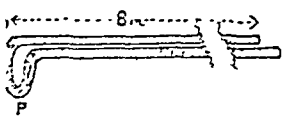


FIG. 16.—Beads P and Q.

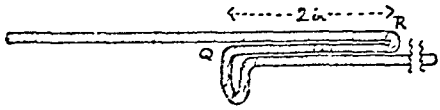


FIG. 17.—Bend R, right side only.

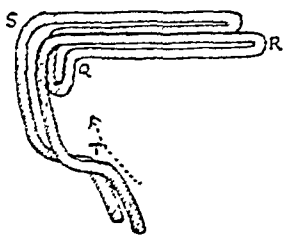


FIG. 18.—The splint ready for insertion.

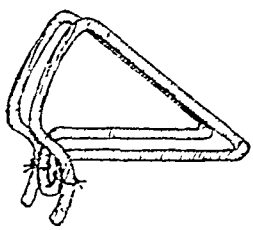


FIG. 19.—The splint expanded and tied.

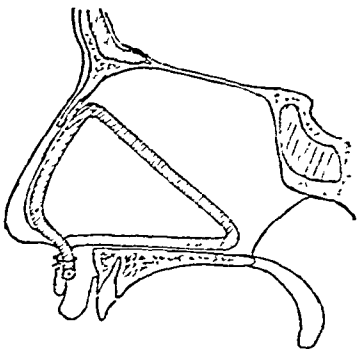


FIG. 20.—Section through left nasal chamber, showing position of splint.



FIG. 21.—The upper lip with splint in position.

measures were directed to careful suture of skin and mucous membrane, and prevention of adhesions. One week later he presented the appearance shown (Fig. 7 on Plate); even in this case the tip of the nose remains central. The fragments of the nasal bones, maxillae, and ethmoid were carefully manipulated into place under general anaesthesia and retained on the triangle splint. The nasal airway is perfect, and the cosmetic result impaired only by the scar (Fig. 8 on Plate).

Summary

The common type of "broken nose" is due to lateral (but not backward) displacement of both nasal bones with imbrication. Treatment consists of (*a*) disimpaction, (*b*) free mobilization of both bones, and (*c*) symmetrical moulding together. No splints are needed.

When the nose has been crushed, internal splinting is required to restore the profile, a convenient form of splint is described. Resection of the septum may be needed. Where a portion of the maxilla is impacted in the antrum access is obtained by the canine fossa route. If much damage has been caused to skin and soft parts, every effort must be made to conserve tissue, limit sepsis, and prevent adhesions.

I am indebted to Dr. F. J. A. Mayes for the skiagrams and photographs.

THE ROLE OF THE PITUITARY IN THE ETIOLOGY OF CANCER

[Preliminary Paper]

BY

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(*With Special Plate*)

Although many of the functions of the ductless glands remain obscure, it is known that the anterior pituitary concerns itself with promoting growth. However, the prevailing conception of this function of the anterior pituitary is limited to the organism as a whole and not to cell growth, or tissue growth, as seen in repair and disease. Zondek (1930) has shown that in 15 per cent. of 118 cases of malignant disease the anterior pituitary hormone was present in the urine in sufficient quantity to give a positive Zondek-Aschheim reaction in mice. In other words, in neoplastic disease anterior pituitary activity is increased to an appreciable degree in a significant proportion of cases.

That this activity of the anterior pituitary does not in itself cause cancer is evident from the fact that in 98 per cent. of healthy pregnant females the Zondek-Aschheim reaction is positive. The relationship of malignant disease with pregnancy, in that both types of cases may give a positive Zondek-Aschheim reaction, is interesting in two ways. In both there is a tumour present, but the obvious point of difference between the two is that in pregnancy the growth is controlled—a condition lacking in the malignant growth.

Growth-promoting Hormone in Posterior Lobe

What is responsible for this controlling of growth, whether in the case of a foetus an organ, a tissue, or a cell? A hypothesis suggested itself in the examination of the pituitary from a male, aged 18, showing all the features of renal infantilism, in whom the posterior pituitary was from two to three times as large as the anterior lobe, whereas, in the normal, the posterior lobe is about one-third the size of the anterior. With a posterior lobe about six times as large as the normal, one can expect some positive feature in the body indicative of this exaggerated function of the part, and in the case referred to the exaggerated feature was in all probability infantilism. This suspicion is, to some degree, confirmed by Sharpey-Schafer, who states that if posterior pituitary is grafted into young tadpoles they subsequently show definite retardation of growth. Can it be that the function of the posterior pituitary is to check growth? This would be in accordance with the older view that the ductless glands (considering the pituitary and the adrenal each as two glands) work in pairs, one giving rise to a stimulating impulse, and the other checking the former by acting in the opposite manner.

Although the pituitary is the seat of the growth promoting hormone, and, according to the above hypothesis, of the growth-checking hormone, metabolism is almost as important in the growth process. Hence, in malignant disease, the glands concerned in metabolism must also be considered. That the endocrines might be disturbed in cancer seemed probable. Could the course of the disease be influenced by adjusting the working of any or all of the glands?

Histological Observations

In order to appreciate fully the character of this investigation it would be as well to state now that the ideas expressed in this work gradually evolved during a histological survey of the whole endocrine system—on the pituitaries, thyroids, and adrenals, of over 200 cases, and on the parathyroids, thymuses and pancreases, of increases, of about 100 cases or over. The selection of the material depended entirely on the state of preservation of the tissue, and not on the type of the case. Hence the number of glands from cancer cases was limited.

The following data on the pituitary were from cases examination of 230 glands, of which 30 were based on an of malignant disease—including 13 of glioma cerebri.

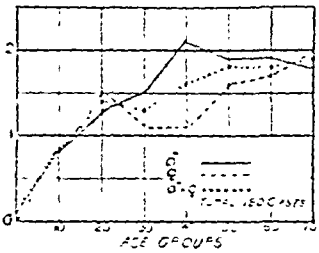
Working on Stewart's hypothesis (1931) that the cells of the anterior lobe are merely in different stages of function, and that the acidophilic cells contain the active secretion, I found that the anterior pituitary in the tumour cases did show a degree of activity appreciably higher than in the normal. Histologically Zondek's conclusion that 15 per cent. of cases of malignant disease give a positive Zondek-Aschheim reaction was confirmed. In many, or perhaps all, cases of malignant disease, then, the anterior pituitary might be considered as overactive.

The Posterior Lobe

The posterior lobe of the hypophysis offered a more difficult task. The belief that the posterior part of the gland was essentially neuroglial was found to be untenable. Preparations stained for neuroglia showed the neuroglia distributed as strands about circular or elliptical masses of tissue, and in well-preserved sections stained by haemalum and eosin the parenchymatous character of the lobules was evident (Fig. 1 on Plate). The posterior pituitary, then, consists of lobules of roundish epithelial cells; these lobules were well vascularized and surrounded by a neuroglial stroma. The colloid of this section of the pituitary was taken to be its effective secretion, and appeared to emanate from the epithelial lobules, from whence it passed through the veins of the posterior pituitary, to the vessels of the pars intermedia, where the secretions of both anterior and posterior lobes intermix. If, as already suggested, the secretion of the posterior pituitary is concerned with checking growth, then the lobe of the gland should show changes, with an incidence parallel with that of cancer, in the various age groups, while in cancer cases it should show these and corresponding changes in a greater degree and more frequently.

In this study the brown pigment of the posterior pituitary was frequently found associated with, or in

nasses of colloid. Often, too, the associated colloid was of a greyish colour when stained with haemalum and eosin. The pigment tended to migrate to the perivascular hannels. In general, the impression was that the brown igment represented an altered and perhaps ineffective ecretion. For purposes of comparison the pigment in ach gland was gauged to be scanty, of moderate amount, r abundant, and in order to produce a graph these grades ere evaluated as 1, 2, and 3. The arithmetical average or 180 cases is shown in the graph (reproduced below),



lotted against the age groups. The results are of necessity very crude, but the curve is sufficiently characteristic to indicate that this pigment increases quite rapidly up to the age of fifty years, and probably slowly from then onwards. This corresponds with the frequency of cancer. The graph shows that brown pigment in the posterior itary tends to increase with age.

he numbers in each age group are:

Age group	Male	Female	Total
0–9	9	3	12
10–19	10	8	18
20–29	16	8	24
30–39	15	8	23
40–49	23	16	39
50–59	27	9	36
60–69	8	11	19
70 and over	6	3	9

the thirty glands from tumour cases there were nine showed a considerable amount of pigment in the ior pituitary; twenty-one showed enough sclerosis recognizable under the low power of the micro-; nine had both sclerosis and pigment present; and o cases the posterior section was considerably com-ed by a large cyst originating in the pars intermedia; x cases, however, no obvious change could be made

Pituitary Changes in Cancer

e histological examination of the pituitary in cancer s suggested: (1) that the anterior pituitary was over-ctive and was stimulating growth; and (2) that the lesions n the posterior pituitary probably affected the quality nd quantity of the posterior secretion, and by so doing, n cancer cases, the growth-restraining influence was nadequate.

As already indicated the growth mechanism was closely ssociated with metabolism. The thyroid and parathyroid glands in cancer cases showed no change which could be lefinitely associated with the disease in question. How-ever, in the pancreas, an important and very significant bnormality was noted.

Changes in the Pancreas

The pancreas was examined in 170 cases, including fourteen cases of cancer apart from carcinoma of the pancreas. The islets in six cases were very numerous, n six numerous, and only in two cases of normal incidence. In all except two cases the islets were enlarged, if the normal islet is taken to be 80 by 110μ (Fig. 2). The groups of cases were certainly small, but these results can be considered to indicate that in cancer cases there is an increased demand for carbohydrate.

Warburg (1923 and 1924) found that, with the same amount of oxygen, cancerous tissue would utilize more carbohydrate, and produce three to four times as much lactic acid as normal tissue. Handel and Tadenuma (1924) showed experimentally that transplanted rat tumours grew more rapidly when the recipient animals were fed on glucose and injected with insulin. Borrel (1922) states that injections of glycogen had an accelerating effect on experimentally produced tumours. Thus the experimental work of others confirms the view obtained from the histological examination of the pancreas in cancer cases. It might be argued that cancer, in these circumstances, should be common in diabetes mellitus. In this disease, however, although the blood sugar is high, there need not necessarily coexist an overactive anterior and a deficient posterior pituitary.

To summarize briefly: in cancer cases there probably exists an unbalanced state in several of the ductless glands which permits the development of the new growth; the following points appear to play an important part—(1) overactivity of the anterior pituitary; (2) underactivity of the posterior pituitary; and (3) an increased demand for carbohydrate, giving rise to abundant and enlarged islets of Langerhans.

Experimental Observations

The experimental phase of this investigation can be divided into two parts: (*a*) to determine whether tumour growth is influenced in the presence of abundant carbohydrate, and (*b*) to determine whether injections of pituitrin would have any effect on checking the growth of epitheliomata in mice.

Effect of Excessive Carbohydrate

One hundred mice were divided into three groups—I of 30, II of 30, and III of 40. All the animals were painted with shale oil five times a week. Group I was fed on oats and cheese; Group II on oats, bread soaked in simple syrup, and simple syrup in the drinking tube. Group III was fed similarly to Group II, but the animals received, in addition, injections of 0.1 c.cm. of a 10 per cent. sterile solution of glucose. These injections varied from three times in the first week to once a fortnight during the first two months. When tumours began to appear, they again received similar injections once a week. At sixteen weeks 30 per cent. of group I, 40 per cent. of Group II, and 56 per cent. of Group III had developed warts. By the twentieth week the first group had 59 per cent., the second group 66 per cent., and the third group 100 per cent. showing tumours. In all, at the thirty-eighth week eighteen epitheliomata had been produced, and of these two occurred in Group I, eight in Group II, and eight in Group III. The incidence of warts in the various groups is not very significant, because the number of animals was too small; but, in view of the results of other workers, these data can be considered as suggestive. The incidence of epitheliomata is much more significant, and appears to show quite definitely that the presence of an abundant supply of glucose does promote the development of epitheliomata in mice.

Effect of Pituitrin

As the epitheliomatous mice became available they were segregated, and the oil applications ceased. In all, thirteen of the eighteen epitheliomata were clinically evident, while the remaining five were recognized only after microscopical examination. Of the group of thirteen, five were used as controls, while the remaining eight were treated. The five controls had the tumours of lesser severity, while the eight animals that were to receive treatment all had severe, extensive, and very obvious epitheliomata. The purpose of the controls was to find

out if any natural regression occurred in the tumours on a basis similar to that which took place in the treated animals. In only one of the control animals did the tumour drop off, and that occurred in a pregnant mouse; but with the termination of pregnancy the growth returned very rapidly.

In the group for treatment, 0.1 to 0.3 c.cm. of a solution of pituitrin (P., D. and Co.) (diluted to 0.1 c.cm. in 35 c.cm. of sterile normal saline) was injected twice daily. The injections were made subcutaneously over the abdomen, or at some point distant to the tumour. The general reactions noted were as follows. Within three days the growth contracted noticeably and became covered with a scab. Gradually the growth became sharply demarcated from the skin. In ten to fourteen days the base became prominent and fluctuant, and from fourteen days onwards necrotic material could be expressed from this region. From a month to six weeks or so, the growth separated, leaving a simple ulcer (Fig. 3), in some cases a few malignant fragments, and in others a thin epitheliomatous layer at the base. Most of the animals died through the wound having become infected, or because of the presence in the body of large numbers of encysted parasites.

Experimental Conclusions

The ultimate results were: (1) complete disappearance of the epithelioma—two cases, four weeks and eight weeks; (2) one or several minute epitheliomatous nodules found on histological examination—four cases, three weeks, five weeks, six weeks, and six weeks; (3) growth reduced to a thin layer at base—two cases, four weeks and nine weeks. It was thus shown, experimentally, that, in mice, the presence of glucose in abundance has a stimulating effect in producing epitheliomata, and that, within limits, pituitrin has a checking influence on malignant tumours. The experimental field was obviously limited; the results obtained, however, were in accordance with the theory enunciated on the basis of the histological findings. Consequently the application of the theory in the therapy of human cases was justifiable. The investigation in its subsequent stage was therefore of a clinical nature.

Remarks on the First Group

Up to the present stage no means were available by which the anterior pituitary could be controlled, and hence the only therapeutic means available were: (1) a diet low in carbohydrate to starve the tumour, and (2) pituitrin (P., D. and Co.) to check the malignant growth. The cases in this group were four in number, and when treatment commenced the average expectation of life was only a few weeks at most, for the growths were all very advanced.

Case I

Male, aged 49. Primary carcinoma of tongue with bilateral involvement of submaxillary gland and extensive infiltration into the neck on both sides. There was a large tumour-like swelling on both sides of the chin, and in each tumour there was a small sinus. General condition was fair and cachexia moderate.

Treatment.—Low carbohydrate diet; 0.5 c.cm. to 2 c.cm. of pituitrin (P., D. and Co.) twice daily. At the end of three weeks the patient died. After the first week the discharge from both sinuses progressively increased, and the sinuses enlarged. After the second week, the submaxillary tumours had visibly diminished in size. At necropsy no growth was found in the tongue, while the submaxillary growths were soft, crumbly, and necrotic; but firm tumour tissue was present in the peripheral shell (Fig. 4). A mediastinal secondary was in a similar state. The cause of death was fatty infiltration of the heart and cirrhosis of the liver.

Case II

Female, aged 59. Epithelioma of right cheek about 12 cm. in diameter, of the cauliflower type, and with an extension down the lateral side of the neck. General condition bad. Cachexia advanced. Treatment similar. After five and a half weeks of treatment, this patient died in a highly toxic state. At necropsy the cauliflower growth had been reduced to a nodule 2 cm. in diameter, but the original base was still malignant. The mass on the side of the neck was hollow and contained clear fluid. Extending below and behind the right eye there was a mass of necrotic tumour tissue. Cause of death—fatty degeneration of the myocardium.

Case III

Female, aged 61. Recurrence of carcinoma of the left breast in surgical scar and in adjacent area, after radical amputation. The area involved was 12 cm. by 18 cm. over the lateral and anterior aspect of the left breast. Condition poor, cachexia moderate. Treatment similar for the first six and a half weeks. At six weeks the malignant edge had begun to disappear, and the centre of the wound seemed to be clearing of growth. The involved area became irregular through some healing having occurred from the sides.

Case IV

Female, aged 44. Carcinoma of both breasts. Both breasts were very prominent, and growth had ulcerated through the right breast in the region of the nipple. Condition poor. Cachexia advanced. Malignant growth advanced. Treatment similar for the first six and a half weeks. During the first week the area about both breasts became intensely congested and denuded of skin. The necrosis in the right breast progressively increased, and at three weeks both breasts appeared to have decreased in size; at one month after treatment the left breast was no longer fixed.

Commentary

In all the four cases in this group there was intense pain in the tumour three to ten minutes after each injection, which lasted for about half an hour. This began at the growing margin and spread over the whole tumour. In all cases, too, the diastolic pressure increased, leaving the pulse pressure at twenty minutes after an injection as low as from 16 to 20. This, however, was transient. More troublesome was the small amount of urine which was periodically recorded, but the amount returned to normal when the dose of pituitrin was reduced, or, if necessary, omitted for that day. Signs of an overdose of pituitrin occurred occasionally, and in the form of spasm of the occipital, brachial, or femoral arteries. One case showed dilatation of the pupils, and at another time the systolic pressure rose by 100 points. Fortunately, these were all transient.

During the six and a half weeks included in this period, when the treatment consisted only of injections of pituitrin and of a diet low in carbohydrate, all the growths showed definite regression. In all cases, however, this regression appeared to come to a standstill, and for a time it seemed that this line of approach to the treatment of malignant disease would be of a very limited character. It was at this point that the Zondek-Aschheim reaction in its relationship to malignant disease was considered, and by this means a method for restraining the activity of the anterior pituitary presented itself.

Remarks on the Second Group

Zondek showed that in 15 per cent. of 118 cases of malignant disease the Zondek-Aschheim reaction was positive. The unpublished results of eighteen cases investigated by Susman and Nuttall showed that fourteen gave a positive reaction; these included four of the six cases in both groups. The remaining two have not been tested. In short, it has been a working rule to suppose

that every case of cancer has a hyperactive anterior pituitary, for it was found that several of the fourteen cases which had previously given a negative reaction became positive if the test was repeated several times. Case II presented a further interesting point. The patient was obviously in a highly toxic state. Her urine, when injected into mice, was lethal. When the urine was diluted twenty times the Zondek-Aschheim reaction was very definitely positive. In other words, the reacting hormone was present in very great amount in the undiluted urine, and it was just possible that it was the excess of anterior pituitary secretion which caused the profound toxæmia. Zondek (1930) found that in cases in which castration had been performed by operation 75 per cent. gave a positive reaction, and this included bilateral oophorectomy. This suggested that the genital glands had a restraining influence on the anterior pituitary, and that perhaps, by the administration of an ovarian extract (theelin, P., D. and Co.), the overactivity of the anterior pituitary in malignant disease might be controlled. The therapeutic agents utilized in Group II were then (*a*) a diet low in carbohydrate, to starve the growth, (*b*) pituitrin (P., D. and Co.), to reinforce the secretion of the posterior pituitary, and (*c*) theelin (P., D. and Co.), to restrain the overactivity of the anterior pituitary.

Case III

Treatment continued as in Group I with the addition of 0·25 c.cm. of theelin daily *for three weeks* and then once or twice weekly. The malignant area continued to clear. In two months the central area was largely cleared but there probably remained a thin base of malignant tissue. In three months the malignant edge was no longer apparent and the surface was flat and clean. The appearance was good but the area was probably not entirely free from growth.

Case IV

Treatment as in Group I with the addition of 0·25 c.cm. to 0·5 c.cm. theelin once daily. Necrosis of the right breast continued and by the tenth week the right breast was reduced to a layer of tumour tissue on the chest wall. The left had become much reduced in size. *Progress continues.*

Case V

Male, aged 55. Epithelioma of tongue with involvement of floor of the mouth and left submaxillary gland. Tongue was fixed and patient was unable to speak.

Treatment.—Diet low in carbohydrate, pituitrin 1 c.cm. to 2 c.cm. twice daily and theelin 0·25 c.cm. to 0·5 c.cm. daily. Within two days his speech was understandable. At the end of one month the tongue was cleaner, not so large, and slightly mobile. Pain in the tongue was severe after injections. The patient looked well and felt well.

Case VI

Female, aged 76. Slow growing epithelioma (Fig. 5) on the dorsum of the foot, 2·6 cm. by 3 cm., with an actively infiltrating edge on the right side and hyperkeratosis on the left (Fig. 7).

Treatment.—Diet low in carbohydrate. Pituitrin from 0·5 c.cm. to 2 c.cm. twice daily and theelin from 0·25 c.cm. to 0·5 c.cm. daily, with occasional lapses for several days. For the first two weeks theelin was not available.

In five days the advancing edge disappeared. At two weeks the tumour was sharply demarcated from the skin and the crescent of tumour tissue at the upper pole was necrotic (Fig. 8). Sections at this stage showed that the tumour was well differentiated from the epidermis (Fig. 6) and was being surrounded by cellular connective tissue. The tumour became very congested and much necrotic material came away in the dressings. At the end of one month the tumour edge was separating, the skin was growing in underneath, and the crescent at the upper pole had disappeared. Since treatment began the tumour was no longer painful. At six weeks a probe could be passed in under the growth over a considerable part of its circumference. At the end of seven weeks the tumour was removed completely and easily by enucleation with a very blunt instrument. When the tumour was removed there could be seen a central area where the tumour had been attached, about 2 cm. in diameter, and an outer rim of skin about 0·4 cm. in width signifying that separation had occurred to the extent of about 0·8 cm. of the diameter of the growth before the operation. Since the operation the patient has been receiving 0·5 c.cm. to 1 c.cm. of pituitrin daily with occasional injections of 0·25 c.cm. theelin. Three weeks after the tumour had been enucleated the wound had healed completely and the patient was discharged from hospital. For the last month the patient has been well and felt much younger.

Case VII

Female, aged 54. Carcinoma right bronchus. Before treatment she complained of a constricting feeling about the trachea and had pleural effusion which caused dyspnœa.

Treatment.—Diet low in carbohydrate. 0·5 c.cm. to 1 c.cm. pituitrin twice daily and 0·25 c.cm. to 0·5 c.cm. theelin daily. In fourteen days the constricting feeling about the trachea disappeared. She looked and felt quite well but respirations continued between 35 and 40. This would be largely due to the intense congestion induced in the affected lung by the treatment. Pain occurred in the right chest after each injection.

Discussion

The crucial test for this form of treatment was in Case VI. There we find that the growing edge disappeared in five days, that the tumour began to separate at fourteen days (at which time the associated hyperkeratosis had disappeared), that in six weeks a probe could be inserted some distance under the growth at most points along the circumference of the tumour and that at seven weeks the tumour, an epithelioma proved by microscopical examination, was successfully enucleated without any cutting. This case alone showed that the treatment based on a definite hypothesis was successful. There is nothing, however, to indicate that recurrences may not happen at some time or other. It is hoped that the patient will continue receiving periodic injections of pituitrin and theelin for at present there is no way of establishing the fact that the normal endocrine balance has been restored.

As for the other cases, all the tumours appear to show some regression, life has been prolonged, and all the patients look and feel better than before. After theelin was employed there has been no serious set back in the progress of the cases and no deaths.

That pituitrin can affect tumour growth was shown by Norgate (1921) when he treated thirty-six cases with injections up to 3 c.cm. a week, but these injections were made into the tumour. He found that it caused an improvement in appetite, in weight, and regression of the tumour. Secondaries were rare. On the whole, life was prolonged for a year or more. He concluded that pituitrin only delayed growth by cutting off the blood supply. Carne (1918) injected pituitrin in cancer cases to raise the blood pressure, and he found a noticeable improvement in the cases so treated. Neither of these inquiries was based on a belief that the ductless glands might play an important part in cancer.

The pain which followed after the injection of pituitrin in cancer cases was investigated by Reding and Slye (1926), who found that this phenomenon occurred in 80 per cent. of eighty cases. No pain was complained of by patients suffering from a non-malignant ulcer, tuberculous or syphilis. They concluded that the pain was not due to vaso-constriction and that the phenomenon was neither restricted to any particular type of growth nor dependent on the amount of smooth muscle in the part.

In conclusion, only a few more points need be dealt with. Pain was controlled by morphine or its equivalent. When the output of urine came below 20 ounces the dose of pituitrin was reduced and if necessary stopped. The output of urine invariably returned to normal in a day or

two. The low pulse pressure which frequently occurred after an injection of pituitrin merely caused a transient faintness. Finally, the effectiveness of the dose was gauged by the temperature, for when the temperature varied between 97° and 99° it was judged that the regressive changes were sufficient. When toxic absorption caused the temperature to rise above 99°, the usual measures were employed to bring it down.

Summary

1. Based on the hypothesis that in cancer cases the anterior pituitary was overactive, and the posterior pituitary underactive, two cases of advanced cancer were treated with pituitrin alone, and five cases with pituitrin and theelin. All were placed on a diet low in carbohydrate.

2. An epithelioma began to separate off and was enucleated after seven weeks of this treatment. The growing edge disappeared in five days.

3. All the cases showed regressive changes in the tumours, and life appeared to be definitely prolonged.

I wish to thank the honorary, medical, and nursing staff of the Christie Cancer Hospital, and Dr. Stanley White of Messrs. Parke, Davis and Co., for their valuable co-operation in the clinical work. I am indebted to the Manchester Committee on Cancer, and the Manchester University Grants Committee for grants to defray the expenses of this investigation. For the photographs and photomicrographs I have to thank Mr. H. C. Taylor of the pathological department.

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TORSION OF OVARIAN CYST IN CHILDREN

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(*With Special Plate*)

The age incidence of ovarian tumours has been noted in several valuable series of recorded cases. Statistics indicate the occurrence of ovarian tumours at the extremes of age and their comparative infrequency in childhood. The proportion of cases met with in children does not exceed 3 per cent. Illustrative of the early age at which ovarian tumours may appear is the case reported by Doran of an ovarian tumour in a premature child, aged 7 months. Another instance is given by Chiene, who performed ovariotomy on a child aged 3 months. The majority, however, of these tumours in children are met with between the ages of 10 and 14. Both the solid and the cystic types of tumour of the ovary are found in children. Of the simple variety, cystadenomata and dermoid cysts are equally common, and constitute about two-thirds of all tumours. The malignant growths form the remainder, and, of these, sarcomata are rather more common than carcinomata.

Cases of ovarian tumours are brought to our notice by reason of: (1) their increasing growth giving rise to abdominal deformity; (2) constitutional disturbances; (3) mechanical effects, causing pressure on the surrounding viscera; (4) complications. In children the complications of rupture, or of suppuration of an ovarian cyst, are exceedingly rare, and torsion, although the commonest complication, is relatively uncommon. The rarity of the condition justifies the detailed description of the following case, which was under my care.

Illustrative Case

J. L. M. J., female, aged 9 years, was admitted to hospital on October 13th, 1930, as a surgical emergency. The parents were both healthy, but somewhat dull intellectually. There was one other sister alive and well.

Previous History.—The patient was born after a short and normal labour, and, except for measles and whooping-cough, she had always been very healthy. When about 5 years of age she had an attack of pain, which commenced on the left side and extended across the upper part of the abdomen. This was accompanied by retching, and "trouble with the bowels." These attacks recurred each year, but were never severe enough to confine the child to bed. The mother was emphatic that the onset of each attack synchronized with the approach of the colder weather, taking place usually in October. The pain lasted as a rule for fourteen days, but eventually responded to doses of castor oil. She had had attacks of vague abdominal pain frequently throughout the last year.

Present Illness.—At 9 p.m., on October 5th, 1930, the patient had a sudden attack of vomiting. There was no pain at first, but the next day she complained of pain in the left side of the abdomen. This pain extended across the upper part of the abdomen, and in no way differed from that experienced in previous attacks. She attended school from October 7th to 10th, but at 11 a.m. on the latter date she had a sudden attack of pain, which "doubled her up." The pain started in the left side, and passed down to the left groin and across the abdomen. She vomited several times. None of the measures which had been successful in previous attacks relieved the pain. The child had a peculiar taste for castor oil, and of her own accord frequently took copious draughts straight from the bottle. There was no action of the bowels from October 9th until the 13th, when she passed a normal motion. Micturition was normal up to the day of admission, when she complained of burning pain on passing urine. The abdominal pain continued, and her general condition became gradually worse. She was sent to hospital as a case of acute appendicitis.

On later interrogation, the mother said that for the past three years she had noticed her child's abdomen becoming more prominent, and that it "seemed to be getting hard on the left side." The patient often acted in a peculiar manner, and the mother was inclined to regard her as somewhat "simple-minded." She had never menstruated, nor was there any precocious sexual development.

Examination.—On admission the patient was extremely ill and dehydrated, crying out from time to time owing to spasms of pain. The temperature was 100.8° F., pulse rate 124, respirations 24. The tongue was furred and dry. The upper part of the abdomen moved slightly with respiration, the lower part not at all. A globular swelling, extending from the pubis to the umbilicus, was apparent, filling the hypogastrium and extending to the left side. Palpation confirmed the presence of this swelling, which was felt to be tense, tender, and cystic. It appeared to rise from the pelvis, and was rather more prominent on the left side. It was so centrally placed, however, that the possibility of its being bladder was considered. Catheterization was performed, but had no effect in diminishing the size of the tumour. There was generalized tenderness over the abdomen and in the loins. Rigidity was present over the whole abdomen, but was most marked in the muscles overlying the tumour, especially on the left side. On rectal examination a hard, tense, tender, and cystic swelling was felt filling the pelvis, and so bulging the anterior wall of the rectum as practically to occlude the lumen of the bowel. A slight degree of vulvitis was present, with a scanty yellowish discharge. The examination of the urine showed the presence of ketones, but was otherwise normal. The other systems revealed nothing abnormal. The diagnosis of acute appendicitis was excluded. The condition was thought to be an abscess, circumscribed in the pelvis, due possibly to an extension from the vulvitis. An operation was decided upon, and was performed at 11.50 p.m. on October 13th.

Operation.—Under chloroform and ether anæsthesia the abdomen was opened by a right paramedian incision. A large, mottled cyst presented itself in the wound, its upper limit extending above the level of the umbilicus. Further examination showed this to be a left ovarian cyst which completely filled the pelvis. The pedicle was found to have twisted three and a half turns in a clockwise direction. Delicate adhesions were present between the cyst and the posterior aspect of the infantile uterus, and these were readily separated. The right ovary was normal. There was some clear sanguineous fluid in the pelvis. The pedicle was clamped and ligatured, and the cyst removed. The stump was peritonized, and the abdomen closed without drains. The child made a complete recovery, and was discharged on October 29th.

Morbid Anatomy.—A photograph of the specimen (see Special Plate) shows an ovarian cyst with a broad thinned pedicle and also part of the Fallopian tube which was excised with the tumour. The cyst was thin walled, somewhat mottled in appearance, due to the deposition of fatty particles on the inner side. The contents were clear fluid in which were floating globules of fat and also fine hairs. The tumour is a typical dermoid cyst and measures 4½ by 4 by 4 inches.

Features of the Condition

In a somewhat extensive review of the literature dealing with cases of torsion of an ovarian cyst in children, it is noticeable that, although cases have been reported in greater or less detail, very little attempt has been made to correlate the clinical findings of the condition. In several instances, more stress has been laid on its rarity than on the description of the actual case itself and the recognition of its possibility in diagnosis. In the above case and in those reviewed there are many common features which warrant fuller description.

Pain.—In many instances a history is reported of similar attacks, which have been of less severity, but have recurred at intervals of months or, less frequently, of years. These previous attacks are of short duration, lasting in the majority of cases but a few hours, although they may continue for several days. In the acute attack the pain is often preceded by vomiting, or vomiting may occur after the pain and be almost continuous throughout. The onset is sudden, and the pain is very severe in character, being usually constant, but sometimes assuming a spasmodic character. It is definitely localized to the side on which the tumour is situated, but radiates medially across the abdomen, so that the umbilicus may be indicated as the site of the pain. The severity of the initial excruciating pain may diminish after a varying time, leaving a dull ache.

General Condition.—The patient looks ill and may be definitely toxæmic. She is exhausted and apprehensive, often crying out from time to time, owing to spasms of pain. The tongue is furred and dry, and the bowels have usually opened naturally, or have responded to laxatives. In a few cases there may be a history of constipation of several days' duration. The pulse rate is raised, while the respiration rate is normal. The temperature is raised usually above 100°, but it varies between 99° and 103°.

Abdominal Examination.—A tumour can be recognized in the majority of cases; in twenty one cases in which the situation has been given, the cyst has occurred thirteen times on the right side and eight times on the left. The cyst may produce only a general prominence of the abdomen, but in many instances the tumour is definitely demarcated. It may be outlined in the iliac fossa, but frequently it assumes a median position, and gives rise to the false impression that it is a distended bladder. The tumour is tense and fluctuating. Tenderness is present, and is most marked over the site of the tumour. It may be localized to a very small area in the iliac fossa or may be general over the whole abdomen. In one case, no pain or tenderness was experienced. Rigidity occurs and is usually well marked, especially in the muscles overlying the tumour, but it may be generalized.

Rectal Examination.—A rectal examination appears to have been made in relatively few of the cases, but when carried out a definite mass was always palpated in each case. In some instances this appeared to occupy practically the whole of the pelvis and markedly compress the walls of the rectum. The tumour is rarely movable. It is acutely tender, and gives a feeling of fluctuation to the examining finger.

Age Incidence.—The age in this series varied, the oldest patient being 13 years, the youngest was reported by M. L. Harris, who describes a case in which a twisted malignant ovarian tumour was successfully removed from a child aged 22 months.

Complications.—In a few cases a slight degree of vulvitis has been present. A blood stained serous fluid is often found in the abdominal cavity, but it is of too small amount to be appreciated before operation. There may be small areas of localized peritonitis, and recent or established, adhesions are usually present, which can be readily broken down and give rise to no difficulty in the operation. In several cases the appendix, which may be congested, has been found adherent to the cyst. In one case intestinal obstruction due to twisting of the ileum following removal of a cyst rendered a second operation necessary.

Diagnosis

More than twenty five cases of torsion of an ovarian cyst in children have been investigated. Since this investigation a further case has been published and I have heard of the occurrence of yet another. Possibly therefore, it is a commoner condition than the few published cases would lead one to believe. It is thus a striking and humiliating fact that, of all the cases investigated, only four were diagnosed prior to operation—surely an indication that ovarian cyst, quite apart from torsion, had not been considered in the differential diagnosis. Each case has been regarded—and rightly so—as an abdominal emergency requiring operation. The diagnosis most commonly made is that of a localized appendix abscess, and where there is a history of previous attacks, increased temperature and pulse rate, tenderness, rigidity, and vomiting and especially where there is a right sided tumour, it may be extremely difficult to differentiate the two conditions. In a case of torsion of a cyst, the onset as a rule is sudden, the bowels have been regular, and the presence of a tumour can be made out by abdominal and rectal examination from the very commencement of the attack. The diagnosis of intussusception has been suggested, but the clinical features of this condition, its greater frequency during the first year and in boys, the passage of mucus and blood in the stools, and the typical emptiness of the right iliac fossa, are absent in the ovarian lesion. Abscess formation must be excluded, and if no definite causative factor can be established to account for it, an abscess, circumscribed in the pelvis, may give rise to great difficulty in diagnosis. The knowledge that torsion of an ovarian cyst can so closely simulate an acute suppurative lesion should render it possible for a correct diagnosis to be made more easily and more frequently.

Summary

1 Over twenty five cases of torsion of ovarian cyst in children have been reviewed, and an illustrative case is given.

2 Ovarian tumour, though rare, increases in frequency with the age of the child, and is most commonly met with between the ages of 10 and 14.

3 Torsion, although very rare, is the commonest complication of these tumours.

4 A correct diagnosis of the condition is decidedly more often the exception than the rule, in spite of the fact

that a constant clinical picture is found in practically every case.

5. The typical features present are: a history of similar but less severe attacks, the sudden onset of pain, an increase of temperature and pulse rate, the palpable abdominal tumour, with overlying tenderness and rigidity, and the tender cystic mass, which can be made out per rectum.

6. The diagnosis is sometimes very difficult, the lesion for which torsion of a cyst is most often mistaken being an appendix abscess.

I have to thank Dr. Teale, who kindly examined the tumour for me and also furnished me with the photograph. The specimen is now in the Pathological Museum of University College Hospital.

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GANGRENE OF THE SKIN OF DIPHTHERITIC ORIGIN

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(With Special Plate)

Two types of diphtheritic infection of the skin may be described. In one a diphtheria organism is isolated, but no symptoms characteristic of the disease are present. This type, which is not uncommon, would probably be more correctly regarded as bacteriological diphtheria. In the other type the diphtheria organism is the active agent in the production of the local disease. This type is of rare occurrence. Cutaneous diphtheria is usually found to be secondary to diphtheria in some more normal site, such as the fauces, nose, or genitals, but primary diphtheria of the skin may occur. The absence of a source of origin of the infection, and the unusual site of the disease, combine to make the present case worthy of record.

The patient was a boy, aged 11 years. According to the history, he visited a swimming bath on May 20th, 1931, and sustained a slight injury of the nature of a bruise on the dorsum of the right foot. Persistent pain and discomfort led to his attendance at the Leeds Public Dispensary on May 26th. The house-surgeon described the injury then as showing the usual appearance of inflammation and the semblance of a greyish pellicle in the centre. At first sight it was taken for a burn. The lesion progressed until, by June 1st, there was a surrounding zone of cellulitis, with, in the centre, a triangular area, which was dark grey and later black, and suggested a localized form of gangrene. Incisions into the affected area revealed no pus and produced no improvement. On account of the unusual appearance of the lesion he was retained as an in-patient. Slight general disturbance was noted from June 1st to 3rd, but the temperature did not rise above 99°. On June 4th, however, it rose to 104°, and multiple small incisions were made in the surrounding inflammatory area. At the same time a swab was taken. On June 5th and 6th the temperature hovered around 102°, and no improvement was noted. On June 6th, following the receipt of a report that diphtheria organisms were present, he was transferred to the Leeds City Hospital.

Fig. 1 (Plate) shows the appearance on admission to the Leeds City Hospital. The central area (C) consisted of a dry black eschar. Surrounding it was a greyish pellicle of semi-necrotic skin (B), and the remaining part of the dorsum of the foot showed much inflammation and oedema at (C). Neither lymphangitis nor adenitis was noted. No offensive odour was associated with the lesion. The tonsils were slightly enlarged, but there was no sign of inflammation or of exudate. There was no nasal discharge, and the anterior nares appeared healthy. The temperature was now subnormal and the pulse 90. Albuminuria was present. The Schick test was positive. Diphtheria antitoxin, 16,000 units, was administered on the day of admission, and no treatment other than dry dressings was applied to the foot for the next ten days.

Within twenty-four hours of admission the inflammatory reaction commenced to subside. The greyish pellicle ceased to extend, but became necrotic within the next few days. Eleven days after admission (Plate, Fig. 2) the lesion had taken the form of a crater with well-defined margins, and with a floor of dry, black, necrotic skin. After a further eight days, the necrotic tissue sloughed, leaving a healthy-looking granulating surface. Albuminuria persisted throughout the whole period of isolation, but no other complications were noted. By the end of July the ulcer had healed completely, and he was discharged from hospital on August 12th.

Note on Bacteriology.—The swab taken on June 4th was examined at the Bacteriological Department of the University of Leeds, and the report stated that *Corynebacterium diphtheriae* was present in pure culture. The organism gave the correct sugar reactions, and was proved to be a virulent type. On the day of admission to the Leeds City Hospital swabs taken from the nose and throat showed no diphtheria organisms, while a swab from the inflammatory area showed a pure culture of *C. diphtheriae*. On June 9th swabs from the necrotic skin and from the greyish pellicle also showed *C. diphtheriae*. On June 10th a swab taken from the greyish pellicle was again examined at the University of Leeds, and the report stated that aerobic and anaerobic cultures showed *C. diphtheriae* in pure culture. A nose swab was again negative on June 12th. On July 1st diphtheria organisms were still grown from the floor of the ulcer, but after July 5th swabs were negative.

I am indebted to the Bacteriological Department of the University of Leeds for laboratory work, and to Dr. J. F. Galpine, for helpful information regarding the early stages at the Leeds Public Dispensary.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

A CASE OF WOUND DIPHTHERIA

(With Special Plate)

The false membrane type of diphtheria of a wound and surrounding skin, once seen, cannot readily be forgotten.

A girl, aged 11 years, was admitted to the Royal Victoria and West Hants Hospital on February 2nd, 1929, on account of appendicitis. For four weeks, off and on, she had had abdominal pain of varying intensity in the right iliac region, with obstipation but without nausea and vomiting. When she was admitted the pulse rate was 104, the tongue was furred, and there was local tenderness with rigidity. On February 19th, Mr. Kinsey Morgan removed an inflamed appendix through a grid-iron incision, then closed the wound in the usual way.

On March 4th the wound began to look unhealthy, and was discharging a thin, watery fluid. The temperature had begun to rise. By April 18th the wound was gaping, and was covered by a dirty grey slough, the appearance of which at once suggested a diphtheritic infection. Examination for the Klebs-Loeffler bacillus was ultimately found to be positive, the organism being reported as occurring in almost pure culture. The wound at its worst had opened up so as to measure about 4 inches by 2¼ inches, the external oblique muscle forming the floor; the skin edges were overhanging all round. The exudate was dirty grey in colour, moist, and fibrinous, and spread for some distance on to the skin beyond the wound edges. The exudate beyond the wound was abruptly marginated, the whole being surrounded by an inflamed deep-red areola. No portion of the exudate could be wiped away. The evolution was slow, the whole condition taking about two months to develop. At no time was there any degree of toxaemia; in fact, there was surprisingly little constitutional disturbance. Large doses of antitoxin were given intramuscularly, with eusol and eupad locally, the child ultimately making a satisfactory recovery.

During the war, wound diphtheria was found to be not uncommon. Systemic symptoms referable to the diphtheria toxins did not occur, and the antitoxin appeared to have no obvious effect in ridding the wound of the infection. This false-membrane type (see Plate) is readily enough recognized clinically when one remembers the appearances of the membrane in faucial diphtheria. There are other types of eruption occurring on the skin as the result of infection by the diphtheria bacillus, the diagnosis of which cannot be confirmed without complete bacteriological examination.

I have to offer my thanks to Mr. Kinsey Morgan for permission to publish the case, and to Dr. A. H. Turton for the excellent photograph from which the illustration was taken.

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FIBROSED APPENDIX MISTAKEN FOR MALIGNANT DISEASE, CAUSING ILEO-CAECAL INTUSSUSCEPTION

Many mistakes are made in diagnosis; few are recorded. I should like to record one.

Mrs. B., aged 60, called on me at the latter end of December, 1930. She complained of loss of weight, increasing difficulty in emptying the bowels, and a lump in the right side of the abdomen: there was also griping pain. Her knowledge of the lump was quite recent. She said she had been going down-hill for the last eighteen months.

On examination the abdomen was soft, flaccid and undistended, with the exception of one small distended loop of intestine in the right iliac fossa. There was a distinct hard lump felt in connexion with this. After examining the rest of the abdomen and chest, I came back to the iliac fossa, and to my surprise the lump had vanished. What could be felt now was some indefinite thickening in the caecal region. She was sent home to bed, and with the exception of a slight colicky pain on two or three occasions there was no further complaint up to the latter end of February, 1931. A provisional diagnosis was early malignant disease of the caecum.

On February 23rd, 1931, she suddenly started with severe pain and vomiting, the vomit consisting of green and yellow bile. I saw her on the 26th, the third day from the onset. There was absolute constipation, no flatus being passed, and no result from enemas. There was a large irregular mass in the region of the transverse colon, and to the left of the umbilicus. It felt solid and was quite dull on percussion. There was a feeling of emptiness in the caecal region. There was no blood per anum. The diagnosis made was intussusception caused by a malignant growth in the caecum.

I opened the abdomen by a paramedian incision and brought the tumour to the surface. There was some free fluid in the abdomen. The mass proved to be an ileo-caecal intussusception. It was not difficult to unravel, as there was a considerable quantity of soft, yellowish lymph between the intussusceptum and intussuscipiens; this looked like pus, and actually was pus. There was a hard mass at the root of the appendix extending for a short distance into the wall of the surrounding caecum. I was still of opinion I was dealing with a malignant growth. My patient being too ill to stand excision, I short-circuited the ileum into the transverse colon (as a preliminary to a Friedländer's operation), placed the caecum in its bed, and through a stab wound passed a drainage tube down to it. Pus flowed from this for three days, when the tube was removed. Three weeks afterwards the abdomen was opened a second time.

The root of the appendix and surrounding caecum formed a hard, firm, leathery tumour. About six inches of ileum, caecum, appendix, ascending colon, and part of transverse up to the anastomosis were removed. The parts were so free and movable that the operation was easy, and was rendered easier by the preliminary anastomosis. On laying open the bowel afterwards, the mouth of the appendix in the fresh state was wide and funnel-shaped. The canal of the appendix was obliterated except for half an inch near the bowel. The appendix cut like a fibroid of the uterus, or a scirrhous cancer. The pathological report was "a fibroid condition of the appendix."

If I could only have rid myself of the obsession that I was dealing with early malignancy a less severe operation would have been justified. But the age, history, loss of weight, and the appearance and feel of the parts confirmed me so much in my opinion that I felt compelled to do a Friedländer, which I had prepared for by the preliminary anastomosis. If a complete excision had not been done, and only the intussusception unrolled, a degenerating structure would have been left, which might easily have become malignant.

My patient has put on 20 lb. since the operation, and has gained immensely in health.

Leeds. J. Stewart, M.B., M.Ch.

Reports of Societies

BLOOD TRANSFUSION

At the meeting of the Medical Society of London on October 26th, with Mr. Herbert Tilley in the chair, a discussion took place on blood transfusion.

Professor Alexander Fleming said that the beginning of modern blood transfusion, which did not become a common procedure until the war, might be ascribed to Landsteiner in 1900, who discovered the grouping of bloods. Seven years later Jansky did much more elaborate testing, and found that human bloods agglutinated into four groups, and he was followed by Moss, who also had four groups differently denominated. Recently there had been proposed a new nomenclature which had merits, and which he hoped would supersede the others. The relation of the different nomenclatures was shown in the following table:

Land-steiner	Jansky	Moss	Suggested New Nomenclature
C	1	4	O
A	2	2	A
B	3	3	B
—	4	1	A B

Certain troubles were encountered in testing bloods. The first of these was a pseudo-agglutination, not a true agglutination at all, found especially among people who were suffering from pneumonia or similar illness. Another

fallacy was due to auto-agglutination. In a few cases the test might be upset because the blood under conditions of bench or room temperature agglutinated its own corpuscles. Yet another difficulty in grouping arose from the constant discovery of subgroups. He had been told that Landsteiner, who had fifteen people working in his laboratory, could tell the blood of each one of them by agglutination tests. But that did not invalidate the fact that the four groups were real entities. One other point was the relative lack of fixed grouping in the blood of very young infants. He showed that in infants under 1 month, out of forty-nine cases, the proportion having fixed groups was 16 per cent. In giving blood transfusion one was giving several different things: fluid, either plasma or serum, red corpuscles, leucocytes, blood platelets, and perhaps certain immune substances. In shock the indication might be for fluid; in sudden haemorrhage, fluid and corpuscles; in septic conditions, healthy leucocytes; in some haemorrhagic conditions, blood platelets. Whole blood had been largely displaced in transfusion by citrated or defibrinated blood. It was reasonable to assume that whole blood was best, containing as it did all the constituents of blood unaltered and in their proper proportions. But the operation, even with the comparatively simple methods now available, was difficult. Citrated blood gave certain reactions and caused some damage as regards bactericidal power. Defibrinated blood left the leucocytes quite undamaged, and had the merit of being the easiest of all methods to apply. Such transfusion could be done with simple improvised apparatus. Finally, he spoke of immuno-transfusion, in some desperate cases extraordinarily beneficial, and in others, equally desperate, having no effect at all. Two procedures which might be classed as immuno-transfusion were the introduction of nuclein into the donor, and the injection of the donor with some hypertonic salt solution, giving rise to considerable increase in bactericidal power.

Dr. H. Letheby Tidy said that when blood transfusion came to the fore during the war the problem in a case of acute haemorrhage in an otherwise healthy man was simply that of refilling a depleted reservoir. But as blood transfusion was increasingly applied conditions became more difficult, and various reactions were set up. The first beneficial effect of transfusion was restoration of the bulk of the fluid; the second, the actual provision of oxygen; and the third, rest and stimulation to the blood forming tissues. This last was a matter of great importance when dealing with the more medical aspects and the more chronic cases in which blood transfusion was carried out. Any organ on which an excessive call was made was apt to give up the struggle and collapse. In anaemia he thought that anything below 30 per cent. haemoglobin was an indication that blood transfusion should be performed, and at 25 per cent. a point was reached when it was imperative to perform such transfusion. It seemed that the procedure might be used even in less advanced cases. He proceeded to speak of the influence of transfusion on the factors which led to haemorrhage. The first of these factors was the coagulation time. Varying statements were made about the coagulation time in cases of anaemia. One statement was that when anybody collapsed from haemorrhage the blood became more coagulable, so that the haemorrhage was, in fact, brought to an end. On the other hand, the statement was frequently made that, in anaemia, blood was less coagulable than normally, the coagulation time was increased, and the result of a blood transfusion was to diminish this time and to increase the coagulability, so tending to bring to an end any further haemorrhage. As a matter of fact, there was no evidence for either statement. There was no relation between coagulation time and the extent of anaemia, though there were very few observations on the effect of blood transfusion on coagulation time, because, of course, transfusion was only performed in emergency, when it was not an easy matter to make additional observations. The clot in normal blood was distinctly firm. Some diseases showed an abnormal clot, though haemophilia, curiously enough, had a normal clot. The clot of anaemic blood was definitely soft, and must be a very inefficient or delicate seal for a bleeding point. A slight disturbance of that clot would cause recurrence of haemorrhage. After showing the results of a test recently made on an anaemic girl, Dr. Tidy suggested that there was a factor not measured by any of these methods which would definitely tend towards recurrence of haemorrhage, though not towards the development of haemorrhage spontaneously. This was a factor undoubtedly influenced by transfusion. On a good many occasions he had tested bleeding time in persons with high blood pressures, and he had never found any difference in their case before and after venesection. So far as he could see, blood transfusion did not raise the blood pressure above about 120 mm., and approximately it did not raise it by more than 50 mm. (that is, if the original pressure was 70 it would be raised to 120; if it was 100 it would still be raised to 120). Turning to special conditions in which blood transfusion was of use, he said that in haemophilia there was not the slightest doubt as to the benefit of transfusion. Its effect was transient, but it was worth having, because the haemophiliac was not always in a state of haemophilia. In jaundice it had been observed that there was a tendency to oozing. Coagulation time in jaundice was normal, though there were exceptions which had unduly biased the view. On the day of death in a case of jaundice there was some evidence that coagulation time might go up to something quite abnormal. Blood transfusion had no effect on oozing in a jaundiced patient. In primary purpura, the haemorrhagic diathesis, everybody who had used transfusion was agreed that it was unreliable; but the only absolute cure was splenectomy, which was associated with a high mortality, and so one had to fall back on something else, and he felt that blood transfusion was the correct procedure. In leukaemia transfusion had no effect, and in aplastic anaemia the position was the same as in haemorrhagic diathesis.

Mr. Geoffrey L. Keynes gave the following indications for transfusion: (1) haemorrhage and shock—traumatic, pathological; (2) pre- and post-operative conditions—gastric or duodenal ulcer; (3) haemorrhagic diseases—haemophilia, melaena neonatorum, purpura; (4) blood diseases—septicaemia; (5) bactericidal infections—pneumococcal peritonitis. The field of utility was certainly expanding. He had always quarrelled with the distinction between whole blood and citrated, because in citration nothing was taken away, only some alteration was made whereby the clotting complex was inhibited. The amount of citrate used was extremely small. It was necessary to use no more than 1 gram of citrate for 450 c.cm. of blood, and it was difficult to believe that this amount, which was destroyed in the body within ten minutes, really produced any profound effect upon the result of the transfusion. He therefore remained an unrepentant "citrationist." As to technique, Fraenkel's needle appeared to him the best instrument for withdrawing blood from the donor. He had a conical flask containing the citrate solution, the blood being run straight into it through the needle. He agreed with what Dr. Tidy had said about the effect of transfusion upon blood pressure; the blood pressure rose to 120 mm., but not appreciably above that point. He proceeded to speak of the London Blood Transfusion Service, an organization

of voluntary donors. The calls on this service had consistently increased, and it was expected that during 1931 the record number of 2,000 calls would have been made. More than 100 hospitals had called for the service. The effect of transfusion had been good, very good, or excellent in more than 50 per cent. of the cases, and in less than 10 per cent. no improvement had been recorded. The number of conditions for which transfusion was carried out in 1930 was 148. In that year 589 cases were medical, 585 surgical, and 217 gynaecological or obstetrical. There were 193 transfusions for one or other form of anaemia. A few problems still remained. One of these was as to the effect on the donor of frequent bestowals. A certain donor in France had given his blood on 450 occasions, and at present in London there was a man who was anxious to emulate his example, but they hesitated to allow him to do so. Blood grouping was apparently still insufficiently familiar to a great many people, so that they persisted in sending for the universal donor, and large numbers of donors of the other three groups were never used.

Dr. F. PARKES WEBER demonstrated the newly modified apparatus for direct blood transfusion after Bürkle de la Camp. The essential feature was that the blood was withdrawn from the donor into a receiver made of "athrombit," which delayed coagulation, so that the blood could be injected directly into the recipient's vein. This type of apparatus had been used at the German Hospital for about the last twenty blood transfusions. On no occasion had the transfusion (mostly of 300 c.cm.) been followed by any rigor. On one occasion it had been followed by a transient urticarial eruption, but that was in a case of very severe chronic ulcerative colitis, in which urticaria had likewise followed an ordinary transfusion of citrated blood on a previous occasion. Of course there should be no delay during the carrying out of the transfusion.

Mr. JULIAN TAYLOR said that Mr. Keynes had lumped together what could not be properly lumped—shock and haemorrhage. Blood transfusion for haemorrhage was successful in every case; in shock it was very different, and in the war uniform failure resulted. It was very difficult in the case of severe injury or drastic operation to decide how much of the patient's plight was to be attributed to haemorrhage and how much to shock. Experience suggested that the haemorrhage could be treated by blood transfusion and the shock could not. Blood transfusion would help in pre-operative anaemia or in those cases in which loss of blood was inevitable during operation.

Dr J. W. CARR asked whether it was common for rigors to occur from blood transfusion, whether a rigor produced any permanent harmful effect, and whether the full benefit could be expected if rigor had not occurred. Dr BERNARD SCHLESINGER described a case of pneumococcal septicaemia in which benefit resulted from immunotransfusion. Mr C. HOPE CARLTON said that in North America the standard method was whole-blood transfusion, and he had given some six or seven hundred such transfusions there. He came back to this country a strong supporter of the whole blood method, but in three years in London his views had been modified; as many reactions were seen with the whole-blood method as with the citrated method. He mentioned two indications for transfusion: to promote metabolism in infants, and for toxaemia in burns and toxaemia associated with acute intestinal intoxication in infants.

Dr TIDY, in reply, said that he had seen cases where rigors had occurred and yet there was apparent benefit. Good results were seen with and without rigor. Mr. KEYNES said that he had never seen a patient in whom a rigor had had apparently any deleterious effect.

THE COMPILATION OF VITAL STATISTICS

In the Section of Epidemiology and State Medicine of the Royal Society of Medicine, on October 23rd, Professor MAJOR GREENWOOD delivered his second annual address from the chair. His subject, suggested by the recent regretted retirement of Dr. T. H. C. Stevenson, a Jenner Medallist of the society, from his official post at Somerset House, was the General Register Office, and particularly the work of William Farr, Dr. Stevenson's forerunner, and the founder of modern medical statistics.

The General Register Office, said Professor Greenwood, was a wonderful institution, and perhaps its publications between 1850 and 1880 contained more valuable contributions to the knowledge of the theory and practice of vital and medical statistics than were made by all other contemporary official and private investigators throughout the world. Even now Somerset House contrived to tell the world more about the way the English lived and died than the staff of the Statistique Générale de France seemed to be able to discover about their countrymen. Yet not one of the pioneers of statistical theory in the eighteenth century was an Englishman, the greatest of them were Frenchmen and Laplace. What names had we to set beside De Moivre and Laplace? True, we had John Graunt, but it was left to foreigners to realize his importance.

William Farr was the son of a farm labourer in Shropshire, whose education, such as it was, was paid for by a local patron. He became a pupil to a Shrewsbury practitioner and, having sat for the L.S.A. examination started practice in London in 1833. Six very hard years must have followed, during which excursions were made into medical journalism, and then, in 1839, came his appointment as compiler of abstracts in the new General Register Office, a post which he retained until 1880. From the first Farr's hand was seen in the annual reports. The reports of the Registrar General, and, after 1841, of the Census Commissioners, were evidently the compilations of Farr. The letting loose in this way of an inquisitive widely read enthusiast, with a flair for the meaning of statistical statements, was a great piece of luck. How he organized the vital statistics need not be told, for it was part of the common knowledge of educated men. How directly and indirectly—through Simon—he stirred the public conscience was also known. Perhaps his curious little hunts of statistical hares were less appreciated, but a young medical statistician in want of a subject for research should read the annual reports steadily; he would find in their pages a sufficient number of suggestions for innumerable theses.

On his retirement in 1880 Farr was succeeded by William Ogle, the originator of corrected or standardized death rates, and after him came Tatham, also a competent statistician, but the individuality or quaintness which had made the publications of the office so attractive had evaporated. Then began the epoch when Dr. T. H. C. Stevenson occupied Farr's chair and recaptured his spirit. Not that he wrote like Farr, but, like Farr, he had been interested, to use a Farr-like metaphor, in the people going up and down to Camelot, whose shadows appeared in the mirror of Shalott, set up in the Strand. He had told the story of infant mortality in a way to inform the mind and touch the heart. It was now, of course much more difficult to give an official vital statistician his head in the way that George Graham, the second Registrar-General, gave Farr his head. Eighty years ago politicians did not take medical statistics seriously, but now the news value, the tendentious interpretation of medical and vital statistics, could be no longer ignored. It was possible that a department might have to restrict the limits within which the members of its staff had a free hand. It was a choice had to be made between accuracy and [illegible] dullness, there could be no doubt in which direction

official prudence must point. But still the memory of that enthusiast from Shropshire, who was so odd a civil servant and so English a genius, would be honoured, and most of the things he valued would continue to be valued.

A vote of thanks to Professor Greenwood was accorded on the motion of Sir William Hamer, seconded by Sir George Buchanan.

DEAFNESS

At a meeting of the London Jewish Hospital Medical Society on October 8th Mr. Maurice Sorsby delivered the presidential address, on deafness and its prevention. He drew attention to the extreme frequency of deafness in its different degrees; in 1927 there were 4,038 totally deaf children in England and Wales, as against 1,925 children totally blind. Minor auditory defect was present in about a third of the school population, and even more frequent in the adult population. Deafness present at birth, the so-called congenital deafness, was responsible for only a small proportion of deafness seen in adults; the large majority of deaf people acquired their disability. Even congenital deafness was, in most cases, not an hereditary lesion, but a sporadic affection of unknown origin. The presence of a deaf relative, or even of a deaf parent, was no proof that the congenitally deaf person was the subject of hereditary deafness, nor was absence of deafness in the parents evidence that the deafness was not hereditary, for the parents might be carriers of it without themselves being deaf. The truly hereditary deaf offered a serious social problem, owing to their tendency to intermarry. Graham Bell had gone so far as to speak of the formation of a deaf variety of the human race as a result of this inbreeding. Deafness acquired in adult life was not always acquired in the sense that the individual was the subject of a somatic defect. Some forms of otosclerosis were hereditary, and made their appearance during adolescence or adult life. But as in "congenital" deafness, so in "acquired" deafness, the great majority of deaf persons were the subjects of non-inheritable pathological lesions. In childhood tubo-tympanic infections spreading from the nasopharynx were mainly responsible. Meningitis, destroying the internal ear, and infectious disease, giving primary lesions in the middle ear, were responsible for a relatively small group. Syphilis was a declining factor. In adult life deafness was caused by the persistence of nasopharyngeal sepsis as in children, and in addition there was that large and indefinite group of cases named otosclerosis and chronic adhesive middle-ear disease. In old age, nerve deafness, probably caused by auto-intoxications and arterio-sclerosis, was a frequent lesion.

In the treatment of deafness, though success was limited, much could be done for people with middle-ear lesions, but the mainstay of the otologist was prevention. The true hereditary deaf formed a problem in eugenics, the victims of acquired deafness a problem in pathology. The eugenics problem was of considerable magnitude, for it was estimated that in England and Wales alone there are 40,000 deaf-mutes; they and many of their hearing relatives were potential breeders of a much larger group. The problem in pathology resolved itself essentially into the control of infectious diseases, with their rapidly destructive lesions of the internal ear (apart from middle-ear infections) and the eradication of nasopharyngeal sepsis, which led to the dire consequences of chronic septic processes in the middle ear. In this latter connexion the gradual decline in deafness was noteworthy, as due to the extensive organization for the removal of infected tonsils in children. Otorrhoea was a late stage in middle-ear infection; it carried danger not only to hearing but also to life, but modern methods of treatment were effective.

Reviews

BIOPHYSICS

Some degree of specialization is inseparable from the advance of knowledge. Our forebears who interested themselves in the pursuit of natural philosophy would find it difficult to orientate themselves to-day among the various subjects which are the children of their own labours. The process of differentiation still goes on, and we must admit, perhaps with a sigh, that the subject of physiology is following the general trend. Those portions of the subject which are investigated with the aid of exact physical measurements are now often called biophysics. Whether biophysics and biochemistry can now properly be considered to cover the range of what was formerly called physiology, or whether there yet remain some unwanted remnants to which anyone still wishing to call himself a physiologist is very welcome, is a matter for argument. Too often in the past the physiologist has been inadequately informed with regard to pure chemistry and physics. There is now the opposite danger, that biophysicists and biochemists may have but a fragmentary acquaintance with the biological side of their subjects. It is therefore important for us to scrutinize closely any new textbooks and monographs dealing with biophysics, such as the recent *Groundwork of Biophysics*,[1] by Wishart. It should be said at the outset that this book is written by one who has never lost sight of the biological point of view, and who has been engaged in the actual instruction of medical students. If the necessity for the introduction into physiological teaching of so much physical chemistry be conceded, then this book is admittedly excellently suited to the purpose for which it was written. But, excellent though such specialized knowledge may be for the instruction of advanced students in pure science, or future investigators in any biological science, one cannot help wondering whether the medical student's cup is not already more than full. Let us not forget that in a former generation the extravagant expectations held out in the shape of the development of organic chemistry led to the introduction into the medical curriculum of much unwanted and useless matter. It is now recognized, on the one hand, that organic chemistry has actually done immense service to medicine and all the attendant sciences, and, on the other hand, that such advances are matters for the attention of specialists. In the opinion of the reviewer, then, such books as Dr. Wishart's will be of very great service indeed to science students, or such students of medicine as can digest them; for others it is sincerely to be hoped that, since two things cannot be in the same place at the same time, they will not be required to acquire such detailed familiarity with the subject.

Almost simultaneously there appears Professor A. V. Hill's *Adventures in Biophysics*,[2] of which we heartily approve. This is the matter of five lectures delivered in connexion with the opening of the Eldridge Reeves Johnson Foundation for Medical Physics at Philadelphia. We are here taken into the author's confidence and given an opportunity to see the working of his mind upon his problems. It is clear that he thinks logically and quantitatively, but by no means unbiologically. The book will appeal to advanced students and to other investigators, and deals with the advancing fringe of the subject, chiefly

[1] *Groundwork of Biophysics.* By G. M. Wishart, B.Sc., M.D. London: G. Bell and Sons, Ltd. 1931. (Pp. vii + 344; 81 figs. 12s. 6d. net.)

[2] *Adventures in Biophysics.* By A. V. Hill, Sc.D., LL.D., M.D., F.R.S. London: Milford, Oxford University Press. 1931. (Pp. 161 + 161; illustrated. 12s. 6d. net.)

in relation to muscular contraction. Admittedly, to this adept in mathematics and physics, biophysics can be an adventure. We agree with him, and consider it to be often a profitable and delightful one—but not for the inexpert.

SALT IN NEPHRITIS

A most important book, by L. Blum and C. van Caulaert, on the role of salt in nephritis,[1] arouses at first some melancholy reflections since, as the preface states, it has appeared after the death of the senior author, Professor Léon Blum of Strasbourg, and has been completed by his co-workers, van Caulaert and Pétrequin. The work on the physico-chemical problems of renal disease carried out in Strasbourg since the war is remarkable in many ways, and the output of Blum himself and of his pupils has been enormous. The present book gives a connected account of all the physico-chemical studies of salt-retention and salt-depletion in their relation to different types of nephritis, and, what is more, explains clearly the reasons for definite lines of therapeutics which in practice have proved most successful. It is safe to say that Blum's work, highly original in its character, has already made a deep impression on all workers, and is being followed up in many lands. The book is divided into two distinct parts: the first on nephritis with chloride retention (retention chlorurée); the second on nephritis with chloride depletion (hypochloruration).

Blum's work began from the well-known earlier observations of Widal, who divided nephritis into the hydraemic, azotaemic, albuminuric, and hypertensive varieties. It was soon found, however, in partial criticism of Widal's results, that there is not a regular and constant parallelism between retention of sodium chloride and retention of water in cases of nephritis with oedema. Blum's researches showed that the retention of chlorine is often greater than that of sodium, and that the elimination of these two elements from the body may be essentially different. In this way commenced a wide study of the phenomena of water exchange in the tissues, which in its side-tracks has led to eminently practical results. Blum was struck by the experiments of Magnus-Levy (1920) on the occurrence of severe oedema induced by injections of sodium bicarbonate, and he began to wonder whether it was not the retention of sodium rather than chlorine that induced oedema in nephritis. This hypothesis was soon shown to be correct; it is only chloride of *sodium* which, when retained, can induce oedema, and, on the other hand, chlorides of potassium, ammonium, and calcium may have a powerful diuretic effect. This is in brief the history of the introduction of calcium chloride as a diuretic in cases of renal oedema. The importance of chlorine in these problems is, however, fundamental, except as regards oedema, and Blum passes on to consider cases of chloride retention in nephritis without oedema. Such cases were first recognized by Ambard and others in 1905, but Blum and van Caulaert have greatly extended our knowledge of them. Much more work on this problem still remains to be done, but Blum and his colleagues noted that in cases of chloride retention without oedema uraemia is particularly liable to ensue. The views concerning uraemia expressed in this book are highly original and stimulating, but at present are bound to be controversial.

Founded on his views of salt retention, Blum and his colleagues have developed new lines of treatment for cases of nephritis with "hyperchloruration." The main plan is indicated on page 163 of their book, and must be read in full to prevent injustice from a short review. Briefly put, the essential points are: (1) A regime of chloride depletion—a salt-poor diet. (2) The administration of drugs inducing chloride excretion—diuretin has proved the best of these. (3) Alkali therapy in cases of chloride retention *without oedema*, to avoid acidosis and (in Blum's view) uraemia—sodium citrate has proved the best. (4) Elimination of sodium, in cases *with oedema*, by administration of Blum's "interstitial diuretics"—calcium chloride is the best.

Part II of the book concerns nephritis with "hypochloruration," and is largely devoted to proof of the existence of a type of renal disease associated with nitrogen retention (azotaemia), in association with diminution of the salt content of the blood. Clinical observations, animal experiments, and chemical analyses of the blood of such patients are all set forth. The treatment of this syndrome is self-evident, and large doses of salt are given. Warnings of complications, if the treatment is overdone, are indicated. In conclusion, it is shown how these abnormalities in the elimination of sodium and of chlorine can be made the basis of a classification of nephritis, essentially practical in that therapeutic measures are thereby strongly indicated. Such a classification is compared and contrasted with the earlier division of nephritis by Widal into the four varieties already mentioned.

This book must be read by all who are grappling with the many problems of renal function in health and disease.

[1] *Le Rôle du Sel dans les Néphrites.* Par Léon Blum et C. van Caulaert. Avec la collaboration de P.-S. Pétrequin. Paris: Masson et Cie. 1931. (Pp. 262, 4 figures. 30 fr.)

AN INTRODUCTION TO GYNAECOLOGY

It is a common experience among teachers of gynaecology that the popular treatises are so long and technical that the raw student is overpowered by the erudition of his masters, and it is with diffidence and not enthusiasm that he begins this branch of his medical training. Professor Jeff Miller has therefore written *An Introduction to Gynæcology*[2] for the benefit of students who are starting their gynaecological appointments. His aim has been to present an elementary account of the principles and the theoretical and clinical aspects of gynaecology. Treatment is not considered, for, as he points out, "the treatment of patients is not the business of the junior student." There is much to be said for this point of view. The book consists of some 316 pages, and although this may seem long for the subject dealt with, the material is lucidly expounded and the reading easy. The illustrations are exceptionally good, and have been obtained from well-known works, Schröder's diagrams form an exception, for they compare very unfavourably with the originals. From the scientific aspect the book is admirable. The author gives excellent descriptions of the modern work on the physiology of the ovary, and stresses the importance of the work on the active principles of the anterior lobe of the pituitary gland. We cannot speak too highly of this method of approach to the subject. Routine gynaecology in the Victorian age must have been very dull with its empiricisms and butterfly pessaries, but modern gynaecology is obtaining a strict scientific basis, and students of the future should be encouraged to regard it in this light rather than to think gynaecologically in terms of uterine and pelvic congestion.

The chapter on methods of examination has obviously been written with great care, it is a praiseworthy achievement. Most textbooks of gynaecology might usefully take it as a model for their future editions, for it is of much greater practical value to young students than the accounts usually given. The question of prolapse is dealt with in two separate sections—one on downward displacement of the uterus, the other on vaginal and urethral hernia. The pathology of all forms of prolapse is more conveniently described together, rather than in this way.

[2] *An Introduction to Gynæcology.* By Jeff Miller, M.D. London: H. Kimpton. 1931. (Pp. 227, 117 figures. 21s. net.)

and more attention might have been paid to the pathology of prolapse than Professor Miller has thought fit; use might have been made of Tandler and Halban's diagrams, and the etiology explained on purely anatomical lines. It is doubtful if any branch of gynaecology presents more difficulty to the average student. Endometriosis is described at great length; Sampson's theory has been accepted, although it has many opponents in America at the present time. A noteworthy feature of the book is the omission of any discussion on the so-called chronic metritis and delayed subinvolution of the English school. Goodall's work has been forgotten, and, although the modern work on the ovarian origin of the associated uterine haemorrhages is accepted for some cases, the author feels diffident in placing before young students the somewhat abstruse conceptions which have been recently put forward, because in his belief they are subjects for the experts.

Professor Miller has produced a work which will deservedly become popular, and which will, in this country, be particularly welcomed for its accounts of the physiological and pathological sides of gynaecology.

PATHOLOGY OF THE SKIN

Dr. LEE MCCARTHY'S *Histopathology of Skin Diseases*[5] is the most ambitious work on the pathological side of dermatology that has been published for many years in the English language. The author has made full use of the opportunities afforded him by his position in the world of dermatology, and by the generosity of Mr. Truxton Beale, to produce a book illustrated on a lavish scale. Even to a greater extent than the ordinary textbook on clinical dermatology, a work dealing with the microscopical appearances of the manifold pathological changes occurring in the skin stands or falls by the quality of its illustrations, and we have no hesitation in saying that the volume before us passes this test. Histology is of great importance for the comprehension of the essential differences which underlie the confusing superficial similarities of various diseases of the skin, and in many cases the microscope is the final court of appeal for questions of practical consequence—especially, perhaps, the occurrence of malignant changes in a previously innocent dermatosis. But this decision is often not so difficult to make as to distinguish the finer histological differences between the various forms of chronic inflammatory change in the skin; and it is in this field that workers will find themselves indebted to the author for his excellent illustrations of the microscopical appearances of, for example, the different varieties of lichen, lupus erythematosus, psoriasis, and eczema. Most of the illustrations are made from drawings by M. A. Bessin of Paris, who has a deserved reputation for the faithful delineation of histological appearances. Illustrations made in this way, and checked by a competent histologist, have advantages over photomicrographs, in that without loss of accuracy accidental features may be omitted and stress laid on the essentials of the picture.

Naturally, Dr. McCarthy has paid very considerable attention to the vast quantity of work that has been done on this subject during the last thirty years, and which for the most part is to be collated only by prolonged research. This laborious task he has obviously carried out conscientiously; a valuable feature of his work is the extensive bibliography with which each successive chapter is furnished. We have all been brought up to believe that the epidermis (unlike the cutis) is embryologically derived exclusively from the ectoderm. Recently Frieboes, an investigator whose opinion demands respect, has advanced the idea that it is to some extent derived from the mesoderm. Dr. McCarthy implies that he is inclined to accept these new and almost revolutionary views. It is a pity that he merely whets our appetite by a brief reference to this fundamental matter without entering into any discussion of the subject. Perhaps, however, he would excuse himself by saying that he is concerned primarily with the pathology and not with the embryology of the skin. There is no doubt that the present work will be welcomed by dermatologists in all English-speaking countries, and will become indispensable to every dermatological and pathological library.

[5] *Histopathology of Skin Diseases.* By Lee McCarthy, M.D. London: Henry Kimpton. 1931. (Pp. 513; 251 figures. £5 5s. net.)

CANCER RESEARCH IN DENMARK

Together with the chief of the radiological department of the municipal hospital of Aarhus, Denmark, Dr. C. KREBS, two colleagues, Drs. H. C. RASK-NIELSEN and A. WAGNER, have written in English a monograph entitled *The Origin of Lymphosarcomatosis and its Relation to Other Forms of Leucosis in White Mice.*[6] These workers describe a type of lymphatic tumour in white mice, which occurs principally in animals that have been exposed to large doses of irradiation by *x* rays. The disease can be transmitted experimentally from one generation to another, but only in animals previously exposed to radiation over the whole body surface. Both in the spontaneous and experimental types of the disease the tumours found have been either a form of what is called "lymphadenosis" or else "lymphosarcomatosis" or "leucosarcomatosis." In view of the confused nomenclature in use for all this group of neoplasms the authors suggest the term "lymphomatosis infiltrans" for the special type they have been investigating. The monograph contains very complete protocols of the experimental animals and fifteen pages of beautifully printed illustrations.

SURGERY OF THE NERVOUS SYSTEM

The small book, *Grundzüge der Neurochirurgie,*[7] which forms No. 8 of the series Medizinische Praxis published by Professors Grote, Fromme, and Warnekros, presents in compressed form a very good account of the surgery of the nervous system. The various chapters contain sections on pathogenesis, symptomatology and diagnosis, prognosis, and treatment. Although in the space at the author's disposal no very great detail is possible, the book is important, because it presents very ably an account which we may take to be a summary of the best contemporary German thought. Chapters will be found on head injury, brain tumour and abscess, methods of ventricular puncture, and the taking of spinal pressure readings. The second half of the book is concerned with the peripheral nerves, sympathetic nervous system, and the surgery of pain. Altogether the book accomplishes what it sets out to do, and achieves an exceptionally high level of excellence.

NOTES ON BOOKS

The July instalment of the *Annals of Medical History*[8] contains eight articles, in addition to the third and concluding list of *incunabula* of which the College of Physicians of Philadelphia may be so justly proud, for

[6] *The Origin of Lymphosarcomatosis and its Relation to Other Forms of Leucosis in White Mice.* By Carl Krebs, H. C. Rask-Nielsen, and Aage Wagner. *Acta Radiologica,* Supplementum X. Stockholm: P. A. Norstedt und Söner. 1930. (Pp. 53; 15 plates. Swedish crowns 8.)

[7] *Grundzüge der Neurochirurgie.* Von Professor Dr. med. Walter Lehmann. Medizinische Praxis, Band viii. Dresden und Leipzig: T. Steinkopff. (Pp. xii + 197; 23 figures. *RM.*13·50.)

[8] *Annals of Medical History.* New Series, vol. iii, No. 4, July, 1931. Edited by Francis R. Packard, M.D. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. (Pp. 353–474; illustrated. Subscription in Great Britain, £2 5s. for volume of six numbers.

it shows no fewer than 401 volumes. Dr. A. H. Barkley of Lexington, Kentucky, writes on Dr. Samuel Brown (1769-1830) of that city, who was the first professor of medicine west of the Alleghenies, and is said to have been the first in North America—namely, in 1802—to employ vaccination, though this is usually ascribed to Benjamin Waterhouse in 1800. Brown was also the first to advocate the institution of a National Medical Association. His portrait, which appears as the frontispiece, is that of an able and strong personality. There are two articles dealing with the private papers of great figures in medicine rather more than a century ago: Dr. G. C. Peachey, the historian of St. George's Hospital, appropriately gives a thumb-nail sketch of the life of Matthew Baillie, physician to that hospital, before publishing two of his letters to Dr. Leckie; Miss C. Doris Hellman of New York makes public a diary of Edward Jenner for the years 1810–12. In an interesting essay on tuberculosis and genius Dr. L. J. Moorman gives an account of Francis Thompson, the son of a medical man, an unsuccessful medical student for six years, and author of *The Hound of Heaven*, said to be the finest ode in the English language. The adventures of Nicholas Culpeper, soldier, physician, astrologer, philosopher, and politician, are retailed by Dr. Burton Chance. The foundations of British dermatology are displayed to the reader by Dr. Haldin-Davis; the inventor of the first artificial ice machine (1850), Dr. John Gorrie, is brought to our notice by Dr. Edward Jelks, and Dr. W. W. Anderson gives a brief account of Thomas Holley Chivers, who abandoned medicine to live and die in "the pride of his intellectuality," and was a contemporary and rival of Edgar Allan Poe. Among the readable reviews by Dr. Packard and Dr. David Riesman are those of the recently published lives of W. S. Halsted and J. G. Adami.

Littler's *Elementary Chemistry*[9] has been written primarily as a textbook for students taking the school certificate and matriculation examinations. The author has rightly appreciated the fact that efforts towards condensation tend to defeat themselves, and he has given his subject an illustrative treatment which is both arresting and instructive. It is calculated to lay the foundation of a permanent interest in chemistry. The book fulfils the desired requirements in a manner that cannot fail to be pleasing to the student as well as helpful to the tutor's efforts.

The two major diseases of Egypt are hookworm disease and bilharzia disease. There has accumulated a large quantity of literature on these two subjects, and accurate bibliographies are now essential for their proper study. The Rockefeller Foundation a few years ago issued an extensive list of references to the former; now the Egyptian University has published a *Bibliography of Schistosomiasis* (*Bilharziasis*): *Zoological, Clinical, and Prophylactic*[10] which extends to over 500 pages. The first half of the volume gives an alphabetical list of authors; the second is arranged under subjects, the main headings being general, historical, zoological, clinical, and prevention. The scope of the book is not confined to the two human African species, but is widened to include other species recorded from man and mammals in all parts of the world. The volume, which is very moderately priced, will form an invaluable addition to the library of all who are seriously interested in this subject.

Mr. Arthur Head's beautiful collection of coloured drawings of the fundus has entered upon a new lease of life by the appearance of a second edition of Mr. G. Lindsay Johnson's *Pocket Atlas and Text-Book of the Fundus Oculi*.[11] The preliminary text, which serves as an introduction to the drawings, shows little essential change from the previous edition of 1911, with the exception of the introduction of two chapters, one on cataract and another on the vitreous. It is difficult to understand why these chapters were introduced. That on cataract, for example, although excellent in itself, consists of an elementary discussion of this condition, its causes, and investigation by oblique and reflected illumination, followed by a clinical description of congenital, secondary, traumatic, post-operative, and senile cataract, and dislocation of the lens, all without reference to the subject of the book as indicated by its title. Other matter which is included, such as the description of von Pirquet's cutaneous reaction for tubercle, or of the technique of operations for glaucoma, suggests that the volume is losing its essential character of a fundus atlas. The atlas itself, however, is an excellent one, and its fifty-four plates of the best and most representative of Mr. Head's drawings, each supplied with a clear and informative description, is the most useful of its kind in our literature, with the exception of the classical atlas of Frost. The comparatively small cost should make it a very serviceable reference book for the student and practitioner.

A special number of *Nosokomeion*[12] or Quarterly Hospital Review, has recently been issued, containing the transactions of the second International Hospital Congress, which was held at Vienna from June 8th to 14th. The subjects discussed were: the costs of hospital construction, the ratio of nurses to patients, hospital terminology, hospital legislation, auxiliary hospital activities, the cost of maintenance of patients in hospital, diets in large general hospitals, neurology and psychiatry in the general hospitals, and the influence of health insurance upon hospital practice and dispensaries.

[9] *Elementary Chemistry*. By W. Littler, B.Sc. London: G. Bell and Sons, Ltd. 1931. (Pp. xi + 440; 123 figures. 4s. 6d. net.)

[10] *Bibliography of Schistosomiasis* (*Bilharziasis*): *Zoological Clinical, and Prophylactic*. By Mohamed Bey Khalil, M.D., Ph.D. Copies obtainable from the Librarian, Egyptian University, Giza, Egypt. (Pp. x + 506. 50 piastres or 6s. net.)

[11] *A Pocket Atlas and Text-Book of the Fundus Oculi*. By G. Lindsay Johnson, B.C., M.D., F.R.C.S. Second edition, revised and enlarged. London: Adlard and Son, Ltd. 1931. (Pp. ix + 215; 54 figures on 27 plates, 52 figures in the text. 12s. 6d. net.)

[12] *Nosokomeion*. Supplementary Number. Stuttgart: W. Kohlhammer. 1931. (Pp. 442. RM 15; subscribers and members of congress, M 10 plus postage.)

PREPARATIONS AND APPLIANCES

A Portable X-Ray Unit

Watson and Sons (Electro-Medical), Limited (Sunic House, Kingsway) have introduced a portable x-ray unit under the name of the Watson-Sankey. This apparatus is not a small equipment of rigid type, in which everything is sacrificed to compactness, but a series of components which, when assembled, as they can be within a few minutes after arrival in the ward or at the private house, form a complete unit with an output sufficient for all the purposes of ordinary radiography. The components are four in number—namely, the trolley base on which the apparatus is mounted, a high-tension transformer, a box-type switchboard, and a tube stand. The transformer is of the oil-immersed type, with removable high-tension terminals for easy transport. The switchboard carries a milliameter, a voltmeter, two safety fuses, and an adjustable control. The automatic exposure switch is connected to the switchboard by a length of flexible cable, so that the operator is allowed reasonable freedom of movement, and the exposure may be set at anything from 1/4 to 12 seconds by rotating a knob. The tube stand, which is arranged for use with a metalix tube, allows of movement of the tube to any position for radiography, and has sufficient extension for work on either side of the bed. The output is 90 kilovolts peak at 10 milliamperes, and by a special autotransformer it is possible to obtain a range of kilovoltage from 50 upwards. The apparatus is operated on the ordinary power supply, or, if necessary, on the lighting circuit, and arrangements are also made whereby various alternating current voltages may be employed. Special canvas carrying cases are supplied.

Livogen

Livogen (British Drug Houses Ltd.) consists of concentrated liquid extract of liver combined with haemoglobin and vitamin B. The value of liver feeding in secondary anaemias was proved experimentally before the discovery of the specific action of liver and liver extracts in pernicious anaemia. The latter action has proved a comparatively straightforward problem, but the mode of action of liver in secondary anaemias is still very obscure. Liver extracts have been found to be rich in vitamin B_2, and yeast extract has been added to livogen to ensure an adequate content of both vitamins B, and B_2. This combination of active principles is intended to promote blood regeneration in anaemias due to a wide variety of causes, and the makers claim that the preparation is ideal as a general tonic.

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PROTECTION OF THE CHILD FROM TUBERCULOSIS

It is characteristic of the rapid advance of public health activity in this country, with its increasing concentration on the less obvious sources of danger, that the National Association for the Prevention of Tuberculosis should, at its seventeenth annual congress in Margate this year, have devoted the whole of its attention to considering the problem of tuberculosis in the child. The subject was discussed from various angles, and quite contradictory expressions of opinion were made, which proved frankly puzzling to the lay members of the audience. There was, in particular, a sharp cleavage of opinion on the amount of energy that should be expended on the child during school years. On the one hand, Dr. H. Midgley Turner pleaded that, since there were reasons for believing that about half of the serious tuberculosis in adult life owed its origin to infection in childhood, "the spearhead of the attack on tuberculosis" should be directed against the childhood manifestations of the disease. On the other hand, Dr. L. S. T. Burrell, in an address which was warmly applauded, arguing from the fact that in practice cases of pulmonary tuberculosis in adults rarely gave a history of undue delicacy during childhood, and that the mortality from tuberculosis was lowest in the 5–15 year age group, maintained that under our present conditions we were in danger of paying far too much attention to the school child. The spirit of wisdom of the Margate congress might almost have been purposely distilled by Dr. R. C. Wingfield in the preparation of his address before the Public Health Section of the British Medical Association Meeting at Eastbourne, published in our current issue. Taking as his title "The problem of the child in the tuberculous household," Dr. Wingfield made a critical examination, characterized by the qualities of penetration and level-headedness for which he has acquired a reputation, into the existing state of our knowledge, and the public health attitude towards the subject. It is a paper that should be read carefully by all who were unable to listen to him in person. Instead of commenting on it directly, we shall attempt to draw certain general conclusions, not only from this paper, but from the wide range of papers delivered before the Margate congress.

Before proceeding further let us define our terms. By "latent tuberculosis" we mean a condition in which there are one or more foci of tuberculosis in the body, not severe or extensive enough to give rise to clinically detectable disease. Latent tuberculosis may be subdivided into two types—active and inactive. "Latent active tuberculosis" implies the presence of a lesion in which the tubercle bacilli are actively proliferating; caseation may or may not be present; and the lesion as a whole may progress till it gives rise to clinically manifest symptoms of disease, or it may undergo retrogression with ultimate healing. "Latent inactive tuberculosis" refers to a lesion that is quiescent or that has undergone healing with or without calcification; in case it may be objected that a calcified lesion is of no further importance, let it be remembered that McPhedran and his colleagues have demonstrated by animal inoculation the presence of tubercle bacilli in the tissues surrounding calcified lesions and fibrous apical scars in about 24 per cent. of cases. These are the terms which were used by Burkhardt in his classical investigation at Dresden into the frequency of latent tuberculosis in bodies examined post mortem. The term "latent" comes from the Latin *latēre*, meaning "to be hidden." To restrict it to the sense of "lying dormant" is, we consider, a mistake, because it leaves us with no suitable term for that important type of active lesion which, though often recognizable by *x* rays, is not sufficiently developed to give rise to clinical symptoms of disease; it is, moreover, this type of lesion which we are all anxious to detect. It may be taken that in both these classes the graded intradermal tuberculin test will be positive, and that the sensitivity will probably be higher in the latent active than in the latent inactive type.

The two main problems to be dealt with concern the infant or child in the tuberculous household—briefly referred to as the "contact child"—and the child of school-leaving age. That infants may safely be reared in contact with open tuberculosis is clear from the experience of Papworth, where not one of 133 children born and reared in the settlement has developed clinical tuberculosis. On the other hand, there is evidence that under the usual social conditions the mortality from tuberculosis is appreciably higher in contact than in non-contact children. The procedure to be adopted with these contact children must be determined by the individual circumstances. If the parents are thoroughly intelligent, and strict personal and domestic hygiene can be relied on, there is no reason why the child should not be brought up in the home. If the conditions are adverse, the child may be removed for the first few years of life to a home in the country, as under the Grancher system, or preferably to a home or institution in the town, where it can be brought up under conditions similar to those of non-contact children. This latter method has the advantage that the child is not far from its parents, and enjoys the benefit of being reared in the type of environment in which it will probably have to spend the greater portion of its future life. If the domestic conditions are bad, and if for one reason or another the child cannot be removed from home, the question of vaccination with B.C.G. should be seriously considered. It is for this class of case that the vaccine seems to be most suitable. Experience in New York has shown that if it is given by the intradermal method ill-effects are uncommon,

and the infant usually develops a positive tuberculin reaction.

So far as the child of school-leaving age is concerned, attention should be devoted mainly to the detection of latent active lesions, which, under the more strenuous conditions of office or factory life shortly to be experienced, may possibly progress to the stage of clinical tuberculosis. For this purpose each child, before leaving school, should be tested with tuberculin. The positive reactors should be examined under the *x* rays, and divided as far as possible into the latent active and the latent inactive types. Careful examination of children of the latent active type will probably reveal, according to the experience of Opie and his colleagues in Philadelphia, a small proportion who are in the incipient stage of tuberculosis; these should be sent to a preventorium or sanatorium. The remainder of the latent active type should be supervised by the tuberculosis dispensary, so that early treatment can be adopted immediately any untoward signs develop.

There are still considerable blanks in our knowledge, and not till these are filled in will it be possible to express a sound opinion on the value of certain preventive measures. We have much to learn about the meaning of the development of a positive tuberculin reaction. Is this development to be regarded as a danger signal, or does it represent the incipient stage of immunity and give cause for thankfulness? What proportion of tuberculin-positive and tuberculin-negative reactors in late childhood develop pulmonary tuberculosis during young adult life? Is pulmonary tuberculosis in adult life due to a reinfection of an allergic person (as Opie believes, and as most laboratory work indicates), or is it due to recrudescence of a lesion acquired in childhood? What is the importance of dosage in primary and secondary infections, and what truth is there in Dudley's conception of the velocity of infection? These are simple questions, and the attempt to answer them should be the inspiration of every tuberculosis officer.

BIOLOGICAL STANDARDIZATION

The Permanent Standards Commission of the Health Organization of the League of Nations has now published the report of its last meeting, held in June at the London School of Hygiene and Tropical Medicine.[1] On the preceding days committees of experts had discussed many of the technical problems dealt with in the report, and had submitted definite recommendations for the consideration of the commission. The report now issued states briefly the final form in which these recommendations were presented to, and have been accepted by, the Health Committee of the League. The work of the commission is largely concerned with the problems involved in the standardization of antiserums and other biological substances, and has especially and continually in view the establishment of biological standards, and the definition of units in terms of these standards, for international acceptance and use. Since its formation in 1923, the commission has secured the adoption, by international agreement, of standards and units for diphtheria and tetanus antitoxins, antidysentery serum, insulin, pituitary (posterior lobe) extract, digitalis, salvarsan, and other biological substances of a similar class. These standards and units have received world-wide recognition and acceptance, and the value of a uniform system of notation, unitage, and measurement, both for the treatment and diagnosis of disease and for the prosecution of research, is being increasingly recognized. The present report records the nature of the problems studied, the progress made, and the decisions reached since the last meeting of the commission at Frankfort in 1928, and outlines the questions to be studied in the immediate future.

During the war antitoxins prepared against the toxins of the organisms of the gas-gangrene group were used for the treatment and prophylaxis of wound infections, and these antitoxins are now coming into more general use in the civilian surgical practice of many countries, particularly as a prophylactic measure in abdominal operations. The question of their biological standardization is of growing importance, and past experience has shown that international agreement ought to be achieved before several units, possibly of widely different values, are proposed or accepted in individual countries. As a beginning, the commission has devoted its attention to the establishment of a standard and the definition of a unit for perfringens antitoxin. The committee of experts which investigated the standardization of this antitoxin wisely decided to base the international unit on the only standard which had been proposed when its inquiry began. From the results of its investigations the committee concluded that perfringens antitoxin can be assayed with a high degree of accuracy, and that simple and practicable methods of standardization, which yield consistent results when applied by different workers in different countries, are available. A standard for perfringens antitoxin has accordingly been established, and a unit in terms of the standard has been defined and accepted for international use. Investigations of a similar kind are now to be undertaken with respect to gas-gangrene (*Vibrion septique*) antitoxin.

The investigation of the many problems arising in connexion with diphtheria continues to engage the attention of the commission. Two questions of far-reaching practical importance are to be studied in the immediate future: an inquiry into cases of diphtheria, reported chiefly on the European continent, which have apparently failed to respond to treatment by antitoxin, and an inquiry into the possibility of obtaining international agreement on the standardization of diphtheria prophylactic. International agreement has been reached with regard to the definition and determination of the Schick test dose of diphtheria toxin. Different views have been held as to the method of determining the quantity of diphtheria toxin to be used in this test,

[1] League of Nations. Health Organization. Geneva, 1931. (1s. 6d.)

and these have found expression in official regulations. In some countries the original definition of Schick—one-fiftieth of the minimum lethal dose, for a guinea-pig, of a matured toxin—is held to be sufficient for practical purposes. Other workers, notably Glenny in this country and Kellogg in America, have maintained that, since toxins contain very varying proportions of toxin and toxoid, the level of immunity due to antitoxin in the patient indicated by a given toxin is dependent, not merely on the toxin present in the dose injected, but also on its combining power for antitoxin, and that accordingly, in defining the Schick test dose, the combining power for antitoxin as well as the toxicity should be taken into account. Convincing experimental evidence has been produced in support of these views; what remained in doubt, however, was the necessity of this admittedly more accurate adjustment of the dose for the practical conduct of the Schick test. An extensive trial has therefore been conducted, in which workers in seven different countries have participated. Two Schick test toxins, adjusted to contain the same amounts of toxin in their test doses, but differing rather widely in their combining powers, were tested on nearly 1,500 individuals. The scope of the inquiry, and the results obtained, are given in an appendix to the report. It was demonstrated that the number of persons classed as Schick-positive or Schick-negative depends upon the properties of the toxin used; in the case of the two toxins studied the difference amounted to about 5 per cent. The difference is not large, but it was clearly desirable so to frame an international definition of the Schick test dose as to eliminate it altogether. In this country, and in some others, the international definition now accepted will involve no change in the official regulations; in others, in which the determination of the dose has hitherto been based on the lethal action alone of the toxin, an additional test to control the combining power will be necessary. The Schick test is a most important instrument in the hands of investigators in many countries who are searching for the knowledge which will enable public health authorities to bring the disease under more effective control, and the adoption by international agreement of a uniform practice for determining immunity and susceptibility will be of value in correlating the results obtained in countries widely separated geographically.

A definite advance is recorded in the report with regard to tuberculin. Investigations on the methods of conducting the test, and comparative studies of different international standards of tuberculin, have been in progress for some years, and the commission is now able to state that agreement has been reached for acceptance of a standard tuberculin for international use. This standard, like the antitoxin standards, is preserved at the State Serum Institute, Copenhagen. The activities of the commission are now being extended to include the standardization of those veterinary products whose use affects also human therapeutics, and the standardization of sex hormones. For the former studies the assistance of experts in veterinary medicine will be sought, and Dr. H. H. Dale, director of the National Institute for Medical Research, London, has been asked to organize the co-operation of experts in different countries, with a view to agreements concerning standards for sex hormones.

The Permanent Standards Commission at the same meeting adopted a series of important recommendations submitted by the Conference on Vitamin Standards which was sitting in London at the same time. With this matter we propose to deal in our next issue.

THE PANEL CONFERENCE

The Annual Conference of Representatives of Local Medical and Panel Committees, which was held last week, proved that there was less division of opinion than some had expected on one or two matters of recent controversy. A full report of the proceedings of the Conference will be found in the *Supplement* to our present issue, and it shows that, besides a number of amendments to the Medical Benefit Regulations which were submitted for confirmation or approval, there were three main matters on which decisions had to be taken. The chairman is to be congratulated upon the way in which he conducted what might have been a very difficult meeting, and the members upon the wisdom of the decisions at which they arrived. One of these main decisions had reference to the subject upon which we commented in a leading article a fortnight ago[1]—the cause of the increase in sickness benefit claims during recent years. The Conference unanimously approved the reply which the Insurance Acts Committee had sent to the Ministry of Health as a rejoinder to the Memorandum in which the Ministry had attempted to show that the main factor in this increase was laxity of medical certification. The experience of this large body of representative insurance practitioners enabled them to endorse, without cavil or dissent, the contention that the increased call upon sickness and disablement benefit funds has been due in overwhelming degree to a growth in the number of legitimate claims made by insured persons, and that, of subsidiary causes, improper medical certification was the least probable and the least demonstrable. The complete argument will be found in the *Supplement* to our issue of October 10th (pp. 206–9), and the Conference desired that the document in which it is set out should be distributed at least as widely as was the Memorandum of the Ministry of Health to which it appears to be an unrefutable answer.

The longest discussion at the Conference, however, was directed naturally to the deduction from the capitation fee on the basis of which insurance practitioners are remunerated. There has been a good deal of criticism of the action of the Insurance Acts Committee, both in acquiescing in the original proposal of the Government to reduce the capitation fee by one shilling temporarily, and, when circumstances had changed so

[1] *British Medical Journal*, October 17th, p. 708



FIG. 1.—Case III. Crushing of right side of nose.

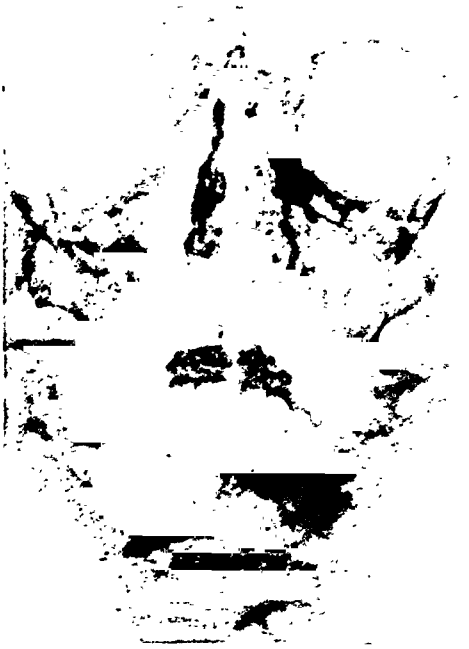


FIG. 2.—Case IV. Crushing of nose with fracture involving antrum.



FIG. 3.—Case I. Characteristic deformity of "mild" type.



FIG. 5.—Case II. Severe crushing; profile restored, triangle splint used.



FIG. 7.—Case VI. Crushing and laceration of nose, after eight days.



FIG. 4.—Case I. Four days after reduction, no splints used.



FIG. 6.—Case V. Result after severe crushing with fracture of



FIG. 8.—Case VI. Result after reduction, triangle splint used.



FIG. 1.—Posterior pituitary—haemalum and eosin. The photograph shows a definite parenchymatous portion with a fairly pronounced stroma. The lobule is of an epithelial character, and the stroma glial. In the lower right-hand corner a glial sclerosis is evident. × 100.



FIG. 2.—Abundant and enlarged islets in a case of carcinoma of rectum. × 50.



FIG. 3.—A simple ulcer on the back of a mouse after the epithelioma had come away a month after treatment. Section at two months. × 50.



FIG. 4.—Case I. The growth had become hyalinized, and was separating from the thin floor of malignant tissue. × 60.

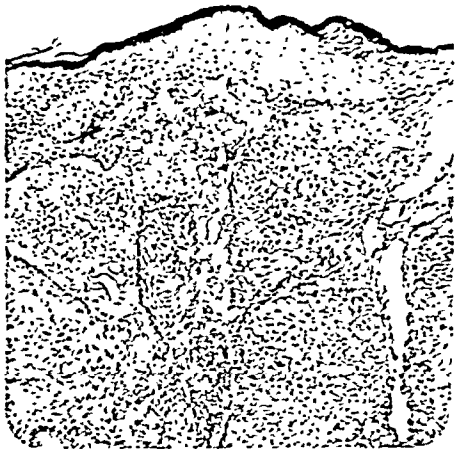


FIG. 5.—Case VI. Histological features of the epithelioma of the foot before treatment. × 70.



FIG. 6.—Epidermal layer has returned to the normal thickness, and the tumour is sharply differentiated from the epidermis. The deeper portion of the growth was bounded by cellular connective tissue. Section taken after fourteen days' treatment. × 80.



FIG. 7.—Case VI. Macroscopic features of the foot and tumour before treatment. Note the hyperkeratosis on the left and the invading margin on the right of the tumour.

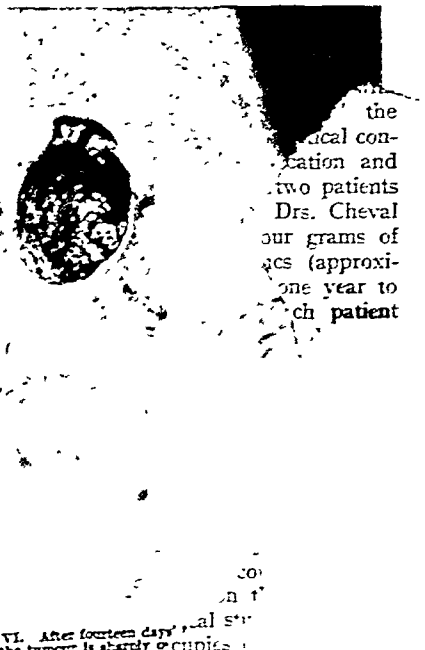


FIG 8.—Case VI. After fourteen days' [illegible] disappeared and the tumour is sharply [illegible] had disappeared after five days.

W. ARKLAY STEEL: TORSION OF OVARIAN CYST IN CHILDREN



FIG 1.—Cyst of left ovary from a girl aged 9 years.

S. WATSON SMITH: WOUND DIPHTHERIA



FIG. 1.—Wound diphtheria of false membrane type

J. S. ANDERSON: GANGRENE OF THE SKIN OF DIPHTHERITIC ORIGIN

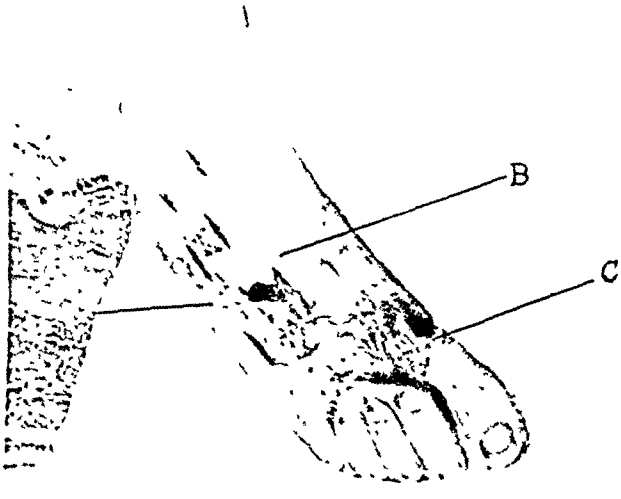


FIG. 1.—Appearance on admission



FIG. 2.—Appearance eleven days after admission

FIG. 3.—A simple u... epithelioma had come awa... at two months. × 50.

that the matter was reopened, in hesitating to accept on behalf of insurance practitioners the smaller deduction then proposed. There were those who objected to the earlier action having been taken without reference to Panel Committees and insurance practitioners, and there were others who thought that in the later event a prompt acceptance would have been preferable to such reference. Both views had found expression in the correspondence columns of the *Supplement*. The Insurance Acts Committee had in each instance to form its judgement in a very difficult situation. The Conference recognized this, and, by an overwhelming majority, endorsed the action which had been taken. On the immediately practical point of the attitude to be adopted in face of the accomplished fact of the deduction, there was an equally emphatic decision, which the medical profession as a whole will approve. It was recognized that national sacrifice was necessary and that insurance practitioners would endure their part in it in no grudging spirit; but it was placed on record that, in fact, the sacrifice asked from insurance practitioners was larger in proportion than that demanded in other comparable cases, that it should be reconsidered as soon as national circumstances allowed, that the question of the amount of the capitation fee was not raised on its merits, and that therefore a strong protest must be made against the unsubstantiated statement in a paragraph of the Economy Report that the "payments to the doctors are too high." It should be noted that all these points have been allowed by the Minister of Health in his statements or letters, including the final wise communication which he sent to the Conference itself. The sacrifice is a real one: in many individual cases it will be a great one; but the need is also real and great.

The question was once more raised whether the Insurance Acts Committee ought to continue to be recognized as representing centrally insurance practitioners, or whether the constitution of that committee should be altered or reviewed. The pleas that the central committee should have no connexion with the British Medical Association, and that it should be wholly composed of insurance practitioners, and, even so, should not contain any who acted as part-time examining officers for referee purposes, or who served on advisory or inquiry committees in disciplinary cases, were patiently heard and summarily and emphatically rejected. The minority vote came from two or three areas only, and was even smaller than it used to be when such matters appeared regularly on the agenda of the Annual Panel Conference. Apart from other considerations which show the advantage of the present composition of the Insurance Acts Committee—which, though more than three-quarters of its members are insurance practitioners, contains a few representatives of other branches of medical practice—the facts that no doctor is wholly an insurance practitioner, and that ophthalmic surgeons and other members of hospital staffs are intimately concerned with additional treatment benefits and other aspects of the insurance service, show the complete impropriety of the suggestions which were so strikingly repudiated. It is no surprise, though none the less gratifying, that the strenuous attempts in certain interested quarters to create disunion have met with such scant support both at the Annual Conference of Local Medical and Panel Committees and at a similar conference held in Scotland a few days earlier.

It is significant that the Conference once more recorded its protest against the Regulation recently introduced by the late Minister of Health interfering with the free right of an insured person to change his doctor when he wishes, and an appeal may be made to the present Minister to remove this unnecessary disability placed upon insured persons as compared with private patients. In conclusion, we should like to congratulate Dr. H. C. Jonas of Barnstaple upon his election as chairman of the Conference for the ensuing year.

THE RADIUM "BOMB"

In Great Britain the use of radium in making a mass attack on malignant growth has not met with success. Eighteen months ago the four-gram "bomb" was set up in the Westminster Hospital clinic in order that this method of distance irradiation might be thoroughly investigated. In the report of the Radium Commission, printed in our issue of October 17th, it was stated that "the use of the bomb in its present form was not only uneconomic, but unwarranted," and the radium contained in it has accordingly been distributed. It is therefore of particular interest to read at the present moment a treatise by Drs. Max Cheval and Dustin of Brussels concerning their experience during three years of the use of a "bomb" containing the same amount of radium—namely, four grams. The Theory and Practice of Telecurietherapy,[1] as distance irradiation is called on the Continent, deals with every aspect of the method. The first chapter describes in detail, with illustrations, the constitution of the "bomb," the organization of the department, and the theoretical considerations determining the fields of application and dosage. The bomb was so arranged that two patients could be treated at the same time, and Drs. Cheval and Dustin have calculated that with four grams of radium worth eight million Belgian francs (approximately £45,000 sterling) it is possible in one year to treat 130 patients with uterine cancer, each patient receiving 100 treatments. This assumes that the maximum efficiency is attained, patients following one another with perfect regularity night and day. In their second chapter the authors describe their findings on the biological action of the irradiation, including under this heading the effect on the general condition, the normal tissues, and the malignant cells. They have found that patients do not suffer seriously from general injury, and the insignificant degrees of anaemia which they have noticed do not seem to be in accord with the more serious results obtained in this country. Their account of the effect of irradiation on the malignant cells is accompanied by a histological study, illustrated by drawings, and this section occupies more than half

[1] *Théorie et Pratique de la Télé curiethérapie*. Par Max Cheval et A. P. Dustin. Paris: Masson et Cie. 1931. (54 fr.)

the book. It is claimed that this is the first systematic histological study of tumours during the course of their treatment by distance irradiation, and the chapter is concluded by an interesting scientific discussion of the nature of the influence of irradiation on cell division. The final chapter deals with the clinical side of the problem, the clinical material having amounted in three years to 207 patients. Those with cancer of the tongue and upper air passages numbered 47. Two "cures" were obtained among ten patients with carcinoma of the tongue. In the whole category seven "cures" were obtained in 14 "favourable cases"; the remaining 33 were unfavourable. Eight patients with carcinoma of the oesophagus were treated, and of these, two were improved, for eight and twenty-four months respectively. Thirty-six patients with carcinoma of the cervix were treated, twelve "cures" being recorded among the twenty-five favourable cases. Twenty-five patients with carcinoma of the breast were treated, but twenty of these had already had surgical removal performed, so that the results are of little value as evidence, though two good results have been obtained with irradiation alone among four patients. Thirteen patients with carcinoma of the rectum were treated, of whom only one remains alive. Twenty cases of sarcoma were treated, but no conclusions have been formed. The authors make no exaggerated claims for the method, but suggest that in an increasing number of patients a definitive sterilization of tumours may be expected. That it is an efficient palliative for advanced cases has been demonstrated. The whole treatise forms a good and careful account of a relatively unexplored method of treatment. The results so far obtained do not seem to promise any very startling improvement as compared with other lines of attack.

THE VARIOLA-VACCINIA FLOCCULATION TEST

The application of the flocculation test of Gordon to the diagnosis of small-pox has already formed the subject of a report to the Medical Research Council (Special Report Series, No. 143) by Burgess, Craigie, and Tulloch. Their results applied to material from ninety-six different sources—variola minor, varicella, and septic rashes—and left little doubt as to the specificity of the reaction as well as to its utility in the diagnosis of small-pox. Craigie and Tulloch have continued the investigation with a view not only to giving the test a more extended trial, but also to examining more closely its mechanism and the possibility of improving it. Their findings, incorporated in a report to the Medical Research Council (Special Report Series, No. 156), constitute a most valuable addition to our knowledge of immunity in virus infections.[1] The extended application of the test comprised a further 129 specimens, and the results obtained amply confirm the opinion expressed in the earlier report that the reaction is both specific and delicate. The authors also show how the technique of the test can be improved by freeing the antigen from impurities which interfere with the reaction, and indicate the best methods for the preservation of the flocculating serum. But this is not the most interesting portion of the report. Evidence is produced to show that the reaction depends alone on virus and specific antibody, that contaminating organisms play no part in it (as claimed by Schultz and his colleagues), and, further, that a firm union between virus and antibody takes place in the test tube. Briefly, the reaction behaves like other antigen-antibody reactions, which is what one would have expected. The most valuable part of Craigie and Tulloch's work, however, relates to the production of immunity with neutralized virus. They find that vaccinia virus neutralized with antiserum, although unable to provoke a reaction when injected intradermally, can yet be shown to contain active virus when inoculated intra-testicularly. Further, when this neutralized virus is introduced subcutaneously in rabbits, despite the fact that no reaction occurs, a solid immunity to vaccinia virus is evoked. Similar results have been obtained by Rhoads (*Journ. Exper. Med.*, 1931, liii, 185). Even one inoculation of a surprisingly small amount of virus, so treated, proved sufficient to give a solid immunity in rabbits as tested by dermal inoculation, and there is evidence that the sensitized virus, when dried *in vacuo*, is a stable product. Of course, more work is required on this question, and Craigie and Tulloch are commendably cautious in drawing conclusions, but it would seem that it is along these lines, so clearly indicated by their investigations, that the solution of the problem of a safe method of small-pox prophylaxis will be found.

[1] Medical Research Council. Special Report Series, No. 156. Further Investigations on the Variola-Vaccinia Flocculation Reaction. By Alexis Craigie and W. J. Tulloch. London: H.M. Stationery Office, 1931. (3s. net.)

SCIENCE AND PUBLIC AFFAIRS

Some thought-provoking ideas on the subject of science and the State were put forward by the president of the Royal Photographic Society, Mr. Olaf Bloch, F.I.C., in his annual address from the chair of that body on October 20th. The address was a plea that the scientific man should take a greater place in public affairs. Mr. Bloch pointed out how marked had been the reaction of scientific advance upon human life, except in the sphere of political and social organization, which science had left comparatively untouched. The technical man soon discovered that the government of the community, and the administration of its affairs as at present carried on, came under a completely different category from his own work, so that he was inclined to leave politics and economics severely alone. In this he was wrong, for it should be possible at least to attempt to deal with these matters in the calm, abstract, and logical way in which the scientist pursued his work in the laboratory. The aloofness of the scientist from public life, Mr. Bloch believed, was not likely to continue. Production was passing rapidly under the control of science, and distribution was following; the next stage would be scientific control of administration. The displacement of labour by mechanization, improvements in industrial organization, and all the other factors which made possible the production of wealth with increasing ease, were chiefly due to the efforts of train individuals, who would, sooner or later, find themselves compelled to take part in government. Human questions, said Mr. Bloch, were the most difficult of all with which to experiment. The sphere in which scientific control of the human problem had been least advanced was in public and private health, where there was rather greater certainty in the application of known

ledge to affairs. Much of the experimental work in bacteriology, for example, had led to quite definite and unquestionable results, and the method of applying such results to the control of infectious diseases, to operative surgery, to food preservation, and the like, was not too difficult to work out with a fair degree of accuracy. Moreover, in the sphere of health, opposition to innovations was less profound and prolonged, since, generally speaking, passion was scarcely provoked, and vested interests not too severely ruffled. But in general, where the experiment had to take account, not of a new machine or a new industrial method, but of human affairs, advance was much slower, and the mind moved in a more conventional fashion. An enormous social inertia existed, which was a handicap when the material aspects of life were changing as rapidly as at present. Mr. Bloch contrasted, on the one hand, the openness of mind, the critical examination of both new and old ideas, the willingness to accept whatever seemed worthy of acceptance on such examination, often exhibited by writers on scientific and technical subjects, and, on the other hand, the attitude shown often in the same journals towards social, economic, and political change or review. But the first uncertain steps towards a higher standard of health and living had already been taken.

OCCUPATIONAL THERAPY FOR PAYING MENTAL PATIENTS

At a meeting of the Psychological Group of the Medical Women's Federation, held lately at the Lyceum Club, the subjects discussed included the working of the new Mental Treatment Act, difficult and backward girls in a village colony, and the treatment of mild mental disorder by organized occupation. Dr. Elizabeth Casson, describing the work done at her own hospital in Bristol, stressed the vital importance of a regular routine. The majority of her patients have their breakfast in bed, but those who get up for breakfast are occupied in arranging flowers and helping in the house until 10.30, when everybody goes over to the occupation room for an hour or an hour and a half. After their work there the patients go for a walk, do gardening, or—if the weather is wet—have community singing. From 2 to 4 o'clock everybody rests; after tea they walk in the garden for half an hour and then return to the occupation room for an hour before supper. At 8 o'clock those who do not go to bed play community games or do country dancing. Dr. Casson insists also upon the importance of having the occupational therapy department distinct from the nursing department; her patients are taken to the occupation room by the nurses and fetched from it, as children would be taken to or fetched from school, but once inside the department they see no more of the nurse until work is over. To put the occupational therapist under the matron is, in her opinion, as bad as to put the dispenser under the matron. The therapist must be a specialist carrying out the doctor's prescription; if the nurses like to take an interest in the work—as a parent might help a child with his home-work—that is a very good thing, but the work is far too specialized to be successful if carried out by half-trained people. Dr. Casson thinks that it is better for everybody if the nurses confine themselves strictly to the work of nursing. In the same way exercises must be taught by a games mistress. Games, like handicrafts, should be taught from the beginning as if the patients were children; the atmosphere of going back to school is most beneficial therapeutically. Netball has been found one of the best games for mental patients. The idea first occurred to Dr. Casson when she saw the interest aroused in introverted patients by balloons at Christmas. It is, as she says, extremely difficult not to do something about it when a ball is thrown at you. She regards with horror knitting as an occupation for mental patients; it is possible to carry on a complete fantasy system while knitting busily. Even for the acute agitated melancholic a better task is unravelling silk stockings; beautiful purses can be rewoven from the material. She likes soap carving as an early handicraft; it has the advantage of being extraordinarily cheap, as all the soap can be used afterwards. She has also found weaving very successful. It provides rhythm and a graduation of attention; the patients can apply themselves to thinking out patterns, and there is an extraordinary fascination about doing "just another inch." She has found it very useful for improving the gait of hysterics, as they are obliged to use their feet properly on the treadles. Bookbinding is useful for those who want to sit still, as it keeps them constantly on the move, and leather work teaches perseverance. Cane work is too dull, except for the mentally deficient, she says, and raffia is often the resort of those who will not use their minds. It has been objected that private patients would not care to be put to work; to this Dr. Casson's figures are sufficient answer. Of 100 cases on her books, 84 per cent. have been through the occupational therapy department. For ten it was not prescribed; one was aged 6 weeks and two others 79 and 84 years respectively, while seven only stayed an average of five and a half days in the institution. There were, in fact, only six rebels who absolutely refused to do occupational therapy; it is regrettable to record that one of these was a doctor and another a doctor's wife, whose husband stopped her just as she was getting interested.

HUGHLINGS JACKSON

The publication of the first volume of the *Selected Writings of John Hughlings Jackson*[1] fills a long-felt want. Hughlings Jackson's position is unique among neurological teachers, and hitherto his publications have been available, for the most part, only in the journals in which they were originally published. It is a tribute to his originality that his ideas should have been perpetuated for a generation largely by means of verbal tradition. Now, however, a selection of his papers is made readily available. The first volume, which is edited by Dr. James Taylor, with the advice and assistance of Dr. Gordon Holmes and Dr. F. M. R. Walshe, deals with epilepsy and epileptiform convulsions. It contains all Jackson's most important contributions to this subject, including his observations on localized convulsions and on so-called "uncinate fits." Apart from the value of this collection as an

[1] *Selected Writings of John Hughlings Jackson*; for the Guarantors of Brain by James Taylor, M.D., F.R.C.P., with the advice and assistance of Gordon Holmes, M.D., F.R.C.P., and F. M. R. Walshe, M.D., F.R.C.P. Vol. I. London: Hodder and Stoughton, Ltd. 1931. (25s. net.)

expression of Jackson's ideas, it is a rich mine of clinical observations, and should be read not only by those who are interested in neurological principles, but also by all who have to deal with epileptic patients. The second volume is to contain Jackson's more philosophical papers, including those on aphasia.

THE B.C.G. TRIAL AT LÜBECK

On October 12th the trial of Professor Deycke, Professor Klotz, Dr. Altstaedt, and Sister Schutze commenced.[1] The sittings apparently threaten to occupy in all some three or four weeks. It is a little difficult for the English reader, unfamiliar with the procedure of the German courts, to appreciate the atmosphere. The parents and relatives of the 75 dead children and the 178 others who received the B.C.G. vaccine are present in the gallery, and at critical points in the inquiry make loud comments and protests, the accused make appeals to the parents and public in court, a number of distinguished bacteriologists are present, probably as expert witnesses to assist the court, and they cross-examine the accused. The local authority has already paid £17,500 to the parents. The press eagerly seize on the "high points" of the tragic trial, and sympathy is expressed for Professor Deycke, aged 66, "in the evening of life." The Ministry of Health in Berlin was told that animal tests for harmlessness of the vaccine had been carried through at Lubeck—whereas none had been done. Dr. Shwenski of Sofia is alleged to have stated that the news of the deaths of 96 children in Bulgaria in 1927 after inoculation with B.C.G. had been suppressed. In our issue of June 6th we reviewed the history. It does not at the moment appear probable that any new decisive evidence will emerge which can answer the central question—did the avirulent B.C.G. become virulent on culture at Lubeck, or was the human culture which was kept in the laboratory, by a tragic mistake exchanged for, or mixed with, the B.C.G.? By a coincidence a special committee on tuberculosis of the American Veterinary Medical Association has just published its opinion that, by growing B.C.G. upon certain media, by inducing and selecting a certain type of growth, or by dissociation, highly virulent cultures have been obtained by independent investigators.

INFLUENZA IN 1930-31

The recently published August issue of the Monthly Epidemiological Report of the Health Section of the League of Nations contains an instructive account of the prevalence of influenza throughout the world in 1930–31. All the countries in Europe, and also the United States of America, showed a sudden increase of influenza cases during the winter of 1930–31. With the exception, however, of Sweden and the Irish Free State, where the epidemic was more severe than in 1928–29, the severity of the outbreak was distinctly less than that of the last epidemic of 1928–29, and could not be compared with the pandemic of 1918. The epidemic, indeed, was practically confined to Europe and North America, there being no evidence of an outbreak in Japan or Australia. In all the countries affected pneumonia and other complications were remarkable for their rarity. In England and Wales it was found that though the number of influenza cases rose much more rapidly than in 1929, the maximum morbidity and mortality remained well below the figures for that year.

[1] The British Medical Journal, October 17th, p. 712.

The Bradshaw Lecture before the Royal College of Physicians of London will be delivered by Dr. J. S. Fairbairn on Tuesday, November 3rd, at 5 p.m., his subject is "The medical and psychological aspects of gynaecology." Dr. James Collier will deliver the FitzPatrick Lectures on "The development of neurology from the commencement of the nineteenth century to the present time" on November 5th and 10th, at 5 p.m.

Mr. W. Douglas Harmer will deliver the Semon Lecture in the Barnes Hall of the Royal Society of Medicine on Thursday, November 5th, at 5 p.m. His subject is "The relative value of radiotherapy in the treatment of cancers in the upper air passages."

We regret to announce the death, on October 21st, of Constantin Baron von Economo von San Serff, professor at the University of Vienna, head of the institute for investigation of the brain at the University Clinic, and president of the Psychiatric Society of Vienna. Professor Economo is best known for having been the first to give its name to lethargic encephalitis in 1917. His work on this subject has recently been translated into English.

THE GENERAL ELECTION

MEDICAL MEMBERS OF THE NEW PARLIAMENT

The following fifteen medical men have been elected to the House of Commons at the General Election on Tuesday, October 27th:

Dr. J. D. Cooke (C.), Hammersmith (South)
*Dr. W. E. Elliot (C.), Glasgow (Kelvingrove)
*Dr. F. E. Fremantle (C.), Hertford (St. Albans)
*Dr. H. C. Haslam (C.), Lincolnshire (Horncastle).
Dr. G. B. Hillman (C.), Wakefield
Dr. A. B. Howitt (C.), Reading.
*Dr. Joseph Hunter (L.), Dumfries
Sir Henry Jackson (C.), Wandsworth (Central)
Dr. J. W. Leech (C.), Newcastle-upon-Tyne (West)
*Dr. J. H. Morris-Jones (L. Nat.), Denbigh (unopposed)
Dr. W. J. O'Donovan (C.), Stepney (Mile End)
*Dr. A. Salter (Lab.), Bermondsey (West)
*Professor T. Sinclair (C.), Belfast (Queen's) University (unopposed).
*Dr. J. H. Williams (Lab.), Carmarthen (Llanelly)
Dr. J. V. Worthington (Nat. Lab.), Gloucester (Forest of Dean)

* Denotes a member of the late Parliament.

The result of the polling in the University of London election, where Sir Ernest Graham-Little has an official, will be declared on Saturday.

We hope to publish next week the polling figures in all the contested elections in which medical candidates were successful.

The list of medical candidates published last week on page 764 should have included the name of Dr. J. D. Cooke, who has now been returned for Hammersmith (South).

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

FIRST ANNUAL DINNER

The first annual dinner of the British College of Obstetricians and Gynaecologists was held at Grosvenor House, London, on October 23rd, with the president, Professor W BLAIR BELL in the chair. The dinner was preceded by a special meeting of the council for an academic ceremony, when Professor Paul Bar of Paris and Professor Essen-Moller of Lund, Sweden, and Lord Riddell were made Honorary Fellows of the College. The ordinary Fellowship was also conferred upon seven recipients, and seven others were admitted to Membership.

CONFERMENT OF HONORARY FELLOWSHIP

Addressing Professor Paul Bar in French, the PRESIDENT said that his great services to the cause of obstetrics and gynaecology had gained for him the homage of womankind and the admiration of the entire world. To Professor Essen Möller, after a few words in Swedish, he said that those who had visited the beautiful clinic in the quiet mediæval city of Lund had come away enchanted and enriched. To Lord Riddell the president expressed thanks on behalf of the College for much help, and spoke of the many years during which he had devoted time and resources to further the advance of medical science.

The French Ambassador and the Swedish Minister were present at the ceremony, and, addressing them, the president said that science knew no boundaries, and by the conferment of Honorary Fellowship on distinguished men in France and in Sweden the truth of this had been again demonstrated.

The FRENCH AMBASSADOR (M. Fleuriau) returned thanks on behalf of Professor Paul Bar. It was the more fitting, he said, that Professor Paul Bar should have been chosen for this honour, because fifty years ago he had been a student in England. He hoped that his election would further the liaison between the specialists of France and of England.

The SWEDISH MINISTER (Baron Palmstierna) said that this distinction would be greatly appreciated in Sweden, where Professor Essen Moller bore a great name and had created a large school of followers.

The dignified ceremony concluded with the words of exhortation spoken by the president, "*Super ardua consurgamus*."

The dinner which followed was attended by a distinguished company. Among those at the principal table were the French and American Ambassadors and the Swedish Minister, Lord Dawson of Penn, P.R.C.P., Sir Thomas Horder, Bt., Dr. H. B. Brackenbury (Chairman of Council of the British Medical Association), the Dean of Canterbury, and the three newly elected Honorary Fellows.

AFTER DINNER SPEECHES

Sir THOMAS HORDER, in proposing the toast of "The College," said that he had a sincere belief in the reasonableness of its institution. As one who worked in an entirely different sphere of medicine, he believed it was in the interest of the subjects which formed the activities of the College that there should be such an institution for men and women who devoted their lives to these subjects. It was rather strange that such a College had not been formed before. The problems of obstetric medicine were peculiar problems, yet none were of greater significance to the individual and to the State. It had been asked why, if obstetric medicine were segregated in this fashion, ophthalmology, dermatology, laryngology, and other subjects should not be similarly segregated. He thought that argument quite fallacious. He could not believe that the problems relating to a special department dealing with a particular part of the body could be compared for a moment in magnitude to the problems inherent in obstetrics and gynaecology. The latter problems were fundamental, while the study of the eye, of the skin, and of the throat, though important, were not, in his view, fundamental. After all, since they began to think of medicine, had they not considered it in all their studies and examinations as tripartite—medicine, surgery, and obstetrics? Was it only a dream that some day in Great Britain there would be an academy of medicine with these three pillars to support it? And was not that dream a little nearer when it was decided to put obstetrics on a base on which it had never yet been built? The Royal College of Physicians of London had asked the new College to nominate a panel of names for examinerships to the Conjoint Board, and it looked to him as though in the near future the College would be responsible for the conduct entirely of the obstetric examinations of the Board. He was glad to see that the College had opened relations very definitely with the Ministry of Health, and had submitted, in response to specific requests, memorandums on maternal mortality and the administration of anæsthetics in midwifery. These external relations seemed of much importance. Within the last few months the President of the Royal College of Physicians had set up a small committee whose duty it was to see that the College kept in touch with external affairs in so far as these had medical bearings. There was always a tendency for such august bodies to lapse into a state of isolation. This action of his own President had been designed to prevent that occurring, but he was not sure at what precocious stage in the existence of any body that condition might not begin to manifest itself. The present gathering made it evident that the new College had no lack of friends outside its walls. But the success of a new institution did not turn so much upon good fellowship outside as upon loyalty, unanimity, and enthusiasm within. Looking on from outside, he was impressed by the toil which must have been necessary to bring the College into being. For those responsible for this exhibition of activity there was already a reward, and to see the reward of one's labours in one's own day was surely something for which to be grateful. Sir Thomas Horder concluded by naming some of the great obstetricians of the immediate past, including one of them who had lived to see the foundation of the College—namely, Francis Champneys. "The spirits of these men are with us to-night, wishing the College success, increased prestige, and an honourable name amongst the institutions of British medicine."

Professor BLAIR BELL, in reply, said that the foundation of institutions such as the College came about in various ways. Henry VIII, in a spasm of remorse for life taking, granted a life saving Charter to the Royal College of Physicians. The College of Surgeons escaped in 1745 from the thraldom of barber surgery, received its Charter in 1800, and, having obtained permission to examine with other bodies in 1875, subsequently became allied with the Royal College of Physicians when the Conjoint Board was formed. The British College of Obstetricians and Gynaecologists was conceived seven years ago, "tormented by ante natal disturbances for five years" and spontaneously delivered but two years since into the heritage awaiting it from the distant past. The long line of descent of the science and art of this branch of medicine, segregated on special study in Sumerian times —3000 B.C.—was one of particular pride, and the College was the demonstration and admission of its ancient rights. In five thousand years or so it would be a matter of conjecture which of the three Colleges was the oldest.

are better sky lighted, and the neighbouring houses are not obscured by a monstrous block It is pleasing to note that the designers of this building were awarded the medal of the Royal Institute of British Architects Yesterday the doctrine of higher and denser building in our towns was held as part of the orthodox faith of national progress, to day it is regarded with rather more than suspicion, to morrow it will probably be looked upon as little short of high treason

Street Lighting

Some interesting experiments in street lighting were recorded by workers at the National Physical Laboratory In Sheffield and in Leicester installations of different forms of street lighting were set up for a length of nearly half a mile All were arranged so as to give the same average illumination, and each could be switched on independently A number of observers were requested to record their observations Among the definite conclusions reached were that bare lamps are the least attractive form of installation, that any device for shading the lamp which produces absence of appreciation of the distant light sources has a depressing effect, that too low a level for the light is disadvantageous, and that lights on one side of the street are poor Unfortunately, the papers by these observers suffer from a tendency to overdo a new technical jargon New words always spring up as a subject develops, but they should be lucidly explained and their connotation made clear

Transmission of light through fog has been investigated by six researches in the United States No visible light can penetrate a heavy fog If the sun is obscured the most powerful marine and aviation beacons are useless From the standpoint of transmission there is no advantage in filtering out any wave lengths present in light, because each wave length is transmitted independently of all others From the standpoint of visibility there is no advantage in filtering out the blue end of the spectrum It might be conceived that the excess scattering of the shorter wave length would build up a glare about the light source, reduce contrast with the background and diminish visibility This has been tested, and it was found that the visibility of a clear light was not increased by using a red filter

Artificial Illumination

Luckiesh and Moss, of the laboratories of the General Electric Company of the United States, put forward what might be described as an impassioned plea for the wider and greater use of artificial light Their paper was entitled, "Humanitarian foot candles They pointed out that artificial lighting, as an engineering activity, was inaugurated in an era of feeble light sources, when the demand for severe visual work was much less than to day The low levels of illumination acceptable at that time were largely justified by the practical and technical difficulties in the way of obtaining proper lighting in adequate amount Whereas outdoor workers are accustomed to light measured in thousands of foot candles the indoor worker is commonly provided with a few foot candles only, and yet he is expected to work for long hours at tasks requiring continuous and close eye work The authors maintained that much nervous energy is thereby wasted which might be turned to good use, and that the economic advantage thereby accruing would outweigh the cost of extra illumination There is ample evidence that when foot candle levels are increased above those now generally existing, a general increase in production follows

The Netherlands Lighting Committee put forward a plea for the examination of certain new lamps which are designed to flood the rooms of the people not only with visible light, but also with ultra violet rays In view of the fact that these artificial sources of light are being employed on an increasingly large scale for hygienic purposes—and especially now that it is realized that individuals may undergo irradiation during work or play without special supervision by experts—the standard requirements to be met by the lighting intended for this purpose ought to be laid down as soon as possible This is in the interests of the user's health, and also in the interests of the manufacturers, who can take these standards as a guide

THE SOUTH AFRICAN MEDICAL CONGRESS

JOHANNESBURG SEPTEMBER 1931

The twenty fifth South African Medical Congress was opened by the Hon Oswald Pirow K C Minister of Justice, on September 14th in the Johannesburg City Hall This is the fourth Annual Scientific Meeting of the Medical Association of South Africa (British Medical Association), into which the two local associations were fused four years ago Mr Pirow welcomed the invitation to open the congress as a compliment to the sister profession—Law He thought that there was need for consultation among the various professions regarding adequate professional control which was becoming difficult, owing, probably to increasing competition especially in these times of depression He referred in glowing terms to the high standard of medical skill in South Africa As illustrations of medical achievement on the Witwatersrand, he mentioned the splendid work done in silicosis prevention by the Miners Phthisis Bureau the notable contributions of the South African Institute for Medical Research to such national problems as plague malaria, and tuberculosis and the model hygienic conditions under which some quarter of a million uncivilized native labourers on the gold mines were housed and fed

Dr A J Orenstein President of the Federal Council of the Association in inducting the President of the Annual Meeting, Dr Francis Napier expressed the special thanks of the Association to the University of the Witwatersrand for its hospitality in providing accommodation for the meeting The numbers this year were larger than at any previous congress Dr Orenstein has inducted the Presidents of the annual scientific meetings ever since the formation of the combined Association four years ago but never he said, had his pleasure been greater than on this occasion, when he had the privilege of inducting a President from his home city, who had been a personal friend from the time of his arrival in South Africa seventeen years ago

Presidential Address A Plea for a State Medical Service

For his presidential address Dr Napier took as his subject "A plea for a State medical service Medical men, he said, knew very well that their profession was an individualistic one, and rightly, because so much depended on the character and capacity of the individual Though nothing should be allowed to interfere unduly with that individualism, there could be no doubt that it had been allowed to go too far, and many abuses had grown up in spite of the code of ethics of the Medical Association The needs of the public were not adequately met at present The man who got the best medical attention was the poor man, who was admitted free of charge to hospital, and had all the advantages of laboratories and specialist opinion That was ideal x ray installations and specialist opinion should be devised for all sections a comparable system should be devised for all sections of the community The rich man could look after himself and could command the best of attention but even then it was doubtful whether he was as well looked after as the poor man A Government Commission three years ago had recommended the adoption in South Africa of

the panel system. But this would certainly prove a dismal failure in this country. No system of national insurance could meet the needs of the whole community. There was a growing conviction in the profession that a State medical service was the only way out. It would be a godsend to the members of the medical profession, who would be relieved of the feeling that they were making money out of their patients. It would be a blessing to the patient, who would no longer have to worry about how he was going to pay his bill. A State service already existed in the case of preventive medicine—a Government Health Department, consisting of a chief and assistant health officers, pathologists, and inspectors; school medical officers and nurses; municipal health officers and their staffs. A curative service, linked up with our hospital system, could provide for men, women, and children in exactly the same way as the poor man is provided for already. A State service need cost the public no more than at present. The State was the public. Democracy required that the Government carried out what the public wanted. To-day the public paid, and paid very heavily. If the State paid, it would be merely taking the public's money out of a different pocket. He was convinced that State medical services would soon be in vogue the world over. Then why copy here any other service which had proved ineffective elsewhere? It might mean to the profession certain sacrifice of independence and remuneration. But he appealed to his colleagues to remember that the medical profession was one of service, not of money-making.

The Sectional Meetings

A scientific meeting consists of plenary sessions in each of the five Sections—medicine, surgery, gynaecology and obstetrics, public health, and special subjects. At the plenary session of each Section a subject for general discussion is introduced by a paper. The subjects selected all evoked good discussions. They were: constipation, diagnosis and treatment of acute appendicitis, medical attendance in pregnancy and the puerperium, pure milk supply, and hysterical phenomena. On the last-named there was a symposium, the various aspects being introduced by half a dozen specialists. The sectional papers were, on the whole, shorter than in previous years, so that more time was available for discussion. They dealt with a great variety of subjects; local problems bulked largely—typhus fever, amoebiases, solanacapsine (extracted from a local poisonous weed), obstetrics among Bantus, blackwater fever, heat-stroke in gold mines, and radiological practice in South Africa.

The Subsection of Psychiatry held a joint meeting with the Public Health Section on the much-discussed subject of sterilization of the unfit. Professor J. T. Dunston, Union Commissioner for Mental Hygiene, a staunch advocate of such action, introduced the subject in an eloquent and well-reasoned paper. He was strongly opposed by Dr. Egerton Brown, who has recently retired from the Mental Service of the Union.

The plenary session on milk produced an interesting discussion, because of the Natal experiment for eradication of bovine tuberculosis, commenced in Durban some ten months ago. Two months ago the Durban Municipal Council introduced by-laws whereby, in effect, no raw milk can be sold in the borough unless it is derived from tuberculin-tested herds. As some 30 per cent. of all the animals tested were found to react positively, and had either to be destroyed or isolated, the local dairy industry suffered great financial loss.

Social Functions

The social side of the congress was an undoubted success. Visiting members were, as usual, made honorary members of all the important local clubs, including eight golf clubs; the latter, in particular, were well patronized by the visitors, who expressed surprise at the well-kept condition of the courses, in spite of the severely dry and cold high veld winter, which was just drawing to a close. Garden parties were given by the Mayor of Johannesburg and by the President, and members were the guests of the Council and Senate of the Witwatersrand University on the occasion of the conferment of honorary doctorates on the President of Congress, Dr. Napier, and on the Chairman of the Federal Council of the Association, Dr. Orenstein.

Congress Dinner

The official dinner of the congress was held at the Carlton Hotel. When the loyal toasts to the King and Governor-General had been honoured, Dr. Dru Drury proposed "South Africa," to which the Minister of Public Health, Dr. D. F. Malan, replied. Dr. Drury complimented the Government on the passing, after many years of struggle, of the Medical, Dental, and Pharmacy Act. The Minister pointed out that, valuable as this Act was, it should be remembered that it only gave them the machinery; its real purpose was to strengthen their fighting capacity against ill-health. They were still busy merely outlining the task for the future with regard to malaria, plague, tuberculosis, and cancer. Even after completing the programme in regard to these diseases, there was still the great task of attending to predisposing causes of disease by the proper balancing of diets and by improving rural conditions. The suggested abolition of provincial councils would undoubtedly facilitate public health administration by the transfer of hospitals and local health services to the Central Government. The existing divided control had greatly impeded the provision of proper health services. Dr. Malan expressed the gratitude of the Government and himself for the very valuable services rendered by the medical profession, the bulk of whose members were doing an enormous amount of good for the people of this country in a self-sacrificing manner. Whatever dangers lay ahead for the profession, it was still not a trade but a calling, a noble calling, and there was plenty of room for men with ideals.

Colonel Denys Reitz, M.P., proposed the toast of "The Medical Association of South Africa," and Dr. Orenstein, in reply, said that the Medical Association, which was an integral part of a world-wide organization, the British Medical Association, now had 12 Branches, 30 Divisions, and over 1,400 members out of 1,600 practitioners. It was the largest professional organization in the Union. The science of medicine advanced so rapidly and covered so wide a field, that the average busy practitioner could not possibly keep abreast of its progress. Yet he must be familiar with the most important advances if he was to deal fairly with his patient. The Association made it possible for him to keep abreast of these advances at a minimum expenditure of time and energy. The country's outstanding medical problem was the need for early and radical improvement in preventive and curative services in rural and native areas. The present position in regard to both was deplorable. Difference of opinion existed only in method.

The Popular Lecture

"Cancer" was selected as the subject of the popular lecture by Mr. C. F. M. Saint, professor of surgery at the Capetown University. It was delivered in the City Hall to an almost exclusively lay audience. The subject was particularly appropriate, in view of the Cancer Conference convened by the Administrator of the Transvaal for the following week, to discuss, among other matters, the establishment of a National Cancer Institute for the Union of South Africa.

X-RAY AND RADIUM PROTECTION

INTERNATIONAL RECOMMENDATIONS

We print below the recommendations for protection against dangers from *x* rays and radium, as revised by the International X-Ray and Radium Commission at the Third International Congress of Radiology, held in Paris last July. The members representing Great Britain on the Commission are Dr. G. W. C. Kaye and Dr. Stanley Melville.

General Principles

The dangers of over-exposure to *x* rays and radium can be avoided by the provision of adequate protection and suitable working conditions. It is the duty of those in charge of *x*-ray and radium departments to ensure such conditions for their personnel. The known effects to be guarded against are: (*a*) injuries to the superficial tissues; (*b*) derangements of internal organs and changes in the blood.

Working Hours, etc.

The following working hours, etc., are recommended for whole-time *x*-ray and radium workers:

(*a*) Not more than seven working hours a day.
(*b*) Not more than five working days a week. The off days to be spent as much as possible out of doors.
(*c*) Not less than four weeks' holiday a year, preferably consecutively.
(*d*) Whole-time workers in hospital *x*-ray and radium departments should not be called upon for other hospital service.
(*e*) X-ray and particularly radium workers should be systematically submitted, both on entry and subsequently at least twice a year, to expert medical, general, and blood examinations. These examinations will determine the acceptance, refusal, limitation, or termination of such occupation.

General X-Ray Recommendations

X-ray departments should not be situated below ground-floor level.

All rooms, including dark rooms, should be provided with windows affording good natural lighting and ready facilities for admitting sunshine and fresh air whenever possible.

All rooms should be provided with adequate exhaust ventilation capable of renewing the air of the room not less than ten times an hour. Air inlets and outlets should be arranged to afford crosswise ventilation of the room.

All rooms should preferably be decorated in light colours.

A working temperature of about 18° C. (65° F.) is desirable in *x*-ray rooms.

X-ray rooms should be large enough to permit a convenient lay-out of the equipment. A minimum floor area of 250 sq. ft. (25 sq. metres) is recommended for *x*-ray rooms, and 100 sq. ft. (10 sq. metres) for dark rooms. Ceilings should be not less than 11 ft. (3.5 metres) high.

Wherever practicable the *x*-ray generating apparatus should be placed in a separate room from the *x*-ray tube.

X-Ray Protective Recommendations

An *x*-ray operator should on no account expose himself unnecessarily to a direct beam of *x* rays.

An operator should place himself as remote as practicable from the *x*-ray tube.

The *x*-ray tube should be surrounded as completely as possible with protective material of adequate lead equivalent.

The following lead equivalents are recommended under average conditions:

Table I.

X Rays Generated by Peak Voltages Kilovolts	Minimum Equivalent Thickness of Lead Millimetres
Not exceeding 75	1.0
" " 100	1.5
" " 125	2.0
" " 150	2.5
" " 175	3.0
" " 200	4.0
" " 250	6.0
" " 300	9.0
" " 350	12.0
" " 400	15.0

In the case of diagnostic work, the operator should be afforded protection from scattered rays by a screen of a minimum lead equivalent of 1 mm.

In the case of *x*-ray treatment the operator is best stationed completely outside the *x*-ray room behind a protective wall of a minimum lead equivalent of 2 mm. This figure should be correspondingly increased if the protective value of the *x*-ray tube enclosure falls short of the values given in Table I. In such event the remaining walls, floor, and ceiling may also be required to provide supplementary protection for adjacent occupants to an extent depending on the circumstances.

Screening examinations should be conducted as rapidly as possible with minimum intensities and apertures. Palpation with the hand should be reduced to the minimum.

The lead glass of fluorescent screens should have the protective values recommended above.

In the case of screening stands the fluorescent screen should, if necessary, be provided with a protective "surround" so that adequate protection against direct radiation is afforded for all positions of the screen and diaphragm.

Screening stands and couches should provide adequate arrangements for protecting the operator against scattered radiation from the patient.

Inspection windows in screens and walls should have protective lead values equivalent to that of the surrounding screen or wall.

Efficient safeguards should be adopted to avoid the omission of a metal filter in *x*-ray treatment.

Protective gloves, which should be suitably lined with fabric or other material, should have a protective value not less than 1.3 mm. lead throughout both back and front (including fingers and wrist). Protective aprons should have a minimum lead value of 1.2 mm.

Electrical Precautions in X-Ray Rooms

The floor covering of the *x*-ray room should be of insulating material, such as wood, rubber, or linoleum.

Overhead conductors should be not less than 9 ft. (3 metres) from the floor. They should consist of stout metal tubing or other coronaless type of conductor. The associated connecting leads should be of coronaless wire kept taut by suitable rheophores.

Wherever possible earthed guards or earthed sheaths should be provided to shield the more adjacent parts of the high-tension system. The use of *x*-ray equipment having the high-tension circuit completely enclosed in earthed conductors is specially recommended. Unless there are reasons to the contrary, metal parts of the apparatus and room should be efficiently earthed.

The use of quick-acting double-pole circuit breakers is recommended. Over-powered fuses should not be used. If more than one apparatus is operated from a common generator, suitable overhead multi-way switches should be provided.

Some suitable form of kilovoltmeter should be provided to afford a measure of the voltage operating the *x*-ray tube.

Special electrical precautions should be taken in rooms where anaesthetics are used in conjunction with *x* rays.

Film Storage Precautions

The use of non-inflammable *x*-ray films should be encouraged. In the case of inflammable films, suitable precautions should be taken as regards their use and storage. Large stocks should be kept in isolated stores, preferably in a separate building or on the roof.

Radium Protective Recommendations

(*a*) *Radium Salts*

Protection for radium workers is required from the effects of: (*a*) beta rays upon the hands; (*b*) gamma rays upon the internal organs, vascular and reproductive systems.

In order to protect the hands from beta rays radium should be placed, in the first place, on distance. The radium should be manipulated with long-handled forceps and should be carried from place to place in long-handled boxes lined on all sides with at least 1 cm. of lead. All manipulations should be carried out as rapidly as possible.

Radium, when not in use, should be stored in a safe as distant as possible from the personnel. It is recommended

that radium tubes or applicators be inserted into separate lead blocks in the safe, giving a thickness of protective wall amounting to the values given in the following table.

TABLE II.

Maximum Quantity of Radium Element	Thickness of Lead
0·2 grams	8·5 centimetres
0·5 "	10·0 "
1·0 "	11·5 "
2·0 "	13·0 "
5·0 "	15·0 "
10·0 "	17·0 "

A separate room should be provided for the "make-up" of screened tubes and applicators, and this room should only be occupied during such work.

In order to protect the body from the penetrating gamma rays during handling of the radium, a screen of not less than 2·5 cm. of lead should be used, and proximity to the radium should only occur during actual work, and for as short a time as possible.

The measurement room should be a separate room, and it should preferably contain the radium only during its actual measurement.

Nurses and attendants should not remain in the same room as patients undergoing radium treatment with quantities exceeding 1·2 gram.

All unskilled work or work which can be learnt in a short period of time should preferably be carried out by temporary workers, who should be engaged on such work for periods not exceeding six months. This applies especially to nurses and those engaged in "making up" applicators.

Discretion should be exercised in transmitting radium salts by post. In the case of small quantities it is recommended that the container should be lined throughout with lead not less than 3 mm. thick. It is more satisfactory to transport large quantities by hand in a suitably designed carrying case.

(b) *Radium Emanation*

In the manipulation of emanation, protection against the beta and gamma rays has likewise to be provided.

The handling of emanation should be carried out, so far as possible, during its relatively inactive state.

The escape of emanation should be very carefully guarded against, and the room in which it is prepared should be provided with an exhaust fan.

Where emanation is likely to come into direct contact with the fingers, thin rubber gloves should be worn to avoid contamination of the hands with active deposit. Otherwise, the protective measure recommended for radium salts should be carried out.

The pumping room should preferably be contained in a separate building. The room should be provided with a connecting tube from the special room in which the radium is stored in solution. The radium in solution should be heavily screened to protect people working in adjacent rooms. This is preferably done by placing the radium in solution in a lead-lined box, the thickness of lead recommended being according to Table II.

Nova et Vetera

ROUBILIAC, CHESELDEN, AND BELCHIER

A fortunate visit by Mrs. Esdaile to the Royal College of Surgeons of England to examine the portrait busts of English surgeons has resulted in the rehabilitation of the two fine terra-cotta busts of Cheselden and Belchier which now stand in the entrance hall of the building. The two busts had for many years been "skied" on brackets over the entrance to the Council room and the Examiners' room, and were described as plaster casts, for they had been repeatedly painted. Mrs. Esdaile, with the eye of an artist, recognized them as something more worthy, and, obtaining a ladder, industriously picked away nine or ten layers of paint until she found what she expected to find—a terra-cotta basis. Informed of this discovery, the President and Council ordered the busts to be stripped of the paint, and there has resulted two real works of art attributed unhesitatingly to Roubiliac, the master sculptor of his generation in England.

The busts were given to the College by Mr. Lucas on December 24th, 1804. The donor, William Lucas, was elected surgeon to Guy's Hospital in 1773, and retired in 1799. "A clever manipulator and a neat surgeon, but not an anatomist," according to Sir Astley Cooper, "he got £300 a year by bleeding, visited a hundred families, but never made more than £500 per annum." His son succeeded his father as surgeon at Guy's in 1799, and resigned in 1824. "He was neat handed but rash in the extreme, cutting amongst most important parts as if they were only skin, and making us all shudder from apprehension of his opening arteries or committing some other error," says Sir Astley.

William Cheselden (1688–1752) was surgeon to St. Thomas's Hospital from 1718 to 1738, and was also for a short time (1733–38) surgeon to St. George's Hospital, then newly founded. He was a man of many attainments, for he is said to have drawn the plans for old Putney Bridge; he was a friend of Addison, Pope, Mead, and Sir Hans Sloane; he was a first-rate pugilist, and he perfected the operation of lateral lithotomy. He was chosen Sheriff of London on June 24th, 1743, but was allowed to "swear off" on the ground that his estate in lands and goods was not of the value of £1,500. He was a member of the United Company of Barbers and Surgeons, and it was partly due to his action that the Surgeons' Company came into existence and the old alliance of Barbers and Surgeons was dissolved.

John Belchier (1706–85) was a favourite pupil of William Cheselden, and was surgeon to Guy's Hospital (1735–68). In one of his papers read before the Royal Society he proved that madder given with food stains the bones bright red. He was a stout and heavy but active man, of whom the story is told that a patient came to him with a pretended complaint. Belchier assured him there was nothing the matter, and the man clapped a pistol to his breast, demanding money. Belchier offered him two guineas and his gold watch. The patient lowered his pistol to take them, and Belchier immediately knocked him down and sat upon him until assistance came. He was buried in the same vault as Guy in the hospital chapel.

Louis François Roubiliac (or Roubillac) (1695–1762) was born at Lyons, and came to London about 1738. He carved a statue of Handel, which was long one of the glories of the Vauxhall Gardens. About 1740 he was making busts, and among his sitters was Dr. Mead; the busts of Cheselden and Belchier were probably executed about this time. A few years later he was engaged on various funeral monuments, of which perhaps the best known are in Westminster Abbey—the Nightingale monument being probably his last work, for he died on January 11th, 1762. He was buried in the churchyard of St. Martin's-in-the-Fields, poor and in debt. Character rather than beauty seems to have been his aim, and the two busts at the College of Surgeons show this most remarkably now that the disfiguring paint of years has been removed. It is noteworthy, too, that at a time when everyone wore a wig neither Cheselden nor Belchier is represented with one, thus bearing out the statement of Nollekens, whose father was apprenticed to the sculptor, that, "notwithstanding his skill, he was not fond of introducing a wig, and endeavoured to persuade his sitters to take their wigs off. His busts of Pope, Lord Bolingbroke, Martin Folkes, Drs. Mead and Frewin, and numerous others of men of literature are without wigs."

D'ARCY POWER.

Scotland

Glasgow Royal Maternity and Women's Hospital

The Glasgow Royal Maternity and Women's Hospital contains 175 beds, of which 78 are reserved for ante-natal cases, 78 for lying-in cases, and 19—in a separate isolation block—for "suspect" cases; any cases of puerperal sepsis are transferred to the Corporation fever hospitals. This institution claims to be the largest purely maternity hospital in the country, and its fifth annual medical report, covering the twelve months ending December 31st, 1930, has a special interest in that it is the first to be issued after a staff reorganization, which has resulted in the hospital adopting the permanent unit system. The lines suggested by the committee of the Royal Society of Medicine for the unification of maternity hospital reports have been followed as far as possible in constructing the present system. The in-patients are classified in three categories as follows: those who had previously been under ante-natal supervision (1,790); emergency cases (1,934); and those applying for admission without recommendation of any kind (745). Thus, of the total of 4,469 patients treated in the hospital wards, 40 per cent. had been under ante-natal supervision of some kind, 43.2 per cent. were emergency cases, and 16.6 per cent. came without any medical recommendations. The total number of cases treated in the wards of the ante-natal department was 1,579, or 35.3 per cent. of all the indoor patients. The apparent discrepancy between this figure and the total number of cases which had been under ante-natal supervision is due mainly to the direct admission of patients from the ante-natal dispensary to the obstetrical department. During the year under review 9,326 patients were dealt with, 778 being sent to public health hospitals and 4,079 being treated in their own homes, in addition to the 4,469 patients admitted to the wards. In preparing this report Dr. H. R. MacLennan, registrar of the hospital, mentions that 70.1 per cent. of the admissions were abnormal cases, and many were in a state of emergency. He adds that this fact, together with many others, such as the high incidence of rickets in the population which is served by the hospital, indicates the gravity of the type of case, which has to be borne in mind when comparing the incidence of the more serious complications of labour and the maternity and morbidity rates with those of institutions where a lesser measure of abnormality is encountered. The popularity of the ante-natal dispensary is increasing each year, and it now has to be open every weekday.

Chair of Psychology in Edinburgh

The inaugural lecture of the new chair in psychology at Edinburgh University was delivered on October 20th by Professor James Drever, the first occupant of the chair. Professor Drever said that a quarter of a century had elapsed since the George Combe Department of Psychology was established in the University, thanks to the far-sightedness of Professor Pringle-Pattison and Professor Sharpey-Schafer, as well as to the generosity of the George Combe Trustees. During that time the expansion of this subject had been very striking. Psychology was one of the oldest of studies and one of the youngest of sciences, and hardly had a history until towards the end of the nineteenth century. Its beginnings as a definite science might be dated from the establishment of Wundt's laboratory at Leipzig in 1879, although before that time, for more than two thousand years, psychology had been studied and taught by philosophers as an integral part of philosophy. Psychological laboratories had now sprung up everywhere, and in America alone during the next two decades no fewer than thirty psychological departments had come into existence, the first being that established at Johns Hopkins University in 1883. The first professor of psychology was Professor Cattell of the University of Pennsylvania, elected in 1888, who had given the first course in experimental psychology offered to students. This branch of the subject had been developed under the influence of physiology, and the psychological laboratory grew out of the physiological laboratory. The great development of mental testing had been brought about mainly through the work of Galton, and the scarcely less important development of animal psychology had a close contact with the development of zoology. Psychiatry had come in through the study of hypnotic phenomena, and in recent times had led up to what was called psycho-analysis. Three main streams of scientific progress—in physiology, general biology, and psychiatry—had thus united to produce the psychology of to-day. With the development of mental testing and animal psychology, all pretence regarding the employment of introspection had been laid aside. The workers in the field of psychology had been avowedly more interested in the phenomena of the unconscious than in the phenomena of the conscious. This widening of the scope of the science had brought many important changes, and armchair psychology was now a thing of the past, so that the text-books of twenty years ago were to-day largely out of date. The lecturer concluded that although there were different schools of psychology at the present time, they were not antagonistic, as each concerned itself with a special line of investigation.

The Adolescent Deaf

At a meeting of the Scoto-Irish branch of the National College of Teachers of the Deaf, held in Edinburgh on October 18th, Mr. George Wilson, who presided, said that the conditions of life of the adolescent deaf in Scotland were too precarious to allow of further delay in dealing with them. The problem of unemployment in regard to the deaf ought to have been considered ten years ago. If a practical scheme of training for these persons was drawn up, funds could probably be procured from a trust in Glasgow specially devoted to the purpose of helping the deaf, or from the Carnegie Endowment or from the Pilgrim Trust. Deaf boys and girls, eager for employment, were leaving the ordinary schools only to swell the ranks of the unemployed, and the teachers of the deaf in Scotland felt that they could not stand aside and see their former pupils swamped by the present wave of unemployment without offering assistance. A paper, read by Miss Eleanor Page, dealing with agricultural training for the post-school deaf children, described the agricultural and horticultural colleges in Great Britain, as well as the farm schools in France and Germany. She suggested the establishment of farm colonies for the deaf in Scotland, where stock could be reared and where market gardening and the bottling and canning of fruit could be carried out by the deaf community under the supervision of a qualified person, who would control the market and the goods. A special committee was appointed to investigate the possibilities of such a scheme.

Central Midwives Board

At a meeting of the Central Midwives Board for Scotland for the hearing of penal cases, Dr. James Haig Ferguson in the chair, it was reported that a midwife had been found guilty of procuring abortion and sentenced to three years' penal servitude. The secretary was directed to remove her name from the roll of midwives, to cancel her certificate, and to prohibit her from attending women in childbirth in any other capacity (Section 8 of the Midwives (Scotland) Act, 1915).

Bignold Hospital, Wick

The Bignold Hospital Aid Committee, at its last meeting, with Provost Duchart in the chair, intimated that after twenty months' work the debt incurred for extensions to the hospital had been completely paid off. When the aid committee was formed this debt amounted to £2,302, and in addition to paying off this sum the committee had raised a further £1,000, which it was resolved to hand over to the hospital trustees for the benefit of the hospital.

England and Wales

Radcliffe Infirmary: Maternity Department

The Duchess of York opened the new maternity department of the Radcliffe Infirmary, Oxford, on October 22nd. Mr. W. M. Goodenough, honorary treasurer of the Infirmary, in welcoming Her Royal Highness, said that the new home was the first part to be completed of the extensions to the hospital for which they had been appealing for funds during the last three years. They were now not only in possession of this home, but the greater part of the necessary buildings was either under construction or being put in hand. He said that Sir William Morris had not only given the home at a cost of £40,000, but had given to them and to the University Medical School jointly a splendid site at a cost of £100,000. Through their connexion with the Medical School they hoped that the hospital would play a growing part in the increase of medical knowledge. The Regius Professor of Medicine, Sir Farquhar Buzzard, in proposing a vote of thanks to the Duchess of York, said that the first step in an ambitious extension scheme had now been taken, and they anticipated that the hospital of their dreams might not be very far from realization. The relations between the University of Oxford and the Radcliffe Infirmary were of the best kind. While watching the hospital's development with an attention not wholly disinterested, the University saw in the future increasing facilities for the study of those difficult problems which confronted those who sought methods for the prevention and cure of disease. Dr. Stobie, the Mayor of Oxford, welcomed the Duchess of York on behalf of the citizens of Oxford. The new building consists of four stories, with the exception of the main ward block, which has two only. On the ground floor there is a pre-natal clinic with emergency labour ward, sisters' quarters, nurses' lecture room, sitting and dining rooms, and kitchen and maids' dining room. Waiting room accommodation for visitors is also provided. On the first floor are the two main wards, each with provision for twelve beds. The remainder of the floor is occupied by single and two-bed wards, together with the large night nursery, babies' bathroom, room for sick babies, and the necessary service rooms, bathrooms, and store rooms. The rooms for paying patients, isolation rooms, and suite of labour wards, with the necessary service rooms, are situated on the third floor. The fourth floor is devoted to staff rooms, consisting of bedrooms for midwives, nurses, and maids. Open-air sun flats are available above the large wards, with access for beds, and the smaller wards and rooms for paying patients have open-air balconies.

Remuneration of Whole-time Medical Officers: Attitude of L.C.C.

If the recommendation of its General Purposes Committee is adopted, the London County Council will not be represented on the advisory committee constituted in accordance with the recommendations of the conference held in 1929 under the chairmanship of Lord Askwith, to consider the question of the remuneration of whole-time medical officers in public health services. The object of the advisory committee is to consider, upon application being made to it by the Ministry of Health, the British Medical Association, or any association of local authorities which has adopted the recommendations of the conference, or by any individual local authority, the merits of any case in which a local authority proposes to employ an officer at a salary or on conditions not in accordance with the recommendations of the conference, or any difficulties which may arise in the application of the recommendations. It was proposed that the advisory committee should consist of seventeen members, the chairman to be appointed by the Ministry of Health, one member to be appointed by each of various representative local government bodies, including the London County Council, and eight by the British Medical Association. Having regard to the exceptional position of the London County Council in the matter, the committee thinks that it need not be represented. It states that the conditions of the Council's service as regards the medical staff at the County Hall are so different from those existing in most, if not all, other areas throughout England and Wales, that it is difficult to institute a detailed comparison between the recommendations of the conference and what obtains in its service. The rates of pay and conditions of service for the medical staff in the hospitals transferred to the Council under the Local Government Act are generally in accordance with those recommended by the conference, the position of medical superintendents being, in fact, somewhat better, and in mental hospitals, also, they are generally in accord.

Burnley Radium Clinic

A short but comprehensive account of the aims and work of the Radium Clinic at the Victoria Hospital, Burnley, has been compiled by Dr. John H. Watson, director of the clinic, and Mr. H. Lawrie, physicist, in order to make clear to the lay public the nature of the work that is being carried on, the scope for extension, and the need of increased financial support. Full details are given of the way in which radium exercises its therapeutic results, and medical practitioners who are less well informed in these respects will find a certain amount of handy information in it. The clinic has now been working for more than twenty months, and is the only one in the county of Lancaster outside the university cities of Manchester and Liverpool which has been devised and equipped on the lines of the Regaud Clinic in Paris. The methods in use are those which have been standardized for the most part in the pioneer clinics of Paris, London, Stockholm, and Brussels, and about 250 new patients are on the register. There have been about 1,500 daily treatments at the clinic, and strict records have been kept on the lines required by the Radium Commission. The waiting list is about eighty, and the amount of radium possessed is 340 mg. With increased financial support it is hoped to set apart fourteen beds for patients requiring radium treatment, in order that special nursing may be provided.

The Teaching of Science

The Alexander Pedler Lecture, under the joint auspices of the British Science Guild and the University of Durham Philosophical Society, was delivered by Professor Irvine Masson in Armstrong College, Newcastle-on-Tyne, on October 21st. Its title was "Problems in the teaching of science." Professor Masson reviewed, on a national scale, education in pure science as it is carried on at our universities and in schools. He asked: Has the pendulum overswung? Are we teaching too much science? Or teaching science too much? Those who were going to

be lifelong scientists must be given an intensive training; but every science was growing now so quickly that it could no longer be confined within the three-year limit of the undergraduate course. Two more years were needed, and were actually expected of a young man before he was eligible for a first post as a practising scientist. This needed universal recognition.

"To those who are not going to be scientists, we are trying to teach too much and too specially. The figures for the whole country show a great preponderance of honours over pass students, and a great many of these honours specialists do not go on with further training in their science, but turn to school teaching, besides other occupations. These carry into the schools the same exclusive specialization, and a vicious circle is created. It is helped, if not caused, by the higher salaries paid under the Burnham scale to school teachers who are honours graduates. If this were altered, and the universities reformed their pass degree courses, we should get much better balanced teaching in schools; and the whole series of educational sieves through which our young people pass (or are forced) would work naturally. In the schools, especially the secondary schools, exaggerated science teaching goes on on a very large scale from absurdly youthful ages, while other subjects—for example, German—are neglected These things are as bad for the future scientist as they are for all his brothers and sisters. They can be cured by the reforms already mentioned, coupled with a change in the functions of the school certificate and the higher school certificate."

Professor Masson's arguments are buttressed, in an appendix to the printed lecture, by a statistical survey which shows the trend during recent years in the choice of pursuits at the universities and schools of this country.

Correspondence

PAIN IN THE ARM AND A DEAD TOOTH

SIR,—The very interesting communication (*British Medical Journal*, October 24th, p. 749) from Dr. H. W. Hills is important, for it shows, what some of us have long taught, that clinical disturbances associated with "dead teeth" and the like are not always explained by the theory of "sepsis." In fact, this theory is in danger of being sometimes a nuisance, for, when the clinical troubles occur, someone is sure to object to removal of the dead structure, not because "it isn't doing harm" (for it *is*), but because "it isn't septic," or because they "can't see how it is a source of infection."

Of course, clinical observation and sound empirical practice are now made subservient to laboratory-bred theory. That we know. But it is a "clinical fact" that many kinds of pathological trouble in the region of the fifth nerve—a physiological mechanism of emotional expression, be it noted—are linked with disturbances at "unexpected distances," not to be explained by any theory of "sepsis," but which go for good when the "trouble" is put right. Dr. Hills has reminded us of the anatomical basis, but it is to be noted that psychological stresses and shunts are also present, the psychological explanations being afforded by the theories of "somatic resonance" and "organ-jargon." That is another story.

The moral of Dr. Hills's anecdote, as of my comments, is that, when a patient is ill, we should not hesitate to put right all that *is* "wrong" merely because we don't "see" how *this* can explain *that*. And, if we want a theory, as a sign from heaven, there is always the old doctrine of *sympathy*, in many respects a larger and more commodious umbrella than that of "septic foci" and the like, which is no longer so weatherproof as it once was. If in any given case we find out, so far as may be, *all* that is wrong with the patient, and try to put right, so far as is possible, all that is wrong—no matter how slender the apparent connexion with the ostensible complaint—we shall be surprised to find with how many "cures" we become credited, and quite rightly too.—I am, etc.,

London, W.1, Oct. 24th. F. G. CROOKSHANK.

PRIORITY IN NEUROLOGICAL SURGERY

SIR,—The publication of the letter by Mr. Donald Armour, entitled "Priority in neurological surgery," in the *British Medical Journal* (July 25th) has recently come to our attention. May we request you to publish the following reply?

Everyone interested in neurology and the surgery of the nervous system takes pleasure in according to Sir Victor Horsley recognition of his remarkable services to medicine. We have not failed to give recognition to him in his connexion with the division of the sensory root of the Gasserian ganglion. In a paper published in the *Philadelphia Medical Journal* (October 25th, 1902, the history and operation in a case described as "one successful case" are given (Frazier), and a claim is made for the superiority of this operation over complete extirpation of the ganglion. In a paper published by us in the *University of Pennsylvania Medical Bulletin* (December, 1901), and also in the *Philadelphia Medical Journal*, the statement is made (Spiller): "I believe that Horsley is the only one who, before Dr. Frazier, has divided the roots of the trigeminal nerve without removing the ganglion. Horsley avulsed them at their attachment to the pons, and his patient died seven hours after the operation." This quotation refers to the *British Medical Journal* of December 12th, 1891 (p. 1249).

It is our understanding that Horsley became convinced from his investigations that the Gasserian ganglion could not be removed successfully by operation, and that therefore he resorted to division of the sensory root. He did this because no other procedure, in his opinion, was possible. We are not aware that any further reference was made to the surgery of the sensory root after the publication of Horsley's paper before the date of our several publications beginning in 1898. At that time all central operations on the trifacial nerve related to removal of the Gasserian ganglion, and, so far as we know, no reference had appeared by any writer regarding the operation on the sensory root which Horsley had performed in one case.

The ganglion operation at that date was exceedingly grave. The mortality was given by Tiffany as 22.2 per cent., and neurologists referred their cases of tic douloureux to the surgeon with hesitation. It is even probable that the mortality of those less skilful than Tiffany was higher. Having these facts in mind, it was suggested (Spiller), in a paper published in collaboration with Dr. Keen in the *American Journal of the Medical Sciences* (November, 1898), that division of the sensory root of the trifacial nerve would probably give the relief from pain that might be hoped for from the removal of the Gasserian ganglion, and probably would be a less serious operation. In 1898 Horsley's case was not known to us.

At that time the regeneration of peripheral nerves was a matter of dispute on account of the studies of several investigators, and especially of those of Ballance and Stewart, and there was uncertainty as to the possibility of regeneration of the sensory root of the Gasserian ganglion. In order to place the operation of the division of the sensory root on a sound foundation, and to exclude the probability of its regeneration after division, seven specimens of the Gasserian ganglion and its roots, removed from as many dogs on which division of the sensory root had been practised (Frazier), were examined (Spiller), and

it was determined that regeneration of the sensory root was improbable, although the results of these experiments were not entirely conclusive.

One of us (Frazier) has, in his several contributions, repeatedly referred to the universally adopted radical operation for trigeminal neuralgia, and has given Spiller credit for the idea of "purposeful section of the sensory root," for several reasons: (1) because he (Frazier) was not familiar with the article in the *British Medical Journal* of December 12th, 1891; (2) because Spiller first proposed the operation to him (Frazier); (3) because the first series of experimental operations to assure permanence of relief were carried out at the suggestion of Spiller; and (4) because the repeated clinical experiences and contributions from the Neurosurgical Clinic of the University Hospital were largely, if not wholly, responsible for the acceptance of this operation throughout the world as a substitute for removal of the ganglion.

It has been substantiated convincingly by the results of operations performed in the Neurosurgical Clinic of the University Hospital that section of the sensory root is less serious than removal of the Gasserian ganglion as forecast in 1898 (Spiller). There have been 665 sensory root operations performed (Frazier) for major trigeminal neuralgia. The mortality at one time was reported as 0.5 per cent. There have been no deaths in the last 264 operations.—We are, etc.,

CHARLES and FRAZIER, M.D.
Philadelphia, Oct. 1st. WILLIAM sit SPILLER, M.D.

CHILD PSYCHOLOGY

SIR,—I feel sure that Dr. H. Devine, in his letter under the above heading (*British Medical Journal*, October 24th), and referring to the study of psychological medicine in London, has quite unintentionally omitted to mention the invaluable teaching of this subject in the Bethlem Royal Hospital. This hospital was the pioneer of teaching in the subject—even before it was made compulsory in the medical curriculum—and the older psychiatrists (myself among the number) remember with gratitude the special instruction and the practical demonstrations in the wards given by the late Sir George Savage and his successors. This hospital welcomed visitors from abroad, as well as students from all the London hospitals, quite apart from those at Guy's and St. Thomas's, to which the staff were specially attached.

The Bethlem Royal Hospital, although now removed from Lambeth, is still in London (Beckenham), and it has the distinction of being served—as a recognized school of the University—by a highly reputed list of teachers in medical psychology and cognate subjects. For many years it was the only mental hospital in which clinical examinations for the Gaskell prize were permitted to be held, and it still carries on most successfully the teaching of psychiatry for undergraduates and graduates who aim at qualifying for the special diploma now required for the higher posts in the service.—I am, etc.,

ROBERT ARMSTRONG-JONES, M.D.
London, S.W., Oct. 24th. (A Governor of the Bethlem Royal Hospital)

SIR,—May I supplement Dr. Devine's letter in the *Journal* of October 24th, by saying that, in addition to the clinics therein mentioned, there has been for several years past, as part of the Department of Psychological Medicine, a clinic at University College Hospital for persons suffering from mental arrest, retardation, and abnormal development. This clinic is attended by a considerable number of maladjusted children. In addition to the physician in charge it has the services of a qualified assistant and an experienced and fully trained social worker; and it not only affords instructional facilities for the students of the hospital, but it is also attended by students from the London School of Economics, where, I may add, a very comprehensive course of lectures in psychological medicine is given for social science students and workers in mental health.

I fully agree with Dr. Devine that it is most regrettable and quite erroneous to suggest that the teaching in London of psychological medicine and child psychology is neglected. This is far from being the case.—I am, etc.,

University College Hospital, W.C., Oct. 26th. A. F. TREDGOLD.

DOSAGE OF DIPHTHERIA ANTITOXIN

SIR,—All would agree with the interesting point in Dr. J. B. Ellison's letter (October 17th, p. 724)—namely, that it is necessary to maintain the concentration of antitoxin on a level high enough to neutralize completely all *incoming* toxin. A child, aged 4, weighing 2 st. 10 lb., suffering from severe diphtheria, who has received 16,000 units of antitoxin intravenously, will have an immediate content of about 20 units of antitoxin per cubic centimetre of blood; five days later about 5 units. We know from clinical experience that a content in a subject's blood of much less than 5 units of antitoxin per cubic centimetre gives high protection. The Schick-negative subject, with about 1/30 of a unit of antitoxin (always expressed per cubic centimetre of blood) does not suffer from the severe diphtheria under discussion. Schick-negative nurses with 1/30 to 1/10 of a unit are, with impunity, tending patients suffering from the severest attacks. We know also that a subcutaneous or intramuscular prophylactic injection of 500 units of serum immediately stops outbreaks. A child of 8, weighing 25 kilos, would have about 1.2 litres of blood (5 per cent. of body weight); his antitoxin unitage after this prophylactic dose would therefore be about 0.1 at twenty-four hours, 0.3 on the third day, and 0.1 about the sixth.

What amount of toxin is absorbed by the patient described by Dr. Ellison? (By the way, if Dr. Ellison will go through his records, how often will he find an account of membrane continuing to spread for two days after a large intravenous dose of antitoxin, it being assumed that swabs yielded only Klebs-Loeffler bacilli and no profuse streptococci or staphylococci?) From the Baden and Dallas accidents we know that 15 to 30 m.l.d. of toxin injected into a child will cause death in between four to six hours, and from Medellin that 250 m.l.d. will kill a child in twenty-four to sixty hours. It is known that an English laboratory worker (Schick-negative, unitage 1/10) injected about 200 guinea-pig m.l.d. (minimum fatal doses) of toxin into himself. No local or general signs or symptoms followed. Since Dr. Ellison's patient lives for several days after serum treatment is commenced, the total amount of toxin absorbed is probably nearer 30 m.l.d. than the higher figure. But the antitoxin present in the blood of a child, even five days after the intravenous injection, is about 5 units; the membrane is extra-corporeal, and the toxin, before it can attack vital vulnerable cells, must make its way through the superficial tissue, where it will find an overwhelming amount of antitoxin ready to neutralize it immediately.

Are not the watery molecules of the Thames as completely excluded by watertight walls at London Bridge in the Cotswolds—though *our* river has disappeared already at Pangbourne! Nevertheless, Dr. Ellison puts his finger on a baffling problem. We do not clearly understand why membrane is formed. The Medellin record shows clearly that in the throats of the unfortunate children into whom toxin was injected, typical membrane occurred

though no Klebs Loeffler bacilli could be found So far as I can trace, no similar observations were made at Boden or at Dallas and most pathologists would say that membrane can occur only when Klebs Loeffler bacilli are present in the throat The observation must therefore be put on record and accepted with what reserve each pathologist will decide But apart from this we do not understand completely what causes the disappearance of the membrane in the average patient A boy known to be Schick negative complained of a sore throat The clinician saw an early membrane and suggested diphtheria Within twenty four hours the thin pellicle had completely disappeared The boy was given no antitoxin, virulent Klebs Loeffler bacilli were present Yet the antitoxin content of his blood changed from 1/10 on the first day of his very mild indisposition to about thirty times as much in a few days One cannot help saying that his efficient 'active immunity,' and rapid production of his own antitoxin, was the cause of the disappearance of the membrane, but there is no proof that other factors may not have been important Dr Ellison will probably agree on the main issue that the clinician who feels that the results of controlled laboratory experiments have some bearing on clinical medicine will, with austere scientific mind, give one large dose intravenously to his gravely ill patient and know that he cannot do more by specific therapy, most will 'play for safety' by giving also an intramuscular dose those who have convinced themselves that repeated doses save more patients than a single dose, will continue to give repeated doses—they probably do no harm—I am, etc,

October 20th M D, D P H

RHEUMATOID ARTHRITIS

SIR,—I have read with interest the correspondence in reply to "Crippled," whose letter appeared in your issue of October 3rd Dr Kerr Pringle suggests that investigation should be made along the lines of a deficiency of vitamin B On this point I had the pleasure of working under Professor Duncan Graham and Dr A Fletcher of Toronto in 1929 In a large percentage of cases of arthritis deformans, where no focus of infection could be demonstrated, the caecum and colon were found to be atonic and greatly dilated This was demonstrated by *x* rays, following barium enemata These patients were then placed on diets low in carbohydrates and high in vitamins, especially vitamin B, which was given concentrated in yeast and wheat germ Patients who were on the thin side were given adequate diets and the obese received reducing diets while no patients received any medicine Monthly *x* ray examinations were made and marked change was noted in most of the cases the bowel contracting down, haustrations appearing, and peristalsis becoming more active At the same time there was definite improvement in the arthritis, which was most noticeable in the rheumatoid form

Dr John Poynton rightly lays great stress on "local focus" in his letter published on October 10th, but surely the time has come when we must look further afield, especially when the 'old reliables," such as teeth, tonsils, and sinuses are so often apparently healthy In *Recent Advances in the Study of Rheumatism* the authors do not stress the use of a barium enema for investigating obscure cases of arthritis Although they mention early investigation carried out by Fletcher in 1922, no reference is made to the more recent work, an account of which appears in the *American Journal of Medical Sciences* for January, 1930 Is it not a possibility that if the bowel was investigated more carefully we might find some suggestion as to why females are more commonly attacked by rheumatoid arthritis than males?—I am etc,

Edinburgh Oct 17th H L FERRIE M D Toronto

THE BLOOD IN GLANDULAR FEVER

SIR,—Correspondents in the *Journal* in the summer of 1930 supplied evidence that glandular fever is common in London even in adults My experience of the disease is confined to children, in whom diagnosis is easy if seen early Recently I attended five cases in a month, and three were seen early enough to enable me to follow the blood picture and to check previous observations of my own Perhaps a note on this would be a useful appendix to the correspondence referred to

It may be said generally that reaction to infection proceeds according to a plan which may be related to these facts in many invertebrates the only wandering cell is the monocyte, so that reaction is necessarily a pure monocytosis, in the lowest vertebrates (lamprey) the lymphocyte is already available, and the reaction is lymphocytosis reinforced by monocytosis which often predominates, in man, marrow cells (leucocytes) are the predominant white cells in the blood and infection is opposed mainly by leucocytosis which is always reinforced, especially in children, by lymphocytosis and monocytosis before return to normal Differences in the relative duration and intensity of these three processes determine the nature of the blood picture, which in glandular fever is easily followed if we arrange symptoms under days of disease, as follows

(1) Sudden onset with sharp pyrexia headache and flushed face (2) Thickly coated tongue with congestion of fauces, epistaxis or vomiting is common On the first two days there is decided leucocytosis, with disappearance of eosinophils, which are not needed at this stage In short, there is the same neutrophilia with eosinopenia as in sepsis and pneumonia The flushed face with circumoral pallor, coated tongue and congested fauces may suggest scarlet fever The blood film excludes this *because scarlet fever is the great exception, and requires* initial eosinophil as well as neutrophil leucocytosis (3) Stiff neck, followed in a few days by tender enlarged lymphatic glands (4) Blood films show, both in red corpuscles and in white cells, changes which in the latter are somewhat characteristic (5) A rash may or may not appear now or in a few days

About the third day leucocytosis is replaced by marked relative and absolute lymphocytosis, with return of eosinophils beyond normal numbers Now this is what occurs in pneumonia, except that the prolonged leucocytosis is compressed into two days in glandular fever In both, return of the eosinophil marks the onset of lymphocytosis The latter continues with little change except an addition of 1 or 2 per cent of plasma cells, which probably differ from lymphocytes chemically more than cytologically and may be called plasmoid lymphocytes comparable with the iodophil leucocytes in pneumonia Though absent from normal blood, these cells are regular attendants on every lymphocytosis At the same time, the red corpuscles show anisocytosis and polychrome disks among which are some with azure rods, arcs and rings (Cabot rings), and a few showing fine punctate basophilia—in short, evidence of toxic anaemia *In mild cases* there is no great monocytosis and return of blood to normal is uneventful except that anaemia and a few plasma cells disappear rather slowly As there are many mild cases this undistinguished blood picture must be common Yet it may be helpful if one considers the relation to symptoms of its three phases

In cases of moderate severity—which in children means considerable glandular disturbance—the developed monocytosis is attended by a remarkable leucoblastosis which is unique among the infectious diseases of children These leucoblasts appear on the fourth day may reach 6 per cent on the sixth day, and remain in the blood for a

week. These cells are quite pathological, and I have offered evidence[1] that they are really immature monocytes (pre-monocytes) accompanying monocytosis, just as myelocytes accompany leucocytosis. They may appear in the monocytosis of malaria, and should be looked for in glandular fever in adults, in whom they might assist diagnosis. In both cases in which I found them the glands were unusually swollen.

Dr. Cantor[2] suggested that glandular fever has three stages—of invasion, of eruption, and of glandular enlargement; that pyrexia is common to all three; but that in some cases the second stage is exaggerated and the third minimized; in others the second is omitted and the third prolonged. Apparently children belong to the latter group, for only the eldest of my patients, a girl of 13, had a rash. On the fifth day a brisk plasmacytosis had appeared, and in the evening gave the count: eosinophils 1, neutrophils 21, lymphocytes 53, monocytes 10, plasma cells 14. Next day the rash appeared on the body—about ten bright erythematous patches with a few urticarial wheals—disappearing in twenty-four hours. On the eighth day the plasma cells fell to 2 per cent., which is usual from the fourth day onwards. This plasmacytosis included both plasma cells and Türck forms, and the latter may be regarded as plasmoid monocytes, which in small numbers accompany every monocytosis—for example, in typhoid and in malaria. The excess is unusual, but occurs sometimes in German measles, in which I found 13.5 per cent. in a woman on the fourth day from beginning of rash. I have also reported[3] 19 per cent. after an intense rash in scarlet fever. In all these cases excess was associated with considerable irritation of lymphatic glands and of skin.—I am, etc.,

London, W.13, Oct. 11th. ROBERT CRAIK, M.D.

[1] *British Medical Journal*, 1930, ii, 213.
[2] Ibid., 1930, i, 1197.
[3] Ibid., 1923, ii, 1096.

"WHAT IS LIFE?"

SIR,—I venture, though but a humble student of biology and physiology, to ask Professor John Haldane a question arising out of his recent volume on the *Philosophic Basis of Biology*. Where are to be found the mechanistic-minded biologists and physiologists against whose supposed doctrines his argument is directed?

I have some limited personal and reading acquaintance with biologists and physiologists to-day, but know none who hold the particular heresies which Professor Haldane is hunting. The same perplexity was present in my mind when reading his earlier work, *The Sciences and Philosophy*, in which a great part of the argument was directed against "Newtonian principles" which had been superseded at the time the book was published.

Professor Haldane, in his letter in the *British Medical Journal* of October 24th, writes: "If we apply to a living organism the conception of matter we have thereby made it impossible to interpret scientifically the phenomena we are dealing with"; presumably some particular conception of matter is here referred to—matter, for example, as independent and self-determining. But in what quarters are such conceptions of matter now held, and does Professor Haldane consider it vicious to embody among our conceptions of the living organism the conceptions of matter that are current among physicists—Planck, for example—to-day?

The majority of biologists and physiologists appear to devote themselves to the discovery of the behaviour of the living organism in all its aspects, believing, apparently, that the picture of life can only so be painted. Philosophy, on the other hand, appears to consider that it has some special means and powers of discovery above and beyond those of the "working class." What *are* these special powers, and what *is* this philosophy which claims them?—I am, etc.,

Liverpool, Oct. 26th. K. W. MONSARRAT.

VACCINATION AND ECONOMY

SIR,—With all respect I cannot quite agree with Dr. Haldin-Davis as to the small-pox lately prevalent in the country being of the mildest possible variety. I have had 766 cases under my care since March, 1928, at the Orsett Joint Hospital, and although the great majority were trivial, we had at least forty severe cases, including several confluent ones, which, however, fortunately recovered. In 1920 we had a small epidemic of thirty-five cases, of which nine died. The cost of maintaining these cases in hospital must have exceeded the cost of vaccinating many thousands of people, and would have paid the salaries of a large number of public vaccinators. I was on the small-pox ships in the 1894 epidemic, when we had 800 deaths, and I believe a virulent case among an unvaccinated population might easily start another fatal epidemic such as occurred in this town in 1902.—I am, etc.,

Grays, Oct. 25th. S. G. FLOYD, M.D.

TREATMENT OF STREPTOCOCCAL INFECTIONS

SIR,—In common with most other medical men, I have in the past felt a certain helplessness in dealing with acute streptococcal infections. Streptococcal antiserums of the polyvalent variety have been, according to the experience of most practitioners, of little or no value. We have in the past regarded the action of an antiserum as being of value for one particular strain of organism only, and in the case of some serums, such as anti-diphtheritic, this is undoubtedly the correct view.

Recently, however, many men have been using anti-scarlatinal streptococcal serum for a variety of streptococcal lesions. In my own limited experience the results have been so encouraging that I feel justified in bringing this subject to the notice of your readers, in the hope that this serum may be given a more extensive trial. The conditions for which it has been used have in every case shown very definite improvement within forty-eight hours. In the space of a communication such as this I can do little more than enumerate the cases under my observation for which this serum has been used.

Streptococcal puerperal septicaemia, 3 cases.
Streptococcal broncho-pneumonia of influenzal type, 3 cases.
Acute post-influenzal otitis media with extensive cervical adenitis, 3 cases.
Streptococcal skin infections of the erysipelas type, 2 cases.
Acute streptococcal cellulitis with adenitis, 2 cases.

In one of the puerperal septicaemia cases in which the organism cultivated from the blood was a non-haemolytic streptococcus, the results were most dramatic. On admission to hospital the patient was delirious, and having rigors on an average of one every four hours. About forty hours after her first dose of serum her temperature dropped to a moderate figure and the rigors ceased. She became mentally rational, wanted her food, and had in every way improved. She continued to receive doses of serum at daily intervals, requiring in all ten doses of 300,000 units.

In one of the influenzal type pneumonia cases, which was in its third week of the disease when the serum was first given, the prognosis seemed hopeless. The patient's

general condition and temperature began to improve rapidly on the second day after the serum injection, and she made a rapid recovery.

All the other cases made rapid recoveries following employment of this serum, but these two are mentioned as those in which, in my opinion, no factor other than the serum could be responsible for recovery. I fully realize the danger of being carried away by one's enthusiasm *with regard to such a remedy as this, but I feel that it is* so very important that any weapon we possess for combating these grave lung and uterine streptococcal infections should be tried out on a larger scale. It is in the influenzal broncho-pneumonia and streptococcal puerperal cases that I am most anxious for a verdict on the effect of treatment with this serum.—I am, etc.,

Barnstaple, October 19th. S. C. SHAW.

ACHONDROPLASIA AND MENTAL DEFICIENCY

SIR,—As the literature I have read on achondroplasia states that achondroplasiacs are mentally bright, I think perhaps the following brief report may be of interest.

A girl, aged 8½, was referred from school regarding her mental condition, the teacher reporting that the child's attainments were only equal to those of a normal child of 5. The girl was an achondroplasiac, and she was also found to be feeble-minded, her speech being defective, her attention somewhat difficult to fix, and her mental age being about 5½ years as tested by the Stanford revision of the Binet-Simon tests.

The mother reported that the child had not started to talk until about 3½ years old. The only point of interest in the personal or family history was the fact that the mother was 50 years of age when the child was born. This suggests that there was perhaps a failure of the mother's reproductive powers affecting the child's development in two directions—mental and physical.—I am, etc.,

Salford, Oct. 15th. H. HEATHCOTE.

USES AND ABUSES OF VACCINES

SIR,—With reference to the article on the uses and abuses of vaccines by Dr. Braxton Hicks, in your issue of October 10th, I should like to corroborate his remarks.

I, and my father before me, have been preparing autogenous vaccines for well over twenty years, with excellent results in a number of conditions. For a very long time I have realized that there was no such thing as a calculable initial dose of vaccine for a given individual, and I adopted a system of *initial subminimal doses*, given at short but gradually increasing intervals, as is suggested by Dr. Braxton Hicks. My doses also increased in strength with the increasing interval, and I can testify that vaccines given by such methods rarely, if ever, cause reactions. The whole secret is to start with few enough organisms, and I often employ only about one-fifth, or even less, of the generally accepted dosage at the outset.

I am astounded by the frequency with which one hears of vaccines (prepared by men whose names are often well to the fore) which have produced serious reactions in the patients to whom the first dose was administered as directed. *There is absolutely no excuse for this.* The policy of *festina lente* produces results which are definitely better than those obtained from excessive initial dosage; moreover, reaction is almost unheard of if the careful procedure is adopted. Much harm has been done to vaccine therapy by these "*high explosive*" vaccines. A patient of one of my colleagues had been treated with vaccine for bronchial asthma at a great London hospital. He was so ill after each injection that the treatment was abandoned, but he was given the vaccine to take to his own private doctor. I was consulted in the matter, and I diluted the vaccine about five times, after which it was given to the patient without any subsequent reaction, but with most marked benefit. One could quote scores of similar instances.

May I, in conclusion, point out the fallacy of putting up autogenous vaccines in rubber-capped bottles, unless two or three different strengths are issued? One can hardly measure less than 0.1 c.cm. of vaccine in a syringe. Now if 0.1 c.cm. of such vaccine contains a *safe initial dose*, the final dose in any reasonable amount of fluid would be far too small. Conversely, if the final dose is to be strong enough, 0.1 c.cm. would contain a dangerous amount of antigen. Autogenous vaccines should always be issued as complete doses in sealed ampoules, preferably bearing numbers as the means of indicating the order in which the injections are to be given.—I am, etc.,

Camberwell, Oct. 22nd. GUY BOUSFIELD.

CO_2 INHALATION FOR ASPHYXIA

SIR,—The original research work of Professor Yandell Henderson of Yale University, which has proved the great value of inhalation of CO_2 in cases of asphyxia, will no doubt be the means of saving many lives. This method was employed empirically hundreds of years ago for the purpose of resuscitating the newborn infant. When the attendant midwife applied her lips to the infant's nostrils and forced CO_2 and oxygen into the lungs, one must suppose that tradition and experience had dictated this method of stimulating the respiratory function. Doubtless that crude method of supplying CO_2 and oxygen was often of service. It might now be used with more confidence in emergency. Eventually, no doubt, all doctors will possess the necessary apparatus for the scientific and accurate application of CO_2 and oxygen.—I am, etc.,

Tottenham, Oct. 21st. BERNARD ROWLANDS.

⁂ *Did not Elisha "lay upon the child, and put his mouth upon his mouth"? (II Kings, iv, 34.)*

Medico-Legal

MINERS' NYSTAGMUS: A QUESTION OF COMPENSATION

In the House of Lords, on October 19th, judgement was given in the appeal of Connor *v.* Cadzow Coal Company, Limited, from the Court of Session in Scotland.

The appellant, a miner who had been in the employment of the company, was, in the early part of 1928, disabled by miners' nystagmus. Liability was admitted, and compensation paid on the finding of total incapacity. Afterwards the appellant was certified fit for surface work, and was paid compensation on the footing of partial incapacity and in September, 1929, he was certified to have recovered from the attack and to be fit for ordinary work, whereupon the company ceased to pay compensation, and asked the arbitrator who had determined the case under the Workmen's Compensation Act to end the award of compensation as from that date. The appellant, in reply to this, made certain averments—namely, that he was not able to earn full wages and had not ceased to be incapacitated as a result of the attack, having failed, in consequence of his disability, to obtain employment and that it was admitted in the industry that a workman who had suffered from miners' nystagmus was even though certified as recovered, precluded from entering employment underground, so that his scope of employment and earning capacity had been diminished.

The Court of Session held that the arbitrator was bound to end the right to compensation on the date stated, on the

ground that the certificate of the medical referee indicated complete recovery On coming before the House of Lords, however, the case was remitted to ascertain whether the medical referee had intended to certify that the man had completely recovered in the sense that he was not, in consequence of the attack, more susceptible to the disease than before The referee replied that his certificate was not intended to bear that construction It was therefore agreed by the House of Lords that the certificate must be taken as meaning that the workman was now more susceptible to the disease than before the attack, and formal judgement was pronounced allowing the appeal against the Court of Session, and upholding the arbitrator in his refusal to end the right to compensation

Lord Buckmaster, in delivering the judgement, said that miners' nystagmus was a disease to which men working underground were liable in varying degrees of susceptibility Some appeared to be immune, others were not so fortunate, and fear of the unknown susceptibility had led mine-owners to require a statement as a condition precedent to employment that the man had not suffered from the illness If there was complete recovery after attack, any subsequent attack must be due to the original susceptibility, but if recovery was not complete a recurrence was more probable owing to the fact that the original conditions caused by the first attack had not entirely passed away The certificate in the present case, after further inquiry of the referee, had been found not to have the effect attributed to it by the Court of Session—namely as establishing complete recovery—and [illegible] occurs some in the question whether, after the ordinary symptoms disappeared, and recovery seemed to have taken place, 5 per cent might not still be the fact that exposure to the same conditions would cause the illness immediately to recur Intense judgement of their lordships the fact of complete recovery had not been established in the present case, and the appellant succeeded

[illegible]K, M

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

At a congregation held on October 23rd the following medical degrees were conferred

M D—G P Chandler, J T Irving, F G Spear, C E Kellett

M B, B Chir—O J C Cotton, D B McGavin, J H Richmond, C P K Toland, A S Hall, J. K Willson-Pepper, H. E W Roberton, T G Reith

M B—F G Winterton

B Chir—I C Stamp, D R Goodfellow

UNIVERSITY OF LONDON

Earl Beauchamp has resigned the Chancellorship of the University owing to ill-health

Dr R J V Pulvertaft, pathologist to St Thomas's Hospital and honorary pathologist at Egham Hospital, has been appointed to the University Readership in Pathology at Westminster Hospital Medical School

The title of Reader in Physiology has been conferred upon Mrs Nora Edkins, D Sc, in respect of the post held by her at Bedford College

UNIVERSITY OF EDINBURGH

At a graduation ceremony held on October 24th the following diplomas were granted

Diploma in Psychiatry—*W H Gillespie, M B, Ch B

D P H—*P C Datta, M B, Ch B, Jessie Griffin, M B, Ch B, L J Howie, M B, Ch B, D F Mackenzie, M B, Ch B, Margaret Isabel M'Kinlay, M B, Ch B, Jessie Crawford Broun Sym, M D, *B O Wilkin, M B, Ch B

** In absentia*

UNIVERSITY OF GLASGOW

At the graduation ceremony held on October 17th the degrees of M B, B Ch were conferred upon the successful candidates whose names were printed on October 17th, at page 729

R J Lumsden, as the most distinguished graduate in medicine for 1931, has been awarded the Brunton Memorial Prize

W H McNair Wilson has gained the West of Scotland R A M C Memorial Prize, awarded to the candidate with the highest aggregate marks in medicine, surgery, and midwifery in the final examination for the degrees of M B, B Ch, held during 1931

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The annual meeting of the Royal College of Physicians of Ireland was held on the morrow of St Luke's Day, October 19th

Dr T. Gillman Moorhead was re elected President and Dr W J Dargan Vice-President

The following were re-elected censors for the coming year medicine, Dr Geoffrey Harvey and Dr Marshall medical jurisprudence and hygiene, Dr. Dargan, midwifery Dr FitzGibbon

The following officers were re elected representative on the General Medical Council, Sir John Moore, treasurer, Dr H Bewley, registrar, Dr Kirkpatrick, librarian Mr R Phelps

The following were elected representatives on the committee of management under the conjoint examination scheme Sir John Moore, Dr Kirkpatrick, and Dr Winter

The following were elected Fellows Drs U. P Basu C C Coghlan, D Moriarty, R H J M Corbet, G S Smith, and H F Moore

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

The following out of ninety eight entries having passed the requisite examinations have been admitted Fellows

R L Beveridge, R E Bridge, F. A Brockenshire, J Brown, A L Bryant, G G Campbell, E C Chitty, J Crowther A Dickson, I G D Souza, G B Flint, G Griffith, J G Harrower, A W S Hay, H B Hough, C A Hutchinson G V Jeakins, H A Kidd, E W Kyle, R B McClure, W McIlmoyle J A McLaughlan, G H Marshall, D'A H Moir, R E M Picker, R W Scanlon, R Shanker, A D Smith, A G Sweetapple, G G C Taylor, V J M Taylor, M B Thakore, J Vaughan Bradley, A W McC White

The Services

Major F M Collins, M B, F R C S, R A M C, has been appointed surgeon to the Viceroy of India

DEATHS IN THE SERVICES

Major General Lawrence Humphry, C B, C M G, late of the R A M C, and of Stede Court, Biddenden Kent, died at Quetta on October 5th, aged 56 He was born on August 30th, 1875, the son of Mr F A Humphry, was educated at Guy's, and took the M R C S and L R C P Lond in 1899 Entering the R A M C as lieutenant on January 28th, 1899 he became lieutenant colonel in the long war promotion list of March 1st, 1915, brevet colonel on June 3rd 1919 colonel in 1924, and major general on December 20th, 1927, when he was appointed D D M S of the Western Command in India with headquarters at Quetta He served in South Africa for three years 1899-1902, taking part in operations in the Orange River Colony and in Cape Colony, and received the Queen's medal and King's medal, with two clasps to each He also served throughout the war of 1914-18, when from 1917 to 1919 he was A D M S of the 40th Division in France was mentioned in dispatches three times, in the *London Gazette* of November 5th, 1915, July 13th, 1916, and May 25th 1918, and received the C M G in 1916, and a brevet colonelcy in 1919 On November 24th, 1927, he was appointed an honorary surgeon to the Viceroy, and received the C B on January 1st 1931 In 1908 he married Phyllis, daughter of Dr Wat[illegible] Griffin of Crowborough

Surgeon Captain Ramsey Martyn Richards, R N (ret.) of Betworth, Exmouth, died after an operation on September 4th, aged 56 He took the M R C S and L R C P Lond in 1898, entered the Navy soon after, attained the rank of surgeon commander on May 13th, 1912 and retired with an honorary step of rank on October 15th 1924 He served throughout the war of *1914-18*

Surgeon Lieutenant Harry Lee Duncan R N, was drowned at Kinkiang, on the Yangtzekiang River, on September 8th He was educated at Aberdeen, where he took the M B, Ch B in 1922, and entered the Navy on July 2nd 1923 He served for some time in the Mediterranean on H M S *Iron Duke* an aircraft carrier, but at the time of his death was serving on the gunboat *Mantis*

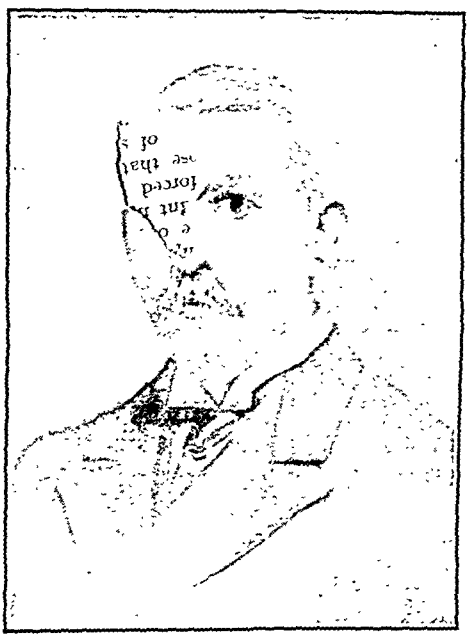
Obituary

SIR MARRIOTT COOKE, K.B.E., M.B.

Late Commissioner of the Board of Control

Sir Marriott Cooke, whose death in his eightieth year took place at his home in London on October 17th, constituted a link between mid-Victorian psychiatry and all that the Mental Treatment Act stands for in our time.

The elder of the two children of Henry Edward Cooke of Harrow, Edward Marriott Cooke was born in 1852. Educated privately at Southampton and at Highgate School, he matriculated in 1869 at the University of London, entered in the same year upon his medical curriculum at King's College, and completed his clinical studies at King's College Hospital. During his undergraduate years he resided in college, the benefit of which he in later life always extolled. Before leaving college he held the post of assistant demonstrator in anatomy. Cooke did not enter the medical profession with any preconceived idea of devoting himself to psychiatry; indeed, so soon as his thoughts began to direct themselves as to the line, general practice or one of the special branches of the profession, which he would like to pursue, it was towards obstetrics and gynaecology that he felt attracted. Whether this attraction grew out of the duties attached to the post of assistant house-accoucheur and of resident accoucheur, which he held at King's College Hospital, cannot now be determined. Upon his own testimony it is, however, certain that when he obtained the post of junior assistant medical officer at the Worcester County and City Mental Hospital at Powick, it was avowedly with the object, while gaining useful experience, of doing some hard reading and of proceeding to some of the higher professional qualifications. He had already passed his primary F.R.C.S. examination, and, having obtained the M.R.C.S. in 1874, he was due to sit for his Final M.B. examination; this he passed in 1877. In those days there was a separate examination for the B.S.; but neither to this degree nor to any further examinations did Cooke ever proceed. Professional or scientific reading was not the relaxation to him which it is to some persons. Not that his practical rather than scientific bent of mind implied any failure to keep in touch with medical progress; on the contrary, he was a regular reader of medical journals, and later on in professional life, although he did not himself prosecute laboratory or other allied work, he gave full scope and encouragement to his junior colleagues, and felt a right pride in any attainments they made in those directions. Probably from this side of his character may be explained the fact that, so far as contributions to medical literature were concerned, writing of that nature was always an effort to him, and that his only contribution to any medical journal was a paper read at the quarterly meeting of the Royal Medico-Psychological Association held at Powick in 1895, and entitled "A review of the last twenty years at the Worcester County and City Lunatic Asylum, with some conclusions derived therefrom." Four years previously, upon his election as president of the Worcester and Hereford Branch of the British Medical Association, he delivered an address on "Some points connected with the causation of mental disease." On the other hand, his official writings, whether reports to visiting committees of mental hospitals, or entries, reports, and minutes arising out of his work later on as a Commissioner, are all remarkable for their lucidity, logical coherence, nicety in choice of words and phrasing, for their exact adherence to fact with an absence of anything savouring of exaggeration, and for the feeling always conveyed in them that the matter in question had been the subject of careful deliberation. Nor, when some recommendation seemed called for, did they ever fail to make quite clear what opinion he had formed and what was the advice which he tendered. Moreover, once this position had been attained there would be no receding from it.



On joining at Powick, Cooke had as his chief Dr. James Sherlock, a man of high medical attainments and of peculiarly suave, courtly, and attractive manner. He it was who, in 1858, had proposed as president of the Medico-Psychological Association for the ensuing year the name of Sir Charles Hastings of Worcester, whose foundation of the British Medical Association is, in part, to be celebrated next year by a pilgrimage to Worcester. Very swiftly Cooke's interest was aroused in the treatment of mental disorders, in the welfare of the insane, and the need of vigilance for their protection—an interest that deepened throughout his life. He not less swiftly recognized, however, that there was room for improvements, among the earliest of which he had in mind being the better supervision of the patients by night. Shortly after he had become the senior of the two assistants, and after he had decided to devote himself to mental hospital work, serious illness befell his chief. Not only did he find himself called upon to act as superintendent for a period of several months, but it also devolved upon him to visit, on behalf of the committee, a number of mental hospitals in order to collect information and to frame a report for its consideration. Despite his short experience, Cooke acquitted himself well; he won high credit both for his management of the institution and for his grip of its future necessities. His outstanding capacity was acknowledged, added to which he possessed good looks and a commanding presence. In 1877 he became superintendent at the Wilts County Mental Hospital, Devizes. In 1881 Dr. Sherlock died suddenly, and Cooke was unanimously appointed to succeed him as medical officer and superintendent at Powick Mental Hospital. For the ensuing seventeen years, with single mind and no thought of still further promotion, the whole of Cooke's energies were devoted to the administration of his hospital and to the welfare of its patients and staff. Throughout these years at Powick he was busily engaged in thinking out and in effecting improvements in his hospital; also in tasks connected with the necessity of its enlargement, as the

result of which its accommodation rose from 770 beds at the time he rejoined as superintendent in 1881 to 1,100 at the time of his appointment, in 1898, as Commissioner in Lunacy. He had a strong conviction of the value of occupation, and claimed that fully 70 per cent. of his patients were usefully employed in one way or another. It was often Cooke's lament, later on as a Commissioner, that in these matters of occupation, of amenities and comforts in the wards, of amusements, of the maintenance of a good band and a well-trained choir, many mental hospitals are not so enthusiastic as they once were. At the end of sixteen years as superintendent at Powick Cooke's strenuous efforts on behalf of his hospital and its patients, and the resultant high standard of efficiency, were rewarded. The Committee of Visitors, upon their own initiative, decided to add £300 a year to his salary, and passed a resolution in which they added a rider to the effect that they wished thus to testify that, in their opinion, they possessed a superintendent second to none in the Kingdom. As this signal mark of favour was publicly announced, it cannot have occasioned surprise when the post of Commissioner in Lunacy, vacant early in 1898 by the death of Dr. J. A. Wallis, was offered to Dr. Cooke.

It is less easy to indicate Cooke's work and views as a Commissioner than as a superintendent, because so much of it all, in his case, is innominate and merged in the Board's corporate activities. Cooke was not an innovator: he preferred to abide by the well-tried measures and arrangements upon which his matured experience had taught him to rely. He was, however, immediately interested in any new suggestion which might advance the treatment of mental disorder, and, if often enough benevolently sceptical as to its ultimate value, he was always ready to encourage its trial. In April, 1914, along with the other members of the Lunacy Commission, he became a Commissioner of the Board of Control, under the provisions of the Mental Deficiency Act of the previous year. Then came the war and the Board's initiation of "The Asylum War-Hospital Scheme," to carry which into effect, and, with the help of the local authorities, to develop it, Cooke's whole-time services, along with those of one of his colleagues, were lent to the War Office from March, 1915, to November, 1916. Under this scheme, twenty-four well-equipped war hospitals, providing over 31,000 beds, were arranged; and there were treated in these hospitals some 480,000 cases. For a man aged 63, Cooke's enthusiasm and energy in connexion with this scheme were remarkable, as were his resourcefulness and fertility of suggestion. From November, 1916, to July, 1918, Cooke acted as chairman of the Board of Control; during the time the then chairman, Sir William Byrne, served as Under Secretary to the Lord Lieutenant of Ireland.

It was in 1918 that, for his war services, as well as for forty-three years spent in the service of the public and as a Commissioner, he was created a K.B.E. Sir Marriott Cooke resigned in August, 1921, and on the following day the King appointed him an Honorary Commissioner. He continued regularly to attend meetings of the Board, as well as to pay occasional official visits, up to the coming into operation, on January 1st, 1931, of the Mental Treatment Act, under which authority for the appointment of honorary members of the Board ceased to exist. In that month his colleagues entertained him to dinner in order to mark both the affectionate esteem in which they had held him, and their sense of his devotion to the cause of those suffering from mental disorder, during his long period of public service, which had extended to fifty-six years.

H. B.

THE LATE DR. MANWARING-WHITE

A correspondent in Lancashire writes: With your permission I would add a few words to the obituary notice of the late Dr. R. Manwaring-White, published in the *Journal* of October 24th. He was one of those men whom one can hardly imagine outside the ranks of the medical profession, so fitted he was by temperament and character for the services which the public needs in illhealth. He had the type of mind that is satisfied by nothing less than an exact diagnosis, and his surgical work, which was his chief interest, was technically skilful, and always careful and judicious. Above all, he was devoted to the needs of his patients, and his real pleasure in life was that of fulfilling those needs. Reference is made in your notice to his critical attitude in matters of medical politics, and I think that the remark is a true one, but in the twenty-five years I knew him I never heard him criticize adversely the conduct of an individual. He was a man of definite opinions, but his charity and patience seemed to his friends inexhaustible, and this, I think, was the chief characteristic of his work and life.

The death of Mrs. MARGARET LAMONT (née Margaret Traill Christie) at Port Said last August, following an operation for acute appendicitis, brought to an end a life of very varied experience. After a brilliant student career at Bedford College and the London (Royal Free Hospital) School of Medicine for Women she graduated M.B., B.S. of the University of London in 1895. In the following year she went to India on special plague duty, and later took charge of the Dufferin Hospital at Calcutta; it was while there that she married and was received into the Roman Catholic Church. She obtained the M.D.Lond. degree in 1897, and also the Cambridge D.P.H. After some wanderings Dr. Lamont settled in Shanghai, and recently her home was in Durban, where her two married daughters now reside. The subject of medical missions always occupied the chief place in her interests, and it was when travelling for this cause that she was overtaken by her last illness.

Medical News

The twelfth Maudsley Lecture will be delivered before the Royal Medico-Psychological Association by Sir Hubert Bond in the Great Hall of the British Medical Association House, Tavistock Square, on Tuesday, November 24th, at 3 p.m. Psychiatrists and other medical practitioners, psychologists, and members of the legal profession, teachers and students, and all interested in mental welfare are cordially invited. Admission without ticket.

The annual dinner of past and present students of the Leeds School of Medicine will be held in the Hotel Metropole, Leeds, on Thursday, November 12th, at 6.30 for 7 o'clock, under the presidency of Dr. G. B. Hillman.

At the meeting of the Pharmaceutical Society of Great Britain, to be held at 17, Bloomsbury Square, W.C., on Tuesday, November 10th, an address will be given by Sir William Willcox on "The practical relationship of bacteriology to pharmacy, and its influence on the curriculum." The president will take the chair at 8.30 p.m.

At the meeting of the Medical Society of Individual Psychology to be held on November 12th Dr. Yates Pearson will speak on individual psychology of [illegible]. On December 10th Dr. F. G. Crookshank will [illegible] physical findings in psychological neurosis. The annual dinner of the society has been arranged for January [illegible], 1932, and further meetings will be held at 11, Chandos Street, W., on the second Thursday of each month [illegible] July.

A meeting of the Metropolitan Branch of the Society of Medical Officers of Health will be held at Milborne St. Andrew, Blandford, Dorset, on Thursday, November 5th, at 12.30 p.m., when the Bladen Dairies will be inspected, at the invitation of Sir Ernest Debenham.

At a meeting of the Royal Sanitary Institute to be held at 90, Buckingham Palace Road, S.W., on Tuesday, November 10th, at 6 p.m., a discussion on "The London County Council Drainage By-laws" will be opened by Dr. William Butler, Medical Officer, General Purposes, London County Council.

The Fellowship of Medicine and Post-Graduate Medical Association announces that the following special courses will begin on November 2nd: proctology at Gordon Hospital for one week, with afternoon clinics (fee £1 1s.); medicine, surgery, and gynaecology at the Royal Waterloo Hospital for three weeks, with morning and afternoon work (fee £3 3s.); neurology at the West End Hospital for Nervous Diseases for four weeks, daily at 5 p.m. (fee £2 2s.). Special courses to the end of the year are as follows: ophthalmology at the Royal Westminster Ophthalmic Hospital, November 9th to 28th, occupying every afternoon (fee £4 4s.); diseases of the chest, at the City of London Hospital, Victoria Park, from November 16th to 28th, morning and afternoon clinics (fee £2 2s.); venereal diseases at the London Lock Hospital, every afternoon and evening, November 16th to December 12th (fee £2 2s.); diseases of infants at the Infants Hospital, every afternoon, November 30th to December 12th (fee £3 3s.); proctology at St. Mark's Hospital, November 23rd to 28th, all day (fee £3 3s.); dermatology at the Blackfriars Skin Hospital, afternoons, November 30th to December 12th (fee £1 1s.). M.R.C.P. evening lectures are as follows: November 9th and 11th, Dr. Maurice Cassidy, "Prognosis in heart disease"; November 16th, Dr. Roodhouse Gloyne, "The clinical pathology of tuberculosis"; November 18th and 23rd, Dr. W. J. Adie, "Diseases of the nervous system." These lectures will be given at 8.30 p.m. at 11, Chandos Street, Cavendish Square. In connexion with this course Dr. Knyvett Gordon will give two lecture-demonstrations, "Anaemia" and "Leukaemia," at 10, Bedford Square, at 8.30 p.m., on November 25th and 27th. (Fee for each lecture, 10s. 6d., payable to the Fellowship in advance or at the lecture room.) A free lecture on "Gastric and duodenal ulcer" will be given by Lord Moynihan on November 11th, at 4 p.m., at 11, Chandos Street. Other lectures of this series will be given by Sir Henry Gauvain, Mr Tudor Edwards, and Mr. Cecil Joll. Copies of syllabuses of all courses, lectures, and demonstrations may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The next election to the Grocers' Company Research Scholarships, awarded with the object of encouraging original research in sanitary science, will take place in May, 1932. They are of the value of £300 each, with an allowance to meet the cost of apparatus and other expenses in connexion with the work. The award is for one year, but renewable for a second or third year. Forms of application and further information can be obtained from the clerk to the Grocers' Company, Grocers' Hall, London, E.C.2.

The sixth annual congress of French-speaking psychoanalysts is being held in Paris on October 30th and 31st. The papers include one by Dr. G. Parchemeney on the hysteria of conversion, and another by Mme Jouve-Reverchon on hysteria from the psychiatric standpoint.

The eighth Voyage Médical International on the Riviera, organized by the Société Médicale du Littoral Méditerranéen, will take place from December 26th to January 9th, under the presidency of Professor V. Balthazard, dovon of the Faculty of Medicine of Paris, and under the leadership of Professors Laignel-Lavastine and Emile Duhot. The principal places to be visited are Marseilles, Aix-en-Provence, Hyères, St. Raphael, Cannes, Juan-les Pins, Nice, Menton, Monaco, Monte Carlo, San Remo. Further information may be had from the Federation of the Health Resorts of France, Tavistock House (North), Tavistock Square, W.C.1.

The dedication stone of the new Freemasons' Hospital and Nursing Home at Ravenscourt Park, London, W., will be laid next year by the Duke of Connaught, Grand Master of English Freemasons. The new hospital, to replace the present building in Fulham Road, will have 180 beds. A medical consultative committee, with Sir D'Arcy Power as chairman, has been appointed to advise the trustees on matters relating to equipment.

The twenty-second annual exhibition of electrical, optical, and other physical apparatus is to be held by the Physical Society and the Optical Society on January 5th, 6th, and 7th, 1932, at the Imperial College of Science and Technology, South Kensington. As on previous occasions, there will be a trade section and a research and experimental section. The section for the work of apprentices and learners is to be continued.

A congress for the study of traumatism in the mining industry was held at Stalino (Ukraine) on October 21st, when the following subjects, among others, were discussed: (1) traumatism and national economy, (2) statistics of industrial accidents; (3) the human factor in traumatism, (4) the role of subterranean medical posts in the campaign against traumatism, (5) organization of medical help, (6) sanitary instruction.

Sir William Henry Goschen has been appointed chairman of the committee of the London Hospital in succession to the late Viscount Knutsford.

The League of Nations has accepted the proposal of the Brazilian Government to erect, at Rio de Janeiro, an international institution for the investigation of leprosy.

Letters, Notes, and Answers

All communications in regard to editorial matters should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS intended for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish to receive to be taken of their communications should authenticate them with their names not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal* should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology, Westcent, London*.
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London*.
MEDICAL SECRETARY, *Mediscera Westcent, London*.

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*, telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*, telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Cervical Adenomata

"CURTIS VERA" would be glad to know of any treatment for multiple soft adenomata with slight pigmentation at the base of the neck and shoulders. The condition is of long standing, and may have been caused by a former mild but chronic seborrhoea of the scalp.

Alopecia Areata

"AREA" writes: I have a case of alopecia areata in a girl of 14 about which I would like to have your opinion. It has existed for some years and was treated in 1928 at a department of the neighbouring general hospital. The lotion prescribed was the usual [illegible] and has done no good. The top of the head is [illegible] for a tuft like a Chinaman's queue. The [illegible] and in the front is quite thick.

Persistent Mild Pyrexia

Dr. Thos. McCulloch (Cambuslang) writes: I wonder if any reader can throw light on a question which is causing me a little anxiety—namely, Can the normal body temperature be higher than 98.6° F.? What prompts this query is the fact that I have under my care a little girl whose temperature has only on one or two occasions since July been lower than 98.6° F. The condition causing the pyrexia at that time was a mild attack of tonsillitis accompanied by slight enlargement of the tonsillar gland on one side. This cleared up in a few days, but the child's mother took the temperature regularly for several weeks afterwards, and found it to be raised on every occasion. The average daily readings are 98.6° in the morning and 98.8° to 99° in the evening. I have examined the child very carefully for lung conditions, etc., but am quite unable to discover any cause. She is aged 7, goes to school every day, and behaves and plays about like any healthy young animal. I shall be glad to know of anyone having met with a similar case.

Catarrh of Upper Respiratory Tract

Dr. B. M. Sayth (Srinagar, Kashmir) writes: In the *Journal* of June 13th "S. S." inquires about catarrh of the upper respiratory tract. I myself have been a sufferer from this complaint for many years, when compelled to live under certain climatic conditions, such as the dust of the Punjab or the smoke and fogs of large English cities. I have tried every sort of palliative remedy, and have found relief on two occasions only. One was when I had protein shock (intravenous T.A.B.). On this occasion the catarrh stopped immediately and completely for some weeks, and then returned gradually. I should have repeated the treatment but for the fact that my reaction was so severe as to be dangerous. The other thing that has relieved it has been exposure to radiant heat, and also the high-frequency "radio" current. On two occasions a severe attack has been completely stopped within two days with this treatment.

Income Tax

"G. P." has lodged his declaration of income, computing his assessable income for 1931-32 on the amount of his earnings for the year ended March 31st, 1931. Owing to ill-health he has recently had to employ an assistant for some months, and may have to continue doing so for some time. Can he claim any adjustment in view of the consequent drop in his net earnings?

*** No; unfortunately such circumstances do not justify a departure from the previous year's basis, though it could have been arranged otherwise if "G. P." had taken a partner instead of an assistant into the practice.

Housekeeper Allowance

"M. N." asks for further information with regard to this allowance.

*** The deduction (of £50) is given to a widower or widow whether there are children to be cared for or not, and to unmarried persons who have a female relative acting as housekeeper where the person making the claim has the care of a brother or sister. Hence it does not apply to the quite common case of a bachelor employing a housekeeper for his own comfort and not directly or indirectly for the care of a brother or sister.

LETTERS, NOTES, ETC.

The "Electrick" Piano Trick

Dr. A. B. Dunne (Doncaster) writes: Some few weeks ago I received a ticket for a lottery organized by the *Revista Internacional Medical*, addressed to me from Calle Mayor, 49, Villanueva y Geltrú, and bearing the Barcelona postmark. I am, I fear, a very careless fellow, and threw it into the wastepaper basket, and thought no more about it. However, that was not the end of the matter, for this week I received the gratifying and (certainly on my part) wholly unexpected news from the firm that the ticket which I had so lightheartedly thrown away, without even making a note of its number, had drawn the second prize—"an electrick piano." My joy at this windfall, however, was tempered by the fact that I have already in my house a pianola, a wireless set, and my daughter's gramophone, and as my house is not connected with the electric company's main I have no use for this valuable instrument, which will be shipped to London and forwarded free of cost to any address in England, etc. As I have no use for this instrument I shall be glad to let any hospital or other institution have it; but before they can become the fortunate possessors, there is one little matter to be attended to. It appears that, under the conditions governing the lottery, subscribers to the journal can alone receive a prize. I, unfortunately, have hitherto not been a subscriber, and so, prior to shipping the "electrick" piano to London, they ask me to forward a remittance of £2 10s. 3d. as soon as possible "in mandat or order de post or cheque, addressed to our director, Mr. Vicente Peris, Calle Mayor 49, Villanueva y Geltrú." Needless to say, I have not done so. This enterprise of the *Revista Internacional Medical*, I think, Mr. Editor, is well worth the consideration of your colleagues of the British medical press, and might be a further inducement to subscribe to their periodicals. Free insurance policies are poor stuff in comparison. Have any of your readers been lucky, along with me, in winning the "electrick" piano?

*** Several other medical men in the North of England inform us that they also have won the "electrick" piano, and in each case the number of the ticket that won the prize was 7890! We are glad to know that none of them has parted with £2 10s. 3d., and we hope that every prize winner has been equally incredulous.

The Post-Influenzal Cough

Dr. K. R. Dalal (health officer, Corporation of Rangoon) writes: Every practising physician will have read with great interest the very useful contribution made to our knowledge of this distressing trouble by Dr. G. Richardson in the *Journal* of April 18th. These persistent paroxysms of irritating cough, mostly coming on when lying down in bed at night, and whenever exposed to cold air or draught following an attack of influenza, once started are very hard to control, and bear a close resemblance to fits of whooping-cough. As stated by Dr. Richardson, most of us will agree that the treatment of this distressing sequel is most disappointing. However, I should like to bring to the notice of the medical profession one drug that I have found most useful in this condition in the few cases in which I have tried it. This is a synthetic drug called "acedicon," prepared by C. H. Boehringer Sohn of Hamburg in tablet form, containing 1/13 grain in each. For adults, half to one tablet may be given as required. I am indebted to Professor W. Griesbach of Hamburg University for bringing it to my knowledge during his tour of the Eastern countries last year.

Urobilinogen

Dr. Sheffield Neave (Huntly) writes: In reference to Dr. Chalmers's letter (October 24th, p. 780), I, too, have been making this test on various cases of illness, although being on a holiday, I have not access to my notes for particulars. I may say there is a point which lessens the importance of this finding—namely, that it is common to find the reaction disappear as the patient gets well. This is notably so in common constipation, which often gives a positive reaction.

Pseudo-Hermaphroditism

Messrs. J. B. Neal and R. Cox (King's College, London) write: In the interesting memorandum by Mr. G. S. Woodman on pseudo-hermaphroditism (October 24th, p. 750) we observe that there is no definite reference to secondary sexual characters, such as development of mammæ, hair, and hair, although the patient is referred to as [illegible]. The presence of female secondary characters seems improbable in the absence of ovaries, while the presence of a testis should predispose to masculine secondaries. We feel that it would be interesting to have further information about the type of secondary characters

Toxaemias of Pregnancy

Correction

The report of Professor F. J. Browne's address to the [illegible] Division on the toxaemias of pregnancy, published in last week's *Supplement*, contained an error which should be corrected without delay (page 235, bottom of column 2). Professor Browne did not recommend *hysterectomy* as a method of terminating pregnancy, which would be unjustifiable in any circumstances. He did recommend abdominal hysterotomy.

Vacancies

Notifications of offices vacant in universities, medical [illegible] and of vacant resident and other appointments at [illegible] will be found at pages 42, 43, 44, 45, 48, and 49 of the advertisement columns, and advertisements as to [illegible] ships, assistantships, and locumtenencies at pages [illegible]

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page [illegible]

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

Aortic Stenosis

385 I. A. CHRISTIAN (*Journ. Amer. Med. Assoc.*, July 18th, 1931, p. 158) states that there is a form of cardiac lesion, not infrequent, which is clinically so distinctive as to merit greater recognition than it usually receives. Its characteristics are: occurrence chiefly in males relatively late in life; slow progression with symptoms of decompensation appearing late, though not necessarily prolonged after their development; the presence of a systolic thrill and a harsh loud systolic thrill in the aortic area, with or without a diastolic murmur; often a characteristic pulse with a normal or decreased pulse pressure, enlargement of the heart, a history of rheumatism early in life, radiological demonstration of calcification in the region of the aortic valve; necropsy findings of stenosis of the aorta with calcified deposits in the cusps (the other valves not being organically abnormal); and great cardiac hypertrophy. The symptomatology is often curiously at variance with the pathological evidence of long duration, for these patients as a rule live a relatively short time after the symptoms develop. The physical signs are those of aortic stenosis with no aortic insufficiency or only a slight degree of it. The differential diagnosis between this condition and aortic arterio-sclerotic dilatation is difficult, but it is easily distinguished from syphilitic aortic insufficiency. Twenty-one such cases, with post-mortem confirmation, are reported.

Syphilitic Parotitis

386 C. CHARGIN and T. ROSENTHAL (*Arch. of Derm. and Syph.*, August 11th, 1931, p. 236), who record a personal case, and have collected 31 others from the literature in addition to those summarized by Gerber in 1913, state that syphilis of the parotid gland is a definite clinical entity; while not common, it is sufficiently frequent to warrant attention, especially since it may be mistaken for a tumour. It may occur early or late in the infection, and also in congenital syphilis. The early types run an acute course, and are bilateral as a rule, the later ones are usually more or less chronic and unilateral. The associated lymph glands are often swollen, when suppuration takes place, as it occasionally does, it is usually in these glands, and only exceptionally in the parotid itself. While the diagnosis of early syphilitic parotitis is easy, the parotitis of late syphilis may be difficult, since the condition has to be distinguished from a variety of tumours and granulomas.

The Pirquet Test

387 G. DE N. HOUGH, jun. (*New England Journ. of Med.*, August 27th, 1931, p. 437) gives the results of, and the conclusions drawn from, 1,000 consecutive von Pirquet tests carried out as a routine procedure on the same number of children suffering from orthopaedic diseases. The cases were classified in three groups: those clinically non-tuberculous, those clinically tuberculous, and those with proved tuberculosis. The combined results in the three groups showed that 817 were negative to both human and bovine tuberculin, while 101 were positive. In 63 only the test with the bovine preparation was positive, and in 19 only the human tuberculin was effective. In 29 positive cases, there was a marked difference in the intensity of the response; in 17 the bovine reaction was more intense, in 12 the human. In the clinically non-tuberculous, the human type caused a more intense reaction in 5, and the bovine in 2. In the clinically tuberculous patients the human type was more effective in 5, and the bovine in 12. In the proved tuberculous cases, the human type reaction was more marked in 2, and the bovine in 3. Hough emphasizes the importance of using both human and bovine tuberculin in von Pirquet reactions, since otherwise some cases will certainly be missed. If the assumption is justified that the skin reaction is specific for the type of organism, and that the cases showing variation are representative of the whole group, it can be inferred that in orthopaedic tuberculosis the bovine type of infection is approximately three times as common as the human.

Non-Venereal Prostatitis

388 W. T. BRIGGS (*Urol. and Cut. Rev.*, September 1931, p. 551) states that many do not realize that the prostate may be the seat of infection in patients who have never had a gonorrhoeal urethritis. He has found that almost anything that lowers the general or local resistance is of etiological moment, such as over-exertion, exposure to cold, drastic purgatives or constipation which disturb the bacterial balance in the intestinal tract, alcoholic excess, and acute infectious diseases such as small-pox, influenza, typhoid, and the exanthemata. Locally, trauma of any kind, whether instrumental, chemical or sexual, plays an important part. The organisms usually found in the smears or by culture are *B. coli*, diphtheroids, streptococci, staphylococci, and typhoid and paratyphoid bacilli. From a study of the literature and from his own experience Briggs concludes that 18 to 20 per cent. of all cases of prostatitis are of non-venereal origin. The diagnosis, however, often requires several examinations. The general symptoms consist of arthritis, neuralgia, myalgia, neurasthenia, and melancholia. The local symptoms vary, the most constant being urethral discharge, pollakiuria, and aching in the groins, testicles, or perineum. Erections are weak or absent, and there is premature ejaculation. Treatment consists in gentle prostatic massage and the passage of full-sized sounds, cold perineal douches, and intestinal hygiene.

Surgery

Treatment of Chronic Osteomyelitis

389 F. S. CHILD and E. F. ROBERTS (*New York State Journ. Med.*, August 1st, 1931, p. 937) give their experience of the Baer treatment with disinfected live maggots in nine cases of chronic osteomyelitis and one of tuberculous sinus. Baer introduced the treatment about three years ago, but the difficulty of producing disinfected maggots was only overcome in December, 1930. As a preliminary the diseased bone is freely opened with an osteotome, and all necrotic bone is excised. All sequestra having been removed, the wound is packed with sterile vaseline gauze, which is taken out 48 hours later, under gas anaesthesia. The maggots are hatched from fly eggs laid by the species *Phormia regina* and *Lucilia sericata*, the eggs are disinfected by washing in sterile distilled water, in sodium hypochlorite solution, and in 4 per cent. formaldehyde. The maggots are tested for sterility by inoculating duplicate sets of fermentation broth tubes for detecting aerobes, and deep meat tubes for anaerobes. Sterile maggots are gently scraped into the wound with a sterilized wooden spatula. They are enclosed by a cage cut out of 80-mesh brass screening cloth, which is held in place with strips of adhesive plaster, three are spaced to provide light, which draws the maggots deep into the wound, and to afford the air which is essential for their vitality. There is profuse discharge, which is permitted to drain through the screen. The maggots are left in the wound for five days, and are then washed out with normal saline solution, or removed with sterile forceps. After an interval of forty-eight hours there may be a further implantation. With the first application of

maggots the authors administer a prophylactic dose of tetanus antitoxin, since Baer reported tetanus in one of his early cases, with maggots which had not been disinfected. A mild sedative is at first necessary at night to allay the itching caused by the maggots. On the second, third, or fourth day the temperature rises to 102° or 103°, probably due to insufficient drainage; there is no purulent odour. Of the ten cases treated nine healed satisfactorily; one case of chronic osteomyelitis still requires further removal of necrotic bone. Eight to thirty implantations were required, the average being fifteen to eighteen. The time required to effect a cure has been eight weeks to six months. The authors consider this the most satisfactory method yet devised for the treatment of chronic osteomyelitis.

390 Prophylaxis of Post-Operative Pneumonia

A. I. Lourie and K. G. Podschibiakin (*La Gynécol.*, July, 1931, p. 391) report on the success of various steps they have taken to prevent post-operative pneumonia. Among general measures the use of purgatives and lavage of the digestive tract have been abolished. A large dose of sugar is given on the day of operation to raise the general body tone. Since the lungs take part in the general depression of physiological function caused by post-operative shock, an intramuscular injection of 1 c.cm. of ether with 1 c.cm. of camphorated oil is given at the end of all operations. The ether provokes an active hyperaemia of the lungs, facilitates expectoration, and by reinforcing alveolar peristalsis enhances the vital capacity of the lungs. In addition, carbon dioxide has been used to stimulate the respiratory centre, thus increasing the frequency and amplitude of the respirations. It was found possible and efficacious to prolong the effects of carbon dioxide administration by allowing the patient to breathe cold air during the recovery period. The body temperature was maintained by blankets and hot bottles, and the neck was well protected. When cold air from a large open window was inhaled by the patient, the respirations became forcible and remained so. Comparing the figures for the periods before and after prophylactic measures were in use, it was found that in 1925-6 among 186 laparotomies there were 27.4 per cent. pulmonary complications and 3.2 per cent. post-operative pneumonias. During the three years when injections of ether (1927), carbon dioxide (1928), and prolonged aspiration of cold air (1929) were used, among 214 laparotomies there were 18.4 per cent. post-operative pulmonary complications and 1.4 per cent. of pneumonia; in the year 1928-9 there was not one case of pneumonia.

391 Phrenicectomy

U. Bani (*Lotta contra la Tuberculosi*, June, 1931, p. 616) reports 368 cases of phrenicectomy for pulmonary tuberculosis performed by him between July 11th, 1924, and December 26th, 1930. In the majority of cases local anaesthesia only (1 per cent. novocain) was used. Of 242 patients, 214 were adults, of whom 143 were men and 71 women; 28 were children of both sexes. The youngest patient was aged 9 years and 4 months, and the oldest 53 years. The cases in adults were classified as follows: (1) 36 with an isolated pulmonary lesion with a single cavity; (2) 97 had fibro-caseous tuberculosis and little tendency to activity, of whom 51 had slight lesions in the opposite lung, while 46 were clinically unilateral; (3) 64 were ulcero-caseous forms with a tendency to activity, and almost all with lesions in the opposite lung. In 17 instances the operation was performed owing to the insistence of the medical practitioner or of the patient's friends in spite of the absence of indications; 165 cases had undergone artificial pneumothorax, which had subsequently been abandoned in 28. Artificial pneumothorax was continued after the phrenicectomy, and in 49 phrenicectomy was the primary operation. The best results were obtained in the first group; 18 patients who had been operated on more than two years previously were in an excellent state of health, and in the rest immediate improvement had ensued. The second group showed the next best results. Of 52 who had been operated on two years previously 19 showed a clinical cure, 21 considerable improvement, and 2[illegible] immediate improvement followed by a relapse. Of 8[illegible] patients in the third group who had been operated on two years previously, 11 showed considerable improvement, and 4 had obtained a clinical cure. No benefit was derived from the operation when no indications for it were present. Bani concludes that phrenicectomy is indicated in localized forms of pulmonary tuberculosis, forms with a tendency to fibrosis; and cases which show but little tendency to advance.

Therapeutics

392 Calcium Therapy

A. L. Lieberman (*Journ. Amer. Med. Assoc.*, July 4th, 1931, p. 15) records a study of the pharmacological effects of calcium lactate and gluconate. It was found that the effects of the first-named salt, though produced more quickly, lasted a shorter time, and the gluconate was chosen, therefore, as the most representative calcium salt. This compound can be given in repeated adequate doses without causing either irritation or necrosis. The most suitable adult dose appeared to be 3 to 4 grams, to avoid any irritation sequels, and to obtain more persistent results, this should be administered after meals. The blood calcium figure attains its maximum elevation within an hour after the subcutaneous or intramuscular administration of calcium, and within four hours after being given orally. Intravenous calcium therapy is dangerous because of the risk of sudden intravascular clotting and death. The urinary calcium figure is apparently a qualitative index of the blood calcium level. A urinary value of 10 to 20 mg. an hour appears to be most desirable in avoiding a hyper- or hypo-calcaemia. Highly suggestive digitalis-like effects (heart block, arrhythmias, and coupled beats) were noted; Lieb mann suggests that these necessitate further investigation.

393 Calcium Therapy in Dermatology

F. A. Diasio (*Med. Journ. and Record*, September 2nd, 1931, p. 237) considers that calcium gluconate has a definite value in the treatment of many of those dermatoses in which an actual or relative calcium deficiency is secondary to increased capillary permeability. Notes of cases of chronic urticaria are given in which the administration of calcium proved efficacious. The calcium salt of gluconic acid is tasteless, and fairly soluble; it is less irritating and toxic than other calcium salts, and has given very satisfactory results. The average dose of calcium gluconate is 60 grains every three hours during the day, its absorption being rapid if it is given between meals, and if it does not give rise to nausea. In acute conditions the oral administration may be supplemented by the intravenous injection of 10 to 20 c.cm. of a 10 per cent. solution as often as necessary; from 5 to 20 c.cm. may be given intramuscularly or subcutaneously to children, or to those who object to the acute local reaction following the introduction of this salt into the veins. Small doses are ineffective. Untoward results are said to be less frequent with the gluconate than with other calcium salts.

394 Scopolamine associated with Other Hypnotics

In the states of waking and sleeping two regions of the brain are particularly involved—the cortical, which is the seat of psychic activity, and the basilar, which contains the centres regulating sleep. In animals deprived of their cortex, certain hypnotics are inefficacious, while others retain their efficacy or are more active. Pick accordingly divides these drugs into two groups: cortical hypnotics such as chloral and chloralose, and basilar hypnotics. [illegible] include especially the barbituric derivatives. [illegible] Jeanne Lévy, and Mme P. Meyer-Oulié (*C. R. Soc. Biologie*, September 18th, 1931, p. 1522) record a series of experiments on the combination of scopolamine and chloralose, a cortical hypnotic, and with [illegible]

barbituric derivative and basilar hypnotic. Scopolamine was found to increase markedly the hypnotic effect of the former, but not that of the latter; on the contrary, it increased in intensity and duration the exciting effects of sonetyl. The authors consider that these results appear to justify Pick's distinction between cortical and basilar hypnotics.

Anaesthetics

395 Local Anaesthesia in Fracture Reduction

R. G. Carothers (*Journ. Amer. Med. Assoc.*, August 22nd, 1931, p. 517) emphasizes the distinction between fracture reduction procedures and such surgical operations as appendicectomy. In fracture cases no further trauma has to be caused; all that has to be done is a manipulation to restore the correct relationship of the injured parts, followed by the application of splints or plaster. If a 1 or 2 per cent. solution of procaine chloride is injected into the haematoma which is usually still present in recent fractures, pain is eliminated, muscle spasm disappears, and reduction is effected easily. Carothers remarks that in 270 cases he has seen no case of infection induced by this injection, which he has employed in all cases of fracture of the long bones; he has not tried it for fractures of the spine, head, pelvis, or ribs. After radiography the site of injection is selected and painted with iodine; with a fine needle a small wheal is made with procaine, and a larger needle with a fairly heavy shaft of the necessary length is then applied to the syringe. The needle is introduced through the wheal towards the fracture, and the operator feels round until he can easily withdraw blood into the syringe. He then injects 10 to 20 c.cm. of a 2 per cent. solution of procaine, the amount depending on the age of the patient and the size of the limb. If more than one fracture is present, each is anaesthetized similarly. After an interval of five minutes the patient is ready for manipulation. No preliminary preparations are required, and a skilled assistant is unnecessary. If the first attempt at reduction is seen radiographically to be unsatisfactory, the procedure can be repeated, for the procaine remains effective for about an hour and a half. In only two cases of the author's series was another form of anaesthesia necessary; one was an ankle fracture with complete dislocation of the astragalus upwards and backwards, and the other a case of fractured femur in which the needle probably entered a vein. Most of his patients received no pre-operative narcotic or sedative.

396 Limitations of Sodium Amytal Anaesthesia

Marie B. Kast (*Anesthesia and Analgesia*, July–August, 1931, p. 183), from an experience of 3,000 operations, concludes that the use of sodium amytal (sodium iso-amyl-ethyl-barbiturate) as a preliminary hypnotic, and as an aid to general anaesthesia, is very satisfactory, but should be limited to such use. When rapid sleep induction is desired, the intravenous method of administration is the best, but for more protracted induction satisfactory results are obtained by the oral, rectal, or intramuscular methods. In the first of these a dose of 3 grains of sodium amytal is given in a capsule at bedtime the previous night, followed in the morning an hour before the operation by a further one to three capsules, and by a hypodermic injection of morphine and atropine half an hour later. Amnesia is pronounced in a large proportion of patients. When employed in association with ether or chloroform inhalation there was a marked reduction in the amount of anaesthetic needed. Whether the effect is immediate by intravenous administration, or more delayed by the other methods, the recovery time is much the same, except when large doses have been given, or a cumulative effect has been produced by repeating the doses before the drug has been entirely eliminated. Larger doses are contraindicated in weak, asthenic, hypotension cases; in those cases of hypertension in which a too sudden drop in blood pressure might result in circulatory collapse; in diabetic cases not properly prepared with insulin; and in neck cases with marked infiltration and oedema of the tissues. Most satisfactory results were obtained in combination with nitrous oxide-oxygen anaesthesia for thyroid surgery and tonsillectomy.

397 Avertin

C. Coghlan (*Med. Journ. Australia*, June 20th, 1931, p. 737) advocates the use of avertin (tribromethylalcohol) in general surgery and obstetrics, and summarizes the British literature on the subject. The rectal administration of 0.1 gram per kilogram of body weight produces an anaesthesia sufficiently deep for minor operations; it can be supplemented by local or general anaesthesia for major work. Full anaesthesia can generally be obtained from 0.125 gram per kilogram, after a preliminary injection of morphine with the addition of 30 c.cm. of a 20 per cent. magnesium sulphate solution and 1 c.cm. of 3 per cent. narcophin. For obstetrical work 0.075 to 0.1 gram per kilogram is used, and repeated if necessary. Owing to the danger of decomposition into hydrobromic acid and dibromacetaldehyde (the latter being most irritating to mucous membranes and setting up inflammation) avertin must be tested before administration by the addition of two drops of a 1 in 1,000 solution of Congo red in distilled water, which in the presence of decomposition gives rise to a purple or blue colour. The rectal injection is made very slowly through a catheter inserted about 4 inches, with the patient lying on the side; in from three to five minutes a natural quiet sleep results, which is sufficiently deep to permit removal to the theatre for operation twenty to thirty minutes later. If the anaesthesia is very deep an airway should be established; should the depth of anaesthesia be insufficient, it can be deepened by the administration of a little ether. The drug has no deleterious action on the heart, kidneys, or liver, and produces only a moderate fall in blood pressure; the presence of amylene hydrate in the liquid preparation, as a respiratory stimulant, counteracts any slowing of the respiration.

Obstetrics and Gynaecology

398 Vaginal Cysts Obstructing Delivery

W. Spitzer (*Zentralbl. f. Gynäk.*, August 1st, 1931, p. 2348), who records an illustrative case, remarks that a cyst is one of the rarest tumours affecting the vagina; it is extremely uncommon for it to obstruct delivery. The only previous case of the kind was reported in 1912 by Fischer in a 3-para, aged 36, in whom a vaginal cyst weighing about 440 grams was removed during extraction by forceps; the subsequent delivery of the child was easy. Spitzer's patient was a primipara, aged 30, in whom the delivery of a child with a face presentation was delayed by a cyst in the right vaginal wall. The contents of the cyst were evacuated, and after injection of pituitary extract a living child was born. The cyst was subsequently removed without difficulty. Its localization and anatomical structure showed that it arose from Gärtner's duct.

399 Radiographical Diagnosis of Foetal Death

According to F. Szellő (*Arch. f. Gynäk.*, May 6th, 1931, p. 495) it is possible, with good technique, to decide by a radiographical examination whether the foetus is alive or dead in the uterus. Illustrative cases are recorded in which the *x*-ray diagnosis, whether of life or death, although conflicting with clinical findings was afterwards proved correct. The chief signs of foetal death are: (1) flattening of the cranial vault, most evident in the parietal region; (2) increased flexion of the vertical column; (3) Spalding's sign, which, though of great significance, becomes evident at a later stage than these; (4) diminution in the radius of curvature of the skull; (5) smallness of the long bones in comparison with the duration of pregnancy; and (6) dimness of the bony shadows as decalcification advances. The sign described

by Spalding in 1922 consists in an overriding of one cranial bone over another at the sutures, as of one tile over another in a roof. Szellö describes a case of foetal death in which this sign was detected as early as the fifth month. Spalding's sign, but in a less marked degree, may be given by the skull bones of the live foetus during compression due to labour pains; it is therefore only reliable before labour. Integrity of the amniotic sac is another essential.

400 Urinary Tract Infections during Pregnancy

H. L. Morris and L. J. Langlois (*Amer. Journ. Obstet. and Gynecol.*, August, 1931, p. 211) believe that the importance of urinary tract infections as a complication of pregnancy has not been sufficiently emphasized, and they record a study of 58 cases of such infections occurring during or after child-bearing. Of these patients 27 were primiparae and 31 multiparae; in 48 the complication was ante-partum, and in 10 post-partum. Infection, ureteral obstruction, hydronephrosis, and hydro-ureter occurred three times more often in the right kidney than in the left. *B. coli* was the usual cause of infection, and the predisposing factor was poor renal drainage associated with intestinal stasis. The onset of urinary symptoms, such as frequency of micturition and nocturia, usually occurred during the fourth month of pregnancy. Constipation was the most important gastro-intestinal symptom; among others were headache, vertigo, and blurring of the vision. Physiological variations in the vesical mucosa and contour began as early as the second month, and persisted until after delivery. Pyeloscopy was an important adjunct to pyelography. The authors remark that an early diagnosis is most important, since success in treatment depends on the early institution of appropriate measures. All foci of infection, including intestinal stasis, must be eradicated, and local and general treatment be given. Patients with renal ptosis were greatly benefited by wearing properly fitted abdominal supports.

Pathology

401 The Pathology of the Placenta

A. N. Morosovax (*La Gynécol.*, August, 1931, p. 452) reviews the functions of the placenta from the morphological point of view as respiratory, alimentary, and excretory. The resistance of the organ is low, and it readily submits to a variety of histological modifications. It represents a barrier between the foetal organism and the maternal organism, but endogenous and exogenous toxins can escape its normal filtering function, chief among which is the syphilitic infection. Normal modifications of the histological structure of the placenta are seen in 48 per cent. of cases in healthy women. In syphilis histological alterations are manifest in 96 per cent. of cases, but are only definitely characteristic in 27 per cent. Such alterations as small areas of necrosis, deposits of calcareous salts, and sclerosis of the villi and vessels; leucocytic infiltrations of the chorion, and often also of the cord, are frequently present. The relationship between the weight of the foetus and the weight of the placenta was studied in syphilitic and non-syphilitic cases. The conclusion reached was that although the weight coefficient was raised three times more frequently in the syphilitic than in the non-syphilitic, yet as a diagnostic sign it did not possess an absolute value, since the placental weight could be influenced by other causes. In the tuberculous mother this structure was found to be altered in 60 per cent. of the cases, the modifications being the presence of many calcified nodules, proliferation of the syncytium, and the appearance of a grosser stroma of the villi. Morosovax adds that although much information may be obtained from the histological examination of the placenta yet the variations may be so wide within normal limits that no diagnosis can be based on these appearances alone without due consideration being given to all other evidence.

402 Squamous Epithelium in the Corporeal Endometrium

M. Boschetti (*Ann. Ostet. e Ginecol.*, June 30th, 1931, p. 631) quotes from the literature some twenty cases in which nodules of pavement epithelium were discovered in the endometrium, either in curettings or in the ablated uterus; the subsequent history showed that the findings did not justify a diagnosis of carcinoma. In Boschetti's case a woman, aged 35, was curetted for six months' meno-metrorrhagia; one large fragment contained, in a hyperplastic area of endometrium, nodules of epithelium resembling structurally and tinctorially the deeper layers of pavement epithelium, and connected with the basal cells of the cylindrical epithelium of the endometrial glands. In the uterus, removed two months later, neither corporeal nor cervical endometrium contained pavement epithelium. Boschetti concludes that in rare cases hyperplastic endometrium of the corpus uteri may contain benign nodules of epidermatization. It is possible that in some instances these nodules are the precursors of carcinoma, but their significance is not so serious as von Franqué has recently maintained. In rare cases gonorrhoea, tuberculosis, or pyometra gives rise to stratification of the corporeal endometrium.

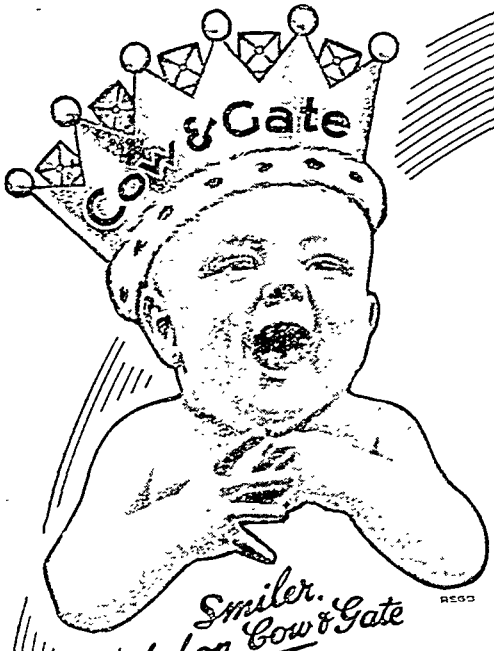
403 Toxic Properties of Staphylococcal Filtrates

The toxicity of sterile filtrates of haemolytic streptococci for the cells of the body has been demonstrated by their destructive action on leucocytes (the leucocidins), on erythrocytes (the haemotoxins), on the skin (the dermatoxins or necrotoxins), and by their quickly lethal effect when injected into rabbits (acute killing poison). Opinions differ as to whether these various effects are due to one or several distinct substances. Julia T. P. Weld and Anne Gunther (*Journ. Exper. Med.*, September 1st, 1931, p. 315) relate a series of experiments to determine this point. These investigations indicated that the filtrates have several toxic properties, most important being the haemotoxic, the necrotoxic, the leucocidic, and the property of killing rapidly. The necrotoxic action appeared to be caused by a constituent in the filtrates different from either the haemotoxic or leucocidic one. Further experiments to determine if the leucocytes selectively adsorbed one or more toxins from atoxic filtrate were inconclusive. As a general rule filtrates which were strong in one toxic activity were found to be potent as regards the others. One "acute killing" unit was equivalent to 25 haemotoxic and to 80–100 necrotoxic units. In filtrates with less haemotoxic strength this quantitative relationship did not hold good, however, and there appeared to be no definite proportional incidence of the leucocidins and any other toxic properties. No precise conclusions as to the unity or plurality of toxins were deducible.

404 An Ultra-virus Test in Tuberculosis

F. van Deinse (*Ann. de l'Inst. Pasteur*, August, 1931, p. 135) describes a method by which the presence of a tuberculosis ultra-virus can be rapidly demonstrated. His experimental findings accord with those of Valtis, Nègre, Saenz, and other investigators, and the virus can be demonstrated in guinea-pigs two to four days after intraperitoneal inoculation with the filtrate from young cultures of tubercle bacilli. The development of acid-resistant bacilli originating from the ultra-virus is greatly aided by the presence of pus in the peritoneum; this can be produced by injecting precipitating calcium phosphate into the peritoneal cavity one to two days before the injection of the filtrate. The bacilli, which are found in great numbers in the pus, come neither from the animal organism nor from bacilli that have passed through the bougies. By this method, it is claimed, a differential diagnosis can be made between the ultra-virus and the bacillary forms of tuberculosis virus. The former form gives rise to the characteristic masses of acid-resistant bacilli in the first three days after inoculation, while bacilli appear about the eighth day; virulent bacilli are in the peritoneal pus only about the tenth day, and are never grouped in masses.

A Doctor writes.





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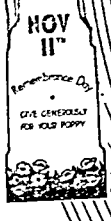
I have just become the father of a son and heir and I do not hesitate to assure you that should it at any time become necessary to resort to artificial feeding it is going to be Cow & Gate every time for my child.

At the same time, as a result of the wonderful progress my daughter made with your preparation, I need hardly assure you that I lose no opportunity of recommending your product to any of my patients who consult me as to the non-progress of their babies who are on the breast.

Assuring you of my thanks and wishing emphatically to point out that this letter is entirely unsolicited by you but given of my own initiative in return for the debt I owe you for the progress my child has made, and I hope you will use this letter to your advantage.

Yours very truly,

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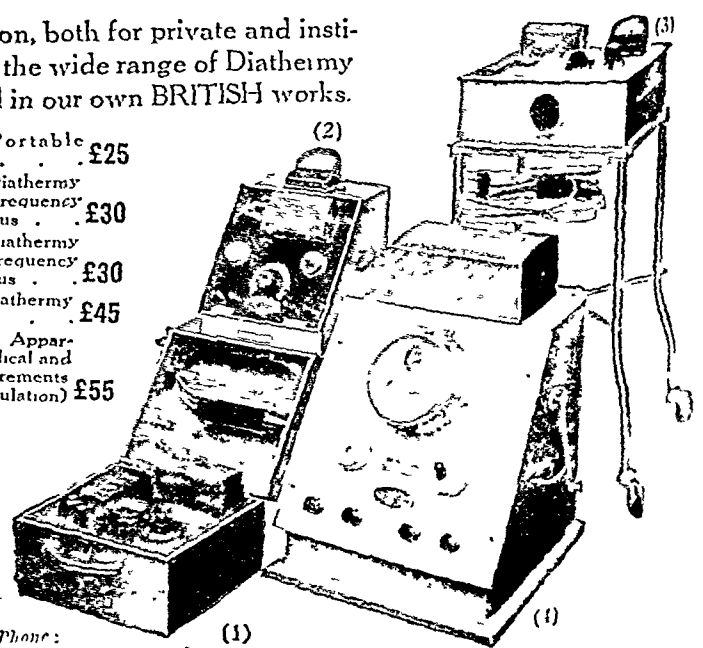
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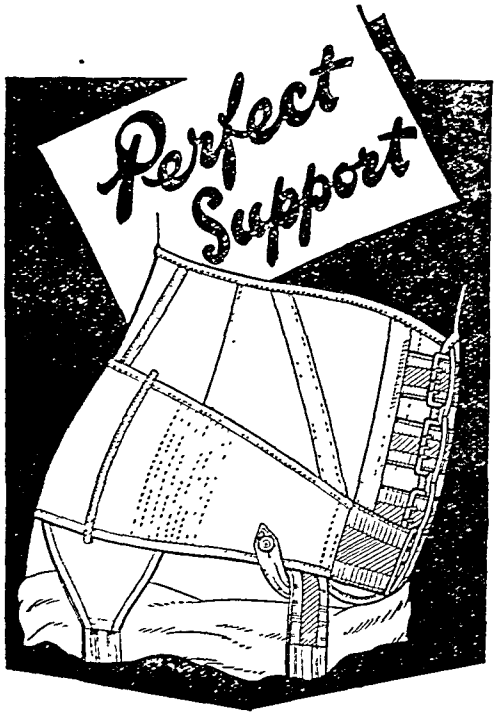
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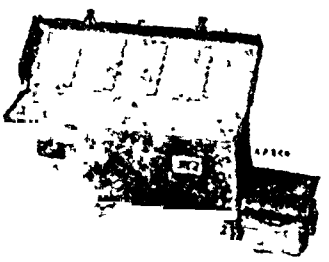
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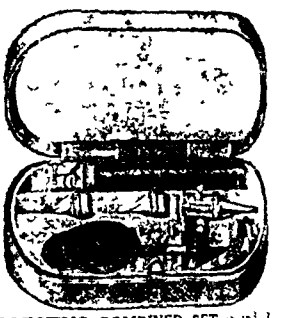
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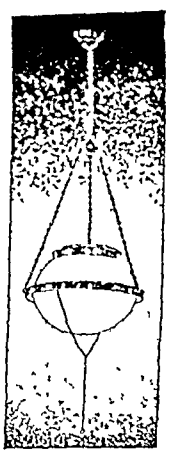
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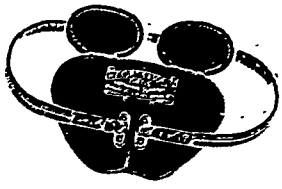
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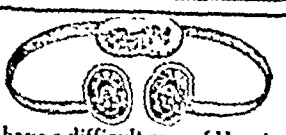
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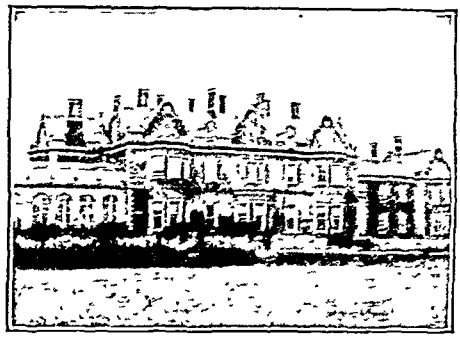
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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway Station and L. M. & S. Railway Station, Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

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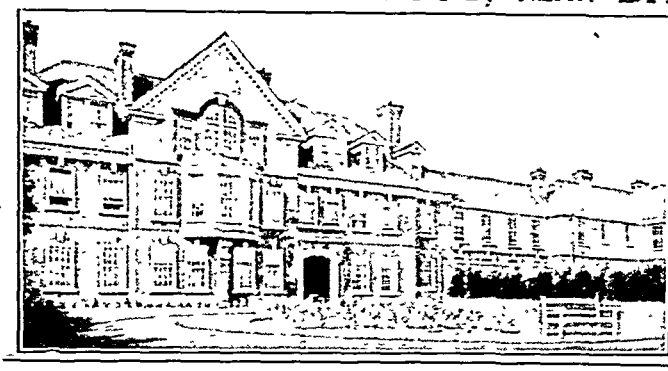
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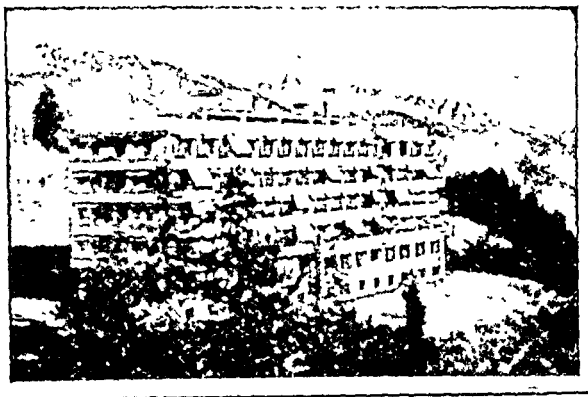
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University of [illegible]outh WALES AND MONMOUTHSHIRE.

COLEG PRIFATHROFAOL DEHEUDIR CYMRU A MYNWY.

Applications are invited for the appointment of FULL-TIME LECTURER & DEMONSTRATOR in ANATOMY.

The salary will be £500.

Further particulars may be obtained from the undersigned, by whom three copies of application must be received on or before Nov. 28th.

University College, Cardiff. D. J. A. BROWN, Registrar.

University of Lucknow.

Applications are invited for the post of PROFESSOR OF ANATOMY on a salary of Rs.1,450 *per mensem*, with effect from January 2nd, 1932. Period of probation one year. On confirmation, the selected candidate may be placed on a grade of Rs.1,450—50—1,650 (subject to any reduction of salary due to general retrenchment), and will be entitled to the benefits of the University Provident Fund (to which he will be required to subscribe 8 per cent. of his salary, the University contributing 8 per cent.). Private practice not allowed. Applications, stating age, special qualifications, teaching experience, research work published, and copies of three testimonials, should reach the Registrar, Lucknow University, Lucknow (India), on or before December 7th.

R. R. KHANNA, Registrar.

October 12th, 1931.
G.L.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM.

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay £E.660 or £E.720 per annum (according to age and qualifications), with five or six biennial increases to £E.1,080, and thence after three years to £E.1,200. These rates of pay as well as the conditions of service are subject to Government rules and regulations from time to time in force. (*£E.1 = £1 0s. 6d.*)

Applicants must be unmarried, and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience (with special reference to Pathology), and copies of testimonials, should be sent to the Director, Wellcome Tropical Research Laboratories, *Khartoum, Sudan.*

Further particulars regarding this post may be obtained on application to the Controller, Sudan Government, London Office, Wellington House, Buckingham Gate, London, S.W.1.

Royal College of Surgeons of EDINBURGH.

At the Annual Meeting of the College, held on October 21st, 1931, the following OFFICE-BEARERS were elected for the ensuing year:

President: Mr. John Wheeler *Dowden.*
Vice President: Dr. James Haig Ferguson.
Secretary and Treasurer: Mr. John William Struthers.

PRESIDENT'S COUNCIL:

Mr. Henry Wade.
Mr. William James Stuart.
Dr. Arthur H. H. Sinclair.
Mr. George L. Chiene.
Dr. John Smith Fraser.
Mr. James M. Graham.

REPRESENTATIVE ON THE GENERAL MEDICAL COUNCIL:

Mr. Alexander. Miles.

Convener of Museum Committee: Dr. Arthur Logan Turner.
Librarian: Mr. David Middleton Greig.

MARLBOROUGH COLLEGE, Near MACCLESFIELD, CHESHIRE,

Specialises in CAREERS FOR GIRLS, General Education to Matric., etc. Special Terms to Medical Men. Apply: *LADY WARDEN.*

City and County of Kingston-upon-Hull.

CITY HOSPITAL, *COTTINGHAM.*

RESIDENT MEDICAL OFFICER.

The Corporation invite applications for the appointment of a male Resident Medical Officer (single) to undertake, *under the Medical Superintendent*, the medical work of the Infectious Diseases Hospital. Commencing salary £350, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £450 per annum, *together with* board, laundry, and residence.

Applicants must be not more than 40 years of age, and must possess general clinical experience. The possession of experience in a fever Hospital will be regarded as an additional qualification.

The successful candidate will be required to reside at the City Hospital, and to devote the whole of his time to the service of the Corporation. He will be required to pass a medical examination, and to contribute to the Corporation's Superannuation Fund.

Applications, on forms to be obtained from the undersigned, with copies of not more than three *recent* testimonials, and endorsed "Resident Medical Officer, City Hospital," should be forwarded not later than noon on Saturday, November 14th.

Health Department, Guildhall, Hull. N. GEBBIE, Medical Officer of Health. October, 1931.

Borough of Ilford.

APPOINTMENT OF WOMAN ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from [illegible] Medical Women for the office of [illegible] Medical Officer of Health, for duties in connection with Maternity and Child Welfare, School Medical Inspection and General Health work. Candidates must possess Diploma of Public Health or similar qualification and have had post-graduate experience in Maternity work and Children's diseases.

The commencing salary of the officer will be £400 per annum, rising, on report of satisfactory service, by annual increments of £25 per annum to £550 per annum (or less if required with free board and residence at the Corporation's Isolation Hospital.

The person appointed will be required to devote whole time to the duties of the office, to reside at the Isolation Hospital, and to enter into a contract for the due performance and fulfilment of all the duties and conditions governing the appointment.

The appointment is subject to satisfactory medical examination, to the Staff Regulations, and to the *Local Government and Other Officers' Superannuation Act, 1922.*

Candidates must not be more than 45 years of age.

Applications, which must be made on forms obtainable (with list of duties) from the undersigned, accompanied by copies of three testimonials (which will not be returned), and endorsed "Woman Assistant Medical Officer of *Health,*" *must be received* at my office at the Town Hall, Ilford, not later than Monday, November 12th.

Canvassing, directly or indirectly, is prohibited and will disqualify.

By Order,
ADAM PARTINGTON, Town Clerk.

Town Hall, Ilford.
October 26th, 1931.

Corporation of Kingston-upon-Hull AND THE HULL AND GOOLE PORT SANITARY AUTHORITY

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Kingston-upon-Hull and the Hull and Goole Port Sanitary Authority invite applications for the appointment of a male *Senior* Assistant Medical Officer of Health at a salary of £800 per annum, rising, subject to satisfactory service, by annual increments of £25 to £1,000 per annum.

Applicants must be registered medical practitioners, *under* 40 years of age, and must possess a registered degree or diploma in Public Health or State Medicine.

The person appointed will be required to assist the Medical Officer of Health for the City in the administration of the Port Sanitary Service, Infectious Diseases Department, and to such extent for the central administration of the Public Assistance Hospitals, and must be prepared to do work in any other department of the Public Health Service, in accordance with the Corporation's scheme for the interchange of medical staff.

Experience in Port Sanitary Work and Infectious Diseases is essential.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the successful candidate passing a medical examination by a doctor approved by the Corporation.

Forms of application and further particulars of the duties and conditions of service may be obtained from the Medical Officer of Health, Guildhall, Hull.

Applications, endorsed "Senior Assistant Medical Officer of Health," together with copies of three recent testimonials, must reach the Medical Officer of Health not later than November 14th.

J. R. HOWARD EVANS, Town Clerk.

Guildhall, Hull.
October, 1931.

Paddington Green Children's HOSPITAL (Incorporated). [illegible]

HOUSE SURGEON.

A House Surgeon is required [illegible] Hospital immediately. Gentlemen [illegible] are invited to send in their applications, *copies of three testimonials*, to the undersigned as soon as possible. Salary at the rate of £[illegible] per annum, with board and residence. The appointment terminates on April [illegible]

JAMES A. HAMILTON, Secretary.

Longton Hospital, Staffs.

HOUSE SURGEON required [illegible] Commencing salary £[illegible], with board, *residence*, and laundry, free of fees.

Applications, with copies of [illegible] monials, and stating [illegible] once to the Chairman of the [illegible] Hospital, Stoke-on-Trent.

The County Council of Middlesex.

ASSISTANT MEDICAL OFFICER.

The County Council invites applications for the post of Assistant Medical Officer in the Public Health and School Medical Department. Applicants must be duly qualified registered medical Practitioners, and should have had special experience of practical Midwifery and Ante-Natal work.

The duties of the post are the medical inspection of school children, the supervision of treatment of minor ailments, the carrying out of work under the maternity and child welfare scheme, and such other duties as may be required by the Council. The Officer appointed must devote whole time to the duties of the post, will act under the supervision and control of the County Medical Officer of Health, and must reside in such district as may be required by the County Council.

Salary at the rate of £600 per annum, rising after two years' service, by yearly increments of £30 to £750. Reasonable travelling expenses allowed.

The successful candidate will be required to contribute to the County Council's Superannuation Fund, and to pass such medical examination as the County Council may direct.

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, stating (1) age, (2) qualifications and (3) previous experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than November 14th. No special application forms are provided. Envelopes must be endorsed "Assistant Medical Officer."

Canvassing, directly or indirectly, will be a disqualification.

ERNEST S. W. HART,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
October 22nd, 1931

Hertfordshire County Council.

INSTITUTION FOR MENTAL DEFECTIVES, CELL BARNES.

APPOINTMENT OF MEDICAL SUPERINTENDENT

The Hertfordshire County Council invite applications from registered Medical Practitioners for the post of Resident Medical Superintendent of the Institution for Mental Defectives at present in the course of erection at Cell Barnes, near St. Albans. The commencing salary will be £800 per annum, rising by annual increments of £50 to £1,200, with unfurnished house, coal, light, and laundry. Such salary will, for the present, be subject to a temporary reduction of ten per cent.

The person appointed will be required to devote the whole of his time to the duties of the post and will not be allowed to engage in private practice.

The appointment will be subject to three months' notice on either side, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922, for which purpose the successful candidate will be required to pass a medical examination.

Applications, stating age, which should not exceed 45, qualifications and experience in the institutional management of Mental Defectives, with copies of three recent testimonials, to be sent to the undersigned not later than Nov. 21st.

Clerk of the Peace Office, Hertford, Herts. October, 1931.

ELTON LONGMORE,
Clerk of the County Council.

County Borough of Huddersfield.

ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners for the post of Assistant School Medical Officer.

The successful candidate will be required to devote the whole of his or her time to the duties of the office, and whilst these consist mainly of work in the School Medical Department they may also include work in any section of the Public Health Service. Experience in the diagnosis and treatment of Diseases in Children is essential.

The salary offered is according to scale, £500 increasing by £25 per annum to £700, and the commencing salary will be based on the candidate's previous experience in the School Medical Service. It will be subject to a temporary cut, which is in operation for one year, the salaries of all the corporation officials over £500 the cut will amount to £17 10s.

Applications, stating age, and giving full particulars regarding training, qualifications and appointments held since qualification, should be forwarded to the undersigned, along with copies of two recent testimonials, so as to reach him not later than Thursday, Nov. 12th.

JOHN M. GIBSON, B.A., M.D., D.P.H.,
Chief School Medical Officer.

City of Birmingham.

DUDLEY ROAD HOSPITAL.

SURGEON.

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment, which will be limited to a period of twelve months.

The present Hospital accommodation is 926 beds, divided into General Medical, General Surgical, Gynaecological, Obstetrical, and Children's Disease sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electro-therapeutic Massage, Ultra-violet, and Electro-cardiographic Departments. Over 4,000 operations are performed annually.

Candidates for the appointment must have had good Surgical experience, and be Fellows of the Royal College of Surgeons (England).

The salary will be £750 per annum; furnished quarters, rations, laundry, and attendance, will be provided. Alternatively, a cash allowance will be paid if the officer appointed is non-resident. There may be shortly a general reduction of Corporation salaries, and the terms of this appointment will be subject to the same revision as may apply to existing officers holding similar appointments. The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to one month's notice on either side.

Further particulars of the appointment may be obtained from the Medical Superintendent, Dr. F. W. ELLIS, at Dudley Road Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, and endorsed "Surgeon," should be addressed to Dr. ELLIS, and delivered at his office not later than Monday, November 9th.

F. H. C. WILTSHIRE, Town Clerk.

The Council House, Birmingham.
October 23rd, 1931

Erith Urban District Council.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER

The Council of the Urban District of Erith invite applications from Medical Practitioners, under the age of 40 years and of not less than three years' standing in their profession, for the above appointment.

Inclusive salary £500 per annum, rising by annual increments of £25 to £700

[illegible] ject to the provisions [illegible] and Other Officers [illegible] and the successful candidate will be required to pass a Medical Examination. It is terminable by three months' written notice on either side, and is also subject to the Council's Standing Orders, Regulations, and Resolutions governing staff.

The appointment is a whole time one. The duties will mainly consist of work in the School Medical Department, but will also include duty in any section of the Health Services of the Council.

Experience in the certification of mental defectives and the possession of a registrable qualification in Public Health will be considered additional recommendations.

Applications, accompanied by copies of not more than three recent testimonials, must be made on forms obtainable from the Medical Officer of Health, Council Offices, "The Oaks," Belvedere, Kent, to whom they should be returned to reach him not later than November 3rd, endorsed "Assistant M.O.H."

Council Offices, "The Oaks," Belvedere. October 17th, 1931.

DOUGLAS S. TWIGG,
Clerk to the Council.

Corporation of Glasgow.

PUBLIC HEALTH DEPARTMENT.

Applications are invited from registered Medical Practitioners (male) for the post of SENIOR ASSISTANT in the Bacteriological Laboratory. Salary £700, rising to £800 per annum. State present age, and give full details of qualifications and experience in bacteriology, together with copies of three recent testimonials relative to such experience.

The person appointed will be subject to the provisions of the Corporation Superannuation Scheme.

Applications to be addressed to "The City Bacteriologist, 20, Cochrane Street, Glasgow, C.1," not later than Saturday, November 7th.

Aberdeen Royal Infirmary.

The Board of Directors invites applications for the post of ASSISTANT GYNAECOLOGIST. Six copies of applications and testimonials should be lodged with the Subscribers per later than November 7th.

230, Union St., Aberdeen.

JOHN A. McCONACHIE,
Clerk and Treasurer.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

LAKE HOSPITAL, AND DARLTON HOUSE, ASHTON-UNDER-LYNE, near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of Junior Resident Medical Officer at the above Hospital, and Institution, at a salary at the rate of £175 per annum, subject to an emergency deduction of 5 per cent.

Candidates must be unmarried.

The appointment will, in the first instance, be for a period of six months, the successful applicant, however, will be eligible on satisfactory service for re-appointment for a further period of six months at the end of that period.

In addition to the salary the Junior Resident Medical Officer will be provided with the usual residential allowances.

The Hospital comprises 300 beds, and the Institution 600 beds.

Applications, accompanied by copies of not more than two testimonials, should be forwarded to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than November 9th. Envelopes should be endorsed "Junior Resident Medical Officer."

County Offices, Preston. October 26th, 1931.

GEORGE ETHERTON,
Clerk of the County Council.

Lancashire County Council.

APPOINTMENT OF ASSISTANT MEDICAL SUPERINTENDENT FOR WRIGHTINGTON HOSPITAL, PARBOLD, LANCS.

Applications are invited for the post of Male Assistant Medical Superintendent (unmarried) for the new Wrightington Hospital, Parbold, Lancs, for the treatment of Non-pulmonary Tuberculosis (60 adults 146 children). Salary £450, rising by two annual increments of £25 to £500 per annum, together with the following emoluments: board, furnished apartments, fuel, light, and laundry. (At present there is an emergency deduction of 5 per cent. from this salary.)

Applicants must be registered Medical Practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least six months in a General Hospital, and have had special experience in the diagnosis and treatment of Tuberculosis.

Contributory Superannuation Scheme is in operation, with medical examination for entrants.

Forms of application, terms of appointment, and list of duties, can be obtained from the undersigned. Closing date, November 16th. All letters must be marked on the outside "Tuberculosis Dept."

County Offices, Preston. GEORGE ETHERTON,
Clerk of the County Council.

County Borough of Halifax.

RESIDENT MEDICAL OFFICER.

HOSPITAL FOR INFECTIOUS DISEASES.

Applications are invited for the appointment of Resident Medical Officer at the Corporation's Isolation Hospital. Salary £350 per annum, rising by annual increments of £25 to £450, together with board, residence, and laundry.

Applications must be made on a prescribed form, which may be obtained from the undersigned, and should be sent, together with copies of not more than three recent testimonials endorsed "Resident Medical Officer," to the undersigned not later than November 5th.

Canvassing, either directly or indirectly, will be a disqualification.

Town Hall, Halifax. PERCY SAUNDERS,
Town Clerk.
October 15th, 1931

Welsh National School of Medicine

YSGOL FEDDYGOL CYMRU

The Council invites applications for the appointment of SECRETARY. Applicants must be aged 25 years of age and should possess considerable experience in clerical and administration. The salary offered is £400 per annum, rising by annual increments of £25 to £500 per annum. The person appointed will be required to devote whole time to the duties of the office, and further particulars regarding the appointment may be obtained on application to the undersigned. Forms of application must be returned not later than Monday, November 9th, 1931. Canvassing, either directly or indirectly, will be a disqualification.

Cathays Park, Cardiff, 23rd October, 1931.

T. LLEWELYN DAVIES,
Secretary to the Council.

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine)

TWO HONORARY GYNAECOLOGISTS REQUIRED.

Applications are invited for Two Vacancies arising in the office of Honorary Gynæcologist.

Candidates must be Doctors of Medicine or Masters of Surgery of a University of the United Kingdom, or Graduates in Medicine or Surgery of a University of the United Kingdom. If only the latter, elected candidates shall within two years of their appointment proceed to one of the higher degrees of their Universities in Medicine or Surgery, or become Fellows of one of the Royal Colleges of Surgeons of the United Kingdom. The elected candidates shall confine themselves in their practice to Obstetrics and Gynæcology.

The present Honorary Assistant Gynæcologists are candidates for the vacancies.

Each candidate is required to send 50 copies of his application and testimonials (for circulation amongst the members of the Election Committee and Medical Board), stating age, qualifications, etc., and endorsed "Honorary Gynæcologist," to reach the undersigned on or before Monday, November 9th.

LEONARD D. RICA, Secretary.

EXTRACT FROM RULES.

64. No Member of the Honorary Medical Staff shall hold office after Attaining the age of 65 years.

Mater Misericordiae Hospital,

DUBLIN (Founded 1852 and conducted by the Sisters of Mercy)

ASSISTANT PHYSICIAN.

Applications are invited for the position of an Assistant Physician on or before November 30th. Each candidate is required to forward at the same time three duplicate copies of his application and also three duplicate copies of three recent testimonials. The Medical Board will arrange, in order of merit, the names of the candidates whom they deem suitable and whose appointment they could advise, and will submit the list to the authorities of the hospital with whom the final act of appointment rests. The successful candidate will hold office for three years, at the expiration of which term he will be eligible for re-election.

Candidates who desire further information are requested to communicate with the Secretary of the Medical Board.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male). Duties to commence on January 1st next.

Salary at the rate of £130 per annum, with residence, board, and laundry.

The appointment is for six months, and is renewable.

The Resident Staff consists of a Resident Surgical Officer and two House Surgeons.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of October, 1931.

ARTHUR H. LIMB, Secretary.

Burton-on-Trent General Infirmary. (130 Beds)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary at the rate of £200 per annum, with board, residence, and laundry.

Also JUNIOR HOUSE SURGEON. Salary £150.

Applications, giving age and qualifications, together with copies of testimonials, to be sent to—

E. W. THORNLEY, Secretary.

Dorset Mental Hospital, DORCHESTER.

DEPUTY MEDICAL SUPERINTENDENT required. Candidates must have had at least five years' Mental Hospital experience, and should hold a Diploma in Psychological Medicine. Laboratory experience also desirable.

Salary £575—£25—£625 a year, with partly furnished house and other emoluments valued at £240. Form of application obtainable from the Medical Superintendent.

October 16th, 1931.

Greenock Royal Infirmary.

Wanted, a HOUSE SURGEON (lady) for December 1st. Salary £100 p.a., including board, residence, and laundry. Other two Resident (ladies) on staff. 150 beds. Good experience. Applications invited, with testimonials, to be sent to the Secretary, 2, Hamilton Street, Greenock.

JAS. A. LOVE, Secretary.

County Mental Hospital, CHESTER.

JUNIOR ASSISTANT MEDICAL OFFICER (male, single) wanted. Salary £350 per annum, with four annual increments of £25, together with furnished apartments, board, washing, and attendance. The last three increments are conditional on holding the Diploma in Psychological Medicine, and for which a further £50 per annum is paid. Three months' study leave (D.P.M.) may be granted.

The appointment is subject to the provisions and privileges of the Asylums Officers Superannuation Act, 1909.

Form of application, which may be obtained from the undersigned, to be returned duly completed not later than November 11th.

G. HAMILTON GRILLS, M.D.,
Medical Superintendent.

All Saints' Hospital (for Genito-Urinary Diseases)

Inpatient Dept.: 91, Finchley Road, N.W.8.
Outpatient Dept. & Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

Applications are invited for the following post, and candidates are requested to send particulars of their experience, qualifications, and copies of recent testimonials, not later than November 21st:

HONORARY SURGICAL REGISTRAR.

The appointment is tenable for a period of twelve months, with renewal up to a maximum of two years, subject to the discretion of the Board of Management. Applicants should be Fellows of the Royal College of Surgeons, and not be engaged in general practice.

D. H. EADE, Secretary.

North Staffordshire Royal Infirmary, STOKE-ON-TRENT. (350 Beds)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, with board, residence, and laundry.

The appointment will be made for twelve months if possible.

Applications, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
Secretary and House Governor.

October 12th, 1931.

The Royal Gwent Hospital, NEWPORT, MON. (160 Beds)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Outpatients, and as House Physician.

Salary £135, with board, lodgings, and laundry. Resident Medical Staff (five). Eligible for promotion.

Large Out-patients Department.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
October 20th, 1931. Secretary-Supt.

The Salvation Army, THE MOTHERS' HOSPITAL, Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant December 1st. Salary £80 per annum, with board, residence, and laundry.

Candidates should have some experience in anæsthetics. Applications, with testimonials, must be sent to the Secretary Superintendent on or before November 5th.

EDGAR DIBDEN, Secretary Supt.

Torbay Hospital, Torquay.

Notice is hereby given, in accordance with Rule 8, that the Court of Governors will meet on November 26th next to elect an HONORARY ANAESTHETIST.

Candidates are required to be registered under the Medical Act.

Applications (with fifteen copies), accompanied by sixteen copies of not more than three testimonials, should be sent to the undersigned not later than Wednesday, November 18th next.

E. L. GRIST,
October 24th, 1931. Secretary.

The Sheffield Royal Hospital. (340 Beds)

There are two vacancies for Residents:
OPHTHALMIC HOUSE SURGEON. £120 per annum;
ANAESTHETIST. £80 per annum, rising to £100 in six months.
Applications to—
W. H. BOOTH,
Superintendent & Secretary.

London Jewish Hospital, Stepney Green, E.1 GENERAL HOSPITAL (103 beds)

Applications are invited for the following posts:

RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board and residence. Appointment for six months.

JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence. Appointment for six months.

CASUALTY OFFICER (non-resident). Salary at the rate of £150 per annum with luncheon and tea. Appointment for six months. The holder will be required to attend the Out-patient Department, from 9 a.m. to 5 p.m.

Applications, with copies of three recent testimonials, to be sent to the Secretary, not later than Friday, November 13th. The successful candidates will be required to take up their duties on December 1st.

Southport General Infirmary. (150 Beds)

Special Departments for Eye, Ear, Nose, and Throat, X-rays, Massage, Pathology, Skin, and V.D.

Wanted, a THIRD HOUSE SURGEON, qualified and registered, unmarried. Salary £150 per annum, with residence, board, laundry. Excellent opportunity for experience in a fully equipped up-to-date hospital. Special experience in the administration of Anæsthetics is desirable. The appointment to be subject to one month's notice on either side after the engagement.

Applications, stating age, nationality, and experience, with copies of testimonials, to be sent in by November 9th, to the Secretary, Infirmary Office, Southport.

The London Female Lock Hospital, 285, Harrow Road, London, W.9

The Board of Management invite applications for the post of HOUSE SURGEON. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be double qualified and registered, should send in their applications by the first post on November 2nd (accompanied by copies of three recent testimonials) to the Secretary, from whom further particulars may be obtained. The appointment is for six months, commencing December 1st. Preference will be given to candidates having previous obstetric experience.

By Order of the Board,
H. J. JANN,
October 9th, 1931. Secretary.

Lincoln County Hospital

Wanted, JUNIOR HOUSE SURGEON, unmarried. Salary at the rate of £130 per annum, rising to £200 per annum after the conclusion of six months' approved service, with residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

ARTHUR WOOD,
Lincoln. Secretary.
October 15th, 1931.

Manchester Babies' Hospital, Burnage Lane, DIDSBURY.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from January 1st, 1932. Salary at the rate of £125 per annum, with laundry. Only candidates with Hospital experience need apply.

Applications, together with copies of testimonials, should be sent to the Secretary, marked "R.M.O.," by Wednesday, November 4th.

ANGELA LOPEZ, Secretary.

Lowestoft and North Suffolk Hospital.

TWO HOUSE SURGEONS (unmarried) required November 20th. Salary £120 per annum, with board, residence, and laundry.

Applications, together with copies of recent testimonials, to be sent to the Medical Superintendent.

Royal Lancaster Infirmary.

Wanted immediately, a SECOND HOUSE SURGEON. Salary £130 per annum, with board, residence, and laundry provided.

Applications, with testimonials, to be sent to the Honorary Secretary, Infirmary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd)*	**CONTRACT PRACTICE** *(contd)*
CONTRACT PRACTICE.	LLWYNYPIA CLYDACH VALE PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MAPPY, GLAMORGAN *(Workmen's Medical Scheme)*	**PUBLIC HEALTH.**
EBBW VALE MON *(Workmen's Medical Society)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	NEATH AND DISTRICT *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OAKDALE MON *(Medical Officer for Medical Aid Association)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District.	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch.
W SOUTH WALES *(Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 150 Macquarie St, Sydney N S W	**SOUTH AUSTRALIA.** *(Lodge Appointments)*	Secretary South Australian Branch B M A House 206 North Terrace Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch) British Medical Association P O Box 155 Wellington New Zealand
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)*	The Hon Sec Queensland Branch British Medical Association B M A Building Adelaide St Brisbane.	**VICTORIA.** *(Sick Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association Medical Society Hall East Melbourne Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices)*	Hon Sec Western Australian Branch British Medical Association No 6 Bank of N S W Chambers St George's Terr Perth Western Australia.

October 29th, 1931 By Order of the Council ALFRED COX Medical Secretary

...ity of Birmingham Mental HOSPITAL

SENIOR ASSISTANT MEDICAL OFFICER

...e Committee of Visitors invite applications ... duly qualified and registered Lady ...tor under 35 years of age for the above

Preference will be given to candidates ... have held a resident appointment in a ...eral Hospital

...e commencing salary will be £350 per ...um together with emoluments (board, resi... and laundry) Subject to twelve months ...ice satisfactory to the Committee an ...ease of £20 will be granted at the end of ...p riod and increases of £25 per annum each subsequent year of service to a maxi...m of £450 An additional £50 will be ...n for the D P M qualification

...e appointment will be terminable by three ...ths notice on either side and the appointed ...didate will be required to join the Asylums ...ers Superannuation Scheme

...pplications accompanied by copies of three ...nt testimonials should be addressed to the ...f Medical Officer City Mental Hospital ...ery Hill Birmingham so as to be received ...him not later than November 14th

F H C WILTSHIRE
Town Clerk's Office — Clerk to the
Council House — Committee of
Birmingham — Visitors
October 17th 1931

The Lady Chichester Hospital, HOVE (BRIGHTON)

FOR FUNCTIONAL NERVOUS DISEASES

(62 Beds)

SENIOR HOUSE PHYSICIAN required for ...e months at £1 per week all found ...uitable experience for Diploma in Psychological Medicine Preference given to Junior ...ident for Senior post later

...pplications with testimonials to the Secre..., 117, North Street, Brighton

Central London Throat, Nose, AND EAR HOSPITAL

Gray's Inn Road W C 1

ASSISTANTS IN THE OUT PATIENT DEPARTMENT

There are vacancies for the following
First and Second Assistants for attendance on Mondays at 2 p m
Second Assistant for attendance on Tuesdays at 5 p m
Third Assistant for attendance on Fridays at 2 p m

The duties are to assist the Surgeons in seeing the patients and the posts are honorary ones

Applications for either of these appointments may be for a period of three six or twelve months and should be sent to the undersigned on or before November 7th

RESIDENT HOUSE SURGEON (Male)

There will be a vacancy for a Third Resident House Surgeon, to enter on duty on December 1st next

The appointment will be for a period of nine months three months as Third House Surgeon three months as Second House Surgeon, and three months as First House Surgeon

Remuneration at the rate of £75 per annum

Applications accompanied by copies of not more than three testimonials should be sent to the undersigned on or before November 7th to

JOHN H YOUNG
Secretary Superintendent

Merthyr General Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER for six months To commence duties early in November Experience in administration of Anæsthetics desirable Salary £150 per annum Applications with residence and laundry Applications with copies of three recent testimonials to Honorary Secretary Honorary Medical Staff Merthyr General Hospital Merthyr Tydfil

The Queen's Hospital for CHILDREN

Hackney Road London E 2

The Committee invite applications for the post of SURGEON for the Ear Nose and Throat Department with charge of beds Attendance required on Monday and Thursday mornings An honorarium to cover travelling expenses will be paid Candidates must be Fellows by examination of the Royal College of Surgeons England

Applications with copies of three recent testimonials which may be printed or typewritten should be sent on or before November 14th to the undersigned from whom further particulars may be obtained

CHARLES H BESSELL Secretary
October 20th 1931

Charing Cross Hospital.

ASSISTANT PHYSICIAN

The Council invite applications for the post of Assistant Physician (male)

Candidates who must be Members of the Royal College of Physicians of London must send in their applications together with copies of three recent testimonials to the undersigned not later than Monday November 2nd.

PHILIP INMAN House Governor
Charing Cross Hospital W C 2.

Assistant Surgeon —The Council

invite applications for the post of Assistant Surgeon to the CHARING CROSS HOSPITAL Candidates who must be Fellows of the Royal College of Surgeons of England should send in their applications together with copies of three testimonials to the undersigned not later than Monday November 2nd.

PHILIP INMAN House Governor
Charing Cross Hospital W C 2.

(Appointments continued on p. 48)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

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Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted.—Two Male Assistants, with a definite view to early Partnership, in increasing Practice (£5,000 p.a.) in attractive city. Large easily worked panel. Capital desirable, but absolute integrity, ability, and personality essential. Replies should give fullest personal and professional details (if possible photograph) and date free.—Address, No. 6735, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, M.R.C.S. and L.R.C.P.(Lond.). Aged 28. Refined Christian Egyptian of English culture. Fluent speaker. Seven years in England. Tall; well dressed. Recently qualified, but willing and energetic. Hospital testimonials. Can drive.—Address, No. 6728, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, single, British, for South Wales Town. No collieries. Must be good Anaesthetist. Very little night work or midwifery. Car kept. Dispenser. Usual bond. Salary £300 p.a. Send essential particulars and photo.—Address, No. 6625, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, gentleman, recently qualified, English or Scot, for mixed Practice, W.R. Yorkshire. Protestant. Salary £300. Usual bond. Able to drive car. Age, references, and full particulars. — Address, No. 6715, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, English or Scotch, for mixed town Practice, little midwifery. Salary eight gns. a week. Some experience of G.P. essential. Car found for the Practice. Usual bond. Send essential particulars and photograph.—Address, No. 6716, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view Succession or Partnership. London or S. Counties by Scot, act. 35, married, M.B. Edin., 1924, ex H.P. 6 yrs.' G.P. Keen and well rec. Used sole charge. Own car. Free as req.—No. 6720, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, young, Scots or English, married or single. Small modern flat provided, rent free. Midlands. Salary £350 p.a., half midwifery fees. Car provided for Practice.—Address, No. 6515, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, active and reliable, in healthy residential London Suburb, to supervise Nucleus. Work at present very light. £250 p.a. Small modern detached house, rent and rates free, and percent. takings. —No. 6738, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, outdoor preferred, in London, by Woman Doctor, M.B.(Lond.), aged 35. Ex R.M.O. Two years' experience general practice. Free end of October.—Address, No. 6721, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, England, West or South, with early view to Partnership or Succession. Scot, act. 28, M.B. Glasgow, 1927, keen, experienced hospital and practice, private and panel. Free now.—Address, No. 6705, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, Assistantship (indoor), with or without view, by Woman Doctor; 9 years' G.P.; panel and wide midwifery experience. Able to drive car. State salary. — Address, No. 6712, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B.(Dunelm), short ASSISTANTSHIP, with view. Preferably North or Midlands, in hunting country. Experience Hospital, G.P., Anaesthetics, qualified 5 years, act. 29 years, single, English.—No. 6725, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, outdoor ASSISTANTSHIP, by woman doctor, qualified 6 years, aged 29. Experienced hospital, G.P., priv. and panel, child., anaes., etc. Keen. Can drive car. Tests; refs. Interv. if req. —No. 6735, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Married or single ASSISTANT, live with Doctor and wife for winter. £280 single, £250 married couple, all found. Mixed Practice, Gloucestershire.—Address, No. 6710, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Young, recently qualified, male ASSISTANT (single), for mixed Practice in Lancs Town. Salary £350 to commence, with furnished rooms, coal, light, etc. All particulars and photo.—Address, No. 6718, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, male, for panel and private Practice, East London. Car provided. Commencing salary £300 p.a. State essential particulars.—Address, No. 6757, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, outdoor, by M.B., B.Ch., male, single, aged 30; ex H.S. and H.P.; five years' experience of G.P. Energetic. Interview.—Address, No. 6711, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistantship, with or without view, by M.B.Glas. (Oct., 1927), married, aged 28. Hosp. and G.P., anaesthetics, midwifery. Free now.—Address, No. 6751, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant, West Riding Colliery Practice. Suit recently qualified man. Salary £280, all found. Full particulars, and photo. if poss.—Address, No. 6737, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistantship immediately. Scotch graduate, experience hospital, G.P., midwifery, X-ray, diathermy. Excellent testimonials.—Address, No. 6731, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Short Assistantship or LOCUM, with a view to Partnership, by M.B., B.Ch., N.U.I. Irish, age 29, single, 5 years' experience of G.P. T.T.—Address, No. 6724, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., Ch.B., aged 30, single, and well experienced. Now at liberty.—Address, No. 6723, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Locum wanted by M.B., B.Ch. (Woman). Five years' experience panel and private practice. Excellent testimonials. Would accept part-time post. Now free in London.—Address, No. 6730, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted, outdoor, by Scot's Graduate, 35, married. Conscientious; thoroughly reliable. Available November, earlier for interview.—Address, No. 6719, B.M.A. House, Tavistock Square, W.C.1.

M.R.C.P.(Lond.), ex H.P., Clinical Assistant, very well experienced, married, aet. 29, wants ASSISTANTSHIP or Salaried Partnership; or would work Branch Surgery. Interview desired.—Address, No. 6702, B.M.A. House, Tavistock Sq., W.C.1.

Scottish Graduate requires ASSISTANTSHIP, with or without view; Single, aged 28; 6 yrs.' qualified, with 3 yrs.' hospital and 3 yrs.' G.P. experience. Free now. —Address, with particulars, No. 6729, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS &c.

Wanted, a Medical Officer for the British Hospital at OPORTO. Age 30–45 years. Must be good surgery. Suit a man wishing to live in a warmer climate. Salary £250 annum, plus private practice, which in the last year has brought in not less than £400. Preference will be given to one who will learn the language and take a Portuguese diploma. Duties to commence in March, 1932.—Apply, Director, Oporto British Hospital, Calçada de Massarellos, Oporto, Portugal.

Wanted for the Lady Irwin TUBERCULOSIS MISSION SANATORIUM near SANAWAR, in the Simla Hills, a Physician, male or female, who should have experience of Tuberculosis work and treatment. Applications to be sent to the Secretary, Lady Irwin Tuberculosis Sanatorium, Sanawar, Simla Hills, India.

A Lady Dispenser-Bookkeeper is supplied immediately on request, qualified and with practical experience in Pharmacy practice and dispensary work, also in Bacteriological Laboratories of the L.M.S. COLLEGE OF PHARMACY FOR WOMEN Preparation for Examinations — Write, wire, or 'phone (Park 0959), Secretary, 7, Wellington Park Road, W.2.

Dispenser Bookkeeper-Secretary (23), requires RE-ENGAGEMENT, certificate, 3½ years' experience in pharmacy practices, medical records, minor dressings. Free. References. Free now.—"DISPENSER," 43, High Street, Stone, Staffs. Tel.: Stone 43

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part time Bookkeeper-Dispensers, Secretary Dispensers, Nurse-Dispensers, Chauffeuse Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE PRIVATE DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctor, experienced, can take EVENING SURGERIES or Week-Ends in London area. — 'Phone, Write or Wire, Address, No. 6715, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary Dispensers or Chauffeuse-Dispensers, please write, wire, or 'phone Temple Bar 5151. DISPENSERS' BUREAU, 15, Lincoln's Inn Fields, Shaftesbury Avenue, London, W.C.2.

Experienced London G.P. Practitioner, recovered from illness, requires LIGHT WORK in Country or South preferred.—Address, No. 6704, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser, Apothecaries Hall qualification, free end of October, requires POST with Doctor, Chemist or Hospital preferred. Six years' experience.—Address, No. 6704, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 65, Fetter Lane, E.C.4 and S.W.1 (Telephone Victoria 2700), requires Qualified Dispensers, Bookkeepers, Lady Typists, Clerical Assistants, Male Nurses, Hospital Attendants, Sanitary Assistants, Masseurs, Masseuses and Special Treatment Orderlies, Porters, Caretakers, etc. No charge to prospective employers.

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PARTNERSHIPS

Christian Partner wanted, Country Town Practice, East Anglia Must young, and done H S job — Address No 26, B M A House Tavistock Square, W C 1

L. B.(Cambridge), M.R.C.P., aet 26 seeks PARTNERSHIP (preliminary) in good class Practice, preferably near London with prospects in Medicine Ex H P, 4th, *H S Teach Hosp Gold medallist in Med* 6733 B M A House Tavistock Sq W C 1

Year Manchester. — Wanted January 1st PARTNER, old-established Practice £3 000 Panel 3 000 1 4 share Guarantee 1st, £1 100 down, additional 1/4 share April 1st £500 down and £500 by instalments Hospital House rent £45 Surgical work if desired, but not necessary —Address, 6732 B M A House, Tavistock Sq, W C 1

Partner required for Half Share of Country Town Practice in N E of England Receipts £1,750 pa Premium 2 years purchase Vendor holds appointments which is on Hospital staff Incoming Partner will reside at seaside resort few miles distant Sport of all kinds —Address No 6717, B M A House, Tavistock Square, W C 1

Partnership. — Three-tenths Share for disposal in old-established practice of £2 100 in N E London Panel 1 900, great scope for increase Half share and succession later Small house to rent Energetic man, with own capital, essential — 6519, B M A House, Tavistock Sq W C 1

Partner wanted, young, capable, energetic man, with capital married or out, in well known city Excellent prospects-address No 6752, B M A House, Tavistock Square, W C 1

Shropshire.—Half Share of well-established PRACTICE No resident opposition Receipts last 3 years average £2 300 Share available "CHEMICALS," 40, Hamilton Street, Hoole, Chester

South Coast.—Partnership, with view to eventual Succession 1/3 share High class Practice for disposal Average takings £3 600 per annum for last three years Very low expenses, no panel very little night work Unique opportunity for keen and active man desiring to Specialise, knowledge of Electricity essential —Address, No 6604, B M A House, Tavistock Square W C 1

Surgeon, M.D, F R C S E, aet. 33 seeks good-class PRACTICE or PARTNERSHIP, where opportunity for Surgical work exists Has had good surgical and gynaecological experience — Address No 6503, B M A House, Tavistock Square W C 1

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Wanted —Scotland or England. —Town PRACTICE Income £1,700 p a Part from panel Good house, with professional accommodation, garden and garage, to rent Much surgery not entertained Good schools essential Capital available — Address No 25 B M A House Tavistock Square W C 1.

Wanted.—Well-established cash and panel PRACTICE, part 1 2 000 or more Camberwell, Peckham New Cross or third district Can purchase immediately Address No 6726, B M A House, Tavistock Square, W C 1

Wanted. — Practice or Partnership, with part 1 1 000 or more Cash receipts £1 000 Practice or Partnership near Town or City preferable Capital available £2 000 — *Address No 6759, B M A House*, Tavistock Square, W C 1

Wanted. — Practice or Partnership Succession in London Income £2 000 or more p a, including substantial panel Ample capital (cash) available —Address, No 6755, B M A House Tavistock Sq, W C 1

Wanted.—Scotland or England, Town PRACTICE with scope, panel about 2 000 Ample capital available —Address No 6756 B M A House Tavistock Sq, W C 1

A well-established cash and panel PRACTICE in London for immediate disposal Receipts average £2 262 p a, panel 2,780 Hours, long lease part sublet Premium £4,000 — Apply, PEACOCK & HADLEY, LTD, 19, Craven Street, Strand, W C 2

Birmingham. — Residential, growing NUCLEUS, industrial class, thickly populated district Lock up 14/ p w, whole house £65 p a, clear Panel over 80, increasing Inc ab £2 p w Started 6 mths ago Great scope Prem £75 Deposit £25, balance by £12 10 quarterly instalments Any nationality —Address, No 6727, B M A House, Tavistock Sq, W C 1

Bournemouth. — Small select Medical Cash PRACTICE, and Resident Patients received Charming detached house Splendid opportunity Aged Vendor must retire ill health Price £1 250, including excellent furniture, ultra violet ray lamps, instruments — No 6535 B M A House Tavistock Sq, W C 1

For immediate sale, the extensive Medical PRACTICE of the above deceased Practitioner, together with the desirable freehold residence, 'Hillcrest," Ferryhill All information from, and offers to be made to, T & W G MADDISON, Solicitors, Durham, or to Mr O'KANE, Hillcrest'

Home County. — Well-established PRACTICE, mainly better class panel 300 club £45 per annum average £900 *per annum Charming locality residential* Fees at surgery 3 6 up visits 6 to £1 1s, months 7 6 and 10 6 Radius 3 miles House rent £94 per annum situated 3 miles from the town on bus route Nearest opponent 2½ miles Six bedrooms gas and electric light main water and drainage Very good professional rooms separate entrance Good garage nice garden Study building all round Plenty of scope One hour by rail from London Premium for Practice £1 500 — Address No 6701, B M A House Tavistock Square, W C 1

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Liverpool. — Woman's Nucleus in rapidly growing district Takings last year £247 Panel 89 House to rent 30s a week, including big rates Reason for sale, marriage £150 would be accepted —Address, No 6739, B M A House, Tavistock Sq, W C 1

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South Africa — For Sale, as owner intends Specialising a well-established PRACTICE in a Free State Town Altitude 5 000 feet Wonderful sunny and dry climate Abundant bird and game shooting Excellent hospital facilities Population 4 000 On railway Radius of district 40 miles Rental of present house and surgery £5 p w, with option of purchase Fees 5/ —10/ Visit in Town, 3 6 to 5 per mile Country Confinements £7 7s —£10 10s Surgery would double income Premium £1 500 — Address No 6612, B M A House, Tavistock Square W C 1

Surrey —Nice residential town. —Well-established PRACTICE. Receipts £900 per annum, panel 300 Good modern house, rent £94 per annum Premium £1,500 Scope for increase —Apply PEACOCK & HADLEY, LTD, 19 Craven Street Strand W C 2

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7 minutes' from Holloway, N.— DEATH VACANCY —Old-established practice panel PRACTICE Receipts average £1 600 to £1 700 a year Nice house at low rent £76, lease Premium £2 000 or near offer —Apply, PEACOCK & HADLEY, LTD, 19 Craven Street, Strand, W C 2

£200 —Small Nucleus for Sale, takings £120, panel 190, N W 5 district Suitable for Branch Surgery or accommodation could be obtained —COOPER, 13, Mandeville St, Clapton, E 5

£5,000 to invest in Country PRACTICE full particulars, which will be treated with the strictest confidence — Address, No 6536, B M A House, Tavistock Square, W C 1

HOUSES CONSULTING ROOMS.

At South Kensington, in attractive square, charmingly situated lower MAISONETTES to LET. Three bed, 2 rec, k & b £130 and £135 p a Good opening for Doctor or Dentist — WALDRON, 77, Cromwell Road, S W 7

Charming House in excellent situation suitable for Dental Surgeon 4 bedrooms 2 reception rooms, and garage etc *Price £1 550 freehold Only £50 cash required* for possession Next to a corner house (already occupied by a Doctor) Rapidly growing neighbourhood May be seen at any time Further particulars from STEATFEILD & HODGE Farm Road Edgware

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Devon —Doctor's widow wishes to LET her FURNISHED COTTAGE in Tor Cove Torquay Contains 4 bedrooms Dining and drawing rooms Bathroom Separate w c Garage Fine position Overlooking sea and bay Rent £2 2s per week Apply, No 6705, B M A House, Tavistock Sq, W C 1.

WOBURN SQUARE, W.C.1.
Now Occupied by Doctor.

Distinguished Residence to be sold, entirely modernised, with 3 reception rooms, 7 bedrooms 3 bathrooms, up-to-date domestic quarters. Central heating. Newly-erected double garage. Rent £190 p.a. Long lease. Moderate prem.—ALAWAY & PARTNERS, 20, Bloomsbury Sq., W.C.1. Mus. 0451.

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For Sale.—The House stated below is beautifully situated in an entirely new and rapidly growing district, on the outskirts of Stockport, and at present without a Medical Practitioner within reasonable distance. Standing on one acre, with well laid out and preserved garden; the house comprises large entrance hall, with cloakroom, containing lavatory and wash-basin, three entertaining rooms, four bedrooms (two with hot and cold water), dressing room, boxroom, bathroom, separate w.c., and well cellared throughout. Large courtyard with garage. With house is a Cottage, with entrance on road, which would make a splendid surgery.—For full particulars, Address, No. 6709, B.M.A. House, Tavistock Sq., W.C.1.

Harley Street (adjoining).—Bachelor SERVICE FLAT, very comfortably furnished. Lift, 'phone, 5 gns. Also Bachelor Bedroom 2 gns. Part time Consulting Room if required.—Address, No. 6714, B.M.A. House, Tavistock Square, W.C.1.

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Applications are invited for the post of RESIDENT ANAESTHETIST and HOUSE SURGEON to the Special Departments (female). Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence at once. Candidates must be registered under the Medical Acts. Applications, stating age and qualifications, together with copies of recent testimonials, to be sent to the undersigned.

ARTHUR R. CASH,
Gen. Supt. & Sec.

October 27th, 1931.

Miller General Hospital, Greenwich Road, S.E.10.

OUT-PATIENT OFFICER (male and unmarried) required to see Medical and Surgical cases. Attendance daily (except Sundays) from 9 to 1; Tuesdays, 9 to 5. Salary £150 per annum, and lunch. The appointment is for six months. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent as soon as possible to the Secretary.

October 27th, 1931.

Connaught Hospital for Walthamstow, Wanstead, and Leyton.

Applications are invited for the post of HONORARY ASSISTANT AURAL SURGEON. Candidates, who must be registered Medical Practitioners and be Fellows of one of the Royal Colleges of Surgeons, should forward their applications by November 16th to KENNETH S. ELLISON, Secretary, Connaught Hospital, E.17. The Hospital contains 100 beds, including private single bed wards, a large out-patient clinic, and the usual special Departments.

District Infirmary, ASHTON-UNDER-LYNE.
(General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The resident staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials to be sent to the undersigned.

FRANK OLIVE,
General Superintendent and Secretary.

October 27th, 1931.

St. John's Hospital for Diseases OF THE SKIN,
49, Leicester Square, W.C.2.

Applications for the post of JUNIOR HONORARY MEDICAL REGISTRAR (male) are invited to be sent to the undersigned before Tuesday morning, November 3rd.

Honorarium £50 per annum.

Applicants must be duly qualified and registered Medical Practitioners. Particulars of duties can be obtained on application.

LEONARD G. R. TURRIN, Secretary.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of RESIDENT ANAESTHETIST AND HOUSE OFFICER (male), which will become vacant on December 1st. Salary at the rate of £100 per annum, with board, residence, and laundry. Candidates, who must be unmarried and registered, are requested to forward their applications, stating age, qualifications, etc., with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, November 11th.

W. H. HEAD, Secretary.

Mildmay Mission Hospital, Austin Street, Bethnal Green, E.2.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER, which becomes vacant on December 1st. Salary £100 per annum, with board, residence, and laundry. The appointment is for six months. Candidates must be registered under the Medical Acts, and the Mildmay Mission is anxious that they should be in sympathy with the religious work of the Hospital. Applications, with copies of two recent testimonials, should be sent to the Medical Superintendent on or before November 7th.

Royal Hampshire HOSPITAL, WINCHESTER.

HOUSE PHYSICIAN

Applications are invited from registered women for the above post, duties to commence on November 1st. Six months' appointment. Salary £150 per annum, with board, residence, and laundry. Candidates, who must be of British nationality, should send their applications at once to the undersigned, together with copies of three testimonials.

HERBERT MASLEN,
Secretary.

St. Mary's Hospitals, Manchester.

JUNIOR ASSISTANT MEDICAL OFFICER for the Children's Out-patient Department (non-resident). Salary at the rate of £100 per annum. The appointment is for a period of six months, commencing December 1st or as soon as possible thereafter. Applications, with copies of two recent testimonials, to be sent to the undersigned not later than November 16th.

R. RITCHIE,

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EAST END E 15
Telephone Maryland 2616

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RESIDENT MEDICAL OFFICER Salary
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Hospital contains 217 beds including
Maternity beds, and other Special Depart
Individuals who should previously have held
similar appointments must send applications
duly signed by testimonials to the under
signed not later than Wednesday November
and not later than Wednesday January
The appointments will date from November
1931, and will be for six months except
the case of the Resident Medical Officer,
which will be for twelve months
RAPHAEL TUCKSON (Major) Secretary

Queen Mary's Hospital for the
EAST END E 15
Telephone Maryland 2616

There is a vacancy on the Staff of this Hospital for an HONORARY PHYSICIAN to the Biochemical Department
Applicants will be required to see Out patients, and will be expected to undertake research work
Applications accompanied by copies of testimonials from candidates who must be duly registered Practitioners either Graduates in Medicine of a University or Fellows or Members of a Royal College of Physicians should be addressed to the undersigned not later than Monday November 4th
RAPHAEL TUCKSON (Major) Secretary

Royal Manchester Children's
HOSPITAL PENDLEBURY
near MANCHESTER (190 Beds)

Wanted, a RESIDENT SURGICAL OFFICER salary £125 per annum who will be appointed for six months Duties to commence Dec 1st Candidates must be unmarried and duly registered Previous hospital experience essential Applications, stating age and accompanied by copies of not more than three testimonials to be sent to the undersigned not later than Saturday, November 5th
Canvassing, directly or indirectly, may disqualify
By Order,
W M HUMPHRY Secretary

October 13th 1931

Children's Hospital, Hampstead,
College Crescent, Sick Cottage N W 3

Applications are invited for the post of RESIDENT MEDICAL OFFICER The appointment will be for the period of six months at a salary of £100 p a with board lodging and washing and will date from December 1st next Candidates must be registered Medical Practitioners and of British nationality Applications accompanied by copies of not more than three testimonials should be sent to the undersigned not later than November 4th
J H JOHNSTON Hon Sec
C J W LONGLEY Secretary Superintendent

Bradford Children's Hospital

HOUSE SURGEON (Lady) wanted in this Hospital Fully qualified Salary £120 with board residence and laundry Applications stating age with recent testimonials not later than November 4th to—
J W LONGLEY Secretary Superintendent

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YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approx. £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

YORKS.—PARTNERSHIP in busy rapidly increasing town Practice. Receipts £2,300. Panel 1,500. Suitable house available. 1/3 share, with view to succession, 2 years' purchase.

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SURGICAL PARTNERSHIP in good class non-panel Practice, situated in health resort on North-West Coast. Well-situated house in own grounds to rent or sale. Receipts £5,000. Premium for 1/2 share 2 years' purchase. New partner should be F.R.C.S. Remaining partner in on Medical side. Or the whole Practice would be sold.

WELSH BORDERS.—Excellent middle-class Town PRACTICE, situated in delightful locality. Good social amenities. Receipts approx £1,500. Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained. Knowledge of Welsh not essential. Hospital.

LONDON, N.W.—Well established mixed PRACTICE, mainly [illegible] with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 3/6 up. No midwifery. One appointment. Part of house sublet if desired. Vendor has developed [illegible] class of Practice at good fees. Premium £1,300 cash.

SUFFOLK.—Old-established Country PRACTICE. Excellent Tudor house to rent, good garden, garage, etc. Receipts about £1,400. Panel 8[illegible]. Fees: visits 5/- to 1 guinea. Premium 1½ years' purchase.

NORTHANTS.—Old-established Country PRACTICE, situated in charming locality. Hunting and sport of all kinds. Highly suitable to [illegible] retired Practitioner. Splendid house in own grounds to rent or purchase: central heating, electric light, etc. Receipts £500. Panel 400. Premium £550.

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LANCS TOWN, near Country.—Old-established PRACTICE. Cash receipts last year £1,125. Panel 1,035. Excellent *house*, 3 reception, 6 bedrooms. Garage and large garden. *Premium*—*Practice and house*—any reasonable offer.—No. 291.

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LANCS TOWN. — *Old-established PRACTICE.* Average cash receipts £995 p.a. Panel 710. Excellent house in pleasant district, 2 reception, 4 bedrooms. Garage and garden. Premium 1½ years' purchase.—No. 233.

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BIRMINGHAM SUBURB.—Middle-class *PRACTICE, with great scope.* Receipts last year £700. Small select panel. Excellent house, 2 reception, 6 bedrooms. Garage and large garden. Premium—Practice, house, and drugs—£1,100. Genuine sacrifice.—No. 283.

MANCHESTER.—INDUSTRIAL PRACTICE, offering great scope. Cash receipts 1930, £889. Panel 721. *Good house*, 2 reception, 5 bedrooms. Rent £50 p.a. Premium—best offer.—No. 190.

LANCS TOWN, nr. MANCHESTER.—PARTNERSHIP in good Practice. Cash receipts 1930, £2,452. *Panel nearly 2,000. House* available, 3 reception, 5 bedrooms, garage. Rent £53 p.a. Premium—Half share—£1,500 (to include drugs, fittings, and debts).—No. 286.

NORTH-WEST COAST. — *SEASIDE RESORT.* — *Old-established PRACTICE.* Cash receipts 1930, £874. Small select panel. Excellent freehold *house*, 5 bedrooms. Garage and garden.—No. 256.

LIVERPOOL. Small PRACTICE of £550 p.a. consisting mainly of transferable appointments (£460 p.a.). Excellent house, 4 reception, 7 bedrooms. Garage. Rent £75 p.a. Premium, 1½ years' purchase.—No 302.

MEDICAL WOMAN'S PRACTICE.—SEASIDE TOWN.—Cash receipts last year £632. Panel 465. Excellent rooms at £36 p.a. Premium £850 or near offer.—No. 274.

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house to rent, 3 reception, 5 bedrooms. Garage and garden. Premium £1,600, payable by *arrangement.—No. 252.*

CHESHIRE TOWN.—Old-established PRACTICE. Average cash receipts £1,420 p.a. Panel 2,000. *Good scope.* New house, 3 reception, 5 bedrooms. *Garage and garden. Premium*—Practice £2,250.—No. 295.

NEAR LIVERPOOL.—PRACTICE offering scope. Cash receipts £500 p.a. Panel 550. Good house, 3 reception, 5 bedrooms. Gar. and gard. Rent £70 p.a. Prem. £550, or near offer.—No. 287.

WANTED IMMEDIATELY.—INDOOR AND OUTDOOR ASSISTANTS FOR TOWN AND COUNTRY PRACTICES, WITH OR WITHOUT VIEW. Good salaries offered. State full particulars.

LOCUMTENENTS (male and female) SHOULD REGISTER AT ONCE FOR IMMEDIATE ENGAGEMENTS.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION have every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUM TENENS.

Assistants and Locum Tenens can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 E. ANGLIA. — Partnership in Practice of about £3,000 p.a. In beautiful residential and agricultural district. Panel about 1,900. After preliminary Assistantship a one-sixth or one third share would be sold at 2 years' purchase. Partner should be for preference a London Graduate.

2 N. LONDON. — Partnership in Practice, averaging over £4,350 p.a., in thickly populated suburban district. Vendor only recently joined the panel. Accommodation consists of 3 bedrooms, etc, to rent. Premium one half share 2 years' purchase, with succession to whole Practice in 12 months if desired.

3 S. OF ENGLAND. — Partnership in good middle class Town Practice, over £5,300 p.a. No panel. Suitable house to purchase. Premium, one fourth share, £2,000. Preliminary Assistantship.

4 S.E. COAST.—Practice, averaging £1,000 p.a. in favourite watering place. No panel. Well situated corner house (7 bedrooms), with good garden, for sale or rent.

5 WITHIN 120 MILES OF LONDON.—Important City—PARTNERSHIP in Practice, nearly £3,650 p.a. No panel. Considerable scope for Surgery. Partner should be aged about 30 and preferably a F.R.C.S. Excellent prospects of Hospital appointment. One third share at 2 years' purchase.

6 N. OF ENGLAND.—Assistant required by Medical Man practising in nice country district, with view to taking over panel comprising between 1,600/1,700 patients. Suitable accommodation to rent. Premium 1½ years' purchase, or a Partnership may be arranged.

7 OPHTHALMIC Practice, doing about £500 p.a., in the West End of London. Premium £500.

8 MIDLANDS. — Partnership in Practice nearly £3,800 p.a. in beautiful suburb of Manufacturing Town. Panel 2,200. House, with 5 bed and dressing rooms, in good residential part, for sale or rent. Unlimited scope. Excellent Hospitals. One third share at first at 2 years' purchase.

9 S. OF ENGLAND. — Practice of nearly £1,100 p.a. in delightful residential town in Inland Watering-place. Panel about 1,100. Very good detached residence (5 bedrooms and attics), with garage and nice garden, for sale or rent. Excellent social and educational advantages. Scope for increase. Premium £1,850.

10 S. COAST. — Practice of nearly £850 p.a. in residential town and health resort. Panel 800. House for sale or rent.

11 DEATH VACANCY. — HEREFORDSHIRE—Country PRACTICE, averaging £700 p.a., in the Wye Valley District. Panel about 600. House (4 bedrooms) with garden, orchard, and paddock, 3 acres. Rent £55 p.a.

12 ABOUT 30 MILES FROM LONDON.—PRACTICE, averaging £275 p.a. (carried on by Medical Woman) in town of 60,000 inhabitants. Panel about 200. Detached corner house, with 9 rooms, for sale or rent. Any reasonable offer entertained.

13 MIDLANDS.—Partnership in Practice over £2,200 p.a. in agricultural district, easy reach of County Town. Panel over 1,200. Suitable house at a rental. One half share at first at 1½ years' purchase.

14 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 682. Detached House (5 bedrooms), with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc. Premium 1½ years' purchase. Suitable for retired Service man.

15 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (5 bedrooms) to rent. Premium £900.

16 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Offer up to one half 2 years' purchase. Up to date Cottage Hospital.

17 E. COAST.—Partnership in lucrative PRACTICE of over £5,250 p.a. in large seaport town. Panel 5,800. Prem., one fourth share, £2,500. Good scope for increase.

18 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Panel about 417, with scope. Corner house, with accommodation, to rent on lease. Premium 1½ years' purchase, or offer.

19 MIDLANDS.—Practice averaging £ p.a. in manufacturing town. Panel 1,100. Very [illegible] built house (6 bed and dressing rooms) for sale. [illegible] crease. Premium 1½ years' purchase.

20 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 [illegible] and garden. Rent £150 p.a. Scope for increase. [illegible] years' purchase.

21 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £ p.a. Panel of 650. Good house (6 bedrooms), with [illegible] acre of garden, for sale. Premium 1½ years' [illegible]

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Practices and Partnerships for Disposal (continued).

22 ESSEX.—Country Practice of £700, including panel and appointments worth about £550 p.a. Premium £1,100

23 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 360. Substantially built 9 roomed house for sale. Scope for increase. Premium £725

24 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

25 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bed rooms) garage and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

26 E. ANGLIA. — Easily worked Country PRACTICE averaging £1,360 p.a. Panel 820. Ten roomed house, with garage, large garden and orchard, to rent. Scope for increase. Premium 1½ years' purchase.

27 S.W. ENGLAND.—Third Partner required in Practice, averaging £5,645 p.a. in small Industrial Town. Partner must be experienced in Surgery (preferably F.R.C.S.) as there is excellent scope in this direction. Panel over 4,000. Semi-detached ten roomed house for sale. Premium one-sixth share 2 years' purchase. Preliminary Assistantship.

28 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort. Receipts past year £623. Panel 500. House (7 bedrooms), garage, and half acre of garden, for sale.

29 LONDON, S.E. — Partnership in sound Practice of £4,500 p.a. in pleasant suburb. No panel. Choice of two houses for sale. Premium, one third share, 2 years' purchase.

30 HOME COUNTIES. — Non-dispensing PRACTICE in delightfully situated Town under 15 miles from London. Receipts past year over £1,200. No panel. Centrally situated house to rent. Premium £2,100.

31 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE about £1,800 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden for sale. Equable climate. Good educational facilities. Premium only £1,250.

32 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and very little midwifery. Well situated house (6 bedrooms) good garden and garage, for sale. Good scope. Premium 1½ years' purchase.

33 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort capable of increase by one practising all the year round. Receipts about £150. No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

34 YORKSHIRE (W.R.).—Partnership after Preliminary Assistantship in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. House available. Applicant should be a capable Surgeon. Premium one third share or one fourth share 1½ years' purchase.

35 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Beautiful modern house to purchase or lease. Premium one-half share 2 years' purchase. Partner should be young and hold F.R.C.S. Or whole Practice would be sold.

36 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

37 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwifery. Six roomed house to rent. Premium £750 most of which may be paid by instalments.

38 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven roomed house, with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

39 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms) garage and nice garden for sale. Premium one third share £2,000.

40 HOME COUNTIES. — Partner required in steadily increasing Practice of between £1,500 and £2,000 p.a. in rapidly growing neighbourhood within 15 miles of London. House, with 5 bedrooms etc., garage and garden, to rent. Good scope. Premium two-fifths share 2 years' purchase.

41 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

42 SOUTH AFRICA. — Country Practice in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kind. Well built house for sale or rent. Easily worked. Premium £550.

43 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first rate town. Panel 1,344. Good house (6/7 bedrooms) to rent. Premium one third share 2 years' purchase.

44 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight roomed house for sale or rent. Excellent educational facilities. Sea fishing, etc. Premium £1,500.

45 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

46 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,500 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one half share 1½ years' purchase.

47 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Look-up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

48 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £6,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (5 bedrooms) to rent. Partner must hold the F.R.C.S. and be aged about 30. Appointment on Hospital Staff. Premium for one sixth to one-fourth share 2 years purchase. Preliminary Assistantship.

49 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

50 S. of ENGLAND.—Partnership in increasing Practice of between £1,500—£2,000 p.a., in flourishing Seaport Town. Panel 1,000. Plenty of scope for increase. Premium, one-half share, 1½ years' purchase. Preliminary Assistantship entertained.

51 S. AFRICA.—CAPE PROVINCE.—PRACTICE of over £1,450, in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent. Premium £500.

52 BORDERS OF ENGLAND AND WALES.—PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in beautifully situated Country Town. Panel about 650. House (5 bedrooms) to rent. *Good schools. Excellent sport.* First-class Hospital. One third to one-half share at 1½ years' purchase. Wealth not necessary.

53 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 1,700. House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase.

54 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one half share 1½ years' purchase.

55 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000. Premium for one fifth share 2 years' purchase.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (Particulars of Terms, Post Free 12/6.

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams: BOVMEDICAL, WESTRAND-LONDON. Telephone: TEMPLE BAR 1616 (3 Lines)

Under the personal directorship of Dr. J. FIELD HALL and J. C. NEEDES

who have both had many years' experience as Medical Transfer Agents.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50).

No charge is made to Principals for the introduction of Locum Tenens or Assistants. Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges.

1. SOUTH-WEST OF ENGLAND. — PARTNERSHIP, with good Surgical Scope.—A one third share is offered in an old established mixed class Practice, situated in pleasant town. Gross cash receipts average £3,500 p.a., including panel of over 4,000. Visits 5/- to 10/6, with medicine extra. Suitable house can be bought at a moderate price. Ingoing partner must be a good surgeon (two Hospitals within easy reach) and preferably have a Fellowship. Premium 2 years' purchase. Sport of all kinds.

2. WEST OF ENGLAND.—Old established general PRACTICE, situated in exceptionally nice neighbourhood, with good sporting and social facilities. Income averages about £1,000 p.a., with small panel of 400. Fees from 3/6 to 1½ gns. Particularly good house, with beautiful garden, and containing 2 reception, 7 bedrooms, etc. Price for freehold £2,000, part on mortgage. Excellent surgical prospects. Premium 1½ years' purchase.

3. WOMAN DOCTOR'S PRACTICE—YORKS—LARGE TOWN—Established eight years, easily worked, and producing nearly £700 p.a. Panel of 500. Fees 5/- to 7/6. Midwifery 3 to 5 gns. Compact house, with 2 sitting, 2 bedrooms, 4 attics, etc. Garden. Garage. Rent on lease £42 10s p.a. Prem. 1½ years' purchase, or near offer.

4. SOUTH OF ENGLAND.—Favourite Coast Town—NURSING HOME, with small private Practice combined, the latter offering very good scope for development. Total receipts last year about £600. Very nice detached house, with excellent accommodation, very well appointed. Price for leasehold (87 years to run) £1,250, to include all furniture, fittings, and fixtures, drugs, and instruments, etc.

5. MIDLANDS—COUNTY TOWN—PARTNERSHIP.—A one-fourth share is offered in an exceptionally sound good mixed class Practice, averaging over £6,000 p.a., including panel of 3400. Lowest fee 4/-. Very little midwifery. If single, purchaser can live in comfortable rooms; otherwise choice of houses for sale or on rental. Premium 2 years' purchase.

6. NORTH OF ENGLAND—GOOD TOWN.—A one third share is offered in a very sound Practice, averaging about £5,000 p.a. Ingoing Partner must be well qualified and not over 35, and interested in medicine. Suitable house available. Premium 2 years' purchase.

7. CHESHIRE—NEAR COAST.—Old established middle and working-class PRACTICE, averaging for the past three years over £1,300. Panel of 550. Fees from 3/6. Good house, with 3 reception, 7 bedrooms, etc. Price for freehold £1,200, part on mortgage. Premium 2 years' purchase.

8. WITHIN TEN MILES OF LONDON—PARTNERSHIP.—The third share of an old established good middle and working class Practice is for disposal, offering excellent future prospects. Cash receipts last year amounted to nearly £2,700, including panel of nearly 1,500. Suitable house available at moderate price. Premium 2 years' pur.

9. WITHIN FOUR MILES OF THE BANK—Old established working class PRACTICE, producing for the last 12 months £2,300, including panel of over 2,800. Appts. worth about £160. Visits from 2/6. Low expenses. Suitable house can be rented or bought. Surgery premises on rental. Premium £4,000 cash.

10. HEREFORDSHIRE—DEATH VACANCY.—Old established unopposed country PRACTICE, averaging for past few years £700 p.a., including panel of 600. Situated in beautiful district, near large town. Fees 2/6 to 21/-. House contains 2 reception, 4 bedrooms. Garden, orchard, and paddock of 3½ acres. Rent £55 p.a. Premium £1,000, or near offer.

11. NORTH-WEST COAST.—SURGICAL PARTNERSHIP.—In a popular residential seaside resort the half share of middle and upper class Practice is offered to a suitable gentleman possessing the F.R.C.S., as the retiring partner does the surgical work, the remaining partner the medical side. Receipts average nearly £5,000 p.a. Beautiful house, with all modern conveniences. Can be rented or purchased. Price, freehold, £3,000, part on mortgage, or would be let on lease at £175. Premium 2 years' purchase.

12. LONDON, S.E.—Well established mixed-class PRACTICE, averaging for past three years £3,885. Panel of 3,900, and appt. worth £200 p.a. Fees from 2/-. Mid 30/- to 2 gns. Suitable house, in very good repair, with 2 reception, 6 bedrooms, ample professional accommodation; garage for 2 cars. Good garden. Rent on lease £90 p.a. Premium £7,500, £5,000 down and balance by arrangement.

13. PARTNERSHIP.—In a most desirable outlying residential suburb of London, a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1,200 p.a., in an old established good mixed class Practice averaging just over £10,000 p.a. Very good house, with ample accommodation. Rent £150 p.a. Premium 2 years' purchase cash.

14. LONDON, W.—Old-established good middle class PRACTICE averaging over £2,500 p.a. Medium sized panel. Visits mainly 10/6. Midwifery discouraged. Suitable house, with ample accommodation. Vendor's leasehold property. Price £1,650, or will be let on lease at £150 p.a. Premium 1½ years' purchase.

15. MANCHESTER.—Good mixed class PRACTICE, averaging over £1 p.a., but capable of much increase. Vendor having to [illegible] owing to ill health. Panel of about 550. Fees 3/6 to 7/6. [illegible] with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £[illegible]. Premium 1½ years' purchase, payable by arrangement.

16. SOUTH AFRICA.—Within 100 miles of East London—[illegible] PRACTICE, in very pretty Township near sea coast, [illegible] financial year £1,066. Practically all fees cash. Climate [illegible]. No night work and little or no visiting. Living cheap. [illegible] residence in 3/4 acre of productive garden. Price £750 [illegible] mortgage, or rent on lease £72 p.a. Premium £550 [illegible] kinds.

17. RENT.—NURSING HOME, and small private Practice com[illegible] latter offering excellent scope if desired as it has not been [illegible] situated in very pretty district within 15 miles of [illegible] receipts last year £1,100. Beautiful house (11 bedrooms et[illegible] ing in 2½ acres of garden, tennis lawn, etc. Price for [illegible] goodwill £2,100.

18. BORDERS OF BERKS AND HANTS.—In a delightful [illegible] agricultural district, within reach of market town, an old [illegible] mixed class PRACTICE averaging about £850 p.a. [illegible] over 400. Visits 5/- to 10/6, medicine extra. House co[illegible] sitting, 7 bedrooms, bathroom, etc. Large garden. Gara[illegible] £50 p.a. on lease. Premium £1,100.

19. SURREY.—PARTNERSHIP.—A two fifths share is offered [illegible] increasing good mixed class PRACTICE, having large [illegible] crease, and situated in a developing residential district [illegible] reach of town. Gross cash receipts for past 12 months [illegible] £1,500. Panel (which can be much increased) 350 [illegible] Suitable house, with 2 reception, 5 bedrooms, etc. Gar[illegible] Price £1,250, part on mortgage. Premium 2 years [illegible]

20. DEVON.—PARTNERSHIP.—Half share of very old-[illegible] posed Country Practice, offering scope, and situated in [illegible] within reach of large town. Cash receipts last [illegible] including appts. and panel of 880. Visits 3/6 to 21 [illegible] extra. House contains 2 reception, 4 bedrooms, bath[illegible] den. Garage. Rent £30 p.a. Premium £2,000. [illegible] fishing, etc.

21. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A [illegible] (with increase to one half later) is for disposal in a P[illegible] sound well-established mixed class Practice, owing to ill [illegible] of the senior Partner. Gross cash receipts average £45 [illegible] (last year £4,437). Panel of 1,344. Consultation 3/- [illegible] Visits 5/- to 21/-. Very suitable house, with 3 reception, 6 [illegible] rooms, etc. Garden. Garage. Rent on lease £100 p.a. [illegible] schools and sport. Premium 2 years' purchase.

22. NORTH DEVON & CORNWALL BORDERS.—Very old-[illegible] opposed Country PRACTICE, in beautiful district near [illegible] receipts average just over £1,100 p.a., including appts. [illegible] 330.—Suitable house available. Premium £1,600, to [illegible] etc. Hunting, golf, fishing, etc.

23. LANCS.—LARGE TOWN.—Old established better and [illegible] PRACTICE, producing last year over £1,400, including [illegible] 970. Visits 2/6 to 10/6, with medicine extra. Suitable [illegible] 2 reception, 6 bedrooms, etc. Garage, garden. Rent on [illegible] Premium £2,050.

24. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very [illegible] lished middle and upper class PRACTICE. Cash re[illegible] nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21 [illegible] little midwifery. House, including consulting room, [illegible] and dispensary, in well situated part of town. Price [illegible] sale. Premium 2 years' purchase.—Third Par[illegible]

25. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third [illegible] quired in very old established lucrative and increas[illegible] working class Practice. Cash receipts for past three [illegible] £4,544 p.a. (last year £4,911), including panel a[illegible] fifth share is for disposal, with increase to a third [illegible] accommodation available. Premium 2 years' purchase.

26. NORTH MIDLANDS.—WITHIN 5 MILES OF PAIGNTON. [illegible] Old established good middle class PRACTICE offering [illegible] Cash receipts for last 12 months £1,332, including [illegible] 1,000. Fees from 3/6. Mid. from 2 gns. Free[illegible] in about 4 acres of ground, with tennis lawn, fruit [illegible] gardens, etc., containing 3 reception, 6 bedrooms, [illegible] sale. Premium 1½ years' purchase.

27. MANCHESTER.—Semi-residential Suburb.—Very [illegible] dispensing mainly middle class PRACTICE, [illegible] including small selected panel of 440, which [illegible] extension. Visits 5/- upwards. Only about 20 cars [illegible] from 5 gns. Well situated house, with good [illegible] (freehold) £1,600. Premium £3,750.

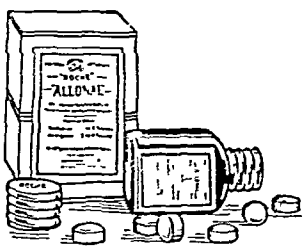
28. LINCS.—PLEASANT MARKET TOWN.—PARTNER[illegible] share, with possible succession in two years' [illegible] for past three years £1,900, including appts. [illegible] ducing £500. Advice and medicine 5/- upwards. [illegible] Very few midwiferies from 2 to 3 guineas. Spacious [illegible] and garage. Price freehold only £1,200. Specially [illegible] excellent schools for boys and girls. Premium [illegible] payable £1,000 down, remainder by arrangement.

Full Schedule of Terms and Conditions will be forwarded on application.

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County [illegible]

'Allonal' Analgesic and Hypnotic

for Pain & Insomnia!



Issued in Bottles of 12, 100 & 500.

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Analgesic / Hypnotic } 1—3 Tablets.

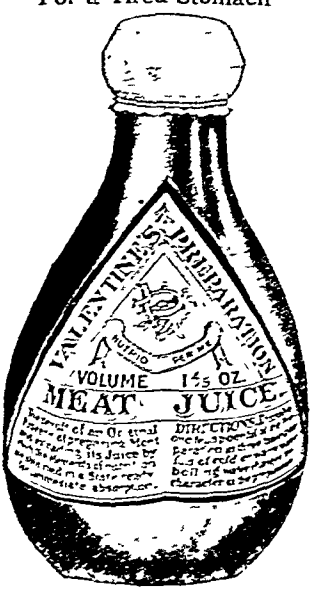
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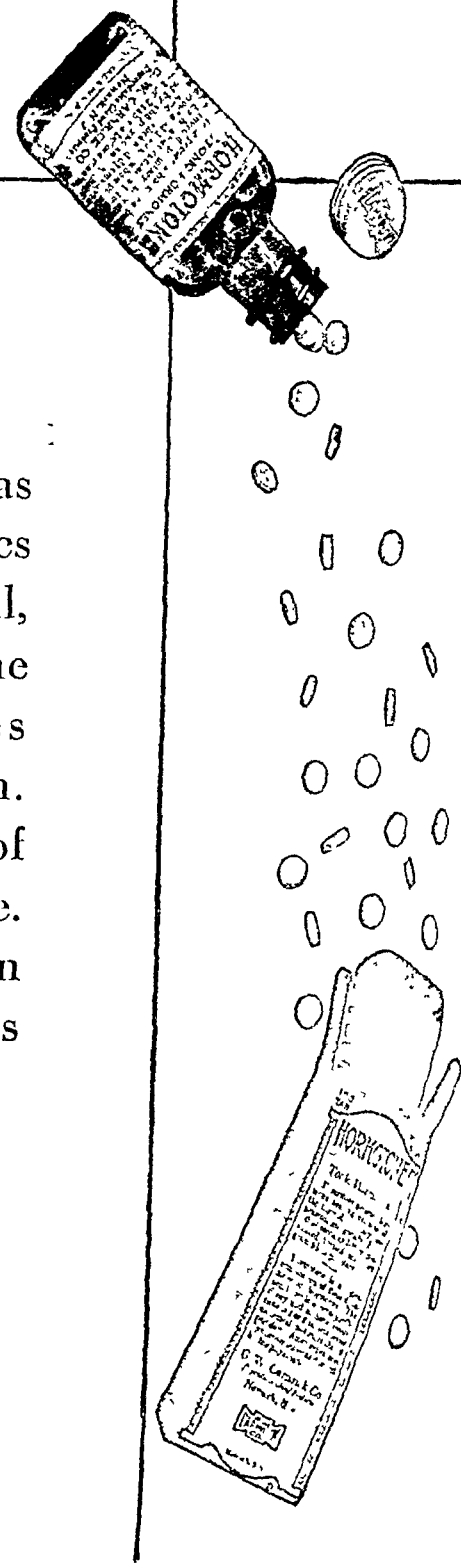


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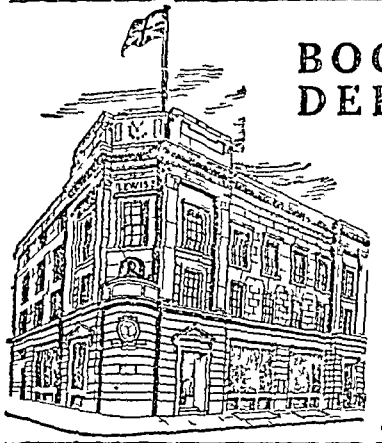
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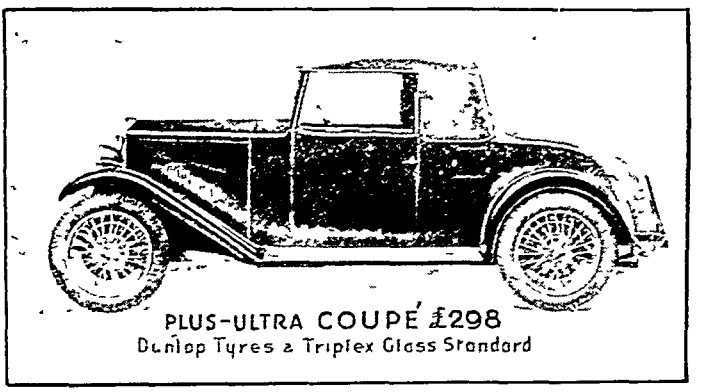
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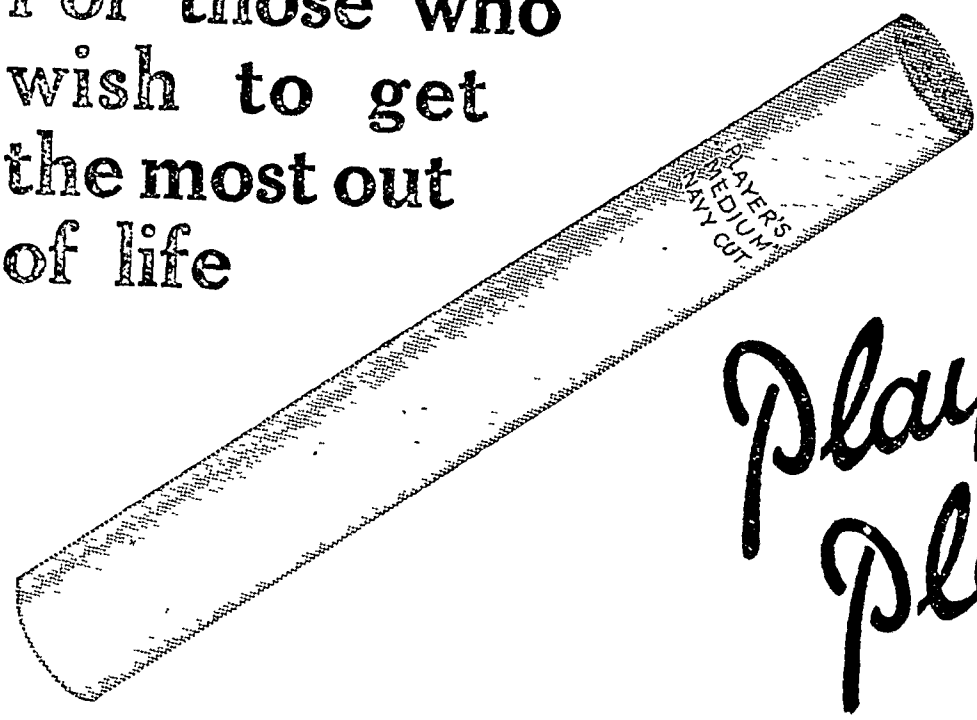
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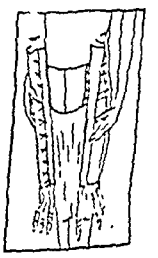
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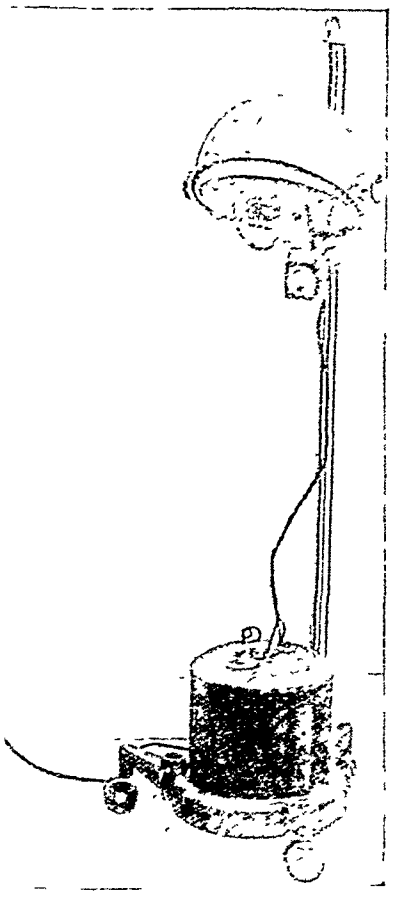
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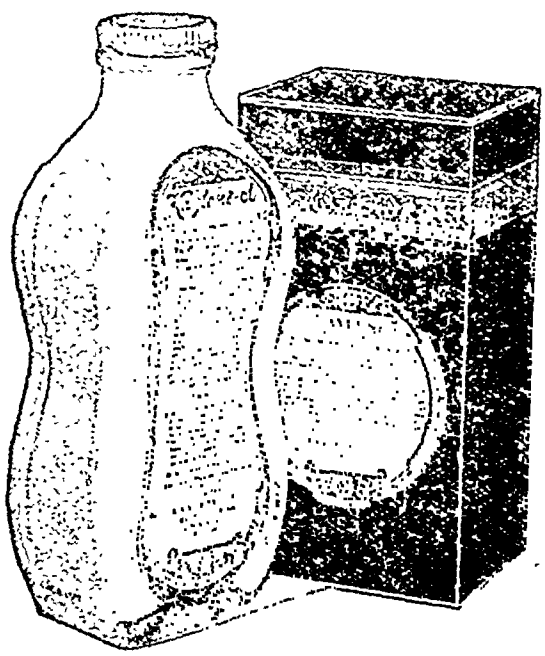
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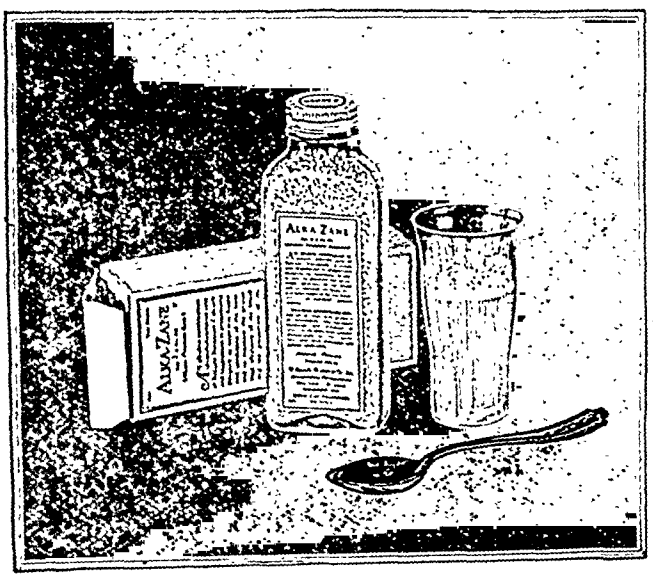
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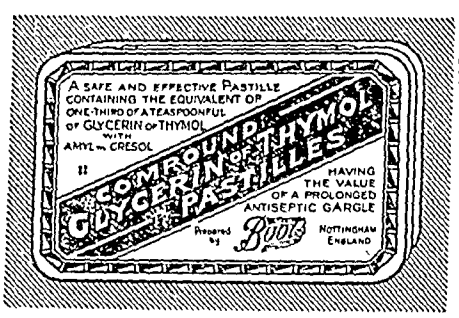
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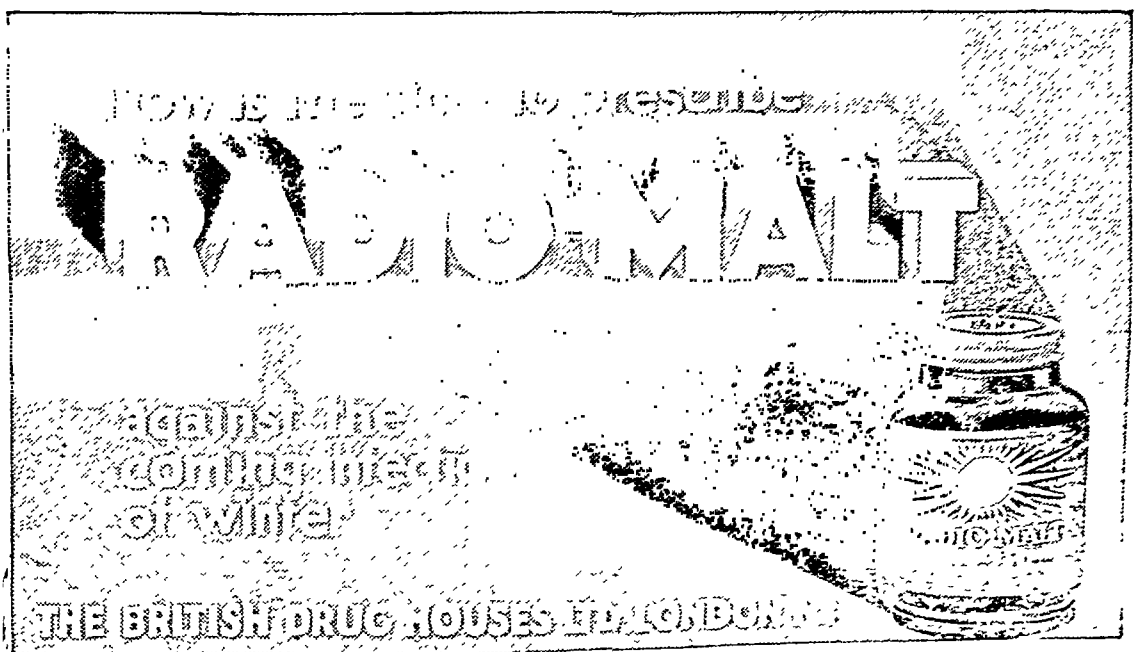
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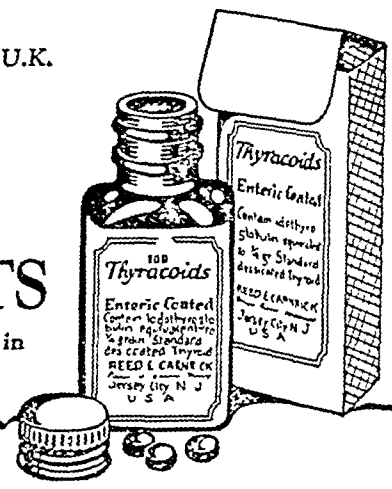
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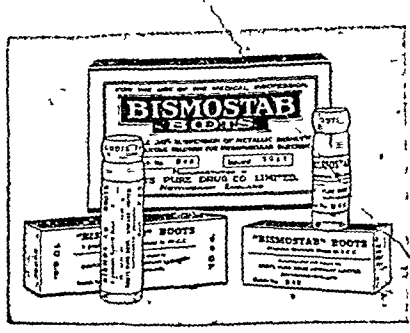


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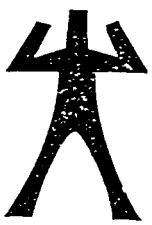
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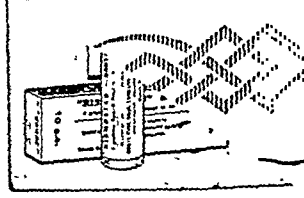
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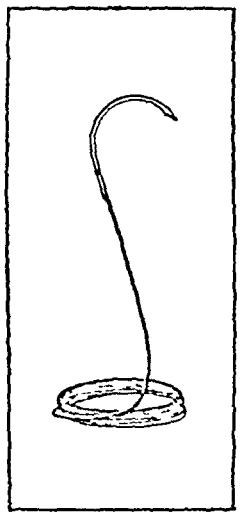
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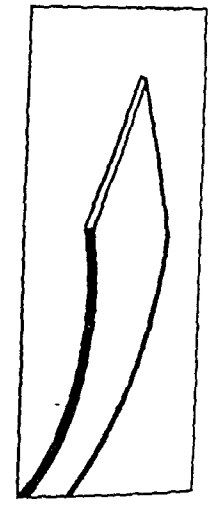
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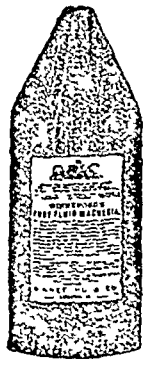
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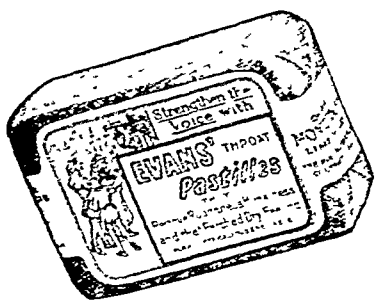
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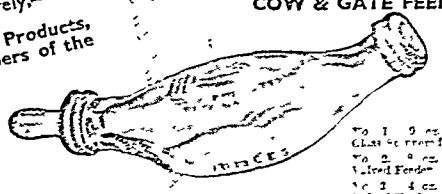
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Yours very sincerely,——



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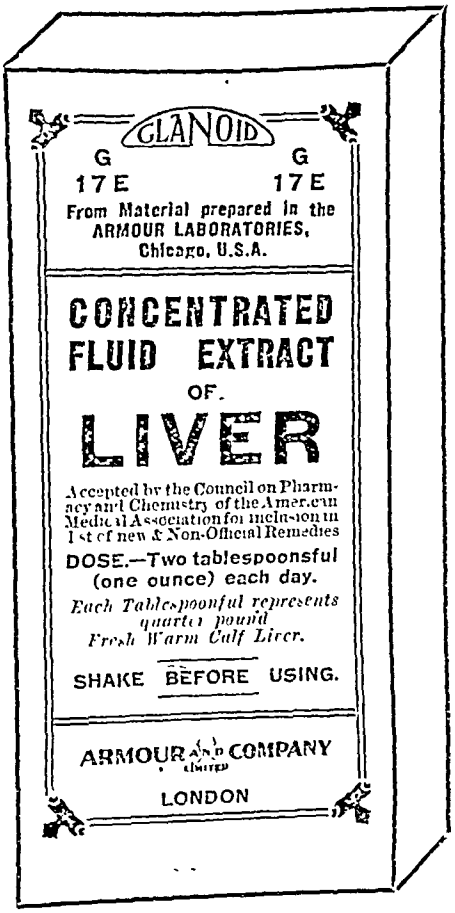
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GAS-GANGRENE-ANTITOXIN (PERFRINGENS) GLOBULINS

(B. welchii=B. perfringens)

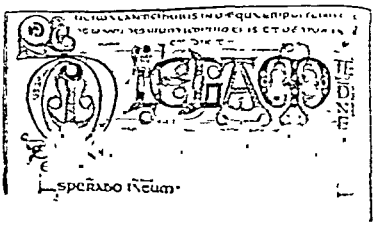
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The illustration is from a manuscript written at Canterbury about A.D. 700.

Date: A.D. 597, Augustine landed.

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The Schorstein Memorial Lecture

ON

CHRONIC EPIDEMIC ENCEPHALITIS

WITH SPECIAL REFERENCE TO THE OCULAR ATTACKS*

BY

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In the first place I desire to express my thanks for the honour of being invited to deliver this annual lecture, founded more than twenty years ago in memory of Gustav Isidore Schorstein. It was never my good fortune to meet him, but from what I know of the work he left behind, and from what I have heard from those who were his pupils or colleagues, I am sure that, had he been spared to complete his life's work, one more would have been added to that long list of world-famous names which is the proud possession of this great hospital and college.

The founders of this lectureship wished it to be a lectureship in clinical medicine. In choosing the subject of chronic epidemic encephalitis their wishes have, I think, been straitly complied with. Such knowledge of epidemic encephalitis as we have to-day is the outcome of clinical observation and clinical methods such as were practised and taught in Medicine when Schorstein first entered its portals.

Very soon after epidemic encephalitis first appeared it was found that in many cases the troubles did not end with the acute attack, but that as time went on fresh symptoms kept arising, different in character from, and bearing no direct ratio in severity to, those that had gone before. This is now recognized as a chronic stage of the disease. It follows the primary infection at varying intervals, and such infection may take place without causing any symptoms at the time. Thus in any outbreak of encephalitis, in addition to the *obvious*, the *anomalous*, and even the *abortive* cases, a certain number of people have a *silent* or *occult* infection, the first and only indication of which is the appearance of symptoms pathognomonic of the chronic stage. The features of this are by now familiar to all. I propose to consider some of them.

While the virus may attack any part of the nervous system, in its chronic stages it gives rise chiefly to three groups of symptoms: disorders of behaviour, disorders of mobility, and disorders of sleep. These are the "big three" of chronic encephalitis. Apart from them its effects are comparatively few and slight. I do not propose to speak of disorders of behaviour. They certainly involve the highest or psychic levels. Although they often complicate or even dominate the picture, they may be absent throughout. Disorders of mobility, on the other hand, are largely somatic, and represent dysfunctioning of upper middle levels, while disorders of sleep have both psychic and somatic components, and it is difficult to suppose that any levels altogether escape the consequences.

DISORDERS OF MOBILITY (PARKINSONISM)

The main features of this syndrome have been well known for more than a century as paralysis agitans. This, although not rare, was never common. Moreover, it is almost without exception limited to one period of life—namely, the period of decline.

With the advent of chronic encephalitis, large numbers of cases of the Parkinsonian syndrome have occurred in almost every country, affecting persons of every age, particularly young people. This increased field of observation of the syndrome at various periods of life has added greatly to our knowledge of the subject, and has shown that most of the differences between post-encephalitic Parkinsonism and paralysis agitans, which were at first thought to be diagnostic, are more apparent than real, and of little importance. Many can be explained by the difference in age of those affected.

Muscular Rigidity

The essential feature, common to all ages and to all causes, is the combination of a peculiar form of muscular rigidity with tremor. The rigidity causes slowness of action (as Walshe[1] rightly emphasizes), poverty of movement, and characteristic postures. It may progress to marked muscular weakness. It is entirely different from that found in lesions of the pyramidal system, and may properly be described as extrapyramidal. It is always present, sometimes to an extreme degree, but in paralysis agitans it has in the past been rather overshadowed by the tremor and the subsequent weakness. The very name *shaking palsy* has contributed towards this. The reason why more attention has been called to it in Parkinsonism is probably due to the ages of the persons affected. Stiffness and slowness are not very serious matters in persons in the declining years of life. They do not want to skip and jump. If they become a little less mobile it does not seem unnatural at their time of life, nor does it arouse much comment. But, when the same thing happens in youth or in early adult life, it is noticeable and it is resented. A young person wants to play games and to compete with his fellows, and from time to time the young Parkinsonian, hardly able to walk, suddenly runs or jumps apparently as well as ever he did. It is so surprising that it is called kinesia paradoxa.

This, however, is not a new phenomenon. It was seen occasionally in paralysis agitans when the elderly sufferer happened to be "younger than his years." Tilney described such a case in 1911 as "progression métadromique." Indeed, this capacity for making short vigorous spurts from time to time, in Parkinsonians, is as typical of the extrapyramidal syndrome as is the inability to keep it up for long. Unusual postures of extension, seen from time to time in Parkinsonism, have also been recorded in paralysis agitans. Thus Gowers[2] writes: "In very rare cases which must be regarded as paralysis agitans, the head is bent strongly backwards."

Tremor

Again, as regards tremor: it was thought in the early days of Parkinsonism that tremor was less common than it is in paralysis agitans. In many cases it is certainly less obvious, but there are exceptions. In some Parkinsonians it begins very early and is very severe. What, however, is not seen so often in the young Parkinsonian as in the older person with paralysis agitans is the markedly tremulous fingers. It is possible that this also may, to some extent, be attributed to the difference in ages. In the declining years of life tremulous fingers are not uncommon, apart from paralysis agitans. More than forty years ago Gowers remarked on the difficulty of distinguishing between the two. Perhaps the extrapyramidal syndrome helps to unmask this feature of declining years.

Gait

Age also plays its part in the matter of gait. Festination has been looked upon as the typical gait of paralysis agitans. Actually it only occurs when the disability affects the trunk and the legs to a certain considerable extent. If it does so more than that, walking is impossible; if less, there may be no festination.

* Delivered at the London Hospital, October 15th, 1931.

Macdonald Critchley[3] has called attention to the varieties of gait in his recent interesting paper on arterio-sclerotic Parkinsonism. In Parkinsonism, festination is by no means common. Even if there is a marked forward stoop so that the body is bent right over, provided that the legs are not seriously involved, the person walks bent over, but he does not festinate. Conversely, provided that the trunk is not pulled forwards, even when both legs are seriously affected, there is no festination, but a small shuffling step with no tendency to fall forwards. If the trouble is chiefly in one leg, there is no festination, however much the body is bent forwards; the sounder leg supports the trunk at every other step. Indeed, there is no single gait typical of this syndrome. Gaits of the most varied type may be seen, depending on the extent and severity of the parts involved. The most constant feature is the visible lack of swing in one or both arms. In fact, the more one sees of the extrapyramidal syndrome, the more do Parkinsonism and paralysis agitans approximate rather than diverge. They have, indeed, a topography in common. Such differences as exist are largely due to the different reactions and compensations of which nervous systems of different ages are capable.

Disorders of Sleep

Disorders of sleep were the distinctive feature of the acute disease. After the acute stage was over they continued to appear as the nocturnal insomnia of children. In both of these stages sleep was disordered as a whole. There was either too much or too little of it. In the chronic stage disorders of sleep, as a whole, are less common. They do occur; some Parkinsonians complain of lethargy, others of insomnia. A certain number suffer from narcoleptic attacks. Besides these there are other phenomena occurring in the chronic stage which may possibly belong to disorders of sleep. These are the peculiar periodic "attacks," usually involving the musculature of the eyes or jaws, the upper trunk and limbs, or the respiratory mechanism. The exact nature of these has given rise to much speculation. They are not seen in paralysis agitans, and do not occur in at least 75 per cent. of Parkinsonians. They are thus not an essential part of the extrapyramidal syndrome. Professor Bonhoeffor[4] of Bonn was, I believe, the first to put forward the view that many of these periodic attacks are connected with disorders of sleep. In 1928 he published a paper on dissociation of the components of sleep in post-encephalitis, in which he stated this view at some length. I had been led to a similar conclusion some time before I knew of Bonhoeffor's paper, and the grounds on which this conclusion was based I shall bring before you to-day. They not only support Bonhoeffor's theory, but to some extent clear away difficulties which presented themselves to him at the time his paper was written.

Oculogyric Attacks

The most common of these periodic attacks are the so-called oculogyric crises or ocular-fixation attacks, of which an excellent description was published by McCowan and Cook[5] in 1928. Out of 384 post-encephalitic Parkinsonians of whom I have personal records, 60 (about 15 per cent.) have these attacks, while in another 5 per cent. there are closely related ocular attacks, *differing slightly* in certain details. I shall refer to some of these later. The two sexes are equally affected. Most of them are young people. The onset may be sudden. The eyes are usually described as "suddenly shooting up into the head." In many cases, however, there is a definite warning, which may be longer or shorter, and may take various forms. As a rule, the eyes turn up. In some this is associated with slight lateral deviation, in others it is not. In a few, however, a downward movement may occur at the first, or may alternate with the upward movement. Much more rarely the movements may be entirely lateral, without any up or down element. The result is the same whatever the direction. The eyes become fixed there, and cannot be got back into their proper position. At the onset an attack can, at times, be made to pass off. Sometimes this can be done by the patient. Thus, during the onset the eyes can be brought down voluntarily for a few seconds, but they go up again. Sometimes they can be made to stay down. Strong suggestion may also cause an attack to pass off. One woman told me that, if she could catch her son when his eyes first began to turn up, she could prevent an attack developing. She added that, "If they once become fixed he goes to sleep in about five minutes." An attack may also be cut short by strong external stimuli of various kinds. Thus, in one case, forcibly pushing the head backwards ended an attack. Its repetition in other attacks was, however, without effect.

Their frequency and duration vary widely in different cases, and at different periods in the same case. They may occur at more or less regular intervals, or quite irregularly. There may be two or three per day, or perhaps only one every few weeks. In some cases they usually occur about the same time of day, in others not. They are much more common in the afternoon than early in the day. They may last only a few minutes or several hours, during which time the patient is helpless. In most cases the attack ends in sleep, and the patient wakes quite free from it. In a certain number of cases the attacks sometimes end in sleep, and at other times cease spontaneously. It is only in a few cases that they never end in sleep. Various circumstances will precipitate an attack, such as prolonged use of the eyes in reading, going to the "pictures," etc. Emotional excitement of any kind, or even suggestion, may be the starting point. Dr. Rees Thomas assures me that, among the mental Parkinsonians at Rampton State Institution, "having to do something they do not like" is sure to start an attack. Certain associated conditions may accompany the attack. The head may be retracted or turned down or to one side. There may be general restlessness and mental distress, or dizziness, with flushing of the face and diplopia. Existing tremor may be increased. There may be an associated opening of the mouth. In some cases there is a certain amount of pain in the head. As a rule pain is absent. All the cases which I have seen are definitely Parkinsonian, sometimes only slightly so. Indeed, in quite a number of cases the patients would be able to carry on their work if it were not for the attacks. So far, in none of my cases have the attacks ceased permanently.

Various explanations of them have been brought forward from time to time. It has been suggested that they are hysterical or hysteriform. Against this there is considerable evidence. Thus the descriptions of attacks are identical to the smallest detail in whatever country they occur; yet in all these places, though hysteria has been occurring for ages, this type of attack was unknown before epidemic encephalitis appeared. In the second place, the attacks do not, in my experience, arise by imitation. I have not seen a single case in which the attack could be attributed to being in contact with similar cases. Stern and others confirm this. Thirdly, although the attack may be cut short by suggestion, it is the common experience that suggestion has no permanent curative effect. Another very important reason, which will be discussed in detail later, is that in hysteria the movements are of a kind capable of being performed voluntarily by a normal person. The movement of the eyes which occurs in an oculogyric attack

ich a movement. It cannot be made by any voluntary fort.

Epilepsy, tetany, and cramp have also been brought orward as possible relations, but any such relationship in only be based on the supposition that the oculogyric stacks are active muscle spasms. Against such a view iere is a good deal of evidence that the position of the es during an attack, so far from being due to active asm, is the result of the eye muscles being in a state rest. This evidence is based on certain facts connected ith the normal act of closing the eyes. So long as the es are open the extrinsic muscles are in a certain state tone, which keeps them always adjusted for binocular sion, and prevents them from being moved in any rection beyond the point at which the pupils are just ear of the lids. The trigger is always at full cock.

When the lids are closed, as in sleep, this tone in the uscles is relaxed, the eyes are no longer adjusted for nocular vision, and they wander upwards behind the ls. We are unconscious of is, and have no control er it.

Its occurrence in sleep was st described by Sir Charles ell,[6] more than a century o, in the following words: When the eye is at rest in ep, or even when the eyelids e shut, the sensation on the tina being then neglected, e voluntary muscles resign eir office and the involuntary uscles draw the pupil under e upper lid. This is the ndition of the organ in rfect repose."

As has already been stated, most of the oculogyric ses, although the lids remain pen, the eyes behave in a milar way to that described Bell when the lids are osed as "the condition of ie organ in repose"—that they turn upwards. This the most common event the oculogyric attack, but in some cases they turn own; in others, to one side In 59 cases of which have records of the exact movements in the attacks the es turn up always in 44 (75 per cent), up and/or down 13 (22 per cent), to one side in 2 (3 per cent.). (For ie sake of simplicity no reference is here made to any companying lateral movement, such as "up and out" "forwards and divergent" The movements are ouped in the three horizontal planes only.)

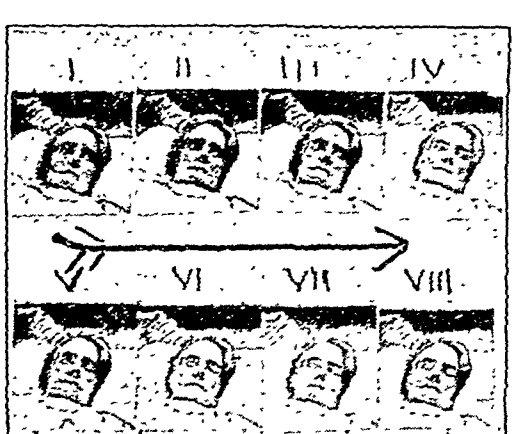


FIG. 1.—Closure of eyes in a case of right facial palsy. Serial pictures in the order of numbers. From I to IV the eyes are open. At some point between IV and V she has been told to close the eyes. At V the left eye has closed, the right eyeball has begun to move up very slightly. This movement continues upwards in VI and VII, and the eye then remains in the same position so long as the closure is kept up.

Position of the Eyes in Sleep

If Bell's statement that the eyes are turned up in sleep the whole truth, it is difficult to make the atypical tacks fit in with the conditions found in sleep.

It seemed desirable, therefore, to investigate more osely this question of the position of the eyes in sleep. uring the last two years, thanks to the generous help many resident officers at several large institutions ncluding a school for the blind) and others, 206 observaons have been made on the position of the eyes in deep ep. These have been made on persons of various ages id both sexes. Great care has been taken to be sure at they were fully asleep at the time of the observation. s in the oculogyric attacks the positions are grouped the three horizontal planes). In these 206 persons the eyes were found upwards in 54 per cent., forwards in 38 per cent, downwards in 5 per cent., and to one side in 3 per cent. In some the position was found to vary on different nights, in others it was constant. In one of those in whom the eyes were down the test was repeated on three nights with great care, and the position was the same each time. It is thus evident that Bell's observation is not the whole truth.*

In most cases the eyes are up in sleep, but in many they are not, and, what is most important for the matter in hand, they may be turned down or to one side, just as they are occasionally in the oculogyric attacks. Bonhoeffor realized this difficulty, that in the oculogyric attacks the eyes sometimes move in other directions than upwards. He tried to get over it by referring to certain cases published by Fleischer,[7] Kestenbaum,[8] and others, in which the eyes turned down in patients with injured upper lids, the so-called inverted Bell's phenomenon It is not possible to go into this in detail now, but it seems to me to bear a different interpretation

Eye Movements in Facial Palsy

As the position of the eyes in sleep did not prove so constant as was supposed, it seemed desirable to look more closely into the visible movement of the eye when the lid is closed or opened in cases of facial palsy It is well known that closure of the lids may take place in at least three circumstances It may be the momentary reflex blinking, the easy dropping of the lids at the onset of sleep, or the active closing at will. This third action may be carried further to resist opening, as when we screw up our eyes In order to follow more exactly the order of events when the attempt is made to close the eyes in facial palsy a series of moving pictures was taken of a case in which the right side was affected. (Fig 1) The patient was told when to close. (The pictures follow each other at about 1/16 second.) It is seen that when the patient is told to shut the eyes the movement begins by the lid closing, and the eye does not begin to change its position until the opposite lid is closed, or practically so, and it continues to move upwards for an appreciable time afterwards. The two movements are not synchronous, but consecutive.

There is every reason to suppose that the movement of the eye behind the lid on the sound side is identical in time and extent with that on the affected side

On the assumption that the sequence of events seen in this case of facial palsy is the normal procedure in closing the lids, it would seem that directly the lids cover the pupils the normal tone of the extrinsic eye muscles is inhibited, and that they go into a state of relaxation; not complete tonelessness, because, as will be seen later,

* Bell's statement seems to have been accepted without question by many writers on the subject. The only exception I can find is in Starling's *Principles of Physiology* (third edition p 565, where it is stated "There now appears to be irrefutable evidence that the eyes during sleep may occupy any position." But observations confirm this statement. [Ed.]—Professor Harris has since kindly informed me of a similar statement in Sir Victor Horsley's *Text Book of Physiology* (vol.), page , with reference to the observations by Karl Ludwig and Wittich, as far back as 1857.

they are ready to resume activity directly they are required. One might say that the trigger is now at half-cock.

Oculogyric Attacks and Sleep

With the muscles at rest the eyeballs assume also a position of rest. Why this should usually be upwards need not concern us here. We know from the observations on sleeping persons that in them it is so in more than half the cases, but we also know that during rest the eyeballs may be in any position. The account given above grouped them only in three planes, but, actually, the individual differences in sleep were extreme. In some they were very far up; in others they were up and out; in some they were forwards and converging; in others, down and to one side. Nor were they found to be necessarily in the same position on different nights. Possibly they change their position of rest during the same sleep. If, as Bell puts it, "the voluntary muscles resign their office" when the lids close, these individual variations are what we should expect. They correspond with the various positions assumed by the trunk and limbs in different individuals when asleep. Each finds his most restful position, and may change it during sleep. Also his position of rest may vary according to the particular parts that are most tired; this may be the same with the eye muscles.



B A C

Fig. 2.—Three photographs to illustrate (A) the presence of strong contraction of the occipito-frontalis in voluntarily looking upwards; (B) its absence when the eyes are still further up in a patient during an oculogyric attack; and (C) its absence in a case of bilateral facial palsy during attempted closure of the eyes.

If we put these facts together, there seems to be no essential difference between the position of the eyes in sleep and in the oculogyric attack. As regards position, then, if the latter is due to muscular spasm, the former may be also. If the eyes in sleep are resting, they may be resting also in the attack. The difference is not in the position of the eyeballs, but in the accompanying circumstances. In sleep all the remainder of the nervous system is resting; it is "whole sleep." In the oculogyric attack no other part is resting, not even the eyelids. This is unwelcome and disturbing, and gives rise to much of the accompanying distress. Looked at as a part of sleep the various features of these attacks easily fit into the picture. Thus, at the onset of an attack the eyes can momentarily be brought into normal position by voluntary effort, or by a strong stimulus from without. How reminiscent is this of the long dreary sermon, the drooping lids forced open for a moment only to close again, the partial awakening at sound of a parental cough, t sudden, complete wakefulness at those welcome wor "And now"!

One patient told me that, if in an attack he do go to sleep in about an hour, he gets a book and t read by repeatedly "pulling his eyes down," and th *if he can get interested enough the eyes will stop d* The interesting book often means late going to bed! T fact that in the majority of cases the attacks occur in t afternoon hours h also a strong flav of sleep. Most s ficant of all, not c does an attack us end in sleep, *sleep ends the att* In some it co within a few minute more often not f an hour or two o even several hou In a few cases on the attack never o in sleep.

Another fact w suggests that th upward position o the eyes in th attacks is not du

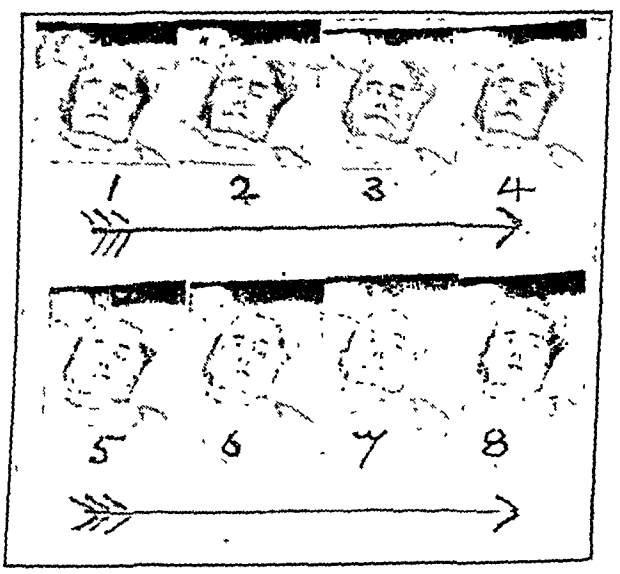


Fig. 3.—Opening the closed eye in a case of right facial palsy. Serial pictures in the order of numbers. From 1 to 4 the left eye is closed, the right eyeball far up and out. Between 4 and 5 she has been told to open the eyes. At 5 the left eyelid remains closed, but the right eye has moved slightly inwards and downwards. At 6 the left eye still remains closed, the right eyeball has got back into its normal position. At 7 the left eyelid has begun to open. Open further still at 8.

active spasm of the elevators is that there is associated contraction of the frontal muscle s occurs in normal persons on looking strongly upw This distinction is well seen in these photo (Fig. 2). The centre one, A, is that of a Par sonian youth who was trying to produce his oculogyric attacks in order to have his graph taken. He a the latter, but failed in former object. Th a real attack. His turned up only as f the normal muscle te allow them to go T are adjusted for the forehead is d wrinkled. In other there is the associated of the occipito frontal looking far upwards the other two, B and C eyeballs are higher they are in A, and, to the inhibition of tone, are under the the forehead shows wrinkles; B is gyric attack; C is a facial diplegia trying the eyes.

This absence of action of the occipito-f in oculogyric att been noted in all I have seen, and graphs of attacks as I have been able to out.* It is also supported by the fact that though the eyes are far up, the forehead is wrinkled.

* This statement applies only to the f In the early stages many irregular mov and facial muscles may occur in the attem

Attacks of Closed Lids

sides the oculogyric attacks, in which the eyes turn me direction, there are others in which the lids close cannot be opened These are not uncommon Some nts will tell you that there *seems* to be something nd the lids which is pulling, and which prevents them ing the eyes These are probably only a variation of other more common form The grounds for such a are to be seen in the serial pictures from the case acial palsy (Fig 3) When the woman is told to the closed eyes the first thing that happens is not the lid goes up, but that the eye begins to move n, and until it has reached its proper position the lid not show any sign of opening Just as in closure ie eyes, the two parts of the act are not synchronous consecutive, but now the order is reversed Until normal tone of the eye muscles has been resumed the tores palpebrarum cannot come into action In the k of "closed lids" the eyes go out of action when lids close, and, as in the oculogyric attack, they iot be brought into position again Until they are, eyes cannot open

ithin the walls of this college, many years ago, your t physician Hughlings Jackson no doubt often ated his famous aphorism "Nervous centres know ing of muscles, they only know of movements" complexity of the muscular actions in the movement losing and opening the eyes is an excellent example of great truth

Ocular Attacks due to Inhibition

here is, then, a good deal in favour of the view that e ocular attacks are not active muscular spasms, but er an inhibition of the muscular tone in the eye cles which normally follows closure of the lids Its is the covering of the pupils by the eyelids Con ely, the cue for the lids to open is the return of full in the eye muscles The oculogyric and the eye ure attacks are merely two slightly different modifica s of the same local inhibition In the former the rs hurry off the stage before the curtain falls in the r the curtain cannot be rung up because the actors not take up their proper positions on the stage rther case it is very disturbing to the management ing the attacks the head is often drawn in the same ction as the eyes, and may change with a change of r direction This is probably a compensatory action secondary to the ocular inhibition

ention was made earlier of other forms of periodic icks occurring in chronic encephalitis, particularly cting the jaws, upper trunk parts, and respiratory acts egards the two former, Bonhoeffer[4] suggests that the may be dissociated components of sleep The occa al attacks of yawning, in some cases leading to disloca of the jaw, and the so-called torsion spasms, which n bear a strong likeness to the stretching of the sleepy son, lend themselves to such a view

Prognosis in Parkinsonism

t would be difficult to paint a darker picture than is sented by chronic encephalitis as a whole If its acute ge chastised us with whips, truly its chronic stage stises with scorpions But it must be remembered t for various reasons it is usually the more severe s that are recorded in medical papers I should like mphasize the fact that there is also a rather less dark

There are at the present time a large number of kinsonians whose lives, at last seven years after in ion, are comparatively little interfered with by their ability Two years ago I followed up 525 of my cases Parkinsonism, and more than half were able to go about, look after themselves, and lead more or less ordinary lives It has not been possible to repeat that follow up this year, but I see many of these patients from time to time, and, although there are exceptions, I know that *most* of them are not any worse than they were two years ago Judged by their rate of movement in the arms as tested by the apparatus described in the *Lancet* in 1927, many of them show no increase of slowness, nor has any serious loss of power occurred

Among my cases of Parkinsonism in their seventh and even in some in their eleventh, year of infection, life is not incompatible with activities such as performing full household duties, playing in a football team, active gymnastics, going with boy scouts to camp and sharing fully in the duties, or working as a blacksmith all the week and holding classes for youths on Sundays One, a married woman, walks ten or fifteen miles every Saturday with her husband One youth dives and swims in the sea a great deal better than most people, another is a good rifle shot Some are managing businesses, one holds high military command *Quite a number of young Parkinsonian men and women have married since their disability* What the future has in store for any or all of these, and whether it is only a pause in a progressive disease or a real arrest of the process there are no precedents to guide us in forming an opinion Meanwhile, as the years go on, the latter seems more possible

For valuable help in preparing this lecture I desire to express thanks to Dr Vincent and his staff at the South Yorks Mental Hospital to Dr Rees Thomas and his staff at Rampton State Institution also to a large number of resident medical officers at the various Sheffield hospitals both voluntary and municipal and to the superintendent of the Blind School for their observations on the eyes in Sleep

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ACUTE SPONTANEOUS HYPOGLYCAEMIA

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Cases of severe acute spontaneous hypoglycaemia have been so rarely reported in the literature that the recognition of the condition in practice is a reasonable excuse for recording the case reported below Moreover this case exhibited certain features different from those observed in any other so far described

elicited, and Babinski's sign was bilaterally positive. The skin was moist, there was blepharospasm, and the conjunctival reflex was diminished, but the pupils reacted normally to light. The urine, obtained by catheter, contained a trace of albumin, but no sugar, diacetic acid, or casts. Blood pressure was 90/70; no other abnormal findings were noted on clinical examination.

In discussing the diagnosis the possibility of acute hypoglycaemia was considered, but at the time no information could be obtained about her condition before admission. A fasting blood sugar estimation (Folin-Wu[1] technique) of 35 mg. per 100 c.cm.—the blood was drawn and the estimation made while the patient was unconscious—supported the diagnosis of acute hypoglycaemia; the blood urea, determined at the same time, was 60 mg. per 100 c.cm. A confirmation of this diagnosis was obtained by the intravenous injection of 10 grams of glucose in 20 c.cm. of distilled water; the injection took about four minutes, and before it was ended signs of returning consciousness appeared. Immediately after receiving the injection the patient became quite conscious and rational, she sat up in bed and asked where she was, the rigidity and blepharospasm disappeared, and the positive Babinski sign became bilaterally negative. We considered that the condition (now thought to be undoubtedly hypoglycaemic in origin) was probably not due to the administration of insulin, because it had become progressively worse in the first fourteen hours after admission.

Three hours after the glucose injection the blood sugar was 111 and the blood urea 30 mg. per 100 c.cm. By this time we learnt that the patient had never had diabetes and had never received insulin; she was therefore put on ward diet and glucose drinks. Glucose was not given after the second day in hospital, except once for a glucose tolerance test.

Previous History

The cause of the attack for which she was admitted to hospital in the first instance was undoubtedly acute spontaneous hypoglycaemia. The previous history, obtained a day or two after recovery from the acute attack, showed that her first three pregnancies had been normal, but the last baby, born in May, 1926, had been stillborn, and this delivery had been followed by a leucorrhoeal discharge which disappeared on treatment. Amenorrhoea had been present since the birth of the stillborn child. A year previous to her admission to the Mater Misericordiae Hospital she had complained of frequent attacks of dizziness, with "an inclination to faint," especially approaching meal-time. Because of these sensations she had gone to the out-patient department of another hospital, and had there received, on February 24th, March 3rd, and March 24th, 1930, three intravenous injections of novarsenobillon (0.3 to 0.45 gram), but the blood Wassermann reaction had been continuously negative. Three days before we first saw her (May 14th) she had actually become unconscious for a few minutes, and on the morning of the day before admission she was found hanging out of bed, with a dull, listless expression on her face, unable to recognize her husband and her friends. On the morning of the day of admission she was again found unconscious—with jerky movements of the limbs and frothy saliva round the mouth—and groaning, with an expression of pain on her face; she recovered partially, and was sent into hospital that evening.

Subsequent History

On the morning of May 16th the fasting blood sugar was 56 mg., and the blood urea 22 mg. per 100 c.cm.; the plasma nitroprusside test was negative, and there were no symptoms then, or afterwards, attributable to hypoglycaemia. At 4 o'clock on the afternoon of the same day, after a mixed ward breakfast at 9 a.m. and dinner at 2 p.m., the blood sugar was 122 mg. per 100 c.cm. On May 17th the fasting blood sugar was 66 without hypoglycaemic symptoms, and one hour after a breakfast, taken at 8.30 a.m., consisting of an egg, about 3½ oz. of bread-and-butter, tea without sugar, and 5 oz. of milk, it was 116 mg. per 100 c.cm.; but at noon, without further food since breakfast, it had fallen to 87. For several subsequent days, while on an ordinary ward diet, with cane sugar allowed in moderation, but no glucose drinks, the patient was kept under observation, and the following figures (mg. per 100 c.cm.) were obtained by blood analyses: sugar (fasting) varied from 72 to 76, calcium 9.75, inorganic phosphorus 1.5, cholesterol 271, uric acid 2.9, creatinine 2[illegible], non-protein nitrogen 37.5, and bilirubin less than 0.1. During this period no hypoglycaemic symptoms occurred. The blood sugar values obtained after the ingestion of 100 grams of glucose, 50 grams of starch, and 50 grams of levulose are shown in the following table.

Time in Minutes after Ingestion	Blood Sugar in mg. per 100 c.cm. after Oral Administration of—		
	85 grams Glucose	50 grams Levulose	50 (?) grams Starch
0	76 (nil)	74 (nil)	78
15	95 (nil)	—	95
30	125 (nil)	100 (nil)	94
45	132 (?)	—	78
60	130 (?)	75 (nil)	94
90	122 (trace)	72 (trace)	102
120	93	72 (trace)	125

The comments in parenthesis denote urinary sugar determinations on specimen obtained at the same time as the corresponding sample of blood.

A combined liver function and gall-bladder visualization test, after the intravenous injection of 2.5 grams of iodoxyl, showed that the dye was removed at the normal rate from the blood, and that the gall-bladder shadow was normal. A fractional test meal showed complete achlorhydria and no gastric mucus or bile. Routine gastro-intestinal and roentgenological examination by Dr. J. A. Geraghty [illegible] revealed some degree of ileal stasis, with a spastic caecum and possibly chronic appendicitis. The blood count showed 75 per cent. haemoglobin, 4,000,000 erythrocytes, and 10,000 leucocytes per c.mm., with a normal differential count. The blood pressure readings showed no subsequent significant change from the first figures. The blood Wassermann reaction was negative, and the patient's weight six days after admission was [illegible]. On the tenth day of observation the stools were examined and found to contain a large quantity of undigested starch, but there were only a few meat and vegetable fibres present and fat and fatty acid were absent; the diastatic power of the blood and urine was normal. Apart from one intravenous injection of glucose, followed by glucose by the mouth for the first day, no special treatment was given for the first fourteen days of observation, the patient being on an ordinary mixed diet. From the fifteenth day, drachm doses of dilute hydrochloric acid (*B.P.*) and 2 grains of pepsin were given in a mixture, three times daily after food during the remainder of period of hospital observation and for three weeks after discharge. As the faeces constantly contained a large [illegible] of undigested starch from the tenth day after admission, the first examination of the stools was made, it would seem that faulty digestion and absorption of starch might account for the constantly low level of the fasting blood sugar (62 to 76 mg. per 100 c.cm.), and that possibly these conditions might also have had some relationship to the hypoglycaemic attack on admission, when the blood sugar was only 35 mg. per 100 c.cm. The patient was therefore given 7½ grains of taka-diastase (Parke, Davis and Co.) three times in divided doses before, with, and after meals [illegible] thirty-second day after admission, starch [illegible] continuously present in large quantity in the stools, [illegible] the starch gradually disappeared, and on the [illegible] the taka-diastase was started no starch was found in the [illegible] stools; indeed, none was again found in the [illegible] subsequent examinations. The blood sugar [illegible] forty-eighth day was still only 74 mg. per 100 c.cm., [illegible] chloric acid was still absent in all specimens of [illegible] test meal on the forty-third day after admission. [illegible] decided to leave hospital on the forty-eighth day (June 1930) after admission, as she constantly refused [illegible] various tests during the last few weeks of her [illegible] promised to keep taking hydrochloric acid [illegible] as prescribed. She remained at home [illegible] three weeks, taking hydrochloric acid [illegible] directed, and she experienced no further [illegible] of hypoglycaemia. At the end of that [illegible]

the hospital for a day for observation, the stools tained no starch, but achlorhydria was still present, and fasting blood sugar was 75 mg. per c.cm. Refusing to ain longer in hospital, she again returned home, and ceased ake the hydrochloric acid and taka-diastase on July 25th, on August 8th we obtained a specimen of stools from her examination, which contained no starch. Another speci- (August 25th) again contained no starch, and no further ptoms suggestive of hypoglycaemia had been experienced. August 27th the test meal showed the presence of hydro- ric acid in moderate amounts in all but two specimens, this result was verified by another test meal next day. September 5th the fasting blood sugar was 78 mg. per c.cm., and 89 mg. three hours after a mixed breakfast. ut a month later a nurse called to see the patient, and id her apparently quite well; the patient stated that she experienced no inclination to faint, and had had no her convulsive attacks.

Literature

he clinical literature on the symptoms caused by te spontaneous hypoglycaemia is interesting, and con- d to comparatively recent years. Harris[2] in 1924 was arently the first to suggest that hyperfunction of the ts of Langerhans might, by causing hypoglycaemia, pro- e symptoms similar to those caused by an overdose of ulin. He reported five cases with comparatively mild ptoms which he considered to be thus explained, and mentioned the term "hyperinsulinism" in connexion ewith. A review of the literature would suggest that, le spontaneous over-production of insulin does explain ny of the recorded cases, certain of them may not ccounted for in this way; hence the descriptive noso- cal term "spontaneous hypoglycaemia" would seem e appropriate than "hyperinsulinism," the latter being rved for symptoms caused by true over-production insulin by the islets of Langerhans. Shih-Hoa and ao[3] in 1925 recorded moderate hypoglycaemic sym- ms from excessive purgation in a condition of partial vation. Wilder, Allen, Power, and Robertson[4] in 7 studied a case of carcinoma of the islets of Langer- s with severe hypoglycaemic symptoms; extracts of tumour tissue yielded insulin. Sendrail and Planques[5] 1927 stated that hypoglycaemia had been observed them in starvation, progressive muscular atrophy, and the pernicious vomiting of pregnancy. Finney and ney[6] in 1928 recorded a case of spontaneous hypo- caemia, and removed part of the pancreas, which was tomically normal. Schroeder[7] in 1928 produced hypo- caemia with symptoms in a woman by lowering the ohydrate intake. Thalhimer and Murphy[8] in 1928 cribed a case of spontaneous hypoglycaemia due to cinoma of the islets of Langerhans, and Allen[9] in 1929 cribed three cases, one of which was due to carcinoma the islets; in another, part of a normal pancreas was oved, with some improvement. Griffith[10] attributed ne cases of convulsions in infancy to spontaneous hypo- caemia. Howland, Campbell, Maltby, and Robinson[11] 1929 described a case of spontaneous hypoglycaemia, to a localized carcinoma of the islets of Langerhans, which removal of the tumour resulted in spontaneous e; this is apparently the only recorded case in which gical treatment was successful. In 1929 McClenahan Norris[12] described a fatal case due to adenoma of the ts of Langerhans. Allen, Boeck, and Judd[13] in 1930 iewed the surgical treatment of acute spontaneous oglycaemic attacks, and stated that three of five ients with pancreatic tumours, on whom partial createctomy had been performed, showed slight im- vement at first, but tended to relapse, and two ained no relief of their symptoms after this operation. mon and Tenery[14] in 1931 reviewed the literature and orded a further case of spontaneous hypoglycaemia with attacks of unconsciousness, due apparently to hyper-insulinism. Cushing,[15] Carr, Parker, Grove, Fisher, and Larimore,[16] and Womack, Gnagi, and Graham[17] record three cases of hyperinsulinism due to adenoma of the islets of Langerhans, with successful removal of the neoplasm and disappearance of the hypoglycaemic symptoms in each case. As far as we have been able to study the literature, about twenty-four cases of acute spontaneous hypoglycaemia with severe symptoms and apparently due to hyperinsulinism have been recorded. Several other references can be found to cases of spontaneous hypoglycaemia, acute and chronic, in some of which the symptoms tend to be less severe or absent, and in which the etiology may not always be clear. For example, the attacks have been attributed to liver insufficiency (possibly in relation to disorders of carbohydrate storage), non-pancreatic endocrine insufficiency or dysfunction, muscular dystrophy, renal glycosuria, lactation, and other causes. Wagner and Parnas[18] refer to a severe and acute case thought to be hepatic in origin, and Cross and Blackford[19] described a case of toxic hepatitis following the administration of neoarsphenamine intravenously, with symptoms definitely due to spontaneous hypoglycaemia. Mann[20] has shown that marked hypoglycaemia occurs in dogs after removal of the liver. Cammidge[21] mentions four cases of convulsive attacks due to chronic hypoglycaemia and associated with abnormalities of digestion, but he gives few details.

The symptoms of hypoglycaemia due to hyperinsulinism resemble those due to an overdose of insulin given hypodermically; the attacks may appear at intervals, and recovery may occur spontaneously, or after the ingestion of carbohydrate or injection of glucose, except in severe terminal attacks. The symptoms vary, according to the severity of the attack, from a sense of uneasiness, faintness, or apprehension, with perhaps sweating or great hunger, to vertigo, staggering, mental confusion, and coma, with or without convulsions, which, when present, are usually of the clonic type. Foaming at the mouth may occur, but loss of sphincter control is said to be uncommon.

Discussion

The case of acute spontaneous hypoglycaemia which we now record is, as far as we have seen in the literature, the first to be reported in detail in these islands, and, furthermore, faulty amylaceous digestion does not appear to have been heretofore described in any other case. The presence of a bilateral Babinski sign during the unconscious state, and its disappearance when consciousness returned after the glucose injection, is noteworthy. The cause of the hypoglycaemia in our case is not clear. The persistently low level of the fasting blood sugar, even when the stools contained no starch, would suggest, in the absence of indications to the contrary, hyperinsulinism. The severer degree of hypoglycaemia which was associated with and, as we believe, responsible for the unconscious state, never recurred during the period of observation. It is interesting to speculate as to whether the faulty digestion of starch, or a sudden exacerbation of this condition, when superadded upon the chronic hypoglycaemia, had an etiological relationship to the production of such a low level of blood sugar (35 mg. per 100 c.cm.) as to cause hypoglycaemic unconsciousness, but this question cannot be definitely answered from the information in our possession; we are inclined to the view, however, that possibly some such relationship was operative. This explanation would not account for the usual low level of fasting blood sugar in this case (62 to 76 mg.), for this level still persisted when the stools were free of starch, but without the occurrence of hypoglycaemic

symptoms. As judged by the tests performed, the liver function was normal; however, the possibility of mild liver injury, due to the novarsenobillon injections, might be considered, but does not seem probable. The blood urea figure was somewhat high while the patient was in coma (60 mg. per 100 c.cm.), but it was normal three hours after recovery. The absorption of glucose from the gastro-intestinal tract was normal, as judged by the glucose tolerance test. A puzzling feature is that the blood sugar curve, obtained after the ingestion of a mixed meal containing 50 grams of starch but no sugar, at a time when the stool was loaded with starch, did not show any great departure from what one might expect to be normal; apparently, although much starch passed through in the stool, a certain quantity was digested and absorbed. It is regrettable that further study of the starch digestion was not possible. We have no knowledge of the duration of the faulty amylaceous digestion previous to admission, and we find it difficult to appraise the significance, if any, of the transient achlorhydria. We regret that we were not able to study the case more fully, and our failure in this respect was due partly to the fact that we were not prepared to meet with a condition so unfamiliar to us, and partly to the poor co-operation of the patient, who objected to the tests and to being retained so long in hospital. We desire to record the case because it is possible that acute spontaneous hypoglycaemia may be a commoner condition than is suspected. On the other hand, although more than fourteen months have elapsed since we first saw the case, we have not seen another, even though we have been on the watch for one.

The patient was prevailed upon to return to the hospital for one day in July, 1931—that is, more than a year after her first admission. She looked well, and stated that she had had no attack of unconsciousness since we had last seen her (September, 1930), but that she had occasionally felt a little giddy, especially after eating "sweets" (meaning sugar and chocolates). Her fasting blood sugar was 62 mg. per 100 c.cm.; after the ingestion of 100 grams of soluble starch in water the blood sugar was determined every half-hour for three hours, and the figures were as follows (mg. per 100 c.cm.): 1/2 hour, 50; 1 hour, 62; 1½ hours, 67; 2 hours, 82; and 3 hours, 75. The stool contained no starch, meat fibre, or fat, but a few vegetable fibres were present. These findings tend to support the suggestion that hyperinsulinism was the cause of the chronic hypoglycaemia, and that the temporary superadded deficiency of the digestion and absorption of starch was a factor in helping to produce the acute hypoglycaemia responsible for the attack of unconsciousness which necessitated the first admission to hospital.

Summary

A case of acute spontaneous hypoglycaemia with severe symptoms is described; there was also chronic hypoglycaemia, and there was associated transient achlorhydria and faulty amylaceous digestion. The severe acute symptoms were promptly relieved by the intravenous injection of 10 grams of glucose.

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THE TRANSPLANTATION OF BONE*

BY

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The value of bone transplantation in the treatment of fractures is now so well established that it no longer needs argument to support it. As with so many other good operations, however, the development of a perfect technique has been slow, and failures have been frequent enough to prevent the operation from becoming as popular as it deserves. This paper is based on a review of the failures with which I have come in contact, and on a consideration of the errors that most often lead to bad results.

Causes of Failure

The chief cause of failure is infection of the wound. In almost every case in which it occurs the graft becomes a sequestrum and the fracture fails to unite. In the operation, therefore, asepsis is imperative. It can be acquired only by painstaking care, constant practice, and by the team work of surgeon and assistants, but the improvement in the results makes the effort well worth while.

There are still a few who fancy that when a piece of bone is transplanted from one place in the body to another it will continue to live, as does a transplant of free skin. This is an idea which must be eradicated if we are to reduce the percentage of failures. It hardly needs repetition that when a piece of bone is cut free from its circulation it dies, and must undergo complete absorption. The cells in the lacunae become necrotic at once and within two weeks have disappeared. Only those cells live which are free on the surfaces and in the open mouths of the Haversian canals, and so are capable of utilizing a supply of lymph, if such is available. These are the cells, however, which make the bone graft important in the treatment of non-union, and which must be humoured to the utmost if success is to be attained. Any abuse of them, such as boiling, immersion in antiseptics, and burning with a hot saw, must be guarded against, and any treatment of the graft that mechanically removes the periosteal and endosteal surfaces and leaves only hard compact bone, such as results from forcing a graft through a dowelling machine, must be avoided. I do not suggest that an autogenous dowel is not better than a boiled bone peg or a nail, but it certainly is not nearly so valuable as if its surface cells had been removed.

The revascularization and replacement of the graft are processes which are well known. Within a few days after the operation the capillaries are growing into the open Haversian canals, and masses of osteoclasts are making excavations in the dead bone. A few days later they are plastering the walls of the excavations with layers of new bone. As the blood vessels

* Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association, Melbourne, 1931.

the interior of the bone, osteoblasts move in also, o carry on the processes of absorption and replace- from within at the same time that they are going the surfaces In this way the graft is ultimately absorbed and replaced with new cancellous bone, may be expected to overcome the defect for which peration was performed. If this defect has been a nion in a fracture, the success of the operation will d on several factors These are first, healing by y union, secondly, the firm healing of the graft e fragments, thirdly, the firm healing of the frag- to one another, either through the graft alone or gh new bone joining the fragments to one another d the graft

question of the firm healing of the graft to the ents is of great importance in a review of the failures after time cases have come into hospital with per g non union because the graft has failed to unite e of the fragments An analysis of these cases shows one or more defects in the operative technique nt for the failure The commonest defect is neglect sure contact of graft to bed over a sufficient area utile to expect to overcome non-union by introducing ft which only butts against a freshened fragment sts in a bed half an inch long, as is so often the In a radius or ulna the graft should be embedded ast an inch and a half into each fragment, and in a at least two and a half inches Another defect is e to secure close apposition of graft to fragments has referred to this over and over again in his s, and he is perfectly right in the matter I have dozens of failures result from one end of a graft contact with its bed, or from the careless fitting aft and bed, so that contact occurs only at points, not throughout surfaces Study of the union of bone blants to their beds in experiments on dogs is most ncing in this regard If the graft is placed in tight ct with its bed, union takes place within two weeks ne laying down of trabeculae of new bone on the es and without the intermediate stage of cartilage rous tissue formation If even a narrow space is left en the graft and its bed, union is much delayed, if the space is as much as an eighth of an inch, may evented altogether Clinical experience confirms thes- imental observations completely, and demonstrates the successful grafting of bone calls for a fair degree ftsmanship

seems hardly necessary to speak of immobilization portant in securing success in bone transplantation ten do operations fail, however, because of neglect mobilize, that a word here may be of value I am nced that immobilization is of even greater impor in a bone grafting operation than in a simple ure, and to secure it we should not only use an nal splint in the form of plaster, but we should use form of internal fixation which will ensure perfect in the healing area until consolidation of the callus ccurred

fourth point of importance concerns the bed into the graft is to be laid In most cases in which ne graft is necessary the ends of the fragments have ne so sclerosed that they are almost totally incapable acting to irritation Such bones are hard like ivory, very little when cut, and show practically no cellular ity when injured It is well known that op rations g at overcoming non union in this kind of bone, simply provide for bringing freshened ends into act, almost always fail For the same reason bone s fail to heal to this kind of bone, and experienced tors know that, to have any chance of success, the must extend beyond the sclerosed area and come in act with healthy bone. A preferable technique, which will be discussed later, gets rid of most of the sclerosed bone and replaces it with an appropriately shaped graft

Some writers have been so impressed with the importance of cutting through the sclerosed bone at the ends of the fragments that they have inclined to the idea that this is the really important part of the operation, and that, except in so far as the bone grafting operation requires the free opening up of the fragments, it is not a real contribution to the treatment of non union Waring and Milligan in 1922 published a paper in which they suggested that the delib rate comminution and artificial impaction of the fragments was a more dependable method of treatment than bone grafting They cite cases in which bone grafting had failed, and the communion operation had subsequently proved successful In this, however, they are undoubtedly mistaken, although the point they emphasized is of basic importance in inducing union Without the thorough opening up of the fragments bone grafting would be futile With the fragments well opened, however, it has been our experience that a bone graft operation well done greatly increases the probability of solid union, and is a most valuable addition to our treatment

A good deal has been said about the stimulus that the bone graft gives to the osteogenetic cells in the ends of the fragments Whether such a stimulus exists or not I have been unable to determine It seems clear, however, that it is of no great importance, as the osteogenetic activity in the ends of fragments in experimental animals seems to be quite as great when the fragments are simply cut open as for the reception of a graft as when the graft has actually been inserted

Technique of a Bone Graft Operation

The technique of a bone graft operation must necessarily vary a great deal, depending on the problem presented It is folly to try to force the same plan on all cases As a rule, the surgeon must determine the mechanical details of his operation after the field has been exposed The operation will be considered under the headings of the preparation of the fragments, the preparation of the graft, and the insertion of the graft

Preparation of the Fragments

To prepare the fragments properly an adequate incision is required, a longer one than is needed for a plating operation, as the motor saw must be used in the wound. The fragments are then brought into line, and, if possible, into contact During these manipulations we avoid all unnecessary injury to the circulation of the fragments. The temptation to strip the periosteum freely off the terminal two or three inches of the fragments must be resisted, as this invariably results in extensive aseptic necrosis, which reduces the fragments to more or less the same condition as the graft, and so lessens the tendency to healing I have seen several cases fail to unite, and several others definitely delayed in uniting, in what were otherwise technically good operations because of ruthless stripping of the periosteum

The next step depends on the thickness of the bone involved If it is the radius, ulna, clavicle, fibula, or one of the slender bones of the hand or foot, the motor saw is applied to the fragments so as to cut out a V shaped piece from the end of each, as shown in Fig 1 This V shaped piece of bone takes out practically all of the sclerosed bone which plugs the medullary canal, and opens the fragment well back to the normal medullary cavity An osteotome is then applied at the point of the V, and the shaft split till the two halves stand open widely This is the preparation for the diamond graft described by Albee

In the case of the tibia, femur, and humerus the diamond graft operation is obviously not suitable, and

some form of inlay, or onlay, or medullary plug must be employed. We are altogether in favour of some type of inlay, as it conforms best to the principles which we think should govern bone grafting. The onlay graft deforms the part, it interferes with subsequent function, and it fails to make the most use of the osteogenetic powers of the fragments, as it does not open up the endosteal region. The medullary plug is defective in that it is often difficult to insert it far enough beyond the area of sclerosed bone, and it too often literally acts as a plug and prevents the outflow of osteogenetic tissue from the interior of the fragments. The inlay graft, on the contrary, does not add to the deformity ; it may be made as long and as wide as is necessary, and in cutting the bed for it the fragments are thoroughly opened up, almost as well as in the diamond-graft operation, so that every advantage is taken of the natural powers the fragments may have towards healing. In our experience it is much the best method.

The preparation of the fragments in such large bones as the tibia consists primarily in restoring proper apposition and alignment. This usually calls for some stripping of the periosteum, but it should be kept to a minimum. At the same time the fibrous tissue, cartilage, and bony plates on the ends of the fragments should be removed, and the freshened surfaces brought into as close contact as possible. If there is any tendency for the fragments to slip apart, and particularly if any amount of force is required to keep the ends in close contact, I always use some form of internal fixation, such as a beef bone or steel screw, or even a steel plate and screws. This precaution does away with the risk of the fragments slipping during the application of the splints or afterwards.

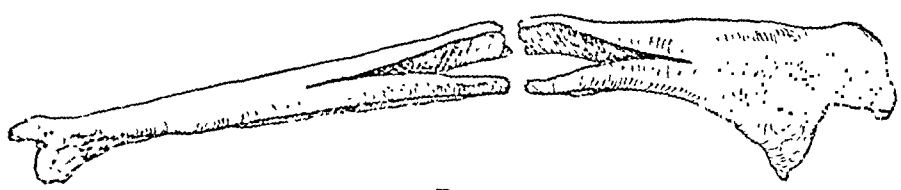


FIG 1.
Bone prepared for diamond-shaped graft.

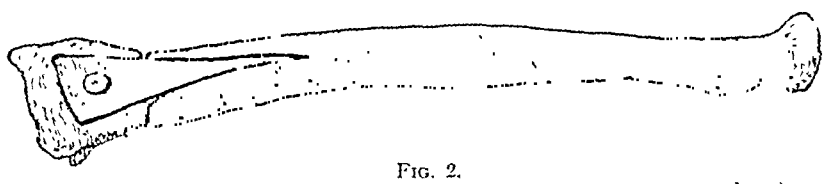


FIG. 2.
Diagram showing method of introducing graft in ununited fracture close to extremity of bone.

The preparation of the bed for the graft is now proceeded with. With a single or twin saw a wide mortice is cut, extending about three inches on each side of the fracture, if this is possible, and exposing the medullary cavity. In the immediate vicinity of the fracture this will still be plugged with sclerosed bone, which must be chiselled out completely. If the fracture is in or close to the expanded end of the bone, length must be sacrificed in the graft, but to make up for this the mortice and graft may be cut much wider there so as to make a dovetail (Fig. 2).

Preparation of the Graft

The preparation of the graft is of the greatest importance. The requirements of a suitable graft may be summarized as follows:

1. It must contain sufficient living elements to enable it to take an active part in the healing of the fracture.
2. It must be strong enough to act as a temporary internal splint.
3. It must be of such a type that it will resist the disintegrating effect of the invading osteoblasts until sufficient new bone has been laid down in and around it to prevent its collapse.

In order that the maximum of living cells may be transplanted with the graft, its periosteal and endosteal surfaces must be preserved. I do not mean by this that the periosteum should be transplanted with the graft, but our experiments, and those of many others, have shown that the amount of new bone forming on the surface is approximately the same, whether the periosteum is transplanted with it or not. As a rule, in cutting the graft we do so subperiosteally and preserve the periosteum to sew over the cavity left by the removal of the bone in order that a subcutaneous haematoma may be prevented. *In removing the graft, however, the periosteal* surface should not be roughly scraped or chiselled, as such treatment would undoubtedly remove the osteoblasts which are lying in all the irregularities of its surface. Similarly, the cancellous bone which lines the deep surface of a tibial graft should be preserved, as it is readily permeated by lymph, and contains large numbers of osteoblasts which quickly spring into activity after the transplantation, and are very important in absorbing and rebuilding bone.

The choice of the particular bone that shall be used in any given case is always important. Our experiments have shown that the transplantation of loose-textured bone, such as rib or crest of ilium, is followed by much more active proliferation of osteoblasts and much more rapid absorption and replacement when the transplant is cut from the hard, compact bone of the crest of the ilium. Theoretically, therefore, cancellous bone should be preferable for transplantation. This is not so, however, in all cases, for in fractures of long bones, such as the tibia, if a transplant of cancellous bone is used, it rarefies so quickly that a fracture often occurs through it, which usually fails to unite again. For long bones, therefore, particularly those in which union naturally takes place slowly, sufficient compact bone is required in the graft to enable it to act as an efficient splint and a trustworthy bridge until new bone formation is well established. The bone that best supplies these requirements is the inner face of the tibia.

One sometimes has to decide whether the graft should be taken from the fractured bone itself, making a so-called "sliding graft," or whether it would be better to go to the opposite limb. As a rule, the sliding graft is perfectly satisfactory, and is therefore preferable. Occasionally, however, when the ends of the fragments are very sclerosed and it is certain that union will be delayed in any circumstances, and where the bone is thin for a distance beyond the sclerosed ends of the fragments, or very thin and atrophic, it is better to cut the graft from a normal bone, and so avoid the risk of failure. The trouble with the sliding graft in the tibia is that it tends to absorb and disintegrate before new bone has formed, very much like grafts of ribs and iliac crests.

There is a distinct place, however, for cancellous bone as transplants. Nothing has been so satisfactory in our hands as rib for non-union in the mandible, for operations designed to fuse joints such as the astragaloid, or to fuse the laminae of the spine together, I like to lay in the prepared bed between

ical bone and a crushed-up mass of cancellous bone, he idea that a great proliferating mass of bone-g cells will result and ultimately fuse all the raw surfaces together. Experimentally it can easily be strated, by transplanting a block of cancellous bone ne muscles of an animal's back and in another place lanting a similar block after it has been well crushed at after three or four weeks a great deal more new formation takes place around the crushed bone round the solid piece. The explanation is that more bone surface has been exposed, and therefore more cells brought into contact with lymph. Clinic-ne same thing can be demonstrated by examining of patients in whom fusion of the vertebrae has ttempted with a single graft in one case and by le strips and crushed grafts in another.

Cutting and Insertion of Graft

technique of cutting and inserting the diamond s worth reviewing. With the fragments prepared ready de-l, the sur- exposes a reflects the eum, and the motor cuts a id-shaped which is as t its central is the trans- diameter of ne, such as radius or into which to be in-. It tapers to a fine at each end, from three ree and a nches long. aw cuts are perpen-r to the periosteal surface, and they go right gh to the medullary cavity, so that the graft is on its deep side with cancellous tissue This graft n held by a suitable forceps, and one end of it mered into the split fragment which has been pre- for it (Fig. 3). The other fragment is then sprung by means of a narrow osteotome, and the other end graft pushed into its bed If this graft has been fit the bed it will now be held firmly in the split f the fragments, and may require no further fixation rule, however, it is not safe to omit further fixation, graft has been known to pop out at one end at stage in the manipulations, and so spoil the whole tion. It has been our custom to pass a drill trans-y through each fragment as it embraces one end graft, and to slip a beef bone pin through this hole. is way accidents are avoided (Fig. 4).

insertion and securing of the inlay graft also es care. As mentioned above, if there is a strong ncy for the fragments to slip sideways, we do not te to immobilize them with steel screws or plates. ot absolutely necessary, however, we omit non-bable material We make a point of seeing that the fits its mortice accurately and has contact over a area. We further make sure that graft and mortice ressed tightly together, and this is done by fastening raft down in its bed in each fragment by one or more beef-bone screws, or, if greater security is needed, by long steel screws The main point is to get a strong graft which is well lined with cancellous bone solidly embedded in the fragments and to fasten it there, so that there is no risk of a little accident spoiling what has often been a serious and difficult operation.

The use of boiled beef bone in the form of pins and screws has been very helpful in immobilizing both fragments and grafts. The screws are inserted into holes which have been drilled and tapped with a special cutting tap. Being ordinary beef bone they have ordinary Haversian canals into which new blood vessels quickly grow, and they undergo the changes which occur in an ordinary autogenous graft—namely, absorption and replacement. The only difference that one can detect between the changes occurring in the boiled beef bone and in the autogenous is that in the former all changes are much slower. It takes six months for a bone screw to be replaced by living bone, whereas an autogenous graft of similar size would have lost its identity in half the time.

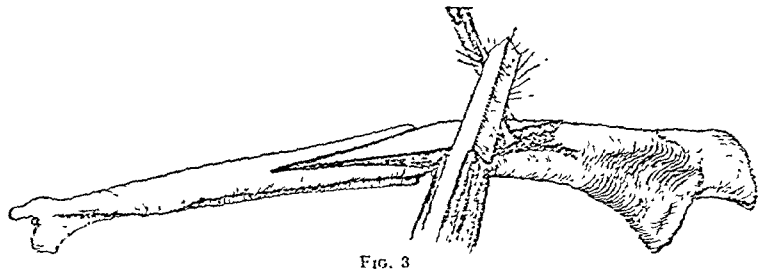


FIG. 3

Graft being hammered into position.

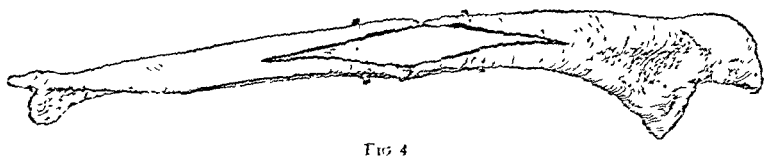


FIG 4

Graft fastened in position with bone pegs

BRIDGING GAPS

The great frequency of failure in attempts to bridge gaps in the long bones by means of transplants has led to almost complete abandoning of the method Experience has shown that it is usually wiser to accept shortening sufficient to bring the ends of the fragments into contact or nearly so and then do a bone graft, than to attempt to maintain the length and to bridge the gap by any method of bone grafting yet devised As a rule, such attempts have ended in failure owing to fracture of the graft. A study of such grafts in animals has shown that these fractures occur close to the point of contact of the graft with its bed, and are due to the fact that absorption has been going on in the graft more rapidly than the building up of new bone, so that a time comes, between two and three months after the operation, when the graft, which originally was quite strong, has softened down till it cannot stand any strain, and so spontaneously fractures.

Occasionally, however, it is absolutely necessary that a gap be bridged, as, for example, in ununited fracture of the mandible. In such cases the surgeon should bring to his assistance all the forces he can command Thus, in addition to bringing a suitably shaped graft into intimate contact with the bed in the fragments, provision must be made to ensure that the greatest number of osteoblasts possible survive and take part in rebuilding the graft. This requirement has been met by using a rib which has been split on the flat so as to allow lymph to bathe the cancellous bone of the interior This plan, if combined with rather prolonged immobilization and a guarded return to motion, will cure most cases of non-union of the mandible

In the rare cases of fracture in the long bones in which it is necessary to bridge gaps, as in severe loss of substance

in the ulna or radius, one must combine the diamond type of graft with multiple slivers, strips, and crushed up cancellous bone, which is laid in the periosteal tube along with the diamond graft. The latter forms a framework upon which the smaller grafts can build new bone and so ultimately fill the space with material strong enough to do the work of the normal ulna or radius.

Conclusion

Much of what I have said has had to do with failures. Failure, however, should occupy a very unimportant place in the surgery of bone grafting, and if the general principles discussed are remembered when the operations are being performed, it will be rare that a failure will need to be recorded.

ABDOMINAL MANIFESTATIONS IN RHEUMATISM

BY

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Although abdominal manifestations in rheumatism are quite well recognized and have frequently been reported, cases in which pain in the abdomen is diagnosed at the outset as definitely rheumatic in origin must be very rare. It is usual for the rheumatic nature of such symptoms to become apparent a few days after their onset, and thus make the diagnosis certain. In a recent paper Giraldi[1] has called attention to this subject, and has given a very good review of the literature relating to it. The matter seems to be of sufficient importance to merit a report of the following cases, and prompts one to consider how frequently abdominal pain in childhood, in the absence of other symptoms, may be rheumatic in origin.

Case I

D. H., male, aged 10 years, was admitted on the surgical side of the London Hospital, under the care of Mr. Alan Perry. Family history was negative. Past history: The boy was said to have suffered from rheumatism, with involvement of the heart, at the age of 5; since then he had suffered from time to time from limb and joint pains, which had sometimes been severe. No history of repeated sore throats or colds. Present illness: Four days before admission he complained of pain in the lower abdomen, and vomited; bowels had been constipated for two days.

December 8th, 1930 (on admission): There was tenderness and rigidity in the right iliac fossa, and appendicitis was diagnosed. At operation the peritoneal cavity was found to contain a little clear fluid, and the appendix was injected. On section it was reported to show changes consistent with slight chronic appendicitis, which, however, did not appear to be due to an acute attack. The boy progressed well for seven days, and then the temperature began to rise again.

December 16th: The boy looked ill, but, except for slightly diminished air entry and impaired percussion note over the lower lobe of left lung, no abnormal signs were noted. The following day a friction rub appeared in the precordial area, which subsequently became more marked and was heard distinctly all over the precordium.

December 30th: The patient was extremely pale. No rheumatic nodules noted. Throat normal. Heart: signs of pericardial effusion; mitral systolic and soft diastolic murmurs, and accentuated pulmonary second sound. Lungs: in left lower lobe percussion note impaired, with tubular breath sounds and crepitations, but nothing further abnormal. Liver enlarged almost down to umbilicus. The operation wound was healed.

January 2nd, 1931: Pericardial effusion markedly decreased.

January 12th: Hardly any effusion noted; lungs practically clear.

February 6th: Much better. Area of cardiac d[ullness] normal; at apex, systolic murmur still heard and s[econd] sound reduplicated; pulmonary second sound accentuated.

March 2nd: No reduplication of apical second sound [now] present, otherwise physical signs in heart unchanged.

March 3rd: Some pain in left shoulder, and rise of temperature and pulse rate.

March 7th: Patient seemed very well. Pulse rate 8[0] to 90. Condition of heart as above; apex beat not fixed; no other signs of adherent pericardium. Liver not enlarged.

About a week later the boy was discharged to a convalescent home. He was treated with sodium salicylate [only] in hospital.

Case II

S. H., female, aged 8. Family history was negative. P[ast] history: The girl was said to have had rheumatic fever, [but] the exact age at which this occurred was not [known]. Generally speaking she had not suffered from limb or joint pains, and there was no history of frequent sore throats or colds. She was admitted on the surgical side of the [London] Hospital (May 2nd, 1929) under Mr. Lett, with a history of vomiting and pain in the right iliac fossa for three days, and one day pain in the right knee. She appeared flushed and [ill], had a furred tongue, and there was tenderness and rigidity on the right side of the abdomen. The heart at this time appeared normal. Appendicitis was diagnosed. Operation revealed an oedematous and injected appendix containing threadworms. On section the appendix was reported to show the changes of slight acute appendicitis, sufficient to have accounted for her symptoms. Three days after operation pain in the right knee was more marked, and the left knee was also painful.

May 7th: Acute rheumatism diagnosed.

May 13th: Blowing mitral systolic murmur noted for the first time. Patient transferred to the children's department.

May 15th: Knees tender but not swollen. No rash noted. Heart not enlarged; localized blowing mitral systolic murmur; pulmonary second sound accentuated; no other abnormal physical signs. Pulse somewhat rapid, but otherwise child progressing well.

July 3rd: Physical signs in heart unchanged, except that the systolic murmur was not quite so marked.

July 31st: Child now appeared very well; no abnormal physical signs, and pulse rate had decreased.

August 23rd: Tonsillectomy performed.

September 17th: Child discharged. Heart apparently normal at this time; pulse rate 88 to 90.

The patient was treated with sodium salicylate during the early part of the illness.

I should like further to mention a case which I had the opportunity of seeing while working with Dr. Marriott at the Children's Hospital, St. Louis, U.S.A. The child was admitted to the hospital on account of abdominal pain, and on examination appeared to present a picture of acute appendicitis. The case was not, however, entirely typical, and the surgeon who saw the child decided to wait and watch him for a period. On the following day he had pain and swelling of the joints, and a typical attack of acute rheumatism developed, and ran a normal course.

Discussion

It is still open to question whether appendicitis may be caused by acute rheumatism, or whether acute rheumatism itself may cause symptoms resembling those of acute appendicitis. I feel that the above cases support the fact that abdominal disease may be a manifestation of rheumatism. The pathological changes in the appendix were slight in both of the cases reported, but there can be no doubt that these children were suffering from rheumatism. (The appendix showing the principal pathological change was that found to contain threadworms.) These cases are similar to certain of those already discussed by Giraldi and others.

i view of the frequency with which rheumatism occurs hildren of the hospital class, and the number of times is confronted with a child suffering from abdominal witho other signs or symptoms, it is worth while idering how often children with these abdominal sym-ns may be actually suffering from rheumatism, of h this pain is at the time the only manifestation. his connexion the "digestive group" of rheumatic ents dis ss d by Giraldi[1] is significant. Another point nterest is the relationship which exists in childhood een sore throat, appendicitis, and abdominal pain, first of which often appears to precede either of the rs; this has been fully discussed by Brennemann,[2 3] seems to be of importance here because of the known ciation of tonsillitis with rheumatism Obviously the ibility of a case that presents the features of true endicitis proving to be rheumatic in nature must not held to contraindicate operation, since, if the case uld actually be one of rheumatism, no great harm uld result, whereas a tragedy is likely to occur if acute endicitis is left without surgical intervention.

ases such as the above probably occur more frequently n is generally realized, and on this account it seems sable that attention should be directed to them.

should like to thank Dr Bratton for the pathological rts and those members of the staff who had care of patients, for permission to report these cases

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YCHIA AS AN OCCUPATIONAL DISEASE*

BY

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sidering how much the nails are exposed to inflamma- and injury in innumerable industrial processes, it is arkable how little has been written about them in the literature that has grown up in the last twenty years ing with occupational diseases of the skin and its endages. In the latest edition of Prosser White's on occupational diseases of the skin there is scarcely mention of the nails In the exhaustive treatise on same subject emanating from the Viennese school, ected by Oppenheim, Rille, and Ullmann, there is a t chapter on the subject contributed by Heller of lin, who for the last thirty years has been studying ases of the nails, and is undoubtedly the greatest ority on them at the present time Heller's chapter lustrated by many excellent photographs, and shows ny instances of deformity and atrophy of the nail ught about by various industrial occupations Very arkable are the erosions of the nails which occur ong those who work in calcium chloride. Apparently, ll collections of this substance are caught under the margin of the nail and act almost like cauterizing nts on the tissues in the vicinity. Alterations in the s owing to concomitant eczema are also well known, occur in many departments of chemical industries. other interesting industrial disease of the nail is that ch affects certain workers in breweries. Those work-n whose duty it is to clean out the casks in which mentation takes place often remove adherent masses yeast with their finger-nails, and this causes the nails be riddled with lacunae, while crusted excrescences w beneath and cause the destruction of the nail t, however, of the lesions here described deal with alterations of the terminal portion of the nail, which frequently in many industrial occupations becomes rubbed down by friction or softened by the macerating action of various fluids It is well known, for example, that washerwomen never have to cut their nails, which are always soft and occasionally become loosened

The type of lesion to which I wish particularly to direct attention does not, however, figure at all conspicuously among the recorded injuries inflicted on the nails by industrial conditions I refer to chronic onychia In the exhaustive treatise of Oppenheim, Rille, and Ullmann the word does not appear in the index I have also searched the literature for some reference to onychia as an industrial disease, but can find no paper bearing on this aspect of the complaint The only variety of onychia which has stirred clinicians to publication appears to be syphilitic onychia, which is the subject of several papers, and I now learn from Dr Rolleston that diphtheritic onychia has been described

The clinical characteristics of chronic onychia hardly require recapitulation The skin at the base of the nail is thickened into a dull red sausage-shaped roll, encircling the nail and gradually tapering off as it approaches the distal end. There is no great quantity of pus produced, but an occasional bead of moisture may be expressed In cases which have continued for some months, the nail-plate itself gradually loses its smooth and polished surface, becomes wrinkled, and may be actually deformed I have seen a case in which the formation of the nail-plate was so seriously interfered with that only heaped up friable material was formed, which really hardly bore the slightest resemblance to normal nail substance There is a certain amount of tenderness at the inflamed bases of the affected nails, but otherwise the symptoms are not severe

In my opinion, most cases of chronic onychia are caused by occupations which necessitate frequent immersion of the fingers in water, and the incidence of the complaint is probably encouraged when soda is used freely Such occupations are beer bottling, office-cleaning, and that occupation which, notwithstanding the social stigma supposed to be attached to it, is still the most widely followed in the world—namely, domestic service The influence of continual moisture was well exemplified in the case of one young patient, a girl, employed in beer-bottling She used to grasp the neck of the bottles with the left hand, and the beer continually overflowed on to her fingers, she contracted onychia on that hand only, while the fingers of the right hand, which were only seldom wetted, escaped. Another patient was a lady who, during the war, volunteered to do the washing for several of her soldier relations returning on leave. She contracted chronic onychia, which took several years to clear up. I think that it is commoner in women who only become exposed to this danger comparatively late in life than in those who are brought up to what may be described as the "rough work" of domestic service Moreover, in many cases the hardened charwoman regards a slight amount of onychia as normal or "all in the day's work" I think that if one takes the trouble to examine the fingers of many of these ladies one will often find a slight degree of thickening of the skin round the base of the nail, even although they make no complaint about it Another cause of onychia occasionally seen but which is hardly describable as an occupational disease is manicuring There are some women who contract the condition from using the orange stick with excessive vigour It may be of medico-legal importance to bear this possibility in mind Circumstances may easily arise in which the occupation of the patient may be blamed for that which is really the result of a pardonable vanity, and the tendency of legislation is continually putting additional

*Paper read in the Section of Dermatology at the Annual Meeting of the British Medical Association, Eastbourne, 1931

temptations in the way of patients to ascribe all their misfortunes to their employments.

One reason, perhaps, why onychia has not drawn much attention as an occupational disease may be that many of the cases occur in patients whose hands are already affected by severe industrial dermatitis, and in whom it is largely secondary to that dermatitis. Here I am especially concerned with onychia occurring independently, and I think that if looked for it will be found to be of more importance industrially than has hitherto been supposed.

A NEW METHOD FOR THE INJECTION OF LIPIODOL

BY

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The intra-bronchial injection of an iodized oil, opaque to the *x* rays, for the diagnosis of certain conditions of the lungs and bronchial tubes has been practised for some time. This method of investigation has advantages peculiar to itself, and there is no other method which gives the same information. It is therefore important that the method of injection should be rapid, painless, and efficient. The condition under treatment may require repeated injections of the oil, and the objections of patients to these repeated injections by the methods at present in use has made it apparent that some easier and more rapid technique should be evolved.

There are two possible methods of injection: the intra-laryngeal (usually called the oral route), and injection through the crico-thyroid membrane direct into the larynx.

The great disadvantage of the oral route is that it is *not applicable to children. The condition which most* commo- Family ires lipiodol injection, a pneumonitis in- volv- said to hav- bronchi, occurs frequently in children, so the heart, at the ot to evolve a technique of injection which to time from lim- lly *applicable only the alternative* m- present illness: Four da- ed.

ain in the lower abdon has previously been necessary for th- nstipated for two days. n, and this has been a serious dis- *December 8th, 1930* (on anaesthetic only is given the child rigidity in the right iliac re round, and are apt to cough l. At operation the peritoi . With deep anaes- thesia, a little clear fluid, and the attend the aboli- tio- of bn it was reported to show cha- ure has to be slight chronic appendicitis, which, however, ails to sh- ear to be due to an acute attack. The boy progressed wel- ow seven days, and then the temperature began to rise ag.

December 16th: The boy looked ill, but, except plify the diminished air entry and *impaired percussion* oid membrane lower lobe of left lung, no abnormal signs v eneral anaesthetic following day a friction rub appeared in of a special syringe which subsequently became more as distinctly all over the precordium.

December 30th: The patient rheumatic nodules noted. Throat PPARATUS pericardial effusion; mitral systo ith a barrel greater in murmurs, and accentuated pulmonary than the one generally in left lower lobe percussion note as been replaced by a breath sounds and crepitations, but not e working arm of this Liver enlarged almost down to umbi arm is screwed the wound was healed. ttached to the piston

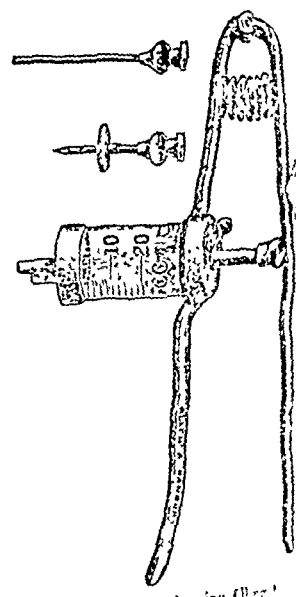
January 2nd, 1931: Pericardial effusion inserted between the

January 12th: Hardly any effusion no constantly apart and clear. To the end of the it. A filling tube is l needle with lateral holes fits the syringe. On this needle a shoulder may be placed, if desired, to prevent it penetrating the larynx beyond a certain point.

TECHNIQUE OF INJECTION

The injection may be made through the crico-thyroid membrane or between two of the upper rings of the trachea. Some time before the injection the skin over the selected site is swabbed with spirit and painted with 1 per cent. picric acid, and this area protected with sterile cotton-wool held in place by a bandage. Before proceeding with the injection the patient should be instructed to bring up as much sputum as possible. At the time of injection the dressing is removed, the patient lies down and, using a syringe fitted with a very fine hypodermic needle, the skin is anaesthetized with 1/2 c.cm. of 2 per cent. novocain and adrenaline. It is good practice to form a bleb to mark the position of the crico-thyroid membrane. The filling tube is fitted to the special syringe and the lever is compressed until the piston reaches the end of the barrel. The tube is then placed in a bottle of warmed oil and the pressure gradually released. As the spring separates the arms of the lever, the piston moves and the oil flows into the barrel.

The piston is so arranged that it goes past the 20 c.cm. mark; the barrel therefore contains 20 c.cm. of oil and 3 to 5 c.cm. of air. The filling tube is removed and the needle attached. The syringe is then inverted and the air expelled. The piston is kept steady at this point by means of a check-piece. The filling of the syringe and fitting of the needle takes about thirty seconds.



Special syringe, showing filling tube (above), and needle with shoulder fitted.

With adults it is now usual to inject about 5 minims of 10 per cent. cocaine hydrochloride into the larynx from an ordinary 1 c.cm. syringe, but with children I generally omit this in order to make the operation more rapid.

The needle of the special syringe is now gently pushed through the crico-thyroid membrane until it is felt to enter the larynx, and the patient is sat up. The lever is held firmly and the check-piece re- with the first finger of the right hand. Tension on lever is now gradually released. If the end of the needle in the larynx bubbles of air will enter the syringe. W- this occurs proceed with the injection. At any st- the injection the position of the end of the needle verified by gently releasing the lever. At the end of injection the lever is released, any oil in the needle pulled back into the barrel. The needle is then drawn, the neck gently rubbed, and the puncture

The *x*-ray picture is taken in the upright posture.

There are no after-effects to these injections and complications have occurred.

In practice this method will be found consi- quicker and far more comfortable for the pa- those previously in use. It is not usually ne- admit patients into hospital; provided the c- which the investigation is made permits, the p- may be allowed to go after the investigation is completed.

A syringe of this type, with the various m- they have been introduced, has been in u- months and has given satisfaction. It is made by Allen and Hanburys.

A SIMPLE TECHNIQUE FOR INTRODUCING LIPIODOL INTO THE LUNGS

BY

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Several methods have been described for the injection of lipiodol into the lungs. One of the earlier methods was by injection into the trachea through the crico-thyroid membrane. This method is not free from complications, and owing to easier means of access is gradually being abandoned.

The peroral methods may be divided into two groups:

1. The aspiration of lipiodol after cocainization of the laryngo-pharynx.
2. The peroral introduction of a catheter through the anaesthetized larynx.

The disadvantage of the first method is the inevitable partial swallowing of the oil and the difficulty of a uniform distribution of the oil throughout the bronchial tree. The second method as usually performed requires profound anaesthesia of the laryngo-pharynx and expert laryngological skill.

The method we originally adopted at the bronchoscopic clinic at the Margaret Street Hospital for Consumption was that of Dr. Garcia Vicente, which consists of a catheter introduction through the larynx by means of a special forceps for holding and directing the catheter into the larynx. The necessity for profound anaesthesia of the laryngo-pharynx, and the bulkiness of the forceps, which made it especially difficult to use in nervous and young patients, was the reason for our originating this simple technique.

Reasoning that the natural way to the larynx is through the nose, we tried introducing the catheter along the floor of the nose, and were astonished at the ease and simplicity with which the catheter entered the larynx. The procedure is so simple that no previous experience is necessary.

PROCEDURE

The equipment required is: one gum elastic catheter, No. 6 or 7, a 40 c.cm. syringe, and a spray containing a 4 per cent. solution of cocaine.

The patient is seated and the neck slightly extended. One nostril, the oro-pharynx, and the larynx are slightly sprayed with the cocaine solution. The sterilized catheter is gently passed along the floor of the nose until it reaches the posterior pharyngeal wall, when, with a slightly increased pressure, it passes without any difficulty directly into the larynx, because the deglutition reflex has been inhibited by cocainizing the oro-pharynx.

The presence of the catheter in the trachea is proved by listening to the inspired and expired air passing through. Two c.cm. of the cocaine solution are immediately introduced through the catheter. The patient is now ready for the introduction of the oil. The entire procedure should not take longer than three minutes.

The patient is placed on the *x*-ray table, which is tilted into the Trendelenburg position. The injection of the oil is begun. In this position the oil readily flows into the upper lobe bronchi. To ensure an equal distribution in both lobes, the patient is directed to turn first on to the right side and then on to the left. The oil flow is watched on the *x*-ray screen. When indicated a radiogram is taken. This should be done as soon as the bronchial tree appears filled, and before the oil has spread to the alveoli. The table is now put into the horizontal position and the injection of the oil is continued. As before, the patient is directed to turn first on to the right side and then on to the left side. In all, about 40 c.cm of lipiodol are introduced. The filling of the lower lobes is again observed on the *x*-ray screen, and a radiogram is taken when the whole bronchial tree is clearly visualized.

Thirty cases have been done with this technique, and in no case has the result been obtained other than with extreme ease and satisfaction.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

AN UNUSUAL COMPLICATION OF BLOOD TRANSFUSION

The transmission of an acute infective fever from one person to another by transfused blood must be a very rare event. That it can occur is clearly demonstrated by the following case:

The patient was a man, aged 36, who had suffered from pernicious anaemia for many years. He had experienced several previous transfusions of blood, with no subsequent reaction beyond slight pyrexia.

On this occasion he was given 520 c.cm. of defibrinated blood from a private donor at 6 p.m. on February 16th, 1931. The donor and recipient both belonged to Group II (Moss), the donor did not enter the patient's room. The operation was completed without difficulty; the temperature rose during the night to 100.8° F., but no other evidence of reaction was observed.

He remained perfectly well until 4 p.m. on February 18th, when a slight rigor occurred and the temperature rose to 104.2°. Headache was severe; alarming pains came in paroxysms in the back and limbs, at times with such sudden intensity that the patient shrieked in his agony. Extreme tenderness was manifested over musculo-tendinous structures, aponeuroses, and the fibrous parts of large joints, but there was no joint swelling. The tongue was coated, the throat dry and a little red and sore. Salicylates and S.U.P. 36 brought considerable relief. During the night a burning painful cough developed, of the tracheal and high bronchial type.

It appeared to be an attack of severe influenza, which slowly subsided in about ten days, leaving a state of extreme prostration and a very troublesome tracheal cough. No gastro-intestinal features appeared at any time. It was not until three weeks after the transfusion that there occurred to the writer the possibility of infection from the donor. On communicating with him it was found that he had had influenza and was still too ill to leave his house. It appeared that he had been "not quite himself" on the day of the transfusion. Twenty-four hours later, on the following evening, he had been completely overcome by a severe attack of influenza similar to that experienced by the recipient. The pains in the limbs had been less intense, no gastro-intestinal symptoms had appeared, and the attack had slowly passed off in about ten days, leaving him very weak, with a dry cough that was "tearing his chest to pieces."

COMMENT

There can be no doubt that the donor's blood contained active infective matter. The course and features of the attack in each case were almost identical. The greater intensity of the recipient's limb pains may be explained partly or entirely by the fact that he was already suffering from pernicious anaemia, a disease in which bone pains and neuralgia are not uncommon.

The donor's attack preceded the recipient's by twenty-two hours, a point of considerable interest; but it would be unwise to draw important conclusions from it without more precise knowledge of the nature of the infective matter and its time

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

CALCUTTA BRANCH

Radiology in Medical Diagnosis

A clinical meeting of the Calcutta Branch was held on September 11th in the lecture theatre of the Calcutta School of Tropical Medicine, when Dr. Kedarnath Das, president of the Branch, was in the chair.

Dr. U. P. Basu read an instructive paper on the value of radiology in medical diagnosis. After a few brief remarks on the history of *x*-ray diagnosis, he described four cases in which the most exhaustive bedside examinations had failed to elicit the precise diagnosis, and in which radiology had had to be appealed to for a solution of the difficulties. The first case was one of obscure chest symptoms in which the diagnosis (a new growth of bronchogenic origin) was finally cleared up by the use of lipiodol and a bronchogram. The second case was that of a young Hindu male student who was admitted to the lecturer's wards complaining of irregular attacks of pain in the right lumbar region, with fever. Dysuria was present during the attacks, succeeded by polyuria of a few days' duration. The right kidney was palpable during the attacks. A pyelogram taken after intravenous injection of uroselectan revealed urethral obstruction, with hydronephrosis. In the third case (a Mussulman seaman) there was a history of intermittent haematemesis and irregular febrile attacks. Clinically the case appeared to be one of aneurysm of the descending limb of the arch of the aorta, but practically all the classical signs of aneurysm in this region were absent. The clinical diagnosis was confirmed by an *x*-ray film of the chest. Dr. Basu's last case was in some respects the most interesting of the series. The patient, a middle-aged Armenian woman, was admitted to hospital complaining of irregular attacks of fever, headache, and generalized body pains, and a tickling throat cough of three days' duration. A radiogram revealed opacity of the right lung, extending from the second to the seventh rib. The condition appeared to be cystic, and a provisional diagnosis of hydatid cyst was made. This was confirmed subsequently at operation, when a hydatid cyst the size of a foetal head was found occupying the right lung. Dr. Basu's cases were retailed with a wealth of clinical observations, and a series of lantern slides rounded off an excellent paper. In concluding, Dr. Basu emphasized the debt of medicine to radiology.

In the discussion that followed, Lieut.-Colonel J. D. Sandes, I.M.S., pointed out that, while medicine undoubtedly owed a debt to radiology, there were also occasions on which radiology owed a debt to medicine. Dr. B. Shaha remarked that he was deeply impressed with the accuracy of Dr. Basu's clinical methods. He urged that bedside methods should always be exhausted before having recourse to radiology. Dr. B. N. C. Roy asked for further information on Dr. Basu's first and second cases. Dr. Basu briefly replied to the various points raised, and expressed thanks to his colleagues on the hospital staff who had assisted in the elucidation of the diagnoses.

Bundle-branch Block

Dr. S. C. Bose followed with a paper on bundle-branch block, illustrated by electrocardiograms. It was a great disappointment to members that Dr. Bose's paper, to the preparation of which he had obviously devoted much care and thought, had to be cut short for want of time. He dealt first with the arterial supply of the two branches of the A-V bundle, pointing out that right branch-bundle block is roughly twenty times as common as left branch-bundle block, owing to the relative arterial poverty of the former branch. The electrocardiograms from a series of ten cases were then shown; eight patients in this series had lesions of the right branch bundle and two had lesions of the left branch bundle. Etiology, age distribution, prognosis, and treatment were next passed in rapid review. In Dr. Bose's opinion branch-bundle block was commoner in Bengal than in Europe, in the proportion of about 1 in 25 cardiac cases from the former country as opposed to 1 in 100 similar cases from the latter country. Syphilis appeared to play a much more important part in the causation of branch-bundle lesions in Bengal than it did in Europe. In the speaker's series of 100 cases seven were of syphilitic origin. The condition could not be diagnosed clinically, and Dr. Bose was frankly pessimistic as to prognosis and treatment.

In the subsequent discussion Colonel Sandes agreed that bundle-branch block was commoner in Bengal than in Europe. Had time permitted, he would have liked to hear Dr. Bose's views on *partial* bundle-branch block. Dr. U. P. Basu said that in his experience bundle-branch block was the result either of infective processes or of muscular degeneration. He asked whether there had been an opportunity for post-mortem examinations in any of Dr. Bose's cases, and, if so, what was the condition of the junctional tissues? Dr. Bose, in reply, said that all his cases had occurred in private, and no necropsies were possible. He pointed out that microscopical examination of the junctional tissues demanded the employment of a very special technique.

Reports of Societies

THE TEACHING AND PRACTICE OF RADIOLOGY

Two new Sections of the Royal Society of Medicine—namely, those of Physical Medicine and of Radiology—have replaced the two old Sections of Balneology and of Electro-Therapeutics. The address from the chair of the Section of Radiology was delivered on October 16th by Professor J. M. Woodburn Morison, who was also the last president of the Section of Electro-Therapeutics.

After relating the circumstances of the new departure, Professor Woodburn Morison spoke on post-graduate instruction in radiology, and made certain suggestions regarding the course of study for the diploma. He believed that the course should extend over three terms—that is to say, a full academic year—and that the subjects comprising the course should be: (*a*) physics and electrotechnics; (*b*) radiodiagnostics; (*c*) radiotherapy, radium therapy, and other forms of treatment by the use of radioactive substances; and (*d*) electrology. The instruction in all subjects should be both theoretical and practical. During the first and second terms all students should be instructed in the four subjects, and during the third term advanced courses of instruction should be given in each subject. Every student should be required to take physics and electrotechnics, and should have the option of selecting any of the other three subjects. Examination should be written, oral, and practical, Part I to be general in all four subjects, and Part II special in the first subject and in the second subject or subjects. This scheme did not contemplate associating electrology from radiology, and he thought the time had not yet come when it was advisable to do so, for he saw no prospect at present of a separate course being instituted in electrology, and, further, there was as yet no diploma in physical medicine for which the subject of electrology more naturally fell. In the scheme he had suggested a general knowledge

subjects would be assured, in addition to specialized knowledge of one or two of them The electrologist would be none the worse for having been taught something about radiology, and some information about electrology could do little harm to the radiologist Physics would be a compulsory subject in both parts of the examination If the student was thoroughly grounded in physics he never regretted it, and invariably, after he had passed the examination, was the first to admit its great practical value

In a later part of his address Professor Woodburn Morison discussed the question of qualification for the practice of radiology Those entitled to practise radiology consisted of all duly qualified and registered medical practitioners who had the requisite knowledge of the subject There was not, and could not be, any logical objection to any consulting physician, surgeon, gynaecologist, or any other qualified medical man doing x ray work, provided he had the requisite knowledge, if he had not got it, and pretended to have it, he was no better than a quack But the speaker wished to stress the necessary corollary Every radiologist should remember that he was first and foremost a physician, but a physician with a specialized knowledge of one branch of medicine He was entitled to treat patients, and, if his knowledge was adequate, to undertake the full management of cases entrusted to him What all practitioners of medicine required, in addition to their knowledge of medicine, was a knowledge of their own limitations and a little common sense The same arguments applied to the teaching of radiology There must be a certain amount of theoretical instruction, but practical instruction was the more important part, and it was there that the personal contact of the student and teacher was of such great value In the course of study for a diploma in radiology it was not essential that the student should have seen and done everything in connexion with the subject it was much better that the teacher should try to give his students, by a thorough study of a few cases, a sound basis on which afterwards they could build "Clinical radiology" was a term for which he offered no apology By use and custom, by its derivation and original meaning, the word "clinical" was applied, not only to bedside teaching, but also to lectures, to wards in hospitals, to the cases in those wards, to medicine and to branches of medicine, and even to the teachers themselves Its extension to radiology was justifiable, but it necessitated that the radiologist, if he was to teach clinical radiology, must have charge of beds Clinical radiology must play a most important part in the teaching of radiology, and that was the province of the qualified radiologist For this he must have charge of beds in the hospital to which he was attached, he must be, in reality, physician in charge of the radiological department, with beds under his control for the study and treatment of cases

THE OBSTETRIC FORCEPS

At a meeting of the Liverpool Medical Institution on October 22nd with Mr FRANK JEANS, vice president, in the chair, Mrs M A DOBBIN CRAWFORD read a paper on the use of the obstetric forceps, which included an account of 100 consecutive cases admitted to the Liverpool Maternity Hospital after failure to deliver by forceps

Mrs Crawford stated that the forceps, applied when the signs were favourable, was an instrument of mercy, used in unsuitable cases, or at an improper time, it was a lethal weapon whereby thousands of living foetuses had been killed, and scores of mothers brought to the door of death To illustrate the frequency of the abuse of that instrument, she had investigated the last 100 cases admitted to the Liverpool Maternity Hospital after attempts to deliver by forceps had failed The reasons for application were in 20 cases, none discoverable (probably a desire to save time or pain), in 64 cases, disproportion, the main factors being post maturity, occipito-posterior position of the vertex, and contracted pelvis The four rules for the application of forceps had been obeyed in only four of the 100 cases In 52 instances forceps were contraindicated, in 44 they had been applied too soon In 59 instances the patient was in the first stage of labour, the smallest degree of dilatation being a two finger os In 40 of these cases severe maternal lacerations were present, the uterus having been ruptured in 3 of them In 36 cases the head was free above the brim, in another 34 the head was entering, the largest diameter being still above the brim The immediate results were that 12 mothers died the morbidity being 31 per cent, and 62 infants died or were stillborn, while 9 of the surviving infants suffered birth injuries No fewer than 20 of the mothers were delivered spontaneously after treatment by sedatives and rest There were several anomalies in the use of forceps (1) it was the most commonly performed operation in general practice, and the one common operation which many students never saw, (2) the excessive force so often applied during the operation was a perfect example of the proverb "Out of sight, out of mind", and (3) the appearance of the scalp during pains did not necessarily indicate that the head was on the perineum, or forceps application had become permissible Having conducted the midwifery of a general practice for seven years, the speaker said she was not ignorant of the difficulties of this most exacting and worst paid branch of medicine She foresaw little prospect of a decrease in the figures of foetal and maternal mortality until public opinion recognized the importance of obstetrics, the unreasonableness of expecting one brain and one pair of hands to do the work of two, and the absurdity of expecting every newly qualified doctor to be an expert obstetrical surgeon The time allowed for practical midwifery in the medical curriculum was far too short, being adequate only for the student who was determined to undertake no obstetrical work after he was qualified

Dr GLYNN WHITTLE said his experience entirely agreed with Mrs Crawford's advice that curved forceps in preference to straight instruments should be used when rigidity threatened He considered that teaching authorities should require improved and extended clinical instruction in midwifery It would doubtless be advantageous to expectant mothers if all doctors commencing practice either devoted themselves seriously to obstetric work or declined midwifery altogether Mr PERCY MALPAS thought Mrs Crawford's paper very significant, particularly with reference to the need for a reconsideration of the diagnosis whenever forceps had failed once The major difficulty in the treatment of these cases in hospital later was that the forceps had been repeatedly applied, so that in addition to trauma and infection, the whole mechanism of the labour was disturbed and subsequent treatment, either active or passive, was often doomed to failure The facts of the whole paper could not be too widely appreciated

Dr S B HERD agreed as to the seriousness of the problem revealed, and the frequency with which a failure to deliver with instruments occurred after a patient had had all her previous children born without help That type of case usually resulted from a condition of post maturity or of weakness of the uterine muscle or of both together Contracted outlet of the pelvis, although uncommon, could result in a failure to deliver with forceps, even when the head had reached the perineum

Carcinoma of the Breast

Mr. Philip Hawe read a paper on carcinoma of the breast, which was based on a series of cases treated at the David Lewis Northern Hospital, Liverpool. After brief reference to the etiological factors, the importance of skin fixation and biopsy in diagnosis of the early case, and the errors that might arise in connexion with axillary tail tumours and traumatic fat necrosis, were considered. The relation of chronic mastitis to carcinoma was discussed, slides being shown to illustrate Cheatle's views on this subject. The great difficulty of distinguishing the so-called "fibro-adenoma" of chronic mastitis from early carcinoma was emphasized, and the same difficulty in connexion with chronic cystic mastitis was illustrated by six cases of malignancy in association with cysts of the breast. The results were divided into two groups. Of 38 early cases, including 9 cases not traced, 29 patients were alive 5 to 10 years after operation; of 74 late cases, including 10 cases not traced, 24 patients were alive 5 to 10 years after operation. Carcinoma in the remaining breast was found in 10 per cent. of the cases surviving operation. One case was quoted in which the patient survived a subsequent pregnancy, but another patient was less fortunate, recurrence being rapid.

In the discussion which followed, Professor R. E. Kelly said that all tumours of the breast must be subjected to microscopical examination. He did not agree that the breast should be removed entirely in all cystic cases. The operation was not complete enough if cancer was found, and it was unnecessary should there be no signs of cancer. Mr. John T. Morrison took exception to the use of the term "fibro-adenoma," as indicating a condition likely to be associated with carcinoma. He limited its application to encapsuled simple neoplasms, rarely, if ever, becoming carcinomatous. In regard to treatment, he stressed the fact that radium was still an experimental method, and its insertion was to be regarded as a major operative procedure. Its value, of course, was great, since even in advanced cases it could be relied upon to produce wonderful local improvement, with corresponding relief of the patient's most distressing symptoms.

At a meeting of the Osler Club, held on October 27th, Mr. W. R. Bett read a paper entitled, "The thyroid: conquests, failures, mysteries, and men." After briefly referring to Vesalius, Eustachius, Morgagni, and Thomas Wharton, he dealt more fully with Gaskell's *Origin of the Vertebrates*. He stressed the very early recognition of goitre in history, linking up Pliny's belief that goitre was caused by impurities in the water supply with McCarrison's classical experiments in India. In sketching the operative story of goitre, an intimate pen portrait was drawn of W. S. Halsted. Mr. Bett concluded his paper with an account of the introduction of iodine into the treatment of goitre and a survey of the present position of exophthalmic goitre; he expressed a hope that the study of the history of medicine might become of real service to medicine by affording it, from an understanding of the past, a peep into the minute ahead. The following took part in the discussion: Sir Walter Fletcher, Mr. T. P. Dunhill, Professor F. R. Fraser, Dr. G. Scott Williamson, Mr. G. L. Keynes, Professor Leonard Findlay, Mr. K. J. Acton Davis, Mr. J. P. Ross, and Dr. J. D. Rolleston.

The new session of the Chelsea Clinical Society opened with the annual dinner on October 20th. At the meeting on November 17th a discussion on the medicinal uses of wines will be opened by Mr. Charles Berry and Dr. G. Murray Levick. Subsequent meetings will be held on the third Tuesday of each month till May 17th, 1932; they will be preceded by dinner at the Hotel Rembrandt, Thurloe Place, S.W., at 7.30 p.m.

Reviews

SURGICAL PATHOLOGY OF BONE

Professor Hertzler of the University of Kansas is writing a series of monographs on the surgical pathology of various tissues and regions of the body. The first of the series treats of the *Surgical Pathology of the Diseases of Bones*,[1] and the subject is dealt with under two main headings: inflammatory affections together with certain less common diseases of unknown origin, and tumours. The rarer affections are dealt with summarily, the author averring that if a man makes mistakes in connexion with them alone he may consider himself a good surgeon. In both sections the descriptions are pithy and practical, and, especially in regard to the inflammatory affections, will serve the student well as a useful guide in this intricate subject. In the section on tumours the new American system of classification is adopted, and as this differs in some respects from the usual classification it may be worth while to examine it in some detail. The introduction of the terms "osteogenic" and "Ewing's tumour" is that which chiefly characterizes it. Origin is taken as the basis of classification, the site of origin being in some other region of the body, or in one of the constituents of the bone itself—namely, periosteum, osseous tissue, vessels, marrow, or osteoclasts. An additional group is added for certain tumours of unknown nature, and one for tissue formations, which resemble, but are not, strictly speaking, tumours. The following, accordingly, are the headings: (1) metastatic tumours; (2) periosteal fibro-sarcoma; (3) osteogenic tumours, benign and malignant; (4) inflammatory conditions; (5) benign giant-celled tumours; (6) angiomata, benign and malignant; (7) Ewing's tumour; (8) myeloma. Although somewhat lacking in logical symmetry, from the practical point of view this is a useful classification; but a classification based on origin has always been considered to be difficult of application and liable to break down at one point or another. This is likely to occur in connexion with the term "osteogenic," which is defined by Codman, who instituted the Central Registry of Bone Tumours in America, as indicating those tumours "which are believed to be derived from cells which are supposed to be the common ancestors of the cells which form bone, cartilage, the fibrous network of bone, and the tissue formerly called myxomatous." It may be objected that the fibrous elements in bones are not all osteogenic, and that it is impossible to decide what is the origin of a spindle-celled sarcoma, for example. However, objections of this kind may perhaps have little practical weight; in cases of doubt recourse would be had to the ordinary classification, and the tumour would be classed simply as a spindle-celled sarcoma, without reference to its origin. In any case the old classification is needed for the further definition of a tumour, whatever its origin, although Professor Hertzler pours scorn upon it. He will have nothing to do with a classification based on cell-structure, and considers that the old histological classification is not worth discussing. Nevertheless, he proposes to have a similar group of small round-celled sarcomas. As a matter of fact, the old classification is not based on cell-structure but on cell-structure and intercellular character, and includes all the forms embraced in the term "osteogenic" without the necessity of invoking beliefs and supposition. The other feature which especially characterizes the American classification is the "Ewing tumour." Few have had any experience of this growth [illegible]

[1] *Surgical Pathology of the Diseases of Bones, Joints, and Associated Muscles.* By Willis E. Hertzler, M.D. Hertzler's Monographs on Surgical Pathology. London: J. B. Lippincott Company. 1931. (9½ × 6½, pp. 211 figures. 21s. net.)

to express an opinion upon it Hertzler describes it as arising in early life, usually in males, as being of slow onset, accompanied commonly by symptoms simulating inflammation, and as giving a relatively good prognosis when treated with radium, in which respect it differs from the osteogenic sarcomas On these grounds it is placed in a group apart There appears to be some doubt as to the nature of the growth, for, as Hertzler remarks.

"There are said to be twelve men in the world who understand the Einstein theory of relativity I do not believe there are so many who understand this group of tumours The question of the derivation of the tumour cells may be left to the pathologists Ewing believes they are of endothelial origin That should settle it If a mother concludes to name one of her progeny 'Clarence' that is her affair, and it is not proper for alley urchins to rechristen him 'Freckles' Some authors state that these tumours produce no bone and then show pictures illustrating how they do produce bone Some of the cuts published as Ewing's tumours resemble a cross section of a peeved porcupine

Mr DAVID GREIG'S *Clinical Observations on the Surgical Pathology of Bone*[2] is apparently the first book published in this country in which the theory of ossification associated with the names of Leriche and Policard is accepted in its entirety In a preliminary chapter the author expounds the new theory in detail, in subsequent chapters a number of selected examples of disease of bone are described in illustration of the application of the theory As the title indicates, the method of exposition is clinical, the history of each case and the circumstances and details of the treatment employed are recited, and from these the changes which necessarily follow in the bones are deduced and illustrated in a number of very fine photographs No better manner of approaching a subject in pathological anatomy could be conceived, and it is remarkable with what facility even the minutiae of the bone changes are explained by the aid of the new theory It has hitherto been considered that ossification may occur in two ways by the action of osteoblasts or by "metaplasia," by which is meant the direct conversion of adult fibrous tissue into bone without the intervention of osteoblasts According to the new theory bone is never produced in either of these ways, that is to say, osteoblasts are not bone producers, and connective tissue cannot be converted into bone without first being de differentiated in the direction of embryonic mesoderm, from which a re differentiation into osseous tissue becomes possible The latter is held to be the one and only mode of ossification, and in order that the re differentiation into osseous tissue shall occur two factors are considered to be essential a local excess of calcium to draw upon, and hyperaemia, which, by its rarefactive action will reduce the calcium to a soluble form Given these two factors, it is held that the differentiating tissue will assume the form of osseous tissue An example will illustrate the working of the theory In adhesions or scar tissue it is not infrequent to find a deposit of calcium, caused, it is supposed, by defective metabolism, in rare cases, whether from irritation of the crystals of calcium or from some obscure cause a vascular reaction is induced, capillaries grow inwards into the scar from the periphery and, in combination with the existing irritation, cause a de differentiation of the tissue elements, while at the same time the associated hyperaemia brings about a solution of the calcium In the presence of the local excess of soluble calcium the differentiating tissue will, it is held, develop into bone, and not into fibrous tissue The conditions are somewhat different where bone is in question instead of scar tissue, because there is already a local excess of calcium to draw upon, but the principle is the same in both cases Pathologists will, perhaps, be ready to accept this theory as a modification of their conception of metaplasia, but probably they will be less willing to relinquish the idea of a dual mode of ossification, and for this reason—that the local excess of calcium which forms such a prominent feature in the new theory does not appear to be present in all cases of ossification The huge masses of osseous tissue which are sometimes met with in ossifying tumours, in leontiasis ossea, and, in smaller amount, in osseous metastases in the lungs, are far in excess of the available local supply of calcium, and their production can hardly be explained on any other theory than that there exist cells whose function it is to extract the necessary calcium from the blood and utilize it in ossification If this view is correct, it would appear that ossification may occur under three different conditions there may be no local excess of calcium in which case ossification will be by osteoblasts there may be no osteoblasts in the tissue concerned, in which case ossification will take place in accordance with the new theory, or both osteoblasts and an excess of calcium may be present, when either or both modes of ossification will be available The subject deserves the attention of pathologists, and Mr Greig's book will be found of great assistance in gaining a comprehension of the problem involved

DIAGNOSIS AND TREATMENT OF BRAIN TUMOURS

Dr ERNEST SACHS of St Louis has done neurological surgery a service by publishing a work of reasonable size in which he sets forth a concise account of the modern approach to the surgery of brain tumours[3] The author does not belong strictly to any particular school, and his book, which is distinctly a personal one, is dedicated jointly to his wife and to Sir Victor Horsley It is not purely a book of operative surgery for it contains much more than that—pathology for example—with a useful description of methods of diagnosis both ancient and modern The appearance of the word diagnosis' in the title of a book written by a surgeon is significant, for there are even to-day those who decry strivings towards independence in this particular field, forgetting apparently that a parallel autonomy has been achieved in most other branches of surgery, often after a long struggle Complete independence must not be unduly stressed, for team work is, of course, essential

After early chapters on anatomy and physiology, Dr Sachs passes on to methods of examination The section on defects in the fields of vision might have been expanded, although its brevity is balanced to a considerable extent as the book progresses by the introduction of perimetric charts and a discussion of their value regionally On the other hand, it would have been a service had the author emphasized that which it is quite clear he himself thinks—namely, that the taking of careful fields is one of the most important points in the examination of any patient suspected of an intracranial lesion The section on x ray examination is good, and the plates which illustrate this part are excellent (as are the plates throughout the whole book) The technique of ventriculography is described, but not in such detail as will prove a sure guide to those who have not already had some experience There is a good description, very well illustrated of the pathology of cerebral tumours followed by a discussion of the symptoms presented by tumours in the various regions of the brain This is greatly helped by the introduction at suitable places of many case histories The book closes with sections on operative technique following

[2] *Clinical Observations on the Surgical Pathology of Bone.* By David M Greig MB, CM FRCS Ed, FRS Ed Edinburgh and London Oliver and Boyd 1931 (Pp xii + 248, 224 figures 30s net)

[3] *The Diagnosis and Treatment of Brain Tumors.* By Ernest Sachs MD London H Kimpton 1931 (Pp 22+ 224 figures 42s net)

in general that method of operating which we generally credit to Halstead, and which has been pushed to its logical conclusion by Cushing. This is practically the standard technique to-day, and is satisfactory, if slow.

Dr. Sachs's book is an enjoyable one to read, and will be helpful to all working in this field, though some may wish at times that out of his rich experience the author had set forth more clearly his mature judgement on technical difficulties. The book is primarily intended for advanced students, and among these we may include many who are already graduates. They are fortunate in having presented to them so well favoured a volume.

FORENSIC MEDICINE

Professor SYDNEY SMITH'S *Forensic Medicine*[4] has now reached a third edition, and this within the short space of six years. While it adheres in general to the lines of previous editions, the text has in places been revised and new cases and illustrations introduced, the whole being welded into a well-balanced book, not too long and diffuse for a student to learn his work from, yet so full and complete that it will be retained by him, after qualification, as a reference book. The author draws attention in the preface to the revision of the section on insanity. After observing that the subject of unsoundness of mind cannot be treated adequately in a work of this size, he goes on to state that he limits himself to such aspects of insanity as have a medico-legal bearing; yet in the text an attempt is made to give a brief summary of the more common types of insanity, with which the student is already familiar from his lectures on mental diseases, but practically no mention is made of the mental cases which are the daily problems of any police surgeon in a large city, and only a very brief summary is given of mental defect, a condition met with daily in courts of summary jurisdiction. This section of the book could be rewritten with advantage. Apart from that, the general text is of a very high standard. The section on toxicology is clear and adequate, though now that poisoning by lysol has become so frequent we would like to see the direction to pass a stomach tube and wash out the stomach expanded and qualified; newly appointed house-surgeons sometimes do not appreciate what they are attempting to carry out. The book makes easy and interesting reading, is well illustrated, and the advice given is clear and sound. The student or practitioner will find it an excellent investment.

APPLIED PHYSIOLOGY

A new edition of Professor SAMSON WRIGHT'S *Applied Physiology*,[5] the fourth since 1926, hardly needs an introduction to medical readers. But there may still be students either too young or too old to have heard of a work which has established itself as the common prayer book of those wanting to understand the gospel of the higher medicine. That a fourth edition of a volume costing 18s. can be brought out so soon after the last is proof not only of a good book, but also of the fact that the significance of physiology in the service of medicine is becoming more and more appreciated. Dr. Langdon Brown drew attention to the importance of their relationship when he wrote his book, *The Physiological Principles of Treatment*. "Samson Wright" might almost be entitled "The physiological principles of diagnosis." The correlation of physiological and pathological processes is made clear by the application of physiological facts to clinical pictures. The physical signs of various diseases are explained in terms of disordered physiological function. With these ideas constantly in mind the student is taught to regard disease processes, not as pathological entities, having, so to speak, a textbook existence of their own, but as disturbances of the normal physiological equilibrium of the body.

A great part of the new matter in the book is concerned with recent knowledge of the ductless glands, including information on the active principle of the adrenal cortex, adrenaline apnoea, the conditions regulating adrenaline secretion, the relation of the pituitary to parturition, and on hyperinsulinism. The physiology of the sinus caroticus, the control of emotional movements, the chemistry of muscular contraction and heat production in muscle, and biological oxidation are subjects about which fresh information has been added. Several new figures have been supplied, and by the deletion of old material the size of the book has been unaltered. Professor Samson Wright is to be congratulated on worthily maintaining the standard he has set himself.

GLYCOGEN

As far back as 1885 Dr. A. BRAULT began a series of publications concerning glycogen and its metabolism, and he has now collected these into one volume, entitled "Glycogen in the Development of Tumours, etc." Abandoning any strict chronological order, he has set out his papers in six main divisions. The first two deal with glycogen formation in tumours, which entails a preliminary comparison between the development of tumours and the granulomata ("infectious neoplasms"). From this the author moves on to discuss the role of glycogen in the human embryo and in the invertebrates, protozoa and the lower vegetable species. These studies occupy two more sections, and in the fifth are found discussions of certain pathological problems concerning glycogen—in cirrhosis of the liver, in certain medico-legal aspects and in the diabetic kidney. In a final section Dr. Brault builds up his theory of the role of glycogen in nature on the basis of the facts set out in preceding chapters. As he sees it, glycogen formation is not an exclusive function of the liver or muscles, but is a part of general nutritive processes. Tissues which have lost the power of glycogen function after attaining full development can regain that power, according to the author's views, whenever demands of nutrition or growth require it. To follow all the arguments in support of this it is necessary to study closely a well-presented case, beautifully illustrated by numerous diagrams, but lacking, as is usual in French monographs, any sort of index.

NOTES ON BOOKS

The Thyroid and Manganese Treatment: its History, Progress and Possibilities[7] sets out in some considerable detail Dr. HERBERT W. NOTT'S views on this important question of preventing and controlling disease by systematic education. Inspired by Sir James Mackenzie's encouragement of the general practitioner to take advantage of his opportunities for advancing medicine, Dr. Nott's victim of intestinal disease necessitating a severe operation, and impressed with the importance of thyroid conditions and alimentary toxaemia, Dr. Nott has now collected the results of some ten years' work. He noticed that in some cases thyroid treatment was without effect, and, following McCarrison's [illegible]

[4] *Forensic Medicine*. By Sydney Smith, M.D.Ed., M.R.C.P., D.P.H. With an introduction by Professor Harvey Littlejohn, F.R.C.S.Ed., F.R.S.E. Third edition. London: J. and A. Churchill. 1931. (Pp. xvi + 631; 170 figures. 24s.)

[5] *Applied Physiology*. By Samson Wright, M.D., M.R.C.P. Fourth edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1931. (Pp. xxv + 552; 128 figures, 1 plate. 18s. net.)

[6] *Le Glycogène dans le Développement des Tumeurs, etc.* [illegible] Normaux et des êtres Organisés. Par A. Brault. [illegible] Cie. 1930. (Pp. 368; 15 plates. 80 fr.)

[7] *The Thyroid and Manganese Treatment: its History, Progress and Possibilities*. By Herbert W. Nott, M.R.C.S., L.R.C.P. W. Heinemann (Medical Books) Ltd. [illegible] 7s. 6d. net.)

ibed this to the inhibitory action of intestinal tox
ıa To obviate this, thyroid treatment was supple
ited by enemas containing permanganate of potassium
: results of this combination in very various diseases,
h in his own practice and in that of others, are fully
)rded, and the progress and modifications of the treat-
it, which incidentally have been published since 1925,
here placed before the reader Dr Nott must be
ıplimented on his industry and perseverance

he second edition of Dr S A Loewenberg's very
ıprehensive work on *Diagnostic Methods and Inter-
tations in Internal Medicine*[1] appears less than two
rs after the first, and without being radically altered
ertheless shows signs of careful revision throughout
v material has been incorporated dealing with the
line blood supply and innervation, with massive pul-
nary collapse, with coronary thrombosis, hyper- and
o tension, with certain of the blood diseases, and with
interpretation of certain findings in the cerebro spinal
d In connexion with this last section, too much
ortance is perhaps attached to the sugar content of the
d in contrast to the three lines with which the chloride
tent is dismissed, without even the mention of the
mal figure It is impossible, however, to find more
n a few minor faults of this kind in the book, and
those who failed to make its acquaintance on its
: appearance it can be confidently recommended in
new form The very large number of illustrations are
eature of the book, and throughout the relation of
sical signs to pathological conditions is well stressed
diagrams and photographs The index of over fifty
es facilitates easy reference, while the final chapter on
hysical examination as applied to industry, life
ırance, health preservation and the detection of
ingering" contains a vast amount of valuable practical
wledge

Ir A H Sanford has thoroughly revised the well
vn *Clinical Diagnosis by Laboratory Methods*,[2] by the
Mr J C Todd (professor of clinical pathology in the
versity of Colorado), the seventh edition of which has
been published Very little alteration has been found
essary in the general appearance of the book and the
ıter part of the descriptive matter but less commonly
d methods have now been omitted in order to provide
ce for more modern procedures, such as the cultivation
ubercle bacilli, Fairhall's method for the determination
ead, and the more recent work of Folin, besides allow
fuller accounts to be given of certain tests previously
:ribed more briefly Allowance being made for the
ewhat different conditions on the other side of the
ntic, this book will be of practical interest to those
cerned with pathological laboratory methods in Great
ain

second edition of *A Synopsis of Pharmacology*[3] by
late Dr D Cow, has been produced by Dr G N
ERS The synopsis deals with all the important drugs
alphabetical order, and describes briefly their chief
rmacological actions It is intended for the use of
lents, and should be found useful for those who desire
ondensed summary of the subject for purposes of
sion

1 his little work entitled *Clinical Aspects and Treat-
it of Articular Rheumatism*[4] Dr L Schmidt empha-
s the seriousness of the condition, and gives a concise
ount of the etiology clinical symptoms, and treatment
he diseases based on his experience at Pistany

Read's *Introduction to Organic Chemistry*[5] is worthy of recommendation to all students first entering on the study of this subject The various classes of compounds chosen for illustration of the basic principles of organic chemistry are those best calculated to prepare the way for further specialized study These are described in clear and simple language together with details of the procedure necessary for practical performance by the student The book is very well suited for beginners who are afterwards to follow organic chemistry in its biological application

[1] *Diagnostic Methods and Interpretations in Internal Medicine* By Samuel A Loewenberg, M D F A C P Second revised edition Philadelphia F A Davis Company 1931 (Pp xxii + 1032, figures 10 Illustrations net)

[2] *Clinical Diagnosis by Laboratory Methods* By James Campbell Todd Ph B M D and Arthur Hawley Sanford M D Seventh edition thoroughly revised Philadelphia and London W B Saunders Company 1931 (Pp 769, 247 figures 25 net)

[3] *A Synopsis of Pharmacology* By the late Douglas Cow M D Second edition revised by G Norman Myers M D B Sc Medicine J and A Churchill 1931 (Pp 171, 12 figures 6s)

[4] *Clinical Aspects and Treatment of Articular Rheumatism* By Schmidt M D Vienna Maudrich Ltd 1931 (Pp 52)

[5] *An Introduction to Organic Chemistry* By John Read Ph D, B Sc London G Bell and Sons Ltd 1931 Pp x + 260, 51 figures 6s 6d)

PREPARATIONS AND APPLIANCES

An Illuminating Tongue Depressor

Dr F W Cope (Leeds) writes

For some time past the want of a proper apparatus for examining the tonsils and pharynx has been acknowledged especially for children The preliminary efforts to fix the head in position adjust the light and press down the tongue with the handle of a spoon or wooden spatula excite the child to such an extent as to make the examination almost a major operation Happily this is now a thing of the past with the electrical apparatus illustrated here in



The sliding spatula is adjusted to the right position and the light is switched on it is shown to the child who is at once interested and is asked to open his mouth The tongue is depressed and a second only is required to see all that is necessary The torch is removed and the glass sheath and tongue depressor are immersed in boiling water and sterilized in a few minutes then wiped with a clean towel or handkerchief The torch is reinserted and the tongue depressor retracted on the making a portable package for the pocket The light is easily switched on and off and the dry battery will last some time

Two leading gynaecologists have spoken well of this apparatus for vaginal examinations and favourable reports have been received from medical men for throat work The facility of examination the saving of time the psychological effect, especially on children and the perfect sterilization combine to produce an instrument which all medical men should find very useful in everyday practice

This apparatus is manufactured by Reynolds and Branson, Ltd 13 Briggate Leeds

THE EYESIGHT OF MOTOR DRIVERS*

BY

N. BISHOP HARMAN, LL.D., F.R.C.S.

SENIOR OPHTHALMIC SURGEON, WEST LONDON HOSPITAL

The coming into force of the Road Traffic Act, with its requirement of a declaration on the part of the applicant for a licence of a certain standard of vision, has aroused little comment, either by way of commendation or criticism. It would appear that the regulation was in some sense a reaction to a popular demand caused by an allegation that "the vast majority of road accidents are due primarily to defective eyesight on the part of the pedestrian or driver." Whether or not the regulation will be effective in reducing the incidence of motor accidents we shall never know, for there is no evidence of the truth of the allegation of the dominant influence of bad sight. Accidents known to be due to bad sight do occur, but they appear to be rare. I have searched my records of bad-sighted patients, and find in several hundred only three such cases. A man with advanced chronic glaucoma stepped in front of a moving car and was killed. A woman, nearly blind from senile cataract, did the same, and was severely injured. A man nearly blind from optic atrophy drove his own car in a rural district for some years in safety—with a child on his knees to direct him!—but he eventually came to grief.

A Conflict of Evidence

Evidence given to the Select Committee of the House of Commons was in sharp conflict. For the R.A.C. it was said that the majority of road accidents appeared to be "unavoidable," and were due in general to a lack of road sense rather than to a lack of competence. The traffic advisor to the Metropolitan Police, admitting the relative freedom from accidents of the taxicab driver, who is subjected to comprehensive tests, considered that "in many cases danger does not arise from want of competence, but rather from want of consideration and undue trust in the driver's competence." For the London General Omnibus Company it was said that the bulk of accidents "arise out of the fact that there is a lack of mental alertness in the particular circumstances in which the accidents occur."

The only witness who urged the necessity for sight tests came from the Cyclist Touring Club. He said "far too many people are driving motor cars now whose sight renders them very dangerous." But on what facts this opinion was based we do not know.

One real piece of evidence of importance was given by the London General Omnibus Company. In the years 1927 and 1928 the company received 61,000 applications for employment as drivers. From these, 3,936 candidates were selected for examination with a view to employment. Only 56 per cent. of those selected passed the medical examiners, and of the 44 per cent. rejected about four-fifths were not aware of having any physical disability whatsoever, and were much surprised at their rejection. Of the 56 per cent. of the selected list who passed the medical examination, 90 per cent. passed the competence test for driving, and were placed on probation for a period of three months. Of these, a further 2 per cent. were, during the probationary period, found unsuitable to drive, as they "at once fell into accidents, and therefore showed that they had not got that balance of mind which is necessary to be a safe driver upon the roads." This means that only 30 per cent. of the superficially suitable candidates were actually accepted as drivers after test. (It will be noted that the evidence does not differentiate between the various forms of physical unfitness.) In 1928 the London General Omnibus Company had 100 fatal accidents, but in no case was any blame attached to the drivers in the course of the inquests. Of the fatal accidents 60 per cent. were found to be attributable to pedestrians, 26 per cent. to cyclists and motor cyclists

Standards of Vision

The problem has been considered in many countries. Most Continental countries, and many of the States of the United States of America, have passed laws requiring certificates of medical fitness, particularly as regards eyesight. Some are very severe—for example, German

Only those individuals are suitable to drive motor cars whom the visual acuity is over 1/2 in one eye, with or without correction, and reaches a minimum of 1/6 in the other eye, provided also that the field of vision is normal, and that examination has eliminated the question of any illness not recognized as causing weakness of sight. Persons whose visual acuity in an eye is less than 1/6, or completely lacking may be passed if that condition is at least of two years' standing and the other eye has an acuity of at least 2/3 with correction. Such cases require the certificate of an oculist. Persons suffering from diplopia, aphakia, or hemeralopia are unfit to drive motor vehicles.

We may be inclined to the opinion that the German rule is better than the English rule. Ability to read the number plate of a motor car at a distance of 25 yards (between 6/18 and 6/12) without regard to field of vision must be insufficient for the purpose desired.

There are certain possible reactions from the English regulation. The issue of a driver's licence to an applicant who can properly make the required declaration is in some sense a guarantee of his fitness to drive. It is true that no such guarantee is given, but there will undoubtedly be a tendency to hold that it is implied. The legislature has taken this risk, notwithstanding advice tendered to it by experts that the standard was inadequate. Ophthalmic surgeons, therefore, must strive to spread the knowledge of what in our opinion is good and sufficient vision for road users.

Safe progression for driver and walker in ordinary daylight demands that the sight should have a third quality: visual acuity, field of vision, and binocular vision. Obviously a driver must have acuity sufficient to see a pedestrian, and to see him well enough to be able to judge of his probable actions. For such a purpose the 25-yard standard is probably quite sufficient. But the fact that this criterion alone is recognized belittles other factors in vision, which for locomotion are of far greater importance. Without a good or sufficient field of vision the fullest visual acuity is useless. There is no one who has not known patients with vision equal to 6/6 who were, by reason of their limited fields, blind for economic purposes. Freeland Fergus, in a paper published in the *British Medical Journal* (1928, i,), stressed the necessity for a good field of vision, even went so far as to assert that form vision was relatively unimportant for general purposes. His emphasis on the need of a good field was right, though his belittlement of acuity was wrong. Acuity necessary, but for locomotion the field is more so. Experience shows that persons with a 20 degree field of the periphery of the field of vision find that in walking they are liable to bump against objects such and door posts; they do not see objects which beside them. Such a limitation as this would apply in a high degree to the driver of a fast-moving

Binocular Vision

The need for binocular vision is a moot point. Personally I am sure that it makes for a safer and safe driver. By binocular vision we

* A communication to the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

of the position and size of objects and our relation to them. It is true that this can be found to some extent by the swift and unconscious movement of the head, and the appreciation of the parallax. But this faculty is not developed easily, and the evidence gained from it is not always reliable. Medical officers of the R.A.F. hold that defects of binocular vision are in the main responsible for bad landings, which account for a large proportion of flying accidents. In somewhat the same fashion car drivers who frequently get into minor scrapes owe their lack of judgement to defective binocular vision. I know that there are cases of one-eyed men who have done well. Hinchliffe was one-eyed, and a great airman. I read recently that Wiley Post, who flew round the world in nine days, is a "one-eyed Red Indian." An even more remarkable feat was performed by the Italian motor car driver in the Irish Grand Prix race this year. A stone hit his goggles, and splinters cut his eyeball. After a rest he pluckily resumed driving in spite of being bandaged over one eye. To drive a car at 100 miles an hour in such a state was no mean feat. Also I know of a one-eyed surgeon who has driven for years with safety in London traffic.

Notwithstanding these exceptions I do not like the one-eyed driver; I should not employ one myself, and would not drive with one eye obscured. I have tried it, and I did not like the experience. I think that much of the difficulty which drivers find in reversing is due to the fact that during that driving they are one-eyed. I am sure that with our rule of the road a man blind of the right eye and with a Wellingtonian nose is not safe. I think that a fair measure of the safety of the one-eyed can be gained by his ability to play tennis. Fast ball games require swift judgement of positions; those with good binocular vision are able to excel, those with bad binocular vision or none are usually failures. Golf is in another category; the one-eyed man can play the game almost as well as the man with perfect binocular vision.

Defects of muscle balance likely to cause diplopia in states of fatigue will require caution. In lower degrees of defect the driver will not be likely to be unsafe, but he should be cautioned against lengthy drives, or driving when in poor health. In higher degrees of defect with frequent symptoms of diplopia there will be added risks. It is certain that constant diplopia should be a bar to driving unless this can be done with one eye partly obscured with the Chavasse glass.

Night Driving and Light Sense

The reliability of the modern car tempts people to use it as a general conveyance, so that night driving is growing much more common. In this connexion the light sense becomes of special importance. It is common to find that myopes dislike night driving, for the very form of their lenses reduces the light that enters the eye.

It is comparatively easy to determine whether a person with a doubtful light sense is safe or not. It can be judged by the use of the perimeter. If the peripheral field be mapped out in good daylight, and then again after the adjustment of the window blinds so as to reduce the illumination to one-tenth of the full light, the excessive reduction of the field of vision in those with a defective light sense will be manifest. Subjects of these defects may be safe drivers in the daytime, but at night they are dangerous. These persons, and especially the high myopes, recognize the defect and avoid night driving.

Colour-blind Drivers

Defects of colour vision should not constitute any disability for driving, either day or night. But the growing use of coloured signal lamps at road crossings has introduced a real difficulty for the colour-blind. Signal lamps of red, yellow, and green are springing up everywhere. A mistake in reading one of these signals may bring the colour-blind driver into conflict with the police, and possibly into collision with other drivers or pedestrians. It is surprising that, despite warnings the authorities have had in this relation, they have not seen fit to adopt the more simple and safe signals which depend upon form rather than colour. A horizontal bar of light would everywhere be recognized as a sign to stop, a round light would indicate the need for caution, and a vertical bar of light would indicate a clear road. Such a plan would follow the long-established precedent of the semaphore signal, and could not lead to confusion.

Other Factors in the Problem

Such a sketch of the sight the motor driver should have gives a very poor view of its complexity. Nor does it touch upon the interrelation of sight and muscular co-ordination—foot, hand, and eye—of the driver. Nor does it hint at the overriding power of nerve control suggested in the term "reaction time"—that power of response which makes two persons who show a general equality in equipment so far apart in capacity. Many accidents arise from a defective reaction time. Perhaps as many are due to visual or cerebral anaesthesia, because the mind behind the eyes is far away from the road—"seeing, they shall see, and shall not perceive." This visual anaesthesia, or wandering attention, has caused the death of not a few drivers and walkers, and there is no cure for it. Again, all our reactions vary from time to time, so that a test one day may be valueless on the next. Ill-health, unwise indulgence, and fatigue (such as is caused by too long driving) produce wide variations in "reaction time." One driver is made jumpy, so he handles his car injudiciously, and it skids into a crash; another becomes too slow in the uptake, and he runs into a collision. These changes due to fatigue become most manifest on entry into a large city, so that a momentary rest before proceeding into crowded streets is a wise precaution.

Practical consideration will inevitably lead to a double standard of fitness for drivers. Public utility and transport companies and taxicab proprietors must demand a proper medical examination of the eyes of their employees. They are responsible for their safety. Also accidents do more than damage cars; they hold up vehicles during the slow process of repair, and insurance rarely covers that loss. A strict examination is justified for these drivers, for they have to drive in all weathers, and both day and night, so that minor defects may become material. Private drivers will in time learn that it is wise for their own safety and peace of mind to gain the assurance of sufficient sight for the driving of the modern speedy car; and if a more liberal interpretation of standard be allowed to them it can only be on the understanding that their driving is intermittent, and not undertaken when conditions are likely to be adverse.

The Council of Epsom College will shortly award two "France" pensions of £30 a year to medical men. Candidates must be not less than 55 years of age, and their income, independent of any allowance from the College or from the Royal Medical Benevolent Fund, must not exceed £100 a year. The Council will also award one "Grewcock" pension of £70 a year. In this case there is no limitation as to age, but candidates must be legally qualified medical men who have retired from professional work, and who, in the opinion of the Council, are in need of the pension. There is the same income limit as in the case of "France" pensioners, and special consideration will be given to the claims of candidates having association with Worcestershire, Lincolnshire, or Carmarthenshire. Forms of application should be obtained forthwith from the secretary, Major W. L. Giffard, O.B.E., 49, Bedford Square, W.C.1.

British Medical Journal

SATURDAY, NOVEMBER 7th, 1931

ENCEPHALITIS LETHARGICA

It is twelve years since Professor Constantin von Economo, whose death we had to announce last week, published in Vienna his clinical account of thirteen cases of an unfamiliar disease to which he gave the name encephalitis lethargica; and now, in the English edition of his *Encephalitis Lethargica: Its Sequelae and Treatment*[1] we find gathered together for English readers the fruits of his subsequent experience as professor of psychiatry and neurology in the University of Vienna. His object was "to present a survey of the complex features of encephalitis lethargica from the clinician's point of view." He begins with a brief review of the discovery and naming of the disease (including a plea for the retention of the term encephalitis lethargica, rather than that of encephalitis epidemica), of the epidemiology of recent epidemics, and of previous outbreaks of epidemic disease associated with lethargy or somnolence. From a consideration of these events Professor Economo hazards the opinion that the disease in its epidemic form may disappear and remain dormant for some considerable time. The acute form of the disease is then discussed at some length, and three basic syndromes are described: (1) the somnolent-ophthalmoplegic, in which group most of the sporadic cases are included; (2) the hyperkinetic group of cases which show unusual toxicity and seldom occur in sporadic circumstances, but frequently in association with influenza outbreaks; and (3) the amyostatic-akinetic form of encephalitis which often precedes the Parkinsonian state. A fourth group includes various atypical forms not infrequently seen, such as cases with cerebellar symptoms, neuritic cases, epidemic hiccup, and others, together with the rarer mono-symptomatic types. Prognosis, in the author's opinion, should always be considered in reference to the character of the prevailing epidemic (*genius epidemicus*); thus the mortality and incidence of sequels are high in hyperkinetic epidemics and comparatively low when the somnolent-ophthalmoplegic type predominates, while the amyostatic cases are less fatal in the acute stage, but more prone to sequels. Intravenous injection of iodine in large doses is described as the classical treatment in acute cases, and this apparently secures better results than have been attempted or achieved in this country.

In his discussion of the morbid anatomy of both acute and chronic encephalitis Professor Economo insists that the primary process of degeneration is the destruction of the ganglion cells, perivascular infiltration being a secondary reaction. His post-mortem studies of Parkinsonian cases support the opinion now generally held that the virus of the disease persists in the chronic forms, and a doubt is expressed whether, in such cases, it is ever eliminated from the central nervous system. Others share this doubt, but there is some clinical evidence that, though present, the virus may remain inactive for a considerable time. Thus Professor Arthur J. Hall in his Schorstein Memorial Lecture on "Chronic epidemic encephalitis," which we publish in our opening pages this week, is now able from his own extensive experience of the disease, including 325 cases of Parkinsonism, to speak more hopefully about the prospects of patients who may suffer from this form of chronic encephalitis. It is comforting to learn that over 50 per cent. of Professor Hall's Parkinsonian patients, with an infection of at least seven years' standing, are able to lead more or less normal lives; some, even in the eleventh year of infection, appear to be engaged in unusually interesting and active pursuits, and "quite a number" have married.

Among other findings, the fact that the pituitary gland shows no change[-y extra]idered significant, in view of the role sometimes assigned it in the derangement of the sleep function. Dealing with differential diagnosis Professor Economo considers that, despite the clinical and pathological differences between cases of encephalitis lethargica and cases of influenza, these two diseases are, in some as yet unknown way, epidemiologically related. He believes that, clinically, post-vaccinal encephalitis is distinct from encephalitis lethargica, and "should not be forced into closer relation with it." The sequels of the disease are considered under two groups: the first comprises residual states (in which, after the resolution of focal symptoms, some symptom of the acute attack remains to mar an otherwise complete recovery), and protracted states of convalescence, which include relapses, intermittent progressions, and certain psychasthenic states; the second group mainly comprises Parkinsonism and the conduct changes in children here called juvenile pseudo-psychopathic. It is the cases belonging to this second group which stand out significantly, and occasion pessimism as regards treatment. Iodine therapy is again chiefly recommended for chronic cases in the first group, though the author admits that improvement, where it occurs, is often not maintained; treatment by diathermy is described in some detail. Scopolamine is regarded as the most important remedy in the symptomatic treatment of Parkinsonians, but, beyond a reference to the use of bulbocapnine, little is said about the treatment of post-encephalitic children.

In his general review Professor Economo suggests that there is some compensation for the present helplessness as regards the treatment of encephalitis [illegible] the fact that the study of the disease has revolutionized our conceptions of pathological and normal mechanisms. It has shown, for example, that many so-called functional disturbances can now be explained on neuro-anatomical—that is, [illegible]. Once more, too, attention may be [illegible]

[1] *Encephalitis Lethargica: Its Sequelae and Treatment.* By Constantin von Economo. Translated and adapted by K. O. Newman, M.D. Oxford Medical Publications. London: Milford, Oxford University Press. 1931. (18s. net.)

rofessor Hall's lecture, and in particular to his very nteresting arguments about the oculogyric crises of ost-encephalitis and their probable relation to sleep isorders. Professor Hall's observation that in these rises the eyes are not always rolled upwards, but ssume various positions, led him to investigate the osition of the eyes in other subjects during deep sleep. was found, again, that in 46 per cent. of the 206 ases tested the eyes were not drawn upwards, but ccupied various other positions; this shows that the octrine on this point handed down by Sir Charles Bell ore than a century ago does not embody the whole uth, and should be modified in accordance with arling's teaching that "the eyes during sleep may ccupy any position."

Professor Economo's latest contribution to the lore of ncephalitis lethargica will be studied with profit by ose who are now called upon to recognize and treat is affection; moreover, this clinical picture of the isease, brushed in by a master hand, may prove of qual value as a guide to future physicians who may, n their turn, be confronted with cases of an unfamiliar idemic disease. It should be added that Dr. Newman, y his excellent translation, has done much to ensure or the English edition that welcome by English and merican readers which the distinguished author esired.

NTERNATIONAL VITAMIN STANDARDS

ast week we dealt with the new decisions made by the ermanent Commission on Biological Standardization, nder the League of Nations, concerning certain import nt serums and bacteriological remedies [1] We publish is week at page 862 an article dealing with recom- iendations for the adoption of international standards nd units for four of the known vitamins These ecommendations were made by a conference, meeting t the same time in London, of leading investigators rom different countries, and were adopted without odification by the Permanent Commission Professor dward Mellanby was chairman of the conference, and Dr. Harriette Chick and Dr Aykroyd of the Lister nstitute acted as secretaries The other members were 'rofessor J C Drummond (London), Professor v. Euler Stockholm), Professor Fridericia (Copenhagen), Pro- essor Jansen (Amsterdam), Professor McCollum Baltimore), Professor Poulsson (Oslo), Mme Randoin Paris), Professor Scheunert (Leipzig), Dr. Seidell Washington) Professor Steenbock (Wisconsin), and Professor Windaus (Gottingen). The League Health Organization in setting up the conference, followed its ractice of choosing the members with a view to their xpert knowledge of the subject, and not on a basis f national representation; but we think that there will e no doubt of the widely representative character of he conference, or of the authority given by its dis- inguished membership to its decisions on any matter oncerned with vitamins.

[1] *British Medical Journal*, October 31st, 1931, p. 809

The members of the conference are to be congratulated on their unanimous agreement with regard to the standards and units to be adopted for so many of the vitamins There must have been many points of detail, or even of principle, on which each expert had a well-grounded confidence in his own special methods Very wisely they concentrated their effort on the task of finding stable standard preparations which all could accept, and of agreeing upon units which could be defined in terms of these In so doing they followed the practice introduced by Ehrlich in 1894 for diphtheria antitoxin, the first therapeutic agent to have its dosage accurately indicated in units of biological activity adopted by the Permanent Commission in dealing with other substances, and abundantly justified by experience. It is probable that few of those who use remedies of this class daily in their practice realize how much of the ease and confidence with which they adjust the dosage to the needs of the case is due to the international action which the Health Organization of the League has promoted and made effective It was the intervention of its Permanent Standards Commission, in 1923, which averted the confusion threatened by a whole series of competing "units" of insulin—"physiological units," "clinical units," "rabbit units," "mouse units"—and based the notation of insulin activity, once and for all, on a stable standard and a single unit defined in terms of it, and now used by the whole world

The history of the dosage of vitamins shows many points of similarity to this The conscientious manufacturer, whether making concentrated preparations of the different vitamins or buying materials such as cod-liver oil for incorporation in medicinal preparations or foods, wished to know and to indicate the specific activity of what he bought or sold Competing and varying units, based on different types of biological test, had been produced by the need for some kind of notation. Some pharmacopoeias had already attempted to base standards for cod-liver oil on prescribed animal tests Even if a perfect, world-wide uniformity of the animals and the diet used in such a test could be secured, which is hardly credible, a unit based on it would become obsolete, with consequent confusion of scientific records and practice, whenever research produced a new and better test. In the case of vitamin D, action was peculiarly urgent, in view of the evidence that overdosage may cause serious harm More than a year ago the Medical Research Council issued a provisional stable standard for this vitamin, and recommended the general adoption in this country of a unit defined in terms of it The Council's action was endorsed, not only by the prompt compliance of all concerned in Britain but by a large number of requests for the standard from research workers and manufacturers in other countries It has again been endorsed by the conference in recommending this standard and unit for formal international adoption The conference similarly defined units of vitamin A based on a standard of purified carotene, and of vitamin B_1, based on

Professor Jansen's dry adsorption-product. In the case of vitamin C, Nature has saved much trouble by providing a standard in every fruiterer's shop; but the simple agreement to adopt the activity of one definite volume of fresh lemon juice as a unit should bring a new harmony into scientific records, as well as into practice and commerce.

It should be noted that the conference wisely made its recommendations effective for not more than two years in the first instance, foreseeing the possibility that a purer standard, for one or another of these vitamins, might easily become available, and provide a better basis for definition of the unit, without change of its value. In the case of vitamin D, research has already advanced more quickly than the conference can have anticipated. In a letter in last week's *Nature*, Askew, Bruce, Callow, Philpot, and Webster, working in the National Institute for Medical Research, under the leadership of Dr. Bourdillon, describe a further big stage in their purification of the crystalline preparation of vitamin D, which they have named "calciferol"; its properties raise the question of its identity with one of the two crystalline antirachitic preparations ("vitamin D_1," and "vitamin D_2"), which have just been described by Windaus and Linsert in Germany. "Calciferol" has now an activity approximating to 40,000 international units in 1 milligram; and there can be little doubt that the isolation of a perfectly pure antirachitic vitamin, in one or other of the laboratories engaged in the attempt, is well within sight, if not already substantially achieved. Before long the unit of vitamin D may be the activity of an exact weight of a pure substance.

Meanwhile, now that the units should have the same meaning in all countries, comparable clinical data ought soon to be available for determining the effective and safe dosage of each of these vitamins in its different applications. The League and the laboratories have done their parts; the practical outcome is in the hands of clinical medicine.

PLASMOQUINE TREATMENT

Since the first observations on the treatment of malaria cases by plasmoquine, carried out by Mühlens in 1926, this preparation has been extensively tested in many parts of the world. Major Manifold, in a "Report on a trial of plasmoquine and quinine in the treatment of benign tertian malaria," discusses the use of this drug on a large scale among the troops in India.[1] After various methods of treatment had been tried in benign tertian malaria, it was noted that 0.04 gram of plasmoquine and 20 grains of quinine per diem for twenty-one days appeared to have given the best results in the prevention of relapses and in the avoidance of toxic symptoms. Altogether 3,213 cases of benign tertian malaria were placed on the above dosage, and 3,187 patients completed their twenty-one days of plasmoquine and quinine treatment. Temporary suspension of the drug for varying periods of time was necessary owing to the appearance of toxic symptoms in 21.4 per cent. of 1,298 British, and 10.2 per cent. of 1,915 Indian cases. In the great majority of instances the symptoms of toxicity—namely, abdominal pain, cyanosis, and digestive disturbances—were never severe, and were less frequent among Indian than British cases. The complaint of epigastric pain showed variations in its incidence in various hospitals, but it was concluded that severe pain and pain of prolonged duration was the exception rather than the rule. The onset of methaemoglobinaemia, as indicated by a blue tinge on the lips, gums, tongue, and finger-nails, was recorded in 56 British (4.3 per cent.) and in 13 Indian cases (0.67 per cent.). In 80 per cent. of these it appeared on or after the seventh day. The treatment quickly reduced acutely enlarged spleens, but the action on chronic enlargements of this organ is doubtful. Pyrexia responded more rapidly to treatment with plasmoquine and quinine than to quinine alone. There were no deaths due to plasmoquine, and it was concluded that this drug in the above dosage can be safely given to all classes of patients.

[1] Reprinted from the *Journal of the Royal Army Medical Corps*, May-June, 1931. London: John Bale, Sons and Danielsson, Ltd.

NOISE IN OXFORD

The amenities of academic life at Oxford have been badly encroached upon of late, and the charms of the place endangered. Goths who ought to know better build over beautiful old gardens, and from all quarters complaints are made of the vast increase of noise and vibration due to traffic. But the lovers of quiet realize that a passive attitude of suffering will not help them, and are determined not to be destroyed by excessive vibration without striking at least one blow in self-defence. The Master of Balliol recently presided over a meeting in Oxford Town Hall, convened by Dr. William Collier and others, at which it was decided to form the Oxford Noise Abatement Society. As the chairman frankly said, the authorities are sympathetic, but they seem to be oppressed with a feeling of impotence in this matter, and will welcome the advice and support of men of science, for which reasons Professor A. M. Low and Sir Maurice Craig had been invited to address the meeting. In the resolution subsequently passed the object of the society was stated to be "co-operation with the local authorities in diminishing the unnecessary speed, noise, and vibration of motor traffic in our streets." There is no doubt that much might be done by enforcing existing laws and regulations, notably that which forbids the use of unsilenced exhausts. Oxford is particularly exposed to the evils of traffic because the principal colleges and academic buildings are situated on, or close to, the main thoroughfares, and because the great residential district of North Oxford is built largely on the Banbury and Woodstock roads, two great highways upon which heavy lorries and fast and monstrous motor cars thunder along, by night as well as by day. These noises, not in themselves pleasing, have their associations which render their repetition agreeable by force of association. The din of Bath, which Miss Austen thus feelingly described—"the dash of the carriages, the heavy rumble of carts and drays, the bawling of newsmen, muffin-men, and milkmen, and the constant clink of pattens"—gave no offence to Lady Russell, who welcomed it as symptomatic of "animation and cheerfulness," while to Anne Elliot it was [illegible]

nobody, we suppose, however anxious to respond to the slogan and "drink more milk," will associate the crash, bang, and clatter of the milk-can lorry with pleasurable sensation, nor the machine-gun fire of the motor cycle with anything more pleasant than a pneumatic drill. The needs of civilization, and the efforts of commerce to supply them, are at the root of the plague of noise; successful commerce implies elimination of waste and friction. Yet noise and vibration of other kinds are clearly wasteful, and often extremely deleterious to the machine. It is on this line of argument that the best hope of advance seems to us to be expected. In short, *noise does not pay*, and this fact has to be instilled by persuasion into the business man's mind, so that he may at length be enlisted in the ranks of the advocates of peace and quiet. Yet the question is complicated by the multiple functions of the average citizen. The man who hurries on a motor cycle along the Woodstock or the Banbury Road seeking the peace and quiet of his suburban home at evening gives little or no thought to other people's homes which he passes on the road. As long as noise was beyond exact measurement and definition the difficulties of legislation and regulation seemed insuperable; but this difficulty is now removed. In a recent article in these columns[1] we commented on a lecture on this subject given by Dr. Kaye at the Royal Institution. The measurement of noise on the spot, and the conviction of the offender caught in the act, is not yet so simple and easy as the detection and conviction of the street hawker whose weights are light; but simplification will surely come. *In coelo quies* seems to be an outcry of despair, and we may hope for a little quiet cheerfulness on this earth.

GLANDULAR FEVER

First described in a satisfactory manner by Pfeiffer in 1889, glandular fever has become more widely recognized as a clinical entity in this country in recent years through the writings of Dr. H. L. Tidy, and at the last meeting of the Section of Medicine of the Royal Society of Medicine this worker put forward his latest views on the disease. It will be remembered that a curious epidemic occurred, principally among adults, in 1930 in many parts of London and elsewhere, in which patients with an eruption resembling that of enteric or rubella subsequently developed glandular swellings and in many instances showed the presence in the blood of the peculiar mononuclear cells characteristic of glandular fever. Dr. Tidy's thesis is that this epidemic represented the full-blown type of glandular fever. He regards this disorder as an acute specific infective fever, with consecutive stages of invasion, eruption, and glandular enlargement, lymphocytosis developing in the course of the last stage. Other types are met with which can be traced from the full course by the omission or overlapping of various stages, and by the omission and overlapping of various features. Thus in children the second stage (eruption) and possibly the first are usually absent, forming the type of glandular fever most commonly seen in past years. Many points of difficulty in diagnosing this condition may arise, especially in the early eruptive stage. The rash sometimes closely resembles that of typhoid fever, and in the course of the discussion Dr. J. Mills described how, in certain cases encountered during a small outbreak of glandular fever in Reading, a positive agglutination to the "O" strain of typhoid organisms occurred. This makes the problem of the etiology of glandular fever a complicated one. Dr. John Bland, at the same meeting, described his attempts to transmit the disease to animals. Blood taken during the febrile stage, from human patients, was successful in producing a sort of glandular fever in rabbits, which was passed on to further generations by inoculation, and some strains of the "organism" are still being kept going. From the inoculation of glandular tissue he obtained only negative results. He is inclined to think that a protozoon is the causative organism of glandular fever. Several interesting points were raised by subsequent speakers. Is it a true lymphocytosis which occurs in the blood in these cases, or is it not more correct to say that all the normal white cells are decreased in number and a special immature type of leucocyte appears? Examples of glandular fever without these typical blood changes have been recorded, and indeed, in the 1930 epidemic, it was found that during the eruptive period a polymorphonuclear leucocytosis was the rule. Various suggestions for the treatment of the condition were made, such as the use of sodium nucleinate to stimulate leucocytic production and the giving of blood from patients convalescent from the disease. Dr. Tidy's summing-up of this part of the subject was emphatically against employing any method of treatment. Patients are more likely to get well if not interfered with. It was stressed that epistaxis is a very common feature at the onset of glandular fever, and the "sore throat" so frequent in children suffering from the condition is a swelling of the lymphatic tissue of the tonsils, without any definite inflammation, a point of help in diagnosis. That the "childish type" may occur in adults, and vice versa, is not excluded by Dr. Tidy's thesis, and indeed at the meeting Dr. Herbert J. Williams described his own experiences with an attack of glandular fever without the eruptive period. The fact that the Wassermann reaction sometimes becomes positive during an attack of glandular fever has also to be borne in mind in making a diagnosis.

[1] *British Medical Journal*, September 19th, 1931, p. 541.

THE VISION OF SCHOOL CHILDREN

The Board of Education has issued the report[1] of a special committee appointed to inquire into the problems connected with defective vision in school children. The members of the committee were: Sir George Newman (chairman), Dr. R. H. Crowley of the Board of Education, Dr. Dunstan Brewer, M.O.H. and S.M.O. for Swindon, Dr. J. J. Butterworth, M.O.H. and S.M.O. for Lancashire, Mr. Percy Flemming, consulting ophthalmic surgeon to University College Hospital, and Mr. Bishop Harman, consulting ophthalmic surgeon to the West London Hospital and oculist to the L.C.C. Education Department, with Dr. J. E. A. Underwood as secretary. The committee was directed to inquire into the factors in childhood leading to the development or aggravation of defective vision and squint. At the outset it found that there existed no sufficient data of what constitutes "normal" refraction for the child at different ages, so it sought to gather material for the

[1] Board of Education. Report of the Committee of Inquiry into the Problems connected with Defective Vision in School Children. London: H.M. Stationery Office. 1931. (6d. net.)

establishment of a standard or "basic scale" of refraction for each age group and sex. Special investigations of refraction were made by twenty-two observers, and the results of 2,625 cases were examined. The variations found were so great that tabulation was difficult. It was determined to record each case according to its greatest deviation from the normal, whether astigmatism or anisometropia was present. The results are set out in tables that are distinctly graphic, although made up of figures. Simple hypermetropia is by far the commonest condition of refraction met with in children of school age and under. The highest incidence is found to be 87.4 per cent. in the age group of 1 to 2 of boys, the lowest 53.1 per cent. of the 13 to 25 age group of girls. Hypermetropia of one dioptre tends to remain unchanged over a course of three or four years. Hypermetropia of two dioptres shows a tendency to decrease during two or three years. Higher degrees also tend to decrease. Generally speaking, the higher the degree of hypermetropia the more is the tendency to decrease, and, on the other hand, the higher the age group the less is the tendency of the hypermetropia to decrease—that is, the condition appears to be more stabilized as age increases. Of children with hypermetropic astigmatism it was found that the majority had from one to two dioptres; higher degrees were comparatively rare. Emmetropia was rare: in a series of 1,116 cases under the age of 5 there were only 14 emmetropes, and none below the age of 1 year. In the higher age groups the number increases, but without any steady progression. Above the age of 5 years the percentage was 5 to 6. There was some evidence to show that the emmetropic eye in the young child is often in a transition stage on the way to myopia. As with myopia, the incidence of emmetropia is so low in children under 5 because they have not had time to develop it. In the tabular analysis showing results of tests for myopia the striking feature is the rarity of cases of myopia in both boys and girls below the age of 5 among unselected children. As consideration passes to the higher age groups it is found that the incidence becomes greater, though the figures present no regular progression. The incidence and degree is rather higher in the girls than in the boys. Visual acuity was correlated with refractive error. It was found that myopia of even slight degree gave rise to visual defect, though the latter may not be sufficient to ensure that under the present school standards all cases would be detected and treated. Hypermetropia of considerable extent may be present without visual defect. The younger the child the more marked is the visual defect. Slight degrees of astigmatism often give rise to visual defect, though usually not greater than is indicated by 6/9, so that many low degrees of defect escape treatment. A suggestion is made that the borderline cases may be detected with advantage by placing a lens of +1 D. sphere before the eyes of children with barely 6/6 vision. In emmetropes, myopes of low degrees, and astigmatics this would cause a considerable lowering of visual acuity, so that they would be distinguished from the hypermetropes, who would pass with ease. The committee judges that the results obtained by this preliminary investigation are sufficiently promising to warrant the continuance of such work in the hands of one investigator, whereby a desirable uniformity of returns would be obtained.

FOOT-AND-MOUTH DISEASE

The Foot-and-Mouth Disease Committee of the Ministry of Agriculture and Fisheries has issued its fourth Progress Report,[1] covering the work initiated by the committee, as well as that performed in other countries, during the past three years. Advance has been steady, although slow—the slowness may in part be due to the inherent complexity and difficulty of the subject, and in part to the numerous changes in the research personnel; no fewer than fourteen workers have resigned after an average term of service with the committee of under eighteen months. Since the publication of the last report in 1928, perhaps the most important discovery has been the cultivation of the virus by Professor H. B. and Dr. M. C. Maitland, in flasks containing living tissue of embryo guinea-pigs. Somewhat similar results have independently been obtained by Heck on the island of Riems, and it seems certain that actual growth and multiplication has taken place. Curiously, the addition of serum to broth cuts short the life of the virus, while sterile skin and other tissues increase the time of survival. It has been shown also that virus in small pieces of skin immersed in liquids of an alkalinity approaching that of blood were still active after 71 to 105 days at 29° F. In blood dried on metal, brick, glass, or wood at 59° to 68°, virus only survived two to three days, although on hide, leather, or rubber its life was prolonged to 80 to 102 days. On wrapping materials at normal and at chilled-meat temperatures, it could live 45 days. In milk the virus is soon killed on souring, but, added to sterilized milk, it can live for at least 47 days at 39° and 30 days at 64.4°. In milk rapidly dried by spraying, it can live for some time longer than when dried by hot rollers. The best disinfectants are those which raise the alkalinity of the liquid used, and a 4 per cent. solution of washing soda is very effective for ordinary washing purposes. Hides can be disinfected by immersion for five hours in sodium bisulphate (1 in 10,000) or for two hours in sodium bifluoride (1 in 20,000) without damage to the skin. Experiments with cold storage suggest that if animals are killed at a highly infective stage of the disease, dressed, and chilled or frozen, they may remain infective for some weeks. At least three types of virus are known—O, A, and C; these produce disease and epizootics which are nearly or quite indistinguishable clinically, though an attack due to one type does not protect animals against the others; in cattle and pigs, however, there seems to be some overlapping or extension of the resistance produced by one of the types to infection with the others. The type most frequently found in Britain is the O type. The main sources of infection are cattle, pigs, and sheep, though other ruminants may easily be infected also. Man has been conclusively proved to be a possible host. Wild rats have been infected from guinea-pigs; and rabbits, hedgehogs, cats, and dogs can harbour the virus. Four different methods have been employed to produce specific immunity against the disease. Inoculation with large doses of serum from previously immunized cattle gives a considerable measure of protection for [illegible] and is effective for cattle exposed to infection in [illegible] and market. The serum should, of course, be [illegible]

[1] Ministry of Agriculture and Fisheries. Fourth Progress Report of the Foot-and-Mouth Disease Research Committee. London: H.M. Stationery Office. 1931. (7s. 6d. net.)

valent. Simultaneous inoculation with virus and serum diminishes the severity of the attack. This method has been used in Germany. Inoculation with attenuated virus has not yet been effective. Inoculation with formolized virus was introduced in 1926, and regularly produces a considerable degree of resistance, but it is necessary to use a virus of high potency and to inject a large amount. The immunity produced is probably of the same kind as that following an actual attack, but of a lower grade. This method has so far mostly been used experimentally with guinea-pigs because of the difficulty of obtaining sufficient quantities for larger animals. This is the method which gives the greatest promise of ultimately controlling the disease.

THE B.C.G. TRIAL AT LÜBECK

There is no sign that this trial is near its end. The reports in the German daily press do not make it clear whether the vaccine was given solely by the mouth or not. Advocates speak of "inoculation," but the technical witnesses mostly use words indicating oral administration, and this seems decisive. It is clearly stated that Dr. Altstaedt, after many of the deaths had occurred, gave to his own newborn infant—in order to demonstrate his faith—the vaccine with sugar and water, and that the infant swallowed it with gusto. An attempt to pre-judge the whole issue by speaking of the material used in Lübeck as something essentially different—"Deycke-vaccine"—was prevented by the judge's ruling that the material must be called "Calmette vaccine" or simply "the vaccine." The judge noted that the League of Nations Commission and the committee of the Académie de Médecine in Paris were convinced of the harmlessness of B.C.G. It was stated that Bulgarian doctors were prepared to give evidence of the Bulgarian tragedy, and that lists of the victims could be produced in court. Apparently an official denial was forthcoming from Bulgaria, and Professor Calmette had no knowledge of the occurrence. It was further stated that three doctors from Budapest were prepared to testify that three of twelve children who had died after the use of B.C.G. in Hungary owed their death to the vaccine. The court decided to call none of these doctors before it, nor Professor Calmette. A demonstration of methods was given at the laboratories, and the court studied the possibility of interchange of cultures. At one stage Dr. Hamel of the Reichsgesundheitsamt testified that the official attitude was, and had been throughout, to discourage or even prohibit the general use of B.C.G. in Germany. The October number of the *Annales* of the Pasteur Institute contains three articles of interest. Dr. Buschmann of Limburg concluded from his researches that B.C.G. is harmless to children, that from it virulent cultures cannot be obtained, and that the use of B.C.G. notably reduces mortality and morbidity. Professor Bang of Copenhagen vaccinated thirteen calves with B.C.G., and, later, gave virulent tubercle bacilli intravenously; the calves surviving were slaughtered about ten months later. One died of a severe infection within two months of the test injection, one was killed owing to advanced tuberculosis, and two when slaughtered had severe lesions; nine were healthy, but in three, "insignificant" lesions were present. Of the nine unprotected control calves which received the same infecting dose four succumbed in six weeks; two when slaughtered showed advanced infection; and three appeared healthy, but yielded lesions at necropsy. Dr. Jundell of Stockholm found that B.C.G. protected calves "to a certain extent" against subsequent artificial infection, but did not protect pigs.

ST. GEORGE'S FORTY YEARS AGO

In a pamphlet reprinted from the *St. George's Hospital Gazette* of June last, Sir Humphry Rolleston writes pleasantly of the hospital and its staff as he has known it in the forty years since he was appointed Curator of the Museum in 1890. The post of curator in those days was not often sought after for its own sake, for, as Frederic Hewitt (afterwards Sir Frederic) wrote of its duties:

> "I've calculi sorted
> And tumours imported,
> I've livers and kidneys and bladders and spleens,
> I stop here all day, and I mayn't go away
> Till I've done my own work and the most of the Dean's."

In Sir Humphry Rolleston's case it happily led to the medical staff and the honours which he bears so gracefully. Of the physicians and surgeons of 1890 none of the former, and only three of the latter, survive. Sir Humphry writes kindly of them all, but naturally with fullest knowledge of the physicians, although a specialist comes in for one of his fullest notices. This was Brudenell Carter, who lived to be 90, and whose undying enmity to Ernest Hart led him to describe this journal in a speech at a dinner of the Apothecaries' Society as "weakly." Carter himself was long connected with the *Lancet*, and for many years was a leader-writer on the staff of the *Times*. None of the six physicians and assistant physicians of 1890 has made much mark on medical history. W. Howship Dickinson probably had the greatest contemporary repute. He was a man of strong personality and a sarcastic wit; but, as Sir Humphry Rolleston says, his name is identified with "lost causes" in pathology. Nevertheless, Sir Thomas Barlow said of him: "This was the noblest Roman of them all." Such character sketches as these by Sir Humphry Rolleston are agreeable reading for those who knew the subjects of them, but of still more serious value to the medical historian of the future. It is greatly to be wished that more of our senior colleagues would put on record their recollections of the staffs of other hospitals. Parr's *Lives of the Fellows of the Royal College of Surgeons* has set a good example in this kind of work.

The next session of the General Medical Council will open on Tuesday, November 24th, at 2 p.m., when the President, Sir Donald MacAlister, B.., will take the chair and give an address. The Council will continue to sit from day to day until the termination of its business.

Professor Otto Warburg of the Kaiser Wilhelm Institut für Biologie, Berlin, has been awarded the Nobel 1931 prize for medicine for his researches on enzymes.

We regret to announce the death of Dr. James Sholto Cameron Douglas, professor of pathology in the University of Sheffield, and dean of the Medical School.

VITAMIN STANDARDS AND UNITS

RECOMMENDATIONS OF THE LONDON CONFERENCE

In June, 1931 (as already noted in these columns), a conference, composed of scientific investigators interested in vitamin research, was held in London under the auspices of the Permanent Standards Commission of the Health Organization of the League of Nations.[1] The conference, whose members were drawn from several European countries and the United States, met "to consider the possibility of accepting, by international agreement, a stable standard for each known vitamin, and of defining, in each case, in terms of such a standard, an arbitrary unit of activity for the corresponding vitamin; also, to consider whether, in each case, any method, or methods, for testing in comparison with the standard can be recommended by international approval." Before the conference met it had been agreed that in the present state of knowledge the question of standards and units could profitably be discussed only in the case of the following vitamins:

1. Fat-soluble vitamin A.
2. The antirachitic vitamin D.
3. The antineuritic vitamin B (also known as vitamin B_1).
4. The antiscorbutic vitamin C.

The problems with which the conference had to deal were of considerable practical and scientific importance. On the commercial side the desirability of being able to state exactly, in terms of units, the potency of different vitamin preparations is obvious, and before the conference met some steps in this direction had already been taken in several countries. For example, the last edition of the *United States Pharmacopoeia* defined a unit of vitamin A activity based on a rat-growth test. In recent years a solution of irradiated ergosterol, in terms of which a unit of vitamin D was defined, has been kept at the National Institute of Medical Research, Hampstead, and used by many commercial firms in standardizing their preparations. In Germany, firms dealing in preparations of irradiated ergosterol have found it necessary to establish a vitamin D unit on their own initiative. As regards foodstuffs, the rough-and-ready methods hitherto adopted of appraising vitamin content obviously need improvement. To read that a foodstuff contains "vitamin B_1 ++" and "vitamin A+" does not convey a very clear idea; the statement that it possesses roughly half the vitamin B_1 potency of yeast and one-tenth the vitamin A content of cod-liver oil provides more information, but still remains vague, because yeast and cod-liver oil are variable substances. Anyone who has attempted to tabulate the vitamin content of common foodstuffs from the experimental data now available will know that a considerable amount of pure guesswork is necessary, which the establishment of vitamin units should eventually eliminate. Similarly, in researches into the chemistry of the vitamins the adoption of vitamin units and standards common to investigators in all countries is of obvious importance. If, for example, an investigator wished to follow one of the vitamins through a series of fractionations, he would find it useful to have a standard of reference for use in estimating exactly the loss of potency at each stage, and the expression of his results in generally accepted units would greatly add to the value of the work.

Definition of Units

At the outset the conference found it necessary to decide on a question of principle—whether to define its units in terms of a biological test or in terms of a standard substance. It agreed unanimously in favour of the latter course, which has been followed in the standardization of other physiologically active substances, as, for example, insulin, immune serums, digitalis, etc. In the case of the vitamins, there is perhaps something to be said in favour of defining units in terms of the reaction of an animal. In large laboratories the rat, the animal most frequently used in vitamin experiments, can be "standardized" to some extent, and if all factors, particularly the breeding diet, are kept constant, the animals will not vary much from generation to generation in their reaction to a given amount of a particular vitamin. A conference held recently in New York in connexion with the Committee of Revision of the *United States Pharmacopoeia* recommended the adoption of units for vitamins A and D based on biological tests, which involved defining the breeding and experimental diets to be used. Such a method of establishing vitamin units may, however, lead to difficulties. Small laboratories do not possess the necessary supply of uniformly reacting test animals, and variations in the breeding and experimental diets, due to the different origins of the foodstuffs composing them, may be expected to occur. Other factors, besides diet, difficult to standardize, might make the reaction of a rat in one laboratory to a given amount of vitamin preparation different from that of a rat of the same age and weight in another. With material standards for comparison these possibilities of confusion are avoided.

The conference, in choosing suitable standards, had to consider a number of points, of which the most important was the question of stability. It is obviously necessary to guard carefully against the possibility of unnoticed deterioration in the standard substance. Other matters requiring consideration were the method of preparation of the standard, the conditions under which it should be kept, and the method of distribution.

Vitamin D

In the case of vitamin D, the preparation of irradiated ergosterol which has already been issued from the National Institute of Medical Research, Hampstead, was chosen as the international standard. This preparation has been in use for more than a year as vitamin D standard in Great Britain, and appears to possess the necessary qualifications. At room temperature it lose[s] potency, but it has been found to remain stable for [...] years when preserved at 0° C., in the absence [...] The method of preparing the standard soluti[on] defined, and it was agreed that when renewal [...] necessary a number of laboratories in different [...] should co-operate in comparing the new stand[ard] tion with the old, and thus ensure their equival[ence]. unit of vitamin D was defined as "the vitamin [...] of 1 mg. of the international standard soluti[on] ated-ergosterol." If, as is not unlikely, vit[amin D] is isolated in pure crystalline form during [the] years, the international unit can be redef[ined] of the pure substance.

Vitamin A

As standards of reference for vitamin A [...] suggested themselves—cod-liver oil and c[arotene]. fact that cod-liver oil, particularly when fr[esh] undergoes a loss of vitamin A potency due t[o] impairs its suitability as a standard. After a [...] however, further change is slow. Pure carotene is transformed into vitamin A in the liver. [...] the physiological effects of vitamin A when g[iven] small doses: 3 to 5γ will restore growth and c[ure] thalmia in vitamin A deficient rats (γ = 0.0[01] With regard to the stability of carotene, in r[elation] vitamin A activity, little is at present k[nown] fact that it consists of two isomers, α and β-c[arotene] of less importance, because these have l[ittle] possess almost similar biological activity.

ıe conference recommended the adoption of carotene ›orarily as an international standard of reference ·itamin A, with a selected sample of cod-liver oil second provisional standard. The choice of carotene :mphasized as provisional, and further investigation ; stability will be necessary before its permanent ility is assured. The preparation of carotene for s an international standard is to be made from a er of samples of pure carotene prepared in certain ed laboratories by Willstätter's[2] method, and the ational unit recommended is the vitamin A potency = 0.001 mg.) of the resulting mixture.

Vitamin B

nternational standard for the antineuritic vitamin conference recommended the absorption product *.min B prepared in the Medical Laboratory, Java,* · method of Seidell,[3] as described by Jansen and ı.[4] This preparation, which is extremely potent antineuritic vitamin, is made by extracting rice ıgs by dilute sulphuric acid, after which the is treated by fuller's earth. The earth, with the ı adsorbed upon it, forms the standard substance. as present knowledge goes loss of antineuritic ı does not occur even when the dry preparation is room temperature for some years ; moisture must r, be avoided, or bacterial decomposition will take The material has the disadvantage of being a ; substance, and probably contains other B s. The unit recommended was the antineuritic f *10 mg. of this adsorption product.*

Vitamin C

able standard of reference for vitamin C appears ready made. A number of observers have found : *juice of oranges and lemons varies very little* ıin C potency from year to year. The unit of C recommended was the vitamin C activity of . of fresh juice of the lemon *Citrus limonum.*

Methods of Biological Assay

nference did not discuss at any length the relative : different methods of biological assay. When : in units of a test substance is to be estimated, substance and the standard preparation are in- d simultaneously by the same method, and the stance should therefore show the same value in the standard, whatever biological technique is l. Practical confirmation of this was recently in the results of investigations planned and sub- o this conference by the Accessory Food Factors ee. For vitamin D tests, for example, the con- lecided that " the ' line ' test, *x*-ray examination, mination of the bone ash, are all equally reliable ," *but some recommendations* were made with o the minimum number of rats to be used for a ıation of antirachitic potency. In tests for B, the conference was satisfied that methods prophylactic and curative in type and employing ıe rat or pigeon as experimental animal may yield valid results."

standard preparations for vitamins A, B_1, and D be kept at the National Institute of Medical ch, Hampstead, which will act for this purpose on of the League of Nations Health Organization. thence they will be issued to suitable individuals nstitutions, under conditions defined by the .nce.

Commentary

While the recommendations of the conference are mainly visional, and may require revision in a few years, a ful advance has been made. The introduction of research. It is to be hoped that the units established will be widely used in assaying the vitamin content of medicinal preparations and foodstuffs. The task of re-investigating common foodstuffs, in order to estimate the number of vitamin units they contain, is not as formidable as it sounds. When this has been done, it should be possible to calculate not only the protein, fat, and carbohydrate content of human dietaries, but also their vitamin content. Certainly it should not be difficult to investigate in this manner the unbalanced diets which lead to deficiency disease. Sufficient knowledge of the vitamin value of different human dietaries should eventually enable us to estimate man's actual requirements in this respect.

References

[1] League of Nations Health Organization. Report of the Permanent Commission on Biological Standardization. London: Geo. Allen and Unwin. (1s. 6d.)
[2] *Liebig's Annalen*, 1906, cccl, 48
[3] Seidell: United States Public Health Reports, 1916, xxxi, 364
[4] Jansen and Donath: *Geneesk. Tijdschr. Nederland.*, 1927, lxvi, 810

WORK AND FINANCE OF VOLUNTARY HOSPITALS IN LONDON

The annual statistical review for 1930, just published by King Edward's Hospital Fund for London,[1] contains no evidence of any falling off, in the five-year period of the review, in the total amount of voluntary gifts to the maintenance of the hospitals of London. On the contrary, they increased during the three years 1928–30 from £1,689,000 to £1,836,000. Though an examination of the figures shows, as was to be expected from the financial stringency, some decrease in 1930 from the high figures of 1928 and 1929 in the amount received from the general body of subscribers and donors, this decrease was more than set off by the receipt of a large single donation of £100,000. If receipts for building and endowment are included, the total voluntary gifts in 1930 amounted to £2,942,000.

The total income of the 140 London hospitals dealt with in the review was £3,768,000, the highest figure recorded, and an increase of £157,000 on the previous year. Notwithstanding an advance of £131,000 in the total running expenditure, due to progress in various directions, including the upkeep of 350 additional beds, the aggregate surplus of income over expenditure for the year 1930 was £80,000. In 1929 it was £54,000. The financial results as a whole in 1930 were therefore better than in 1929.

If the individual hospitals are taken separately, there were 71 with surpluses and 69 with deficits ; in this respect 1930 was not so favourable as 1929, when 80 of these hospitals had surpluses ; but, taken as a whole, while the deficits came to £84,000 more than in 1929, the surpluses totalled £110,000 more. Some of the hospitals with a deficit were in a position of real difficulty, but hospitals with a deficit one year are often among those with surpluses in the next, as the result either of better fortune or of special efforts.

The question what effect the prevailing depression may have upon the finances of the London voluntary hospitals during 1931 cannot as yet be answered ; but whatever doubts are felt are no more than a recurrence of similar doubts felt a year ago regarding the results of 1930. The soundness of the position in London at the beginning of the year is demonstrated by the figures given in the King's Fund review for 1930, and is thus described in its concluding summary :

" The work of the voluntary hospitals in London continues to extend. The figures of the five years covered by this

[1] Statistical Review of the Work and Finance of the London (1s.)

review carry on from the preceding years the story of increased work. The number of in-patients treated daily in the London hospitals has increased by 16 per cent. in the last five years, while the out-patients have increased by over 6 per cent., and the total out-patient attendances by 20 per cent. This increased work is the outcome of the change that has gradually been taking place in the part played by the voluntary hospitals. These hospitals are no longer only a refuge for the indigent sick; the rise of an informed public opinion on the importance of the health of the individual for the social well-being, and the progress made in curative medicine and surgery, have not only increased the number of those patients that can be effectively treated, but have also led to demands from other classes of the community, and the hospitals have opened their doors to serve the common good.

"In the aggregate the receipts have kept pace with the increased maintenance expenditure. Except in 1926, current maintenance has been covered by income. To this result subscriptions and donations have contributed their share, this source of income showing a large increase in recent years, quite apart from the exceptional single donation of £100,000 in 1930, and this although heavy demands have been made by the hospitals upon the public for large schemes of rebuilding and of extension at existing hospitals and for buildings for new hospitals. In each of the last four years the annual receipts by the hospitals from voluntary sources for all purposes have exceeded two and a half million pounds, the highest figure being reached in 1930, when over £2,900,000 was received. The same tale of increased receipts is told by the figures for patients' payments, which have reached a higher total in each successive year. All this is proof that during recent years public interest in the voluntary hospitals has continued to grow, and that the basis upon which the voluntary hospitals rest has been steadily broadening.

"These facts show that the vitality of the voluntary system is unimpaired, and has proved adequate to discharge the heavier tasks imposed upon it by changing social conditions. The financial and vital statistics contained in this review demonstrate that, so far as London is concerned, the community is ready to support in ever-increasing measure what has been described as 'our unique heritage,' and that the voluntary hospitals have been strengthening their hold upon the confidence of the public."

COLONIES FOR MENTAL DEFECTIVES

REPORT OF DEPARTMENTAL COMMITTEE

In January, 1930, the Board of Control, with the approval of the Minister of Health, appointed a committee with the following terms of reference.

"To consider and report what are the essential structural requirements of a complete colony for mental defectives of all types, and to what extent the cost could be reduced by the adoption of semi-permanent or temporary buildings or other new methods of construction, having regard to the comparative cost of maintenance as well as the initial capital expenditure involved."

The committee's report has now been published.[1] Although not required to deal with questions of policy, the committee states that its inquiries inevitably involved some consideration of the present-day method of housing defectives in "colonies," as compared with the older method of placing them in large barrack-like structures, and that the evidence received was strongly in favour of the colony principle.

"A complete colony should contain all the structures necessary for the housing, training, occupation, and recreation of defectives of all grades and ages, and the arrangements should be designed with reference to the fact that the great majority of the colonists will reside there for many years, and some for the duration of life."

The main purpose of the committee was to explore the possibilities of effecting economies in construction, and after an exhaustive inquiry it now sets out the essential requirements. While it has not been able to suggest major economies on present practice, a number of suggestions are made for effecting economies which, when taken together over a complete scheme, may be expected to be appreciable. To some extent the committee's suggestions would modify the standards now aimed at, but the comfort and general amenities, and the space allowed per patient, would not be affected. While preserving the colony idea of detached units grouped round a common administrative centre, the committee recommends closer concentration of the buildings and departure from the separate villa principle to the extent of building certain of the homes in semi-detached pairs. This recommendation alone would result in an estimated saving of £300 on each villa.

SIZE OF COLONIES

The question of the size of a colony is one which affects greatly the question of cost. Considerations of efficient classification, the need for a resident medical administrator, and the provision of essential facilities for occupations, recreation, and medical treatment, lead the committee to the view that no colony should be erected for fewer than 520 beds. But considerations of economy indicate that the administrative units essential to success should be made to serve not less than 880 beds, and the committee recommends that future colonies should be constructed ultimately to contain at least this number. Larger numbers would make for still further economy and efficiency, and the only practical limit of size would be imposed by the size of the geographical area to be served by the colony. This must not be so large that reasonably frequent visits by relatives and friends would be unduly difficult or expensive. The majority of local authorities would not, for themselves alone, need a colony of economic size, and the committee urges that they should be persuaded to combine in the provision of joint colonies.

METHODS OF CONSTRUCTION

On the question of permanent *versus* semi-permanent or other methods of construction, the committee, after careful inquiry, reaches the conclusion that "if the permanent construction is treated with due regard to lightness and simplicity, very little initial, and probably no ultimate, saving is likely to be effected by adopting semi-permanent or temporary constructional methods," except in the case of workshops, farm buildings, and similar structures. This conclusion is based mainly on the operation of loan charges for the different types of construction; but there are other than economic factors, and it suggests that local authorities would themselves be the best judges of what was best in any particular case.

Apart from its suggestions for effecting economies in the cost, necessarily heavy, of building colonies for mental defectives, the report of the committee should be of value to local authorities, because it defines a minimum standard of accommodation, while yet preserving decent conditions of residence for this afflicted section of the community. A series of sketch plans, illustrating the committee's suggestions for planning different kinds of homes, appears as an appendix.

ATTITUDE OF THE BOARD OF CONTROL

In a circular enclosing copies of this report the Board of Control says that in the existing financial situation they do not desire to urge local authorities who have not yet provided mental deficiency colonies to embark upon schemes of this kind at present. But it anticipates that many authorities will have under consideration proposals for such schemes with a view to their inception when circumstances permit. Bearing in mind the need for reasonable economies in the provision of colonies, the Board accepts generally the recommendations of the committee, and it will be prepared to approve proposals on these lines as and when such schemes proceed. At the same time, the Board's general acceptance of the recommendations will not preclude it from approving proposals which may depart from the recommendations (for example, with respect to air space and the arrangement of beds in dormitories), but can be justified on their merits in particular cases.

[1] Colonies for Mental Defectives. Report of Departmental Committee. H.M. Stationery Office. 1931. (2s. net.)

THE GENERAL ELECTION

MEDICAL MEMBERS OF THE NEW PARLIAMENT

The following nine medical men who were members of the last Parliament have been re-elected to the House of Commons at the recent General Election: Dr. Walter E Elliot, Dr. F. E. Fremantle, Sir Ernest Graham-Little, Dr. H. C. Haslam, Dr. Joseph Hunter, Dr. J. H. Morris-Jones (unopposed), Dr. Alfred Salter, Professor Thomas Sinclair (unopposed), and Dr. J. H. Williams.

The following seven medical men have also been elected, one of whom, Sir Henry Jackson, sat as *member for the* same constituency in the House of Commons from 1924 to 1929: Dr. J. D. Cooke, Dr. G. B. Hillman, Dr. A B. *Howitt, Sir Henry Jackson, Dr. J. W. Leech, Dr. W. J.* O'Donovan, and Dr. J. V. Worthington.

SUCCESSFUL CANDIDATES: POLLING FIGURES

The following are the polling figures at all the contested elections in which medical candidates were successful. An asterisk denotes that a candidate sat in the last Parliament.

HAMMERSMITH (SOUTH):	
Dr J. D Cooke (C)	21,018
*D. Chater (Lab)	8,390
GLASGOW (KELVINGROVE):	
*Dr. W E Elliot (C)	21,481
J Winning (Lab)	12,415
HERTFORD (ST ALBANS):	
*Dr. F E Fremantle (C)	36,660
Miss M Whateley (Lab)	10,289
LINCOLNSHIRE (HORNCASTLE):	
*Dr. H C. Haslam (C)	18,100
G. H. Dutton (L)	8,788
WAKEFIELD:	
Dr G. B *Hillman (C)*	15,831
*G H. Sherwood (Lab)	11,774
READING:	
Dr A B Howitt (C)	24,439
*Somerville Hastings, F R C S (Lab)	19 277
E R. Troward (New Party)	861
DUMFRIES:	
*Dr. Joseph Hunter (L) . ..	23,873
J. S Paterson (Lab)	7,693
WANDSWORTH *(CENTRAL)*	
Sir Henry Jackson (C)	19,189
J L. Cohen (Lab)	7,512
A M Diston (New Party)	424
NEWCASTLE-UPON-TYNE (WEST)	
Dr J W *Leech (C)*	28,560
*J H Palin (Lab)	13,514
DENBIGH:	
*Dr J H Morris-Jones (L Nat)	unopposed
STEPNEY (MILE END).	
Dr W J O'Donovan (C)	12,369
*J Scurr (Lab)	9,733
BERMONDSEY (WEST):	
*Dr A Salter (Lab)	10,039
N Bower (C)	9,048
W *Hannington* (Com)	873
BELFAST (QUEEN'S) UNIVERSITY:	
*Professor T Sinclair (C)	unopposed
CARMARTHEN (LLANELLY)	
*Dr J H Williams (Lab)	34,196
I J Rees (C)	18,163
GLOUCESTER (FOREST OF DEAN):	
Dr J V Worthington (N L Lab)	14 815
*D J. Vaughan *(Lab)*	13,241
UNIVERSITY OF LONDON:	
*Sir E Graham-Little (Ind)	8 461
Major A G. Church (Nat Lab)	3,134

MEDICAL CANDIDATES NOT ELECTED

The following members of the medical profession were defeated at the polls Several had previously represented or contested either the same or other constituencies An asterisk denotes that a candidate sat in the last Parliament

Dr F G Bushell (Lab), Somerset (Taunton)
Dr C R Cooke Taylor (L Nat), Camberwell (Dulwich)
*The Right Hon Christopher Addison (Lab), Willesden (South East)
Dr Esther Richards (Lab), Pudsey (West)
*Mr Somerville Hastings (Lab), Reading
Dr W S Rowell Thomas (L), Ilford
*Dr L Haden Guest (Lab), Bucklemshire (Wycombe).
Dr R A Lester (Lab) Hampshire (Winchester)
*Dr T Drummond Shiels (Lab) Edinburgh East
*Dr R Forgan (New Party), Renfrew (Western)

England and Wales

Centenary of the York Medical Society

The centenary of the York Medical Society was celebrated on October 28th. The president (Mr J. S Hughes), in welcoming the large audience, which included delegates from other medical societies, described the conditions prevailing a hundred years ago, when science seemed to be bride-bound, and medicine and surgery were a mass of empiricism and mediaevalism. One of the founders of the British Association at York at that time was a member of the medical profession, Dr. Wade; he subsequently brought into being, in 1831, the York Medical Society, for the advancement of medicine and surgery. The society had had a continuous existence, and had rendered distinguished service to medical science Lord Moynihan, P.R C S, delivered an address on ancient medicine and surgery, commenting particularly on the occurrence of osteo-arthritis in prehistoric Egypt, and on the operation of trephining in Peru, presumably to relieve "possession by evil spirits" With the aid of a lantern slide he showed how a fractured forearm had been united by expert hands in 1250 B.C. Dr. Watts Eden, President of the Royal Society of Medicine, who proposed a vote of thanks to Lord Moynihan, condemned the over-specialization which was too current, and emphasized the value of such organizations as the York Medical Society in affording the means of bringing specialists and general practitioners together, to the great advantage of both. The centenary banquet was attended by the Archbishop and the Dean of York, the Lord Mayor, and representatives of medical practitioners from all parts of the county. The Archbishop, responding to the toast of "The Clergy," proposed by Mr. E. R. Dodsworth, pleaded for closer association between the medical profession and the Church. There was always, he said, a great danger of drifting into some remoteness or unreality when any interest was pursued in isolation, and particularly when it had a scientific aspect. Human bodies themselves could not be treated as though the physical and mental sides were independent, for the personality was a unity, and so a close harmonious co-operation of those engaged in healing was much to be desired. Sir Squire Sprigge, proposing the health of Lord Moynihan, commented on the pioneer work in surgery for which his fame was world-wide Lord Moynihan, in his reply, said that an objective of his life had been to bring surgeons together, and to make the world of English surgeons count for more than it had ever previously done The formation of the Association of Surgeons of Great Britain and Ireland was gradually rendering it impossible for second-rate work to go on in any clime, and surgeons were being united in personal friendship as well as by professional interests in a way

which would have been impossible twenty years ago. As disciples of Lister they had made British surgery the safest and best in the world, and surgery was surely the greatest of the arts. The toast of "The Guests" was proposed by Dr. H. Yellowlees of London, formerly medical superintendent of the York Retreat; Professor D. P. D. Wilkie of Edinburgh, and Dr. W. G. Willoughby, President of the British Medical Association, responded.

Chadwick Lecture on Cancer

A Chadwick Public Lecture, entitled "The prevention of cancer," was given in the Great Hall of the British Medical Association House, Tavistock Square, by Dr. F. J. McCann, on October 30th, with Sir William Collins in the chair. Dr. McCann's first point was that the proper study of human cancer was the cancer patient, and any attempt to relegate the clinician to the background in favour of the laboratory worker should be discouraged. Both were capable of rendering service in their own sphere, but that of the clinician was the larger. After discussing briefly the age incidence and distribution of cancer he declared that this was largely a preventable disease. It did not appear like a bolt from the blue, but was usually preceded by a period of subnormal health varying in intensity and duration. It was not a local but a systemic disease, and unless the local removal or destruction of the growth was aided by general treatment the proportion of cures would not increase. The cancer patient should remain under observation for the rest of his life. Strict bodily cleanliness occupied a foremost place among the methods of preventing cancer, and its utility was not only exemplified in dealing with "occupational cancer," but also in all situations where chronic irritation was allowed to persist. Chronic irritation stood out as the most common single exciting cause of surface cancer, and full advantage had not been taken of this knowledge. Long-continued irritation insufficient to cause rapid local destruction of tissue was the most potent. The irritant might be mechanical, chemical, bacterial, actinic, or from animal parasites. Prevention or removal of chronic irritants was the most hopeful method of hindering the appearance of a cancerous growth. The lecturer then indicated how this principle could be applied to cancer, not only on the surface of the body, but also in the internal organs. Further, the value of the study of pre-cancerous states was stressed as well as the great importance of early recognition of cancer. A striking example was furnished by cancer of the uterus, which had dropped from the top of the list to fifth place. In 1907 the lecturer acted as chairman of a committee of the British Medical Association formed to encourage the earlier recognition of cancer of the womb, and leaflets giving the early signs and symptoms were distributed to nurses and midwives, and a synopsis published in the leading medical journals. This action had been instrumental in directing increased attention to early recognition, and in consequence the results of treatment had been improved. What had been achieved for uterine cancer could be achieved for other organs of the body. The general problem was to prevent senility of the tissues, whether premature or excessive. The necessity for pure air and sunlight was as great in the prevention of cancer as in that of tuberculosis, while open-air treatment should be the rule after operations for cancer. Removal of the local disease or its destruction formed only a part of the treatment of cancer; removal of "focal sepsis" was an important means of tissue betterment. A well-balanced diet, suitable to age, sex, occupation, habits, and environment, was requisite. The effect of toxic poisoning from the intestine, and the influence of syphilis and chronic alcoholism in relation to tissue degeneration, were pointed out, as well as the reasons for disregarding the microbic theory of cancer. In Dr. McCann's view the cause of cancer was probably some chemical product of tissue degeneration, varying in quantity in different bloods and at different times in the same blood, and capable of exciting irregular and uncontrolled growth of epithelial cells in localities naturally predisposed or rendered suitable by chronic irritation, inflammation, disease, or degeneration, and these cells in turn producing a similar substance, augmenting that which existed in the circulating blood. The problem of cancer was the problem of cell growth. Certain of the internal secretions had the power of exciting and others of restraining cell growth, and it was in this direction that the best means of providing a genuine cure for cancer must be looked for. But prevention was better still, and early recognition essential

Expected Measles Epidemic in London

An epidemic of measles in London, according to a report of the Central Public Health Committee of the London County Council, is expected during this autumn and winter. Measles epidemics in London appear to occur biennially, beginning in the late autumn, reaching their meridian in March, and taking some six or seven months to complete the circle of London. The last epidemic occurred in the autumn and winter of 1929-30, and the next is therefore almost due. During each measles epidemic in London not fewer than 50,000 children are affected. The committee points out that measles is an infection which does not lend itself ideally to hospital treatment, and therefore home nursing should be encouraged in all cases where it can be carried out under reasonably favourable conditions. Where satisfactory home nursing cannot be obtained, every effort should be made to secure the patient's admission to hospital at as early a stage of the illness as possible. The Council has 4,634 beds in its town fever hospitals, and 2,868 more in outlying and convalescent hospitals. During measles epidemics every case of scarlet fever that can either be kept at home or sent to one of the outlying hospitals renders a hospital bed available for measles. It is considered that if measles cases are admitted before complications have developed, a period of fourteen days is usually adequate for hospital treatment. The number of beds that can be set apart for measles depends largely on the incidence of diphtheria, which must be given priority of admission over both scarlet fever and measles. It much depends also upon the incidence of small-pox. If the fever hospital accommodation is unduly taxed for other conditions, arrangements will have to be made for assistance from the general hospitals under the Council's control during the period of expected greatest pressure—namely, February to April, 1932. Attention is drawn to the assistance which the public, especially parents, can give. Despite much propaganda, the belief persists that measles can be lightly treated without medical aid or nursing assistance; yet during the last four years measles has caused eight times as many deaths as scarlet fever and one and a half times as many as diphtheria. The deaths from measles in London are diminishing, however, as seen from the figures for recent quinquenniums:

1906–10	9,538	1921–25	3,855
1911–15	9,596	1926–30	3,715
1916–20	5,830		

Important points in mitigating the effects of an epidemic are: (1) to make every effort to postpone contracting the disease until after the third or fifth year, for the younger the child the greater is the risk of serious illness; (2) to secure adequate medical, nursing, and hospital care; (3) to have regard to the fact that measles is particularly fatal among children under five living under unfavourable conditions.

St. Luke's Day Service at Portsmouth

A special service was held at the Cathedral, Portsmouth, on St. Luke's Day, when there was a large congregation, including the Lord Mayor and Lady Mayoress, Sir Harold Pink, chairman of the Royal Portsmouth Hospital, Surgeon Captain J. S. Dudding, R.N., members of the Portsmouth Division of the British Medical Association, together with representatives of the Voluntary Aid Detachment of the British Red Cross Society and nurses from the local institutions. The special service was conducted by the Provost, and the lessons were read by Dr. David McAskie and Dr. F. C. B. Gittings, the chairman and secretary respectively of the Portsmouth Division. In the course of his sermon the Bishop of Portsmouth quoted the following statement of a young modern thinker: "The great sin which all scientists must avoid is that of despairing of the ultimate arrival at the unity of the universe." He remarked that if this objective was lost sight of the result would mean the collapse of research. If St. Luke, the beloved physician and the patron saint of the medical profession, returned to this earth and witnessed the works of modern medicine he would recall the words: "Ye shall do greater things than these." The life of a physician meant much intellectual and physical hardship, and only by splendid self-discipline and self-sacrifice could research be carried on with that great unity in view. Physics had taught that life was not an output of fundamental matter, so much as an interrelative series of events with a definitely forward movement, and they must regard themselves as adventurous climbers with an Everest to conquer. For the scientist, discovery sometimes meant rebuilding his house with what seemed to be broken tools. Anybody with a new truth to give the world was an object of derision and persecution, and often found his discovery a crown of thorns. Indeed, the crucifix was never far from the truth-teller, but comfort emanated from the fact that He who told the truth two thousand years ago was still in our company and essential to our lives.

Medical Superintendent of North-Eastern Hospital

Dr. F. H. Thomson, medical superintendent of the North-Eastern Hospital, South Tottenham, retired under the age limit in October. He entered the service of the Metropolitan Asylums Board in 1890, became medical superintendent in 1906, and in 1926 was appointed by the Board chief medical officer in the infectious diseases hospitals service. The London County Council states that "he has carried out his responsible duties with conspicuous ability and zeal, and has rendered important services in the administration of the infectious diseases hospitals." Twenty-five applications were received in response to public advertisement for appointment as medical superintendent in the Public Health Department, for duty in the first instance at the North-Eastern Hospital. Dr. E. H. R. Harries, medical superintendent of the City Fever Hospital, Birmingham, and clinical lecturer on fevers, Birmingham University, has been chosen.

Strangeways Research Laboratory

The report for 1930 of the trustees of the Strangeways Research Laboratory at Cambridge indicates that the work of this organization is proceeding satisfactorily, despite the lack of money which would enable extensions to be undertaken and the endowment fund to be increased. All available space is now being devoted to research; eleven workers are at present accommodated in the building, and one is temporarily working abroad. A comprehensive scheme for studying the effects of radiation upon normal and malignant cells has been devised in collaboration with various university departments and with Addenbrooke's Hospital. The radio-sensitivity of malignant cells is being investigated by means of the tissue culture technique, and, in this connexion, it may be recalled that the British Institute of Radiology presented its Roentgen award for 1930 to Dr. F. G. Spear, a member of the scientific staff of the laboratory, for his paper on the immediate and delayed effects of radium on tissue cultures *in vitro*. Experimental work in embryology and histology has been promoted, with special reference to bone formation and the repair of fractures. Various articles have been published by Dr. Honor Fell and other members of the staff of the laboratory, and communications have been made to learned societies.

Ireland

Allocation of Sweepstakes Money

A Bill was recently introduced in the Dail, and read a first time, to amend the Public Charitable Hospitals Act so that some of the money already provided by statute for allocation to county and district hospitals should be allocated to nursing institutions. A "nursing organization" is defined as one "which has for its sole object the nursing and providing of nurses for poor persons suffering from physical diseases or injuries, or women in childbirth." Section 2 provides that, notwithstanding anything contained in Section 6 of the Amending Act, one-twenty-fifth part of the portion of every available surplus paid to the Minister for Local Government and Public Health under that section shall be paid or applied by him in such manner as he shall think proper to or for the benefit of such nursing organizations as he shall think fit. It also provides that where the Minister under this section pays any money out of available surplus to a nursing organization, he may require as a condition that such money shall be applied only for or in relation to the promotion of the objects of the organization in particular areas specified by him.

Drain on Insurance Funds

At the annual meeting of the Association of Trade Union Approved Societies in Dublin, Mr. L. J. Duffy, who presided, stated that a number of societies which had provided additional benefits, such as dental treatment and hospital treatment, before July last, were now obliged, as a result of the third quinquennial valuation, to discontinue these services, and that the societies as a whole had not nearly so much money available for additional benefits during the present valuation period as in the previous period, because of increased expenditure on sickness and disablement benefit. The increase in sickness claims was confirmed by a subcommittee of the Health Insurance Advisory Committee, which had given much consideration to the problems arising out of excessive expenditure on benefits, but no improvement could be hoped for so long as the present volume of unemployment continued. Many thousands of workers were unemployed for long periods, and probably double as many were employed only intermittently. The experience of approved societies and of sickness insurance funds in the Irish Free State seems to be similar to that of other countries where considerable unemployment exists.

Blind People in the Irish Free State

Commenting on a leading article in the *Irish Times*, Dr. J. S. Quin draws attention to the needs of the blind in the Free State, and to the work that has recently been started by the National Council for the Welfare of the Blind in Ireland, of which he is honorary treasurer.

which would have been impossible twenty years ago. As disciples of Lister they had made British surgery the first and best in the world, and surgery was surely the greatest of the arts. The toast of "The Guests" was proposed by Dr. H. Yellowlees of London, formerly medical superintendent of the York Retreat; Professor D. P. D. Wilkie of Edinburgh, and Dr. W. G. Willcocks, President of the British Medical Association, responded.

Chadwick Lecture on Cancer

A Chadwick Public Lecture, entitled "The prevention of cancer," was given in the Great Hall of the British Medical Association House, Tavistock Square, by Dr. J. J. McCann, on October 30th, with Sir William Collins in the chair. Dr. McCann's first point was that the proper study of human cancer was the cancer patient, and any attempt to relegate the clinician to the background in favour of the laboratory worker should be discouraged. Both were capable of rendering service in their own sphere, but that of the clinician was the larger. After discussing briefly the age incidence and distribution of cancer he declared that this was largely a preventable disease. It did not appear like a bolt from the blue, but was usually preceded by a period of subnormal health variable in intensity and duration. It was not a local but a systemic disease, and unless the local removal or destruction of the growth was aided by general treatment the proportion of cures would not increase. The cancer patient should remain under observation for the rest of his life. Strict bodily cleanliness occupied a foremost place among the methods of preventing cancer, and its utility was not only exemplified in dealing with "occupational cancer," but also in all situations where chronic irritation was allowed to persist. Chronic irritation stood out as the most common single exciting cause of surface cancer, and full advantage had not been taken of this knowledge. Long-continued irritation insufficient to cause rapid local destruction of tissue was the most potent. The irritant might be mechanical, chemical, bacterial, actinic, or from animal parasites. Prevention or removal of chronic irritants was the most hopeful method of hindering the appearance of a cancerous growth. The lecturer then indicated how this principle could be applied to cancer, not only on the surface of the body, but also in the internal organs. Further, the value of the study of pre-cancerous states was stressed as well as the great importance of early recognition of cancer. A striking example was furnished by cancer of the uterus, which had dropped from the top of the list to fifth place. In 1907 the lecturer acted as chairman of a committee of the British Medical Association formed to encourage the early recognition of cancer of the womb, and leaflets giving the early signs and symptoms were distributed to nurses and midwives, and a synopsis published in the leading medical journals. This action had been instrumental in directing increased attention to early recognition, and in consequence the results of treatment had been improved. What had been achieved for uterine cancer could be achieved for other organs of the body. The general problem was to prevent senility of the tissues, whether premature or excessive. The necessity for pure air and sunlight was as great in the prevention of cancer as in that of tuberculosis, while open-air treatment should be the rule after operations for cancer. Removal of the local disease or its destruction formed only a part of the treatment of cancer; removal of "focal sepsis" was an important means of tissue betterment. A well-balanced diet, suitable to age, sex, occupation, habits, and environment, was requisite. The effect of toxic poisoning from the intestine, the influence of syphilis and chronic tissue degeneration, were pointed out, as well as the reasons for disregarding the microbic theory of cancer. In Dr. McCann's view the cause of cancer was probably some chemical product of tissue degeneration, varying in quantity in different bloods and at different times in the same blood, and capable of exciting irregular and uncontrolled growth of epithelial cells in localities naturally predisposed or rendered suitable by chronic irritation, inflammation, disease, or degeneration, and these cells in turn producing a similar substance, augmenting that which existed in the circulating blood. The problem of cancer was the problem of cell growth. Certain of the internal secretions had the power of exciting and others of restraining cell growth, and it was in this direction that the best means of providing a genuine cure for cancer must be looked for. But prevention was better still, and early recognition essential.

Expected Measles Epidemic in London

An epidemic of measles in London, according to a report of the Central Public Health Committee of the London County Council, is expected during this autumn and winter. Measles epidemics in London appear to occur biennially, beginning in the late autumn, reaching their meridian in March, and taking some six or seven months to complete the circle of London. The last epidemic occurred in the autumn and winter of 1929–30, and the next is therefore almost due. During each measles epidemic in London not fewer than 50,000 children are affected. The committee points out that measles is an infection which does not lend itself ideally to hospital treatment, and therefore home nursing should be encouraged in all cases where it can be carried out under reasonably favourable conditions. Where satisfactory home nursing cannot be obtained, every effort should be made to secure the patient's admission to hospital at as early a stage of the illness as possible. The Council has 4,634 beds in its town fever hospitals, and 2,868 more in outlying and convalescent hospitals. During measles epidemics every case of scarlet fever that can either be kept at home or sent to one of the outlying hospitals renders a hospital bed available for measles. It is considered that if measles cases are admitted before complications have developed, a period of fourteen days is usually adequate for hospital treatment. The number of beds that can be set apart for measles depends largely on the incidence of diphtheria, which must be given priority of admission over both scarlet fever and measles; much depends also upon the incidence of small-pox. If the fever hospital accommodation is unduly taxed for other conditions, arrangements will have to be made for assistance from the general hospitals under the Council's control during the period of expected greatest pressure—namely, February to April, 1932. Attention is drawn to the assistance which the public, especially parents, can give. Despite much propaganda, the belief persists that measles can be lightly treated without medical and nursing assistance; yet during the last four years measles has caused eight times as many deaths as scarlet fever, and one and a half times as many as diphtheria. The deaths from measles in London are diminishing, however, as seen from the figures for recent quinquenniums:

1906–10	9,538	1921–25	3,859
1911–15	9,596	1926–30	3,715
1916–20	5,830		

Important points in mitigating the effects of an epidemic are: (1) to make every effort to postpone contraction of the disease until after the third or fifth year, because the younger the child the greater is the risk of serious illness; (2) to secure adequate medical, nursing, and hygienic care; (3) to have regard to the fact that measles is particularly fatal among children under-nourished or living under unfavourable conditions.

St. Luke's Day Service at Portsmouth

A special service was held at the Cathedral, Portsmouth on St Luke's Day, when there was a large congregation including the Lord Mayor and Lady Mayoress Sir Harold Pink, chairman of the Royal Portsmouth Hospital, Surgeon Captain J S Dudding RN members of the Portsmouth Division of the British Medical Association, together with representatives of the Volunteer Aid Detachment of the British Red Cross Society and nurses from the local institutions The special service was conducted by the Provost, and the lessons were read by Dr David McKelvie and Dr I C B Gittins the chairman and secretary respectively of the Portsmouth Division In the course of his sermon the Bishop of Portsmouth quoted the following statement of a modern thinker "The great sin which all seem to shun must avoid is that of despairing of the ultimate arrival at the unity of the universe" He remarked that if this objective was lost sight of the result would mean the collapse of research If St Luke the beloved physician and the patron saint of the medical profession, returned to this earth and witnessed the works of modern medicine he would recall the words Ye shall do greater things than these" The life of a physician meant much intellectual and physical hardship and only by splendid self discipline and self sacrifice could research be carried on with that great unity in view Physics had taught that life was not an output of fundamental matter, so much as an interrelative series of events with a definitely forward movement, and they must regard themselves as adventurous climbers with an Everest to conquer For the scientist, discovery sometimes meant rebuilding his house with what seemed to be broken tools Anybody with a new truth to give the world was an object of derision and persecution, and often found his discovery a crown of thorns Indeed, the crucifix was never far from the truth teller, but comfort emanated from the fact that He who told the truth two thousand years ago was still in our company and essential to our lives

Medical Superintendent of North-Eastern Hospital

Dr I H Thomson medical superintendent of the North Eastern Hospital, South Tottenham, retired under the age limit in October He entered the service of the Metropolitan Asylums Board in 1890, became medical superintendent in 1906, and in 1926 was appointed by the Board chief medical officer in the infectious diseases hospitals service The London County Council states that "he has carried out his responsible duties with conspicuous ability and zeal, and has rendered important services in the administration of the infectious diseases hospitals Twenty five applications were received in response to public advertisement for appointment as medical superintendent in the Public Health Department, for duty in the first instance at the North Eastern Hospital Dr E H R Harries, medical superintendent of the City Fever Hospital, Birmingham, and clinical lecturer on fevers Birmingham University, has been chosen

Strangeways Research Laboratory

The report for 1930 of the trustees of the Strangeways Research Laboratory at Cambridge indicates that the work of this organization is proceeding satisfactorily, despite the lack of money which would enable extensions to be undertaken and the endowment fund to be increased All available space is now being devoted to research eleven workers are at present accommodated in the building and one is temporarily working abroad A comprehensive scheme for studying the effects of radiation upon normal and malignant cells has been devised in collaboration with various university departments and with Addenbrooke's Hospital The radio sensitivity of malignant cells is being investigated by means of the tissue culture technique, and, in this connexion, it may be recalled that the British Institute of Radiology presented its Roentgen award for 1930 to Dr F G Spear, a member of the scientific staff of the laboratory, for his paper on the immediate and delayed effects of radium on tissue cultures *in vitro* Experimental work in embryology and histology has been promoted, with special reference to bone formation and the repair of fractures Various articles have been published by Dr Honor Fell and other members of the staff of the laboratory, and communications have been made to learned societies

Ireland

Allocation of Sweepstakes Money

A Bill was recently introduced in the Dail, and read a first time, to amend the Public Charitable Hospitals Act so that some of the money already provided by statute for allocation to county and district hospitals should be allocated to nursing institutions A nursing organization is defined as one "which has for its sole object the nursing and providing of nurses for poor persons suffering from physical diseases or injuries or women in childbirth" Section 2 provides that notwithstanding anything contained in Section 6 of the Amending Act, one twenty fifth part of the portion of every available surplus paid to the Minister for Local Government and Public Health under that section shall be paid or applied by him in such manner as he shall think proper to or for the benefit of such nursing organizations as he shall think fit It also provides that where the Minister under this section pays any money out of available surplus to a nursing organization, he may require as a condition that such money shall be applied only for or in relation to the promotion of the objects of the organization in particular areas specified by him

Drain on Insurance Funds

At the annual meeting of the Association of Trade Union Approved Societies in Dublin, Mr L J Duffy, who presided stated that a number of societies which had provided additional benefits, such as dental treatment and hospital treatment, before July last, were now obliged, as a result of the third quinquennial valuation, to discontinue these services, and that the societies as a whole had not nearly so much money available for additional benefits during the present valuation period as in the previous period, because of increased expenditure on sickness and disablement benefit The increase in sickness claims was confirmed by a subcommittee of the Health Insurance Advisory Committee, which had given much consideration to the problems arising out of excessive expenditure on benefits, but no improvement could be hoped for so long as the present volume of unemployment continued Many thousands of workers were unemployed for long periods and probably double as many were employed only intermittently The experience of approved societies and of sickness insurance funds in the Irish Free State seems to be similar to that of other countries where considerable unemployment exists

Blind People in the Irish Free State

Commenting on a leading article in the *Irish Times* Dr J S Quin draws attention to the needs of the blind in the Free State, and to the work that has recently been started by the National Council for the Welfare of the Blind in Ireland, of which he is honorary treasurer

This society, which is under the patronage of the Governor-General and Mrs. McNeill, is the direct result of the realization of this need by Miss Alice S. Armitage, daughter of the late Dr. Armitage, who founded what is now the National Institute for the Blind, and first introduced the Braille system into Great Britain. Membership is open to all interested on payment of an annual subscription of half a guinea, and the executive committee is elected annually by the general body of the members at the annual meeting. The aims and scope of the council are briefly as follows: to co-ordinate the work of the Richmond National Institution, St. Joseph's, Drumcondra, St. Mary's Merrion, Irish Association for the Blind, Irish National League of the Blind; to promote the formation of local county committees; to provide home teachers and visitors for the blind in their own homes; to print and circulate Braille magazines and books; and to facilitate the sale of work done by the blind, whether in institutions or in their own homes. The blind poor receive State pensions and allowances under the Blind Persons Act, but much more than financial help is required—for example, education in Braille and in handicrafts, the provision of facilities for higher education in suitable cases, and, above all, the realization that sympathetic assistance, rather than indiscriminate charity, helps the blind to retain their independence and to share in the normal life of the community. The council has already appointed a home teacher for the Dublin area, where, according to the Government registers, over 600 blind people are living in their own homes. The need for extending this side of the work is obvious.

Scotland

Edinburgh University

A graduation ceremony was held at Edinburgh University on October 24th for the conferment of degrees in arts, commerce, law, and science. Principal Sir Thomas Holland presided, and in the course of his address referred to the approaching celebration (in 1933) of the 350th anniversary of the foundation of the University. A volume, he said, was in preparation which would bring the history of the University up to date, thereby amplifying the volume published by Sir Alexander Grant in 1884, on the occasion of the tercentenary festival. He also referred to the desirability of establishing, in connexion with the anniversary, local associations and clubs of the 18,000 graduates who were on the General Register of the University. There were already in Great Britain about a dozen local associations and clubs of Edinburgh graduates, but it would be well if the meeting at Edinburgh in 1933 could exchange greetings with corresponding gatherings in various parts of the world. He hoped that copies of the new history of the University would be available for such meetings. In referring to the inauguration of two new chairs in child life and health and in psychology (*British Medical Journal*, October 24th, p. 772, and October 31st, p. 821), the principal remarked that Dr. G. M. Robertson, professor of psychiatry, had established a children's clinic at the Hospital for Nervous Diseases at Morningside. These three chairs laid the foundation for a systematic and correlated group of researches on the physical and mental aspects of children's problems, and the results obtained promised to be of special economic value to the country. Moreover, they offered the beginnings of a distinctively new school of investigation in Edinburgh in connexion with the work carried out with growing success in the department of social study.

Glasgow University

The half-yearly meeting of Glasgow University General Council was held on October 28th, Principal R. S. Rait presiding. A proposal was made that a University Club should be founded for the purpose of providing a common meeting place for alumni, so that contact might be maintained between former graduates of the University. It was intimated by Mr. C. A. Oakley that a prospective membership of 750 had been secured. The principal announced the receipt of a cordial letter from the retiring Lord Rector, Mr. Stanley Baldwin, in which he expressed the hope of having an opportunity of coming again to Glasgow University. Dr. John F. Fergus and Dr. David Baird Smith were reappointed representatives of the council on the University Court for a term of four years.

Compensation for Death in Hospital

The recent settlement of an action in connexion with the death of a patient in hospital presents points of interest to the medical profession. The action was brought by Mrs. J. Quaine or Reilly of Glasgow, against Alexander Donald McLean, male nurse, of Glasgow, for payment of £1,000 as damages for the death of her son, Richard Reilly, who was admitted to Stobhill Hospital, Glasgow, on September 12th, 1930, suffering from an epileptic fit. It was alleged that the defender, who was on duty in the ward, used unnecessary force for the purpose of keeping the patient in bed, and that in consequence the patient died two days later. The defender denied fault, and said that Reilly became very violent, attempted to strike the doctor and his mother, and fell out of bed. He explained that no restraint was used greater than was usual and proper for the patient's own security and care, and that he was not responsible for the injuries sustained. The case was finally settled out of court, the pursuer accepting £300 and expenses in settlement of the action.

Correspondence

A CHRISTMAS APPEAL

SIR,—For many years I have asked members of the medical profession to subscribe at this time of the year in order that the Royal Medical Benevolent Fund may distribute Christmas gifts. These gifts are made to poor widows and daughters of our professional colleagues, and also to medical men who are infirm or unable to work through illness, and whose savings are exhausted. I know the times are difficult for everyone, but I feel confident that those who can spare even a small donation will do so again this year so that even greater hardship should not fall on those least able to bear it.

It is the hope of the committee to distribute 30s. to each of the annuitants and the poorest of the grantees at Christmas. I am most anxious that none should look in vain this Christmas for the gift which can bring a few additional necessities of life and extra comforts to their homes. It is difficult for us to realize that "these homes" are often only a bed-sitting room of a very cheap rental.

May I ask your readers to forward their donations, however small they may be? Cheques, postal orders, or even stamps should be addressed to the honorary treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.—I am, etc.,

THOMAS BARLOW,
President.

London, Oct. 27th.

NEO-HIPPOCRATISM

SIR,—The defence of neo-Hippocratic methods of diagnosis and treatment made by Dr. Robert Hutchison from the important tribune of the Harveian Orator of the Royal College of Physicians—a defence on which you comment in your issue of October 24th—is, I think, of great significance for contemporary medical thought and practice in this country. As I have devoted to this subject long years of teaching and many publications, I should like to add a few words of comment.

In the return towards the methods of Hippocrates, which often occurs in the course of the history of medicine in periods of medical crisis, British physicians have always played an important part. When in the fifteenth and sixteenth centuries medicine had degenerated into a collection of narrow scholastic ideas and of superstitions, Thomas Linacre was among those who brought medicine into the right path by propagating the real conceptions and methods of Hippocrates and of the ancient Greek physicians. When in the seventeenth century medicine had been submerged by unbridled speculations and dogmas, Sydenham terminated that crisis by reintroducing the Hippocratic method of clinical observation. Nowadays, when medicine has come to a deadlock on account of the narrow mechanistical and organic principles of the nineteenth century, which have led to therapeutical nihilism, it is to the experimental demonstration of the integration of man made by the British physiologists, and to the clinical teaching of Sir James Mackenzie, that we owe for the greatest part the neo-Hippocratic movement that characterizes our post-war medicine.

Neo-Hippocratism is founded on the conception of the integration, of the "wholeness" of the human body. Man cannot be considered as a bundle of organs or a colony of cells, nor as constituted by a separate body and a separate soul, but as an integrated whole. Thus, diagnosis and treatment refer to the whole individual, and consideration of special groups of diseases can no longer be accepted. Specialties can develop only in surgery because surgical specialties refer to operative technique, but they cannot exist in internal medicine, because internal medicine has to consider the whole individual, and thus is "all or none." The real specialist in internal medicine is not the cardiologist, the gastro-enterologist, or the neurologist, who run after non-existent fictional or local diseases, but the internist, who sees and treats the patient as a whole.

The basis of neo-Hippocratic medicine is a special diagnostic procedure, the "diagnosis of the person," which is individual, complete, and dynamic. It is individual because its object is the understanding of the individual patient, and not the placing upon that patient of a fictional nosographical label. It is complete because it considers the whole individual and the individual as a whole, and not merely a local lesion or functional disturbance. It is dynamic because through it the physician endeavours to find out not only the actual condition of the patient, but also what will become of the patient. It is obvious that such a diagnosis can only be made by the method of clinical observation. Laboratory tests do not give a diagnosis, but merely signs which help us towards the real diagnosis. It is only after the clinical diagnosis has been established that such laboratory tests can be demanded to confirm, to develop, and even to correct certain *details* of the exploration of the patient. To attempt a diagnosis by collecting a series of routine laboratory signs, as this is usually done, is doomed to failure because in that procedure of the "diagnostical clinic" the directive line resulting from the consideration of the patient as a whole is neglected.

Armed with that precise diagnosis therapeutic handling has greater chance of success. Neo-Hippocratic medicine considers all medical or internistic therapeutic agents—psychical, dietetic, chemical, biological, and physical—and applies them according to the indications of the individual patient under severe control of the continuous diagnosis of the person. Thus one-sided applications of therapeutic agents, and particularly applications without continuous diagnostic control of the internist, are rejected. This neo-Hippocratic method of "rational therapeutical constellation" increases the healing power of the contemporary internist, and helps him to navigate between the Charybdis and Scylla of the nineteenth century medicine, medical nihilism, and surgical radicalism. In fact, the first positive results of this new method of approach towards the patient is the avoidance of unnecessary operations.

Those who follow international medical literature realize the importance of the neo-Hippocratic movement in the whole contemporary medical world. These modern doctrines are unfortunately dealt with too theoretically and too dogmatically. By bringing neo-Hippocratic medicine on the level of the actual clinical handling, by linking it with the name of Harvey, who was not only an experimentalist but a thinker, Dr. Robert Hutchison has rendered a great service to our art and science.—I am, etc.,

A. P. CAWADIAS.

London, W.1, Nov. 1st.

"WHAT IS LIFE?"

SIR,—In reply to the question which Mr. Monsarrat asks at the beginning of his letter in your issue of October 31st I would refer him, for a recent and very well written statement of the mechanistic position in biology, to Professor Hogben's book on *The Nature of Living Matter*. This book certainly represents ideas which are still current among many biologists though Mr. Monsarrat may not have come into intellectual contact with them.

The rest of Mr. Monsarrat's letter makes me fear that my own letter of the previous week was not sufficiently explicit. The point which I wished to express was that, if we interpret a living organism as "matter," whether dominated by a mysterious "vital principle" or not, we inevitably fail in the scientific interpretation of life. The use of the conception "matter" implies that we can legitimately separate in thought the events in a living organism from those in its environment, just as we ordinarily do in our conception of a machine. In a sense, we are constantly making this separation; but close examination shows that in so far are we do so we are unable to represent to ourselves the orderliness in biological phenomena. The fact that physicists are finding that even in what has hitherto been called the inorganic world this separation cannot ultimately be made strengthens this contention greatly. But the step which they are taking amounts to an abandonment, except as a very useful, and indeed necessary, provisional idea of the conception of matter as self-existent substance and the substitution, as Planck has put it in the statement which I quoted, of the conception of wholeness taken from biology.

As regards the relation of philosophy to [illegible] think that Mr. Monsarrat must have overlooked [illegible] I said in the first paragraph of my previous [illegible]

I am, etc.,

J. S. [illegible]

Oxford, Oct. 2nd.

THE TEACHING OF PSYCHOLOGY

SIR,—I share with Sir Robert Armitage admiration of the teaching record [illegible] Hospital in recent times, the more so [illegible] taught there by that superlative clin[illegible] Savage, to whom he refers. It is not

however, to say that Bethlem Hospital was "the pioneer of teaching in the subject."

Dr. Battie of St. Luke's Hospital gave some lectures in 1753 to pupils who attended the hospital. This can only be regarded as a sporadic outbreak. It was Esquirol of Paris who first taught the subject successfully at the Salpêtrière in 1817, and attracted medical men from all over Europe. He ceased to lecture when he went to Charenton in 1825. Among his first pupils was Sir Alexander Morison, who became visiting physician to Bethlem Hospital in 1835. Sir Alexander started to lecture in London on February 9th, 1826. He, however, gave practical instruction only for the first time in London to two or three pupils at the Middlesex Asylum at Hanwell in 1840, and two years afterwards he lectured at Bethlem Hospital from 1842 till 1852. Dr. Conolly gave an excellent and complete course of lectures at Hanwell from 1842 till 1847. Dr. Sutherland about this time also gave practical lectures at St. Luke's Hospital. By 1870, however, only Dr. Sankey of University College and Dr. Blandford of St. George's gave lectures in London—the former at Camberwell House. The position in Paris, which had started so well, was even less satisfactory. Lasègue lectured successfully from 1862 till 1866, after which official instruction ceased to be given. Sir George Savage was appointed physician to Bethlem Hospital in 1878, after Dr. W. Rhys Williams, who had delivered some lectures at St. Thomas's Hospital, and since then lectures have been continuously given by a series of distinguished teachers till the present time, when a complete course of instruction for the Diploma in Psychological Medicine is given.

Edinburgh has the longest continuous record of tuition in this subject of any medical school. Sir Alexander Morison started to lecture on mental diseases in Edinburgh on November 9th, 1823, over two years before doing so in London. He had at first an audience of only six persons, and his course consisted of nine lectures. He, with the help of his son, lectured continuously till 1852. Dr. Skae of the Royal Hospital at Morningside took over the lectureship in the following year, and lectured for twenty years. At Skae's death in 1873, Professor Laycock, who had also been lecturing on the subject for fourteen years in the University, began to lecture at Morningside. He died after three years, and was succeeded by Professor Grainger Stewart. In 1879, however, that great clinician Sir Thomas Clouston was appointed lecturer on mental diseases to the University of Edinburgh, and he continued to lecture for about thirty years.

It would thus seem that Sir Alexander Morison, imitating Esquirol, was the first to lecture specially on mental diseases in Great Britain. In Edinburgh, where he first lectured, there has not been a hiatus in the teaching of this subject for 107 years.—I am, etc.,

GEORGE M. ROBERTSON.

University of Edinburgh, Nov. 2nd.

THE PITUITARY IN THE ETIOLOGY OF CANCER

I read with the greatest interest Dr. ... on "The role of the pituitary in the ... er" (October 31st, p. 794), and the ... I venture to offer is by no means ... ure and does not affect his main con... de with the object of pointing out what ... a possible fallacy in the interpretation ... It applies equally to the explanation ... s of the Zondek-Aschheim reaction in ...

In commenting on the fact that Zondek has shown that in 15 per cent. of 118 cases of malignant disease the anterior pituitary hormone could be detected in the urine, he says: "In other words, in neoplastic disease anterior pituitary activity is increased to an appreciable degree in a significant proportion of cases." This is certainly a legitimate deduction, but it is not the only, nor, it seems to me, the most logical deduction. I suggest that it is reasonable to regard the hormone found in the urine as evidence that a certain proportion of the hormone, produced in amount adequate for the normal requirements of the tissues, is actually excreted unused because certain cells are incapable of utilizing or absorbing it. The effective action of a hormone does not depend only on the normal functioning of the gland producing it; the factor of the sensitiveness of the cell on which the hormone is intended to act, its ability to absorb the hormone, and, so to speak, interpret its message, must also be considered.

Sensitiveness to hormonic influence must, I think, be regarded as an essential function of any normal cell, comparable to its secretory, metabolic, or any other function. In malignant disease there is a failure of physiological function to a degree proportional to the degeneracy of the cell. If there is any considerable mass of cells so degenerate as to be partly or entirely incapable of absorbing the hormone it would be likely that the unused part of the hormone would be excreted unchanged. In a paper entitled "A theory of cancer"[1] I discussed the sensitiveness of the cell to what I called "the co-ordinating hormone," and, in the original draft of the paper ventured to prophesy that the unused part of the hormone might some day be detected in the urine.

The presence of anterior pituitary hormone in the urine in malignant disease and in pregnancy is not necessarily evidence that the hormone is being produced in excessive amounts; it is only evidence that more is being produced than is being absorbed.—I am, etc.,

Leicester, Nov. 1st. T. C. CLARE.

RHEUMATOID ARTHRITIS

SIR,—The correspondence evoked by the letter of "Crippled" in your issue of October 3rd tempts me to commit the statement that only by adopting some constructive hypothesis can we hopefully essay the task of solving the riddle of the etiology of rheumatoid arthritis. The late Dr. Strangeways once said to me, "Neither in my lifetime nor yet in yours will the cause of rheumatoid arthritis be discovered." This attitude of mind, however, is altogether too pessimistic.

Theoretically, the logical method of attacking a scientific problem is to conceive an hypothesis, to disprove it if need be, and begin afresh with both negative and positive data on which to work. The hypothesis which I venture to submit has *treatment* as its essential objective, and briefly amounts to this: the rheumatoid state is conceived to be comparable to that of a nation engaged in war, whose political and internal economy is dislocated by the prodigal and unrestrained activities of profiteers.

If this simile is allowed, the two problems which emerge are these: What are the influences which tend towards a state of war, and what is the nature of the profiteering? In regard to the former, it must be understood that just as there are nations to-day so placed that, given the necessary stimulus, the unhappy state of war may obtain at any moment, while there are others so situated either territorially or stabilized as the result of past and present policy, temperament, etc., that they are unlikely to be entangled in warfare, so there are individuals who will never be affected by rheumatoid arthritis, and others who, alas! will. The reasons given by Dr. Neligan (in his

[1] *Lancet*, 1920, ii, 1298.

letter published on October 17th) why women are more prone than men to be beset by a combination of physical and mental stress are in themselves quite sufficient to account for their greater predisposition to rheumatoid arthritis, but it is unlikely, as in international affairs, that the combination of factors which predispose to a state of war is a standard one. Turning to the question of profiteers, potential profiteers in the nature of streptococci are always with us, but, even given a state of war, the problem as to the evolution of potential profiteers to the condition of active profiteering has still to be established.

According to this hypothesis, a combination of factors as yet improperly understood conspire in a predisposed individual to lower his immunity and permit organisms of a low grade pathogenicity to gain access to the blood stream, and that these not only further disorganize an already stressed metabolism and give rise to further constitutional disturbance, but, possibly activated by some sensitizing agent, make, as it were, a corner in joints. That systemic disturbance is not mere fantasy is proved by the occurrence of pyrexia, tachycardia, thyroid enlargement, enlargement of the spleen, and even carditis and subcutaneous nodules, in differing percentages.

This hypothesis is useful (to me, at all events) in that its conception presents problems for research which are likely to be of utility in treatment—for example, in the adjustment of such biochemical obliquities as a deranged blood count, achlorhydria, etc., as well as the more fascinating, though up to the present less profitable, explorations of the territories of diathesis and tissue affinity. It explains in some degree the relative importance of [illegible] pus, for if we assume, for instance, that streptococci play an important part in the production of rheumatoid arthritis, then how can we hope to eliminate them by merely removing a tooth or two when a corresponding number of feet of intestine may harbour proportionately greater numbers? Even were it allowed that our knowledge of the etiology of rheumatoid arthritis has not increased since Spender's time, yet the same cannot be said in respect of treatment as Dr. Douthwaite's able writings, for example, testify.—I am, etc.,

VINCENT COATES

Bath, Oct. 25th.

SIR,—With reference to Dr. Douthwaite's letter in your issue of October 24th, I should like to join issue with him when by his words, "Careful desensitization with any form of protein will, in the early stages of an allergic disease, tend to produce benefit, or even cure probably this accounts for Dr. Warren Crowe's happy experiences," he gives the impression that it is only in the early stages that the Warren Crowe treatment is efficacious. That his experiences are happy in the early stages I can vouch for, but it is not only in the early stages. Happy results are obtained in patients who have been crippled for years. But in these long-standing cases great patience is required, by both the patient and the doctor. One of the greatest difficulties encountered is that the patient has already been hypersensitized—either by her own toxins or by some other form of treatment.

If cases of rheumatoid arthritis could be treated by the Warren Crowe method before they had been hypersensitized by other forms of intervention there is little doubt in my mind that in the great majority of cases a cure could be effected. I, too, have yet to see the Warren Crowe treatment fail in an early case. I recognize that "early" is difficult to assess.

At the same time I am not suggesting that vaccine therapy is the only effective form of treatment. Any form of treatment which would raise the patient's state of health to a higher level might enable her to overcome the rheumatoid arthritis. The fault with most forms of treatment, in the active stages of the disease, is that they are too drastic, and so defeat their own ends by producing a further auto-intoxication and a greater state of sensitiveness. If the day comes when any other form of treatment can claim 100 per cent. successes (in the early stages) so much the better, but until then the clinics run on the Warren Crowe lines will probably continue to flourish.

It seems highly probable that "Crippled" is right when she suggests that rheumatoid arthritis may be cured by "mental healing." If "mental healing" will raise the patient's resistance sufficiently, why should it not succeed? I cannot, however, agree with her argument that, because it succeeds, therefore the rheumatoid arthritis is possibly functional.—I am, etc.,

F. E. GRAHAM BOWALIE

Hove, Oct. 26th.

SIR,—Dr. K. E. Fernie's letter in to-day's *Journal* gave me great pleasure, for I can endorse to the full his x-ray observation that a barium enema shows a greatly dilated caecum and ascending colon in nearly every case of rheumatoid arthritis. A bismuth meal shows the reason for this habitual overdistension to be persistent spasmodic constriction of the distal colon due to chronic catarrh (colitis). This catarrh is caused by putrefaction of the faeces, and it has been shown by McCarrison, and more recently by others, that deficiency of vitamin B is an important factor in permitting putrefaction in the bowel.

The intestinal tube is the great focus of infection in all toxaemic disorders, it is far more extensive and therefore far more important than teeth, tonsils, sinuses, etc. In fact, these latter infections are almost always secondary to intestinal toxaemia, which impairs all tissues and renders them liable to attack by microbes. Failures to improve rheumatoid arthritis by the mere removal of septic teeth, tonsils, etc., will continue until such time as the intestinal tube is universally recognized to be the main seat of toxic absorption is investigated by x-rays (bismuth meal and barium enema), and is made the basis of efficient treatment.

The greater susceptibility of females to rheumatoid arthritis fits in with their greater liability to severe forms of chronic intestinal stasis.—I am, etc.,

ALFRED C. JORDAN.

London, W. 1, Oct. 31st.

DENTAL SEPSIS AND CHRONIC ARTHRITIS

SIR,—Chronic sepsis, particularly dental sepsis, as a causative factor in chronic arthritis has been so stressed during these post-war years that it is a relief to find in the *British Medical Journal* three consecutive letters from doctors who do not believe it. Nevertheless, it cannot be doubted that there does exist a relationship between the two, although this be other than one of cause and effect.

If a differentiation is made between rheumatoid and osteo-arthritis one will find that each has its special dental lesion associated with it: in the former case this will be dental caries, and in the latter pyorrhoea. If this association be analysed it will be seen that there exists a definite relation between the joint and the dental lesion in each case. The age incidence is similar, both caries and rheumatoid arthritis being essentially diseases of youth and early middle life, increasing in incidence at puberty, while pyorrhoea and osteo-arthritis are more usual in the later middle years. The general build and

made up of the patients is similar; in the first case we have the asthenic type of individual, rather undernourished with a tendency to acidosis, and in the latter the sthenic over-fed person with a tendency to alkalosis. The morbid anatomy of the joints themselves shows characteristic changes which are comparable with the dental changes, allowing for the differences of environment; with rheumatoid arthritis and caries we get a destruction of bone, cartilage, and dental enamel, and with osteo-arthritis a hyperostosis, a hypercalcification of the enamel, and a laying down of calculus in the subgingival sulcus (the destruction of the alveolus being a secondary change subsequent upon the progress of the condition). All this points to a common origin, the examination of which may be useful in pointing the way to the discovery of the fundamental etiological factors of both.

It is my belief that not only are caries and pyorrhoea *antagonistic lesions*, but that the production of each rests upon a metabolic disturbance in which the endocrine autonomic system plays the predominant part; an imbalance in the one direction tending to bring about an acidosis, and in the other an alkalosis. On this threshold or diathesis, which will usually be congenital, the strains and stresses of life commence to act, be these physiological, psychological, or dietetic. It would seem probable that the threshold for caries and for rheumatoid arthritis and that for pyorrhoea and osteo-arthritis are the same; this would account for their respective associations, and (through the similar biochemical changes which would result therefrom) for the similar anatomical changes which come about, which would be in the opposite directions in the one or the other group. Then, as soon as *sepsis makes its appearance*, which must result from a pre-existing caries or pyorrhoea, a vicious circle would be formed, the sepsis lowering still further the efficiency of the endocrine autonomic system and making worse the arthritis. This would account not only for the successes attending teeth extraction, but also for the, in my experience, far more frequent failures.

This conception of the causes behind both the dental and the joint conditions (a tooth is also a joint) will explain the occurrence not only of the dental destruction but also of the chronic sepsis. It is recognized that the organisms concerned are in no way specific, but are those whose usual habitat is the mouth, but which in some altered circumstances have become parasitic; it is also accepted that the endocrine autonomic system comprises the defensive mechanism of the body, for the perfect working of which a balance between sympathetic and parasympathetic portions is essential; if then caries and pyorrhoea, and rheumatoid and osteo-arthritis, are due to an imbalance of this system it is easy to see why they are so frequently associated with chronic infection. An observation of Pemberton's is interesting in this connexion. He says:

"The writer has drawn attention to the fact that tissues, such as the tonsil, harbouring foci, may undergo marked transformation, losing their conspicuous characters and becoming nearly or quite normal following improvement in the arthritis from a well-planned regimen. These several considerations emphasize strongly the probability that focal infection may often be the result of a systemic imbalance as well as the cause of it."

From this it will be seen that even if teeth are removed as a simple method of breaking a vicious circle, this does not really constitute treatment for the arthritic condition, any more than the filling of a tooth cavity constitutes the final treatment of dental caries.—I am, etc.,

F. W. Broderick, M.R.C.S., L.D.S.

Bournemouth, Oct. 17th.

PAIN IN THE ARM AND A DEAD TOOTH

Sir,—In his letter commenting on Dr. H. W. Hills's communication in the *British Medical Journal* of October 24th, p. 749, Dr. Crookshank is as interesting as he always is. Knowing his great controversial abilities, in spite of his dig at the pathologist, I hesitate to cross swords with him; merely, as regards the pathologist, venturing to suggest that the habit of this worker of interfering with the more imaginative flights of the clinician is one of the causes of his unpopularity. But I do venture to protest against the advice that "when a patient is ill, we should not hesitate to put right all that is 'wrong' merely because we don't 'see' how *this can explain that.*" It reminds one so much of the road to success of Sir Joshua Tonsil in *Mrs. Dose the Doctor's Wife*. "And it generally ended in their having several other little things done. . . . And now Joshua got fifty guineas for each little thing he did." I have *indeed been surprised to find* with how many "cures" practitioners who follow Dr. Crookshank's advice are credited, but the edentulous, tonsillectomized, and appendicectomized patients still seek the doctor's consulting rooms.—I am, etc.,

Kensington, W., Oct. 31st. Harold H. Sanguinetti.

FOREIGN BODIES IN THE ALIMENTARY TRACT

Sir,—In his paper on the relation of foreign substances to the human body, in the *British Medical Journal* of October 24th, Mr. Gordon Bruce records some of the wanderings of swallowed pins and needles inside the human body. He does not mention, however, that such bodies may pass through the whole gastro-intestinal canal without causing any detectable injury. Some twenty-five years ago I was consulted about a female baby 1½ years old, on account of painful defaecation. Rectal examination revealed a needle (which I removed with ease), stuck point downwards into the wall of the rectum. The mother then remembered that, a few days before, she left some needlework unattended for a few minutes in the presence of her baby, and on her return missed the unthreaded needle. In reply to her inquiry, the little girl pointed to her mouth. As the baby seemed perfectly all right, the mother disregarded the baby's gesture. I saw the child again when she was a young lady of about 16 or 17, perfectly fit and well. I do not remember whether I published this case in a medical journal at the time, but I recorded it in a little book of mine, *Nursery Hygiene* (Baillière, Tindall and Cox, 1910, p. 109). Swallowed fish bones or sharp pieces of wood sticking in the rectum and causing painful defaecation are probably familiar to every practitioner.

I have also had an interesting case of the passage of three considerable-sized gall-stones per anum, in a woman who was so moribund that she was refused operation at St. Bartholomew's Hospital about five years ago. She has not had another attack of biliary colic since then.—I am, etc.,

London, W.1, Oct. 26th. W. M. Feldman.

ENZYMES *VERSUS* TOXINS

Sir,—With regard to my letter on the nature of viruses in your issue of October 17th, may I be allowed to amplify slightly one point? In referring to the differences in behaviour between enzymes and toxins, I said that one can hardly suppose that the latter can impose an altered mode of functioning upon a cell. Probably this is true; but I had forgotten one instance, which *appears* to provide an exception. In an investigation on the nature and specificity of Negri bodies some years ago Acton and

Harvey (*Parasitology*, 1911, iv, 255) stated that they had been able to find similar bodies in animals which had been inoculated with viper venom, and also with an emulsion of *B. pyocyaneus*. Accepting these observations, the following explanation may perhaps be offered.

Toxins, as generally designated, may be, really, either or both of two things: (1) true toxins—that is, some specific, chemical substances produced as a result of metabolic activity; or (2) the particular enzymes which function in producing such substances. The latter would be the factors inducing a change in the metabolism of the affected susceptible cells. Compare, for example, the cases of rabies virus and snake venom. Both are produced by buccal glands (by epithelium of epiblastic origin, like the nervous system), and it is not difficult to consider that in the latter case, together with the actual secretion of the poison gland, there may also be some of the enzyme which has produced it. The action of the enzyme in causing the metabolism of the susceptible cells to function abnormally would naturally require a much longer time than that of the poisonous substance itself. It is not without significance, I think, that Acton and Harvey found that the only two out of twenty guinea pigs which showed Negri bodies, after inoculation with minute doses of venom, were the only ones which lived forty-eight hours or more. It is also possible that in long-delayed effects of bacterial toxins—for example, tetanus toxin—a similar double set of factors may be operating.—I am, etc.,

Walton-on-Thames, Oct. 26th H. M. WOODCOCK.

CHANGES IN THE GUINEA-PIG EMBRYO PRODUCED BY SCORBUTIC DIET

SIR,—The pathological anatomy of adult and infantile scurvy has received the attention of many investigators, so that both the macroscopical and the microscopical appearances are now well known. Characteristic abnormalities of the long bones at the costo-chondral junctions and at the epiphyseal lines are especially well recognized.

No investigations have apparently been made on the effects of scurvy on the embryo, since no reference to such work can be found in the literature, with the exception of that published by myself.[1]

Experiment has convinced me that "subacute scurvy" can be detected in the embryo as early as ten days after the mother guinea-pig is fed exclusively on a scorbutic diet. It was noted that, when fed on a scurvy-producing diet, a great many pregnant guinea-pigs died earlier than those which were not pregnant. Post-mortem examination in such cases showed advanced scurvy and a haemorrhagic condition of the embryos. I found that on a scorbutic diet pregnant guinea-pigs showed signs of scurvy earlier than guinea-pigs that were not pregnant.

I found, further, that of two pregnant guinea-pigs fed on a diet of bran, oats, and autoclaved milk, one aborted fourteen days and the other fifteen days after the special feeding was begun. It was difficult to determine the exact age of the embryos, but in both cases they were within two or three weeks of full development.

Eight other guinea pigs in a more advanced state of pregnancy had stillborn embryos after being fed on a scorbutic diet for thirteen days. All the embryos showed lesions characteristic of scurvy.

A suggested inference from these experiments is that embryonal scurvy may well be the cause of many abortions and stillbirths in the case of the human subject. Many cases of maternal morbidity *may* be due to scurvy-producing diet. It is well known that there are few abortions or stillbirths or cases of infantile scurvy in localities where mothers, otherwise healthy, live on natural foods.—I am, etc.,

Montreal, Canada F. M. WELLS, D.D.S.

[1] *Scurvy Tell-tale in a Sound Body*, p. 65. Desbarats Printing Co., Montreal, 1926.

THE TERM "CONGENITAL"

SIR,—I cannot agree with Dr. Feldman that the term "congenital" means "born with." Its true meaning is "generated with"—that is, "conceived with." The term applies to the fertilized ovum, which henceforth develops in a manner peculiar to itself.

I have no objection to the word "intra-natal" as applied to infection acquired during the process of birth; but if we are confronted with a child, aged 7, developing interstitial keratitis due to syphilis, we cannot be sure whether the infection was acquired *in utero* or at birth. The term "connatal" is therefore suggested to include both these contingencies; in either case there has been an acquired infection.

As a contrary instance I would cite Little's disease. If this is due to injury to the brain at birth then it is an intra-natal disease (belonging to one subdivision of connatal diseases). If, however, it is due to defective development of certain brain convolutions, then it requires to be reclassified as congenital. (There is here no question of infection.)

The intention, therefore, is to apply the term "connatal" to the diseases brought about by the accidents, including infection, that may happen to the fertilized ovum during the processes of gestation and of labour. The whole of these processes are necessary to bring about nativity.—I am, etc.,

Dagenham, Oct. 24th M. MELGRAVE.

Obituary

ALEXANDER WILSON, F.R.C.S.

Consulting Anaesthetist to Manchester Royal Infirmary, Surgeon to St. Luke's Hospital, Manchester

We regret to announce the death of Mr. Alexander Wilson of Manchester, which took place on October 23rd, after an illness of a few weeks' duration. He was born on August 6th, 1860, in Manchester, where his father was then in practice. As he was not of robust physique he was sent at an early age to live with Scottish relations at Lockerbie, and attended the Dryfesdale parish school there until 1872, when he returned to Manchester. After finishing his school work he entered Owens College for medical training, qualifying in 1883 with the London Conjoint Diploma. He served as house-physician and house-surgeon in the Manchester Royal Infirmary, as resident medical officer in its large convalescent hospital, and, finally, in a similar post at the Children's Hospital, Pendlebury.

Wilson married early in life, and went to Canada in 1885 with the idea of working there, but, finding things not promising or congenial, he soon returned home, and was for a time at Winchester. His friend William Thorburn then suggested that he should work for his F.R.C.S., and take up anaesthetics whilst doing so. He accordingly returned to Manchester, and was appointed an anaesthetist to the Royal Infirmary. This venture appealed to him so much that, although he passed the Fellowship in 1890, he decided to specialize in anaesthetics, and his genial and attractive personality and his ability and keenness for his work soon led to success. Walter Whitehead, G. A. Wright, and F. A. Southam were then the leading surgeons in busy practice and he was their first choice, because not only was he skilful, safe, and reliable, but he was always ready to lend a hand

anything that wanted doing during an operation, as, for instance, shifting a patient and getting him into the most suitable position for the surgeon, or to do any odd job he could turn his hand to. His experience with these junior men taught him many useful points about the conduct of an operation, and he was most helpful to juniors during their first surgical work by giving them little hints and by inspiring confidence to overcome the difficulties that so often present themselves during operations. He worked a great deal with Walter Whitehead in his early tongue operations on private patients, and devised a simple means of changing the position of the patient from that of lying down during the administration of the anæsthetic to the erect one during removal of the tongue to prevent blood from entering the larynx. This was the use of a common kitchen rocking-chair, and was very effective. After twenty years on the salaried staff of the Royal Infirmary, he was invited to become honorary anæsthetist and to direct this department of the hospital, which required the regular attendance of several men.

Early in his career, in the year 1890, Wilson joined the honorary staff of St. Luke's Hospital for Venereal Diseases, and remained in active work there until his health broke down a few months ago. He always had an intense sympathy for many of these patients, and they felt that they had a friendly adviser in their trouble. His association with this hospital and its work did a very great deal towards keeping its usefulness and need before the general public, and marked him out as the most suitable man to take charge of the venereal department at the Manchester Royal Infirmary when this was opened in 1917 as part of a national scheme organized by the Local Government Board. He continued in charge of this work for many years after he had reached the age limit of sixty for members of the staff in the active service of the hospital.

[illegible] commencement of the war he was attached to the 2nd Western General Hospital with charge of [illegible] and later, for twelve months, had its [illegible] well. He was very successful as administrator [illegible] with full confidence and respect of all who [illegible] direction. He retired with the rank [illegible] in the R.A.M.C. (T.F.). A neat, [illegible] out man, he looked the colonel every [illegible] was known to many long after the war, [illegible] to use the title himself, as "the [illegible] appointed a Deputy Lieutenant of the [illegible] for his services.

[illegible] excellent teacher, and trained many [illegible] anæsthetists. He had a very sympathetic [illegible] was most considerate towards the feelings [illegible] about to anæsthetize. Many a household [illegible] gratitude the care he took to allay the [illegible] had to "have chloroform," and [illegible] person whom he treated as a child [illegible] intimate terms to-day. A more kindly, [illegible]ed, and Wilson will be missed by [illegible] cheering pleasure of his friendship. [illegible] articles on anæsthetic subjects, and [illegible] from this for Ashby and Wright's textbook [illegible] *Children*.

[illegible] the British Medical Association met in London in 1910 Mr. Wilson was vice-president of the Section of Anæsthetics, and when it met in Manchester in 1929 was vice-president of the Section of Venereal Diseases.

E. M. B.

Dr. James Ardern Ashcroft, late of Littleborough, Lancs, died at Derby on October 24th, aged 69. He retired from practice several years ago, and had been in poor health for the last two years. He was a native of Marple, Derbyshire, and, after studying medicine at the University of Edinburgh, graduated M.B., C.M. in 1885 and M.D. in 1892. Dr. Ashcroft was in general practice for about forty years in Littleborough, and had been a member of the British Medical Association for many years. He was buried at Shore Church, Littleborough, on October 27th, and many of his old patients were present at the funeral service. He leaves a widow, one daughter, and three sons, one of whom is a member of the medical profession, and succeeded him in the practice.

Mr. Edward Septimus Earnshaw Hewer, F.R.C.S., died on October 24th, at Stratford-on-Avon, after an illness which had lasted nearly two years. He was born in 1875, and received his medical education at St. Bartholomew's Hospital, where he was secretary and vice-president of the Abernethian Society. He qualified as M.R.C.S., L.R.C.P. in 1898. After holding the posts of house-surgeon at St. Bartholomew's, and of assistant house-surgeon at the Gloucester Infirmary, he obtained the diploma of F.R.C.S.Eng. in 1900, and three years later began practice at Stratford. His outstanding skill in surgery was increasingly recognized there, and early in 1908 he was appointed surgeon to the Stratford-on-Avon Hospital. During the war Mr. Hewer took charge of the Clopton War Hospital, and his services in that connexion were recognized later by the conferment of the O.B.E. He won widespread popularity as a generous friend, as well as a highly skilled surgeon, and a large number of his medical colleagues from the surrounding district attended the memorial service.

Medical men throughout the country will regret to hear of the sudden death, on October 30th, after an operation, of Mr. J. Bernard Lamb, for over forty years the secretary of the London office of Epsom College, from which post he retired on pension only a month ago. Mr. Lamb had devoted his life to the furtherance of the Royal Medical Foundation attached to Epsom College, and his signature at the foot of appeals for funds must be familiar to great numbers of medical practitioners. During his tenure of office he saw the subscriptions increase from some £3,000 per annum to more than double that amount. To him the work was a hobby as well as a duty.

We regret to announce the death of Professor Guido Holzknecht of Vienna, a pioneer in roentgenology, and author of a standard textbook on radio-diagnosis, at the age of 58. Some months ago he had undergone amputation of the right arm for malignant disease due to *x* rays.

Medico-Legal

USE OF THE TITLE "DENTAL SURGEON"

In the Court of Appeal, on October 29th, before the Master of the Rolls (Lord Hanworth), Lord Justice Lawrence, and Lord Justice Romer, an appeal by the defendant, Mr. Wilfred Henry Weeks of Norwich, from the decision of Mr. Justice Farwell, in an action brought by the Attorney-General at the relation of the British Dental Association, was dismissed. The case turned upon the claim of Mr. Weeks, registered as "Dentist, 1921," to use the title "dental surgeon." The proceedings in the lower court, when Mr. Justice Farwell gave judgement for the plaintiff, were fully reported in the *British Medical Journal*, August 22nd (p. 359).

The Master of the Rolls, in dismissing the appeal, recounted the history of dental titles. Before 1878 persons were able to practise dentistry practically without any control. The Act of 1878 regulated the practice and qualification of dentists. The large majority of persons registered under that Act (in the proportion of 9 to 2) possessed no diploma or degree, and were admitted by virtue of *bona-fide* practice. As time went on, however, the proportion altered, and just before the Act of 1921 was passed there were on the *Dentists Register* 4,527 persons practising dentistry who possessed degrees and 428 (pre-1878 practitioners) without degrees. There was good reason, therefore, for taking a different attitude on the question of qualification when the latter Act

was passed. No doubt there was a desire to protect that large body of practitioners who possessed a degree or diploma, and therefore Section 4 (*b*) of the Act of 1921 provided that a dental practitioner was not to use "any title or description reasonably calculated to suggest that he possesses any professional status or qualification other than a professional status or qualification which he in fact possesses and which is indicated by particulars entered in the *Register* in respect of him." The defendant in this case claimed the right to call himself a dental surgeon, but in his lordship's view the section just quoted imposed a direct prohibition on that. The word "surgeon" expressed a distinct qualification, and the only issue was whether it suggested a qualification which the defendant did not possess. Mr. Justice Farwell had held the effect of the evidence brought before him to be that, while to many people the term "dental surgeon" had no particular significance, to a considerable number it had a definite meaning, and implied a person with a degree, licence, or diploma, and Mr. Justice Farwell had held that in those circumstances it was impossible to say that the use of the title "dental surgeon" would not reasonably suggest to many of the public that the defendant had some status or qualification which he did not in fact possess. The question must turn upon what the expression meant to those instructed and educated in such matters.

Lord Justice Lawrence and Lord Justice Romer concurred, and the appeal was dismissed. A stay of execution was granted for one month to enable the defendant to decide whether he wished to appeal to the House of Lords.

Mr. Grant, K.C., and Mr. J. R. Butterfield appeared for the appellant, and Mr. Gavin Symonds, K.C., and Mr. H. G. Robertson for the plaintiff. The court came to its decision without calling upon counsel for the plaintiff.

CHARGE OF FALSELY PRETENDING TO BE A REGISTERED PERSON

At the West Ham Police Court, on October 27th, Charles John Powell, aged 21, a hospital attendant, of Knollys Road, Streatham, was summoned for falsely pretending to be a doctor of medicine and surgeon, contrary to Section 40 of the Medical Act, 1858, which prescribes a penalty, not exceeding £20, for falsely pretending to be a registered person. He pleaded "Guilty."

Mr. E. Clayton, for the Director of Public Prosecutions, said that in March last Powell went to the offices of the Commonwealth and Dominion Line, and applied for a post of doctor or surgeon in a ship going to Australia. He was given a form to fill up, and it appeared that he went to a public library, looked up the *Medical Directory*, and selected the name of Duncan Pick, M.B., Ch.B., a doctor in Fifeshire. When he presented the form at the shipping office he had signed it in the name of Dr. Pick, and added Dr. Pick's qualifications. This, of course, was forgery, but the Director of Public Prosecutions, considering the whole circumstances, decided to proceed against him, not on that charge, but for a contravention of the Medical Act. Powell was posted to s.s. *Port Denison*, and went to Australia on the staff of that vessel as a doctor. He attended a number of patients, but nothing wrong was noticed. In August, two months after landing in Australia, he applied to the shipping company to be again taken on as a doctor, and he came back to England in the company's ship *Port Arthur*, on which again he attended a number of cases, but none of them of a serious character. At the end of the voyage he was told that he must report to the officials of the Immigration Department, but he did not do so, and, later, he sent a letter to the shipping company in which he stated that he was not Dr. Pick, and that he had gone to Australia hoping to obtain work there.

Detective Inspector Cockburn said that the reason why the defendant came back in the *Port Arthur* was to attend the captain, who was suffering from heart trouble, and the treatment which he gave him was really very good. The witness also explained that doctors who had taken their degrees in England were taken back in this manner to Australia free, and similar privileges were given to doctors in Australia who wanted to come to England to take further degrees.

Asked what he had to say in mitigation, the defendant pointed out that the ship he went in was one which did not generally carry a doctor, and that the ship he came home in never carried one.

The magistrate (Mr. St. John Morrow) said that the defendant did not seem to realize the seriousness of his offence. He had been engaged in sweeping out a nursing home, and suddenly he posed as a doctor and went on a six or seven weeks' voyage to Australia. He might have had several deaths on board, and if anything had happened to the people he treated, and they had died, he would have been charged with manslaughter. The case was, however, by the decision of the Director of Public Prosecutions, to be dealt with under the Medical Act, and he therefore fined the defendant £5 and 3 guineas costs, or, in default, thirty-one days' imprisonment.

Universities and Colleges

UNIVERSITY OF LONDON

University College: Department of Psychology

A course of twelve lectures, with practical exercises, on the administration of psychological tests in mental clinics and hospitals, will be given by Dr. W. Stephenson, Miss Constance A. Simmins, and Miss L. Grace Studman. The course will begin with a public introductory lecture by Dr. Stephenson, on Tuesday, November 17th, at 3 p.m. The day and hour for the continuation of the course will then be arranged to suit the convenience of those wishing to attend. Fee £1 11s. 6d. Inquiries may be addressed to the secretary, University College, Gower Street, W.C.1.

NATIONAL UNIVERSITY OF IRELAND

The following candidates have been approved at the examination indicated:

Third M.B.—*Part I (Pathology and Materia Medica)*: *M. F. Headon, †E. Isaacson, *C. F. E. Stanford, *J. L. O'Ferrall, *M. K. Mellett, †Con O'Leary, †J. F. Sullivan, †J. Jordan, G. Bialkin, P. A. Byrne, D. Coffey, C. Gray, D. J. Lawless, P. McMahon, Mary W. Meagher, R. F. O'Donnell, P. J. O'Ivan, G. F. Ryan, *Part II (Medical Jurisprudence and Hygiene)*: *J. K. Feeney, *R. Hayes, †J. Ready, *J. L. O'Ferrell, J. Fahy, E. Fleming, J. McSorley, P. J. O'Driscoll, P. G. Ryan, M. F. Sheehan. Exempted from further examinations in pathology: N. B. Higgins, J. J. O'Byrne, T. J. O'Donnell.

* First-class honours. † Second-class honours.

QUEEN'S UNIVERSITY OF BELFAST

Dr. J. S. Young, Reader in pathology in the University of Leeds, has been appointed to the Musgrave chair of pathology in Queen's University, Belfast.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a meeting of the Royal College of Physicians, held on October 29th, when the President, Lord Dawson of Penn, was in the chair, Professor H. R. Dean, Dr. Gordon Holmes, and Dr. J. P. Hedley were elected Councillors. Dr. K. D. Wilkinson was appointed an examiner in pharmacology and Professor R. T. Leiper an examiner in tropical medicine and hygiene. Dr. Raymond Crawfurd was re-elected a representative of the College on the Committee of Management of the Conjoint Board, and Dr. Comyns Berkeley the College representative on the Central Midwives Board. The President announced that the Council had appointed Dr. Robert Cruickshank of Glasgow University to be Milroy lecturer for 1933, and that Professor Edward Mellanby had accepted the office of Croonian lecturer, 1933. The appointments of Mr. D. H. Patey as Streatfeild scholar and Mr. F. E. Pitt-Payne as Jenks memorial scholar were also announced.

Membership

The following candidates, having satisfied the Censors' Board, were elected Members of the College.

Frederick Gerard Allison, M.D.Manitoba, James Hilton Bentley, L.R.C.P., Trevor Laurence Bomford, M.B.Lond., Rupert Pritchard Picton Davies, M.D.Lond., Laurence Bedford Elwell, M.B.Sydney, Maurice Rolfe Vickers Ford, L.R.C.P., Ivor John Franklen-Evans, M.B.Camb., Frank Alfred Gaydon, M.B.Lond., Isaac Gordon, M.B.Lond., Ram Kumar Goyal, M.B.Punjab, Richard Fairfax Fukuno Grace, M.D.Ed., Mohan Lal Gujral, M.B.Punjab, Arthur Sandford Hoseason, M.B.Lond., Esther Margaret Killick, M.B.Leeds, Frank Patrick Lee Lander, M.B.Lond., Mahomedali Ladhabhoy Mistry, M.D.Lond., Francis Alan Richards, M.B.Camb., Mahmoud

Saleh Eldin, M B Cairo, Henry Armand Hugh Selbourne, M B Lond., Sarah Shore, M B Lond., Felix Smith, M D Birm., Raghubansa Kishore Tandon, M B Lucknow, Shripad Shivarao Ugrankar, M B Bombay, and Khushwant Lal Wig, M B Punjab.

Licences

Licences to practise were conferred upon the following candidates, who have passed the Final Examinations in medicine, surgery, and midwifery of the Conjoint Board, and have complied with the by-laws of the College:

R Ahmad, S S Alam, G. T. Allen, M. W. Allen, A. B. Anderson, A V Anderson, V Ascher, I J Ashley, Kathleen W Aylwin-Gibson, R Butler, L I Bannister, *P. S Bassalvi, E. H. S. Bebb, C. M Bell, L A R Berkley, J B Bishop, M Bloom, H. E Bonnell, J R Brasbrooks, I J Burke, I. E Burrows, H. W. Cowen, R V I Creet, C J N Davis, N. E. D. De Silva, A H. Dunkerley, B Dunkerley, Joanna M Egerton, A. G. Evans, M. Farooq, J W H Fox, S G French, J. H. L Gilmore, G P. Gladstone, I R Glover, P W Godfrey, A. J. B. Goldsmith, G H Greenway, *H N. Gregg, W. Hall, G. W. Hall-Smith, R A L Hammond, Margaret Hardwick, Sheila M Harper, Florence D Hawes, F Hilmy, L A. Hiscock, Nora A. Hodgkinson, P A Hubbard, Daisy G. Iliff, J. A. James, W. H G. Jessop, D E V Jones, E. Kaminsky, A A. Kidvai, Victoria H King, A W Langford, H. H Langston, N. R C Lansdell, B. Lawn, J Littlejohn, A. D Low, J M Low, R. S C. McDade, J. G. Madden, *G. S Malik, M. H. Masina, *Sosa Matthew, M T. Maung, C. F Mayo-Smith, S. G. Meanley, T. F. Miles, A. Miller, I D Monger, M. Myers, P H Nankivell, M. W. C Oldfield, W H. Owles, G I Partridge, R C T Pearson, T J. Phillips, P. Pringle, Dorothy M M Rees, L Rees, G. O. S. Reid, W. F. Richards, B Roberts, I C Robertson, P. Rosenfeld, M. G. Ross, J. T. Rowe, C Rutter, C R Sadler, I N. Samuel, Mary A. Saunders, G. Scott, *A Shafi, H Shoukry, A Shufleder, H. Simpson, K. Singh, R I G Smith, P Q M Spaight, *G. Steane, D. Stone, G L. Stroud, I Sutton, J T C Taylor, G W Thomas, H C. Wadge, W W Walther, R A. Wesson, H. G Williams, R N. H Williams, I P Williams, D S P Wilson, As L. Wingfield, J. M. Wingfield, C L R Wood, R B. D. Wright.

* M R C S. previously granted.

A supplementary list of Licentiates is being issued later for candidates whose examinations were not completed when the above list was compiled.

Diplomas in Public Health were also conferred, jointly with the Royal College of Surgeons, on the following candidates:

M Akram, E A Aslett, R. S Baindur, Eleanor M. Carless, R Cove Smith, J Cribbin, J H Dancy, E C. Downer, E. Grundy, P L Khosla, J R Macdougall, C. V. Macnamara, R. D Munshi, J L Newman, Ajit K. Sen, Amiya K. Sen, H. B. Swift, I. Taylor, S R Wilson

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The annual meeting of the Fellows and Members of the Royal College of Surgeons of England will be held at the College, Lincoln's Inn Fields, W C., on Thursday, November 19th, at 3 p.m.

Bradshaw Lecture

The Bradshaw Lecture before the Royal College of Surgeons of England will be given at the College by Mr. W. Sampson Handley on Thursday, November 12th, at 5 p.m.; the subject will be chronic mastitis. Fellows and Members of the College are invited to attend. Students and others who are not Fellows or Members will be admitted on presenting their private visiting cards.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

A special meeting of the council, attended by a large number of the Fellows and Members of the College and their friends, was held in Grosvenor House, London, on October 23rd, when the president, Professor Blair Bell, conferred the Honorary Fellowship of the College on Professor Paul Bar of Paris, Professor Essen Moller of Lund, Sweden, and the Right Hon. Lord Riddell in recognition of their services to obstetrics and gynaecology. Their Excellencies the French Ambassador and the Swedish Minister were present, and returned thanks on behalf of their fellow-countrymen.

The following were admitted to the ordinary Fellowship of the College: Margaret Basden, Frank Cook, Joseph Bernard Dawson, Samuel Walter Maslen Jones, Gordon King, Arthur James McNair, Ruth Nicholson.

The following Members were admitted: Michael Waldo Boom, Bulman, Reginald Lionel Downer, Amy Margaret Fleming, John Kennedy Rose, Margaret Salmond, Gerald Spence Smyth.

The quarterly meeting of the council was held on October 24th. Dr. Henry Russell Andrews was co-opted to the Finance and Executive Committee until the next annual general meeting. It was decided that, notwithstanding any resolution to the contrary, those who were invited to become Fellows and Members from Great Britain and the Irish Free State be allowed to accept this invitation up to the time of the annual general meeting in 1932. The secretary reported the conclusions reached at a round-table conference held the previous day with representatives of the Dominions concerning the election and relation to the College of Fellows and Members in the Dominions. Important financial and other considerations were settled.

SOCIETY OF APOTHECARIES OF LONDON

New Regulations for Final Examination

The following additions have been made to the regulations for the Final Examination for the diploma of L.M.S.S.A. Lond.:

1. In future a separate examination in pathology and bacteriology (written, practical, and oral) will form Section I of the Final Examination. Candidates must take this section not later than the last part of Section II of the Final Examination, and will be admissible to it not less than twenty-four months after passing in anatomy and physiology, on production of the certificates laid down. (This regulation will not apply to candidates who pass, or become entitled to exemption from, the primary examination in anatomy and physiology before January 31st, 1932.)

2. Candidates who begin their professional studies after January 1st, 1932, will be required to complete the whole of Section II of the Final Examination (medicine, surgery, midwifery, and forensic medicine) within a period not exceeding twenty-five months. In cases where the period has been exceeded, it will be necessary for candidates to pass again in any subject or subjects in which they may have already satisfied the examiners, until this regulation is complied with.

The following candidates have passed in the subjects indicated:

Surgery.—H. W. Davies, G. Handelsman, M. Iddali, R. Perkins, Z. M. Pierpont, S. Ramarao.

Medicine.—S. J. Bellgard, L. F. Donnan, C. Morgan, Z. M. Pierpont, B. Rivlin.

Forensic Medicine.—V. R. T. Baylis, M. Ditton, L. F. Donnan, K. Malik, H. C. Pain, Z. M. Pierpont.

Midwifery.—V. R. T. Baylis, K. W. Bruce, G. A. Dingemans, L. F. Donnan, H. T. Giblin, H. G. Hind, J. L. King, F. C. Moll, T. D. Norton, E. M. F. O'Donovan, H. Owen, Z. M. Pierpont, F. A. Trowbridge, H. A. T. Wells, J. C. Williams.

The diploma of the Society has been granted to Messrs. H. W. Davies, L. F. Donnan, H. G. Hind, and Z. M. Pierpont.

Medical News

A Chadwick public lecture on "The outlook on tuberculosis—then and now," will be given by Sir Robert Philip at the Gateshead Town Hall on Friday, November 13th. The mayor of Gateshead will take the chair at 7.30 p.m.

The West Riding Association of Edinburgh Graduates will hold its annual general meeting and dinner at the Midland Hotel, Bradford, on Wednesday, November 11th. The meeting is at 6.45 p.m., and the dinner at 7.30. Professor D. P. D. Wilkie is to be the guest of the evening. The honorary secretary, Mr. Donald Watson, F.R.C.S., 33, Manor Row, Bradford, will be pleased to supply further information.

The annual dinner of the London (Royal Free Hospital) School of Medicine for Women will be held at the Savoy Hotel, Strand (Embankment entrance), on Thursday, December 3rd, at 7 for 7.30 p.m., with Lord Riddell in the chair.

The South-West London Medical Society will hold its first meeting of the new session on Wednesday, November 11th, at 9 p.m., at the Bolingbroke Hospital, Wandsworth Common, when Dr. S. A. Kinnier Wilson will give a lecture on "The diagnosis and treatment of epileptic varieties."

The Middlesex Hospital annual smoking concert, organized by the students in aid of the Cancer Wing, will take place at the Queen's Hall, Langham Place, on Friday, November 13th, at 8.30 p.m., with the Earl of Athlone in the chair.

A discussion on "The medical aspects of crime in fact and fiction" will take place at the meeting of the Hunterian Society to be held at Apothecaries' Hall, Water Lane, E.C., on Monday, November 16th, at 9 p.m. Fellows of the society may take non-medical guests, including ladies, to the meeting.

A combined clinical and pathological meeting of the West London Medico-Chirurgical Society will be held at the West London Hospital to-day (Friday, November 6th), at 8 p.m.

Dr. Erwin Wexberg of Vienna will speak on "Individual psychology and psycho-analysis in medical practice" at a special meeting of the Medical Society of Individual Psychology, to be held at 11, Chandos Street, Cavendish Square, W.1, on Thursday, November 19th, at 8.30 p.m. Visitors will be welcome on presentation of their cards.

The British Waterworks Association will hold its winter meeting on Thursday, November 19th, during the Public Works Congress, at the Agricultural Hall, Islington. At the afternoon session Dr. E. V. Suckling will read a paper on "The sterilization of water by catadyn silver," followed by a paper on "The cause and removal of earthy tastes in water," by Mr. B. A. Adams.

The Fellowship of Medicine and Post-Graduate Medical Association announces a three weeks' course in ophthalmology beginning on November 9th at the Royal Westminster Ophthalmic Hospital (fee £4 4s.). From November 16th to 28th a course in diseases of the chest will be given at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park (fee £2 2s.). A course in venereal diseases will be held from November 16th to December 12th at the London Lock Hospital, Dean Street (fee £2 2s.). From November 23rd to 28th there will be a course in proctology at St. Mark's Hospital (fee £3 3s.). The Infants Hospital will hold an afternoon course in diseases of infants from November 30th to December 12th (fee £3 3s.), and during the same period there will be a course in dermatology at the Hospital for Diseases of the Skin, Blackfriars (fee £1 1s.). Free lectures will be given on Wednesdays at 4 p.m. at the Medical Society of London, 11, Chandos Street, Cavendish Square, by Sir Henry Gauvain, Mr. Tudor Edwards, and Mr. Cecil Joll. Lectures for the M.R.C.P. examination will be given at the same place on Mondays and Wednesdays at 8.30 p.m. by Dr. Maurice Cassidy, Dr. Roodhouse Gloyne, Dr. W. J. Adie, and Dr. Knyvett Gordon. Full particulars from the Fellowship of Medicine, 1, Wimpole Street, W.1.

The annual congress of the British Institute of Radiology will be held at the Central Hall, Westminster, on December 2nd, 3rd, and 4th. In association with the congress an exhibition of *x*-ray apparatus will be held in the same building under the auspices of the British *x*-ray industry.

Reference was made in our issue of August 1st (p. 219) to the facilities for post-graduate study available in Berlin to members of the medical profession in this country. A booklet in English has now been issued by the Kaiserin Friedrich-Haus für das ärztliche Fortbildungswesen giving full particulars of the English courses that have been arranged by the Dozentenvereinigung. This association of lecturers consists of about two hundred professors, docents, and directors of hospitals, and has at its disposal over 20,000 beds. The English courses are given all the year round, and diplomas are awarded, on application, to students who have completed at least four months' or three hundred hours' attendance. There are opportunities for free instruction and for appointments to internships in many of the medical and surgical clinics, but for these some knowledge of the German language is generally required. Arrangements for private courses may be made through the office of the Association (Luisenplatz 2–4, Berlin, N.W.6), to which all inquiries should be directed.

The new extension of the Richmond Royal Hospital, which includes a new operating theatre and *x*-ray department, was opened by the Marchioness of Cambridge on October 20th.

The September issue of the *China Medical Journal*, published monthly by the China Medical Association, is devoted to leprosy, and opens with an article by Sir Leonard Rogers on prophylaxis. He denounces the rigid compulsory segregation of all lepers, as soon as they are discovered, as being an impractical procedure in the vast majority of cases, and leading to the concealment of early cases. He commends the provision of a voluntary system of up-to-date treatment for early cases at clinics, and segregation of the more advanced cases in leper colonies where they can cultivate the land and produce most of their food. He stresses the importance of examining the contacts of all known infective cases, and providing efficient treatment. Dr. R. M. Wilson discusses the management and maintenance of a leper colony; the diagnosis of leprosy is reviewed by Drs. E. Muir and F. Reiss; while articles on treatment are contributed by Drs. L. F. Heimburger and N. D. Fraser. Much of this issue is devoted to a survey of the incidence of this disease in the three southern provinces of China, and also in Southern Yunnan, Swatow, Szechuan, and Manchuria.

The *London Gazette* of October 20th announces that the King has conferred the Edward Medal upon nineteen persons for conspicuous bravery in rescuing a miner from a fall of roof in the Hedley Pit, South Moor, county Durham. Among the recipients was Dr. Charles James Brookfield Fox, who had been summoned to amputate, if necessary, the miner's leg to expedite his release. It was found impossible to amputate in the restricted area, but Dr. Fox remained on the scene until the miner was rescued, and examined and treated him before sending him to the surface.

A full report of the fourth annual scientific meeting of the Medical Association of South Africa and the twenty-fifth South African Medical Congress, at Johannesburg, in September, is published in the *Journal of the Medical Association of South Africa* (*B.M.A.*) for October 10th, and indicates the great success that was achieved under the presidency of Dr. Francis Napier. Some account of the work of the sectional meetings and of the social functions appeared in our last issue at page 817. The hospitality of the Southern Transvaal Branch and its Divisions was highly appreciated by all who took part in the congress.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring *REPRINTS* of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams, *Bacillus Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams, *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Anal Neuralgia

"NEURALGIA" writes: I should be grateful for any information on the cause and treatment of anal neuralgia. A man of 57, and his wife, aged 49, both suffer from this distressing malady. There is no evidence of piles, fissures or anything abnormal to be seen. The attacks frequently come on at night. Sitting on a hot-water bottle controls the attack. The pain comes on suddenly, is sickening in character, and just as suddenly stops. If it comes on during the night it invariably wakes the patient. Heat seems to be the only remedy, but it is uncomfortable and inconvenient to have to rise in the night to prepare hot water.

Persistent Mild Pyrexia

Dr. H. S. Burnell-Jones (London, N.W.5) writes: The answer to Dr. Thos. McCulloch's question (October 31st, p. 832) is, Yes. About 1912, Dr. Whittaker, head master of Taunton School, told me of a boy at the school who, after an illness, continued with a temperature above normal. The head master and the school medical officer decided that, as the boy appeared perfectly well, they would take the risk of sending him on a journey which he had to take. A day or two after the journey Dr. Whittaker received a letter from the boy's father (who was a doctor) saying, "I should have told you that my boy's temperature is always above 98.6° F."

Income Tax

Temporary Residence in the United Kingdom

"B. M." proposes to come to England on leave in April, 1932. He is naturally desirous of avoiding income tax liability, which, he understands, will attach to him if his stay in England exceeds six months. He inquires what would be the result if he spends, say, five months out of seven in the United Kingdom, the other two being spent in occasional absences on the Continent, and, also, whether absence in the Irish Free State or the Channel Islands would be as effective as absence in, say, France.

*** The six months' test applies to the aggregate of the periods of actual physical presence in the United Kingdom, provided that "B. M." does not maintain a residence available for his use during his temporary absence abroad. The Irish Free State or the Channel Islands would be as effective for the purpose of absenting himself from the United Kingdom as any other place outside the United Kingdom.

Cost of Indoor Assistant

"S. B." asks what deduction may be claimed for the cost of an indoor assistant.

*** It is impossible to answer this question categorically—so much depends on the circumstances. Probably the best way of dealing with the matter is to take the accommodation and domestic service into account in estimating what proportion of the total is expended on the professional portion of the premises, and to make an *ad hoc* estimate of the cost of the assistant's food, laundry, etc.

Loss Incurred on Visit Abroad

"F. P." attended a scientific meeting abroad, as an official reporter for certain journals. His total emoluments were £25 and his travelling expenses—£125. The inspector of taxes declines to make him any allowance for the resulting loss of £100.

*** The loss is allowable if it was incurred as a matter of business, and the question to be decided is whether "F P." made the journey in the hope of gain, or for some other reason; in the latter event, the receipts are a reduction effected in the cost of carrying out a private desire, and the transactions as a whole would not give rise to a claim for income tax relief. Various factors enter into the decision; for example, whether "F. P." has in the past earned profits by reporting congresses, etc.

Liability of Assistant

"E. J S." refers to an answer in our issue of September 26th last, and states that the inspector of taxes declines to accept the view that he is not liable to pay income tax on £91, being the amount paid by his principal to a third person for his lodgings. The inspector refers to the decisions in Cordy *v.* Gordin and Ferguson *v.* Noble.

*** "E. J. S" is liable on the £6 10s. paid to him towards the cost of gas and lighting; the matter in dispute is with regard to the £84 10s. paid to the proprietor of the rooms occupied by "E. J. S." In Cordy *v.* Gordin it was held that an employee entitled to receive a certain salary but liable to suffer a deduction therefrom for cost of board and lodging was liable to tax on the full amount of the salary before the deduction was made. In Ferguson *v.* Noble it was held that a cash allowance received in lieu of a uniform was liable to assessment. In our view the essential feature in both these cases is the liability of sums which were received in cash or which were as stated, and would have been so receivable but for a deduction provided by the agreement for service. They are in the same line as the leading case of Tennant *v.* Smith, and do not appear to be conclusive against "E. J. S." It is still sound law that a benefit received in kind is not assessable unless it can be turned to monetary account. If "E. J. S.'s" lodgings were selected to suit himself, so that in effect they were his choice, equity is heavily against him, and a favourable decision by the local commissioners might be difficult to obtain; but we consider that the technical merits of the question are with him.

LETTERS, NOTES, ETC.

Phimosis and Circumcision

Dr. E. Sutherland-Rawlings (late senior medical officer, London Lock Hospital, and assistant, Venereal Diseases Department, St. Paul's Hospital) writes: With reference to the recent letter in the *British Medical Journal* on circumcision, I should like to point out that the class of infant to whom circumcision is "an act of barbarism" must belong to the enlightened society who instruct their sons in the hygiene of a genital toilet. For the lower classes—those seen at venereal clinics, for example, where the stench of decomposed smegma makes the examiner sick—the advantage of the circumcised over the uncircumcised is apparent, more especially in such cases as the following: phimosis, balanitis, herpes preputialis, chancre of the prepuce, etc. In the *Lancet*, last March, I pointed out that penile chancres occurred more frequently in the circumcised than in the non-circumcised. Again, I have found that masturbation most often occurred in those cases with a mild degree of phimosis, and that in adults circumcision under local analgesia served as a cure for the complaint. Convulsions and fits in a child of 8 months was cured beyond doubt by a simple circumcision. I would suggest that all practitioners, especially in the poor localities, should urge circumcision, if only as a mild prophylactic measure against penile troubles later on in life.

"Bridgets and Virgins"

Dr. Harold Balme writes: In these days of ante-natal version for malpresentations the following verbatim account recently given me by a patient may not be without interest: "I went to see a doctor when I thought I was due, but directly 'e put 'is 'ands on me, 'e said, 'Good Lord, woman, your baby's coming the wrong way; you must go off to 'orspital at once and 'ave it turned.' So off I went, and as soon as I got there they took me into a theatre and gave me chloroform. And there were two other ladies besides me what 'ad got their babies the wrong way, but the doctors said that my case was rather different from theirs. Mine, they said, was a *bridget*, but the others was just *virgins*. . . . And my 'usband, 'e didn't 'alf carry on when 'e knew I 'ad to go into 'orspital. Do you know what 'e did, doctor? 'E just cried for two hours, 'e did, and then 'e went and 'ad 'is 'air cut, just to take 'is thoughts off."

CO_2 in Resuscitation

"F. B. R." writes: Apropos CO_2 as a respiratory stimulant, at a recent confinement, as the result of premedication of the mother, of instrumental delivery, or of some cause unknown, the child was born in a condition of partial asphyxia. Half an hour's effort to restore respiration proved ineffective, beyond producing a spasmodic inspiratory gasp at intervals. The baby appeared to have definitely decided not to remain. It then occurred to me to try the "Sparklet" apparatus, or, I should rather say, contrivance, which one carries in the anaesthetic bag. The result of discharging a little CO_2 in front of the baby's mouth at the moment of its making a rare inspiratory effort was instant and amazingly effective. The rhythm was started, and in a few minutes all anxiety had vanished. Admittedly there is nothing startlingly new in this phenomenon. I feel, however, that I am justified in relating the experience from the conviction that the average practitioner is unaware that he has to his hand a simple, inexpensive little CO_2 container, suggested by a Manchester anaesthetist and manufactured by the "Sparklet" people. I now feel it should have a place in every midwifery bag, and that it will save many an infant life.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 54, 55, 58, and 59 of our advertisement columns, and advertisements of partnerships, assistantships, and locumtenencies at pages 56 to 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 207

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

405 Thrombo-phlebitis Migrans in Scarlet Fever

J. B. ELLISON (*Brit. Journ. Child. Dis.*, July–September, 1931, p. 207), who reports two illustrative cases, remarks that inflammation of the veins is a very unusual complication of scarlet fever, only a few cases having been recorded by Schamberg and Koimer, Rolleston, and Hunekens and Siperstein. His patients were two boys, aged 6 and 10½ years respectively, who at a late stage of a mild attack of scarlet fever developed the condition described by Moorhead and Abrahamson as thrombo-phlebitis migrans. The characteristic features are (1) lesions disseminated in time and space, small lengths of superficial vessels being first attacked; (2) phlebitis of the lungs and abdominal viscera; and (3) a favourable prognosis in spite of a prolonged course. Complete recovery in both cases followed within five weeks from the onset.

406 Pulmonary and Laryngeal Tuberculosis

M. AUBRY and L. BRODIEZ (*Presse Méd.*, August 26th, 1931, p. 1267) from a study of some cases conclude that there is a more or less direct correlation between pulmonary and laryngeal tuberculosis, and that this complication presents two diametrically opposite types: the infiltration-ulceration type with caseous evolution, and the fibro-congestive form which tends to ultimate fibrosis. The first form, the classical and most common, has been fully described by numerous authors, and its characteristics are summarized. The second type is distinguished from the first by the fact that often the laryngeal lesions are the first manifestations of the pulmonary complication. The cough is very slight, and the expectoration, whether scanty or plentiful, contains few bacilli. In contrast with the caseous form, the dysphonia and dysphagia are slight; dyspnoea appears relatively early, and may be very accentuated. The laryngeal lesions occur particularly on the ventricular band, and often the whole hemilarynx is affected. Though the band, cords, and arytenoids are greatly infiltrated, mobility is usually conserved. The general state is always unaffected. The lungs reveal very characteristic signs, which are described. The prognosis is much more favourable than in the caseous form. The lesions can be treated directly without fear of causing exacerbations, and in this fibro-congestive type, diathermy and galvano-cauterization produce good results. A typical case is recorded, and, in conclusion, the authors state that prognosis depends rather on the caseous tendency than on the extent or actual activity of the lesions.

407 The Cardiac Output in Complete Heart-Block

L. B. ELLIS and S. WEISS (*Amer. Journ. Med. Sci.*, August, 1931, p. 195) discuss the condition of the cardiac output and the peripheral circulatory mechanism in complete heart-block. They investigated five patients with this condition, two of whom had no functional disability; in two cases the symptoms were moderate, and in one the general disturbance was pronounced. It was found that the two patients with no functional incapacity and no arterio-sclerosis had normal arterial blood pressures, while the other three had systolic hypertension. In the absence of cardiac failure the venous pressure was normal. In the four patients with no circulatory failure during rest, normal values were found for the cardiac output estimated per minute; the outputs for each beat in these patients were, however, increased 40 to 50 per cent. above the normal. In the fifth patient, who suffered from circulatory failure, even in bed, indirect evidence of a decreased blood flow was obtained. The circulating blood volume was reduced in four patients, and is not mentioned in the fifth. Basal metabolic rates in the lower part of the normal range were present in four patients, while in the fifth the rate was 20 per cent. below normal. The degree of elevation of the lactic acid and the changes of blood gases following exercise were normal in one patient, who had good functional capacity. The authors conclude that the increased stroke volume of the heart, the systolic hypertension, the reduced blood volume, and, possibly, the somewhat lowered basal metabolic rate, may be considered compensatory responses tending to maintain a constant and adequate blood supply to the tissues during the prolonged diastolic pauses consequent upon the slow heart rate. They add that the symptoms of patients with heart-block are of two types: (1) those of congestive or anginal heart failure, resulting from myocardial degeneration; and (2) the Stokes-Adams attacks, probably due to insufficient cerebral circulation attributable to the inability of the heart to respond to the demands of exertion, or to alterations in the peripheral circulatory adjustment, or, most probably, to a local decrease in the irritability and responsiveness of the ventricles with periods of ventricular asystole. Complete heart-block is therefore compatible with normal life, and the prognosis as regards health and life depends mainly on the presence or absence of myocardial disease.

408 Post-vaccinal Myelitis

T. W. BROCKBANK (*Journ. Amer. Med. Assoc.*, July 25th 1931, p. 227) records a case in a boy, aged 6 years, in whom the prodromal symptoms began on the thirteenth day after vaccination. Complete spinal anaesthesia developed up to the level of the ninth dorsal segment, with accompanying paralysis, and was still present six months after the onset. The case is remarkable in that the acute inflammatory lesions of the nervous system reported as occasionally following vaccination have usually presented the clinical symptoms of encephalitis or polio-encephalitis, while in cases with paramount spinal cord involvement the sensory impairment has been negligible or transient.

409 H. GOUNELLE (*Paris Méd.*, August 15th, 1931, p. 144) reports a case of lumbo-sacral myelitis in a soldier aged 21, which occurred a fortnight after revaccination. Complete recovery ensued in six weeks.

410 Agranulocytic Angina

R. C. LOGEFEIL (*Minnesota Med.*, August, 1931, p. 696) refers to the increasing number of cases of this syndrome, its grave prognosis, and high death rate. In one series of 75 definite cases, only 16 patients recovered (20.25 per cent.); in another series of 150 cases, the mortality was 82 per cent. The condition is characterized by acute sore throat, fever, and prostration; this is followed by a bleeding gangrenous ulceration of the mouth and pharynx, with a pseudo-diphtheria! exudate. The liver, spleen, and occasionally, the lymph glands are enlarged; terminal pneumonia follows, accompanied by severe leucopenia with few or no granulocytes, and a relative lymphocytosis. Sometimes there may occur ecchymosis, secondary anaemia, necrotic ulceration of the oesophagus, intestines, and genitals, jaundice, coryza, multiple abscesses, polyarthritis, and mental torpor, but leucopenia and angina are the only constant symptoms. The disease attacks apparently healthy persons, usually middle-aged women, though some patients have had previous illnesses. Bacteriological and post-mortem examinations have proved unsatisfactory, but haemolytic streptococci are present frequently. Logefeil reports a fatal case in a woman, aged 29, who had febrile sore throat and malaise a week after an alveolar abscess had been opened; she had had a similar attack, with leucopenia, a year previously. The angina increased, and diffuse broncho-pneumonia ensued. A blood count showed 2,500 leucocytes, 20 per cent. granulocytes, and 80 per cent. lymphocytes. The soft palate

sloughed. Blood cultures were negative. Transfusion produced only a transient improvement, and the patient died twelve days after admission. Logefeil concludes that agranulocytic angina or true agranulocytosis may be a definite bone-marrow disease. It may accompany severe sepsis, chronic infections, chemical poisoning, aplastic anaemia, and aleukaemic blood conditions. Absence of abnormal blood cells, severe secondary anaemia and haemorrhagic diathesis, with the presence of severe ulcerating angina, prostration, and terminal pneumonia, are characteristic of it, and aid the differential diagnosis.

Surgery

411 Perforated Duodenal Ulcer

W. C. WHITE and H. A. PATTERSON (*Annals of Surgery*, August, 1931, p. 242) comment on the remarkable frequency of acute perforations of duodenal ulcer in men as compared with women, and state that they are unable to account satisfactorily for this fact. In a large series of cases only 3 per cent. occurred in women, and there were fifty or sixty consecutive male cases. The majority of acute perforations occur in the third, fourth, or fifth decade, nearly 40 per cent. being in the fourth. There is usually an exacerbation of chronic ulcer pain before perforation ; this lasts from several hours to two weeks, and represents serosal involvement by the pathological process. This pain is constant, and is not relieved by food or alkalis. The cause of perforation is doubtful, a full stomach, sudden exertion, and excess of alcohol being possible factors. Treatment in the majority of early cases of acute perforated gastro-duodenal ulcer should consist in the simple closure of the perforation, with or without drainage. Of these cases it has been found that 60 per cent. to 65 per cent. remain free from gastric symptoms ; 10 per cent. to 15 per cent. require a gastro-enterostomy at a later date on account of pyloric obstruction. The remaining 25 per cent. of patients are free from symptoms, if they are careful as regards their diet and general routine. Partial gastrectomy in some of these cases is advisable as a curative measure. Primary gastro-enterostomy does not produce good results, but secondary gastro-enterostomy following pyloric obstruction after simple closure is a satisfactory procedure. In certain cases of acute perforated gastro-duodenal ulcer adequate closure may produce a pyloric occlusion on account of a large perforation, unusually extensive surrounding induration, or both ; in these cases an immediate gastro-enterostomy is justified. Careful closure, with the use of omental tomy [illegible]nt, will reduce to a minimum the cases in [illegible]ecessary. Pyloroplasty and partial gastrec- duodenal [illegible]e good results in cases of acute perforated

412 [illegible] Cure of [illegible]stric Ulcers

VAN DER VOORDT (*Bruxelles-Méd.*, [illegible] July 19th, 1931, p. 1127) records notes of thirty-fi[illegible] cases in which he has operated for the radical cure of [illegible]h of some of the results, in spite of the poor general hea[illegible] one case when patients, were highly successful, except[illegible] death on the delirium tremens developed, followed [illegible]ling a consider- eleventh day. A wide gastrectomy, incl[illegible] performed in able portion of the lesser curvature, wa[illegible] much of the each instance. This procedure removes [illegible]ber of subse- acid-secreting area, and diminishes the num[illegible] there is less quent peptic and jejunal ulcers ; in addition[illegible] As regards subsequent trouble from pain and gastralgia, [illegible] is attached the operative technique great importance [illegible]ated atten- to the necessity for the continuous concentr[illegible] of operation, tion of the surgeon and his assistants during the[illegible]t to finish and to the supervision of the case from start [illegible]portance of by the surgeon himself. The essential impo[illegible]struments, local anaesthesia, the exclusion of all crushing in[illegible]d d are all and the employment of reabsorbable threa[illegible] as tment has emphasized. Pre-operative vaccination trea[illegible]pear been abandoned.

413 Raynaud's Disease

A. M. GRAVES (*Amer. Journ. of Surg.*, July, 1931, p. 83) suggests various causative factors in Raynaud's disease, such as exposure, trauma, psychic exertion, sudden fright, and acute infections. It occurs most frequently between the ages of 18 and 30, and it is found that women are more frequently affected, the proportion of female cases being about 80 per cent. The onset of the disease is usually sudden, and of short duration, following exposure to cold in most instances. The disease may subside spontaneously, but the majority of cases remain remittently active. The characteristic symptoms are local syncope and asphyxia, and local or symmetrical trophic lesions, or gangrene. Local syncope is the term used to describe the blanching of a part which occurs most often in the fingers, toes, cheeks, ears, or nose. This condition lasts for varying periods of from five minutes to a few hours, and is liable to recur. This syncope is usually followed by a local anoxaemia, with temporary swelling or a cold sweat. If this condition persists the skin may become black and mortified, with desquamation of the epidermis. A period of hyperaemia may follow the syncope or asphyxia. If these phenomena persist, gangrene of the peripheral parts eventually results ; this is usually of a dry variety. In nearly every case there is a painful numbness, followed by a sensation of burning and tingling. Treatment in mild cases should be prophylactic, such as the wearing of warm clothing, the application of heat, or the removal to a warm climate. Small areas of gangrene should be allowed to demarcate and slough, but amputation is necessary for large areas. Good results have been obtained from surgery of the sympathetic system such as periarterial sympathectomy ; a modified sympathetic ramisection ; ganglionectomy ; excision of the second thoracic ganglion with the stellate ganglion and the intervening trunk ; and resection of the last cervical together with the first and second dorsal ganglia. Prognosis as to the life of an affected part in Raynaud's disease used to be poor, and amputations were frequent, but earlier diagnosis and a more satisfactory therapy have made it possible for an affected part to remain useful for many years in a good number of cases.

414 Diagnosis of Intracranial Tumours

D. L. BUTTERFIELD (*New York State Journ. of Med.*, August 15th, 1931, p. 1001) reports seventeen cases of intracranial tumours without the diagnostic sign of choked disk ; they came to his notice during a period of eighteen months. These consisted of fourteen brain tumours, one large cortical cyst of the parieto-occipital region, and two cases of pachymeningitis haemorrhagica interna. Notes on all, and illustrations of some, of the cases are given; these demonstrate that masses may be present in many sites, and of large size, without causing any choking of the disk, although other ocular signs may be present. In none of the cases was there any considerable intracranial pressure as shown by lumbar puncture. The author suggests that at least 15 per cent. of cases of intracranial tumours do not exhibit the classical sign of choked disk, and that consequently a diagnosis will often have to depend on the other two signs.

415 Gall-stones in the Common Bile Duct

E. S. JUDD and J. M. MARSHALL (*Arch. of Surg.*, August, 1931, p. 175) review 1,608 cases in which stones of the common bile duct were removed by operation, and point out that 1,120 of the patients were women and only 488 men. The youngest patient was 5 months old, and a fourth of the number were over 60 years of age. On an average the female patients came for treatment 5½ years earlier than the males. The most common symptoms of stone in the common bile duct are paroxysms of colicky pain, chills and fever, and jaundice. The stones may cause no symptoms for some length of time, but eventually there is irritation of the mucous lining of the ducts, which produces an inflammatory reaction with oedema round the stone, occluding the duct, and giving rise to biliary obstruction. Symptoms of sepsis,

followed by jaundice, will appear if infection and obstruction are present. In the cases under review 80 per cent. had a history of one or more attacks of severe biliary colic; 17 per cent. had dull pain in the epigastrium, and only 2.4 per cent. had no pain. Jaundice was present in 73.4 per cent. of the cases, with symptoms of sepsis, with chills and fever in 37 per cent. Gastro-intestinal disturbances with nausea and vomiting were common symptoms, and the majority of patients suffered from chronic dyspepsia. Diagnosis is aided by cholecystography, and the passage into the duodenum of a small soft Rehfuss tube to determine the possibility of obtaining bile through the tube, as is the case when the obstruction is a stone; in stricture or malignancy no bile can be recovered. Of the 1,608 cases reviewed stones were found both in the gall-bladder and the common bile duct in 63.5 per cent.; in 36.5 per cent. stones were only present in the duct. The spontaneous formation of a fistula between the gall-bladder and an adjacent hollow viscus occurred in 72 patients, the fistula in most cases being between the gall-bladder and the duodenum. Pancreatitis was an associated lesion in 26 per cent., and marked cholangitis in 4.2 per cent. of cases. Varying degrees of hepatitis and biliary cirrhosis were seen in the liver when the condition was of long standing. Operation, which consists of removal of the stones, should also include the removal of the gall-bladder when jaundice is not present or the operative risk is too great. In these cases prolonged drainage is indicated, even for as long as a year if necessary. In the series reported the mortality rate was 6.7 per cent., death being due to local or generalized peritonitis, pneumonia, haemorrhage, nephritis, and pulmonary embolism. In 75 cases there was recurrence, and in 55 stones were again removed from the common bile duct.

416 Typhoid Perforation of the Gall-bladder

A. WAJSMANN (*Thèse de Paris*, 1931, No. 407) states that while cholecystitis and perforation of the gall-blader in typhoid fever are well known in the adult, in the child these complications are much rarer. A search through the literature from 1835 to 1930 revealed only thirty-five cases of typhoid cholecystitis in the child, in fifteen of which (42.85 per cent.) perforation was anatomically proved. The onset of typhoid cholecystitis may take place in two different ways: either it may closely simulate intestinal perforation, and its true nature be only discovered by systematic examination of the biliary tract, or the symptoms at once point to cholecystitis with evidence of perforation. In perforation of the gall-bladder the interval of peritoneal tolerance is much longer than in the case of intestinal perforation. The mortality among children with perforation of the gall-bladder is 87 5 per cent. in the absence of operation, but, when an operation is undertaken, even late, recovery takes place in 62.5 per cent. Cholecystitis appears to be the best operation since it is the easiest to perform, can be completed in the minimum of time, and has the advantage of draining the gall-bladder and of preventing fresh infection of the intestine. The thesis contains the histories of sixteen cases in children aged from 5 to 13 years.

Therapeutics

417 Insulin in Malnutrition

R. D METZ (*Journ. Amer. Med. Assoc.*, May 2nd, 1931, p 1456) has found insulin an effective remedy in malnutrition. An increase in weight is noted after its use in the asthenic, under-nourished, and visceroptotic patient with an apparently intact carbohydrate metabolism; such patients benefited subjectively, and retained their added weight after the insulin had been stopped. Its general effects are obvious in an increase in the subcutaneous tissue, and a healthier appearance of the skin. The nervous system becomes more stable, and the mentality and outlook upon life brighter; there is a gain in strength also. The improved mentality is shown by an increase in ambition and determination, giving a markedly increased interest in life. With the patient in hospital on the usual general diet three doses of 10 units each are given before each meal on the first day, increasing by five units daily up to 20 and 30 units. For ambulatory patients the dosage is smaller, starting with 5 units twice a day, and rising to 20 units three times daily. Any occurrence of hypoglycaemic symptoms is controlled by the ingestion of sugar. The gain in weight resulting from the treatment ceases when the weight has reached the normal for the patient. The author records five illustrative cases.

418 Oxygen Administration in Cardiac Failure

Adequate transportation of oxygen from the lungs to the tissues is maintained by the normal heart, but in cardiac disease there is impairment of this function; the significance of this type of anoxaemia in cardiac failure is not clearly understood. A. L. BARACH and D. W. RICHARDS (*Arch. Int. Med.*, August, 1931, p. 325) review the literature relating to the production of symptoms of cardiac failure by deficiency of oxygen in the blood, and to the effects of oxygen administration in cardiac insufficiency. The difficulty in this treatment has been to keep patients continuously in atmospheres of high oxygen content for considerable periods. The present authors claim to have overcome this by using the Barach oxygen chamber. They record the results obtained in eight patients suffering from various forms of circulatory failure, with cyanosis, who were treated in a chamber containing 45 per cent. of oxygen for three to sixty days. Five patients who had congestive cardiac failure with arterial anoxaemia were benefited by an atmosphere containing a high degree of oxygen. Striking objective changes were: increased arterial oxygen saturation, with decrease of the cyanosis; diminished pulmonary ventilation; and rise in the carbon dioxide levels. Subjectively, there was relief from the dyspnoea and orthopnoea. Three patients experienced marked diuresis and disappearance of oedema while breathing a high concentration of oxygen. The oedema returned when the percentage of oxygen was lowered, and again disappeared when the oxygen was increased, as long as cardiac insufficiency was present.

419 Vaccine Treatment of Chronic Erysipelas

A. M. MEMMESHEIMER (*Münch. med. Woch.*, August 21st, 1931, p. 1438), during the last five years, out of twenty-two cases of erysipelas has observed sixteen in which the disease assumed a chronic recurrent character, the cutaneous symptoms being the most prominent. The condition was therefore frequently mistaken for other skin diseases. The great majority of these cases (12) occurred between the third and sixth decades, and mainly in women (13 cases). In such cases treatment by intravenous injections of a mixed vaccine composed of at least twenty different strains of pathogenic streptococci had a remarkably good effect. The doses consisted of 0.2, 0.3, 0.4, 0.5, and 0.6 c.cm. given every other day. In cases where the reaction was severe intramuscular injections were substituted, the initial dose being 0.5 c.cm., which was subsequently increased to 0.75, 1, 1.25, 1.5, and 2 c.cm.

420 Fumigation in Superficial Fungus Infections

S. AYRES, N. P. ANDERSON, and E. M. YOUNGBLOOD (*Arch. Dermatol. and Syphilol.*, August, 1931, p. 283), though claiming no originality for the idea of fumigation, suggest that insufficient attention has been given to fumigation as an essential measure to prevent the spread of superficial fungus infections—for example, those acquired by walking barefoot on infected floors of such places as gymnasia, swimming pools, athletic and country clubs. In America, it is stated, the habit of walking barefoot has so increased in recent years that epidermophytosis, or ringworm of the foot, has become epidemic. The local condition is best treated by an ointment containing 2 grams of salicylic acid, 4 grams of benzoic acid, and 30 grams of benzoinated lard, but experience has proved that it is useless to cure the local condition unless patients sterilize their shoes and stockings, bathmats, and the floors of bedrooms and bathrooms. The spores of such a fungus as epidermophyton may remain viable

on the ground for a year or more, but fumigation with a formaldehyde candle is a simple and effective method of sterilizing all the materials with which the infection has come into contact. A simple experiment to prove the susceptibility of the more common types of pathogenic fungi to the fumes of formaldehyde was made, infective material from active lesions, as well as from old cultures, being exposed for four hours to the fumes of a formaldehyde candle in a closed room. Fresh tubes of Sabouraud's medium which had been inoculated with the fumigated material remained sterile indefinitely, while the control tubes produced good growths in three or four days. Periodic fumigation of gymnasium floors and shower rooms is advised, in order to prevent epidemics of ringworm.

Ophthalmology

421 Early Treatment of Squint

E. K. HALLOCK (*New York State Journ. of Med.*, June 15th, 1931, p. 745) emphasizes the importance of early treatment in strabismus. The normal condition of muscle balance is present when, with the gaze fixed on a distant point, the eye is in focus, with the ciliary muscle at rest; the axes of the eyes are parallel; with the gaze fixed on nearer objects, the amount of accommodation required is proportioned to the distance between the object and the eye; and the amount of convergence is just sufficient to direct each eye to the object looked at. Binocular fixation is developed in early life, by a method of "trial and error"; if refractive errors are present in one or both eyes, it is impossible for both eyes to fix an object, and for that object to be clearly seen. The tendency is therefore for the better eye to fix the object, and for the worse to be allowed to deviate. Since the vision of the deviating eye is now a hindrance, the brain begins to disregard its image, and eventually a condition of disuse amblyopia results. Refraction, under atropine, should be undertaken at an early age, and glasses be prescribed. There will still be a tendency not to use the subnormal eye, and the sight of the good eye should therefore be obscured by special glasses for a definite period each day; atropine drops should also be inserted into the better eye once or twice a week, in order to compel the use of the inferior eye. An operation may be undertaken later for cosmetic reasons, but only after the essential cause has been dealt with. The condition in alternating strabismus is different; glasses alone will not suffice. In consequence of the alternate use the vision is often equal in the two eyes, and an operation is indicated earlier. In non-accommodative strabismus the deviation is the result, and not the cause, of the poor vision. Macular haemorrhages at birth may have made the vision so poor that there is no impulse to binocular fusion, and the eye is allowed to deviate. There may even be aversion to fusion, due supposedly to congenital absence of a fusion centre. In such cases glasses will do no good; an operation may have cosmetic advantages, without improving the vision.

422 Epidemiology of Trachoma

A. J. MACCALLAN (*Brit. Journ. of Ophthalmol.*, July, 1931, p. 369) gives an accepted classification of the four stages of trachoma which is of the greatest use clinically and statistically. A specific organism, though long sought, has not yet been conclusively demonstrated. The geographical distribution of the disease is divided into sections according to the prevalence, Egypt, the Levant, Morocco, Algeria, Tunisia, Palestine, Arabia, Persia, and Iraq heading the list. No race is exempt; the infectivity is dependent upon the source of the contagion, and is increased by superadded conjunctivitis with profuse discharge. Children are more susceptible than adults, and in them the disease is more dangerous. Dissemination by flies is not improbable, but the usual route taken by the infection is digital, by towels, handkerchiefs, and bed-clothing. A minimal dose of virus may produce a severe form of trachoma. Health, altitude, and humidity have no influence upon the incidence, and the temperature of the locality is only concerned in so far as in hotter weather flies and ophthalmia are more prevalent. Trachoma is more common under bad social conditions; the sexes are equally affected, and trauma is not a factor in its occurrence. The prophylaxis is fully discussed under the headings personal, familial, scholastic, military, national, and international.

423 The Post-cycloplegic Test

H. BEARD (*Arch. of Ophthalmol.*, June, 1931, p. 943) states that the post-cycloplegic test should definitely be a supplement to refraction when atropine or homatropine has been employed. The "full correction" with cycloplegia should be determined. In hypermetropia and high astigmatism this "full correction" will probably have to be reduced when ciliary tone returns. The static and dynamic corrections are now known, and the problem is what adjustment should be made for the return of ciliary tone. The following questions must be considered: [illegible] are present? Do any glasses already [illegible] the symptoms, and to what extent? Is the unaided distance vision adequate? Would glasses which "blur" at 20 feet be compatible with the patient's occupation? Where a sufficiently full correction to relieve asthenopia cannot be tolerated for constant wear, a second weaker pair may be ordered for distance. Generally there should be no alteration of the cylinder found in the static test. In myopia the ciliary tonus is rarely prominent and the correction should be full.

Obstetrics and Gynaecology

424 Bouilly's Operation for Prolapse

C. LENORMANT and P. DREYFUS (*Gynécol. et Obstét.*, July, 1931, p. 1) regard Bouilly's operation as the most suitable radical treatment of moderate and severe degrees of prolapse in young women. It consists in (1) a wide anterior colpectomy; (2) amputation of the cervix; and (3) posterior colpo-perineorrhaphy. The amputation of the cervix, besides curing hypertrophy or cervical metritis (one or other of which was present in fifty-seven of the writer's seventy-three cases), determines an involution of the corpus uteri, and leads to cicatricial fixation of the remnant of the cervix. For cases of prolapse without much descent of the uterus, and with a healthy cervix, colpo-perineorrhaphy is preferable, with ligamentopexy for retroversion; in the massive prolapses of old women, vaginal hysterectomy should be combined with a plastic operation. In the first stage of the Bouilly operation the present authors have never wounded the bladder; they admit, however, that in the second stage haemostasis of the cervico-vaginal arteries may cause considerable difficulty, and the pouch of Douglas is sometimes opened. Secondary haemorrhage occurred in six of the seventy-three cases, proving fatal in two; the total mortality was three.

425 Heart Disease and Pregnancy

C. YOUNG (*Canadian Med. Assoc. Journ.*, August, 1931, p. 154) briefly discusses functional cardiac disease in pregnant women, and divides organic disease of the heart into two groups—namely (1) rheumatic valvular disease, and (2) gross heart disease. The first group includes cases without cardiac enlargement or signs of heart failure; the condition is usually mitral stenosis and regurgitation, or aortic regurgitation, or combinations of both. The author quotes two series of cases of mitral stenosis, totalling 110, with no deaths; only two patients developed signs of heart failure during pregnancy. Aortic regurgitation is a little more serious. A series of 25 cases is recorded, with 3 deaths, 6 heart failures during pregnancy, and 3 seriously damaged hearts after labour. Young

recalls that Mackenzie used to advise that such cases should be allowed to proceed to term if there were a good response to effort, no Carrigan pulse, and no cardiac enlargement. The second group comprises such cases as valvular disease with definite gross cardiac enlargement, myocardial degenerations, congestive failure, and auricular fibrillation. In mitral stenosis with cardiac enlargement, but good response to effort and no history of previous failure, the author considers that the pregnancy might be allowed to proceed to term, but in all other cases in this group he recommends therapeutic abortion as the safest procedure if the patients are seen before the fourth month. The best method is probably the insertion of a tent or gauze packing in the cervix, and sometimes curetting next day, under morphine and scopolamine with light ether anaesthesia. After the fourth month, on account of the greater risk of haemorrhage and of incomplete emptying of the uterus, delay is advocated. The cardiac reserve should be built up by rest in bed. It is extremely dangerous to induce labour during heart failure, and especially so in the later months. At Queen Charlotte's Hospital, Caesarean section at the twenty-fourth week is advocated. The author prefers the induction of labour medically or by other means at the thirty-sixth week, with ether in the second stage, and the patient digitalized. The patient should be kept in bed for at least a month after labour. The infant mortality is high in these cases. The author concludes by observing that it is astonishing how many women with apparently severely diseased hearts come through repeated pregnancies with remarkably little additional damage.

426 Operative Treatment of Ovarian Tumours

V. B. GREEN-ARMYTAGE (*Journ. Obstet. and Gynaecol. of the British Empire*, Spring Number, 1931, p. 111) reports his experience during ten years in treating ovarian tumours in Calcutta. He remarks that it is still a common error in India to consider such tumours as being of little importance and malignancy, with the result that they are allowed to persist until they reach an enormous size. He concludes that the date of operation should not be hurried, but the patient should be kept in bed until the heart and kidneys are functioning normally. These patients are frequently constipated and infested with worms, and therefore santonin and gentle purgation should be the routine procedure on admission. With a view to inhibiting operative shock and strengthening the cardiac muscle, the author prescribes honey and a liberal diet. A cachectic condition is frequently present, which renders it difficult to gauge the vital resistance of the patient. Before the operation is begun, and from the first moment of the anaesthesia, intravenous injections are given of a 20 per cent. glucose solution at the rate of 1 drachm per minute. Gentle compression of the abdomen is made during the operation by a long roller towel, which is placed round the patient's waist immediately below the costal margin. This maintains the abdominal pressure, and obviates the filling up of the splanchnic vessels, consequent upon removal of the tumour. The author strongly commends this procedure, which also prevents any sudden movement of the heart downwards as the result of release of tension upon the diaphragm. In the case of very large tumours the pressure on the diaphragm may be so great as to cause cyanosis; in these circumstances open ether and oxygen are administered with the patient in a slightly prone position. Excellent results have also attended the employment of avertin anaesthesia.

427 Pregnancy Diagnosis Tests

L. BROUHA and H. HINGLAIS (*Gynécol. et Obstét.*, July, 1931, p. 43) discuss the technique of the Brouha-Hinglais-Simonnet test for the diagnosis of pregnancy, described first in 1928. Into infantile male mice, aged about four weeks, is injected subcutaneously the urine of a pregnant woman, and at the eighth to tenth day the animals are killed; if the pregnancy reaction is positive, the vesiculae seminales show a large increase in size and weight. In 401 tests of pregnancy one error only was made; a positive reaction has been obtained so early as the fifth or eighth day after a missed menstrual period. Death of the injected animal from toxicity of the urine is less common than in the females used in the Aschheim-Zondek test. An experienced observer can give a report on the urine as early as the sixth day. It is essential that the male mice should be chosen by age, and not by weight. The reaction becomes negative 4 to 8 days after parturition; in cases of intrauterine death of the foetus the reaction becomes negative when the placenta perishes, and not when the foetus dies. In ectopic gestation a positive reaction lasts as long as chorionic activity persists. In certain cases of hydatidiform mole the urine gives a reaction which is much more intense than in ordinary pregnancy.

428 While working on the Aschheim-Zondek reaction, and employing rats instead of mice, DHARMENDRA (*Indian Journ. Med. Research*, July, 1931, p. 239) noted the effects of injections of pregnancy urine on male rats. It was found that in immature animals the testicles hypertrophy and descend into the scrotum, and that the seminal vesicles, prostate, Cowper's glands, and penis hypertrophy. In older animals with descended testicles, the hypertrophy of these structures is marked; the effects on adult rats are, however, variable. In view of these findings a modification of the test, using male rats, is suggested, descent of the testicles in the injected animals being the sign of a positive reaction. This obviates killing the animals, and the necessity of obtaining animals of definitely known age.

429 Syphilitic Disease of the Corpus Uteri

P. CAFFIER (*Zentralbl. f. Gynäk.*, June 27th, 1931, p. 2018) alludes to the difficulties of distinguishing between syphilitic and tuberculous disease of the corpus uteri, and believes that the first of these conditions is sometimes diagnosed on insufficient evidence. He records a case in which he believes the differential diagnosis to be uncertain, syphilis being the more probable. In the myomatous uterus of an apparently healthy unmarried woman, aged 39, there was found a generalized interstitial infiltration, with round and epithelioid cells, together with numerous giant cells; caseation was absent. Doubt was cast on the histological diagnosis of tuberculosis by the absence of clinical or radiological signs of thoracic tubercle; on the other hand, the Wassermann reaction was positive, and there was enlargement of the liver and spleen.

430 Influenza and the Puerperium

H. THERICEL (*Thèse de Paris*, 1931, No. 484), who records sixty-two cases in patients aged from 17 to 45, states that in a high percentage of cases, which it is difficult to determine statistically, influenza has an injurious effect upon the female genital organs, causing disturbance of menstruation in the form of menorrhagia, metrorrhagia, or amenorrhoea. It may not only set up acute inflammation of the uterus and adnexa, but also activate chronic processes, especially malignant tumours. It appears to have a predilection for pregnant women, in whom it is liable to cause abortion in the early stage and premature labour later, except in the mildest attacks. Although the age of the mother and the number of previous pregnancies do not appear to have any effect, the stage of pregnancy is important, since the nearer pregnancy is to term, the more serious the disease is likely to be. Influenza does not have a bad effect upon delivery, which takes place with unusual rapidity. On the other hand, labour has a disastrous effect upon the disease, frequently giving rise to a rapidly fatal pneumonia. The effect on the children of the mothers attack is very bad, some perishing *in utero*, or during or immediately after delivery, while many of those who survive have a subnormal weight. The diagnosis between influenza and puerperal fever is very difficult, but the pulse rate is of considerable value, since it remains slow in influenza and becomes rapid in puerperal fever (Wallich's sign). The induction of abortion and Caesarean section are contraindicated.

Pathology

431 The Use of Gelatin for Liver-function Tests

R. Mancke (*Münch. med. Woch.*, August 21st, 1931, p. 1430) has devised a liver function test depending on the efficiency of the protein-metabolizing functions of the liver. Alterations in the de-aminizing powers of the liver affect the amounts of amino-acids excreted in the urine. Since the pure amino-acids are too expensive for routine clinical use, Mancke administers a flavoured solution of 50 grams of gelatin which contains 25 per cent. of the amino-acid glycocoll. The amount of urine excreted every four hours afterwards is measured, and the amount of amino-nitrogen is estimated in each specimen by Folin's method. Normally the maximum excretion occurs during the first four hours, and the amount rapidly diminishes in subsequent specimens. In simple jaundice the amount of amino-nitrogen excreted during the first four hours is much increased, and may be as much as four times the normal. In another group of cases of abnormal liver function examined (mainly cases of cirrhosis) the excretion was delayed, and larger amounts appeared in the second and third four-hourly specimens than in normal subjects; the total was, however, not increased.

432 Vaginal Secretion in Early Pregnancy

Hartman found that in pregnant apes, at the time when the first menstrual period after conception was to be expected, red cells appeared in the vaginal secretion. Red cells have also been demonstrated in the vaginal secretion of pregnant rats. Kulitzy (*Zentralbl. f. Gynäk.*, August 8th, 1931, p. 2430) has made a series of investigations on women in order to see if this can be used as a test in the early diagnosis of pregnancy. In 72 per cent. of pregnant, and 16 per cent. of normal non-pregnant women during the intermenstrual period, red cells were microscopically demonstrable in the vaginal secretion. The author therefore concludes that the test is only of service in suggesting the possibility of pregnancy or confirming other indications. The possible origin of the red cells in the vaginal secretion is discussed.

433 Restoration of the Circulation in Replanted Limbs

Referring to the experiments of Halstead and other workers on the replantation of severed limbs, and on the vascular sequels of ligaturing procedures, F. L. Reichert (*Bull. Johns Hopkins Hosp.*, August, 1931, p. 86) reports experimental studies which throw light on the inter-dependence of the vascular systems (arterial, venous, and lymphatic) in maintaining an adequate circulatory balance, and on the comparative value of ligaturing the artery and vein, either simultaneously or tying the veins later. After replantation, arterial regeneration was demonstrated on the second and third days, venous restoration on the fourth and fifth, and lymphatic re-appearance as early as the fourth day after the operation. Gangrene does not develop if the main vein is tied five or more days after replantation, whereas the artery alone cannot be safely occluded until the fourteenth day. The time interval for a safe arterial ligaturing can be diminished to seven days, when the artery and vein are simultaneously tied. Experience with war wounds has definitely indicated that in arterial ligaturing the incidence of gangrene may be diminished by the occlusion, at the same time, of the accompanying vein. The lymphatic system also was proved to be an important factor in maintaining an adequate afferent circulation.

434 Calcium and Phosphorus Metabolism in Nephritis

F. J. Ford (*Arch. Dis. in Child.*, August, 1931, p. 209) has investigated by "balance studies" the metabolism of calcium and phosphorus in renal disease, with special reference to their utilization, absorption, and excretion in nephritis. He finds that the urinary excretion of both is diminished, that of calcium more markedly. The amounts of the two elements thus excreted bear no relationship to their respective retentions in the body, nor to the volume of the urine passed, but the faecal output of both is increased in nephritis. The rise in the phosphorus excretion by the bowel is greater than that in the case of calcium, the normal CaO to P_2O_5 ratio being reduced almost to unity. The process of restoration of the normal route of excretion is extremely slow, and is delayed for some time after the onset of convalescence. The retention of calcium and phosphorus in nephritis, he adds, does not appear to be unusually high, and their absorption is adequate, though it varies more widely than in healthy persons.

435 Preservation of Blood-grouping Serums

L. Rosenthal (*Journ. Lab. and Clin. Med.*, August, 1931, p. 1123) points out that the contamination of haem-agglutinating serums by bacteria may be a source of error in blood-grouping tests, and that, where these tests are performed frequently, the maintenance of sterility in the serums is difficult. The addition of various disinfectants such as chloroform, phenol, and glycerin has proved unsatisfactory, owing to the formation of precipitates. Dyes, such as brilliant green and gentian-violet, protect the serums from bacterial contamination, and, moreover, by selecting dyes of different colours, mistakes due to erroneous labelling may be avoided. Rosenthal adds to each cubic centimetre of Group II serum 0.01 c.cm. of a 1 per cent. aqueous solution of neutral acriflavine, and 0.01 c.cm. of a 0.5 per cent. aqueous solution of basic fuchsine; to each cubic centimetre of Group III serum 0.02 c.cm. of a 1 per cent. aqueous solution of brilliant green. Thus the Group II serums are coloured red and the Group III green.

436 The Aschheim-Zondek Test

M. Watrin and H. Brabant (*C. R. Soc. de Biologie*, August 5th, 1931, p. 1418) claim to have been the first to doubt the hypophyseal origin of the substance causing the characteristic ovarian changes in the Aschheim-Zondek reaction. These doubts are based on both teleological and biological grounds, which are described in their present report. From an experimental study these investigators conclude that the substance present in the urine of pregnant females is of placental origin, and has an elective, necrotic action on the ovule and the granular layer of the ovarian follicles. This necrosis is either accompanied by intrafollicular and medullary haemorrhages, or determines a massive atresia of the follicles with hyperplasia of their internal thecae. Other substances (the urine of cancerous men, epiphyseal extract, emulsion of spermatozoids) and thyroid implants can also give rise to the Aschheim-Zondek reaction. Nevertheless, it is not improbable that the placental substance has a biological function to play, apart from arrest of follicular maturation during the last months of pregnancy, when the corpus luteum atrophies. Though this is only a hypothesis, the authors believe that it explains why only the urines of those mammals, as man and the primates, in which gestation is long, contain this substance, atresic for the ovarian follicles.

437 Cod-liver Oil in Powder Form

G. Mansfeld and Z. Horn (*Deut. med. Woch.*, August 21st, 1931, p. 1452) have tested a powdered form of cod-liver oil (jemalt) for both its growth-promoting and anti-rachitic effects. The powder contains 30 per cent. of dried cod-liver oil, and is said to have a pleasant taste. The growth experiments were carried out on young white rats kept in the dark on a rachitogenic diet. The rickets experiments were designed to test the therapeutic and prophylactic effects of the preparation, and were controlled chemically, radiologically, and histologically. The authors conclude that this powdered preparation of cod-liver oil retains its activity as far as vitamins A and D are concerned.

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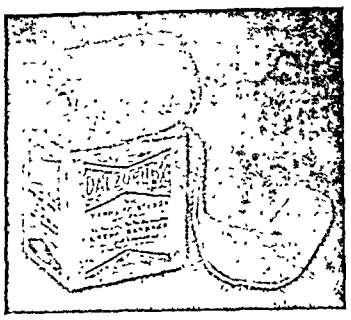
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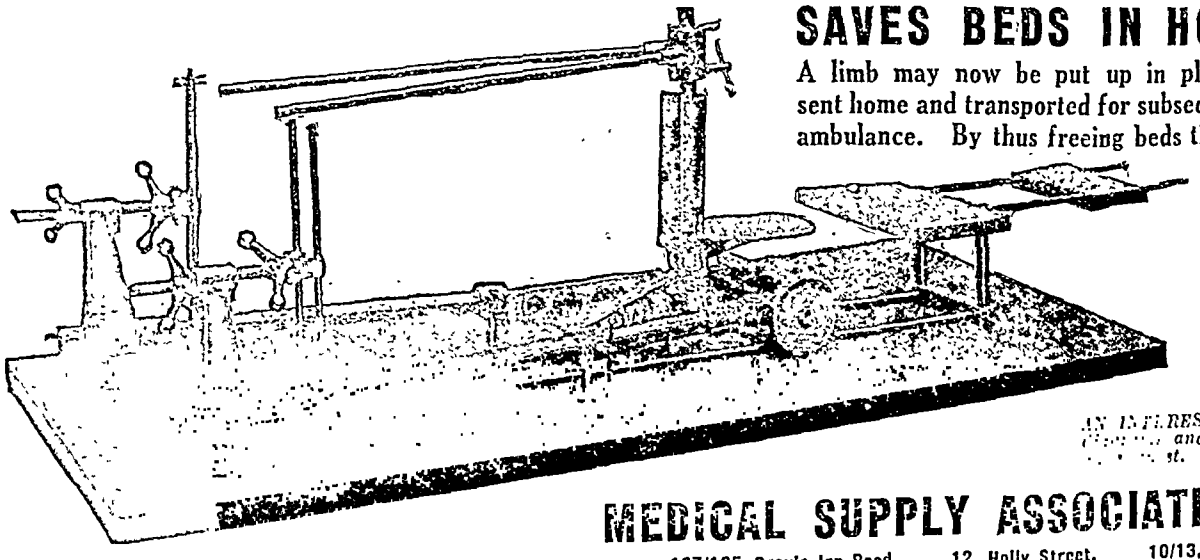
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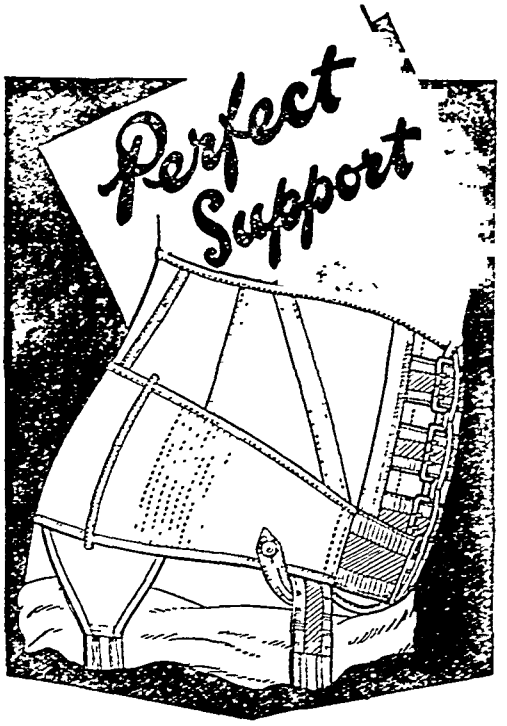
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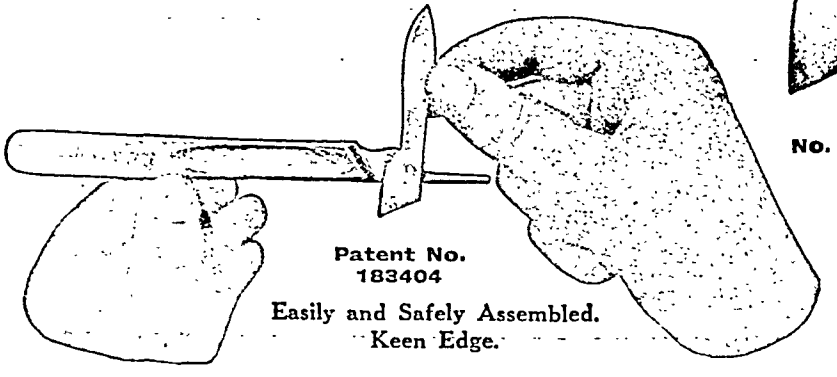
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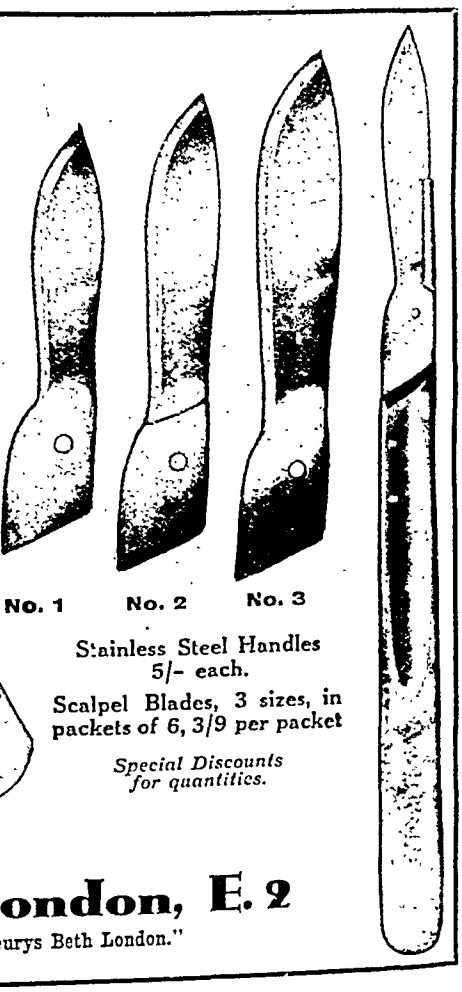
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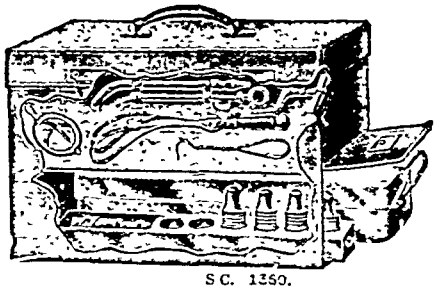
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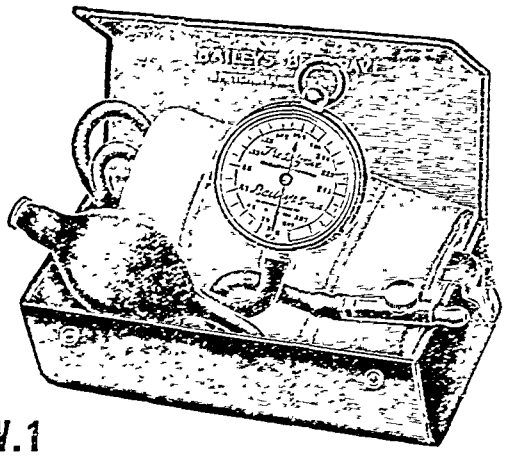
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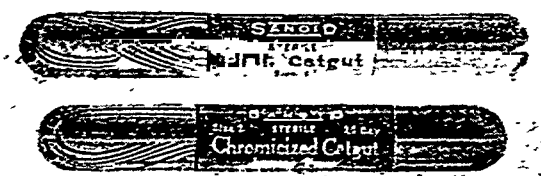
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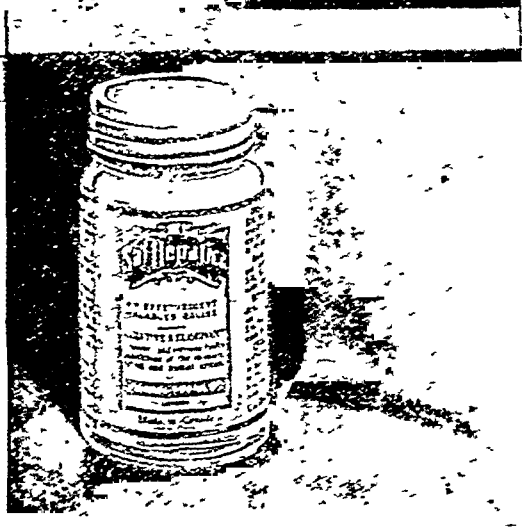
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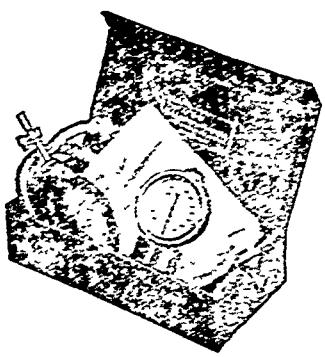
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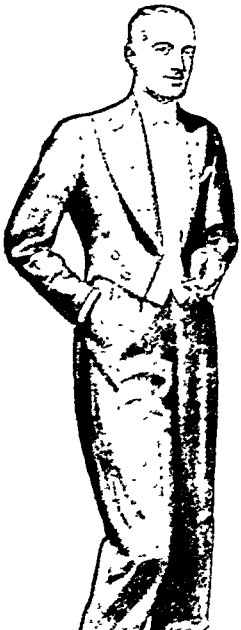
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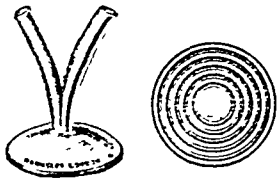
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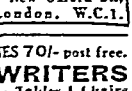
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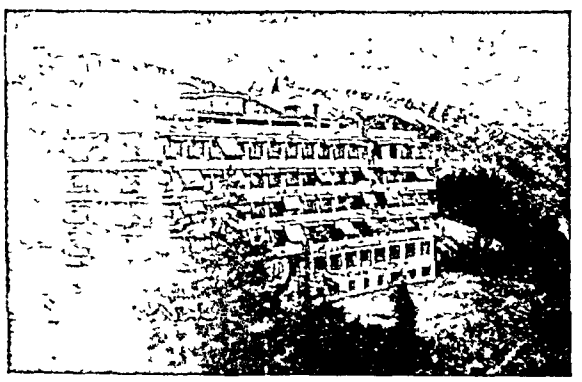
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Highly qualified Tutors with accurate knowledge of the special features of these examinations.

Write at once for booklet, "How to Pass the Conjoint Board Examinations." Sent free on application.

Address: The Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, London, W.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

Manchester Medical School

ANNUAL DINNER

Past and Present Students

Wednesday, Nov 18th 7.30 p.m.

Grand Hotel President Dr D Dougal

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.

A SERIES OF WEEKLY DEMONSTRATIONS for medical practitioners has been arranged in the various hospitals of Glasgow from November till May A COURSE OF LECTURES will also be given in the Faculty Hall weekly from November till February In addition some SPECIAL COURSES are offered and CLINICAL ASSISTANTSHIPS are available in several of the hospitals The syllabus may be had on application to the Secretary Post Graduate Medical Association The University Glasgow

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD Estab 1882 Cases not resident treated at 39 Earl's Court Square, S W 5 and in residence in the Summer holidays at Miss BEHNKE'S house on the Chilterns

"Pre-eminent success in the education and treatment of stammering and other speech defects."—Times
"Thoroughly physiological principles"—Lancet"
"This method is scientifically sound and perfectly effective"—Guy's Hospital Gazette"

STAMMERING CLEFT PALATE SPEECH, LISPING, 3/9 of Miss BEHNKE 39 Earl's Court Sq S W.5

UNIVERSITY OF OXFORD.

DIPLOMA IN OPHTHALMOLOGY.

The next Examination begins on June 20th 1932 The two months' Course of Instruction starts on April 25th 1932

For further information apply to—
P H ADAMS
6 Holywell, Margaret Ogilvie Reader
Oxford In Ophthalmology

F.R.C.S.(Edin.).

Full PREP COURSE with Anatomical (Cadaver and Living Model) and Surg Path Demonstrations for next Exam, will commence shortly POSTAL TUITION at any time—H C ORAM, F R C S Surgeons Hall Edinburgh

Medical and Dental Students.

Special Classes for Pre Medical and Dental Exams Matric, and Prelim
Chemistry Physics and Biology Labs
MANCHESTER TUTORIAL COLLEGE,
32", Oxford Road Manchester

F.R.C.S.(Edin.).

CLASSES with Museum and Anatomical Demonstrations for next Exam, will commence shortly Correspondence work at any time Particulars from CHAS WHITTAKER, F R C S, Surgeons Hall Edinburgh

University of London.

A Course of Four Lectures on *Protein Metabolism* will be given by Dr W PORSON D Sc Ph D at KING'S COLLEGE (Strand, W C 2) on THURSDAYS NOVEMBER 12th 19th 26th and DECEMBER 3rd at 5 p m
Admission free without ticket
S J WORSLEY
Academic Registrar

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF MEDICINE tenable at St Thomas's Hospital Medical School The Professor will be Director of the Medical Unit at the Hospital Salary £2 000 a year
Applications (12 copies) must be received not later than first post on November 26th by the Academic Registrar University of London S W 7 from whom further particulars may be obtained

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London £8 8s for 10 Lessons—Address No 123 B M A House, Tavistock Square, W C 1

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES KHARTOUM

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay £P 660 or £P 720 per annum (according to age and qualifications) with five or six biennial increases to £L1 080 and thereafter three years to £L1 200 These rates of pay as well as the conditions of service are subject to Government rules and regulations from time to time in force (£L1 = £1 0s 6d)

Applicants must be unmarried and will be expected to take up their duties immediately

Applications stating age degrees experience (with special reference to Pathology) and copies of testimonials should be sent to the Director Wellcome Tropical Research Laboratories Khartoum Sudan

Further particulars regarding the post may be obtained on application to the Controller, Sudan Government London Office Wellington House Buckingham Gate London S W 1

University of Lucknow.

Applications are invited for the post of PROFESSOR OF ANATOMY on a salary of Rs 1 450 per mensem with effect from January 2nd 1932 Period of probation one year On confirmation, the selected candidate may be placed on a grade of Rs 1 450—50—1 600 (subject to any reduction of salary due to general retrenchment), and will be entitled to the benefits of the University Provident Fund (to which he will be required to subscribe 8 per cent of his salary, the University contributing 8 per cent) Private practice not allowed Applications stating age, special qualifications, teaching experience research work published and copies of the testimonials should reach the Registrar Lucknow University, Lucknow (India) on or before December 7th
P P KHANNA
October 12th, 1931 Registrar
G L

The Otago Hospital Board

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL NEW ZEALAND

Applications are invited for the following vacant positions viz
RESIDENT SURGICAL OFFICER (Senior).
RESIDENT MEDICAL OFFICER (Senior)

Candidates must hold a degree in Medicine of a British University must have been qualified for three years and have had two years Hospital appointments of at least one year

The duties of the Resident Surgical Officer will be those of superintending House Surgeons with in addition certain tutorial work under the direction of the Professor of Surgery

The Resident Medical Officer will be required to act as medical tutor under the direction of the Professors of Medicine and as superintending House Physician and Medical Registrar

Salary for each position to be at the rate of £500 per annum with board and residence less 10 per cent reduction

Full details may be obtained on application to the High Commissioner for New Zealand Strand W C 2

Applications to be received by the undersigned not later than January 1932
JOHN JACOBS,
Secretary, Otago Hospital Board
Dunedin, New Zealand
September 26th 1931

Argyll County Council.

MEDICAL OFFICER wanted for the Medical Service area of Strachur and Stralachlan The salary includes a payment of £124 from the County Council A grant from the Highlands and Islands (Medical Service) Fund is made by the Department of Health and considerable private practice may be expected

For further particulars reference may be made to the County Medical Officer Oban, Argyll, with whom applications with one copy of three recent testimonials are to be lodged on or before November 14th

Hôpital Français,
172, Shaftesbury Avenue, W C 2

JUNIOR RESIDENT MEDICAL OFFICER (male) required Registered unmarried *speaking French preferable* Salary £160 per annum with full board and laundry

Candidates should send in their applications with three copies of recent testimonials on or before November 30th to—
J KNECHT Secretary

Leeds Jewish Herzl Moser HOSPITAL Required immediately RESIDENT MEDICAL OFFICER Salary £200 per annum Ample time for Post-Graduate

ROYAL NAVAL MEDICAL SERVICE.

VACANCIES EXIST FOR MEDICAL OFFICERS IN THE ROYAL NAVY

Candidates will be entered as Short Service Medical Officers and will be considered for transfer to the Permanent Service after six months service They must be registered under the Medical Acts and have passed the examination for entry

Medical Officers are liable to serve in Naval Hospitals or Ships in any part of the world

Excellent opportunities exist for Clinical professional work both Medical and Surgical as well as for special study in Diseases of the Eye, Pathology, Oto-laryngology and other specialties

Victualling pay on a graded scale for Post-Graduate study

Outfit Allowance £50 on joining

Initial rate of pay on appointment £400 to £2 070 a year according to length of service

Allowances Messing allowance of Hospital rate and Servants' allowance of £5 and £7 10s Specialists' Allowances of £5 and £10 10s Marriage allowance £5 and £26 a day Professional Allowance, Lodging Allowance etc

Promotion—To Surgeon Lieutenant-Commander after 6 years service to Surgeon Commander after a total of 12 years service, Inspector of Hospitals and Surgeons Rear-Admiral and Surgeon Vice-Admiral by selection

Antedate of seniority on account of previous Hospital appointments and accelerated promotion can be granted

Retirement—Pensions are paid as follows
Short Service Officers after 5 years service, £350
Permanent Officers after 4 years service, £400
Permanent Officers after 8 years service, £1 000
Permanent Officers after 12 years service, £1 500
Permanent Officers after 16 years service, £2 250

Rates of Pay range from age of 25 at £530 a year to a maximum of £1 065 a year at the maximum earned by a Surgeon Vice-Admiral

Copies of the Regulations and full particulars as to Commissions and Examinations may be obtained on application in person or by letter to the Medical Director-General of the Navy, Queen Anne's Chambers Tothill Street London, S W 1

Royal Berkshire Hospital, READING

RESIDENT MEDICAL OFFICER (Senior) required immediately for BLAGRAVE BRANCH HOSPITAL (60 beds) for six months Candidates must be fully qualified and registered Remuneration at the rate of £200 per annum, with board residence and laundry Suitable post for applicant working for examination

Applications, with copies of testimonials, should be sent to the undersigned
F A LYON Secretary

Burslem Haywood and Tunstall WAR MEMORIAL HOSPITAL

Wanted SECOND RESIDENT MEDICAL OFFICER (male) Salary £150 with board and residence Must be fully qualified Experience in Ear, Nose Throat and Eye work desired Applications, stating age and experience to be sent with copies of three recent testimonials, to be sent to the
J C POWELL F C I S Secretary
Public Offices, Price Street Burslem

Margate and District General HOSPITAL (60 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) Salary £150 per annum with board and laundry

Applications and names of two referees should be addressed to the Secretary at the Hospital not later than

Royal Isle of Wight County HOSPITAL RYDE.

RESIDENT HOUSE SURGEON wanted for November 28th for two years unmarried Single bedroom Doubly qualified and registered State age and salary Salary at the rate of £ 80 per annum with board residence and laundry Apply enclosing copies of testimonials to Secretary before Tuesday, November 17th Return railway fare for selected candidate

Cornwall Mental Hospital,
BODMIN.

Applications are invited for the post of SECOND ASSISTANT MEDICAL OFFICER Candidates must be duly registered, and previous Mental Hospital experience is an advantage. Salary £350 per annum, rising by annual increments of £25 to £450, with board, lodging, and laundry, valued at £80.

The appointment will be subject to the Asylums Officers Superannuation Act, 1909.

A furnished married quarters, comprising a partly furnished house, with garden, will shortly be available, plus coal, light, laundry, and garden produce, with £100 in lieu of board and attendance.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded to the Medical Superintendent.

Kent County Ophthalmic and
AURAL HOSPITAL, MAIDSTONE.
(110 Beds)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON (male), which will be vacant on December 1st next. Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality, and should have had experience of Ophthalmology. The Hospital is recognised by the Examining Board for the Diploma. The appointment will be for six months, but may be renewed for a second six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned

JOHN W. STRICKLAND, Secretary.

The Willesden General Hospital
(Incorporated), N.W.10.
(106 Beds)

Applications are invited for (a) CASUALTY OFFICER; (b) HOUSE PHYSICIAN.

Applications are invited from fully qualified medical graduates for each of the above appointments. Candidates must be unmarried.

The appointments are for a period of four months from December 1st.

Salary (a) as Casualty Officer at the rate of £120 per annum; (b) as House Physician at the rate of £80 per annum.

Duly signed applications with copies of testimonials should be addressed to the Secretary, The Willesden General Hospital, N.W.10, not later than Monday, November 16th.

Canvassing will disqualify.

1931

Woking and District Victoria
HOSPITAL
(General Hospital—50 Beds)

A RESIDENT MEDICAL OFFICER (unmarried) is required for early January, 1932. Applicants must be doubly qualified and registered. Salary £200 per annum, with board, residence and laundry.

Appointment for six months, and renewable for further six months.

Applications, stating age, etc., and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained. They must be received before November 14th. Personal canvassing not allowed.

R. MANNING DRIVER, Hon. Sec.

Woking and District Victoria Hospital.

The Queen's Hospital for
CHILDREN,
Hackney Road, London, E.2.

The Committee invite applications for the post of SURGEON for the Ear, Nose and Throat Department, with charge of beds. Applications required on Monday and Thursday mornings. An honorarium to cover travelling expenses will be paid. Candidates must be Fellows, by examination, of the Royal College of Surgeons England.

Applications, with copies of three recent testimonials, which may be printed or typewritten, should be sent on or before November 14th to the undersigned, from whom further particulars may be obtained.

CHARLES H. BESSELL, Secretary.

October 29th, 1931.

Liverpool and District Hospital
FOR DISEASES OF THE HEART.

HOUSE PHYSICIAN (male or female) required for a period of six months from January 1st, 1932. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications must be received later than November 30th to the Secretary, 14, Cook St., Liverpool.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds)

RESIDENT SURGICAL OFFICER (male); HOUSE SURGEON (male)

Salary £150 and £100 per annum respectively, with board, residence, and laundry. Appointments are tenable for six months, and are subject to renewal. Duties to commence November 30th and December 8th respectively. Candidates must be registered under the Medical Acts.

Applicants must state if, in the event of their being unsuccessful in one appointment, they are willing to offer themselves for the other.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by November 18th.

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (female)

Salary £120 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence on December 18th. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by November 18th.

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds)

Applications are invited for the post of RESIDENT ANAESTHETIST and HOUSE SURGEON to the Special Departments (female).

Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence at once. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to be sent to the undersigned

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds)

A RADIUM OFFICER is required for the NATIONAL RADIUM REGIONAL CENTRE at Plymouth (South Devon and East Cornwall Hospital). Candidates, who must be on the Medical Register of the United Kingdom or of the Irish Free State, must hold the qualification of D.M.R.E., and have had special experience of Radium Therapy. Salary commencing at £600 per annum. Applications, with three recent testimonials, should be sent not later than November 28th to the undersigned.

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

Leicestershire and Rutland
MENTAL HOSPITAL, NARBOROUGH, near LEICESTER.

ASSISTANT MEDICAL OFFICER REQUIRED.

Candidates must be registered and not more than 35 years of age, unmarried. Salary £350 per annum, rising £25 per annum to £450. In addition £50 per annum will be given if the candidate holds the Diploma of Psychological Medicine. Apartments, full board, and attendance in addition to the above, valued for Superannuation purposes at £150 per annum. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, with copies of not more than three recent testimonials, to be sent to the Medical Superintendent forthwith.

All Saints' Hospital (for Genito-
URINARY DISEASES).
In patient Dept.: 91, Finchley Road, N.W.8.
Out patient Dept. & Secretary's Office:
49/55, Vauxhall Bridge Road, S.W.1.

Applications are invited for the following post, and candidates are requested to send particulars of their experience, qualifications, and copies of recent testimonials, not later than November 21st:

HONORARY SURGICAL REGISTRAR.

The appointment is tenable for a period of twelve months, with renewal up to a maximum of two years, subject to the discretion of the Board of Management. Applicants should be Fellows of the Royal College of Surgeons, and not be engaged in general practice.

D. H. EADE, Secretary.

Queen's Hospital, Birmingham.

Applications are invited for the following appointments:

1. VISITING ANAESTHETIST. Appointment for one year, with eligibility for re-election. Honorarium 160 guineas per annum.
2. PATHOLOGIST. Appointment for three years, with eligibility for re-election. Honorarium £100 per annum.

Candidates for both offices must be registered Medical Practitioners.

Applications, stating experience, qualifications, and date of birth, together with Diplomas, evidence of registration and copies of recent testimonials, to reach the undersigned (from whom further information is obtainable) by Saturday, November 14th.

Birmingham. G. HURFORD,
Oct. 29th, 1931. House Gov. & Sec.

Cheltenham General and Eye
HOSPITALS.

The Board of Management invite applications for the post of HOUSE SURGEON (male) at the General Hospital, which will be vacant early in December.

Candidates must be unmarried, and have a registered qualification in Medicine and Surgery.

Salary £200 p.a., with board, lodging, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes marked "House Surgeon" to the undersigned not later than the 14th prox.

J. CUMMING SMITH, F.C.I.S.,
The General Hospital, Secretary.
Cheltenham. October 30th, 1931.

The General Hospital,
BIRMINGHAM.

The Board invites applications for the post of RESIDENT SURGICAL OFFICER. Candidates must be Fellows of one of the Royal Colleges of Surgeons and must also possess a medical qualification and be registered. The salary will be £180 per annum (plus certain fees), with board, residence, and laundry.

The appointment will be made in the first instance for one year from December 31st next, and be subject to annual renewal for two subsequent years.

Applications, with certificates of registration and copies of testimonials, should be sent by November 20th to the undersigned, from whom further particulars may be obtained.

A. H. LEANEY,
Nov. 2nd, 1931. House Governor.

The General Hospital,
BIRMINGHAM.

Applications are invited for the following Resident appointments:

RESIDENT ANAESTHETIST, vacant Dec. 1st;
RESIDENT ANAESTHETIST, vacant Dec. 31st,
salary £120 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by November 20th.

A. H. LEANEY,
Nov. 2nd, 1931. House Governor.

Royal Alexandra Hospital for
SICK CHILDREN, BRIGHTON.
(100 Beds)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. No canvassing allowed. To commence duties on December 1st.

Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, on or before Nov. 20th.

October 24th, 1931.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male, qualified). A knowledge of Eye work is desirable. Salary £200, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Birmingham and Midland
HOSPITAL FOR WOMEN.

HOUSE SURGEON (man or woman) wanted for six months from January 1st, 1932. Salary to be at the rate of £75 per annum. Applications, with full particulars and copies of testimonials, to be sent to HUGH C. [illegible], 45 Newhall Street, not later than November 14th.

The County Council of Middlesex.

ASSISTANT MEDICAL OFFICER

The County Council invites applications for the post of Assistant Medical Officer in the Public Health and School Medical Department. Applicants must be duly qualified registered Medical Practitioners, and should have had special experience of practical Midwifery and Ante-Natal work.

The duties of the post are the medical inspection of school children, the supervision of treatment of minor ailments, the carrying out of work under the maternity and child welfare scheme, and such other duties as may be required by the Council. The Officer appointed must devote his whole time to the duties of the post, will act under the supervision and control of the County Medical Officer of Health, and must reside in such district as may be required by the County Council.

Salary at the rate of £600 per annum, rising after two years' service by yearly increments of £30 to £750. Reasonable travelling expenses allowed.

The successful candidate will be required to contribute to the County Council's Superannuation Fund, and to pass such medical examination as the County Council may direct.

The appointment will be during the pleasure of the Council, and subject to one month's notice on either side.

Applications, stating (1) age, (2) qualifications, and (3) previous experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than November 14th. No special application forms are provided. Envelopes must be endorsed "Assistant Medical Officer."

Canvassing, directly or indirectly, will be a disqualification.

ERNEST SWART,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
October 22nd, 1931.

County Borough of Dewsbury.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER

The Dewsbury Corporation invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health for the position of Medical Officer of Health and School Medical Officer at a commencing salary of £900 per annum, subject to a temporary reduction of 7½ per cent. until October 31st, 1932, when the question of the continuation of the reduction will be reviewed.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, to reside in the Borough, and will not be allowed to engage in private practice. All emoluments or fees which may be payable to or received by him must be paid over to the Corporation.

The appointment will be made in accordance with, and subject to the Public Health Officers Act, 1921, and the Sanitary Officers Order, 1926.

Canvassing, either directly or indirectly, is prohibited. Applicants may, if they desire, forward 15 copies of their application and testimonials for the use of the members of the Committee.

Applications, with copies of not more than *three recent testimonials attached to be sent to* me endorsed "Medical Officer of Health," not later than November 12th.

TOM HALL HOLLAND BOOTH,
Town Clerk.
Dewsbury.
November 2nd, 1931.

County Borough of Huddersfield.

ASSISTANT SCHOOL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners for the post of Assistant School Medical Officer.

The successful candidate will be required to devote the whole of his or her time to the duties of the office, and whilst these consist mainly of work in the School Medical Department they may also include work in any section of the Public Health Service. Experience in the diagnosis and treatment of Diseases in Children is essential.

The salary offered is according to scale £500 increasing by £25 per annum to £700, and the commencing salary will be based on the candidate's previous experience in the School Medical Service. It will be subject to a temporary cut which is in operation for one year on the salaries of all the corporation officials. On £500 the cut will amount to £17 10s.

Applications, stating age, and giving full particulars regarding training, qualifications and appointments held since qualification, should be forwarded to the undersigned, along with copies of two recent testimonials, so as to reach him not later than Thursday, Nov. 12th.

JOHN M. GIBSON, B.A., M.D., D.P.H.,
Chief School Medical Officer.

Corporation of Kingston-upon-Hull, and the Hull and Goole Port Sanitary Authority

SENIOR ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Kingston upon Hull and the Hull and Goole Port Sanitary Authority invite applications for the appointment of a male Senior Assistant Medical Officer of Health at a salary of £800 per annum, rising, subject to satisfactory service, by annual increments of £25 to £1,000 per annum.

Applicants must be registered medical practitioners under 40 years of age, and must hold a registered degree or diploma in Public Health or State Medicine.

The person appointed will be responsible to the Medical Officer of Health for the detailed administration of the Port Sanitary Service, Infectious Diseases Department, and to a large extent for the central administration of two Public Assistance Hospitals, and may be called upon to do work in any other departments of the Public Health Service, in accordance with the Corporation's scheme for the interchange of medical staff.

Experience in Port Sanitary Work and Infectious Diseases is essential.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922, and to the successful candidate passing a medical examination by a doctor appointed by the Corporation.

Forms of application and further particulars of the duties and conditions of service can be obtained from the Medical Officer of Health, Guildhall, Hull.

Applications, endorsed "Senior Assistant Medical Officer of Health," together with copies of three recent testimonials, must reach the Medical Officer of Health not later than November 14th.

Guildhall, Hull. J. B. HOWARD ROBERTS,
October, 1931. Town Clerk.

City and County of Kingston-upon-Hull

CITY HOSPITAL, COTTINGHAM

RESIDENT MEDICAL OFFICER

The Corporation invite applications for the appointment of a male (or female) Resident Medical Officer to undertake under the Medical Superintendent the medical work of the Infectious Diseases Hospital. Commencing salary £330 rising subject to satisfactory service, by annual increments of £25 to a maximum of £450 per annum, together with board, laundry, and residence.

Applicants must be not more than 40 years of age and must possess general clinical experience. The possession of experience in a fever Hospital will be regarded as an additional qualification.

The successful candidate will be required to reside at the City Hospital, and to devote the whole of his time to the service of the Corporation. He will be required to pass a medical examination, and to contribute to the Corporation's Superannuation Fund.

Applications, on forms to be obtained from the undersigned, with copies of not more than three recent testimonials, and endorsed "Resident Medical Officer, City Hospital," should be forwarded not later than noon on Saturday, November 14th.

Health Department, N. GEBBIE,
Guildhall, Medical Officer of Health.
Hull, October, 1931.

County Council of the West Riding of Yorkshire.

APPOINTMENT OF CONSULTANT TUBERCULOSIS OFFICERS.

The County Council of the West Riding of Yorkshire invite applications for the appointment of Three Consultant Tuberculosis Officers.

The applicants must be highly skilled in the knowledge and treatment of tuberculosis. They will be responsible for all forms of treatment carried out at the Dispensaries within the areas allotted to them, and will be available for consultation with the medical practitioners within the areas.

Salary £750 per annum, rising by biennial increments of £50 to £1,100. For the present the above salary is subject to a reduction of 8½ per cent.

The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Further particulars and form of application may be obtained from the undersigned, by whom all applications together with copies of not more than three recent testimonials must be received no later than November 16th.

County Hall, J. CHARLES McGRATH,
Wakefield. Clerk of the County Council.
October, 1931.

Borough of Ilford.

APPOINTMENT OF WOMAN ASSISTANT MEDICAL OFFICER OF HEALTH

Applications are invited from legally qualified Medical Women for the office of Assistant Medical Officer of Health, for duties in connection with Maternity and Child Welfare work, School Medical Inspection and General Public Health work. Candidates must possess the Diploma of Public Health or similar qualification and have had post-graduate experience in Maternity work and Children's diseases.

The commencing salary of the officer will be £400 per annum, rising on report of satisfactory service, by annual increments of £25 per annum to £500 per annum (no terms), and with free board and residence at the Corporation's Isolation Hospital.

The person appointed will be required to devote whole time to the duties of the office, to reside at the Isolation Hospital, and to enter into a contract for the due performance and fulfilment of all the duties and conditions governing the appointment.

The appointment is subject to satisfactory medical examination, to the Superannuation Act, 1922, and to the Local Government and Other Officers' Superannuation Act, 1922.

Candidates must not be more than 45 years of age.

Applications, which must be made on forms obtained by personal application from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), endorsed "Woman Assistant Medical Officer of Health," must be delivered at my office at the Town Hall, Ilford, not later than Thursday, November 12th.

Canvassing, directly or indirectly, will be prohibited and will disqualify.

By Order,
Town Hall, ADAM PARTINGTON,
Ilford. Town Clerk.
October 29th, 1931.

Lancashire County Council.

APPOINTMENT OF ASSISTANT MEDICAL SUPERINTENDENT FOR WEIGHTINGTON HOSPITAL, PARBOLD, LANCS.

Applications are invited for the post of Male Assistant Medical Superintendent (unmarried) for the new Weightington Hospital, Parbold, Lancs, for the treatment of Pulmonary Tuberculosis (80 adults, 145 children). Salary £450 rising by two annual increments of £25 to £500 per annum, together with the following emoluments, viz., furnished apartments, fuel, light, and laundry (at present there is an emergency deduction of 5 per cent. from the salary).

Applicants must be registered Medical Practitioners between 25 and 34 years of age, and the person appointed must devote the whole of his time to the duties as defined by the Council. Candidates must have held House appointments for at least six months in a General Hospital and have had special experience in the diagnosis and treatment of Tuberculosis.

Contributory Superannuation Scheme in operation, with medical examination for entrance.

Forms of application, terms of appointment, and list of duties can be obtained from the undersigned. Closing date, November 10th. All letters must be marked on the outside "Tuberculosis Dept."

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council.

Lancashire County Council.

BIDDULPH GRANGE ORTHOPÆDIC HOSPITAL.

Applications are invited from duly qualified and registered women Medical Practitioners for the following posts at the above Hospital which contains 81 beds:

SENIOR HOUSE SURGEON. Salary £250 per annum (less 5 per cent. temporary emergency deduction), together with board, residence, and laundry. Candidates must have had experience in a general hospital. Preference will be given to candidates who have had orthopædic experience.

JUNIOR HOUSE SURGEON. Salary £200 per annum (less 5 per cent. temporary emergency deduction), together with board, residence, and laundry. Preference will be given to candidates who have had resident hospital appointments and who have completed one year's service.

Both appointments will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, which must be on forms obtained from the undersigned, to be received not later than November 25th, to Dr. J. J. Buchanan, Chief Medical and Child Welfare Department, County Offices, Preston.

Date of commencement, February 1st, 1932.

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council.
November 2nd, 1931.

East Sussex County Mental Hospital, Hellingly.

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the above post from duly qualified registered gentlemen (unmarried); preference will be given to those holding a University degree.

Salary £350 a year, rising by four annual increments of £25 to £450, together with board, lodging, washing, and attendance, valued for superannuation purposes at £90 a year; an additional £50 a year will be paid to any candidate appointed who holds the Diploma in Psychological Medicine, or a similar Diploma.

The appointment is subject to three months' notice on either side, to the provisions of the Asylums Officers Superannuation Act, 1909, and to any general percentage reduction in salaries which may be decided upon by the Visiting Committee.

Applications, marked "A.M.O.," giving particulars of previous experience, and copies of not more than three testimonials (ad hoc), should be addressed to the Medical Superintendent not later than November 18th.

Hospital of St. Cross, Rugby.

(114 Beds.)

Applications are invited for the post of Third RESIDENT MEDICAL OFFICER, qualified.

Salary at the rate of £100 per annum, with full board, etc.

Six months' appointment, and eligible on completion of service for extension or other resident's posts.

Candidates must be prepared to commence duties on November 30th.

The practice of the Hospital offers excellent opportunities for wide experience.

Certificates and other fees shared by R.M.O.'s.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned.

(Signed) W. COCKBURN,
Superintendent and Secretary.

The Hospital for Women, Soho Square, W.1.

A vacancy is about to occur in the office of PATHOLOGIST and REGISTRAR, and applications are hereby invited for the post.

Candidates must be Graduates in Medicine of a recognized University. The appointment is for twelve months from January 1st, 1932, and the holder is eligible for re-election for a period not exceeding three years. Honorarium £100 per annum.

Applications and testimonials must be forwarded to the undersigned by Tuesday, November 24th. Candidates are invited to call upon the members of the Medical Staff, from whom further information may be obtained.

J. P. HEMING, Secretary.

St. Mary's Hospital, W.2.

Applications are invited for the post of ORTHOPAEDIC SURGEON, who will be a member of the Hon. Surgical Staff. Candidates for the appointment are requested to forward their applications, with copies (not originals) of testimonials, not exceeding six in number, on or before November 25th.

Candidates must be Fellows of the Royal College of Surgeons of England.

The appointment is for five years, at the expiration of which term the holder will be eligible for re-election.

W. PARKES, Secretary.

Stockton and Thornaby Hospital, Stockton-on-Tees.

(150 Beds—3 Residents.)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (male) for a period of at least six months. Duties to commence Dec. 1st or Jan. 1st. Salary £200, with board, lodging, and laundry. Candidates must be duly qualified and unmarried. Applications, stating age, nationality, and experience, together with three recent testimonials, to be sent to the undersigned.

JOHN WILKINSON, Secretary.

Miller General Hospital, Greenwich Road, S.E.10.

OUT PATIENT OFFICER (male and unmarried) required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1, Tuesdays, 9 to 5. Salary £150 per annum, and lunch. The appointment is for six months. Applications, stating age, nationality, medical qualifications and experience, accompanied by not more than three recent testimonials, to be sent as soon as possible to the Secretary.

October 27th, 1931.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

(No. of available Beds—490).

Applications are invited for the undermentioned posts:

HOUSE SURGEON—AURAL.
CASUALTY SURGICAL OFFICER.

Salary is at the rate of £75 per annum for the House Surgeon (Aural), with board and lodging. For the Casualty Surgical Officer salary is at the rate of £75 per annum to an applicant with previous Hospital experience, and £50 per annum without.

Appointments are for six months commencing December 20th.

Application forms can be obtained from the undersigned and should be returned, with copies of three recent testimonials, not later than first post on December 6th.

R. ARMSTRONG,
November 3rd, 1931. Medical Supt.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

(No. of available Beds—490).

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. The post is tenable for six months, but may be extended for a further six months. This post is open to ladies.

Salary is at the rate of £75 per annum, with board-residence. Candidates must have experience of Refractions.

Graduates of other Medical Schools, as well as the Welsh National School of Medicine, are eligible for this post.

Applications, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible, as the post is now vacant.

R. ARMSTRONG,
November 3rd, 1931. Medical Supt.

Royal Northern Hospital, Holloway, N.7.

Applications are invited for the post of HOUSE SURGEON (male), vacant on Dec. 15th.

The appointment is for nine months (six months as House Surgeon and three months as Casualty Officer). Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by November 14th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

Brookfield Orthopaedic Hospital, Hale End, Woodford Green.

Applications are invited for the post of ANAESTHETIST. The gentleman appointed will be required to give Anaesthetics about once a week generally, but not always, on Tuesday or Wednesday mornings. Applications, to be full details of qualifications for the post, to be sent as soon as possible to the Hon. Secretary, Brookfield Orthopaedic Hospital, Education Offices, High Street, Walthamstow.

November 2nd, 1931.

Cardiff City Mental Hospital, Whitchurch, Cardiff.

DEPUTY MEDICAL SUPERINTENDENT required. Salary £700 per annum. If successful candidate is resident, a charge of £120 per annum will be made for the emoluments.

Applications, with three testimonials, to be sent on or before November 17th to the Medical Superintendent.

Essex County Hospital, Colchester. (160 Beds.)

Wanted immediately, ASSISTANT HOUSE SURGEON AND REGISTRAR (male). Salary £120, with board, washing, and residence. Medical and Surgical qualifications required.

Applications, with three recent testimonials, to be sent by Friday, November 13th, to—

ALFRED G. BUCK, Secretary.

Bedford County Hospital. (124 Beds.)

FIRST HOUSE SURGEON (male) fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £165, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, as soon as possible.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on January 1st, 1932.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, November 30th, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practice.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, December 2nd, at 5 p.m. precisely.

Forms of application, and copies of the Rules, may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
November, 1931. Secretary.

The Manor House Hospital, Golders Green, London, N.W.11.

Applications are invited for the post of JUNIOR MEDICAL OFFICER. Salary at the rate of £200 per annum, with board-residence. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating full particulars and accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned, to reach him at the earliest possible moment.

JAMES W. LINKHORN, Secretary.

Liverpool Maternity Hospital, Oxford Street.

HOUSE SURGEON required for the six months commencing January 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Hon. Secretary of the Medical Board, on or before November 28th.

St. Thomas's Hospital.

VACANCIES.

SURGICAL REGISTRARS.

There are vacancies for two Surgical Registrars. Applications, with full details of Academic career, to be addressed to the Secretary and Clerk to the Governors on or before November 24th.

Burton-on-Trent General Infirmary. (150 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary at the rate of £200 per annum, with board, residence, and laundry.

Applications, giving age and qualifications, together with copies of testimonials, to be sent to—

E. W. THORNLEY, Secretary.

The St. Helens Hospital.

Applications are invited for the position of HOUSE SURGEON to this Hospital, at a salary of £200 per annum, plus board, residence, and laundry. Applications, accompanied by three recent testimonials, to be sent to the Secretary, St. Helens Hospital, Lancs., not later than November 17th.

The successful candidate will be required to commence his duties on December 1st.

Royal Cornwall Infirmary, Truro. (84 Beds.)

HOUSE SURGEON (male) required with experience of Anaesthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

The Sheffield Royal Hospital.

TWO ASSISTANT CASUALTY OFFICERS (male), who will also act as House Surgeons to Assistant Surgeons in charge of 22 beds. Three months' appointments, then eligible for other resident posts. Salary at the rate of £90 per annum for first six months, then £100 per annum.

W. H. BOOTH, Supt. & Secretary.

APPOINTMENTS—Important Notice.

edical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A. House, Tavistock Square, W.C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(cont'd)*	**CONTRACT PRACTICE** *(cont'd)*
CONTRACT PRACTICE.	LLWYNYPIA, CLYDACH VALE, PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	GOMORE VALLEY, GLAMORGAN *(Workmen Colliery Medical Aid Society) (Workmen's Medical Scheme)*
DERBY AMALGAMATED FRIENDLY SOCIETY MEDICAL ASSOCIATION *(Medical Practitioner)*	MARDY, GLAMORGAN *(Workmen's Medical Scheme)*	**PUBLIC HEALTH.**
EBBW VALE, MON *(Workmen's Medical Society)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme)*	NEATH AND DISTRICT *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OAKDALE, MON *(Medical Officer for Medical Aid Association)*	

(b) Overseas.

edical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second olumn or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1.

Town or District.	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch
W SOUTH WALES. *(Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary, South Australian Branch, B M A House, 205 North Terrace, Adelaide	WELLINGTON, NEW ZEALAND. *(Contract practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch British Medical Association) P O Box 150 Wellington New Zealand
QUEENSLAND. *(Friendly Societies Institute)*	The Hon Sec, Queensland Branch British Medical Association P M A Buildings Adelaide St, Brisbane	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P MAJOR, (Hon Sec Victorian Branch) British Medical Association, Medical Society Hall, East Melbourne, Victoria	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch British Medical Association, No 6 Bank of N S W Chambers, St George's Terr Perth, Western Australia

November 4th, 1931 By Order of the Council ALFRED COX, Medical Secretary.

ity of Birmingham Mental HOSPITAL.

NIOR ASSISTANT MEDICAL OFFICER

ie Committee of Visitors invite applications duly qualified and registered Ladies under 30 years of age for the above Preference will be given to candidates have held a residential appointment in a eral Hospital

e commencing salary will be £350 per um together with emoluments (board, resi- and laundry) Subject to twelve months' tory service to the Committee, an ease of £50 will be granted at the end of period, and increases of £25 per annum each subsequent year of service to a maxi- of £450 An additional £50 will be n for the D P M qualification

e appointment will be terminable by three ths notice on either side and the appointed iate will be required to join the Asylums ers Superannuation Scheme

ications accompanied by copies of three nt testimonials should be addressed to the f Medical Officer City Mental Hospital ers Hill Birmingham so as to be received him not later than November 14th

F H C WHITSHIRE, m Clerk's Office, Council House Birmingham tember 17th 1931

Clerk to the Committee of Visitors

Mary's Hospitals, Manchester.

NIOR ASSISTANT MEDICAL OFFICER the Children's Out-patient Department (non-dent) Salary at the rate of £50 per annum appointment is for a period of six months, mencing December 1st next and is suitable Graduate work for higher qualifications lications, with copies of three testimonials, be sent to the undersigned on or before ember 16th

R. RATCLIFFE, Secretary

Manchester Babies' Hospital, Burnage Lane, LEVENSHULME.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER Appointment is for six months from January 1st, 1932 Salary at the rate of £250 per annum, with laundry Only candidates with previous Hospital experience need apply

Applications together with copies of three monials, should be sent to the undersigned marked 'P M O,' by Wednesday, Nov 25th

ANGELA LOPEZ Secretary

Merthyr General Hospital.

Applications are invited for the post of RESIDENT MEDICAL OFFICER for six months To commence duties early in November Experience in administration of Anæsthetics desirable Salary £150 per annum, with board, residence, and laundry Applications with copies of three recent testimonials to Honorary Secretary Honorary Medical Staff, Merthyr General Hospital Merthyr Tydfil

Lowestoft and North Suffolk HOSPITAL.

TWO HOUSE SURGEONS (men or women) required November 25th Commencing salary £120 per annum, with board, residence and laundry.

Applications together with copies of three recent testimonials to be sent to the Hon Medical Superintendent

Royal Lancaster Infirmary

Wanted immediately a gentleman as JUNIOR HOUSE SURGEON British

Salary £150 per annum Board, residence and laundry provided

Applications with testimonials to be made to the Honorary Secretary, Royal Lancaster Infirmary

London Jewish Hospital, Stepney Green, E.1 GENERAL HOSPITAL (100 Beds)

Applications are invited for the following posts

RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum with board and residence Applications from women only

JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence Appointment for six months

CASUALTY OFFICER (non-resident) Salary at the rate of £150 per annum, with lunch and tea Appointment for six months The latter will be required to attend the Out-patient Department from 9 a m to 5 p m

Applications with copies of three testimonials to be sent to the Secretary on or before Friday November 13th The successful candidates will be required to take up their duties on December 1st

County Mental Hospital, CHESTER.

JUNIOR ASSISTANT MEDICAL OFFICER (male or female) wanted Salary £200 per annum with furnished apartments, board, washing and attendance The latter terminable by one month's notice on either side The Diploma in Public Health and for which a further £50 per annum is paid Three months study leave (D P H) may be granted

The appointment is subject to the provisions and privileges of the Asylum Officers Superannuation Act 1909

Form of application which may be obtained from the undersigned, to be returned duly completed not later than November 14th

G HAMILTON GEILLS M D Medical Superintendent

(Appointments continued on p 58.)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

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All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted, an experienced Assistant, net salary £900 per annum. No applications considered unless accompanied by full particulars as to age, qualification, etc., and received not later than November 14th next. — Address, Secretary, 10, The Circle, Tredegar.

Wanted. — Assistantship (Outdoor) in or near London, by well-qual. Medical Woman. Hospital. Five years' panel and private practice. Midwifery and anæsthetics. Accus. sole charge and dispensing. Excellent testimonials. Free now.—Address, No. 6838, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with definite early view, by woman M.B., B.Ch., B.A.O.(Belfast, March, 1928), aged 28. Ex H.P., H.S. (Children & Gen.), Orthopaedics. R.M.O., E. E. N. & T. Anaes. Free 1 month.—No. 6818, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by M.B.(Lond.), 26, British, Jewish; good appearance; 3 years' H.P., H.S., and G.P. Experienced midwifery. Can drive. State salary.—Address, No 6839, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for General Practice in Hong Kong (British). Good prospects. Knowledge of Eye, Ear, nose, and throat work essential. Write for further particulars. — Address, No. 6802, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, outdoor Assistant, Englishman, male, married preferred. Some experience general practice. West Country near Town. Drive car. Salary £400. Usual bond.—Address, No. 6820, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Assistant from end of November, male or female, within 30 miles of London. Suit recently qualified person. Salary £200, all found. Car provided. — Address, No. 6906, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistant for mixed Practice near Manchester. Keen and energetic. Prospects. Salary £400 p.a. Usual bond. Full particulars and photo.—Address, No. 6807, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with or without view; good salaries; state full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistantship by Woman Doctor. Six years' experience private and panel practice. Able to drive car.—Address, No 6822, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — End of Nov., Lady ASSISTANT (indoor). North Midlands. Able to drive car and cycle. Light work. Full particulars.—Address, No. 6808, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, panel Practice in Midlands, near City. Compact. Salary £300. Able to drive a car.—Address, No. 6911, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Nov. 30th, indoor male ASSISTANT, single, British, with or without view, for Country Practice in most beautiful part of Yorkshire.—Address, No. 6809, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, Country Practice, Kent. Able to drive car. Very comfortable job.—Address, No. 6829, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Part-time Assistant (lady) for rural and seaside Practice. Time for study. References required.—Address, No. 6836, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship or Residency sought by Conjoint diplomate while completing London University degree. Experience includes 3 years' hospital residences, 3 years' X-rays, 3 years in Tropics. Speaks 4 European languages.—Address, No. 6830, B.M.A. House, Tavistock Square, W.C.1.

Assistantship desired by M.B. (Lond.), Bart's, 1925; with or without view. Welsh, single, disengaged. Experienced hospital and general practice. London or South Wales town preferred. Motorist.—Address, No. 6828, B.M.A. House, Tavistock Square, W.C.1.

Assistant required (male) for large panel and private Practice in Industrial Town near Manchester. Applicants must be young and energetic. Dispenser kept. View to Partnership.—Address, No. 6835, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, Country Town in Scotland, Protestant. Able to drive car. No dispensing. Bond. No view. Indoor at first, later outdoor. Age, references, etc.—Address, No. 6908, B.M.A. House, Tavistock Square, W.C.1.

M.R.C.S., L.R.C.P., one year G.P. experience, ex H.S., interested in Model Engineering, wants ASSISTANTSHIP with Doctor similarly interested. Act. 26, energetic. Used to sole charge.—Address, No. 6903, B.M.A. House, Tavistock Square, W.C.1.

Part-time Assistantship or other PART-TIME WORK wanted in London by M.B., 5 years' experience of G.P., ex H.S., age 29. Own car. Good anaesthetist.—Address, No. 6825, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
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After Office Hours: Epsom 9142.

Locum Tenens and Assistants required, preferably those within 50 miles of Liverpool.—For further particulars apply to Messrs. R. SUMNER & CO., LTD., Manufacturing Chemists, 40, Hanover Street, Liverpool.

Locum Tenens, Medical Man, needs Employment. Mornings, evenings, week-ends, or periods. Fees from 10/6.—Address, No. 6913, B.M.A. House, Tavistock Sq., W.C.1.

Locum wanted for Sunday evenings, S.W. London.—Address, No. 6905, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B., B.Ch., desires LOCUM or ASSISTANTSHIP, London or Midlands, 2 years' experience G.P., general and children's hospital experience. Free now. Interview. — Address, No. 6904, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted immediately.—Resident for small private Sanatorium. Would suit young Graduate convalescing from Tuberculosis. Work very light. Salary nominal.—Address, No. 6805, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Young recently qualified Irishman in large panel and private Practice in London (indoor). Please send essential particulars, age, etc.—Address, No. 6827, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispenser - Bookkeeper, Lady (Hall), seeks appointment. Experienced in hospital and private practice, N.H.I. Capable and reliable. Excellent references.—Address, No. 6816, B.M.A. House, Tavistock Square, W.C.1.

Dispensing has proved to be a suitable career for daughters of Doctors. Mr. WALDEN, Secretary, can recommend a Lady now disengaged, for post as Dispenser to Doctor.—WESTMINSTER COLLEGE FOR LADY DISPENSERS, 19, Helix Gardens, Brixton, S.W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Gentlewoman, ex V.A.D. requires post as RECEPTIONIST-DISPENSER, or Hostess-Housekeeper to Doctor. Held similar posts. Would consider relief surgeries. Moderate salary. London or Suburbs. Refs.—No. 6909, B.M.A. House, Tavistock Sq., W.C.1.

Lady Dispenser, London trained, requires POST with Doctor; London or travelling distance; part-time, temporary, or otherwise. Would accept nominal salary to gain experience.—Address, No. 6832, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser (Hall) requires WHOLE, PART-TIME, or LOCUM WORK. 6 years' experience Bookkeeping, etc. Good references. London district preferred.—Address, No. 6823, B.M.A. House, Tavistock Sq., W.C.1.

L.R.C.S. Ireland, age 49, war service 1914-1918 (M.C.), seeks PART-TIME WORK in or around London. Can arrange mornings, evenings, and week-ends. First-class references. — Address, No. 6907, B.M.A. House, Tavistock Square, W.C.1.

Male Dispenser-Bookkeeper, 42, desires post, Yorkshire, West Riding, or London. Good refs. (one ten years). Moderate salary. At liberty.—Address, No. 6813, B.M.A. House, Tavistock Square, W.C.1.

Medical Student. — Position in London offered to recent fourth or fifth year student, with Literary ability.—State age, medical training, and give particulars of Literary work, to No. 6817, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1. (Telephone No. [illegible]22), supplies qualified [illegible], Laboratory Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

Typewriting and Duplicating.—Testimonials, Theses, etc., neatly and accurately copied. Scientific work a specialty.—WOBURN BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). 'Phone: Museum 4475.

Testimonials Duplicated per return of post. Prices per testimonial—12 copies 1/6; 50, 2/6; 100, 4/-.—MISS NANCY MCFARLANE (B.M.J.), 44, Elderton Road, Westcliffe-on-Sea.

Typewriting and Duplicating undertaken by Expert Testimonials These Legal Documents Numerous letters of appreciation from Doctors—BEATRICE RADFORD (B), 341, Finchley Road, N W 3 'Phone Hampstead 6430 (any hour)

Young Doctor, Bart's man, requires AFTERNOON WORK of any description in London area Free from 2—5 p m Own car available—Address No 6814, B M A House, Tavistock Square W C 1

Young Lady desires Secretarial POST, London or Provinces University education, advanced French, German, Latin Expert shorthand typist, cashier bookkeeper 3 years experience Excellent references—M Brown, 61, Lisle Road, Aberdeen, Scotland

PARTNERSHIPS.

Wanted, Partner, L.R.C.S., Country Practice Market Town, Kent Old established Practice among beautiful surroundings Easy reach of London Much scope —Address No 6806, B M A House, Tavistock Square, W C 1

Christian Partner wanted, Country Town Practice, East Anglia Must be young and done H S job —Address No 6626, B M A House, Tavistock Square, W C 1

For Disposal.—Share producing £1,250, and larger share later, in old established mixed PRACTICE in attractive Midland Suburb Two years' purchase—Address, No 6901 B M A House, Tavistock Sq, W C 1

Male Partner wanted in good-class Practice in residential district within 15 miles of London Must be well qualified and have extensive experience of general practice Capital essential Good house to be rented on long lease No agents—Add, No 6833, B M A House, Tavistock Sq, W C 1

M.B., B.S., with higher medical qualifications would like to hear of PARTNERSHIP in remunerative Practice in England or Scotland Extensive experience in hospital and general practice—Address No 6910, B M A House, Tavistock Square, W C 1

Near Manchester. — Wanted January 1st, PARTNER old established Practice £3 000 Panel 3 000 1/4 share January 1st £1 100 down, additional 1/4 share April 1st, £900 down and £500 by instalments Hospital House rent £45 Surgical work if desired, but not necessary—Address No 6772 B M A House, Tavistock Sq W C 1

Urgently required.—Partnership, Small PRACTICE or Death Vacancy, by Medical Man Good personality married 12 years experience hospital tropical, and general Preliminary Assistant-ship not objected to—No 6834, B M A House, Tavistock Sq, W C 1

X-ray or Electro-therapy Partnership or ASSISTANTSHIP wanted by experienced London graduate Capital available S England or London preferred, not essential —Address No 6912, B M A House, Tavistock Square W C 1

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Wanted. — A fairly good-class general PRACTICE or PARTNERSHIP in a residential town or good suburban returning an income of £1,500 to £2 000 a year by a well qualified experienced married man, prepared to negotiate at once and with ample capital at command—Details will be received in strict confidence by Mr PERCIVAL TUPPER, 4 & 5 Adam Street W C 2

Wanted, a Practice in London, any district must have large panel, corner house preferred with garage or space, immediate Premium around £1 200 — Full particulars in confidence to ACCOUNTANT, 13, Mandeville Street Clapton, E.5

Wanted—Practice in Liverpool or near district or North Wales Coast Income £700 to £1 000 Good panel and scope necessary House to rent Capital available — Address No 6512, B M A House, Tavistock Square W C 1

Wanted — Practice or Partnership with panel 1,000 or more Cash receipts £1 000 Practice or Partnership near Town or City preferable Capital available £2 000 — Address No 6902, B M A House, Tavistock Square, W C 1

Wanted. — Sound mixed Practice, £3 000—£4 000 p a To suit partners Ample cash available Should have large panel—Address No 6819, B M A House, Tavistock Square, W C 1

Beds. — Country Practice in pretty district Nice house, electric light, garden garage Receipts £500, great scope Panel 75, increasing Opportunity week Price £400, for house £300, part deferred—MANCHESTER MEDICAL & SCIENTIFIC ASSOCIATION, 6, Brown Street

Country Medical Practice for sale—Argus and Perthshire Private and panel Death Vacancy House to rent—Particulars from REID JOHNSTON & Co, Solicitors, 34, Reform Street, Dundee

Devon Market Town. — Death Vacancy Old-established panel and family PRACTICE, neglected through old age and ill health house, surgery, garage Excellent opportunity for young active man—Address No 6821, B M A House, Tavistock Square, W C 1

For Sale. — Old-established Country Town PRACTICE, 40 miles from London Receipts £1,200 p a Panel 720 Midwifery refused Excellent educational facilities House to rent, garage, small garden, etc Premium for Practice, £1 800 cash—Address, No 6834, B M A House, Tavistock Sq, W C 1

For Sale.—Radiological Practice within 60 miles of London Average receipts for last three years is £1,200—Address, No 6801, B M A House, Tavistock Sq, W C 1

Growing Colliery Practice in South Yorkshire Established 5 years Receipts for the last 12 months £1,247 Panel 1 150 Premium £1,500 Rent of house (including rates) £65 p a—Apply, 2632, REYNOLDS' PRESS, LTD, Medical Transfer Agents 13 Bridge St, Leeds

Liverpool.—Wanted, small panel PRACTICE or NUCLEUS in South or East District with house—Address, No 6824, B M A House, Tavistock Square, W C 1

London, E. — Returns nearly £1 200 Panel 830 Nice House on main road, long lease, easily worked Expensive Price £1 750 cash—Address No 6831, B M A House, Tavistock Square W C 1

Manchester. — Old-established PRACTICE increasing good scope gross receipts last year abt £3 000 p l l 9 0 exceptional house freehold garden and garage Terms 11 years purchase house £2 000—Address No 6815 B M A House Tavistock Sq W C 1

Medical Practice for Sale in large Lancashire town Income £1 600 Good panel Comfortable house leased Price only £2 000—WOODCOCK & SON, Ipswich

Medical Practice. — Excellent PRACTICE for sale, owing to death in North Wales town — Full particulars from LLOYD GEORGE & GEORGE, Solicitors, Portmadoc

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For Sale by Auction, Nov 17th. —Freehold RESIDENCE (occupied by Medical Practitioner for over 50 years) at Langrathdale, one of the prettiest valleys in Eden Valley 3 reception, and 6 bedrooms, bath, etc Garage, gardens and paddock Vacant Possession—Particulars from TUER ANDREWS & Co, or ANDREWS & Co, Penrith Cumberland

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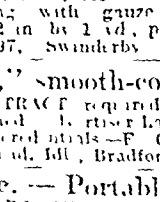
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I, Philip Figdor Ashton, M.B., Ch.B., of 23, Harley Street, London, W.1, hereby give notice that by Deed Poll dated October 27th, 1931, and duly enrolled, have adopted the surname of ASHTON in addition to my previous name of PHILIP FIGDOR.
Dated November 2nd, 1931.
PHILIP FIGDOR ASHTON.

APPOINTMENTS.—Contd.

County Mental Hospital,
LANCASTER.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER. Candidates must be single and under 35 years of age. Commencing salary £500, rising by annual increments of £25 to £600, with further increase on promotion, subject to a deduction of 3 per cent. under the Asylum Officers Superannuation Act. There are no emoluments. The selected candidate will be required to live in the Hospital, and he will be provided with board, lodging, etc., for which a charge of £150 a year is made.
The possession of a Diploma in Psychological Medicine will entitle the Officer to an additional £50 per annum.
Applications, giving full particulars, with testimonials (copies only), should be forwarded to the Medical Superintendent before Nov. 23rd.

The Mount Vernon Hospital,
NORTHWOOD, MIDDLESEX.
(The National Centre for the Study and Treatment of Cancer)

There is a vacancy for a RESIDENT MEDICAL OFFICER.
Candidates must be fully qualified and registered. Salary at the rate of £250 per annum, with board, lodging, etc.
Applications, with copies of three testimonials, to be sent to the undersigned not later than November 28th.
W. J. MORTON, Secretary.
Offices: 32, Fitzroy Square, W.1.

St. Thomas's Hospital Medical SCHOOL.
VACANCY.

PATHOLOGIST to the Medical and Surgical Units. Salary £400 per annum.
Applications, accompanied by full Academic record and two testimonials, to be rendered to the Dean's Office by November 20th.

Aberdeen Royal Mental Hospital.

The office of JUNIOR ASSISTANT PHYSICIAN (male) in Aberdeen Royal Mental Hospital is vacant, and applications for it are invited.
Salary will commence at £300 per annum, with board, lodging, and laundry.
Applications, stating age and qualifications, with copies of testimonials, should be sent to the Physician Superintendent.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as FIRST ASSISTANT MEDICAL OFFICER (man or woman) at the MAUDSLEY HOSPITAL, Denmark Hill, S.E.5 (for treatment of incipient mental disorder). Candidates must be not more than 40 years of age (unless already in the Council's Mental Hospital Service), must be registered to practise both in medicine and surgery in England, and must have held a residential position in a General Hospital for six months or have had comparable general experience. Appointment pensionable under the Asylums Officers Superannuation Act, 1909. Salary £750 a year, rising to £850 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. In the case of a woman, marriage terminates contract of service. Application form giving full particulars obtainable from Chief Officer (Ref. B) L.C.C. Mental Hospitals Department, Artillery House, Artillery Row, S.W.1. Applications must be received by November 28th. Canvassing disqualifies.
MONTAGU H. COX,
Clerk of the London County Council.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as ASSISTANT MEDICAL OFFICER (male) in the Mental Hospital Service. Candidates must be under 35 years of age. They must be registered to practise both in medicine and surgery in England, must be of at least one year's professional standing, and must have held a residential position in a General Hospital for six months or have had comparable general experience. Salary £475 a year, rising to £550 a year (additional allowance of £50 a year to holders of D.P.M.). No emoluments. Charge for board, lodging, etc. (at present £2 9s. a week) if required to be resident. Pensionable under Asylums Officers Superannuation Act 1909. Application form, giving full particulars, obtainable from Chief Officer (Ref. B), L.C.C. Mental Hospitals Department, Artillery House, Artillery Row, S.W.1. *Applications* must be received by November 28th. Canvassing disqualifies.
MONTAGU H. COX,
Clerk of the London County Council.

Borough of Mansfield.
TEMPORARY ASSISTANT (FEMALE) MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Temporary Assistant (Female) Medical Officer of Health for the Borough of Mansfield, for a period of twelve months, at a salary of £500 per annum.
The duties will include the Medical Inspection of school children, work in connection with Maternity and Child Welfare Centres, Antenatal Clinics, etc.
Candidates must be registered Medical Practitioners, hold a Diploma of Public Health, and have had at least three years' experience of post-graduate work.
The successful candidate will be required to devote the whole of her time to the duties of the office and to reside in the Borough.
The appointment will be subject to the approval of the Ministry of Health.
Applications, which must be made on forms obtainable from the undersigned, accompanied by copies of three recent testimonials, endorsed "Temporary Assistant Medical Officer of Health," must be received at my office not later than November 21st.
Town Clerk's Office, Mansfield. A. C. SHEPHERD, Town Clerk.

Victoria Hospital, Burnley.
(120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The duties will include the giving of a certain number of anaesthetics. The appointment is for six months, and carries a salary of £150 per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. examinations.
Applications, with copies testimonials should be addressed to the undersigned forthwith.
GEO. W. COOLING,
Secretary Superintendent.

Taunton and Somerset Hospital,
TAUNTON. (104 Beds.)

LADY HOUSE PHYSICIAN (ASSISTANT) required end of November. Two months' subject to Period of engagement not exceeding six in the first instance. Salary at the rate of £100 per annum, with board, residence, and laundry.
Applications, with testimonials, to F. J. J. STACEY, Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (mal.) Duties to commence on January 1st next.

Salary at the rate of £150 per annum, with residence, board and laundry.

The appointment is for six months, and is renewable.

The hospital Staff consists of a President Surgical Officer and Two House Surgeons.

Applications accompanied by not more than three recent testimonials, to be sent to the undersigned

Dated this 26th day of October 1931

ARTHUR H. LIMB Secretary

St. John's Hospital for Diseases OF THE SKIN

49, Leicester Square, W.C.2

Applications for the post of JUNIOR HONORARY MEDICAL REGISTRAR (mal. or fem.) are invited to be sent to the undersigned on or before Tuesday morning, November 17th.

Honorarium £50 per annum.

Applicants must be duly qualified and registered Medical Practitioners. Particulars of the duties can be obtained on application to

LEONARD G. E. TULPIN, Secretary.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of RESIDENT ANAESTHETIST AND EMERGENCY OFFICER (male) which will become vacant on December 1st. Salary at the rate of £130 per annum with board, residence, and laundry. Candidates who must be unmarried and duly registered are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, November 11th.

W. H. HEAD, Secretary Supt.

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Scotland.—Nr. Glasgow. — Over £850 p.a. Panel 1,300. Appt. £75. Fees 3/- to 7/6. 5 bed., 3 recep., etc. 1½ acres purchase.—No. 8929.

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Surrey Town. — Aver. £4,000. Panel about 2,000. Appts. £630. Fees 5/- to 12/6. 1/3 share for sale now.—No. 8911.

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Middlesex Suburb.—Share worth about £900. Good panel. Appts. £40. Fees 5/6 to 10/6. Good house and garden for sale.—No. 8907.

Kent. — Country, unopposed, about £900 p.a. Panel 330. Fees 3/6 to 12/6. Appointments £125 p.a. Premium £1,300.—No. 8900.

Lancs Town. — Over £600 p.a. Panel 270. Fees 3/6 up. Good house to buy or rent. Premium £800 or offer.—No. 8898.

London, S.W.—Central. — Over £800. Fees 7/6 to 21/-. No panel or dispensing. Prem. £1,000, or 1/2 share 1½ years purchase.—No. 8895.

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LONDON, W.10.—NUCLEUS Look-up, situated in working class locality. Living accommodation for bachelor if desired. Receipts between £5 and £6 per week. Panel 100. Prem. 1 years purchase or near offer.

BERKS.—Well established Town PRACTICE, situated within 60 miles of London. Medium sized house to rent. Receipts nearly £900. Panel nearly 600. Scope for increase. Premium 1½ years' purchase.

HOME COUNTIES. — PARTNERSHIP in good class Practice situated in well-known country town. Receipts approx. £6,000. Select easily run panel. Medium sized house to rent. Premium for 1/4 share 2 years' purchase. This Practice has been known to the Agency for many years, and is highly recommended. It is essential that the incoming Partner shall hold the F.R.C.S., and be aged about 30. Appointment to Hospital Staff.

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HOME COUNTIES (S.) — Well established Country Town PRACTICE, situated within 38 miles of London. Excellent house to rent on lease at £95 p.a., electric light, main drainage, large garden, garage. Receipts nearly £1,000. Panel over 300. Fees 5/6 up. Premium £1,500.

YORKSHIRE.—Well established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approx. £1,000. Panel 620. Fees 5/6 up. One appointment. Premium 1½ years' purchase.

YORKS.—PARTNERSHIP in busy rapidly increasing town Practice. Receipts £2,300. Panel 1,500. Suitable house available. 1/3 share, with view to succession, 2 years' purchase.

ESSEX.—NUCLEUS PRACTICE in residential locality. Excellent scope for young and energetic man. Suitable house available. Receipts £325. Panel 225. Premium £450.

CHESHIRE.—Well established PRACTICE with excellent scope for panel if desired. Modern semi-detached house (4 beds), garage. Small panel. Receipts approx. £500. Fees 5/6 up. One appointment worth £150. Mods. 5 gns. Premium open to reasonable offer.

EAST MIDLANDS.—PARTNERSHIP in better middle class Practice. 10 roomed house available. Receipts nearly £2,000. Fees 5/- up. Up to date Hospital. Scope for surgery. Premium 1/3 share, with view to larger share £1,300.

WELSH BORDERS.—Excellent middle class Town PRACTICE, situated in delightful locality. Good social amenities. Receipts approx. £1,800. Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained. Knowledge of Welsh not essential. Boys.

LONDON, N.W. — Well established mixed PRACTICE, mainly better class, with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 5/6 up. No midwifery. One appointment. Part of house sublet if desired. Vendor has developed better class of Practice at good fees. Premium £1,300 cash.

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CHESHIRE.—Near Coast.—Small G.P., with excellent scope for expansion, situated in working class and residential district. Receipts £630. Panel 900. Suitable house available. Premium 1½ years' purchase. Excellent scope for keen and energetic man.

NORTH-WEST COAST.—PARTNERSHIP in old established good class non panel and non dispensing Practice. Suitable house available. Receipts approx. £3,600. Fees 10/6 up. 1/3 share, with view to half and possible succession, 1½ yrs.' purchase. Excell. scope for Physician.

MIDDLESEX.—PARTNERSHIP in rapidly developing district, situated within 12 miles of London. Receipts about £1,600 p.a. Panel nearly 1,900. Suitable small house available. Cottage Hospital. Excellent scope. Premium for 2/5 share, with view to 1/2, 2 years' purchase.

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3. LANCASHIRE TOWN. — Well established middle and upper class PRACTICE. Receipts £1,354. Panel 950. Good house, 5 bedrooms, to rent or for sale. Garden and garage.
4. NORTH OF ENGLAND.—Panel, Colliery, and Club PRACTICE. Receipts average £800 p.a. Panel 550. Appointments £350. Good house to rent. Considerable scope for energetic man.
5. MIDLANDS.—Panel and Private PRACTICE. Receipts considerably over £700. Panel over 600, and both increasing rapidly. Appointments worth about £70. House to rent. Garage, etc.
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3. A well established cash and panel PRACTICE in London for immediate disposal. Receipts average £2,262 p.a., panel 2,780. House, long lease, part sublet. Premium £4,000.
4. Seven mins. from Holloway, N.—DEATH VACANCY.—Old-established non-panel Practice. Receipts average £1,600 to £1,700 a year. Nice house available, rent £76, lease. Premium £2,000 or near offer.
5. Five mins. from Hammersmith, W.—Small PRACTICE. Neglected of late, has done very well in past. Panel now 230, little private. Premium £175 for immediate sale. House. Excellent scope for increase.
6. HALF SHARE of a well-established Practice in rapidly developing residential part, 10 miles out of London. Share of £500 guaranteed in any case. Excellent house on rental. Premium £750, part by instalments.
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WESTMORLAND — UNOPPOSED COUNTRY PRACTICE in beautiful district. Cash receipts last year £1,075, including £380 from panel. Good house, 2 reception, 4 bedrooms. Garage and garden. Rent £37 p.a. Premium best offer.—No. 300.

CHESHIRE TOWN.—Old-established PRACTICE. Average cash receipts £1,420 p.a. Panel 2,000. Good scope. Nice house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice £2,250.—No. 293.

LANCS TOWN, nr. MANCHESTER.—PARTNERSHIP in good Practice. Cash receipts 1930, £2,452. Panel nearly 2,000. House available, 5 reception, 5 bedrooms, garage. Rent £65 p.a. Premium—Half share—£1,500 (to include drugs, fittings, and debts).—No. 286.

MANCHESTER.—PLEASANT RESIDENTIAL SUBURB.—Old-established PRACTICE. Average cash receipts £685 p.a. Panel over 600. Much scope. Excellent house, 2 reception, 4 bedrooms, garage, and good garden, to be sold, or may be rented for a period on lease. Premium 1 year's purchase. Vendor retiring.—No. 246.

NEAR PRESTON.—PRACTICE offering scope. Cash receipts 1930, £626. Panel 250. Good house, 2 reception, 4 bedrooms. Rent £70 p.a. Premium £800, or near offer.—No. 254.

NORTH WEST COAST — SEASIDE RESORT. — Old-established PRACTICE. Cash receipts 1930, £874. Small select panel. Excellent freehold house, 5 bedrooms. Garage and garden.—No. 289.

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BIRMINGHAM SUBURB. — Middle-class PRACTICE, with great scope. Receipts last year £700. Small select panel. Excellent house, 2 reception, 5 bedrooms. Garage and large garden. Premium—Practice, house, and drugs—£1,100. Genuine sacrifice.—No. 285.

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MANCHESTER.—RESIDENTIAL SUBURB. Middle-class PRACTICE. Suitable for two in Partnership (one a good surgeon). Cash receipts 1931, £4,578. Panel 1,400. Two excellent houses, with ample accommodation. Premium 1½ years' purchase, part by arrangement.—No. 277.

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BIRKENHEAD.—PRACTICE with great scope. Cash receipts about £700 p.a. Panel 900. Good house, 5 bedrooms, garden. Premium—Practice—£800, or near offer.—No. 235.

MANCHESTER.—INDUSTRIAL PRACTICE. Cash receipts £900 p.a. Panel 1,550. Good scope. Excellent house, 2 reception, 4 bedrooms, to rent. Premium £1,000 for quick sale.—No. 301.

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £1,175 p.a. Panel 1,460. Excellent house to rent, 3 reception, 5 bedrooms. Garage and garden. Premium £1,600, payable by arrangement.—No. 232.

MEDICAL WOMAN'S PRACTICE.—SEASIDE TOWN.—Cash receipts last year £652. Panel 465. Excellent rooms at £36 p.a. Premium £850 or near offer.—No. 274.

MANCHESTER.—INDUSTRIAL PRACTICE, offering great scope. Cash receipts 1930, £889. Panel 721. Good house, 2 reception, 5 bedrooms. Rent £50 p.a. Premium—best offer.—No. 190.

NEAR LIVERPOOL.—PRACTICE offering scope. Cash receipts £800 p.a. Panel 550. Good house, 2 reception, 5 bedrooms. Gar. and gard. Rent £70 p.a. Prem. £650, or near offer.—No. 287.

MANCHESTER.—RESIDENTIAL SUBURB.—PRACTICE. Cash receipts last year £1,245. Panel 550. Much scope. Charming modern house, recently built for Practice, 5 bedrooms, 2 reception rooms. Garage and garden. For sale or may be rented on lease. Premium—Practice—1½ years' purchase.—No. 238.

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1 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase. Cottage Hospital. One-fifth share for disposal.

2 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main thoroughfare. Panel 125. Shop-fronted house to rent on lease. Good scope for increase. Premium £300.

3 E. ANGLIA. — Partnership in Practice of about £3,000 p.a. in beautiful residential and agricultural district. Panel about 1,900. After preliminary Assistantship a one-sixth or one third share would be sold at 2 years' purchase. Partner should be for preference a London Graduate.

4 N. LONDON. — Partnership in Practice, averaging over £4,350 p.a., in thickly populated suburban district. Vendor only recently joined the panel. Accommodation consists of 3 bedrooms, etc., to rent. Premium one-half share 2 years' purchase, with succession to whole Practice in 12 months if desired.

5 S. OF ENGLAND. — Partnership in good middle class Town Practice, over £5,500 p.a. No panel. Suitable house to purchase. Premium, one-fourth share, £2,000. Preliminary Assistantship.

6 N. OF ENGLAND.—Assistant required by Medical Man practising in nice country district, with view to taking over panel comprising between 1,600/1,700 patients. Suitable accommodation to rent. Premium 1½ years' purchase; or a Partnership may be arranged.

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8 MIDLANDS. — Partnership in Practice nearly £3,800 p.a. in beautiful suburb of Manufacturing Town. Panel 2,200. House, with 5 bed and dressing rooms, in good residential part, for sale or rent. Unlimited scope. Excellent Hospitals One third share at first at 2 years' purchase.

9 S. OF ENGLAND. — Practice of nearly £1,100 p.a. in delightful residential town in Inland Watering-place Panel about 1,100. Very good detached residence (5 bedrooms and attics), with garage and nice garden, for sale or rent. Excellent social and educational advantages. Scope for increase. Premium £1,650.

10 ABOUT 30 MILES FROM LONDON.—PRACTICE, averaging £275 p.a. (carried on by Medical Woman) in town of 60,000 inhabitants. Panel about 200. Detached corner house, with 9 rooms, for sale or rent. Any reasonable offer entertained.

11 MIDLANDS.—Partnership in Practice over £2,200 p.a. in agricultural district, easy reach of County Town. Panel over 1,200. Suitable house at a rental. One-half share at first at 1½ years' purchase.

12 DORSET.—Country Practice of £1,000 p.a. in beautiful part near the coast. Panel 682. Detached house (6 bedrooms), with garage and beautiful garden, to rent. Hunting, shooting, fishing, etc. Premium 1½ years' purchase. Suitable for retired Service man.

13 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock-up" Surgery. Panel about 500. Well-situated corner residence (5 bedrooms) to rent. Premium £900.

14 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one-half 2 years' purchase. Up-to date Cottage Hospital.

15 E. COAST.—Partnership in lucrative PRACTICE of over £5,250 p.a. in large seaport town. Panel over 3,800. Prem., one-fourth share, £2,500. Good scope for increase.

16 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Select panel about 417, with scope. Corner house, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

17 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town. Panel 1,100. Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

18 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 bedrooms. Garage and garden. Rent £150 p.a. Scope for increase. Premium 1½ years' purchase.

19 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £700 p.a. and a panel of 650. Good house (6 bedrooms), with garage, and one acre of garden, for sale. Premium 1½ years' purchase.

20 ESSEX.—Country Practice of £700, including panel and appointments worth about £550 p.a. Premium £1,100.

21 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 350. Substantially built 9 roomed house for sale. Scope for increase. Premium £725.

22 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair-sized garden, to rent. Good scope. Premium £700 cash.

23 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well-situated detached house (5 or 6 bedrooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

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(Incorporated)

12. Stratford Place.

Tele. Address: Telephone, West—London. Oxford Street, W.1. Telephone: Mayfair 1782 (1783)

Practices and Partnerships for Disposal (continued).

21 DEATH VACANCY DEVON Practice [illegible] £1,000 [illegible]

25 HOME COUNTIES Non-dispensing [illegible] £1,000 [illegible]

23 NEW ZEALAND NORTH ISLAND [illegible] Town [illegible] £2,000 [illegible]

27 BIRMINGHAM Practice of about £1,000 [illegible]

28 NORTH OF ENGLAND Small Non-dispensing [illegible] £1,000 [illegible]

29 YORKSHIRE (W.R.).—Partnership after [illegible] £2,000 [illegible]

30 N.W. COAST. — Partnership in Practice [illegible] Premium £2,000 [illegible]

31 EAST ANGLIA.—Partnership in Practice over £4,000 p.a. [illegible] £2,000 [illegible]

32 WEST HAM. — Practice (carried on by Medical Woman) in [illegible] £700 p.a. [illegible] Premium £750 [illegible]

33 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. [illegible] £2,000 [illegible]

34 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,400. House (5 bedrooms) garage and nice garden for sale. Premium one-third share £2,000.

35 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. House (5 bedrooms) and dressing room) garage and charming garden for sale. Good house. Premium £750.

36 SOUTH AFRICA.—Easily worked Country Practice in [illegible] £2,000 [illegible] Cash receipts year ended 31st March, 1931, over £1,000. Net profit [illegible] £1,225.

37 MIDLANDS.—Partnership in non-dispensing Practice also about £4,000 p.a. in first-rate town. Panel 1,344. Good house (6,7 bedrooms) to rent. Premium one-third share 2 years' purchase.

38 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight-roomed house for sale or rent. Excellent educational facilities. Sea-bathing etc. Premium £1,500.

39 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms) central heating, grounds of 2 acres, orchard etc. for sale. Sport. Premium 1½ years' purchase.

40 S. OF ENGLAND.—Partnership in Opportunity [illegible] £1,500 p.a. [illegible] £2,000.

41 LONDON, W.—Panel of 400 for transfer [illegible] Panel Light Surgery £65 p.a. Premium to include furniture and drugs, £500.

42 HOME COUNTIES.—Partnership in exceptional [illegible] £2,000 [illegible] £1,000 [illegible] Partnership [illegible] £1,500 [illegible] £1,000 [illegible] Premium £1,000 [illegible] £1,000 [illegible] £1,000.

43 EAST ANGLIA.—Partnership in good-class [illegible] £1,000 [illegible] Partnership [illegible] £1,000 [illegible] £1,000 [illegible] £1,000

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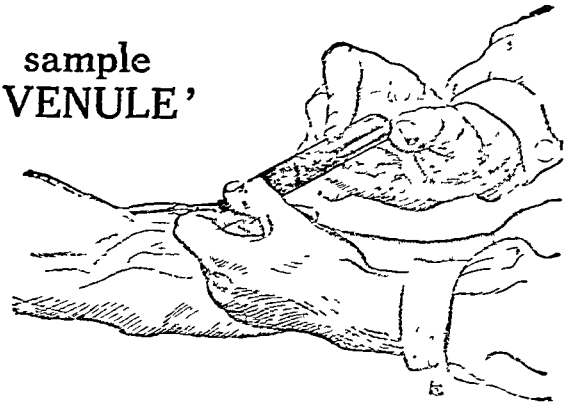
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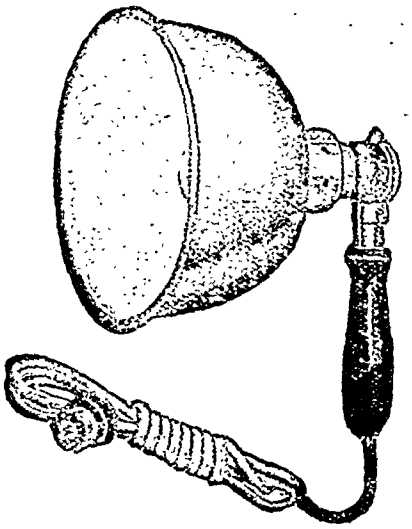
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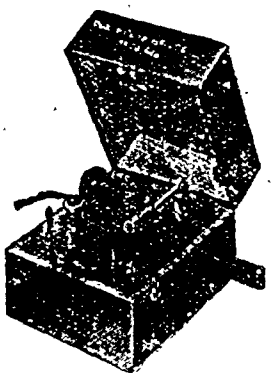
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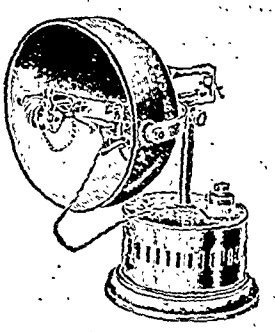
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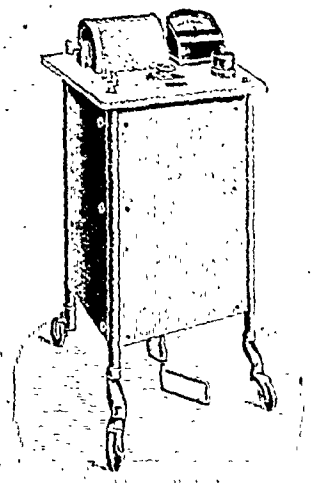
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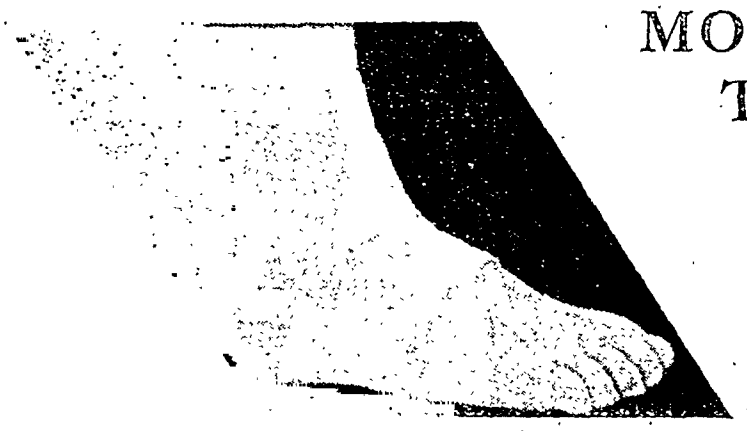


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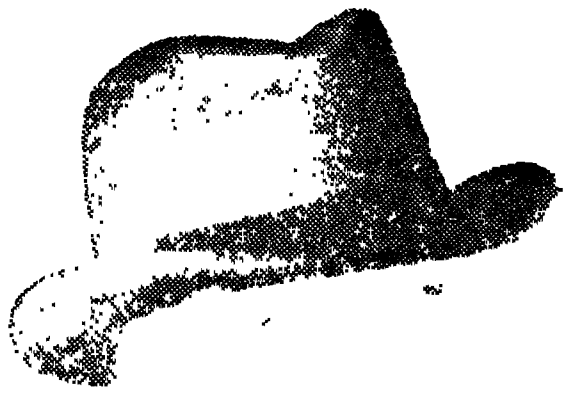
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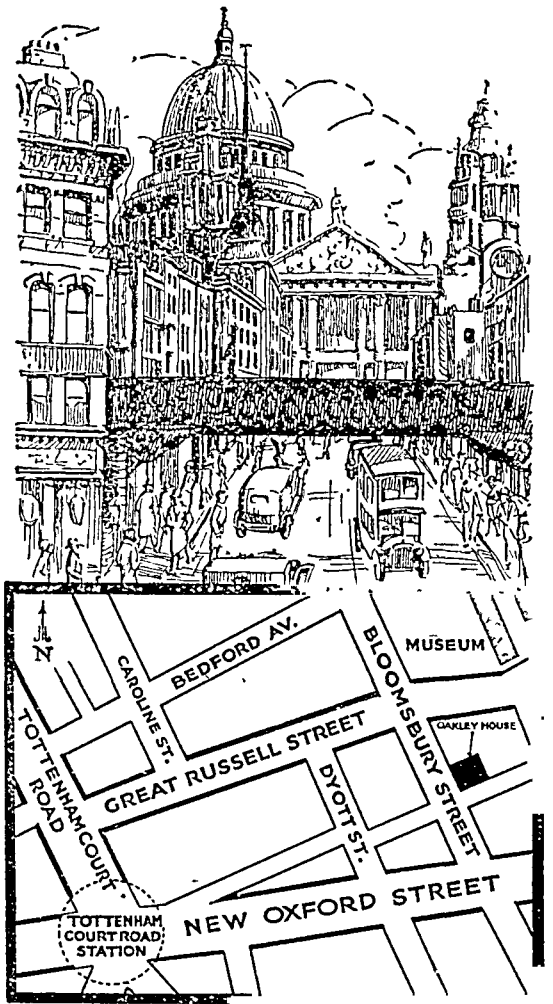
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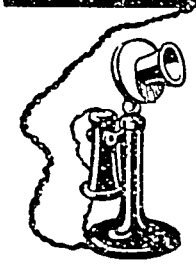
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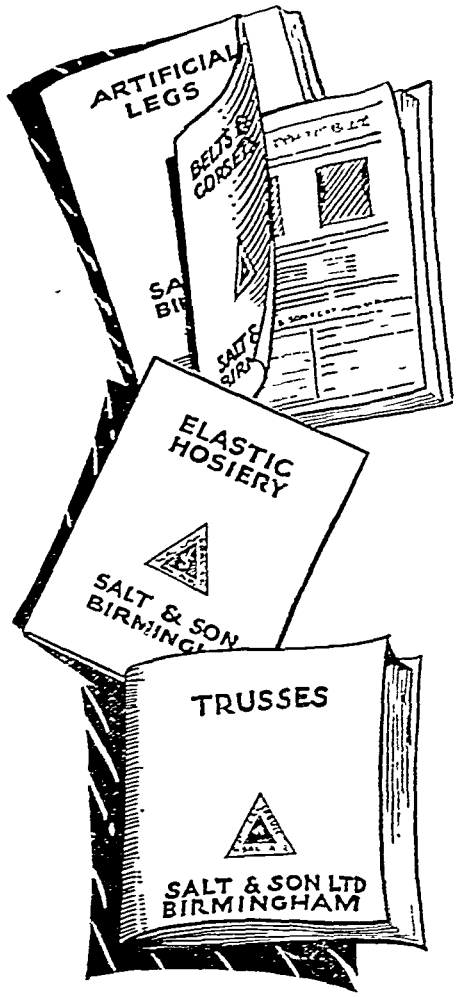
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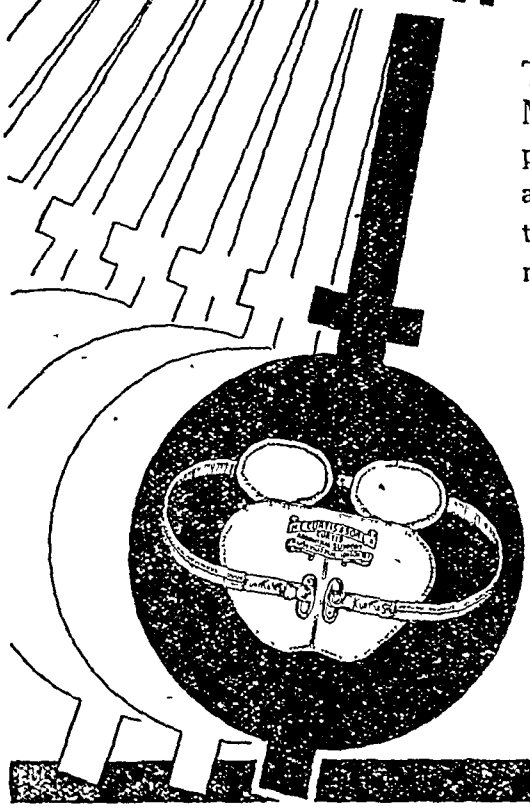


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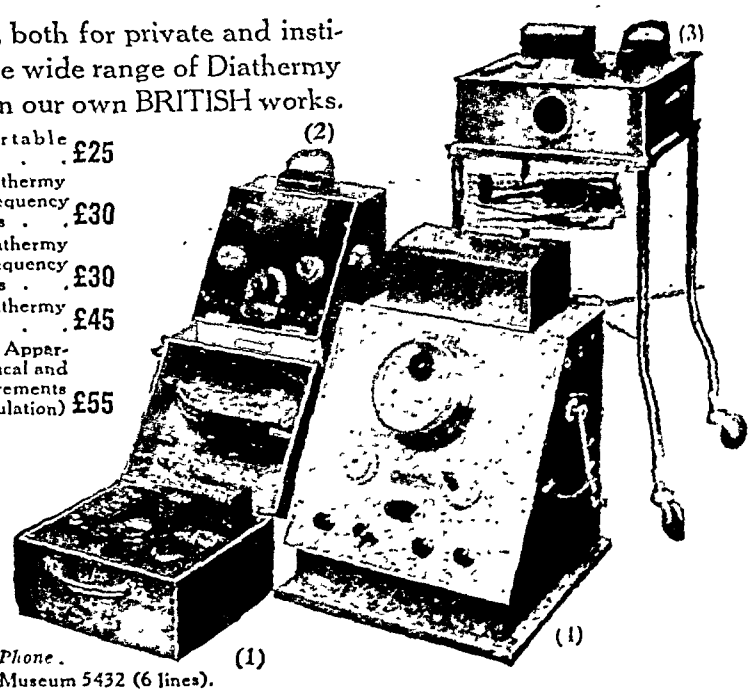
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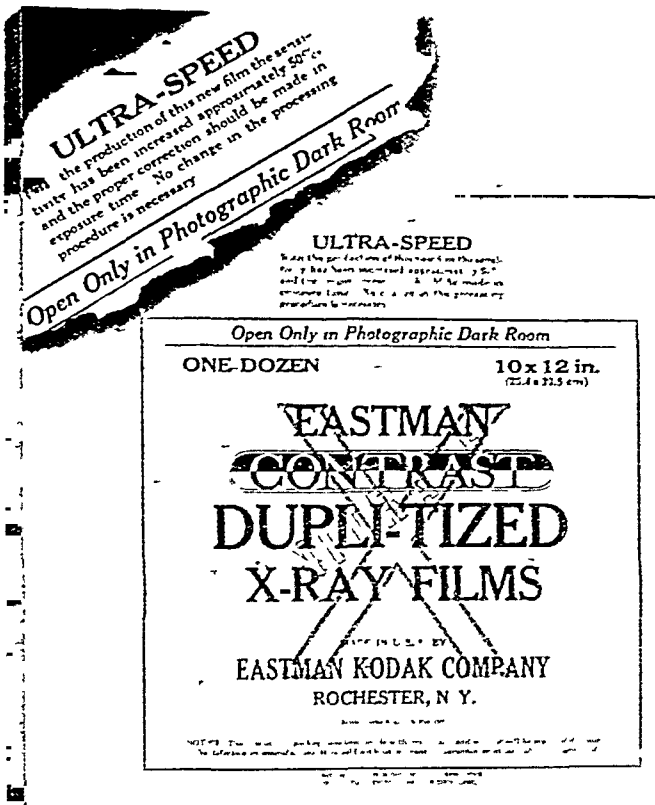


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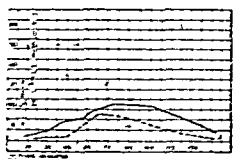
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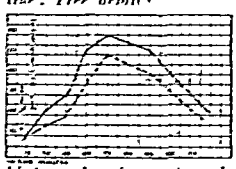
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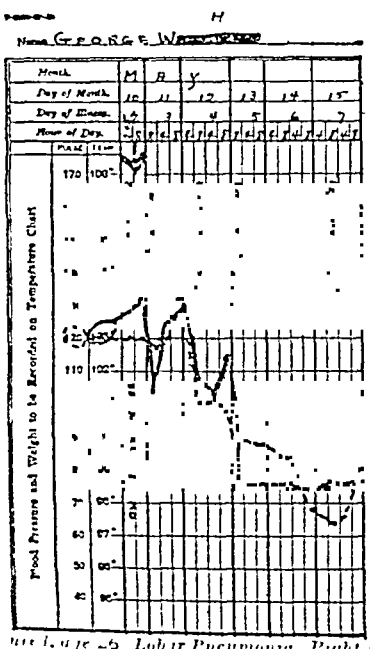
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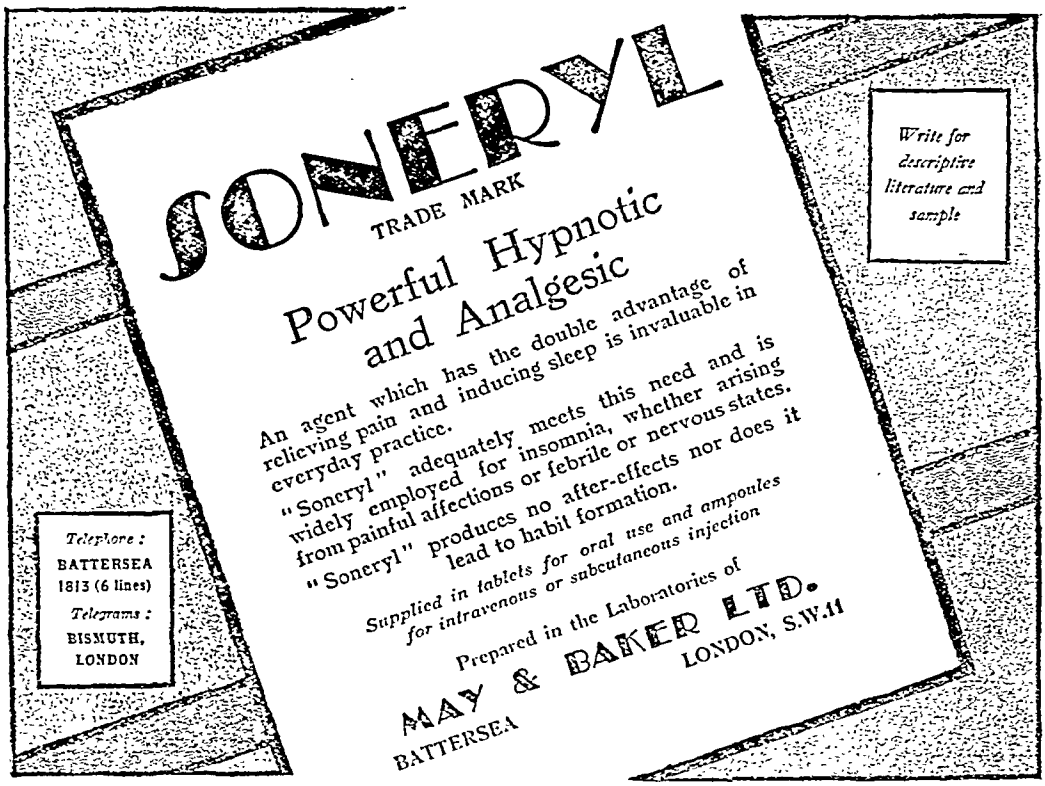
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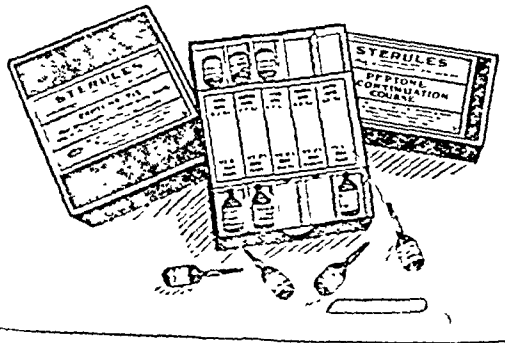
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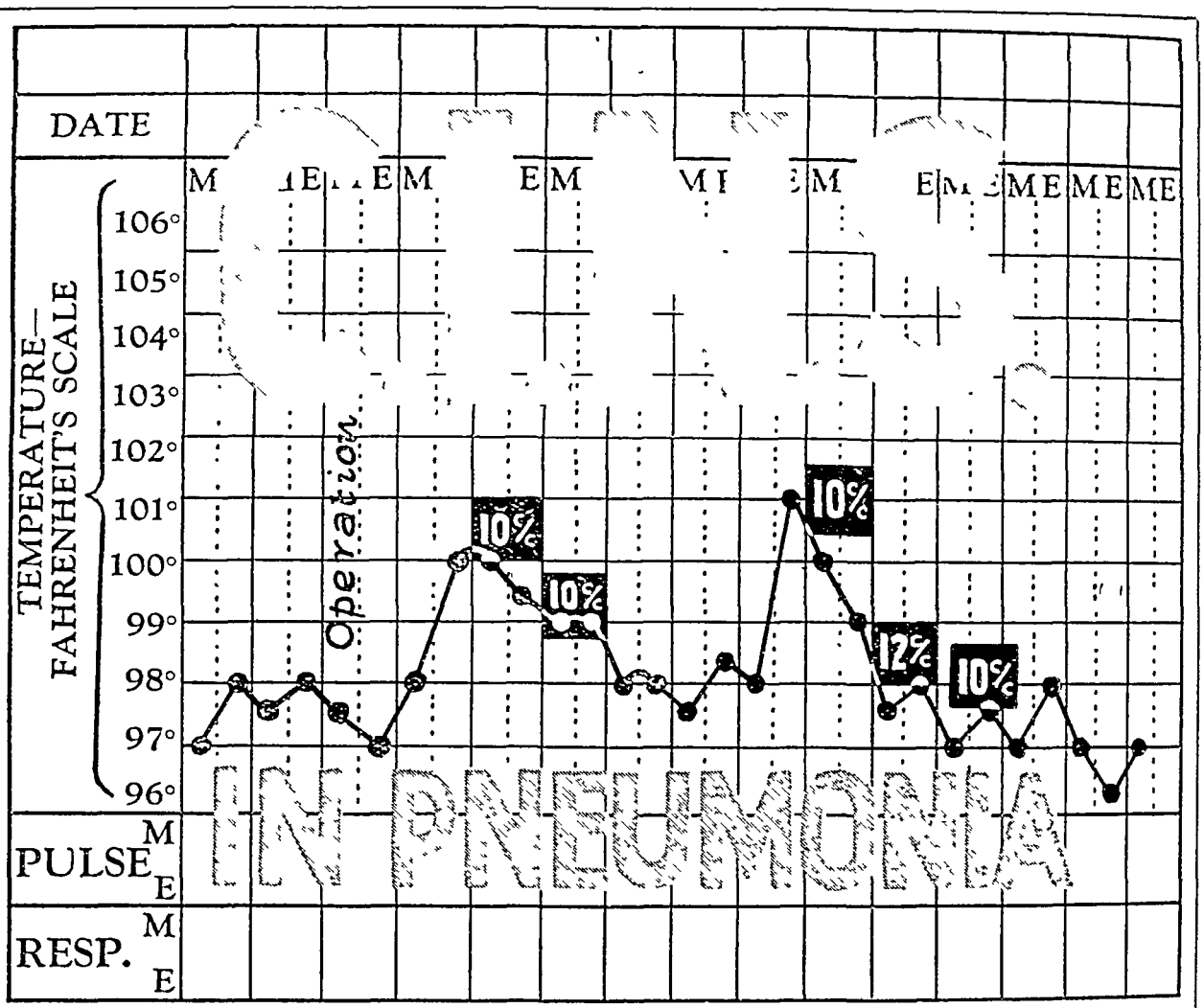
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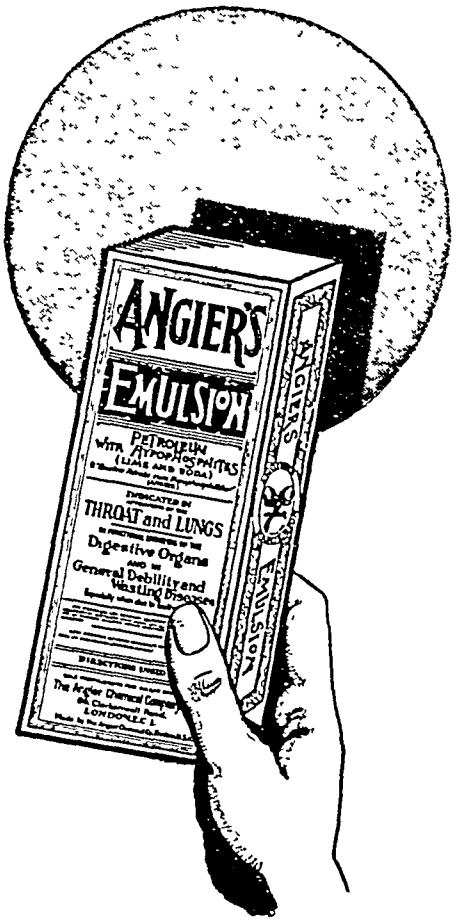
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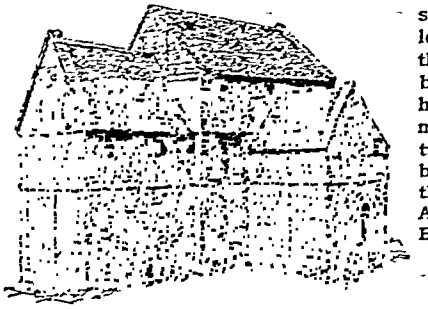
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The British Medical Journal, April 18th, 1931. p. 692.

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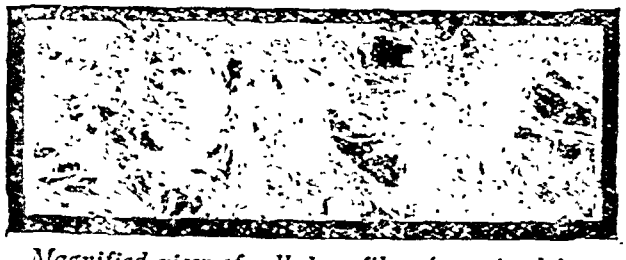
The Practitioner, May, 1931. p. 584.

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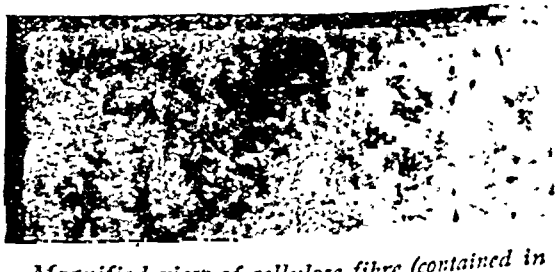
The filter-tip . . . retains bodies which are generally held to be the principal cause of throat irritation. Additional advantages of the filter-tip comprise *protection of the lips, teeth and fingers from unsightly stain,* and prevention of fragments of tobacco from getting into the mouth.

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The Lancet, January 24th, 1931. p. 194.



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Observations on TRIGEMINAL NEURALGIA*

BY

GEOFFREY JEFFERSON, M.S.(Lond.), F.R.C.S.

HONORARY NEUROLOGICAL SURGEON, MANCHESTER ROYAL INFIRMARY; HONORARY SURGEON, SALFORD ROYAL HOSPITAL.

In introducing the subject of paroxysmal trigeminal neuralgia I shall omit any references to the nature of a disease the causes of which are as unknown to us as they were to Tudor physicians. But it will be necessary at the outset to make some allusion to the character of the paroxysms, because adequate treatment depends on the selection of the right cases. Not uncommonly patients are referred as "neuralgias" who undoubtedly have pain in the face and head, yet who are not true sufferers from the paroxysmal disorder, and these may be made much worse by procedures very right and proper for the orthodox case. As to these procedures, the present occasion is important because the time has arrived for a reassessment of values in the methods of treating this condition. The claims of alcohol injections have been most ably and convincingly pleaded in this country in particular; but sufficient evidence is now available to show that operation is in general superior to injection, and should therefore be more widely employed. Alcohol has its place in the treatment of neuralgia, but it must be removed from the dominance which it has held. I shall elaborate the logic of these statements later in this discussion.

CHARACTER OF PAROXYSMAL TRIGEMINAL NEURALGIAS

Although the character of the attacks of pain in true paroxysmal neuralgia is familiar enough, yet an outline of the chief features will not come amiss, for in its severe forms it is not a common occurrence, being slightly rarer in my experience than intracranial tumours. If reflex neuralgias from various local causes were added, they would no doubt more than adjust the numerical balance. Clearly, comparative experience must vary, but I believe that I am correct in the main on this point.

Sex.—The predominance of neuralgia in females has long been recognized, but since we do not know the cause of the disease no important conclusion may be drawn, nor is the sexual disparity sufficiently marked to lead in itself to any special deduction.

Unilaterality.—The pain is always confined to one side, and generally to one division at the commencement, either the second or third. Sometimes the pain affects two divisions very early, but, as a rule, it remains limited at the beginning and only spreads after months, or often years, have elapsed. The pain keeps within the confines of the trigeminal field, and spread outside it into the neck or shoulder will make us suspect some other cause, though overflow is sometimes genuine. In some cases it may reappear on the opposite side, limited to a single division, generally the second. As the pain may appear on the opposite side long after it has been successfully treated on the primary side, the sparing of the motor division is a wise precaution at operation. Fortunately, this step in no way increases the likelihood of recurrence, nor is the resultant anaesthesia any the less.

Nature of the Paroxysm.—The pain is always of brief duration, and when the storm has passed the patient is generally comfortable, though sometimes a tingling or stinging sensation endures. But whether this slight middle pain is present or not, the patient lives in dread of a return of the torment, and even after successful treatment this apprehension of the future persists for a long time. The pain is brought on by a touch, by a breath of wind, by a movement, so that smiling, talking, and eating become a penance. A facial pseudo-palsy develops in some patients; the face becomes almost Parkinsonian in its mask-like appearance, actually a purely voluntary defensive inhibition. The patient sometimes swathes herself in wrappings and brings with her someone to talk for her, a "talker," in the same way that a disabled batsman at cricket may be allowed a "runner." The descriptions of the nature of the pains vary somewhat, but it is clear that neuralgic pains are sharp, and lancinating, like long needle thrusts or stabs. It is probable that the differences in neuralgic pains are differences of description rather than real disparities in essence, and vary with the patient's powers of expression. This point is important, and may be useful in diagnosis, for if we can standardize, as it were, neuralgic pains, we can more easily differentiate between true "neuralgias" and those who suffer from pains in the face of another kind. Certain it is that the pain is essentially different from the more common burning, throbbing, duller, and continous pain of an inflammatory lesion, and when a person who is thought to have neuralgia uses such terms as the last to describe the pain, we shall rightly suspect that we are faced with something other than true trigeminal neuralgia—very possibly a closed infected antrum with secondary neuralgia. In much the same way that the pain is differently described by different persons, so the expedients to which they resort to mitigate, or to prevent, the attacks vary with individual ingenuity and resources.

Facial Spasms.—The term "tic douloureux" is not a good generic title, as in many patients facial spasm is not an important feature. Often during severe attacks the pain causes irregular contractions of the facial musculature, but they are seldom of a severely spastic or clonic nature. Painful cramp-like facial spasms may occur in cases which are not essentially due to trigeminal neuralgia, spasms which are not stopped until the seventh nerve is blocked. These cases are very rare, but must be distinguished as a separate entity. In trigeminal neuralgia the pain comes first and facial movements are secondary, followed as the pain passes off by lachrymation, salivation, and flushing of the capillaries of the face (a sympathetic phase).

Remissions and Intermissions.—As already mentioned, the painful spasms are in general of brief duration; hence the pain commonly disappears altogether for long periods. In fact, remissions of symptoms are as characteristic of major neuralgia as they are of duodenal ulcer. This is a fundamental characteristic. The pains may disappear for weeks, months, or even years; and here we have the explanation of the fact that so many patients are able to give such long histories of their malady. Generally this is well recognized by the patient, who admits that were it not for the free periods he would have gone out of his mind or sought death. At the same time the knowledge that after a few weeks or months of agony the pain will probably go, and the hope that it will not return, encourage the victim to struggle on with inadequate medicinal protection against his sufferings. With this must be coupled the undeniable fact that doctors themselves too often hesitate to advise radical surgical treatment. I shall refer to this point again later.

The remissions from pain are most irregular, and although in some patients there is a seasonal incidence in spring and autumn, this is by no means general. Cold in my own series has been more beneficial than heat, and there is little hope that a stay in a warm or sheltered watering-place will give the relief so eagerly sought, and sometimes found in other chronic diseases.

* Read in opening a discussion in the Section of Surgery at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

Sites of Election.—The pain of trigeminal neuralgia is generally strictly anatomical in its distribution. In my cases it has commenced rather more often in the second division. Probably the second and third divisions are affected more or less equally, but the slightly greater incidence in the second division in my own series is worth noting, because it used to be taught that neuralgia began in the third division and spread upwards to the second. This is certainly not the rule.

First Division.—A point on which there can be no dispute, however, is that the first division is rarely affected first (2 per cent. of my series). Many patients with severe neuralgia complain of pain passing up through the eye to the forehead from the second division, but this is a pure overflow and stops when the pain in the lower part of the face is put to an end. Further, pain high in the temple may originate in the auriculo-temporal branch of the third division and from the zygomatico-temporal branch of the second, and may be described by our patients, who are not anatomists, as "pain in the forehead."

The freedom of the ophthalmic division from primary neuralgia is of immense importance when we come to treatment, for it is evident that we can, if we choose, omit this part of its predestined deep fibres from destruction without fear of subsequent pain in this area. The recognition that this branch can be spared has profoundly modified the surgical treatment of neuralgia.

Second Division.—The pain is generally in the soft parts of the face, and especially in the upper lip and beside the nose. It may also affect the gum about the canine fossa, but does not often spread to the palate. Second division neuralgia tends, therefore, to be seated in the soft parts, and is, if one may call it so, an anterior pain. It may, of course, extend into the full distribution of the second division, including the posterior palatine nerves, the upper gum, the temple, as already mentioned, the side of the nose and the eye, and overflow beyond these confines on the same side but not to the other. On the whole, however, the presence of pain in the upper lip and the fear of the lip and cheek being touched are the striking features of neuralgia in this division.

Third Division.—The pain in neuralgias of this division is chiefly in the bone and gum, going back to the tragus but not so often into the lip or tongue. Indeed, the freedom from severe pain in the tongue is notable; even in well-established cases it may dart there only occasionally. Third division pain is therefore more often a deep-seated pain and is not so tiresome in the lip as with the second division, though the pain is in itself no less severe.

"Atypical Neuralgias."—In very marked contradistinction to the above is a most difficult group, which is at present classified under the non-committal title of "atypical neuralgias." The outstanding feature of these cases is the non-paroxysmal nature of the pain, which is continuous night and day, often for years. It is described as a burning and often as of a pulling kind, and is generally felt all over the trigeminal field and often beyond it from the start. The pain is equally described as unbearable, but it never remits and it never causes those sudden eloquent silences, those postures and anguished expressions which are diagnostic of true neuralgia. In fact, when the patient, in the course of describing the pain which has been so continuously present, is interrupted and asked whether the pain is there now, the invariable answer is, "Yes, of course, it never ceases," although his demeanour has given the clinician no special inkling that he was indeed in pain at the time. This is quite [illegible]. The patients are generally younger than the [illegible]," often in the twenties or thirties, an age at which paroxysmal neuralgia is rare, though [illegible] unknown. Further, the pain is often centred about the eye and affects the forehead and scalp more than the rest of the face, radiating to the neck, shoulder, and arm. Both sides are commonly affected, though one may be much less troublesome than the other. It is important that we should differentiate this type because surgical treatment is entirely useless, and *indeed should be* avoided, as it commonly makes the condition worse since all treatment for pain is essentially destructive. Such steps give the patient a positive lesion with which to tempt some other surgeon to extend the damaged area in the hope of cure—a praiseworthy but vain aspiration. (See excellent reviews of this subject by Glaser and by Stewart and Lambert on spheno-palatine neuralgia.)

Glosso-pharyngeal Neuralgia.—This is a rare disease but one which is easily confounded with trigeminal neuralgia. There has been only one case in my series, and this will be separately reported. The pain is equally spasmodic, but is generally localized to the depths of the ear and to the fauces or to one or the other, an elective tendency; it does not spread to the face. If such a distribution is localized to the ear, it may delude the surgeon into thinking that it is a curiously local example of third division neuralgia, seated in those twigs which supply the tragus, auditory meatus, and tympanum. The pain is more localized and more deeply seated than in trigeminal neuralgia, and is brought on not by chewing and moving the jaws but by swallowing. The treatment is of course resection of the glosso-pharyngeal nerve.

Post-herpetic Neuralgia.—Brief mention must be made of post-herpetic neuralgia. It is well known that herpes is a distressingly painful affection, but in the young or moderately young it passes off without any legacies but scars. In the aged it is almost always followed by pain of the most insistent and wearying nature. This pain, like that of the atypical neuralgias of younger persons, is continuous and unremittent, and it is my experience, and the experience, I think, of all of us, that long-standing continuous pain is intractable to surgery unless it is secondary to chronic malignant disease. Occasionally post-herpetic neuralgia is spasmodic, and in such cases there is more hope of surgical cure.

Tumours and Gummata of the Gasserian Ganglion.—Lastly we have those cases in which pain in the trigeminal field is caused by tumours or focal lepto-meningitides affecting the root of the nerve in the posterior fossa, by tumours or aneurysms involving the ganglion in the middle fossa, or by nasopharyngeal or other growths infiltrating the issuing divisions. The differentiation of neuralgias due to these conditions is a fascinating subject, but it has no place in the present discussion. Fortunately we have a touchstone by which these causes can generally be eliminated immediately, namely, anaesthesia or analgesia of the affected area. In true paroxysmal neuralgia there is never any alteration in the sensory perception of the skin, unless it be a certain hypersensitiveness. This is a fundamental point in diagnosis. If cutaneous anaesthesia is found [illegible] (anaesthesia dolorosa), then we know at once that the case is one in which there is some definite lesion of the trigeminal or its branches, and a full study must be made to discover the cause. I am aware that [illegible] acoustic neuromata have been discovered [illegible] the course of an attack through the posterior [illegible] sensory root of a patient thought to be the subject of plain neuralgia. But such isolated experiences [illegible] my opinion imply, as some would have [illegible] this is a sufficient reason for the routine [illegible] approach. The fact is that neuralgia [illegible]

leading symptom in lateral recess tumours. Severe neuralgic pain sometimes occurs in malignant disease of the mouth, and no little success may be obtained by a well-planned nerve section, which gives astonishing relief. Mention must be made of trigeminal neuralgia, often with a large overflow, occurring in disseminated sclerosis. These cases can be helped by surgery. The causal lesion seems to be a patch of sclerosis in the pons in the area of entry of the sensory root (Parker).

Differential Diagnosis of Paroxysmal Neuralgia

The foregoing account should make clear enough the characteristics of major or paroxysmal neuralgia, and also those states most likely to incite it as an auxiliary phenomenon. To recapitulate: the patient is usually female, the pain is limited to one or two divisions save in the worst cases, the attacks are of brief duration, and between the pains the patient is moderately comfortable though apprehensive. There is a strong tendency towards remissions in which the pain is negligible or entirely absent for weeks or months. There is no alteration in the sensibility of the skin, certainly no diminution. The pain of secondary neuralgia is very similar, and when due to dental causes it is easily remedied. Antral infection, however, is more insidious. It might be assumed that if pain corresponding to the paroxysmal type has been present for a long period, possibly for two or three years, and there is no history obtainable of disease in the nose or of purulent discharge, paranasal infection cannot be present. This would be an unsafe conclusion, for I have known of such cases, and I firmly believe that *x*-ray studies of the sinuses should be made as a routine if error and disappointments are to be avoided. Generally these infected patients admit having had occasional swelling of the face or, what is more important, of the lids, an oedema lasting for a day or two. Flushing and a sensation of subjective feeling of swelling occurs in some paroxysmal cases due to disturbance of sympathetic control during the attack. This is of short duration and may usually be distinguished from a real oedema.

Treatment

It is just forty years since Horsley published a paper entitled "Remarks on the various surgical procedures devised for the relief or cure of trigeminal neuralgia." All the operations there reported, thirty-one on nineteen patients, were peripheral save one—a "section of the fifth nerve from the bulb" by a transtentorial approach ending fatally. The years that have passed have seen many further stages in the struggle between the surgeon and a nerve which shows the most astonishing and obstinate powers of regeneration, powers which would delight us if they were reproduced by, say, the median or ulnar at the wrist. The story of the surgery of neuralgia is one of a slowly advancing attack from the periphery inwards to the ganglion and finally to the sensory root. The names of many famous men are associated with this movement, especially Rose, Horsley, Krause, and in particular Jonathan Hutchinson junior.

Operations on Gasserian Ganglion

Hutchinson perfected the removal of the lower two-thirds of the ganglion with the preservation of the ophthalmic division and that portion of the ganglion which is proper to it. This he did for three reasons: first, because primary neuralgia is rare in the first division and when present is generally an overflow, so that the division may usually be left intact; secondly, in order to preserve sensation in the eye and to prevent the neuro-paralytic keratitis which is so apt to follow complete denervation of the cornea; and thirdly, because by leaving it he avoided the chief danger of the operation at that date, injury to the cavernous sinus. Hutchinson brought this operation to a high pitch of efficiency, for in 1919 he reported 70 partial excisions of the Gasserian ganglion with 3 deaths (4 per cent. mortality) and refers to Horsley's (1908) 120 cases with 6 deaths (5 per cent.). Horsley's final figures were never, I think, published. These English figures compared extraordinarily favourably with those from foreign clinics, and were unquestionably far better than those of surgeons with less experience in British and other centres.

The Gasserian ganglion in its upper and anterior part lies in the wall of the cavernous sinus, the ophthalmic division penetrating it. The whole ganglion cannot be removed without injuring the sinus, and misguided attempts to do so were responsible for the heavy operative mortality that years later still hangs like a cloud over the subject. Hutchinson's operation was well conceived in that he removed only such part of the ganglion as could be extirpated without opening the cavernous sinus, though even so, a small opening is almost inevitable when the cut second division is stripped back. None the less the Hutchinson operation has been abandoned in favour of another of which he was himself, curiously enough, extremely sceptical. I refer of course to section of the sensory root by the temporal extradural route, the advantage of which is that the cavernous sinus is not a hazard at all, for the operation has nothing to do with it.

Methods of Division of Sensory Root

This operation, generally credited to Spiller, has been perfected by his surgical colleague Frazier, who has recently recorded 511 cases, with 1 death in the last 269 cases (0.37 per cent.). Prior to this, Cushing in 1920 had reported 332 Gasserian operations with 2 deaths (0.6 per cent.), most being root sections, others partial gasserectomies. Similar figures have been recorded by Adson. Cushing's statistics certainly provided a tremendous stimulus, for ten years ago his low mortality rate in such a large number of cases seemed well-nigh incredible.

Three innovations have contributed to the improvement in operative results: the sitting posture in the dental chair, the use of illuminated retractors, and, lastly, the employment of suction as a means of keeping the field clear.

I have personally performed the operation on eighty-five occasions with two deaths, one from an unknown cause early in the series in an exceedingly bad subject, the other a death from pulmonary embolism on the ninth day in a patient making the usual smooth post-operative recovery. This mortality is higher than I would wish, but it is only common sense to admit that occasional fatalities must occur when we are dealing with persons of the age and debility of some "neuralgias." Neither of my deaths came from technical error, and indeed it is my purpose in this address to show that the factors which can bring about morbidity and fatality are so few that such deaths as occur may be attributed more to bad luck than to the inherent hazards of the operation. I have carried out fractional root sections five times under local anaesthesia (which has its special points), helped out by a little inhalation anaesthetic when the root was being worked upon. And I have twice cut the sensory root on the second side, preserving the motor root, after the ganglion on the other side had been destroyed by alcohol by the Härtel method. The precise mortality in decimal points of zero is not of great importance: what is important is

that it is clear that with good surgery and good fortune only one patient in a very large number is going to die after the operation. Yet it would seem that practitioners the world over still think of Gasserian operations as having the same mortality as in the immediate post-Listerian period, or so one would judge from their attitude towards it. It is a fact, of course, that the operation of section of the sensory root is a very difficult operation to learn and is at times an exceedingly difficult operation to perform, though at other times it may be simple.

It is clear from the low mortality of this operation in large series of cases that there must be something essentially benign, some factor of risk must be lacking, as compared with even the partial Hutchinsonian resections. This logical assumption is correct and it lies in the avoidance of any likelihood of damage to the cavernous sinus. It is true that the sinus and even the carotid artery may be damaged in this operation with fatal results, but only when the surgeon has gone astray, and these structures are not normal risks when the operation is well performed. The sensory root can be picked up at the posterior end of the cavum meckelii and the actual section carried through without the least loss of blood. It is imperative that the field should be entirely dry before the final exposure of the root in its cerebro-spinal fluid sac, and it is in effecting this that the surgeon may have to use all the skill at his command, not because of bleeding from the cavernous sinus but of bleeding from veins in the dura. Some individuals have none of any note, others may be well endowed.

Advantages of Fractional Division

Total division of the sensory root, however, is open to the dangers that come from an insensitive cornea and is in this respect inferior to the Hutchinsonian operation, though superior to it in point of mortality. Realizing this, Frazier has applied the Hutchinsonian principle to the root section, preserving those fibres in the root which supply the eye, and Adson has added a further refinement in the preservation of the motor root. This operation, which is now the accepted standard operation among neurological surgeons and the one which I perform, is referred to as "fractional division of the sensory root." It is fortunate, indeed, that the arrangement of fibres in the root of the trigeminal nerve allows, as Frazier has shown, of such manoeuvres being carried through with success. There is no doubt a slight interchange and a little interweaving of fibres, more in some individuals than in others, but in the main the fibres preserve a predestined course in the root, those to the ophthalmic division lying innermost and above, those to the third division lying below and outside, those to the second occupying an intermediate position. The parallel arrangement of the fibres is well shown in Fig. 1. The motor root lies behind the sensory, crossing from above downwards, and is free from the sensory fibres in that part of the root exposed at operation. The safest way of preserving it is, in my experience, to cut through the root from without inwards with long fine Stille scissors, until a hole is made through which the motor root, running in a slightly different direction, is clearly seen. In cases in which alcohol injections have been made into the ganglion beforehand, a satisfactory fractional section is much more difficult to carry out, for there are many more adhesions, the fibres do not separate readily one from another as they ordinarily will, and the motor root is commonly matted to the sensory part. These are serious obstacles to clean operating, and it is desirable that we should attempt to standardize our treatment of neuralgic patients and avoid making ganglionic injections in patients who are suitable subjects for fractional section.

Results of Fractional Division

Personally I make a practice of dividing the lower [illegible] outer two-thirds (lower and outer because the root [illegible] obliquely with its flat upper surface looking upwards [illegible] outwards). The resulting anaesthesia affects the [illegible] two-thirds of the face and half the cornea. In many [illegible]

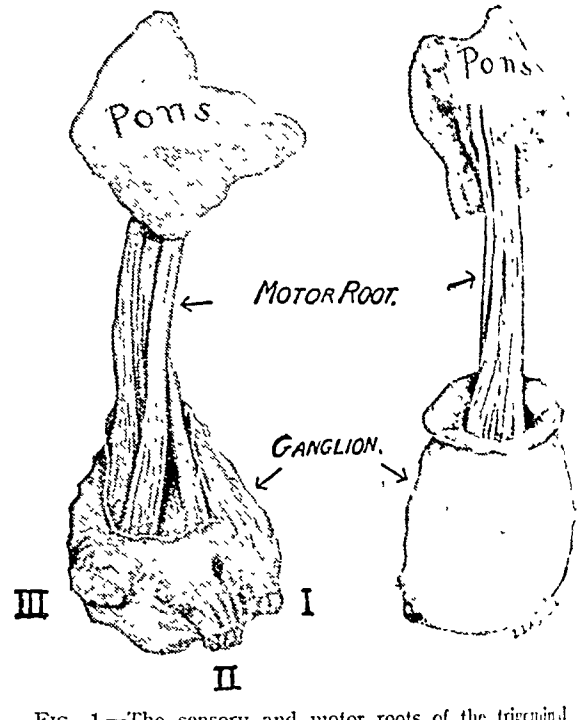


FIG. 1.—The sensory and motor roots of the trigeminal nerve, from below (left) and above (right). Note the parallel fibres in the sensory root.

the line of anaesthesia runs strictly through the pupil the lower half of the cornea being insensitive, the upper normal. Figure 2, which is the work of an entirely independent observer on cases operated upon by me, shows the average result. The retained sensation in the cornea has been sufficient to prevent the neuro-paralytic keratitis of which Paton made so masterly a review. From the recurrence in a series of cases of this picture of partial ocular anaesthesia it becomes abundantly manifest that we have in this operation a method of attack on trigeminal neuralgia which seems to meet all our needs. In two or three cases I have ventured with success to cut the middle

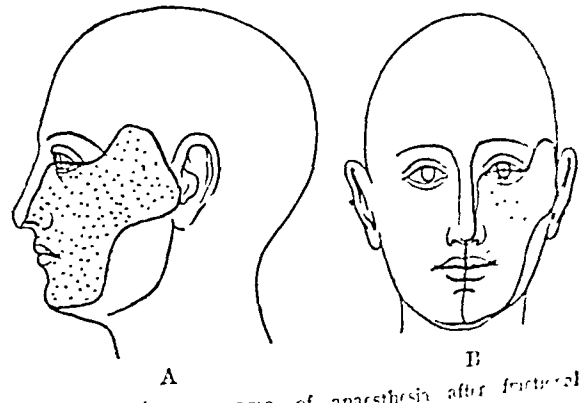


FIG. 2.—Average area of anaesthesia after fractional section of the sensory root. (F. N. Mu[illegible])

portion of the sensory root alone (see Fig. 3) in [illegible] whose chief pain was referred to the second divi[illegible] anaesthesia following partial divisions is never dense, b[illegible] the operation none the less stops the neuralgic pains. T[illegible] partial preservation of sensation is a great boon to t[illegible] patient. We have an anomalous situation in the pre[illegible] ence of sensation after fractional root division, for

anaesthesia is incomplete after an alcohol injection, the pain is almost certain to return (though there are cases in which it does not), on the other hand, if the face is not entirely numb in the painful area after root section it does not seem to matter No doubt the explanation is to be sought in the site of the interruption of conduction in the two operations It must be conceded that on occasions the motor root cannot be isolated with certainty, but its conservation should be aimed at Marshall's studies on my cases show that there is no lessening in the anaesthesia when it has been spared.

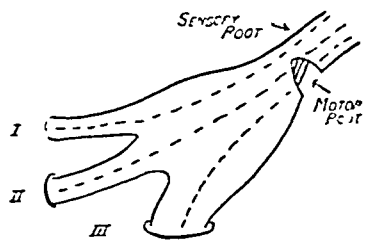


FIG 3—Diagrammatic schema of fractional root section with preservation of motor root Ophthalmic fibres preserved

It has been claimed by those who urge the division of the root in the posterior fossa by a cerebellar approach that fractional section stops the pain without producing a totally anaesthetic face This same result, in my experience, follows fractional section in the middle fossa, and is not a specific result of the immediately pre pontine section It is, indeed, a well recognized result of root section and partial nerve section elsewhere that analgesia is produced over a wider area than tactile anaesthesia

Alcohol Injections

In view of the mortality following Gasserian operations in the remote past it is not a matter for wonder that attempts were made to find some less lethal method of treatment Peripheral alcohol injections have proved their usefulness and in the hands of some, notably of Harris in this country, they have proved of great service I believe that it is wise to advise a patient to have at least one peripheral injection before proceeding to operation, especially in the less severe case clearly limited to one division The advantage is that he has a foretaste of the numbness (and that curious and frequently accompanying feeling of swelling) which will be permanent after the root section an anaesthesia which must always come as some thing of a surprise Pre operative advice, though useful, can never adequately describe the actual feeling However if a fractional root division is to be performed preliminary injections are not so necessary, as some sensation is retained As to injections into the ganglion itself, whether by Harris's lateral method of infiltration or by the anterior direct placement of alcohol into the ganglion and root as devised by Härtel, and developed by my colleagues Rayner and Morris in this country, I believe that this method should be restricted to those who are judged to be physically incapable by reason of their age or of coexisting disease to undergo operation I have arbitrarily fixed 70 years as a limit, but I have no doubt that even some older persons could be shepherded through a root section if it were necessary In younger persons and especially those in the forties and fifties, and those whom we term a "good" sixty or more, I have no hesitation whatever in saying that fractional root section is infinitely the better course The matter is capable, I believe of precise and logical statement If operation had nothing better to offer than a complete and dense anaesthesia of the face with the risks consequent on total interruption of the ophthalmic fibres, there would be nothing to choose between such an operation and alcohol injection —indeed, the balance would be in favour of the latter except after its repeated failure But fractional root section offers something which alcoholic destruction of the ganglion cannot give—namely, preservation at will of such fibres as we wish to keep This being the case there seems to me to be little room for argument as to which is the method of choice, though the exigencies of circumstances may at times induce us to use a method which is both theoretically and practically inferior Alcohol injections are in any case more uncertain than operation The not infrequent result of injections is that we achieve rather less than we hoped for, while at times, using a precisely similar technique, we obtain more, unfortunately, than we bargained for We must not forget that trigeminal neuralgia is a really serious affection, and we do not make it less serious by using a method which is to the casual eye a simple and innocuous one, and yet may require much repetition and bring about an occasional catastrophe But in the aged and the infirm we must continue to use this somewhat uncontrollable method

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CHRONIC MICROCYTIC ANAEMIA*

BY

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In opening a discussion on the classification and treatment of the secondary anaemias one is at once faced with the difficulties of the nomenclature The adjective *secondary* was originally applied to anaemia whose pathology was well understood, in contrast to *primary* anaemias such as pernicious anaemia, whose intrinsic nature was obscure Recent advances in knowledge have done much to obliterate this distinction We now have more information about the etiology of pernicious anaemia than of many anaemias called secondary An additional meaning has, however, become attached to the term secondary In anaemia from simple causes, such as haemorrhage, infection, or toxaemia, the haemoglobin is decreased out of proportion to the red cells, which are often smaller than normal, and the colour index is low When we say that an anaemia is of the secondary type, we usually mean only that the colour index is low It is in this sense that I shall interpret the title of our discussion I hope to show that very little is known of the pathology of many cases of anaemia of low colour index, and that there is a large and coherent group which forms an independent malady, a disease *sui generis*

The adjective *chlorotic* has similarly been so devalorized as to have lost all meaning True chlorosis has practically disappeared There can be few medical men under the age of forty who have ever seen a case of "green sickness" To-day anaemia is uncommon in adolescent

* Read in opening a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Eastbourne, 1931

females, and is never associated with a greenish coloration of the skin. On the other hand, anaemia of obscure origin is very common in adult women. Only too often it passes unrecognized, or, if recognized, it is wrongly ascribed to one of the accepted causes of secondary anaemia. It is both meaningless and inaccurate to diagnose these cases as chlorosis.

The haematologist applies the terms *microcytic* or *hypochromic* to all forms of anaemia of low colour index. Although the term hypochromic, which refers to the pallor of the red cells, is more universally accurate than the term microcytic, which refers to their diminished size, I shall prefer to speak of these anaemias of low colour index as microcytic, for reasons of pathology which do not concern us at present. To avoid the associations of such words as secondary or chlorotic, I shall refer to obscure anaemia of low colour index as chronic microcytic anaemia, thus stressing the low colour index and differentiating this form of anaemia from the megalocytic anaemias of which pernicious anaemia is the classical example. Chronic microcytic anaemia constitutes a well-defined malady which is much more common in women than in men and which is susceptible of great improvement on intelligent treatment.

The commonly accepted causes of microcytic or secondary anaemia are haemorrhage, especially from peptic ulcer and tuberculous disease of the intestine, haemorrhoids, and menorrhagia; infection, especially in tuberculosis, acute and subacute rheumatism, and suppuration; new growths; and toxaemias, such as chronic nephritis. In all these conditions the anaemia is merely a symptom of the underlying disease, and it is to the latter that treatment must be directed. Until the cause is removed, haematinic remedies other than transfusion rarely produce any effect. I shall not further refer to these conditions.

The study of a large series of cases of microcytic anaemia reveals two important facts. The first is the great excess of all forms of microcytic anaemia in women. Anni Seppanen (1930)[41] analysed 278 cases of microcytic anaemia which had been admitted to the First Medical Clinic at Helsingfors between 1908 and 1928. During that period 7,706 men and 7,183 women had passed through the clinic. In spite of the preponderance of male admissions, 77 per cent. of the patients with anaemia were women. When all cases of chlorosis, and all in which the anaemia might be attributed to genital haemorrhage, pregnancy, or lactation, had been abstracted, the number of female cases was still 69 per cent. of the total. There was an excess of women in all the groups—haemorrhage, infection, etc.—except malignant disease.

The second important fact is the high proportion of unexplained cases of chronic microcytic anaemia. Seppänen's 278 cases included 30 patients with "chlorosis" and 19 in whom anaemia was either the only symptom or was associated with a functional dyspepsia—that is, 18 per cent unexplained. In an analysis of the cases diagnosed as anaemia at Guy's Hospital in the years 1922 to 1927, I found that there were 183 cases, of which 47 (26 per cent.) were unexplained microcytic anaemia.[56] In the same paper I analysed all blood counts done by Dr. F. A. Knott, the clinical haematologist at Guy's Hospital, in the years 1927 to 1929, and found that there were 137 cases of anaemia, of which 20 (15 per cent.) were unexplained microcytic anaemia.

All these percentages are inaccurate. They probably underestimate the frequency of chronic microcytic anaemia in women. Nevertheless, they serve to emphasize two important facts: (1) that all forms of microcytic anaemia, whether symptomatic of some underlying malady or not, are much more common in the female sex; and (2) that a large fraction of all forms of microcytic anaemia is unexplained, and not due to haemorrhage, infection, toxaemia, or malignant disease. For some years now I have been engaged in a study of this last group, and it has become clear that chronic microcytic anaemia may be an independent disease, with well-defined etiological factors and symptoms, much more frequent in women than in men.

Incidence and Constitutional Type

Defining anaemia as a haemoglobin percentage of less than 75, and limiting my investigations to patients over the age of ten, I have been able to study 117 cases of chronic microcytic anaemia, including "chlorosis," in which none of the accepted causes of anaemia was active. Of these patients 101 (86 per cent.) were women, and for the present I shall confine myself to describing the female cases. The diagram of the age incidence (Fig. 1) shows

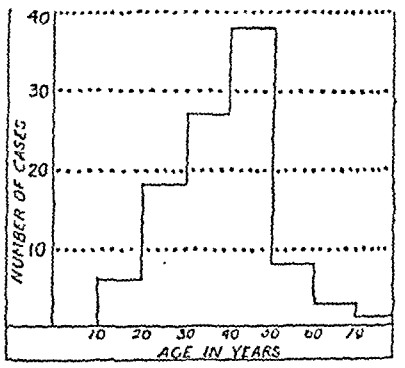


Fig. 1.—Age incidence of chronic microcytic anaemia in women.

a steady increase to a maximum in the years 40 to 50 and then an abrupt decrease. In individual cases which I have followed after the menopause there has been a spontaneous improvement. The age and sex incidence of chronic microcytic anaemia are thus quite different from those of achlorhydria[8 10 23 36] and of pernicious anaemia,[37] which increase in frequency with advancing years, and are said to occur equally in the two sexes. Chronic microcytic anaemia is a disease of the female sex and of the reproductive epoch. True pernicious anaemia is probably more common in men than in women, a fact hitherto concealed by the confusion of simple achlorhydric anaemia and pernicious anaemia.

No social class is picked out, but the women affected often show signs of an asthenic diathesis. This may not be obvious from the external habit of the patient, who in rare instances appears robust, but there is a general constitutional weakness, most evident in the digestive, the reproductive, and the nervous systems. Less commonly the resistance to septic infections is poor, or there is a history of frequent winter coughs or pleurisy, unproductive of physical signs or of *x*-ray changes in the lungs, but suggestive of pulmonary weakness. It is not easy to decide how far such weaknesses are innate and how far they are secondary to the anaemia. Many cases certainly do surprisingly well when the anaemia is corrected, but in the majority there is evidence of debility unrelated to the anaemia. Corroboration of the association of achlorhydria (a symptom of great frequency in chronic microcytic anaemia) with asthenic disturbances, such as the nervous temperament, functional dyspepsia, rheumatoid arthritis, and debility, may be found in the writings of Albu,[1] Warburg and Jorgensen,[2] Wilkinson and Oliver,[3] I have previously discussed the importance of constitutional factors in chronic microcytic anaemia unassociated with achlorhydria.[56]

The debility from which these women suffer may date back to the earliest years of life; they were difficult to rear and had intestinal dyspepsia or "consumption of the bowels" in childhood. The majority are

dyspeptics, even though the gastric secretion may be normal. Nervous instability is present in almost all. It may manifest itself merely as a hyperaesthesia, in which the common pleasures and pains of life produce an excessive response and give rise to undue emotion or insomnia. In other women disabling headaches, pruritus, hysterical phenomena, nervous breakdowns, and even insanity, occur. The reproductive function, which is a measure of the inherent vitality of the organism, is subnormal. Some are the solitary offspring of infertile parents or the children of old age. The catamenia often begin late in life and cease early; the periods are painful. Menstruation is more often scanty than excessive. One-quarter of the patients are single. Complete or relative sterility, miscarriages, and post-partum haemorrhage, are frequent in the married women.

Although the anaemia is intimately linked with the age of reproduction, and is undoubtedly aggravated by pregnancy and by the excessive loss which sometimes marks the establishment and the cessation of menstruation, these factors of themselves seem insufficient to account for its long standing. The physiological anaemia of pregnancy disappears within a few weeks of parturition.[4] The number of pregnancies in the anaemic patients is smaller than in healthy women. An occasional flooding or a post-partum haemorrhage cannot account for anaemia of twenty years' duration. Such loss of blood is trivial compared with that of the transfusion donor, who gives a pint of blood every three months. For these reasons it is clear that, although the strain of menstruation and pregnancy plays a most important part in the development of chronic microcytic anaemia, this is only because of inadequate and subnormal blood formation, which is partly the result of intrinsic constitutional inferiority, and partly of extrinsic factors to be discussed later.

The Anaemia

The anaemia appears to be due to inability to form haemoglobin, in contrast to pernicious anaemia, where the difficulty lies in manufacturing the stroma of the red cells. In a case of average severity a blood count of 3,500,000 red cells per c.mm., haemoglobin 35 per cent., and a colour index of 0.5, are to be expected. Sometimes the total number of red cells is normal and there is a pure haemoglobin deficiency. The red cells are pale, and, in general, the worse the anaemia the lower the colour index. The mean diameter of the red cells is usually diminished and never raised. Reticulocytes are within normal limits and occasional normoblasts are present. The zone of haemolysis with hypotonic saline is widened, but this increased fragility disappears on repair of the anaemia.[15 42] Van den Bergh's reaction is negative, the bilirubin content of the plasma being diminished, as also is the free iron of the plasma.[27 29] Blood platelets are unaffected. The total and differential white count is normal. At times, in the absence of infection or haemorrhage, the Arneth count shows a shift to the left, which disappears on repair of the anaemia. Less often there is a shift to the right, the neutrophils being hypermature.

The spleen is palpable in one-third of all cases, whether achlorhydric or normochlorhydric. It is rarely much more than palpable, but may extend a hand's breadth below the ribs. It completely recedes beneath the costal margin on repair of the anaemia. Excision of the spleen, which should never be performed wittingly, as it is both needless and ineffective, reveals a pure hyperplasia of this organ (McNee's Group IV).[21 43 53] The bone marrow is hyperplastic, with great excess of normoblasts. Hyperplasia gives place to normal maturation of the red cells on successful treatment.[47]

The duration of the anaemia before the patient comes under observation is very variable. Histories are unreliable, on the one hand, because anaemia develops insidiously and is not appreciated till the haemoglobin has fallen below 40 per cent.; on the other hand, because the symptoms of nervous debility or dyspepsia may be indistinguishable from those of anaemia. The history may be brief, the disease beginning spontaneously, or after influenza or confinement. Anaemia may have been continuously present since puberty. Most commonly the patient was treated for anaemia in girlhood, and relapsed again in the thirties. Much must depend on the relative importance of the intrinsic and extrinsic agencies. Achlorhydria, which is the most important etiological factor, is usually secondary to gastritis, and becomes more frequent in the later age groups. The average duration of symptoms is from five to ten years. The natural tendency of the disease is to get progressively worse through the child-bearing period, with exacerbations in pregnancy, and to recover spontaneously after the menopause.

Diet

The diet is often poor in animal protein, but this is not true of all cases by any means, and it is not possible to ascribe the anaemia solely to defective diet. A similar diet is taken by large numbers of people who are not anaemic, and when anaemia results from defective nutrition it is more often megalocytic-aplastic[22] in type than microcytic.[24] Nevertheless, many of these women are ingesting insufficient iron in the food. In some cases of chronic microcytic anaemia, koilonychia, or spoon-shaped depression of the nails, occurs. The nails are so hollow that a drop of water will rest easily on them. On repair of the anaemia the nails grow out in their normal convexity. I have seen koilonychia without anaemia in anorexia nervosa, and it is also described in tuberculosis.[17] It seems to be a sign of defective nutrition.

Intestinal Intoxication and Focal Sepsis

In collecting cases of chronic microcytic anaemia I have been careful to exclude patients with haemorrhage, infection, or toxaemia; but I have included cases attributed to intestinal toxaemia and focal sepsis, as these diagnoses are much abused. In no patient was there any evidence of intestinal toxaemia. Therapeutic measures based on this diagnosis, such as aperients, operation on the colon, or inoculation with faecal or duodenal streptococci, are valueless. Treatment with iron alone cures the anaemia.

Oral sepsis is common in these women, but it plays little part in the inception of the anaemia. Many have had most or all of their teeth extracted without benefit. In only six did this operation seem to have been of value. Careful study of these cases has shown that no improvement in the anaemia can be expected from dental extractions alone unless such signs of septic absorption as fever, leucocytosis, septic rashes, or arthritis are present. Anaemia is very rarely the result of focal sepsis. The streptococci isolated from my cases have nearly always been anhaemolytic. These findings are confirmed by Bullcid,[5] who made a bacteriological study of eight hundred teeth extracted for apical infection, and found that true haemolytic streptococci were very rare, and were usually associated with acute alveolar abscess. I do not wish to deny the existence of anaemia due to anhaemolytic streptococci, but rather to point out that it is rare and usually a febrile ailment.

It must be remembered that the resistance to septic infection is impaired in chronic microcytic anaemia, and it seems that oral sepsis is more often the result than the cause of the debility. The same point has been emphasized by Pemberton[25] and by Douthwaite[11] with regard

to rheumatoid arthritis. In three of my patients, whose teeth had been examined and passed by first-class dentists, rapid infection and decay have subsequently occurred. The same lack of resistance to infection, especially by streptococci, is shown by the skin, and patients of mine have developed infectious eczema, erythema induratum, and chronic paronychia, years after the onset of the anaemia. The lower end of the alimentary canal is not infrequently involved, anal fissures and intertrigo occurring. Infections of the mouth, leading to glossitis, stomatitis, pharyngitis, and dysphagia, and of the stomach, leading to gastritis and achlorhydria, are of such great importance that they must be considered separately.

Achlorhydria

Fractional test meals have been performed in all these 101 women, except in 6, who were unable to swallow the tube on account of dysphagia. In 81 per cent. there was achlorhydria or extreme hypochlorhydria. The details of this achlorhydria have not yet been elucidated, but it appears that while free hydrochloric acid is usually permanently absent, chlorides and pepsin are not diminished to the same degree as in pernicious anaemia and there is not an absolute achylia gastrica. Achlorhydria precedes the anaemia and remains when the anaemia is cured. It is not the result of the anaemia. Gastric lavage and histamine injections fail to provoke the secretion of acid.

What is the cause of this achlorhydria? In many cases it is a hereditary abnormality, as has recently been emphasized by Wilkinson and Brockbank.[30] Achlorhydria alone, achlorhydria plus the pernicious-anaemia-subacute-combined-degeneration syndrome, and achlorhydria plus chronic microcytic anaemia, all run in families. The males are more prone to pernicious anaemia, the females to chronic microcytic anaemia. Gram[16] has brought evidence that it is perhaps not achlorhydria which is inherited, but a vulnerable gastric mucosa, which sooner or later develops gastritis and consequent achlorhydria. In many cases the history is extremely suggestive of gastritis, symptoms dating from an attack of gastric influenza, food-poisoning, or other gastro-intestinal infection. Gastritis may also be the result of oral sepsis. Six of my cases followed gastro-enterostomy.

The close correlation of achlorhydria and anaemia cannot be a matter of chance, and a causal nexus is also clear when anaemia follows an operation on the stomach which produces gastric anacidity. Achlorhydria may produce anaemia in three ways. In the first place, it often causes loss of appetite for non-containing foods such as animal proteins and green vegetables. In the second place, the absorption of iron is probably diminished in the absence of free hydrochloric acid from the stomach.[30] In the third place, it is often associated with other signs of the asthenic diathesis, in which anaemia so readily occurs.

It is very difficult to know the proportion of cases of achlorhydria in which anaemia develops. Hospital statistics are valueless, as they concern only the sick. For this reason my previous computation that among 100 patients with achlorhydria one might expect to find 10 with pernicious anaemia and 20 with microcytic anaemia, is far too high, as Warburg has clearly shown. Pernicious anaemia only develops when the gastric ferments are absent and this true achylia gastrica is much rarer than achlorhydria. Why does achlorhydria not always produce a microcytic anaemia? It seems that a robust constitution and a healthy appetite can overcome this defect. Microcytic anaemia very rarely arises from this cause in males. Recently it has been found, however, that there may be iron deficiency in pernicious anaemia also.[43]

After operations on the stomach severe anaemia develops more frequently in women than in men.[44] In my [illegible] women patients with anaemia after gastro-enterostomy there were well-marked signs of an asthenic diathesis. In two no ulcer had ever been demonstrated, the operation having been performed for gastroptosis; one had been treated for anaemia in girlhood, one had had dysphagia before the operation, and the fifth had had hysterical paraplegia ever since a haematemesis fifteen years before the operation. For all these reasons it appears that achlorhydria is rarely sufficient to produce microcytic anaemia unless the basic constitution I have described is present.

Glossitis and Dysphagia

In 1851 Moeller described six cases of chronic excoriation of the tongue in middle-aged women. A similar condition was noted in pernicious anaemia by William Hunter in 1889. About this Moellerian or Hunterian glossitis there has grown up an extensive literature, which has been reviewed by Heyn[18] and by Lewis.[23] The glossitis is a well-defined malady, but it occurs in a number of diseases of a nutritional or metabolic nature, and though usually associated with gastric anacidity, it may be found in cases of anaemia or malnutrition, tropical or non-tropical, in which free HCl is secreted in normal concentration.

This type of glossitis is present in about half of the cases of chronic microcytic anaemia. It is often painless and unknown to the patient. In the active stages the tongue is reddened and excoriated; vesicles may appear and break down to form shallow ulcers. In the chronic and quiescent stages the filiform papillae are destroyed, leaving a smooth, bald tongue. Inflammatory changes in the mouth are not limited to the tongue. The inflammation may spread to the buccal mucosa and to the corners of the mouth and lips, conditions known as stomatitis and perlèche. Passing backwards to the pharynx it produces huskiness and, when the nerve terminals in the pharynx are involved, a most troublesome dysphagia, which may be the presenting symptom.

In my experience pharyngitis and dysphagia never occur without glossitis, and stomatitis rarely. All are more frequent in achlorhydria, but may accompany normal gastric secretion. When the gastric juice is normal, recurrent erythematous and herpetiform eruptions of the mouth and tongue, which subside without residue, are more frequent. The cause of these mouth changes is much debated. They seem to be initiated most commonly by streptococci.[2 20 40 42] In some cases monilia are found. The aphthous eruptions may be due to the virus of herpes simplex, like those of childhood.[33] The fundamental cause is a peculiar lack of tissue resistance to organisms in the mouth, resulting most frequently from achlorhydria but also from other disturbances of nutrition.

Oedema and Angina

Several of my patients have had slight oedema. I have never seen gross oedema, but the literature contains reports of cases of achlorhydria and anaemia, in which there was general anasarca.[12 21 38] Elwyn[12] refers to other cases of achlorhydria with anasarca, in which there was no anaemia or where complications sufficient to account for the anaemia were present. The oedema in these cases, like the anaemia, is due to impaired nutrition, and is comparable with war nutritional oedema.[29]

True anginal pain on exertion, which disappeared on repair of the anaemia, was present in two of my cases. Angina from poor quality of blood is therefore not limited to pernicious anaemia.

Classification

In a series of papers[23 35 36] I have discussed chronic microcytic anaemia in women in three subgroups, but it may

be clearly understood that the age incidence, the anaemia, and the constitutional background are identical throughout, and that this is merely a convenient symptomatic subdivision. The disease is a single entity.

Simple Achlorhydric Anaemia.—This is the largest group, comprising 69 of the 101 cases. In brief summary, it is a disease of middle-aged women, all of whom prove to have achlorhydria or extreme hypochlorhydria. The disease is chronic and shows little tendency to spontaneous recovery until after the menopause. Medical advice is sought either for symptoms of anaemia or because of dyspepsia. The pallor is often striking, but it has not the lemon-yellow tinge of pernicious anaemia, and van den Bergh's reaction is negative. The nails are often spoon-shaped. Glossitis may be present, and not infrequently the spleen is palpable. There may be paraesthesia of the hands and feet but there is no sub-acute combined degeneration of the cord. The anaemia is of low colour index, haemoglobin being disproportionately reduced and the average diameter of the red cells diminished. White cells and platelets are normal; megaloblasts never appear. At biopsy or post-mortem the bone marrow is found to be hyperplastic, normoblasts are much increased in numbers, but there are no megaloblasts.

Dysphagia and Anaemia.—This group comprises 13 of the 101 cases. The inflammatory changes in the mouth spread backward to the pharynx, destroying the nerve terminals which initiate the swallowing reflex and giving rise to the cardinal symptom of dysphagia. Achlorhydria is frequent—in five out of seven patients (Witts);[31] eight out of ten patients (Moersch and Conner);[32] and in five out of five patients (Graham and Johnson);[33] Cameron,[4] however, found free hydrochloric acid "in all of his 25 patients on whom he was able to pass a tube." The other signs and symptoms are identical with those of simple achlorhydric anaemia. Their close relationship is shown by the occurrence in my series of a mother of 44 with dysphagia and anaemia, and her daughter of 23 with simple achlorhydric anaemia.

Chlorosis and Late Chlorosis (Visceroptosis and Anaemia).—In the remaining 19 of the 101 cases neither achlorhydria nor dysphagia was present, and glossitis was much milder. The anaemia and other symptoms were identical, but the group was distinguished by pronounced stigmata of the asthenic diathesis, all being of the chronic invalid type, as described by Bedingfield.[3]

Diagnosis

Anaemia is a symptom of many disorders, and it is of paramount importance not to diagnose an idiopathic anaemia without the most careful examination of the patient. Malignant disease often presents itself as an obscure anaemia and must be considered in all cases. The occult blood test on the faeces should be a routine. In women particular inquiry should be made for excessive menstrual loss. The case should never be long confused with pernicious anaemia: the low colour index and negative van den Bergh reaction are incompatible with this diagnosis, as also is the failure to respond to treatment by liver or stomach. In the rare disease aplastic anaemia, the colour index is high, white cells and platelets are diminished, necrotic ulcerations occur, and there is no response to iron.

Much difficulty may be presented by the diagnosis from splenic anaemia, as achlorhydria, anaemia, leucopenia, and splenomegaly occur in both diseases. Cases of chronic microcytic anaemia are frequently diagnosed as splenic anaemia, and I have known several women refuse operation advised on this diagnosis and return later with a spleen no longer palpable. A spleen below the umbilicus is not likely to be due to chronic microcytic anaemia. If there is a small spleen and anaemia of low colour index, if there is no history of jaundice or haematemesis, if skin pigmentation, clubbing of the fingers, and signs of liver damage such as enlarged veins, positive van den Bergh reaction, and impaired levulose tolerance are absent, the case should always first be thoroughly treated with iron, when the anaemia and the spleen will disappear if the correct diagnosis is chronic microcytic anaemia.

Infective endocarditis and myxoedema are other differential diagnoses which have offered difficulty. More commonly anaemia is overlooked, and the case is diagnosed as hysteria, debility, or functional dyspepsia. These maladies may indeed be present, but they will improve much more satisfactorily when the blood is restored to normal.

Prognosis and Treatment

The prognosis as regards life is good. Kaznelson[21] has described a fatal case, but this must be a rare event. Transition to pernicious anaemia is also very uncommon. Only two of my patients have developed pernicious anaemia, though they have been watched for intervals extending up to nine years. The risk is greater when there is a family history of pernicious anaemia. The prognosis of the anaemia is not good. Relapse is common, especially after incomplete treatment.

The anaemia must be treated with iron by mouth. Small doses and injections are useless. The minimum effective dose of iron and ammonium citrate is 60 grains a day, and of Blaud's pill 30 grains; I prefer 90 grains and 40 grains respectively. I have recently reviewed the results of iron treatment in detail,[37] but would emphasize that effective treatment nearly always takes three months, while it may need a year. Treatment must be continued till the haemoglobin is raised to 80 per cent., for relapse is then much less frequent. The results of vigorous treatment with iron are uniformly good. Failure means either a wrong diagnosis, too small a dose, or a complication such as an active septic focus. Large doses of iron are well tolerated and improve digestion. Few facts in medicine are so unanimously believed by the expert, so strongly backed by evidence, and so little known to the profession, as the absolute necessity of very large doses of iron in the treatment of these chronic anaemias.

Transfusion is temporarily effective, but soon followed by relapse. Liver, liver extract, liver ash, desiccated stomach, and hydrochloric acid, are all without effect on the anaemia.[34 35] Copper plays no part in the action of the large doses of iron. An analysis of the preparations of iron I have used revealed between 3 and 4 milligrams of copper per kilo, which would give only 1/100 milligram of copper per day, or less than the food contains.

Anaemic patients should be confined to bed. The diet should be varied, and should include red meat, liver, or kidney every day. Foci of sepsis should be eliminated, as they delay the response to iron, and keep up the inflammatory changes in the mouth and throat. Glossitis, pharyngitis, and stomatitis usually improve on repair of the anaemia. In some instances they are most intractable. Elimination of septic foci, liver, hydrochloric acid, concentrates of all the known vitamins, have all proved ineffective in these stubborn cases. I am now trying desiccated stomach on the suggestion of Dr. J. F. Wilkinson, who has found that it always cures the glossitis of pernicious anaemia.[47] Dysphagia is treated by the passage of Hurst's mercury tube.

Menorrhagia may be a very troublesome complication. In certain instances, as soon as the haemoglobin has been raised by iron to about 70 per cent., a previous amenorrhoea gives place to menorrhagia. The patient must

remain in bed throughout the period, omitting iron, and taking instead about 100 grains of calcium lactate a day, supported if necessary by injections of cotarnine hydrochloride. After a few months the periods settle down to a normal amount and duration. Menorrhagia is common again about the climacteric. Although not the prime cause of the anaemia, for the patient has previously suffered from anaemia and scanty menstruation, it may nullify all haematinic therapy. It is unwise to wait too long for a natural menopause, as this may condemn the patient to years of invalidism. Treatment by *x*-ray or subtotal hysterectomy should be recommended early; the results are extremely good.

Anaemia in Men

Little can be said about anaemia in men. It is usually of short history, responds rapidly to large doses of iron, and rarely relapses. The cases are equally divided into a group in early life with normal gastric secretion and no symptom except anaemia,[19 54] and a group in later life with simple achlorhydric anaemia. It may be noted in conclusion that although simple achlorhydric anaemia occurs with greatest frequency in women in the reproductive period, a small but important number of cases occur in old people of either sex.[10]

Summary

1 Chronic microcytic anaemia, for which none of the usual causes of secondary anaemia can be found, occurs with considerable frequency in women of reproductive age The women affected are generally of asthenic constitution, and achlorhydria is present in 80 per cent.

2 The anaemia is chronic and shows little or no tendency to improve until after the menopause, when it may disappear spontaneously.

3 The spleen is palpable in one-third of the cases, but recedes beneath the costal margin on repair of the anaemia.

4 Superficial glossitis, indistinguishable from the sore tongue of pernicious anaemia, is present in one-half of the cases Stomatitis also occurs. In about 15 per cent. the inflammation spreads to the pharynx, producing dysphagia, which may be the presenting symptom.

5 Treatment is simple and effective. All cases respond to iron, provided it is given by the mouth in large doses for an adequate period of time. Liver is of no value. Owing to the risk of relapse, it is advisable to continue a small maintenance dose of iron after the anaemia has been cured.

Note on the Literature

I have reviewed the literature in previous papers.[53 54 55 56 57] Subsequent descriptions of chronic microcytic anaemia are listed below [13 26 27 32 46] I had previously overlooked West's paper,[48] which was published under Dr. A. F. Hurst's direction in 1928, and which must be one of the earliest English descriptions of uncomplicated simple achlorhydric anaemia. Naegeli[54] gives an admirable short account of these anaemias in the last edition of his textbook, regarding them as variants of chlorosis and stressing the constitutional basis. I have to thank Professor A W M Ellis, of the London Hospital, and the physicians of Guy's Hospital, for the opportunity of studying patients under their care I am indebted to the members of the Will Edmonds Committee for Clinical Research, and especially to Dr. A. F. Hurst, for much advice, encouragement, and assistance.

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SIMPLE ACHLORHYDRIC ANAEMIA TREATED BY IRON

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Simple achlorhydric anaemia has emerged slowly as a definite entity from among the group of secondary anaemias, and it is remarkable that general recognition o the condition has been so long delayed. A valuable pape on the subject was published by L. J. Witts[1] in 1930 with an analysis of fifty cases and full references to the literature; more recently prominence was given to the subject in a discussion on iron therapy at the Roya Society of Medicine [2]

The subject is of importance and interest for th following reasons. (*a*) There is reason to believe that th anaemia is a modern disease; a study of the literature o blood diseases of the past century reveals no clinic description of the present type. It somewhat resembl chlorosis, but can be sharply defined from it. (*b*) Th

logy of the condition is of great importance. The emia is associated with a chronic gastritis, to which achlorhydria may be secondary, as emphasized by T. Davies.[2] (c) The condition is not uncommon in men in the fourth and fifth decades of life, but it appears probable that the majority of the patients go relieved, being insufficiently dosed with iron, or treated with liver and stomach extracts which have no curative effect.

Description of the Disease

From the clinical aspect it may be described in general terms as an anaemia of insidious origin and great chronicity, affecting females almost exclusively, and developing between the ages of 30 and 40 years. There is usually no close association with haemorrhage or sepsis, but it is frequently accompanied by gastro-intestinal lesions, such as stomatitis, fissures at the angles of the mouth, *glossitis, pharyngitis, gastritis,* and occasionally colitis, producing the symptom-group of the Plummer-Vinson syndrome. Palpable enlargement of the spleen is sometimes present; other symptoms and physical signs are such as are secondary to the anaemia—breathlessness, palpitations, giddy and fainting attacks, and cardiac dilatation.

From the laboratory aspect the condition is an anaemia of chlorotic type—a haemoglobinaemia. There is no evidence of blood destruction within the tissues. The red cell count is often but little reduced, and may be normal or even before intensive treatment; during treatment an erythrocytosis commonly develops. The cells show anisocytosis with many microcytes at first, but appear to be of normal average size during a remission. The colour index may be extremely low during the untreated phase, and tends to remain subnormal throughout. The fractional test meal shows achlorhydria or hypochlorhydria; there is usually excess of mucus.

Differential Diagnosis

The differential diagnosis of chlorosis and simple achlorhydric anaemia is of interest. The blood picture of the two anaemias is practically identical; but a comprehensive article on chlorosis by Sir Clifford Allbutt[3] in 1898 gives a description of a clinical type which can be made to include simple achlorhydric anaemia, nor can it be recognized under any other heading. It is unbelievable that anaemia of such definite clinical characteristics could have escaped the acute observers of the end of the last century. Chlorosis was then so common that, to quote from Allbutt, "It was well known in every consulting room, public or private"; it was "no respecter of race, rank, or fortune"; "a disease of country and of town alike"; and so predominantly a disease of virgins that Lloyd Jones, who had made a special study of the subject, is quoted as saying that in twenty years of practice he had only seen two cases in married women, and both of those were domestic servants who had never borne children. Some cases of chlorosis are indeed described as persisting into middle life, with frequent relapses; but there is no doubt that the simple achlorhydric anaemia of the present day is not a persistent chlorosis. The age of onset of simple achlorhydric anaemia in Witts's series is in the fourth or fifth decade in 70 per cent., and his youngest patient is 22 years old. *The married women in the present series have all borne children* (six cases, with twenty-five children). A normal or good gastric secretion is reported to be present in chlorosis; this is mentioned by Allbutt and by more recent writers. The resemblances between the two diseases are (*a*) the blood picture, (*b*) the sex incidence, (*c*) the tendency to relapses, and (*d*) the cure or permanent remission which follows continued treatment by large doses of iron. The differences lie in (*a*) the age incidence, (*b*) the relation to sex activity and fecundity, and (*c*) the gastric secretions. Lastly, there is the striking fact that during the last thirty to forty years chlorosis has been disappearing, and a formerly unknown type of anaemia has appeared.

Therapeutics

The disease appears to be one of severe iron deficiency, and only a moderate increase of haemoglobin is found after administration of iron preparations in the official pharmacopoeial doses. In Case II, after eight months' treatment, haemoglobin was 56 per cent. In Case I, after four months, haemoglobin was 68 per cent., but the response was probably assisted by a blood transfusion at the beginning of the period; three months later the haemoglobin had fallen to 50 per cent. The following treatments were given without apparent benefit. *Injections of iron and ammonium citrate up to 1½ grains daily.* Arsenic was given in Cases II and III. Liver, half a pound daily for considerable periods, in Cases I, II, III, and IV. Hydrochloric acid was given to most of the patients. Stomach lavage was performed daily with hydrogen peroxide in Cases III and IV, for periods of seventeen days and six weeks respectively. Blood transfusions were given to two patients. In Case I, two transfusions at intervals of nine months were followed by temporary improvement; in Case IV one transfusion was done. The improvement appears to last from two to three months.

As will be seen from the records below, in Cases I to V the patients had been under observation and treatment for a considerable time before massive iron dosage was given. Some had improved and relapsed again, but in none had the blood condition reached normal; the haemoglobin was still below 60 per cent. in all the cases when massive iron dosage was begun. The rise in the months following was so striking that it is difficult to believe that it is to be attributed to the cumulative effect of the previous treatments. In Case VI there had been no previous treatment, and the results were equally impressive. In Case IV smaller doses were given than in any of the other cases, and the maximum rise of haemoglobin was the lowest shown. In Case IX no regular treatment was given; this demonstrates the fact that the anaemia shows no tendency to spontaneous remission. The results are uniform except in Case VIII; the complete failure of haemoglobin response to treatment suggests that the case belongs to a different category, though the clinical findings appear similar. The tendency to relapse is shown by Case III, in which no treatment was given for ten months, when the haemoglobin was found to have fallen from 110 to 77 per cent., although the patient had been well throughout, and was not aware of any deterioration of her health.

The Iron Preparation and Dosage.—According to the practice of Witts and others, the preparation used in most of the cases has been the iron and ammonium citrate in doses of 90 grains daily, increased to 120 grains and diminished to 60 grains in single instances. Pilula ferri was given in one case up to a dose of 90 grains daily for six weeks; the result did not appear to be so good as in cases treated with the scale preparation. No contra-indication to these large doses has been met with; some of the patients *complain of flatulence, but this is a frequent* complaint in this condition apart from the taking of iron; others complain of constipation, but it is not severe, and is easily counteracted by mild aperients. A full account of the value of different forms of iron is given by L. J. Witts.[2]

The Changes in the Blood under Treatment.—There is a tendency in these cases to a high initial red cell count,

with the development of an erythrocytosis under treatment. Five million per c.mm. being taken as a normal maximum (though this is considered high for women by some workers), three cases showed an erythrocytosis actually before treatment with massive doses of iron—Cases II, IV, and VI; and two (Cases V and VII) had counts of a normal figure. In all the cases (except Cases III and VI) iron had been given in small doses before the massive doses were begun. Smaller doses may be sufficient to stimulate red cell formation, though inadequate for haemoglobin manufacture. The erythrocytosis was more than a transitory feature, persisting in two cases for more than thirteen months; in one case it reached the maximum recorded as early as six weeks. During the period of haemoglobinaemia the red cells show much anisocytosis and poikilocytosis, with many microcytes; but during a remission the cells are of normal average diameter. The haemoglobin increase that follows massive doses of iron may begin within the first two or three weeks (an increase of 25 per cent. in three weeks occurred in Case III), but the maximum increase lags behind the maximum red cell count for three or four months. The colour index, which is extremely low before treatment, has not been recorded as unity in any one of these cases, even after long treatment; the highest figure was 0.96 in Case I. The white cells show no change either in the total or differential counts.

The following are the clinical histories and blood records of nine cases. Six of these are typical of the condition, in which complete remissions were obtained under treatment. Most of the cases are still under observation.

Case I

A spinster, aged 41, had severe anaemia in 1918 at the age of 29, she had probably had some degree of anaemia for years previously. All her life she had suffered from neglected constipation, with a tendency to slight haemorrhages from the bowel. She was treated for "colitis" in 1920 with appendicostomy—closed in a few weeks. Bleeding piles removed in 1925. Transfusions for anaemia in 1927 and 1928. Slight recurrent febrile attacks with colitis during 1928 and 1929; symptoms were abdominal pain, flatulence, glossitis, and dysphagia. Menses fairly regular, no excessive loss.

Examination in August, 1929.—Nutrition fair, fissures at corners of mouth, papillae of tongue atrophied, tongue sore, pain and difficulty in swallowing, spleen not felt, liver normal. Sigmoidoscopy—no ulceration seen. Large uterine fibroid, no haemorrhage. Wassermann reaction negative. Test meal—secretion obtained by vomiting one hour after usual gruel meal—nearly pure mucus, complete achlorhydria, low chlorides. In hospital five months with continued low fever; treatment with large doses of anti-dysenteric serum caused high temperature reaction, and was followed by improvement in bowel symptoms and normal temperature. No improvement in blood condition during four months following; immediate improvement with massive iron, no relapse in anaemia or bowel symptoms after fifteen months. Still takes iron regularly.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent	
8/6/27	Before first blood transfusion	2.52	36	0.66
3/3/28	Before second blood transfusion	4.47	32	0.35
9/8/28	After five months liq. ferri perchlor.	5.13	68	0.6
9/10/28	Liver 6 oz. and HCl and Fe	4.81	51	0.5
7/10/27	After two months' hospital treatment for colitis	5.28	38	0.36
16/4/30	Before massive iron	5.5	44	0.4
5/5/30	After nineteen days' treatment	5.8	58	0.5
8/9/30	Iron continued	6.2	96	0.7
5/12/30	Ditto	5.65	105	0.94
4/5/31	Iron for two weeks each month since March 30th	5.9	98	0.8

Case II

A married woman, aged 49. Four children, youngest 16. "Anaemia" since 14 years old; "heart trouble" since the war; for past two years breathless, choking, and giddy on exertion, but still keeps house for family of eight. Appetite very poor, occasional indigestion. Menses always rather profuse, and during first six months of 1929 loss more severe, but no period for ten weeks before admission. First seen August, 1929. Thin, tongue smooth, not sore, very septic teeth, heart dilated, no valvular disease, spleen not felt, liver normal. Fractional meal—much mucus, complete achlorhydria.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent	
22/7/29	Before treatment	4.13	28	0.3
25/11/29	After three months' hospital treatment, iron mixtures, liver, HCl, arsenic	4.85	38	0.4
1/4/30	Fe. am. cit., 60 grains for four days	6.2	56	0.5
25/5/30	Ditto 90 grains from 24/4/30	6.3	78	0.6
21/11/30	Fe omitted for time, but regular since October 2nd	5.76	97	0.85
22/3/31	Fe regularly	—	135	—

Case III

Married woman, aged 43. Three children, youngest 6 months. Severe haemorrhage with first confinement, but no abnormal loss with second and third; "anaemia" with each. First seen February, 1930. Thin, spleen not felt. Wassermann reaction strongly positive. Fractional meal—much mucus, complete achlorhydria. Novarsenobillon injections (total 0.8 gram) given; treatment stopped on finding urobilin in the urine, and quinine-iodo-bismuth given. No improvement in anaemia could be ascribed to these drugs. Daily stomach lavage given for seventeen days, no concurrent improvement. Massive iron given, followed by rapid improvement.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent	
10/29	Soon after confinement	1.85	22	0.6
17/3/30	Before massive iron	4.23	23	0.35
18/2/30	After five months' iron	6.31	110	0.8
12/6/31	Iron omitted ten months	4.73	77	0.8

Case IV

Married woman, aged 48. Three children, youngest 17. In 1928 first gastric symptoms; in 1929 attack of "gastric influenza"—that is, abdominal pain with vomiting and fever; first seen three months later with complaints of flatulence and palpitations. Appetite fair, digestion usually good; diet includes meat and green vegetables. Menses normal, at six weeks' interval. Spleen not felt. Wassermann reaction negative. Fractional meal—resting juice some excess of mucus and pus, complete achlorhydria. Later, severe haemorrhage from uterine polyp, which was removed by operation; no further haemorrhage.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent	
7/5/29	Before haemorrhage	4.89	72	0.31
7/11/29	After haemorrhage	3.5	20	0.28
5/12/29	Three weeks after blood transfusion	5.44	46	0.42
17/3/30	Before massive iron	5.9	50	0.5
28/4/30	After five weeks' iron	6.3	75	0.6
8/5/31	After thirteen months' iron	5.5	88	0.8

N.B.—Dose of iron 60 grains daily except for very short periods of 90 grains. Patient did not take larger dose well.

Case V

Married woman, aged 41. Four children, youngest 9. When 33 years old was sent to sanatorium for tuberculosis; no symptoms since. Appetite poor, flatulence slight, diet ordinary, including meat and green vegetables. Menorrhagia treated for two to three years, but menses natural for past six months. Thin, spleen not felt. Fractional meal—much mucus, complete achlorhydria, chlorides low. Very slight response to treatment with ordinary hospital iron mixtures; good response to massive iron (see Table below).

Case VI

Married woman, aged 35. Three children—two living, aged 12 and 10, one died at birth seven years ago. Four years ago "gastric influenza," details forgotten. Menses normal, but recently at two to three weeks' interval only. Duration of present symptoms four months; complains of "stomach pains and flatulence which keep her awake." Appetite good, takes ordinary food. No previous attack, never sore tongue. Spleen definitely palpable. Wassermann reaction negative. Fractional meal—complete achlorhydria, no excess of mucus. No previous treatments. Good response to massive iron (see Table).

Table showing Response to Massive Iron Dosage

Case No.	Treatment before Massive Iron	Blood Records: Minimum at any Period		Immediately before Treatment		Maximum during Treatment	
		Hb	R.B.C.	Hb	R.B.C.	Hb	R.B.C.
1	Fe, liver, transfusion	22	3·6	44	4·4	105	6·2
2	Fe eight months	23	4·13	56	6·2	105	6·5
3	Liver, N.A.B.	22	1·85	30	4·0	110	6·33
4	Fe, As, liver	20	3·5	50	5·95	88	6·3
5	Fe six months	35	4·85	44	5·0	94	6·5
6	None	—	—	60	5·9	110	6·75

Fe = Iron in ordinary doses by mouth or subcutaneous injection.
Hb = Haemoglobin per cent., by Haldane's method.
R.B.C. = Red blood cells in millions per c.mm.
Massive iron = Fe. ammon. cit. 90 grains daily, except in Cases iv and v. In Case iv 60 grains daily were given, in Case v 90 grains—but irregularly.

The minimum and maximum records only are given in the table, numerous other examinations were made, but not at sufficiently regular intervals to determine accurately the length of time required to obtain the maximum response to treatment. From the records, however, it is clear that the rise of haemoglobin to its maximum is much slower than that of the red cells. The red cell maximum was obtained after periods of treatment varying from six weeks to seven months, with an average for the six cases of four months; the haemoglobin maximum was recorded after periods varying from five to ten months, with an average of 7.3 months.

The following two cases are reported, one as showing an incomplete response after five months' treatment, and the other as failing to show any haemoglobin response at all. Both were treated as out-patients, and the cause of failure could not be fully investigated.

Case VII

Spinster aged 29. Not well since arthritis when 27 years old. Menses irregular, and scanty for five months. Fainting and giddiness; appetite capricious; eats very little meat; nausea and vomiting occasionally. On admission, nutrition fair, spleen not felt. Wassermann reaction negative. No arthritis, ten carious teeth extracted in hospital. Fractional meal—much mucus, hypochlorhydria.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent.	
23.3.30	Before treatment	4·75	38	0·4
29.4.30	After four weeks pill. ferri rep. to 90 grains daily	4·83	53	0·6
1.10.30	After five months fe. ammon. cit. 90 grains daily	4·82	80	0·8

Case VIII

Married woman, aged 40. One child, aged 17. Anaemia after severe uterine haemorrhage in 1927; ill with diarrhoea and vomiting for one month, in October, 1929. Menses usually regular and scanty. Long history of "gastritis"; haematemesis twenty years ago. Tongue sometimes sore, and easily irritated by condiments; corners of mouth cracked and sore. Often suffers from palpitation. No history of rheumatic fever. On examination nutrition fair, spleen not felt. Heart, well compensated mitral stenosis with regurgitation, lesion of moderate severity. Wassermann reaction negative. Fractional meal—no excess of mucus, hypochlorhydria. Same report one year later.

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent.	
12.5.30	Before treatment	5·0	32	0·3
5.6.30	Fe. ammon. cit. grains 90 per day	—	—	—
13.7.30	After six weeks' treatment	3·9	23	0·4
5.12.30	Taking Fe regularly	4·85	44	0·45
23.5.31	Ditto	5·05	35	0·35

This patient constantly maintains that she feels very well, and has refused admission to hospital; but there is no reason to doubt that she takes the dose of iron prescribed. The failure of the haemoglobin response is, however, complete.

Case IX

Married woman, aged 35. Seven children, eldest 14. First seen January, 1927. History of post partum haemorrhage with fifth confinement, and anaemia since. "Gastritis" at 14 years of age. A little vomiting with pregnancies, and one slight haematemesis, a little bleeding from piles occasionally; no menorrhagia, no excessive haemorrhage with later confinements. Is very breathless, and has giddy and fainting attacks during pregnancies. Examination—nutrition fair, liver and spleen not felt. Wassermann reaction negative. Fractional meal—much excess of mucus, complete achlorhydria.

In three and a half years of observation the highest haemoglobin record in this patient was 56 per cent., shortly after a blood transfusion; two further pregnancies occurred during that period. Massive iron was ordered during 1930, but the treatment was not continued, as the patient attends very irregularly, and always says that she feels "much better."

Blood Records

		R.B.C.	Hb	C.I.
		Millions	Per cent.	
4.1.27	Seven months pregnant	4·5	40	0·44
11.3.27	Four weeks after confinement and blood transfusion	4·44	56	0·6
7.10.29	—	3·19	20	0·3
12.9.30	Fourteen weeks pregnant, feeling well	4·52	40	0·44

I am indebted to Dr. D. M. Vaux for the blood examinations, and to Dr. E. M. Martland for the test meal examinations.

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INFARCTION OF THE MYOCARDIUM*

BY

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Infarction of the myocardium is the commonest cause of sudden death in the elderly, and so is of particular interest to pathologists, medico-legal experts, and clinicians. It will be convenient to describe and discuss the changes under the following heads: (1) no myocardial change, death occurring so suddenly that there has not been time for anatomical change; (2) visible infarction—*myomalacia cordis*; (3) slower progressive closure of artery, producing myofibrosis; (4) mixtures of these.

First, then, when a coronary artery is occluded the patient may die within a minute or two, and at post-mortem the myocardium may appear normal. The cause of this sudden death is not yet clearly understood. It is certainly too sudden to be accounted for by lack of oxygen supply to the muscle; for if this were the explanation a more gradual death would be expected; and, further, it has been shown under experimental conditions that the myocardium can continue contracting for some time without an arterial blood supply.

Ligature of the Coronary Artery

The first experimental ligature of a coronary artery was performed by Chirac in 1698. Since then Erichsen (1842), Bezold and Breyman (1867), Samuelson (1881), Cohnheim (1881), and Porter (1896), have all ligatured coronary arteries under various experimental conditions, and have all found that the heart stops beating within one or two minutes after ligature of a main branch of the coronary artery. With better technique Miller and Mathews (1909) and Smith (1918) found that only a few of the dogs died if two main branches were ligatured. When a heart stopped beating within a few minutes of the coronary occlusion they observed that it did so because the left ventricle went into fibrillation, became dilated, and stopped beating; the rest of the heart became dilated, and also stopped. The experimental evidence, therefore, goes to show that the cause of sudden death in coronary occlusion is an upset in the rhythmical contraction of the myocardium of the left ventricle, and is not the failure of an exhausted muscle deprived of its blood supply. It is important that this should be quite clearly grasped, because it partly explains why there is neither macroscopical nor microscopical evidence of change in the myocardium affected in these cases. The other part of the explanation is that we only recognize infarcts by the autolytic changes in them, and these take time to develop. Since there will be no change in the myocardium, the pathological diagnosis in this type of sudden death will depend on the finding of an occluded coronary artery.

Infarction

If the patient survives the occlusion the extent of the changes shown by the myocardium will depend on the size of the vessel affected and on the condition of the other artery; the character of the changes will be the same, and are those of infarction, organization, and fibrosis.

It is convenient to classify the infarcts as large or small under the terms "massive" and "molecular" necrosis, and a description of a massive necrosis or large infarct of the myocardium will be given first. Its commonest situation is that part of the left ventricle which lies immediately beneath the endocardium. The earliest microscopic change consists in the affected part becoming a little swollen, glassy, and reddish-purple. This very early change is seldom seen, because patients either die within a minute or so of the occlusion of their coronary artery (in which case no change is discernible), or they live until the later changes have developed. Later, the infarct exhibits the usual appearance of an anaemic infarct anywhere else—that is to say, it is opaque, pale yellow, or clay-coloured. The dead tissue may give way at this stage and the patient die of haemopericardium. In the periphery of the infarcted area numerous polymorphs collect, and an active granulation tissue develops, which separates the normal from the infarcted myocardium. A heart the seat of such an infarct now presents the following features: immediately beneath the endocardium there is an opaque clay-coloured zone, separated from the normal myocardium by a band of grey gelatinous tissue, and in some cases, particularly if the necrosis reaches the pericardium, there is local, or even general, pericarditis. Microscopically the dead muscle is distinguished from the living by being swollen and glassy, while the nuclei have either disappeared or are in various stages of degeneration. In the periphery of the dead muscle, and infiltrating it, is the granulation tissue. The cross striations of the myocardium may persist for some time after it is dead.

Next, the dead part becomes autolysed, infiltrated by polymorphs, and gradually resorbed; the granulation tissue becomes less and less cellular, and the fibroblasts more mature, until, finally, there is a dense fibrous scar representing the infarct—a scar produced by the granulation tissue which has removed the dead myocardium. This fibrous tissue will tend to stretch under the intracardiac pressure, and if it covers a wide enough area an aneurysm results.

The pericarditis may also organize, producing fibrosis varying in extent from a local patch of thickening to local or obliterative fibrous pericardial adhesions.

Rupture

As has been mentioned, the heart may rupture through an infarcted area, or an aneurysm may rupture—neither is very common in ordinary hospital practice.

Molecular Necrosis

In those hearts in which multiple or single patches of fibrosis are found there is no reason to suppose that the process of killing and removing the myocardium differs materially from that described for the massive infarcts.

The Coronary Arteries

There are only two common causes of occlusion of a coronary artery: one, the degeneration of its wall with or without thrombus, and the other, syphilitic aortitis, which sometimes closes the orifices of the coronary arteries. Of the innumerable uncommon causes embolus is often mentioned, but this is a rare cause; when it does occur it is usually associated with valvular disease of the heart.

Atheroma of the coronary arteries is by far the commonest cause of cardiac infarction, and as this term is seldom used with the same meaning by different authors it will be advisable to indicate that it is employed here in the sense in which Turnbull uses it in his classical paper on arterial structure. That is to say, it is a degeneration characterized by the accumulation of debris, which is at first fatty, and, later, impregnated by calcium, and which is practically confined to the intima. For simplicity of description I have included under "atheroma" hypertrophy of the intima as well as actual degeneration. Atheroma occurs most commonly in localized patches of intimal hypertrophy, and this combination may close the lumen of the coronary artery, or a thrombus may be deposited on its roughened surface and complete the

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closure. On examination of a heart in the post-mortem room the ordinary method of opening the coronary arteries with scissors sometimes fails to demonstrate the block. If there is a small thrombus covering an ulcerated plaque it is easily removed or pushed on and squashed by the point of the scissors, and is so missed. A more satisfactory method consists in making transverse incisions with a knife, starting near the origin of the coronary arteries and working along their course.

When cardiac infarction is caused by syphilis it is due to the involvement of the orifices of the coronary arteries by syphilitic aortitis, and, apart from gummata of the myocardium, I have not seen syphilitic arteritis of the coronary arteries, except at their origins, and then only in syphilitic aortitis.

As a rule, cardiac infarction occurs at an earlier age when caused by syphilis than when caused by atheroma. Since 1924 I have had thirty-five cases due to atheroma, with an average age of 61; during the same period four were due to syphilis; their ages were 50, 51, 28, and 47. Here it may be remarked that syphilitic aortitis may be present with cardiac infarction in cases in which the infarct is due to atheroma of a coronary artery and not to syphilitic aortitis.

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AN EPIDEMIC OF CHOREA IN A FAMILY

BY

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The following three cases of chorea, occurring almost simultaneously in sisters of one family, seemed to us to be of sufficient rarity and interest to warrant their being put on record.

Case 1.—E. J., aged 8. There was no previous history of pains or other manifestations of rheumatism. The patient had had tonsillectomy performed at St. Thomas's Hospital at the age of 4. On August 25th, 1930, she came to the out-patient department at Westminster Hospital with well-marked chorea, and was admitted for six weeks. A throat swab showed streptococci. Some septic teeth were extracted while she was in hospital. A second attack of chorea was preceded by a "croupy cough," commencing June 1st, 1931, and she was again admitted. Immediately after discharge she went to a convalescent home, without returning to her own home, and she is still there. No heart lesion was noted.

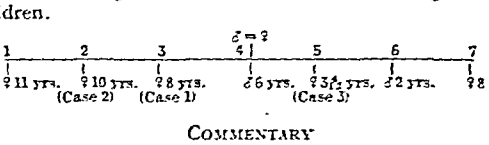
Case 2.—G. J., aged 10, had suffered on and off previously with pains in the legs. She was first seen in the out-patient department of Westminster Hospital on May 18th, 1929, with a typical attack of chorea. She was admitted as an in-patient for six weeks. Tonsillectomy was performed on June 24th. A throat swab, taken in July, showed a pure culture of *Micrococcus catarrhalis*. On December 4th she came to the out-patient department again with a second attack, milder in this instance. She was put on aspirin, with rest at home, followed by a period in a convalescent home. She gradually improved. On June 15th, 1931, she developed a third moderately severe attack of chorea, preceded some weeks before by a "croupy cough," and was admitted. She is still in hospital, and is improving. She has shown no signs of heart involvement.

Case 3.—G. J., aged 3 years 4 months, was treated at Westminster Hospital in the out-patient department about two years ago for general malnutrition and tonsillitis. There was no complaint of pains or rheumatism. She came again on August 6th, 1931, with a history of slight movements four days previously. They were observed to be typically choreic. The last known attack of sore throat was about two and a half months previously. She was admitted to the wards, and is still an in-patient. Her movements have lessened. There is a soft mitral systolic murmur.

The interesting point of the inquiry is the onset of chorea in the three children of the one family at short intervals, so that they were all suffering from that condition simultaneously. An inspection was made of the home conditions, and revealed that all three patients were accustomed to sleeping in the same room (about 9 by 9 feet in size). The room had one door and one large window, which the mother stated was left partly open at night in favourable weather. The general condition of the house was dirty, but not extremely so. An examination of the other members of the family showed that the father was suffering from what he stated to be "rheumatic arthritis." On examination he looked well, and little joint swelling was seen. His tonsils had been removed in childhood, and his throat was healthy. The mother was healthy in appearance, and had small, clean, atrophic tonsils.

L. J., the eldest child, had no rheumatic history, but had had her tonsils removed (for nephritis). T. J., the fourth child, had no previous rheumatic history, but the mother stated that he had had sore throats and swollen glands in the neck from infancy, and was still suffering from them. On examination, the tonsils were seen to be very large, with pus in the crypts, and his cervical glands were also enlarged. His tonsils are to be removed. D. J., the sixth child, has had no ill-health. The tonsils were noted to be very large, but not obviously septic. The youngest child was a healthy infant.

The following scheme shows the sex and ages of the children.



COMMENTARY

It was pointed out by Longstaff[1] and Atwater[2], in 1905 and 1927 respectively, that the streptococcal diseases, such as erysipelas, septicaemia, scarlet fever, puerperal fever, and rheumatic fever, were inclined to show a synchronicity in incidence and mortality. This argued a certain epidemicity. In the rheumatic wards at the Cheyne Hospital for Children, Chelsea, it was noticed by Sheldon[3] that there were small epidemics of sore throat, followed some two or three weeks later by epidemics of acute rheumatism, and that in those cases which did not actually develop a sore throat a rise of temperature had been noted two to three weeks previously. Sheldon found that the cases in these epidemics were, with one exception, in neighbouring beds.

Alison Glover,[4] in the Milroy Lecture, quoted several instances to show that tonsillitis and subsequent rheumatism assumed epidemic proportions under crowded conditions, and practically disappeared when these conditions

were ameliorated. He took the case of the *Impregnable* Training Establishment in 1912–13 (reported by Dudley). The boys, aged 15½, were housed in three old wooden battleships, the air space was continuous, and the hammocks were 16 inches apart. The incidence of tonsillitis was 397 and of rheumatic fever 43.7 per 1,000 respectively—a very high figure. This dropped to normal proportions on transference of the boys to barracks ashore.

In the report of the health of the Royal Air Force for 1928 a similar epidemic of tonsillitis and acute rheumatism is recorded, although the crowding here was not so marked. The incidence of tonsillitis was 175 and of rheumatism 16.5 per 1,000 respectively.

In the instance under discussion it is suggested, in view of the synchronicity of the attacks and the crowded living conditions, that these three children have either infected one another or have been infected by a possible carrier in the person of the fourth child, the boy with chronically infected tonsils. The latter seems the more likely, since the patient in Case 3 had not seen her sisters for a period of six weeks previous to admission to hospital herself, as the sisters had been in hospital and at a convalescent home for that time. This would imply a very long latent period for chorea.

Conclusions

1. Chorea may assume epidemic proportions in a family where the living conditions show overcrowding.

2. The cases reported support the contention that rheumatism may be contagious in overcrowded conditions.

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A CASE OF BRILL'S DISEASE

BY

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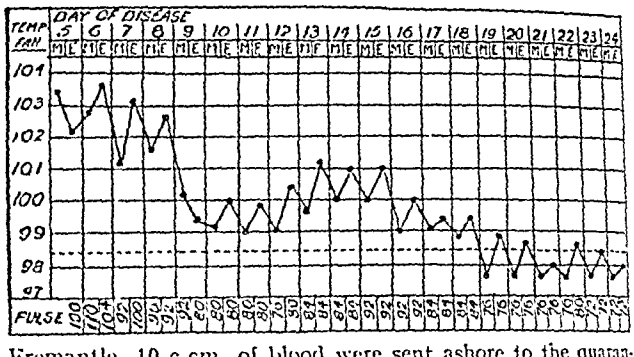
The following case seems worth reporting in view of the absence of diagnostic symptoms, and the interesting points arising from it.

History of the Case

A male, aged 49, a vegetable cook working in the galley of a passenger liner with a crew of 400, reported to the ship's surgeon on February 25th, 1931, complaining that he had been feeling dizzy, had pains in the legs, and had been coughing for two days. His temperature was normal and physical examination was negative. He had never lived abroad, but had served in France during the war. At that time there was an epidemic of mild influenza among the crew; his case was diagnosed as influenza and he was given salicylates and alkalis.

On the morning of February 27th his temperature was 103.4° F., and he was moved into the ship's hospital among other influenza patients. He vomited twice that day. On the 28th he complained of nothing but the headache, which had become more intense, and a troublesome cough. That night he was slightly delirious. The temperature began to settle down on March 3rd, and the patient felt much better; but on the 6th it rose again and remained up until the 13th, at which time he felt perfectly well, but weak after being confined to bed. There was no enlargement of the spleen at any time during the illness and no physical signs of disease except a few occasional rales at the bases of the lungs. The bowels, which had been rather free during the first two or three days, were subsequently constipated, and had to be regulated by aperients. A few small pink papules were observed on the back and chest, perhaps a dozen in all; but as these occurred when the ship was in the Indian Ocean, they were put down to the heat and sweating. No spots occurred on the limbs.

In view of the duration of the pyrexia, slight cough, and irregularity of the bowels, the case was diagnosed as probably one of paratyphoid fever, and on March 18th, on arrival at



Fremantle, 10 c.cm. of blood were sent ashore to the quarantine authorities with a request for a Widal test. The result of the test was a negative Widal but a positive Weil-Felix.

Commentary

The following points arise in connexion with this case.

1. It was found impossible to trace the source of infection. This man had not been ashore at any port since sailing from England; and, if we accept a twelve days' incubation period, this would put the date of exposure to infection a day or two prior to the sailing of the ship from London. No lice were ever found in his bunk, in the hospital bed, or on his body; he denies the possibility of any lice while at his home, and of having slept away from home where lice might be present. No rats have ever been seen in the ship since she was launched, and he says that there have never been any in his home. The medical officer of health for Gravesend was communicated with, and he stated that no similar cases had been reported in the borough "for very many years," and he kindly inquired of the port sanitary medical officer, who stated that no cases of typhus or contacts had come into the port.

2. The difficulty of diagnosis was due to the mildness of the symptoms—namely, the total absence of any distinctive rash, no suffusion of the face or conjunctiva, etc.—and to the fact that there had been no cases of Brill's disease or typhus on board. This would have caused the diagnosis of this case to be missed had not a routine Weil-Felix test been carried out. The infection was apparently contracted in England, where the disease in such a mild case, occurring, as this did, during an influenza epidemic, would probably not be diagnosed, and suggests the routine use of the Weil-Felix reaction in prolonged cases of pyrexia with influenzal symptoms in which other causes are not found.

3. All authorities seem agreed that this disease is not communicated direct from case to case. Nicolle,[1] Anderson and Goldberger,[2] and more recently the report of the Typhus Research Commission of the League of the Red Cross Societies to Poland,[3] all agree in indicating the body louse as the means of spread of infection in typhus. In Brill's disease the louse seems to play either no part or a very minor one, and cases do not occur spreading directly through families and communities. This was noted by Brill[4] in America, by Fletcher and Lesslar[5] in the Malay States, and by Hone[6] in South Australia; the latter put forward evidence to show that the spread is in some way connected with the presence of abnormal numbers, or of abnormal activity, of rats or mice. This leads to a point of some importance to shipping companies and port health authorities. At present there is no official recognition by port health and quarantine departments of any difference between typhus and Brill's disease. Typhus is one of the five quarantinable diseases, and if a case occurs on board it leads to

the regulations for quarantinable diseases being enforced and free pratique at ports being withheld Whatever view is held as to whether typhus and Brill's disease are varieties of the same infection or are different diseases presenting similarities, there should be no necessity for including the latter among the quarantinable diseases if the evidence regarding the method of its spread is accepted, as there is no likelihood of a virulent epidemic arising Brill's disease might be made notifiable at ports in a similar way to measles, scarlet fever, venereal disease, etc , when the *Q* and not the *L* flag is flown on entering port

4 There does not seem to be any authoritative statement as to how long after recovery a patient who has once suffered from typhus or Brill's disease will give a positive Weil Felix reaction This point might arise in a case of pyrexia in which the Weil Felix reaction, done as a routine, is found to be positive, and in which the patient has been abroad and may have had a mild attack of Brill's disease that was undiagnosed at the time

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

TREATMENT IN PERNICIOUS ANAEMIA

The striking success which in recent years has been obtained by feeding patients suffering from pernicious anaemia with liver in some of the many available forms, or more recently by some extract of the stomach mucosa, leaves us still in ignorance of the actual cause of the disease Some cases, which at first dramatically improve, after a time relapse, and the increased anaemia and asthenia are not then benefited to the same extent—possibly not at all—by liver or stomach feeding The question, therefore, is, Why is it so?

It appears that in giving liver we are supplying a "something" to the patient which an animal normally has in that wonderful warehouse—its liver If we assume that the liver itself does not manufacture this "something, but rather *stores* it, this possibly explains why we get better results clinically by varying our methods of administering liver and by altering the brand of the preparation of liver extract , because on this assumption we can recognize that the animal's storehouse (liver) may be poorly stocked with the "something"—even in a normal, healthy animal—at the time of killing to procure the extract This something is possibly an amino-acid

Now the gastric mucosa has been found to be of value in replacing liver , this "something" can therefore be probably found in the stomach and stored in the liver In the American medical press it has been recorded that beef muscle, incubated with normal healthy human gastric juice, has been found to be a substitute for liver treatment, whereas feeding with normal gastric juice alone was found ineffective

I venture to record the following case of feeding with beef muscle and gastric juice, which succeeded dramatically for a time, so that this procedure may receive trial by those in charge of refractory cases of pernicious anaemia

Case History

A male patient, aged 61, was sent to me last July by Dr Ainsley Hawes—an advanced case of pernicious anaemia The patient had benefited wonderfully on liver and ventriculin and had received a blood transfusion on eight occasions. Recently, however, he had rapidly relapsed, was extremely weak and ill, with constant vomiting and was taking little interest in his surroundings. His liver and spleen were both enlarged—the spleen could be felt three inches below the costal margin He begged for another transfusion Realizing that it would be of only very temporary benefit alone, I consented on the condition that this temporary improvement should be utilized for an active attempt at treating the disease as well Stating this to the relations, I had no difficulty in getting the patient's daughter-in-law to offer to provide the gastric juice daily

Immediately after the transfusion, which picked him up rapidly, he was given glucose and 15 units of insulin, shortly after, he received 2 oz of pounded beef muscle, which had been incubated for three hours with 2 oz of gastric juice, aspirated two hours after the donor had taken an egg beaten up in milk. This was repeated daily, and also insulin with glucose twice a day The improvement was dramatic , he became active in mind, the vomiting entirely ceased, and the spleen got smaller in two days, at the end of the week being hardly perceptible After ten days he went home to continue the gastric juice beef diet and improved continuously for a month Then he had a bilious attack, disliked the diet, and it was discontinued Since then I hear he is going downhill again rapidly

I have urged, as the donor is perfectly willing to resume, that the treatment should be started again surreptitiously, and that the meat should be varied—mutton, chicken, veal, or rabbit muscle—so that the disguise may be complete

The value of giving glucose and insulin as a general tonic in many grave conditions to tide over a critical period is as yet hardly sufficiently appreciated

Consideration of this case emphasizes the point of view that pernicious anaemia is a deficiency disease, the "something" being contained and made by the action of gastric juice of a healthy person acting on the beef muscle at body heat Obviously beef muscle does not contain it The liver then stores this "something" and supplies it, when necessary, to the blood-forming system

In conclusion, the young lady rapidly learned to pass the tube on herself, and to aspirate her gastric juice perfectly easily with the aid of a mirror; she is quite ready to continue her daily gift for an indefinite period. I hope to add to this preliminary report at a later date.

Leicester ASTLEY V. CLARKE.

HERPES ZOSTER AND ENCEPHALITIS

The following case is, I think, of sufficient interest to be worth publication.

On August 10th, 1931, a married woman complained of severe pain extending from above the left orbit to the top of the head , there was no pain on the right side She also had mild conjunctivitis of the left eye Five days later the typical rash of herpes zoster developed above the left eye and extended through the hair to the top of the head The conjunctiva was now very injected , there was ptosis of the left upper eyelid, and typical ophthalmic zoster

On September 6th she complained of weakness in her left arm, and of inability to grip with the hand, or brush her hair. On examination, the left leg was also found to be weak, but there was no exaggeration of the knee jerk and Kernig's sign was absent There is no keratitis of the left eye so far She eventually developed a left sided hemiplegia

I noticed in the *Epitome* of September 12th (para 197) that André Thomas and J B Buvat had recorded a very similar case They stated that among the numerous nervous manifestations in patients with herpes zoster hemiplegia was one of the most frequent, especially in ophthalmic zoster, but that the relation between the two had not always been firmly established

Southwaite, Carlisle A G MACGILLIVRAY, M B , Ch B.

Reports of Societies

THE WIDENING OPPORTUNITIES OF PHYSICAL TREATMENT

The address from the chair of the new Section of Physical Medicine of the Royal Society of Medicine was delivered on October 16th by Dr. F. G. THOMSON, the first president, who was also the last president of the old Section of Balneology.

Treatment by physical methods, he said, although practised in some forms and to some extent from the earliest times, had never received, until comparatively recently, much serious consideration from the bulk of the medical profession. The main preoccupation of those engaged in practical therapeutics had, with very few exceptions, always been directed to the discovery and administration of pharmacological preparations derived from minerals or plants, and, in later years, in the form of glandular extracts, from animals. For many centuries drug treatment had held the field, to the exclusion of everything else. Instead of becoming fewer and simpler, the remedies appeared to become more numerous and complex. Osler, however, declared that the best physician was he who used the fewest drugs, and although this attitude of mind was rarely pursued to its logical conclusion, there were now many in the profession who would agree with its essential truth. Although certain drugs were of inestimable value in properly selected cases, there were many others whose use and reputation depended more on custom and tradition than on proved utility.

Together with a recognition of the limitations of drug therapy, there had arisen a tendency to place greater reliance on forms of treatment based entirely on physical measures. An outstanding example of this was seen in the great importance that treatment by radium and by *x* rays had assumed in recent years. A department of physiotherapy also was now included in nearly every large general hospital, where increasing numbers of people were treated daily by massage, manipulation, various electrical applications, and light. But although physical treatment was assuming yearly a wider and more important role in practical therapeutics, it still lacked co-ordination of ideas and methods. Until now the subject had been somewhat neglected in the medical curriculum, and, so far as Dr. Thomson was aware, there was no single university or medical school where any serious attempt had been made to introduce the systematic teaching of the different forms of physical medicine.

Physical treatment had been used so long and extensively in the treatment of rheumatic diseases and such metabolic disorders as gout and obesity, that many people might be inclined to associate it almost entirely with those particular diseases. As a matter of fact, it was of much wider application, and there was a great variety of diseases in which at some time or another some form of physical treatment was indicated. No better example could be given of the application of physical treatment in general medicine than the modern way of dealing with pulmonary tuberculosis. Sanatorium treatment, which consisted of rest, unlimited fresh air, suitable diet, and graduated exercises, carefully controlled by the patient's reactions, was physical treatment and nothing else. These same principles, combined with any necessary surgical intervention, proved equally successful in surgical tuberculosis. The change of thought in favour of physical measures was well illustrated in the open-air treatment of medical and surgical tuberculosis. If any physician in the early 'nineties had advised his consumptive patients to discard their chest protectors, overcoats, shawls, and respirators, and to spend their days and nights—more particularly their nights—exposed to the winds of heaven in all sorts of weather, he would have been looked upon as a danger to the community. But the principles underlying sanatorium treatment were now generally recognized as sound; and its results in one of the most insidious, intractable, and dangerous of diseases were satisfactory. It was all the more remarkable that these same principles had not been applied more widely in other chronic infections. One disease which suggested itself was chronic multiple infective arthritis, where the stereotyped forms of treatment by drugs, liniments, baths, radiant heat, and so forth had been, in the majority of cases, perfectly futile. Apart from the removal, if this was possible, of any focus of infection, the only line of treatment which appeared to afford any hope of success was to put the patient in the best possible condition to resist the infection by methods strictly analogous to those employed in chronic tuberculosis.

The numerous diseases for which physical treatment was applicable offered such wide fields for discussion that Dr. Thomson foresaw difficulty in limiting the activities of the Section of Physical Medicine. Although there might be certain technical aspects of the subject of little interest to any but those actively engaged in carrying out physical methods, he felt that the object of the Section should be to consider physical treatment on lines as broad and comprehensive as possible, and to combine, as far as might be, with other Sections by joint meetings to discuss the applicability of such treatment to the cases with which they were particularly concerned. Certain forms of physical treatment were comparatively new, and in some cases more or less experimental in their application. The exponents of any new method were apt to be carried away by enthusiasm, which had to be tempered by further experience. One function which the Section might usefully perform was to make collective investigations into the value of different forms of physical treatment, and to issue reports on these subjects. Many reasons, therefore, pointed to the need for a Section devoted entirely to the study of physical medicine, and, if run on broad and comprehensive lines, he believed that it would prove of very great advantage.

ACUTE OSTEOMYELITIS

At a meeting of the Section of Surgery of the Royal Society of Medicine on November 4th, with Mr. C. H. FAGGE in the chair, a discussion on the treatment of acute osteomyelitis was opened by Mr. GWYNNE WILLIAMS.

The many varieties of acute osteomyelitis, Mr. Williams said, combined with the relative infrequency of the disease, made it difficult for any one person to form a conclusive opinion on its treatment. He defined acute osteomyelitis as a sudden illness associated with fever and with evidence of inflammation of bone, with a history of duration for days rather than weeks. He proposed that the discussion should be limited to acute primary osteomyelitis as found in the long bones, and to forms due to *Staphylococcus aureus*. Results might be considered under four headings: immediate mortality; preservation of the limb; the extent of the resulting necrosis of bone; persistence of suppuration of varying degrees in the bone in after years. During the past twenty years 91 cases had been treated in University College Hospital, of which 7 had occurred in adults and 84 in the growing bones of children. There had been 18 deaths in the series, 10 of them during the first four days after operation; the majority of these must be regarded as due to septicaemia, and were probably incapable of cure by operative treatment. In the remaining group death had occurred in the neighbourhood of the tenth day. These cases had been treated by opening the medulla to the extent to which

pus was visible, and then by plugging or irrigation by the Carrel-Dakin method In most of them, either before or after death, pericarditis or other evidence of widespread infection had developed, and it might be argued that the severity of the surgical procedure was responsible for the dissemination of infection Surgical treatment of acute osteomyelitis had favoured free gutterng of the bone for some years, but recently a more limited attack with the drill and trephine had been attempted Whatever method was used the temperature fell gradually, and it was rare to find a case in which operation produced a crisis Mr Gwynne Williams described a case of osteomyelitis of both tibiae, which had been treated by stripping the periostrum for two thirds of the length of each bone and by drilling a hole in each The result had been a gradual fall of temperature and steady healing of one tibia and sequestrum formation in the other He suggested that if the periosteum was extensively stripped it was neither necessary nor always desirable to open up the bone During post operative treatment the resistance of the patient should be raised if possible, and he considered that these cases did best in the open air He believed in Orr's method of plugging with a vaseline dressing and enclosing the limb in a plaster splint The smell was foul from the wound under this treatment, but the pain was completely relieved If the general condition gave cause for anxiety a plaster bandage could be removed almost as easily as a cotton one In his experience blood transfusion seemed to have little value in cases of infection The preservation of the limb depended on the invasion of neighbouring joints He believed that the less the surgical trauma to the bone the smaller the sequestrum He knew of no evidence on which a considered judgement could be formed on the likelihood of sub equent suppuration in the bone in after years

Mr ERIC LLOYD said that the mortality rate in acute osteomyelitis varied between 20 and 60 per cent, and was commonly in the neighbourhood of 30 to 35 per cent The infection started in the metaphysis of the bone, and Starr had considered that invasion of the medullary cavity occurred late in the disease, he had therefore condemned gutter operations as occasioning unnecessary devitalization of bone, and had pleaded for simple but adequate drainage 'Drain the metaphysis, spare the diaphysis" might almost have been Starr's slogan Spread of infection into the epiphysis or into the joint was rare The commonest direction of spread was probably through the compact bone at its thinnest point where it joined the epiphysis, with subsequent formation of a subperiosteal abscess In patients who recovered after simple incision of the periosteum nature's perforation of the compact bone at the junction with the epiphysis probably provided adequate drainage, but this did not occur often enough to make simple periosteal incision the treatment of election Starr believed that when medullary infection occurred it was by way of the Haversian canals from a subperiosteal abscess, but he held that if drainage was established in the metaphysis the medulla could look after itself Mr Lloyd described two cases in which he had combined Starr s and Orr's methods of treatment with success

Mr W H OGILVIE said that he was a supporter of the older gutter operation He doubted whether the drainage secured by drilling the metaphysis was adequate, and complete healing was hindered in any operation where the walls of an abscess cavity could not fall together Sequestra had subsequently developed in 60 per cent of Starr s patients Orr's method had been valuable during the war, when there was a shortage of dressings and of nursing staff, but it gave rise to much scar tissue and the unnecessary ankylosis of joints Scarring hindered healing if subsequent operations had to be undertaken He considered that the gutter operation should be approached by a flap incision, and the wound closed round Carrel-Dakin tubes, this combined the advantages of the closed and the open wound as regarded scarring and drainage

Mr MAX PAGE was convinced that extensive operations gave rise to sequestra and favoured recurrence Quite half the cases of acute osteomyelitis had bacteraemia, and surgery could do nothing to reduce this He agreed that blood transfusion was disappointing Orr's treatment was impracticable in a closed ward, owing to the foul smell generated, but its success in some cases brought home the thought that pus, provided it was not enclosed, was a useful dressing Packing could be introduced through a trephine hole, and should not be removed in too much of a hurry.

Mr. P C C GARNHAM believed that most sequestra were due, not to osteomyelitis, but to operative interference, and described two cases in which sequestra had formed at the exact site at which the bone had been entered at operation Whenever possible, he thought the bone should be left intact or drained by a small hole made with the minimum of trauma.

Mr C P HOLMAN said that the orthodox treatment of acute osteomyelitis used to be immediate operation, but possibly it might be wiser to leave the patient until the acute stage had begun to subside In ten patients who had been admitted to hospital with subperiosteal abscess he had simply incised the periosteum and packed the wound with gauze coated in bipp, with good results. The majority of cases treated in this way required operation later to remove sequestra He thought it might be advisable to defer operation until the acute stage was past, and he believed that interference with the bone should be reduced to a minimum Orr's treatment could be rendered less offensive by packing the wound with bipp, which would remain sweet for weeks, and by cutting the plaster so that the top dressings could be changed Mr Holman thought that it was better to treat an infected joint by Dr Cotton's method of washing out with 1 in 15,000 mercury perchloride through a needle and cannula than by incision

Mr J P HOSFORD described a case in which spread of infection had occurred through the epiphyseal cartilage into the joint, treatment had been by drainage of the joint, with subsequent complete recovery of function He asked what the treatment of election should be when it was suspected that the epiphyseal cartilage was involved In a small proportion of persons arteries were known to traverse the epiphyseal cartilage, and spread of infection, when it occurred, was probably by way of these abnormal vessels Surgeons hesitated to drill the cartilage, which might itself be uninjured in spite of the extension of infection through it.

Mr O L ADDISON regretted an apparent return to the surgery of 70 years ago, which had been responsible for filling pathological museums with specimens He disagreed that trephining could provide adequate drainage Those who found sequestra following their operations had failed to secure efficient drainage, he had never seen a sequestrum of any size after a thorough gutter operation Osteomyelitis might flare up, even fifty or sixty years after operation, and adequate treatment was always difficult and uncertain He was of the opinion that where there was severe involvement of the femoral shaft amputation was the best treatment Treatment by trephining could never be successful except in the earliest and mildest cases

Mr KENNETH HERITAGE had found the results of Starr's method of treatment satisfactory where the diagnosis was made early. He thought dissemination of infection

following the gutter operation might be due to the use of the gouge; where a trephine was used this danger might be reduced. Immobility—the principle of Orr's treatment—could be secured equally well with a Thomas splint; enclosure in plaster was wrong if the pus had spread under the periosteum, or along the cellular planes of the limb.

In replying, Mr. GWYNNE WILLIAMS said that there was no sure way of telling when the epiphyseal cartilage was involved; the surgeon must wait and watch developments. He did not claim that trephining provided adequate drainage, but he did not believe that this was secured by the gutter operation either. The mortality rate had not been reduced by the gutter operation.

BRITISH ORTHOPAEDIC ASSOCIATION

ANNUAL MEETING

The annual general meeting of the British Orthopaedic Association was held at Newcastle-upon-Tyne on October 30th and 31st. The first morning was devoted to the reading of short papers, and in the afternoon cases were demonstrated at the Royal Victoria Infirmary.

Osteochrondritis Ischio-pubica

Dr. WHATELY DAVIDSON (Newcastle) said that osteochondritis ischio-pubica was a rare condition in which there was limping and pain suggestive of early tuberculosis of the hip, with tenderness and swelling over the ischio-pubic ramus. *X* rays showed a globular swollen appearance of the cartilaginous junction of the rami of the ischium and the pubis. The condition was thought to be traumatic in origin and analogous to osteochrondritis of epiphyses. Symptoms subsided within a few months and the *x*-ray appearances became normal.

End-results of Tuberculosis of the Hip

Mr. JOHN GILMOUR (Newcastle) had followed up a series of eighty-seven cases of tuberculosis of the hip. Conservative treatment in an abduction frame secured recovery of a limited range of movements in a proportion of cases. A short fibrous ankylosis was a satisfactory end-result, but recurring flexion adduction deformity requiring repeated osteotomies was not infrequent. If the hip became unstable and dislocation or wandering acetabulum threatened, an extra-articular arthrodesis was advised.

Mr. NAUGHTON DUNN (Birmingham) said that multiple osteotomies could be avoided if the child whose hip disease had become quiescent was left without apparatus for six months until maximum possible deformity had developed before the osteotomy was performed.

Mr. MCCRAE AITKEN (London) advocated non-weight-bearing unloaded movement after the disease was quiescent. This encouraged recalcification of the femoral head and acetabulum, and prevented flattening of the bearing surfaces.

Mr. T. P. MCMURRAY (Liverpool) strongly recommended conservative treatment, and said that the majority of adequately treated cases returned to work with a strong stable hip.

Calcareous Deposits in the Supraspinatus Tendon

Mr. R. C. ELMSLIE (president) described seven cases of deposition of amorphous calcium in the supraspinatus tendon just above the great tuberosity. This was to be differentiated from fracture of the tuberosity, and from loose bodies in the joint. Very severe pain arose, and excision of the whole sac, including the adjacent part of the tendon, was advised. Symptoms were completely relieved and did not recur.

Mr. R. OLLERENSHAW (Manchester) reported two similar cases. Mr. R. WATSON JONES (Liverpool) said that the condition was exactly analogous to calcification of the semilunar cartilages, intervertebral discs, fibrosed lymph glands, and organizing blood clot, and was due to fibrosis. It occurred in other tendons, notably the tendo Achillis after tenotomy. Occasionally the deposit could be aspirated subcutaneously with complete relief of symptoms.

Treatment of Fracture Shafts of Both Leg Bones

Mr. WATSON JONES (Liverpool) demonstrated a simple portable apparatus by which anatomical reduction of overriding fractures of the shafts of the tibia and fibula could be secured, which allowed immediate fixation in plaster. Reduction was just as perfect as when an open operation was performed, and all the disadvantages of extension methods were avoided. The complete treatment of a case was illustrated by means of a cinematograph film.

Bone Grafts and Fusion Operations for the Spine

Mr. S. A. S. MALKIN (Nottingham) compared the relative merits of Albee's, Hey Groves's, Gibson's, and Hibb's operations for fusing the spinous processes and laminae in tuberculosis of the spine. He was in favour of laying a double tibial graft on the laminae, one on either side of the bases of the spinous processes. Solid bony fusion could be demonstrated radiologically.

INJURIES OF MUSCLES AND TENDONS

Mr. H. C. EDWARDS (London) introduced a discussion on injuries of muscles and tendons, and based his opening remarks on the paper for which he was awarded the Robert Jones medal and prize for 1931. He said that muscle strains should be treated by early exercise to avoid adhesions and prevent wasting of the muscle as a whole. Massage was entirely useless. As a general rule ruptured muscles should be sutured in order to allow early exercise and movement. Late operations by fascial implantations where the retracted muscle belly had fully shortened was of no value. Pathological rupture of the long head of the biceps in chronic arthritis of the shoulder, "drummer's rupture" of the extensor longus pollicis, and spontaneous rupture of this tendon following fractures of the lower end of the radius, were discussed. Other occupational muscle injuries were rupture of the tendo Achillis in mountaineers, of the pectoralis major in boxers, of the external oblique in reapers, and the adductor longus in cavalrymen. Abdominal pain, tenderness, and rigidity in rupture of the rectus abdominis was to be distinguished from acute appendicitis. Avulsion of the extensor tendon of the finger (mallet finger) was best treated by operation. Open wounds of the flexor tendons gave very poor results. Immediate operation in the hospital casualty department was strongly deprecated, not only because the operation was *too* difficult for any but a very experienced operator, but because the risk of infection was much less after several days' interval. Bunnell's buried suture, and immediate active movements with no immobilization, were essential.

Mr. ROCYN JONES (London) had personally sustained a partial rupture of the calf muscles and had found raising the heel of the shoe to be of no value. Local strapping was beneficial.

Mr. H. PLATT (Manchester) said that the only reliable sign of complete rupture of the tendo Achillis was an abnormal range of dorsiflection at the ankle-joint. Operative treatment was then necessary. Mallet finger should be treated conservatively by fixation for six weeks. Although the terminal joint required hyperextension, both of the other joints should be flexed.

Mr. W. TRETHOWAN (London) had observed the results of treatment by massage and exercises of a complete

rupture of the tendo Achillis in a professional dancer who had refused operation. The tendon united with half an inch of lengthening, and although the patient did subsequently dance, she was now much less efficient, and had recently returned asking for operative treatment.

Mr. WATSON JONES (Liverpool) said that myositis ossificans at the elbow- and knee-joints was purely traumatic, and due to avulsion of a muscle insertion with periosteum. It was not an inevitable complication, and was curable by suturing the periosteum back to the bone. In cut finger tendons, the suture of the profundus tendon alone was advised. This tendon provided ample power, and, if the sublimis tendon was completely cut away, adhesion formation was minimized.

Mr. ELMSLIE said that he had never seen a really satisfactory result when a flexor tendon of the finger had been cut below the distal palmar crease. Almost every speaker who had taken part in the discussion was in agreement, and had spoken in very strong terms of the danger of allowing casualty officers to suture cut tendons. The operation was never to be regarded as an emergency. Not only should several days elapse before it was undertaken, but the patient should be admitted to the wards, treated as a major case, and only operated upon by senior surgeons, preferably those accustomed to tendon surgery.

BACTERIOPHAGE AND THE CHOLERA PROBLEM

At a meeting of the Edinburgh Branch of the Royal Society of Tropical Medicine and Hygiene, on October 22nd, in the Clinical Laboratory of the Royal Infirmary, Edinburgh, with Lieut.-Colonel E. D. W. GREIG, I.M.S., president of the Branch, in the chair, Lieut.-Colonel J. MORISON, I.M.S., read a paper on the bacteriophage in relation to cholera and dysentery.

After describing the features of bacteriophage action, and referring to the different views as to the nature of the agent, the lecturer commended, as a working hypothesis, d'Herelle's contention that it was an independent living organism. So long ago as 1923 Bail had noticed that a race of dysentery phage could be divided into types, at least two of which, when obtained pure, each evoked a resistance to its own action in a bacterium grown in its presence. The bacterium was no longer lysable by this type of phage, but could still be lysed by the other. This observation had been confirmed, and additional types had been described by others, but Asheshov first grasped the idea that the various types supplemented each other, and that *in vivo*, as *in vitro*, the action of a multitype bacteriophage might be very different from that of a single-type bacteriophage. A distinction should be drawn between a polyvalent bacteriophage which lysed serologically different bacteria, and a multitype bacteriophage, composed of types of one race, each of which lysed the bacteria made resistant to other types of that race. Asheshov, working in Patna, had described three types of cholera bacteriophage, which he called A, B, and C, and devised for their identification a simple and ingenious technique by which a quantitative analysis of a cholera bacteriophage could be made. Two quantitative analysis procedures had been devised, one by Asheshov and his assistant, Dr. Saranjan Khan, the other by the speaker. These had concordant results, but each had its drawbacks. Colonel Morison's assistant, Dr. A. C. Vardon, had now combined the two methods into one, which was simple and rapid. The result of such examinations had been to show that in nature one or more types were frequently absent. The dysentery bacteriophage had been studied at Shillong on similar lines. Two types were isolated by picking off plaques, and repeated subculturing; these types were called G and H. Finally, seven in all were obtained. Of these seven, six had been found in India, and one in a phage obtained from d'Herelle's laboratory in Paris; the last had also three of the Indian types. When a bacteriophage had n types present, the method of analysis required that a strain of dysentery (Shiga or Flexner, etc.) be made resistant to the types, taken $n-1$ at a time. It was increasingly difficult to prepare strains of dysentery resistant to five and six types of phage, since these multiple-resistant strains grew feebly, but quadruple-resistant strains were very useful in determining phages G, H, J, K, and L. In obtaining these multiple-resistant cultures of dysentery and cholera it was found that certain types and combinations of types made a smooth culture rough, and that other combinations apparently transformed a rough culture into a smooth. Rough strains of cholera obtained from patients at the end of an epidemic were all A-resistant, but these when made resistant also to B or to C phages became smooth. Similarly an originally smooth Flexner became rough when made resistant to H, J, and K phages, but was still smooth when made resistant to G, H, and K. The Shillong therapeutic phage was a mixture of cholera and polyvalent dysentery phages, prepared from many natural phages, and grown on a number of strains of vibrios and dysentery bacilli. These methods secured the presence of as many "types" as possible, and, before issue, each batch was analysed in the way described. The use of a mixed phage had been suggested by the finding of a strong dysentery and a strong cholera phage in a patient recovering from cholera, and was justified for village use, since early cases of cholera were frequently mistaken for dysentery, and some acute dysenteric infections were indistinguishable from cholera.

In Assam, where cholera was endemic, the melting of the Himalayan snow and the first rise of certain silted rivers over their fouled mud flats determined, if cholera was present, the hot-weather epidemics; the sudden fall of the rivers, with rapid drainage of the villages on their banks, seemed to precede the autumn epidemics. This held for Assam and for that part of Bengal north and east of the Ganges. The absence of cholera in Assam during the wettest months of the year (July and August) was probably due to the isolation of every village, which rain and mud so effectively secured in those parts. The monthly figures for cholera in official reports gave no true picture of the spread of cholera. In villages it was rarely difficult to find the actual person who brought the cholera, and to obtain evidence of how it was distributed. During a study of a village epidemic, and of its treatment by bacteriophage, an indication was obtained of how village epidemics might possibly be cut short, and the spread of the disease be hindered. In one epidemic the infection was brought by a party returning from an infected village two days' journey distant. The funeral feast held on the day the first victim died resulted directly and indirectly in 143 cases of cholera in a population of 700. The disease during the first nine days caused fifty-eight deaths among eighty cases. Among the patients who became ill on the ninth day seven out of nine died. There was no evidence that the virulence of the disease was abating. That evening bacteriophage was distributed to all who would take or were allowed to take it, and its distribution was continued till the end of the epidemic. Of those becoming ill after the arrival of the bacteriophage, six did not receive bacteriophage and all died, while of fifty-seven who received the bacteriophage only six died. To test the question what would happen could the bacteriophage be given to the

first cases, two notorious centres for cholera had been under observation. In the one, Naogaon with a population of nearly 500,000, bacteriophage was distributed to every village along the banks of the Kalang River. In the other, Habigunj, through which flowed an equally dangerous stream, the usual methods of vaccination and treatment with essential oils were carried out. During the first six months of 1930 sixty-three scattered cases of suspected cholera were treated by the headmen of the villages in Naogaon, but no outbreak ensued, and there had been no outbreak so far during 1931. In the Habigunj area there were two severe epidemics during 1930, and a small one in the spring of 1931. On the occurrence of this third epidemic the Public Health Department had ordered the adoption of bacteriophage treatment in Habigunj, and if this was effectively carried out the experiment would enter on a new phase. Naogaon had not experienced such freedom from cholera during the previous ten years, but the results of 1932 were awaited, since that would be the fifth year from the last epidemic, and there was a susceptible population unprotected either by a recent epidemic or by vaccination. To the proper disposal of excreta, which had banished cholera from Europe, to the disinfection of infected water supplies which had protected cities like Baghdad and Poona, and to vaccination, which could never be given a fair trial since the vaccinators always arrived after the disease had started, was now added a method which attacked the disease at its beginning by bringing about the development of an agent active against the vibrio itself in the first cases of an epidemic—cases which might themselves disseminate the bacteriophage as they ordinarily disseminated the cholera vibrio.

INTRACRANIAL TUMOURS

A meeting of the Liverpool Medical Institution on October 29th, with the president, Professor W. Blair Bell, in the chair, took the form of a symposium on intracranial tumours.

Dr. T. B. Davie discussed the pathology of these tumours, and classified them as: (1) gliomas, 41.2 per cent.; (2) meningiomas, 12.5 per cent.; (3) auditory nerve tumours, 9.4 per cent.; (4) pituitary and hypophyseal stalk tumours, 21.7 per cent.; (5) secondary carcinomas, 4.7 per cent.; (6) granulomas, 2.75 per cent.; (7) blood-vessel tumours, 1.7 per cent.; and (8) miscellaneous tumours. The metastatic tumours, granulomas, and rarer tumours of the miscellaneous group were omitted from further consideration. The pathology of the different tumour groups was illustrated by mounted specimens, stained sections, and lantern slides. Several examples of acoustic nerve tumours were shown, and their essentially fibromatous structure was demonstrated. This structure was contrasted with the endotheliomatous structure of the meningiomas. Included among the meningiomas was one occurring in the cerebello-pontine angle, and another which had become malignant. The gliomas were dealt with more fully, the classification adopted being that of Bailey and Cushing, with some of the modifications suggested by Carmichael and by Penfield. A simplified routine of fixing and staining the gliomata was recommended, and examples of most of the commoner glial tumours were given. In conclusion, the age incidence and site of occurrence of the commoner gliomata were discussed. The value of knowledge of the aspect of intracranial tumours—as a guide to the nature and scope of surgical intervention, and as a basis for the formulation of a rational prognosis—was made the plea for further and more general study of these interesting growths.

Dr. Henry Cohen, dealing with the mechanism of symptom production in cerebral tumour, pointed out that the symptomatology arose firstly from the presence of a foreign body, gradually increasing in size, in a relatively non-expansile chamber—the skull; and secondly, from the site and nature of the foreign body. Hence the complete diagnosis must comprise an answer to all three aspects of this problem—Whether? Where? What? The general signs of cerebral tumour resulted from a gradually increasing intracranial pressure. This depended on, and varied with, the size and rate of growth of the tumour, and interference with the circulation of blood and cerebro-spinal fluid, especially the latter. The localizing signs of a tumour were produced by increase, perversion, and decrease or abolition of the cerebral function; these resulted from the destruction of nerve elements, pressure on, with displacement of, nerve elements, and resulting loss of function, and interference with the circulation of blood and cerebro-spinal fluid, especially the former. A detailed description of these general signs followed, with points in the differential diagnosis from other conditions giving rise to the classical triad of headache, vomiting, and papilloedema. Special emphasis was laid on generalized epileptiform convulsions as an early expression of increased intracranial pressure. The relative infrequency of papilloedema in early supratentorial lesions was stressed. False localizing signs in cerebral tumour were considered in some detail, and the necessity was emphasized of careful inspection, palpation, percussion, and auscultation of the cranium. Accessory means of diagnosis were mainly examinations of the cerebro-spinal fluid and radiography; other methods—such as brain puncture (Pfeiffer), and the electrical resistance method of Bohnenkamp and Schwäh—were of interest, but not of routine clinical value. The use of manometry, combined ventricular and lumbar puncture, and especially the value of cerebro-spinal fluid examinations in excluding other conditions which might simulate tumour, was commended, though the danger of lumbar puncture, particularly in subtentorial neoplasms, was very real. Radiography was of help, both directly and indirectly, after the injection of contrast media. A brief description was given of the methods of encephalography and ventriculography after air injection, and several lantern slides showing examples of radiological changes in cerebral tumour were presented. In attempting the pre-operative diagnosis of the nature of the tumour, the factors requiring most careful consideration were: the age of the patient, the site of the tumour, the mode of evolution of symptoms, evidences of disease elsewhere, and such accessory tests as serological, cutaneous, blood and cerebro-spinal fluid examinations, auscultation, and radiography.

Professor R. E. Kelly considered the surgical aspects. He said that trephining was probably one of the oldest surgical operations, going as far back as neolithic times; Hippocrates, Galen, and Celsus had used the trephine and had given practical hints for employing it. In a work by Scultetus in 1650 there were numerous illustrations of head operations performed by instruments similar to those in use at the present time. Broca might be looked upon as the founder of cranial surgery, for he was the first to trephine for abscess. Professor Kelly then demonstrated the more modern instruments of Hudson, de Martell, and Souttar, and discussed the particular areas in which he had found these instruments useful. He then showed a cinematograph film of a cranial operation—a tuberculoma. The tumour was quite easily shelled out; the patient, a boy, had made a complete recovery. Professor Kelly also exhibited four other patients, from three of whom meningiomas had been removed.

Reviews

TISSUE CULTURE

Tissue Culture in Relation to Experimental Biology,[1] by E C Cragin, reviews the contributions of tissue culture to many different fields of biological and medical inquiry In the introduction the author defends the wide scope of his book by maintaining that a consideration of these various branches of biological science in relation to tissue culture is a useful way of obtaining a general view of the wide range of cell activities After dealing with the origin and history of tissue culture he passes to the technique, which he sets out in commendable detail The routine procedure described is for many laboratories perhaps unduly complicated, but when the work has to be done in a hot and dusty city, or in an unsuitable building, the numerous precautions recommended might be valuable A comprehensive summary of the mass of literature relating to the appearance and mode of growth in culture of different types of tissue is followed by an account of the conditions of growth *in vitro* This section includes an interesting and illuminating discussion of the vexed question of dedifferentiation of tissue during cultivation The cytology of cells *in vitro* (structure, reproduction, migration, etc) and their physiology (metabolism, muscular contractility, etc) are then described, and a short section is devoted to the work on the cultivation *in vitro* of plant tissues, which has so far proved the least fruitful application of the technique The rest of the book relates to the many applications of tissue culture to medical subjects—pharmacology, radiology, pathology, bacteriology, and immunology—and it ends with a chapter on tissue culture and cancer

This is a useful and interesting survey of the immense tissue culture literature in a readably brief form, and the author is to be congratulated on the excellent arrangement of his matter More criticism and discussion of the works quoted might have been included with advantage, especially in the last chapter (on cancer), where some of the results referred to as established facts are by no means universally accepted as such One of the minor faults of the book is the large number of errors in the spelling of authors' names the reviewer encountered one Polish name which was spelt in four different ways An extensive and very useful bibliography is appended, but as many of the papers included are not mentioned in the text, it would have been more valuable had it been divided into smaller sections according to the subject matter of the papers, each section following its appropriate chapter

On finishing Dr Cragin's book the reader can hardly fail to be impressed by the enormous possibilities of tissue culture as a research method, and, indeed, there is hardly any branch of medicine or biology which the technique cannot be made to serve in some degree In the introduction the author states that tissue culture can easily be done in any laboratory This is perfectly true There is however, a deceptive simplicity about the method which has been responsible for much unsound research A beginner equipped with a general medical or scientific education can learn the essential principles of tissue culture in a month, but, unless he is working in close contact with those who are already expert in the technique only long experience will enable him to interpret the material correctly, to distinguish between normality and degeneration, and to diagnose and overcome technical difficulties Moreover, it is one thing to be proficient in the tissue culture method, and quite another to apply it successfully to a specific problem, and the most competent tissue culturist will produce results of little value unless he is either a specialist himself in some particular branch of science (pathology, biochemistry, embryology, etc), or is able to collaborate with such a specialist

[1] *La Culture des Tissus en Biologie Expérimentale* Par Émile C Cragin Préface du Professeur G Roussy Paris Masson et Cie 1931 (Pp viii + 242, 72 figures 55 fr)

THE CARDIAC CYCLE

Dr Harrington Sainsbury insists upon the recognition of physical principles in the consideration of physiological problems In his monograph on *The Cardiac Cycle*[2] many common sense arguments are marshalled in support of an unorthodox conception of the production of the arterial pulse Briefly, he holds that the pulse-wave is generated by the impact of blood upon the closed aortic valves during the isometric phase of ventricular contraction, and that the wave is "sent coursing through the aorta and its branchings down to the arterioles" The stretching of the arterial wall is regarded as the expression of "momentum" carried by the pulse wave Since momentum is defined physically as the product of mass and rate of movement of the mass, it is difficult to see how a vibration without any expulsion of blood into the arterial tree can add any momentum to that already possessed by the moving stream of blood before the impact strikes on the closed aortic valves It would seem more reasonable to agree with Wiggers that the oscillations in the column of blood produced during the isometric phase of ventricular contraction are insignificant, and are represented by small preliminary undulations on the carotid pulse curve before the abrupt large wave resulting from the onset of the ejection phase

Whatever criticism is levelled at Dr Harrington Sainsbury's work, it must be recognized that his opinions are the outcome of a very full consideration of detail and first principles His stimulating section on the bulbus aortae is well thought out as a whole, but is not convincing in the matter of the action of the aortic valves In explaining that these are opened up only centrally during the ejection phase of ventricular systole, the author puts forward the view that any greater movement of the valves would be impossible, because it would entail the movement of the blood *en masse* Surely the elasticity of the bulbus aortae would allow of more than minimal opening of the aortic valves? The pathological arguments brought to sustain his view are more impressive

This volume concludes with a description of the mechanics of the circulation of the lymph The importance of the pulse wave in promoting lymph flow is stressed, and a logical discussion of other factors is provided Dr Sainsbury has obviously given great care and thought to the difficult problems which he seeks to solve While his views are open to criticism, there can be no doubt of the sincerity, enthusiasm, and lucidity with which his arguments are set forth

[2] *The Cardiac Cycle* By Harrington Sainsbury, O B E, M D, F R C P Bristol J Wright and Sons, Ltd, London Simpkin Marshall, Ltd 1931 (Pp 79, 1 diagram 5s net)

THE PSYCHOLOGY OF EARLY CHILDHOOD

The great importance of the study of the pre school period of a child's life is now recognized A good deal of attention has recently been directed to it The establishment of nursery schools, and the extension of child welfare work to children between 2 and 5 years of age, has been urged upon local authorities by the Board of Education and the Ministry of Health Yet it remains

true, as has been several times pointed out, that during this range of age in which habit formation is so active, and where wise guidance is of such great value for future welfare, there is a greater lack of expert assistance than at any other period of childhood. A new edition of the work of William Stern of Hamburg, on *The Psychology of Early Childhood up to the Sixth Year of Age*,[1] is opportune and welcome. This is the second edition of the English translation of this work, and it has been enlarged and completely revised in accordance with the sixth German edition.

It need scarcely be said that the book is full and authoritative; indeed, since its first publication in 1924 it has been recognized as containing a large amount of original and pioneer work, and as being a standard volume which could not be ignored by anyone interested or working in the field of study to which it has reference. To some its general method and outlook may begin to appear old-fashioned, but the revision it has undergone for this new edition fully recognizes the most important advances which have been made in the field of child psychology, and submits them to discussion and criticism. A number of the chapters in the sections dealing with enjoyment and creative activity, and with effort, emotion, and will, have been entirely rewritten. Much fuller treatment has been given to the experimental examination of young children by specific tests. Some trenchant, but wise, criticisms of psycho-analysis in general, and especially of Freudian psycho-analysis in young children, are now included; the pedagogic theories and practices of the Montessori school are submitted to examination with not altogether favourable results; and in general the theory of personality, and the personal standpoint, on which previous editions have been based, has been maintained, and is emphasized perhaps even more than before.

At the end of the book are two supplements—one by Professor Kurt Lewin of Berlin, who deals with the expressive movements of children by means of film photographs, and one by Professor Heinz Werner of Hamburg, on the subject of magic attitudes in early childhood. It will be seen that the work is very thorough, in German fashion. Scarcely any detail is overlooked, though it is curious that the very real light which the modern study of mental defectiveness can throw upon the normal psychology of children is, to all intents and purposes, ignored. In places, perhaps, this attention to detail is a little overpowering, and detracts from the interest which a broader and more general method of analysis might have induced. One general statement should, however, be quoted, not only as being very important in itself, but also as indicating one of the standpoints from which the subject has been dealt with:

"Our task is not to apply the 'normal measure' of our own psychic powers and nature to the child and to make a note of the points where he falls short of the standard, but rather to understand the different nature of the child as being typically characteristic of his positive divergent individuality."

PERIMETRY

A third edition of *The Principles and Practice of Perimetry*,[2] by Luther C. Peter, professor of ophthalmology of the University of Pennsylvania, has now appeared. The volume is introduced by a short summary of the anatomy and physiology of the visual paths and the physiological principles of vision. In the first of these subjects a considerable amount of matter has been added, particularly with reference to the recent work of Brouwer and Zeeman and Putnam on the visual paths. The treatment of the physiology of vision is necessarily brief in a work of this kind; this, however, cannot reasonably be taken as an excuse for lapses into unintelligibility. It is difficult, for example, to follow the definition suggested for visual acuity (p. 40): "By this term is meant either the ability of the eye to recognize minute points of definite size, as separate points at a definite distance, spacial perception, or to recognize a point of definite size at a definite distance."

The section on physiology is followed by a description of the general principles of mapping out the visual field by the perimeter or the campimeter, which is followed by a good account of the many modifications of the standard instruments which have been devised for the purpose, the value of some of the newer and more expensive of these being carefully and justly appraised. This is followed by a general discussion of the pathological changes which may be found in the visual fields—the various types of scotomata, changes in the colour fields, and so on. A new and prominent feature of the present edition is the introduction of the "anatomic or physiologic method" of reading the visual fields. According to this method the chart represents the patient's field as viewed by the examiner in a position facing the patient, instead of depicting the field (according to custom) as looked at by the patient himself. The former method has the theoretical advantage of conforming to the general usage in projection in most other branches of ophthalmology and general medicine, but it makes some of the charts considerably different from those to which we have become accustomed. The remainder of the book deals with the many pathological and functional conditions which produce abnormal changes in the visual fields. These are discussed in considerable detail, and the many personal observations of the author are amply supplemented by references to the voluminous literature which has accumulated round the subject. The volume forms a useful source of information on many of the more difficult problems of ocular and cerebral diagnosis.

ANTI-MOSQUITO MEASURES

The literature dealing with the application of various anti-mosquito measures has become so extensive that the average worker has great difficulty in keeping in touch with the different methods advocated. Major Gordon Covell, in his work entitled *Malaria Control by Anti-Mosquito Measures*,[5] has placed in the hands of medical men a short, concise, and extremely practical account of the various methods used to control malaria. The important measures of housing, screening, oiling, and the use of Paris green are discussed in detail, and reference is made to all the methods advocated in the literature. This most useful book will be of the very greatest value to field-workers in all countries. A feature of it is the comprehensive bibliography, which contains 570 references to books and articles, arranged under the headings of the various measures dealt with. This collection of the literature will be welcomed by all malariologists, and the appendix, giving a list of the sources and prices of the various apparatus used in carrying out anti-mosquito measures, is invaluable.

[1] *Psychology of Early Childhood up to the Sixth Year of Age.* By William Stern. Translated by Anna Barwell. Second edition, revised and enlarged in accordance with the sixth German edition. London: G. Allen and Unwin, Ltd. 1930. (Pp. 612. 18s. net.)

[2] *The Principles and Practice of Perimetry.* By Luther C. Peter, M.D., Sc.D., F.A.C.S. Third edition, thoroughly revised. Philadelphia: Lea and Febiger. 1931. (Pp. xii + 315; 194 figures, [illegible] dollars net.)

[5] *Malaria Control by Anti-Mosquito Measures.* By Gordon Covell, M.D., D.P.H., D.T.M. and H., Major I.M.S. Calcutta and Simla: Thacker, Spink and Co., Ltd.; London: W. Thacker and Co. 1931. (Pp. ix + 148; 13 figures. 7s. 6d.)

NOTES ON BOOKS

HOWELL'S *Text Book of Physiology*[1] is now so well known and so widely appreciated in this country, and the appearance of new editions so regular an annual event, that the latest edition needs but little comment. It is enough to say that the standard which has earned for it a world-wide reputation has been well maintained, and that the work has been brought well up to date. The reviewer is of the opinion that there is no more useful presentation of the point of view of present-day American physiology.

The many friends of *Mrs. Dose the Doctor's Wife* will be glad to hear that Miss JOYCE DENNYS has written and illustrated a sequel to that lively piece of satire, in time for the Christmas gift-book season. *Repeated Doses*[2] ("The mixture to be taken as before") is very good fun. Where the author and artist gets her knowledge of Harley Street and general practice from we do not know; but it is plain that she has first-hand acquaintance with both sides of the medical life, and if her digs at doctors are a little unkind she shows herself once again a witty and understanding admirer of the doctor's wife.

The appearance of vol. xi of MELLOR'S *Chemistry*[3] brings the author's work a notable stage nearer completion. Our reviews of the first ten volumes have already described the work as one of extraordinary magnitude, including a wonderful wealth of detail arranged on a plan which we believe must render it the most comprehensive as well as the most convenient work of reference of its kind that has yet been published. Vol. xi deals with tellurium, chromium, molybdenum, and tungsten. It continues the characteristics established in the former volumes, and maintains the same high standard of excellence. Dr. Mellor has a genius for connecting facts and events into attractive narrative. We observe that each separate volume has its own index; it seems to us, however, that a general index to all the volumes will also be highly desirable. If the whole work is to be fully cross-indexed, the index will itself be a very substantial volume.

In *The Great Physician: A Short Life of Sir William Osler*[4] there is presented, to those who were not fortunate enough to know him and might be deterred by the length of Professor Harvey Cushing's famous *Life* of his master, a beautifully printed and illustrated account of "the physician of two continents." The author, EDITH GITTINGS REID of Baltimore, had the privilege of Sir William's acquaintance, of access to many of his letters, and help from a number of his devoted friends. She also acknowledges her great indebtedness to Professor Cushing's biography, of which to a considerable extent her book is almost necessarily an abstract. She writes in a style which will probably appeal more to those accustomed to the American press than it will to British readers. There are some minor inaccuracies about medical matters; but these should not worry the lay reader, and he may not notice the different spellings (Egerton and Edgerton Y. Davis) of Osler's *nom de plume*.

Mr. H. L. BAYNHAM, publisher, of 49, Queen Victoria Street, London, E.C.4, has prepared a new edition for 1931 of the *London Register of Nursing Homes and Medical Institutions*. Some particulars are given of accommodation for paying patients in London voluntary hospitals.

[1] *Text-Book of Physiology*. By William H. Howell, Ph.D., M.D., Sc.D., LL.D. Eleventh edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1930. (Pp. 1,099; 305 figures. 30s. net.)

[2] *Repeated Doses*. Written and illustrated by Joyce Dennys. London: J. Lane, The Bodley Head, Ltd. 1931. (Pp. 157; illustrated. 5s. net.)

[3] *A Comprehensive Treatise on Inorganic and Theoretical Chemistry*. By J. W. Mellor, D.Sc., F.R.S. Vol. xi. London and New York: Longmans, Green and Co. 1931. (Pp. xii + 909; 51 figures. 63s. net.)

[4] *The Great Physician: A Short Life of Sir William Osler*. By Edith Gittings Reid. London, New York, and Toronto: Oxford University Press. 1931. (Pp. x + 299; 10 illustrations. 12s. 6d. net.)

PREPARATIONS AND APPLIANCES

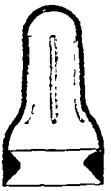
AN IMPROVED TEAT FOR INFANTS' FEEDING-BOTTLES

Dr. A. D. MACDONALD (Department of Pharmacology, University of Manchester) writes:

The rubber teats commonly used on infants' feeding-bottles are made by the repeated immersion of a suitably shaped mould in a rubber solution, and the teat, when a suitable thickness is obtained, is "cold-vulcanized"—a process which involves the exposure of the article to the action of sulphur monochloride, either as a vapour or in solution. Such treatment produces a certain hardness and resilience. The whole process is slow, and the glass moulds require frequent replacement. It is also unsatisfactory, in that it is not particularly healthy for the workers; indeed, the manufacturer who uses it is required to obey rather stringent Home Office regulations. The cold-vulcanized rubber teat is not an altogether satisfactory makeshift; in France its sale is forbidden by law, but certain loopholes have it possible for the regulations to be evaded on technical grounds.

The laboratory staff of Messrs. Macinlop, Ltd., Manchester, have been experimenting during the past year on the production of a moulded heat-vulcanized teat which would be free from the more serious objections which characterize the standard cold-vulcanized patterns. I have acted in an advisory capacity during the development of the moulded teat, and subjected the teat to a series of laboratory tests. It is clearly important to ascertain that the processes of manufacture do not introduce into the rubber any harmful substance.

For the production of a heat-vulcanized article the rubber is first mixed with a carefully controlled proportion of sulphur and subsidiary ingredients. The heat treatment is usually accomplished by inserting a weighed quantity of the mixed or "compounded" rubber in a steel mould, which is placed under hydraulic pressure between the platens of a steam-heated press. The degree of vulcanization is determined in part by the composition of the mixed rubber, and also by the temperature and duration of the heat treatment. In contrast to cold vulcanization, which is largely a surface treatment, heat vulcanization progresses uniformly throughout the mass, so that all portions of the finished article have the same characteristics. In addition to careful selection of the compound and all raw materials used, manufacturing operations must be carried out with strict attention to cleanliness, and the finished moulded teats are finally sterilized before wrapping.



In all my observations the new teats have been compared with those marketed by a well-known firm, and known to be manufactured by the older process. When new and unboiled the moulded teat is not quite as translucent as the cold-vulcanized article. It feels a little firmer and more substantial, and is free from any stickiness, which cannot always be claimed for the other. In rough tests of toughness and elasticity there is little to choose between them.

Most important of the advantages that can be claimed for the moulded teat is that it can be sterilized repeatedly by boiling in water. I have boiled one for four days of about eight hours, without apparent deterioration. The cold-vulcanized teat, after thirty minutes' boiling, generally loses resilience, and becomes cracked and rough. These cracks, if the teats are used thereafter, might well be irritant, and make strict cleanliness difficult.

Milk is not affected in reaction, as tested by indicators, nor in palatability, when the new teat is immersed in it. Indeed, I have pumped a small quantity of milk through a teat repeatedly throughout an hour, and the appearance, reaction, and flavour of the milk are unaffected. When a teat has been immersed in milk for twenty-four hours the flavour of the milk is impaired, becoming "rubbery"; but this is an academic objection, and applies equally to the cold-vulcanized product.

I have applied rubber strips, cut from the teats, to the skin of the forearm and axilla, retaining them in place by strips of zinc-oxide plaster. No reaction whatever was provoked in the skin by the heat-vulcanized rubber; indeed, the zinc-oxide plaster produced a slight erythema, from which the rubber had shielded the area it covered.

Through the kindness of Dr. Catherine Chisholm, the moulded teats were then given a thorough clinical trial. On her recommendation they were lengthened, so that they could reach and stimulate the palate and dorsum of the tongue, if required, and thus produce more powerful suction. The shoulders were further strengthened, and the retaining ring improved, so that there is no risk of the infant sucking or pulling the teat from the bottle. For bottles with openings at either end a suitable valve of similar material has been moulded. It is believed that these teats will shortly be available for general use.

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SATURDAY, NOVEMBER 14th, 1931

THE GROWING AND MOVING BOY

Towards the end of the war Lord Dawson of Penn brought forward his proposal for the formation of a network of "health centres" throughout the country. These health centres, while affording facilities for the best kind of team work, were also to play an important part in recognizing the physical conditions that lead to disease. The orthopaedic centres now established are, in a way, a specialized fulfilment of the main idea, and already the class of case they are receiving and treating is in a far less advanced stage than when Alton first opened its wards. Practitioners not only now diagnose surgical tuberculous conditions earlier, but press upon parents the necessity for early institutional treatment. Now another lead in the same direction has been given by Lord Dawson. In his address at the opening of the new sanatorium at Epsom College (reported in our issue of October 10th, p. 666) he called upon school medical officers to "study boys when they are in movement." This is a new conception of medical examination of great importance. It is both bold and original, for it is a call to recognize tendencies and susceptibilities even before these become the early signs of disease. Let us see where such a practice would lead, and what changes in methods of examination, keeping of records, and work for the school medical officer it would entail.

The customary general medical examination of to-day puts on record age, height, weight, chest measurement, and chest expansion. Then, as a rule, there are records concerning the various systems. But measurements pass from recollection or interest as soon as noted on paper, for they are so many cold facts that convey to the mind only a faint idea of the physical make-up of the individual. In the examination of the systems the records rarely note anything but abnormalities, and make no effort to assess the "degree of wellness" or efficiency of the system under inspection. In the Royal Air Force it was recognized that the examiner must try to estimate degrees of wellness and concern himself little, or not at all, with illness. Special tests were devised—such as the breath-holding test, fatigue test, exercise tolerance test, and balancing test—with a view to estimating and obtaining some record of the efficiency of various systems. These proved invaluable. During the late war they were applied to youths fresh from school, pilots who had broken down in training, or been wounded, or flown for long hours; and those in charge of the examinations grew to recognize types at sight without special examination or reference to their record. Thus, the stigmata of cardiovascular debility, nervous instability, and of other types of disordered function, made themselves patent to the eye and mind of medical officers trained to assess varying degrees of health rather than of illness. The individuals of each type reacted alike under the stress of training and war, although weight, height, chest measurements, and similar data showed extreme variations within the type; moreover, they responded successfully to pre-selection for the kind of flying they were best suited to carry out, and a large number of the new entry were, by suitably chosen methods of physical training, made to advance from an unsuitable type to one able to respond well to stress and strain. This is real "health centre medicine" of the best.

So to-day the special examiners of the Royal Air Force, while continuing exact and detailed records, are able in a very large proportion of cases to classify their material accurately by eye, by observing the body in movement. Any medical officer to a school who attended the assessing of the Royal Air Force pilots and candidates could acquire in a short time the skill to classify boys coming under his observation into a number of types. He could check his observations by occasional full examinations, including suitable tests, and by observing the achievement of the boys in their school games and their response to treatment when ill. The usual records are cold, and give no living picture of the individual; but here is a method that cannot fail to interest the school medical officer, because it will, once his eye is trained, instantly conjure up almost a composite portrait of the individual. Moreover, classification of the living and moving boy in this way can be taught by the doctor to masters, thus building a bridge of mutual interest and collaboration between the two. It is to be hoped that medical officers to public schools will respond to this new and inspiring call, and produce work as valuable for growing boys as that of the original Special Board of the Royal Flying Corps in the emergency of the war. It should not be difficult, in conference, to agree upon a few preliminary broad types, and so begin at once to make the road Lord Dawson has indicated.

Lord Dawson, in his address, referred also to the education of the skin. This is of great importance, and further knowledge would certainly show us how to diminish some of the dread of the Lent Term now present in the minds of parents and masters alike. The Turk considers the Englishman mad when he takes a bath. "To get into a bowl of water, wash the dirt off and then roll in it" seems to him the height of insanity. Are not school baths, in which boy follows boy in rapid succession, an almost perfect method of conveying infection of the skin and mucous membrane from one individual to another? No one supposes that the mere emptying of a bath leaves it surgically clean. Showers would certainly be more efficacious and hygienic, would be cheap, and use less water than an ordinary bath. In many places in Sweden all who enter the swimming baths have to wash themselves with soap under a hot shower before being allowed to swim; these shower rooms are used instead of baths, and the healthiness of

the Swede is too well known to emphasize. Experiments to prove a point such as this would be easy to carry out in one house of a boarding school, and they would come well within the duties of school medical officers who take a broad view of their appointment. Lord Dawson has indeed opened for them new interests and new functions that will eventually bear fruit for the nation if they respond to his call.

ECONOMY IN INDIAN HEALTH SERVICES

The special session of the Indian Legislative Assembly, the business of which is confined to the Government's Emergency Finance Bill, met at Delhi on November 4th and will presumably complete its business by the 21st, the date for which the Council of State has been summoned. The Bill is designed to meet a deficit of some 39 crores (that is, about 390 million rupees) during the next eighteen months, and those upon whom its burden will fall with most weight have at least the consolation that its operation is, according to the Finance Member, Sir George Schuster, expected to produce a surplus which will justify relief during the financial year 1933–34. The Bill imposes sweeping retrenchments in Government services generally, and especially in military expenditure, an emergency cut in all salaries at a flat rate of 10 per cent., and drastic increase of all taxation except the customs duty on exports.

The salary cuts, which are expected to effect a saving of 128 lakhs, will come into force as from December 1st, and apply equally to civil and army officers. In the case of officers whose rights are guaranteed under the Government of India Act—a class which includes the Indian Medical Service—the necessary legislation will be introduced in the Imperial Parliament at the first opportunity. The main lines of the scheme were announced at the close of the autumn session in Delhi, and interest therefore centres at the moment rather on the recommendations of the committees to which was entrusted the task of formulating detailed proposals for retrenchment and the decisions on these recommendations now announced for the first time. Some of these have a special claim upon our attention, not only as affecting the service conditions of members of the Indian Medical Service, but also as constituting a grave menace to the long overdue development of the basic health services. They fall into two groups: those primarily affecting service conditions, and those primarily affecting services. Under the first head, in addition to the basic salary cuts, the General Purposes Subcommittee proposed the withdrawal of the Lee concessions and the abolition of the exemption from income tax of pensions, leave and deputation salaries, and allowances payable outside India. On these proposals we can frame no better comment than that supplied by the Finance Member in announcing their rejection in his opening speech last week, as reported by the *Times* correspondent in Delhi. He pointed out that the concessions were granted to meet grievances and inequalities as between different classes of officer, held, after most searching inquiry, to be fully established. To withdraw them would be to restore the inequalities, and would entail palpable injustice and class discrimination. For the rest, the Government of India has no legal means of recovering Indian income tax on payments due outside India; the pensions rights of existing pensioners, and of those who have already entered a pensionable service, cannot be altered; and the proposal to superimpose taxation on leave pay upon salary cuts already pushed to an extreme limit is not one which the Government should, or could, entertain.

The recommendations for retrenchment in existing or projected services include the abolition of the appointments of Director-General I.M.S., and Public Health Commissioner with the Government of India, and of the separate establishment of the Director-General, which includes six medical officers, one of whom acts as an assistant to the Public Health Commissioner. It is recommended that the responsible heads of the existing central departments should be replaced by two isolated officers, a Medical Adviser to the Government of India and a Public Health Adviser to the Government of India, each to be "of sufficient standing and experience to function as a Deputy Secretary, and to draw about a Deputy Secretary's pay." The existing nucleus of a central health and medical department would be absorbed in the Army Department on the one hand, and the civil Department of Health, Education, and Lands on the other. The subcommittee's justification of these recommendations is hardly convincing. Holding that the D.G.I.M.S. and his office are merely a survival of the pre-reform period, it opines that medical service questions do not require a civil head of the Medical Services any more than is the case with any other All-India Service operating largely in the major Provinces; that co-ordination of the medical policies of the major Provinces may *per se* be a desirable object, but the existing constitution does not demand it; and that neither do the Provinces ask for it, nor can India in her present financial condition afford to undertake it. On the military side the subcommittee considers it only right that all such matters should be transferred to the Army Department, but does not find it necessary to discuss the efficiency value for the Service of a head with adequate status, including access to the Viceroy, and reasonable departmental resources. As regards the Public Health Commissioner, it bases its recommendations, with cheerful inconsequence, upon those of the Inchcape Economy Committee of 1923, ignoring alike the cogency of the reasons which led to their rejection in the earlier period of financial stringency, and the practice and experience of all civilized Governments, federal as well as unitary, in the matter of central health departments, and the grave implications of the Indian morbidity and mortality returns at the

present time. Both these recommendations have been rejected by the Government of India. The report as yet available do not inform us of the grounds for this decision, but we may hazard a guess that it is based on three general considerations: appreciation of the actual health obligations, national and international, of the Central Government, under the existing constitution; realization of the essential part played by a strong central department of health in the sound development of any federal State; and, perhaps not less, recognition of the importance for the efficiency of military and civil services alike, especially during a period of transition and doubt such as the present, of a responsible head with adequate status.

On two more recommendations of the subcommittee the decision of the Government is not mentioned in the reports so far received. These are the suspension of the annual grant of 5½ lakhs to the Central Research Fund, and the reduction of the estimate for the first year's work of the new School of Tropical Hygiene at Calcutta. We hope and believe that the former of these entails only a further postponement of the creation of a Central Research Institute, already the subject of inquiry by two special scientific commissions and much overdue, and not a curtailment of the existing minimum programme of basic research. While it is only proper that all possible economy should be observed in the administration of the Calcutta School of Hygiene, the recommendations of the subcommittee are to be regretted, not merely because they suggest a somewhat cavalier attitude towards the commitments undertaken by the Government of India in accepting the munificent gift of the Rockefeller Trustees, but because of the implied assumption either that India can obtain in the open market the services of first-class scientists at anything less than competitive rates, or that India can afford to dispense with such services. To those who hold this view or find in public health and research services the most appropriate field for retrenchment—and reports from Delhi suggest that in India, at least, their number is not negligible—we would recommend a study of the statement by Colonel W. G. King, Sir Ronald Ross, and the late Sir W. J. Simpson (quoted in our leading article of April 14th, 1923) on public health and medical research in India, which pointed out that the mean expectation of life of the Indian male at birth, which was 24.59 in 1891, had diminished by 1911 to 22.59, while in England it had risen from 40.17 in 1841 to 51.50 in 1910–12. They should also study the latest reports of the Public Health Commissioner, whose office and functions they find superfluous. From these they will learn that the Indian death rate for 1928 was nearly double that of England and Wales, and thrice that of New Zealand, while the infant death rate, a sensitive index of the value of public health effort, was nearly two and a half times that of England and Wales, and about five times that of New Zealand for the same year. The Report of the Simon Commission will inform them that the annual deaths from preventable disease are estimated at five or six millions. In face of such facts the vital question for India would seem to be whether curtailment of public health and research services is not a method of economy too extravagant to be seriously considered.

EPHEDRINE AND PSEUDO-EPHEDRINE

Ephedrine was introduced as a cure for asthma about seven years ago and has rapidly attained a great popularity. The original source was the Chinese plant *Ephedra vulgaris*, and the disturbed condition of China in recent years has resulted in the supply being scarcely adequate to meet the demand. Lieut.-Colonel Chopra and his co-workers have just published[1] the results of a careful study of the Indian ephedras, which was made in order to see if any of these could serve as a source of the alkaloid. They analysed the alkaloidal content of a number of species grown in different localities, and also studied the seasonal variation. They found that two species (*E. gerardiana* and *E. nebrodensis*) contained from 0.5 to 2 per cent. of ephedrine. These yields equal or even surpass those obtained from Chinese plants. *E. intermedia* gave a good yield of total alkaloids, most of which consisted of pseudo-ephedrine. The alkaloidal content in all species showed great seasonal variation, which depended on the rainfall and therefore was different in different localities. The alkaloid yield during the wet months was only one-third of that obtained from plants collected during the dry months. These researches have therefore resulted in establishing a new source of ephedrine, and the authors mention that the Indian export of ephedra leaves is now at least 25 per cent. of the Chinese export. They have also studied the relative therapeutic values of ephedrine and pseudo-ephedrine. They found that ephedrine, when given regularly for asthma, produced a variety of disagreeable side-effects. Palpitation, tachycardia, fainting fits, constipation, and digestive disturbances were among the effects noted. A still more important fact was that patients with cardiac disease tended to become decompensated when given ephedrine regularly in large doses. The authors found that ephedrine produced a more powerful vasoconstrictor action than did pseudo-ephedrine, but that the former depressed, whilst the latter stimulated, the myocardium. On the other hand, the two drugs produced an equal action on the respiratory tract. Clinical tests showed that ephedrine and pseudo-ephedrine were equally effective in relieving asthma, but that the latter caused fewer unpleasant side-actions. "If the use of this alkaloid (pseudo-ephedrine) is extended in the treatment of asthma and other conditions in which ephedrine is being used, not only will the cost of treatment be reduced, but it may be possible to avoid the unpleasant side-effects of the latter group." The results obtained by Lieut.-Colonel Chopra and his co-workers are interesting and important, first from an economic point of view, and secondly, because they suggest an advance in the treatment of asthma. It is to be hoped that clinicians in this country will study the relative merits of ephedrine and pseudo-ephedrine.

[1] Indian Ephedras: Their Chemistry and Pharmacology, *Indian Journal of Medical Research*, 1931, xix, 177. By R. N. Chopra, M.A., M.D., S. Krishna, Ph.D., D.Sc., F.I.C., and T. P. Ghosh, B.Sc., F.C.S.

THE RED CROSS TRANSFUSION SERVICE

It is announced that the Medical Research Council and the British Red Cross Society have appointed Dr H F Brewer, senior demonstrator of pathology at St Bartholomew's Hospital, to be medical officer to the Blood Transfusion Service organized by the Red Cross His duties will be to supervise the examination of volunteers for transfusion, collate information on the effect of transfusion on donors, and to carry out researches into blood grouping, so that the transfusion service may be kept abreast of the latest developments in surgery and haematology. St Bartholomew's Hospital is providing the laboratory facilities Some account of the work of this service was given by Mr Geoffrey L Keynes at the meeting of the Medical Society of London on October 26th, and briefly reported in the *British Medical Journal* of October 31st (p 801) The service has now a ten years' history, and the number of calls upon it has grown steadily each year, with the exception of a short period when the liver treatment of pernicious anaemia first came to be widely adopted, and obviated the necessity in many cases for successive blood transfusions Last year only 52 transfusions for pernicious anaemia were given, though there were 140 transfusions for anaemias of other forms In 1929 the number of transfusions carried out was 1,333, in 1930 the number rose to 1,627, and by the end of this year it is expected that 2,000 calls will have been made upon this service The membership of the service is now over 1,100, of whom about one fifth are women Very many social organizations are represented on the list of volunteers No payment is made, but all expenses are refunded, including time lost from work, but in most cases the donor, if required in the daytime, is able to return to his work within an hour More than a hundred hospitals have called for the service A very careful record is kept of the nature of the calls and the result of the transfusion In more than half the transfusions the result is described as "good," "very good," or "excellent," and only in 10 per cent is "no improvement" recorded During 1930 the number of distinct conditions for which transfusion was given was 148, and the medical and surgical cases were almost equal in numbers Transfusion was given also in 217 obstetrical or gynaecological cases As many as 449 transfusions were given in cases of disease affecting the alimentary canal (carcinoma 106, colitis 52, duodenal and gastric ulcer 291) Blood transfusion was given last year in 33 cases of fracture and severe injury, in 22 cases of osteomyelitis, in 37 of septicaemia and pyaemia, and in 42 of uterine fibroids Though the operation is not painful or harmful to the donor, those responsible for the service are a little in doubt as to the effect of frequent bestowals Mr Keynes, at the meeting of the Medical Society of London, stated that a certain donor in France had given his blood 450 times, and that at present in London there was a man who was anxious to emulate his example, but those concerned hesitated to allow him to do so It appears that blood grouping is imperfectly understood by some who ask for transfusion for their patients, for they persist in requesting the services of the universal donors, with the result that these are over-used, and donors in the other groups are not used at all.

LEPTOSPIROSIS IN THE ANDAMANS

In an Indian Medical Research Memoir (No 20, March, 1931)[1] Lieut-Colonel J Taylor and Dr A N Goyle describe the result of their investigation of a severe type of jaundice which occurs in the penal settlement around Port Blair in South Andaman Island Previous work, notably that of Barber in 1926, had shown the leptospiral nature of this disease, but no thorough clinical and laboratory investigation of the condition had been undertaken prior to the work recorded in this memoir After a brief historical survey of jaundice in the Andamans, and a description of the infected area and its population, the authors give the results of their clinical and laboratory investigation of sixty four cases of this disease Clinically, the condition differed little from Weil's disease as it occurs in other parts of the world The incubation period was from six to eight days, the onset acute, with fever, prostration, pains in the body, muscular tenderness, injection of the conjunctivae, and frequently albuminuria Jaundice was absent in 31 per cent of the cases, when present it made its appearance, as a rule, on the fourth or fifth day of disease Secondary fever was noted in 19 per cent of cases, and the mortality was 18 7 per cent, about midway between that obtaining in the Japanese mines outbreak investigated by Inada and his colleagues in 1916, and the low rate of 4 5 per cent observed in the British and French armies on the Western front during the great war Illustrative cases of different degrees of severity are described in detail, and the differential diagnosis is discussed The laboratory investigation brought out certain points of considerable interest It has long been recognized that direct examination of human material, with the possible exception of urine, is of little use as a diagnostic procedure, and Taylor and Goyle are of like opinion In the past reliance was placed on guinea pig inoculation, either with blood collected early in the disease or with urine in the later stages, as a means to diagnosis, but in this investigation only one guinea pig out of twenty two inoculated with blood became infected, and no better success was obtained when urine was the inoculum On the other hand, blood cultures made in Noguchi's semi-solid leptospiral medium, or Fletcher's modification of it, were usually positive when blood was collected during the first four or five days of disease Later in the disease there are the various serological tests available for diagnosis, such as agglutination, complement-fixation, the adhesion test, and Pfeiffer's reaction But here one must not forget that the pathogenic leptospira fall into a number of serological groups which bear little or no relation either to the type of disease or to its geographical distribution so that unless one were in possession of a variety of strains, including the local strains, serological reactions might be of little value In fact, Taylor and Goyle's findings emphasize this point, for twenty four out of the twenty-eight Andaman strains of lepto-pira examined serologically formed a group reacting with none of the serums prepared from a representative collection of human, rat, and dog strains As elsewhere, Weil's disease in the Andamans was found to be associated

[1] *Leptospirosis in the Andamans* By Lieut-Colonel J Taylor, D S O, M D D P H I M S and Amar Nath Goyle, M B, Ph D Indian Medical Research Memoir, No 20 Calcutta Thacker, Spink and Co 1931 (8, or Rs 6)

with wet conditions. The seasonal prevalence was that of the south-west monsoon, and cases were practically confined to adult males whose work entailed prolonged contact with stagnant water. Work in the paddy fields was responsible for a considerable number of cases, and the authors recommend the application of calcium cyanamide fertilizer to infected fields as a prophylactic measure likely to be effective. The memoir contains an appendix giving a useful summary of our present knowledge of leptospiral infections.

DRUG POTS

With the advance of pharmacy as a science, and the gradual disappearance of the bottle of medicine in favour of tablets, the furniture of the chemists' shops is changing rapidly. The huge carboys, with cabalistic signs on the glass, and the coloured liquid inside, which used to shine so gloriously on a foggy day in London, have gone as completely as the ordered rows of drug pots and the stoppered bottles on the shelves behind the counter. Mr. Geoffrey Eliot Howard, therefore, has done well to describe some of them before it is too late, and the Medici Society to reproduce their shape and colour in a series of excellent plates.[1] Mr. Howard classifies these drug pots rather too rigidly into decennial periods, each identifiable by the character of its ornamentation. He has also enlisted the services of Mr. C. J. S. Thompson to explain the nature and uses of the various drugs which the jars contained. This table is the more easily understood if it be remembered that U and V are interchangeable. The table might have been amplified with advantage by describing the cryptic alchemical signs which often ornament both drug pots and bottles. Added to the general description are short articles on posset pots, the pill slab, the barber's bowl, wine cups, and wine pots, all of which have long since gone out of use and become "museum pieces." There are one or two small slips which may be rectified in any future edition. It was Dr. William Bullein, not Andrew Boorde, who described the apothecary as the "physician's cook," and the barber's dish (p. 76) could only have been used as a receptacle for blood in cases of emergency. The physician always recommended the quantity of blood to be taken away in a stated number of ounces, unless it was "ad deliquium," and the metal bleeding-bowl was therefore marked on its inner surface with lines representing ounces, and had a flattened portion in its circle, where it could be held against the arm.

MEDICAL HYDROLOGY

The annual meeting of the International Society of Medical Hydrology was held in Amsterdam from October 30th to November 3rd. In the absence of the president (Professor W. Thayer), Dr. J. Van Breeman presided. The honorary secretaries were Dr. E. P. Poulton (London) and Dr. W. S. C. Copeman (London). An inaugural banquet was given to the 120 or so members who attended the meeting by the Dutch Society for the Study of Rheumatism. This was followed by a concert. On the next day the society was officially welcomed in the morning by high officials of the Dutch Government and representatives of the public health services. It was pointed out that rheumatic problems were now definitely considered in Holland to justify inclusion under the heading of "public health," and that this lead was now being followed in other countries, which were awaking to the grave social significance of the rheumatic diseases. In the afternoon a discussion on "The factor of chill in disease" was opened at the university by Professor Loghem, who gave an account of an epidemiological experiment which he had inaugurated with the aid of 7,000 colleagues throughout the country over a period of thirty-seven weeks. He was able to show that the mortality curve from pneumonia and other bronchial affections (excluding the mortality due to senility) ran parallel with the ground temperature curve over this period. Other speakers included Dr. Schade (Germany), Dr. R. Fortescue Fox (London), Professor Wybauw (Belgium), Professor Prusík (Czechoslovakia), and Dr. Baudoin (France). At a council meeting the retiring chairman, Dr. Fortescue Fox, inducted his successor, Dr. E. P. Poulton, into the chair, and Dr. R. Keller (Switzerland) was elected honorary secretary jointly with Dr. W. S. C. Copeman. On the Sunday a tour of the city of Amsterdam was provided by the hosts, followed by a discussion at the Institute of Hygiene, opened by Dr. A. Häberlin (Germany), on the treatment of non-tuberculous children by the seaside—a subject discussed by him at the Annual Meeting of the British Medical Association at Eastbourne last July.[1] The members visited the clinics of Professors Snapper (internal medicine) and Brouwer (neurology), where recent research work was shown and discussed. A clinical meeting was held on the last morning at the Institute for Physical Therapy, of which the acting president (Dr. Van Breeman) has been director for twenty-six years, proving himself thereby to have been amongst the pioneers in this form of treatment in Europe. The Ligue International Contre le Rhumatisme afterwards held its annual meeting, at which Dr. Fortescue Fox was re-elected chairman, and Dr. Van Breeman secretary.

VITAMIN A CONTENT OF BUTTER AND MARGARINE

Miss Barbara Morgan and Dr. Katharine Coward recently published[2] estimations of the vitamin A content of a sample of fresh summer butter and of a "vitamin margarine." Their tests showed that the butter and margarine had an approximately equal vitamin A content, and that the potency of each was about one-thirtieth that of a standard cod-liver oil. The authors point out that these results confirm the claim of the makers of the margarine that their product has a vitamin A content equal to that of butter. Miss Morgan and Dr. Coward's findings are of interest in connexion with the investigation into the activity of vitamin concentrates, of which an account appeared recently in these columns.[3] It will be recalled that four preparations were tested for their content of various vitamins. The vitamin A content was tested in two cases, the vitamin C content in three cases, and the vitamin D content in one case. Reviewing these investigations, we said:

[1] *Early English Drug Jars.* By Geoffrey Eliot Howard. London: The Medici Society, Ltd. (10s. 6d.)

[1] *British Medical Journal*, August 22nd, 1931, p. 331.
[2] *Lancet*, 1931, ii, 758.
[3] *British Medical Journal*, July 11th, 1931, p. 71.

"The results can be considered fairly satisfactory as regards vitamin A, for both products tested had an activity similar to that of cod liver oil," and, further, "The three tests for vitamin C were very disappointing, for two were completely negative" The purpose of the tests undertaken on our behalf was to estimate how much reliance the medical practitioner could place on the vitamin concentrates prepared by firms of repute. In discussing the significance of the results obtained we remarked "It is evident from the results obtained that the problem of preparing on a commercial scale stable concentrates of vitamin A and C has not yet been fully solved, at any rate in the case of preparations put up in the form of foods" Since the results of the tests were so much more favourable in respect of vitamin A than of vitamin C, it was perhaps a little unfair to bracket vitamin A concentrates with vitamin C concentrates in a single generalization We are the more glad, therefore, to note that the results obtained by *Miss Morgan and Dr. Coward in the case of vitamin A* concentrates added to margarine appear to be completely satisfactory, not only in respect of the presence of this vitamin, but also of its stability It is a very difficult problem to mix such delicate active principles as those contained in vitamin concentrates with other substances to make palatable foods and yet to avoid rendering them unstable, and we have no wish to underrate the successes already achieved in this matter by manufacturers of the highest standing.

BRITISH EMPIRE CANCER CAMPAIGN

*In the absence of Lord Reading, Sir Charles Gordon-*Watson presided at the quarterly meeting of the Grand Council of the British Empire Cancer Campaign, held on November 10th On the recommendations of the Executive Council and the Scientific Advisory Committee a further grant for one year of £600 was made to the Cancer Research Committee of the Marie Curie Hospital, also of £300 to Mrs E K Dawson of Edinburgh, and of £50 to Mr. E Nevill Willmer of Cambridge Sir Charles Gordon-Watson, as chairman of the Investigation Committee, reported in detail the whole of the investigations which had been made by the Campaign in connexion with the diagnostic claims of Dr Bendien of Zeist, Holland After reading the contents of the letter which had been sent by the Investigation Committee to the scientific press,[1] expressing the opinion that the method of diagnosis could not be as yet accepted as reliable, Sir Charles pointed out emphatically that in his official correspondence Dr. Bendien had never made claims concerning the treatment of cancer, nor had a shred of evidence been submitted to the Campaign in support of his ability to treat cancer patients successfully A vote of grateful thanks was accorded by the Grand Council to Sir William Morris, Bt, for his generous gift to the Campaign of £25,000 for the specific purpose of the establishment of a radiological research fellowship at Mount Vernon Hospital All arrangements in connexion with the establishment of this William Morris Research Fellowship were delegated to a joint committee, consisting of representatives of the Mount Vernon Hospital and members of the Scientific Advisory Committee of the Campaign

[1] *British Medical Journal*, October 10th, p 677

The work to be carried out under the Fellowship will be both clinical and laboratory, and it is hoped that it will be possible fairly soon to install the necessary equipment at Mount Vernon Hospital The trustees in charge of the funds are Sir Richard Garton, Mr J. Beaumont Pease, and Mr. F. C. Goodenough, members of the Finance Committee of the Campaign

PATHOLOGICAL SPECIMENS BY POST

The Postmaster General requests us to remind members of the medical profession of the regulations governing the postal transmission of pathological specimens sent for medical examination or analysis He informs us that pathological specimens improperly packed have been observed in the post, and draws attention to the serious risk of infection to officers of the post office and of contamination to the mails in the event of leakage of such packets The regulations are as follows:

Deleterious liquids or substances, though otherwise prohibited from transmission by post may be sent for medical examination or analysis to a recognized medical laboratory or institute, whether or not belonging to a public health authority, or to a qualified medical practitioner or veterinary surgeon within the United Kingdom, by *Letter Post and on no account by Parcel Post*, under the following conditions An such liquid or substance must be enclosed in a receptacle hermetically sealed or otherwise securely closed, which receptacle must itself be placed in a strong wooden leather or metal case in such a way that it cannot shift about and with a sufficient quantity of some absorbent material (such as sawdust or cotton wool) so packed about the receptacle as absolutely to prevent any possible leakage from the package in the event of damage to the receptacle The packet so made up must be conspicuously marked 'Fragile with care' and bear the words Pathological specimen Any packet of the kind found in the parcel post or found in the letter post not packed and marked as directed, will be at once stopped and destroyed with all its wrappings and enclosures Further any person who sends by post a deleterious liquid or substance for medical examination or analysis otherwise than as provided by these regulations is liable to prosecution If receptacles are supplied by a laboratory or institute they should be submitted to the secretary, General Post Office, in order to ascertain whether they are regarded as complying with the regulations

Sir E Hilton Young, who succeeds Mr Neville Chamberlain as Minister of Health, was the first (and has so far been the only) layman to serve on the General Medical Council since its formation in 1858 He was appointed by the King on the advice of the Privy Council on May 23rd, 1926, to fill the vacancy on the Council caused by the resignation of Sir Francis Champneys.

The Thomas Vicary Lecture will be delivered at the Royal College of Surgeons of England by Colonel W. P. MacArthur, D S O, M D, on Thursday December 10th, at 5 o'clock. His subject is "The surgeon and old-time plague."

We regret to announce the death at Bournemouth, on November 5th, of Mr Bilton Pollard, consulting surgeon to University College Hospital, and to the Queen's Hospital for Children, London We hope to publish a memoir, with portrait, in our next issue.

THE RELATIVE VALUE OF RADIOTHERAPY IN THE TREATMENT OF CANCERS OF THE UPPER AIR PASSAGES

SEMON LECTURE BY MR. DOUGLAS HARMER

The annual Semon Lecture, under the auspices of the University of London, was delivered by Mr. W. Douglas Harmer, F.R.C.S., at the house of the Royal Society of Medicine on November 5th. Mr. Harmer devoted the lecture to a review of the relative value of radiotherapy in the treatment of cancers of the upper air passages.

The lecturer began by remarking that until recently few centres with adequate facilities for radiotherapy existed, but the position had gradually improved. The British Empire Cancer Campaign, the National Radium Commission, and the Medical Research Council had now nineteen centres, in addition to those hospitals which had been given radium by the King Edward's Hospital Fund. It was to be hoped that before long every hospital would realize that it was impossible to administer radiation treatment properly unless all patients suitable for it were handed over to a group of specialists—surgeon, pathologist, physicist, radiologist—between whom there must be close co-operation. At St. Bartholomew's Hospital researches had been proceeding since 1913, and recently he had been connected with another unit—the combined Radium Institute and Mount Vernon Hospital, which was now one of the most important centres in the country and comparable with the great foundations abroad.

After emphasizing the importance of early diagnosis, and pointing out that practitioners must be trained to send their patients, on the first suspicion of malignancy, to such centres as those mentioned, Mr. Harmer discussed the choice of treatment—a very difficult problem. Experience of all the various methods would decide between surgery, diathermy, radiation, or a combination of them, according to the nature and extent of the disease. If a comparison must be made between surgery and radiation, all the cases should be placed in one of three groups: the operable, borderline, and inoperable. On making an analysis of all patients examined at radium centres and non-radium centres, it would be found that in operable cases the results were about the same at both kinds of centres; in advanced cases the results at the radium centres would be found superior, because of the greater variety of treatment offered, and if all the cases in the three groups were taken together, the radium centres would score heavily.

Effects of Radiation

Nearly all cancers in the upper air passages, Mr. Harmer continued, were radio-sensitive to some extent, but, owing to their depth from the surface, it was difficult to deliver an adequate tissue dose. Radium, applied on the surface or interstitially, in contradistinction to *x* rays, must be considered as a "short-range gun." Clinically and experimentally, it had been noted that the best results were obtained with radium when it was applied in close apposition to the lesion. In illustration of this, he pointed out that whereas in cancers strictly localized to the vocal cords a large percentage of good results was secured, and recurrences only took place at the anterior commissure or below the cord, in advanced cases with subglottic extensions the results had been bad, the chief reason being failure to cover the growth with the radium. It was important to irradiate uniformly the whole of the diseased area; this could be done more certainly with needles than with seeds; if possible, the needles should be distributed around the tumour, rather than inserted within it. The use of small doses over long periods had certainly given better results than large doses applied for a short time. With regard to filtration, he believed that physicists were to blame for advising the use of filters so thin as 0.5 mm. platinum. Except in very experienced hands, it was safer to employ thicker filters, even up to 1 mm. With such filtration radium caused very little damage to the surrounding tissues, and needles could safely be placed close to, or into, bones without fear of necrosis.

In considering the effects of radiation, it should be borne in mind that syphilities, chronic alcoholics, and persons seriously debilitated or anaemic, rarely responded well. Of equal importance were the radiation sensitivity of different grades of cancers and the condition of the stroma. Although there was no experimental evidence of a stimulating effect of radiation on the growth of tumours, this might occur clinically if too small a dose were given. No doubt, previous treatment often made cancer radio-resistant to further applications, but the time elapsing, and the nature and extent of the recurrence, must be considered before deciding on a repetition of the treatment. Above all, steps should be taken, before such repetition, to verify the diagnosis, so that a delayed radium burn might not be mistakenly irradiated as a recurrence of the cancer. No patient who had received radiation treatment at some other centre should be given *x* rays or radium until all the details of the previous treatment had been obtained.

Post-irradiation changes might be classified as follows: (1) total disappearance of growth, the tissues regaining a normal appearance; (2) fibrosis or partial healing; (3) oedema, possibly due to a specific type of infection, and always of serious significance; (4) radiation sores, to be distinguished from the painless and rapidly healing normal reactions; (5) necrosis, a complication occurring more particularly in the larynx, but rare if adequate filtration had been employed, and care taken to prevent sepsis; and (6) pain, as distinct from that ensuing upon radium burns, and appearing as severe neuralgia, due to chronic sepsis, ulceration, or fibrosis, or signifying that the whole disease had not been destroyed.

Cancers of the Larynx

Mr. Harmer then discussed separately the different regions in respect to the occurrence of cancer. Intrinsic carcinoma of the larynx, he said, could be diagnosed early while it was an entirely local disease, and, given an intelligent selection of cases, the results obtained by surgery had been very good indeed. The poor results often following surgery in operable cases were due chiefly to the fact that very few patients could be safely treated by laryngo-fissure; yet the majority of laryngologists still preferred surgery to radiation, because in most hands the latter gave such unsatisfactory results, and the dangers were considerable owing to faulty treatment. The general experience was that carcinoma of the ventricular band was highly radio-sensitive, while that of the cord was favourable for radiation, and that of the subglottic region resistant. There was no agreement at present as to the best method of irradiating, but the lecturer considered that buried radium had given such good results in his own cases as to make that the method of choice. If on first treating these operable cases with radium the disease did not disappear at once, it would usually be arrested, and the line of further treatment could be decided upon deliberately. As a rule, radiation should not be repeated unless the patient was unfitted for laryngectomy; small recurrences could sometimes be treated with radium a second time, but surgery should be carefully considered.

The larynx offered one of the best examples of the short-range efficacy of the gamma rays. To insert the radium a modification of Ledoux's operation (fenestration) was suitable for growths absolutely localized to one vocal

cord or band. When the growth had crossed the middle line the needles must be placed bilaterally; when it had extended down into the subglottic region the principle of Hautant's operation, or some modification thereof, should be employed, and long needles inserted. To prevent complications, sepsis must be avoided at all costs by gentleness in the manipulation of the tissue, by complete and careful haemostasis, and by closing the skin wound completely. To prevent oedema, perichondritis, and late reactions, full filtration was necessary (up to 0·8 mm platinum). Tracheotomy should not be performed if the opposite cord was movable and the glottis adequate. With these precautions he had treated eight cases of this operable group, seven of the patients were living and free from disease, two of them after six years and one after five.

In borderline cases radiation combined with surgery was capable of giving good results. Personally he preferred the use of radium interstitially after removal of the thyroid and cricoid cartilages, with pre- and post-operative radiation. When a growth had extended beyond the limits of the laryngeal cartilages or through them, so that the tissues of the neck were invaded, and particularly when there were glands on both sides of the neck, laryngectomy should not be undertaken.

Altogether, although the results of radium treatment in most centres had proved unsatisfactory, the lecturer believed this to be due to faulty technique, inadequate dosage, and an under-estimation of the extent of the disease. In his own unit the percentage of cures in the operable cases appeared to be at least as good as with operation. The time had arrived when the question should be asked whether it was ever safe to perform a laryngectomy unless the patient had received preliminary radiation treatment in some form. Then, if the disease was not cleared up by radiation within three months, or if any induration remained in the larynx, it was safer to advise laryngectomy than to repeat radium treatment, unless very intense radiation had been employed, laryngectomy could safely be performed. Even in inoperable cases some relief of symptoms and prolongation of life could be obtained by radium. If the growth had infiltrated the cartilages extensively, or had perforated into the neck, radium should not be employed interstitially, better results could be obtained with less risk of sepsis by external irradiation with *x* rays or radium, followed by intubation with radium.

In a brief note on cancers of the hypopharynx, in which he included those of the pyriform fossa, of the posterior pharyngeal wall, and extrinsic laryngeal growths, the lecturer said that he considered a combination of surgery and radiation to be a better treatment than simple excision.

Nasal Growths

Extrinsic growths starting in the skin of the nose were either rodent ulcer or squamous celled carcinoma. In all types of rodent ulcer radiation was better than excision, but in resistant growths excision by diathermy was indicated, and was preferable to the knife. Surface irradiation by beta and gamma rays gave good results in early lesions, but needling was preferable for advanced cases and recurrences. Carcinoma might commence spontaneously, or develop in scar tissue or in a previously existing rodent ulcer, lupus, or even endothelioma. It had a chronic course, penetrating deeply and extending widely; although persisting for years, it rarely affected the lymphatic glands or produced metastases. Such nasal carcinomas behaved quite unlike carcinoma in any other part of the body. The best method of treatment was to use radium on a mould, giving split doses for two to four weeks, and supplementing occasionally by buried radium along the edge of the lesion. These cancers showed an inveterate tendency to recur, so that many treatments might be necessary both by radium and diathermy.

In the nasal sinuses and antrum there was a great variation in the types of growth. The commonest was a cylindrical carcinoma of the adeno-carcinomatous type. For practical purposes all the tumours were malignant, but in very early stages some caused little trouble, so that the true diagnosis was often overlooked. They tended to recur locally, but glandular involvement was late, and metastasis took place only in the last stages of the disease. Surgery alone had given very unsatisfactory results. With surgery, diathermy, and radiation the results had undoubtedly improved.

For the borderline group of cases, without metastasis, preliminary treatment with *x* rays was advisable, followed by a biopsy through the inferior meatus or the canine fossa. If malignancy was established, the next essential step was to provide adequate drainage and exposure, so that the limits of the disease were shown. As a method of approach, he preferred the palatal route, which gave the best drainage, offered the best means of inspection, and caused no external deformity, defects in speech and swallowing could be easily repaired later by a watertight denture. This method gave access to the antrum, nasal fossa, the higher ethmoidal cells, and the sphenoidal regions. The removal of the obvious part of the growth could be effected by diathermy, but in most cases this could only be a partial removal, and it was necessary to treat the peripheral extensions with radiation. Either a large dose of radium could be inserted immediately, or the wound could be left open for a week, and the cavity then treated with radium, in split doses, for a prolonged period, by means of a plate so moulded as to fill the cavity, carrying on its outer surface the requisite quantity of radium in small needles. This apparatus could be worn for six or eight hours daily, until the whole cavity was completely covered with a fibrinous film. In the inoperable group of cases it was questionable whether any treatment should be attempted, but in rare instances, where the growth had not extended too widely into the zygomatic fossa, *x* rays might afford palliative relief.

Almost all forms of sarcoma met with in other parts of the body were to be found in the nasal sinuses, and varied greatly in malignancy. Biopsy was an essential preliminary to treatment, and was safe after a small dose of *x* rays. For the myeloid and fibrous type, which grew very slowly and metastasized rarely, surgery was the best treatment. For chondrosarcoma, osteosarcoma, and myxosarcoma, more uncertain in their course, a combination of surgery, diathermy, and radium was indicated. In the fairly large group of round- and spindle-celled sarcoma, highly malignant, surgery was fraught with great danger. Sometimes the growths were so sensitive that they disappeared completely with *x* rays and surface radium; this treatment should always be tried first. Even in cases where radiation failed, it was seldom possible to excise the whole diseased area. The results with sarcoma had been very much better than with carcinoma.

The Nasopharynx

The commonest tumour of the nasopharynx was carcinoma. Most of the growths in this region were highly malignant; usually they were far advanced before the patient sought advice, and the disease had invaded the base of the skull and the bones at the back of the nose. Metastases in the glands occurred earlier with carcinomas than with sarcomas. Radiation should be applied before trying to confirm diagnosis by a biopsy. Surgery here was useless and dangerous. To deliver an adequate radiation dose to so deep a situation as the base of the skull, intense *x* rays should first be given, followed later by

supplementary local treatment with radium. This latter might be applied either in the form of a suitable tube, containing 50 mg., well filtered with 2 mm. of platinum, drawn up into the nasopharynx through the mouth, and retained by strings passed through the nose for twenty-four to forty-eight hours; alternatively, tubes could be passed through the nose, the disease being treated with split doses for a week or longer until the requisite dose had been administered. Even if the growth was highly sensitive, and disappeared rapidly, the maximum treatment that was safe should always be given. The total dose might vary from 1,500 to 3,000 mg. hours, according to the extent of the growth. Severe reactions might result from the treatment, but these were unavoidable. Even after the acute inflammation had subsided, the healing of the tissues was very slow, and radium necrosis was common. Although these growths were serious, the prognosis of sarcoma was not hopeless. Long-standing cures had been reported, and great prolongation of life could be expected if the treatment were given early, before the glands were affected. On the other hand, Mr. Harmer could find no records of long-standing cures of carcinoma.

The Tonsil and Mesopharynx

Carcinoma of the tonsil was so malignant that simple removal with a knife was dangerous, and ought never to be attempted. The lecturer had used diathermy for many cases, but always in combination with radiation. Most surgeons were agreed that some form of radiation was essential, but it was difficult to decide what was the best method of delivering an adequate dose. At the Paris Radium Institute x rays or distance radium was the method of choice. The lecturer's own view was that the primary lesion should be treated in most cases with needles, and any remaining induration with the diathermy knife. In all cases the neck should be treated with massive irradiation, part of the dose to be given before and part after dealing with the primary lesion. Block dissection should rarely be undertaken; when employed, needles or seeds should be placed in the wound. The results of all the different methods of treatment were still unsatisfactory, but with further research the radiation treatment of new growths in this situation might give results which to-day were impossible to forecast. Sarcoma of the tonsil was much rarer than carcinoma. Almost all surgeons were agreed about the risks of surgical intervention, and it had been noted that the biopsy often failed to give a definite diagnosis. The treatment was unquestionably radiation, either x rays only, or x rays followed by radium. Such statistics as he had been able to collect showed that far better results could be obtained by irradiation of sarcomas than of carcinomas in this region.

Cancers of the Palate, Cheek, and Other Situations

The majority of growths in the palate and cheek were squamous-celled carcinomas; less common were endotheliomas and sarcomas. Growths in the buccal mucosa had a more serious prognosis than palatal growths, and the prognosis of lesions in the soft palate and uvula was more serious than in the hard palate. The primary growth should be treated before the glands, except in very rapidly growing tumours, in which a pre-operative x-ray application to the primary and lymphatic area should always be given. The growth should be treated afterwards by needles, seeds, or surface radium, since x rays alone could not be relied upon to destroy it. For the hard palate a denture carrying radium was a simple method of giving surface treatment, and for the protection of the tongue it should be lined on its under surface with 1 mm. of lead. If complete healing was not obtained within a reasonable period, the induration should be excised by diathermy.

The decision as to treatment of the glandular area presented many difficulties. If no glands were found on examination, and the growth was not of a very virulent type, the neck might be left untouched, though it must be examined periodically. Small, movable, unilateral glands should be removed, preferably after preliminary radiation. Large, fixed, or bilateral glands were always inoperable, but the disease could be arrested by a combined treatment with x rays and radium or either alone. The results on the whole were good.

The lecturer touched upon endothelioma, which was of not uncommon occurrence in the palate, pharyngeal wall, nasopharynx, and neck. It could never be trusted to remain quiescent, and the sooner it was removed the better. Endotheliomas in their early stages had a dense fibrous capsule, and were easy to enucleate. The small area of tumour adherent to the surrounding tissues, which was the base of the attachment, should be cauterized to prevent local recurrence. The treatment was pre-operative x rays, followed by enucleation of the growth a week later, and the insertion of radium. Transitional cell carcinomas and lympho-epitheliomas deserved consideration because of their high malignancy and remarkable susceptibility to radiation; they might commence in the tonsil, base of tongue, nasopharynx, larynx, or perhaps oesophagus.

Conclusions

At each stage of his lecture Mr. Harmer described illustrative cases, and gave statistics of survival for the cases treated in his own unit and collected from other workers. The results in his own clinic, out of more than 400 cases, showed 19 per cent. of cases of carcinoma surviving, 50 per cent. of cases of sarcoma, and 47 per cent. of cases of endothelioma. A large proportion of his carcinoma cases were inoperable. He believed that there was a great future for radiotherapy, if the treatment was properly handled, but it was necessary to have special clinics, richly endowed, vigorously supported by those in control of radium, and staffed by groups of expert specialists. Radium had not made the surgery of cancer of the throat easier, but more complicated. He doubted the wisdom of a surgeon employing radium without the help of a group of experts. Equally the patient ought not to be handed over to the pure radiotherapist who had no clinical knowledge of the disease. With careful treatment, relief could be afforded by radiation to a large proportion of advanced cases of cancer. It was safer to treat the virulent types of cancer with radiation than with surgery alone; even early cancers might confidently be treated by radiation by experts. There was reason to believe that external irradiation was necessary in nearly all cases before local treatment with radium, but it was not clear whether x rays or large quantities of radium were best for this purpose.

A representative meeting of bio-physical assistants was held in London on November 4th, when the question of constituting an Association of Bio-Physical Assistants was discussed. It was agreed that such a society was necessary, and the following resolution was proposed and carried unanimously: "That an Association of Registered Bio-Physical Assistants be and is hereby constituted for the purpose of (*a*) advancing the study and practice of physical methods, and making available to the public greater facilities for such methods through the medium of registered workers; (*b*) to promote the welfare of bio-physical assistants in their professional capacity; (*c*) to co-operate as required with other recognized bodies for the achievement of the above ends." An organizing committee was appointed for the purpose of registering the association and drawing up its constitution, etc.

HEALTH OF THE SCHOOL CHILD

SIR GEORGE NEWMAN'S REPORT

[First Notice]

The annual report of the Chief Medical Officer of the Board of Education (Sir George Newman) for the year 1930* covers a wide range of subjects. Perhaps one that is most pressing is noted at the outset. It is stated that: Year after year in these reports attention has been drawn to the physical condition of children as we find them when first they enter the elementary schools. The defects which commonly develop during the first five years of life are almost entirely preventable, and, in theory, there is no reason why the entrants to school should not consist, with few exceptions, of normal healthy children. The fact remains, however, that some 20 per cent. of these entrants require treatment of some sort, while a very considerable proportion in addition, though not immediately requiring treatment, show some undesirable deviation from the normal. It has for a long time been realized that most of these defects have arisen between the ages of 2 and 5 years. Maternity and child welfare schemes have, on the whole, made fairly adequate provision for the care of children up to the age of 2 years, but there are comparatively few areas where the same care and supervision are available during the three succeeding years. Even in those areas where they are available full advantage is not always taken of them. The average mother realizes her need for skilled advice in the care of infancy, but she often considers herself quite competent to diagnose and treat the ailments of the "toddler" stage.

Medical Examination in Schools

During the years of school life the provision is excellent. The statutory requirements of the Board call for a medical examination of each child as soon as practicable after entering school, at or about 8 years, and before leaving school. The ultimate aim of these inspections is not only the detection and treatment of disease and defect, but also that of advising on the conditions necessary to create and maintain all-round healthiness. Comment is made that local reports do not sufficiently indicate the general state of health of the children. A tale of defects found does not indicate this. At every examination the question should be asked, "Is this child developing according to the plan Nature has mapped out for him?" The question is difficult to answer, for it does not depend upon averages of height or weight, of alertness or mental attainment, or upon any other average standards, *but upon an estimate of the whole individual.* Inspection will, in the majority of cases, enable the medical officer to pass a child as normally healthy, but in a substantial minority it will not be possible to do this with certainty. These children will be submitted to a short period of general observation and examination, specially directed to such matters as evidence of chronic fatigue and of malnutrition.

It is also a matter of importance that the children at medical inspection should be accompanied by a parent, usually the mother. It is no exaggeration to say that where the attendance of the parents is exceptionally low there is something wrong, unless, indeed, the area is one where the local industries depend largely on female labour. Though the medical officer's primary object is to assess the physical condition of the child, it is of equal importance that he should be able to estimate the attitude of the mother. Is this parent to become an ally or not?

During the past year the number of children inspected at routine and special examinations totalled two and three-quarter millions, or 55·4 per cent. of the average attendance. Defects of vision head the list of defects found, closely followed by enlarged tonsils and adenoids. Skin diseases follow a long way behind. The percentage of children found to be suffering from definite defects (excluding dental disease and uncleanliness) requiring treatment was 20·9 per cent. Reference to the returns of past years do not show much variation, though reports from some areas are most promising. In Sunderland the percentages of those requiring treatment have been halved in the space of seven years. In some directions there has been indubitable success; the striking reduction of ringworm of the scalp which is invariably brought about in the areas of authorities which provide x-ray treatment as a routine measure; for example, in Bristol there has been a fall in nine years from 183 to 8 among some 60,000 children. In Hull the cases used to average 150 a year; last year there were only 93. But it is disappointing to learn that over 700,000 out of five million school children were found to be unclean. Over fourteen million examinations were made by the school nurses, and in 1,069 cases parents were prosecuted. It is suggested that the work of the school nurses would be made more effective if there were a more frequent resort to the weapon of prosecution. Dirt often means disease, and cleanliness engenders self-respect. By insisting on cleanliness parents and children learn that they themselves have an important part to play in the care of the body; that the school medical service is not a scheme for doing work for the children, but an agency which seeks to help those who help themselves.

Speech Defects

A considerable number of local authorities have established classes for the treatment of stammering and other speech defects. A child who leaves school without having acquired the power of expressing himself in writing may be unemployable, and is evidence of the failure of the educational system, but inability to speak distinctly is an even greater reflection on the system if the defect is remediable. There is an imperfect realization of the results obtained by a skilled teacher. School medical officer reports show that the degree of improvement resulting from such teaching is well worth while, though none of them is so blind to facts as to claim 100 per cent. of cures. At one centre the after history of 68 cases was investigated: 12 were apparently cured, 38 were much improved, and with only occasional hesitancy if excited; 13 were improved but having more or less frequent lapses; and in 5 the condition was practically unchanged.

Educational Strain on Eyesight

Reports on the children in secondary schools call frequent attention to the prevalence of defective vision. The London report says:

"Considering the higher proportion of girls than of boys wearing spectacles, and that the number wearing them increases between 12 and 15, and that notwithstanding this the visual acuity of the girls is markedly less than that of the boys, whilst also visual acuity declines in both during secondary school life, there appears to be no escaping the conclusion that education imposes injurious strain upon the eyes, greater in girls than in boys. Of the men in training colleges 70 per cent. were able to pass the vision test, 26·4 per cent. of those examined wore spectacles. Among the women 72·2 per cent. passed the vision test, but 33·5 per cent. were wearing spectacles."

The School Dental Service

It is an acknowledged fact that an adequate scheme for dental care during school life is one of the most valuable parts, from the point of view of health, of the school medical service. There has been a considerable increase in the number of dentists appointed for the work;

* The Health of the School Child. Annual Report of the Chief Medical Officer of the Board of Education for the Year 1930. London: H.M. Stationery Office. 1931. (2s. net.)

it is now 741, as against 481 last year. The amount of conservative work has increased, both absolutely and relatively, the number of fillings averaging 68 per 100 children treated, as compared with 65 in 1929. The percentage treated during the past four years has been 58.1, 58.4, and 58.5, while in 1930 it was 63.4. It may be looked upon as a reflection on our educational system that after fifty years of universal education a considerable proportion of parents refuse dental treatment for their children when skilled treatment is provided free of cost. Since in more educated classes dental treatment is sought after and obtained at much cost, we may infer that those who refuse treatment do so because they fail to understand the importance of sound teeth in the maintenance of health and the damaging effect of bad teeth.

Reference is made to the work of Mrs. Mellanby and others concerning the possibility of the prevention of dental disease by dietetic measures. As recorded in these columns on October 3rd (p. 615), a well-controlled experiment was carried out in a Birmingham residential institution: 332 children were under observation, of an average age of 9 years. One group was given cod-liver oil or irradiated ergosterol, the other oily food that did not contain vitamin D. At the end of two years there was a significant retardation of the progress of caries of the permanent teeth in the vitamin group in each investigation as compared with the other groups. There was approximately one-third less caries. The hope that dietetic measures may check the incidence of dental disease is reasonable, but it still awaits the confirmation of wider experience. The influence of the teachers in the improvement of the condition of the teeth of the children is commented upon favourably. More than half the battle has been won when the children have learnt to be interested in and proud of their teeth, and desire to keep them whole and not unattractive.

Ireland

Annual Meeting of the British Medical Association, Dublin, 1933

The Executive Committee appointed to make arrangements for the annual meeting of the British Medical Association to be held in Dublin in July, 1933, met recently in the Royal College of Physicians, Dublin, with Professor T. G. Moorhead in the chair. As it is expected that more than a thousand doctors from Great Britain and other parts of the world will attend the meeting—the first to be held in Dublin for almost fifty years—it is considered essential that arrangements should be made without delay. Seven committees have been appointed for this purpose.

Irish Free State Medical Registration Council

The autumn session of the Medical Registration Council had held on November 3rd at the Council's office, the pr per Fitzwilliam Street, Dublin. There were present: more si sident (Dr. Denis J. Coffey), Mr. William Doolin, growth sh Dundon, Dr. Edward Magennis, Dr. James N. very rapidly Henry F. Moore, Dr. Thomas Gillman *x*-ray applicat Robert J. Rowlette, Dr. Stephen Shea, should always be Stoney, and the Registrar, Miss Eileen E. afterwards by ne less of the session included correspond- *x* rays alone could p istry of Industry and Commerce, and the hard palate a den lwives Board, Saorstát Eireann, on method of giving surface Rules arising from the Midwives of the tongue it should be was approved by the Council. 1 mm. of lead. If comple medical examinations of the ies having been initiated at the May session, 1931, a number of such examinations were visited during the summer examinations. Arrangements were made to complete the visitation at the winter examinations this year. Other routine business included matters arising under the procedure of registration, certificates of death, and the consideration of penal cases.

Dublin University Biological Association

At the annual opening meeting of the Dublin University Biological Association, held in Trinity College on October 31st, Dr. A. H. Davidson (president-elect) read a paper entitled, "Caesarean section: its history and present status." Dr. Davidson traced the history of the operation from the earliest times, and pointed out that it was attended by a very large mortality during the eighteenth and nineteenth centuries, and was only used as a last resource. For some time it lost favour, but later regained popularity amongst obstetricians. Its rehabilitation was greatly assisted by the attitude of the Roman Catholic Church. It really began to have a definite place in obstetrics from the year 1880 onwards. The speaker next discussed the position of the operation in modern obstetrics, and quoted collected statistics of large numbers of cases in 1911 and 1921 to show that it was gradually becoming safer. This was leading to a swing of the pendulum in the opposite direction, and the present tendency, especially in America and on the Continent, was to perform the operation rather too often. He deprecated this attitude. He discussed the position held by Dublin in the world of obstetrics, and the attitude which it had adopted towards the operation, describing this as one of extreme conservatism, which led to its performance only when necessary in the interests of mother and child. Dr. Davidson then showed a cinematograph film of a lower segment Caesarean section performed recently at Dr. Steevens's Hospital. Mr. L. C. Rivett (Queen Charlotte's Hospital, London), in proposing a vote of thanks to the president-elect for a most attractive paper, said that he had always been interested in this operation. Dr. Solomons reported on 161 Caesarean operations at the Rotunda during the first four years of his Mastership. Of these 85 were performed by the lower segment route with one death, and this case was complicated by tumours. Caesarean section, he said, could be repeated many times. Professor T. G. Moorhead, P.R.C.P.I., proposed that the "Dublin University Biological Association is worthy of the support of all the medical students in the University of Dublin." Sir William de Courcy Wheeler, in seconding the resolution, which was carried with acclamation, said that, having heard Dr. Davidson's address, he was more convinced than ever before of the value of the Association. He deplored the fact that in this era of specialization Dublin was handicapped, so far as the training of specialists was concerned, by its obsolete system of multiple small hospitals. In Dublin there was a hospital at the corner of almost every street, each one equipping itself to duplicate the work of its neighbour. Now that the voluntary system of finance was dead, it was difficult to know what would happen to these hospitals when the sweepstakes fountain ceased to flow. It was well for the profession to realize that the Government already had its finger in the pie, and that, for good or evil, the hospitals were heading towards State control. Sir William asked whether it was too late for a great scheme of amalgamation such as was agreed upon a few years ago. At that time there was a hope of money, but none was forthcoming; now the money was there. The president (Dr. L. Abrahamson) distributed the medals as follows: Daniel John Cunningham Medal, Laurence Kolb; John Mallet Purser Medal, Horace Donagh O'Brien; Dublin University Biological Association Medal, Albert A. Cunningham.

Milk Supply for Infant Welfare Centres

At a meeting of the Belfast Public Health Committee the medical superintendent officer of health reported that the death rate for the week ended October 24th, was 11.1, that from the principal zymotic diseases being 0.3, as compared with 10.6 and 0.5 for the previous week, and 12.1 and 0.7 and 13.9 and 0.6 for the corresponding period of last year. The committee recommended the council to adopt by-laws regulating the sale of ice-cream. These by-laws deal with the construction of premises, and include precautions for protecting food against infection or contamination, and provisions for the inspection of premises and the hours during which they may be kept open. The chairman reported that a complaint had been made to him that during past months the supply of milk for child welfare centres in the city had decreased, and that over the same period the administration costs had increased considerably in consequence of the salaries of additional doctors and nurses. In his opinion this was defeating the object of the scheme, which was intended to provide milk for the poor children of the city. Too much money, he contended, was being spent on professional services, and the centres were gradually changing from child welfare centres to adult welfare centres. He suggested that better service would be rendered to the children with the limited supply of money available by increasing the milk supply and reducing the number of officials in connexion with the scheme.

Belfast Health Statistics

Referring to tuberculosis, Dr. Thomson states that tubercle-infected milk is responsible to a great extent for surgical tuberculosis in children ; he adds that the amount of tuberculosis in cattle is so great that it would be economically impossible to slaughter all the infected animals. It is reported that 25 per cent. of the dairy cows kept in sheds suffer from tuberculosis, and the latest Royal Commission states that the milk of cows suffering from tuberculosis frequently contains tubercle bacilli. In Dr. Thomson's opinion the only hope at present—when some 8 per cent. of milk samples are found to contain tubercle bacilli—is to use milk from cows which have passed the tuberculin test or to drink pasteurized milk. His reason for preferring pasteurized milk to Grade A (T.T.) milk is that the heating process in the former destroys any scarlet fever or diphtheria toxins. He further suggests that the disease should be made notifiable in all its stages instead of, as at present, only in cases where germs are found in the sputum. Mention is made of the existence of many overcrowded and ill-ventilated schools, and the necessity for more accommodation for tuberculous school children is stressed. At present Whiteabbey provides accommodation for sixty-five such cases, but room is needed for at least one hundred. In regard to other diseases in the city it is gratifying to note that scarlet fever is diminishing. Although 1,132 notifications were received, there were only seven deaths, the disease in most cases being of a mild type. An increase in notifications of diphtheria was recorded (618 cases), and twenty-two deaths occurred from the disease. Stocks of diphtheria antitoxin are kept at six depots in the city. Deaths from cancer totalled 424. Thirty-two cases of typhoid were notified, and two deaths from the disease were registered. Purdysburn Fever Hospital received 2,053 cases during the year, and at the municipal laboratory 12,070 specimens were examined. Incorporated in the report is a special report on the tuberculosis department by the chief tuberculosis officer, Dr. Trimble, who gives an account of a tour of investigation through Canada and the United States.

Scotland

Aberdeen Nerve Hospital

The Wellwood Nursing Home, for early mental cases, situated near Cults, Deeside, was formally opened on October 31st by Sir Ashley W. Mackintosh, emeritus professor of medicine in Aberdeen University. In performing the ceremony, Sir Ashley said that the whole trend of modern medical science was in the direction of early treatment and, so far as might be, of prevention of disease. There was no branch of medical work in which this attitude was more important than in dealing with mental cases, particularly among the young, and the institution which they were opening that day would be a valuable contribution towards this end. He was afterwards presented with a gold match-box, as a memento of the occasion, by Mr. George Robb, on behalf of the directors of the Royal Mental Hospital, Aberdeen.

Peterhead Water Supply

The Water Committee of Peterhead Town Council recently considered a joint report on the water supply of this burgh prepared by the medical officer of health and city engineer for the city of Aberdeen. The report states that in the last week in September various complaints were made by residents that, when warmed, the water supplied by taps had a smell of fish. Samples taken proved that the water was of good quality both chemically and bacteriologically, but that it contained an excessive quantity of infusoria. It had been decided that water should be supplied to the town direct from the reservoir, that the condition of the filter beds should be investigated, and that a preliminary course of chlorination of the beds should be adopted. It appears that the filter beds have been in operation for over twenty years, and that the time is now opportune for their complete renewal with fresh materials. It is also recommended that domestic storage cisterns should be thoroughly cleaned out, and that every morning before use the water in each house should be run for three or four minutes. The report contains the somewhat surprising assurance that the water is fit for drinking purposes in every respect.

Fire in St. Andrews Laboratories

A destructive fire, which caused damage estimated at £7,000, broke out on November 3rd in the natural philosophy and chemistry departments of the United College, St. Andrews. A good deal of valuable apparatus was destroyed, and some rooms were completely gutted. The fire appears to have originated in connexion with the central heating arrangements, and is supposed to have been burning for about an hour before it was observed, about 4.15 a.m., by students residing in the neighbouring St. Salvator's Hall. The rooms of the research students were completely destroyed. Some valuable apparatus of historical association, used by the famous Gregory and others, fortunately escaped damage. In the chemistry department a lecture room, research laboratory, and the museum all suffered considerable damage.

Certification of Blind Persons

A memorandum in relation to future administration connected with the welfare of blind persons has been issued by the Department of Health for Scotland. The memorandum refers to the recent establishment in the cities of Edinburgh, Glasgow, Dundee, and Aberdeen, of regional clinics for the examination of persons claiming to be blind, and lays down that these clinics must be used

as far as practicable by local authorities in Scotland in determining whether a person is or is not blind, for the purposes of benefit under the Blind Persons Act, 1920. The principles enunciated by the meetings of the ophthalmic surgeons, convened by the Department of Health and reported to the Department, are to form the basis for future certification. A standard form of medical certificate has been drawn up for use in this connexion, and it is recommended that this certificate should be signed by two ophthalmic surgeons. It contains, in addition to the information regarding the fact of blindness, a statement whether the applicant, if a child, is, though not blind, likely to become blind and likely to benefit by attendance at a sight-saving class. The recommendations of the examining surgeons, in regard to eye treatment, are also to be recorded, and local authorities are desired to make arrangements to secure that any such treatment shall be duly obtained. The value of the regional clinics to local authorities is also emphasized in the memorandum. These clinics enable local authorities to satisfy themselves that the numerous benefits now afforded to blind persons will be applied only to those who are entitled to them. Such benefits include public assistance, elementary or technical education, social services of voluntary agencies, etc. It is suggested that all registered blind persons, or at least all doubtful cases, should be re-examined.

Alcohol in Child Life

The first lecture of a short series dealing with the relations of alcohol to civic life, under the auspices of the Scottish Temperance Alliance, was delivered on November 3rd by Dr. E. M. Pringle, assistant clinical medical officer for child welfare under the Edinburgh Corporation. The lecturer said that alcohol was one of the three racial poisons which damaged the life stream at its source, and was responsible not only for stillbirths and the birth of many debilitated children, but for a large proportion of the infant mortality, which showed a progressive fall in accordance with the progressive reduction in alcoholic consumption. Overlaying of infants was a common result of alcoholism, which had been reduced recently in Edinburgh by the provision of cradles of cheap construction. In 1907 there had been 907 deaths of young children (34 from overlaying); in 1917, 604 (3 from overlaying); and in 1927, 606 (2 from overlaying). Dr. Pringle further traced the relationship between infant mortality in different wards of the city and the number of licences existing in these wards as well as the varying housing conditions. In Morningside ward, where the licences numbered 15 (1 to 1,361 persons) the infantile mortality was 13 per thousand, while in Canongate, with 40 licences (1 to 521 persons), the infantile mortality rose to 108 per thousand. In Scotland the expenditure on alcoholic liquor was £6 10s. per head per annum, while only £2 1s. was spent on milk.

New Infectious Hospital for Paisley

At a meeting of the Paisley Town Council on November 6th it was decided to proceed with a scheme for a new hospital for infectious diseases, and a committee was appointed to select a site. It was pointed out at the meeting that the present hospital was not satisfactory, because patients with different troubles were treated occasionally in the same ward. The new hospital is estimated to cost approximately £100,000.

District Nursing in Scotland

At the quarterly meeting of the Scottish Council of the Queen's Institute of District Nursing, held in Edinburgh on November 3rd, it was intimated that during the previous quarter, 26 nurses had completed district training and 13 midwifery training, and that these had been appointed district nurses in various parts of Scotland, chiefly in the Highlands and Islands. Twenty-two resignations of nurses were received; retirement, other work, and marriage being the chief causes. In regard to the nursing work in the city of Edinburgh, it was stated that 1,061 new cases had been treated during the quarter, and that the nurses had paid a total of 42,244 visits.

England and Wales

Mortality Rates in Birmingham

Dr. H. P. Newsholme, medical officer of health for Birmingham, provides in his annual report for 1930 a good example of the way in which such publications can illustrate the practical working out of public health schemes. Illuminating comments are appended to the various tables, and details are given of the progress of various institutions. The death rate during the year under review was 10.8 per 1,000, the lowest ever recorded in that city. In the earlier part of the period 1871–1930 the Birmingham death rate was above that of England and Wales; in later years the position has become reversed, with the exception of 1929, when the figure was slightly higher owing to the serious influenza epidemic. The rate compares favourably also with those recorded in most of the other great cities. Thus it is below those of London, Glasgow, Liverpool, Manchester, Leeds, and Edinburgh, and only slightly above that of Sheffield. As usual, the mortality among males was notably higher than among females, the number of deaths being 5,515 against 5,098. More than half the deaths occurred last year in persons below the age of 65, while considerably more than a quarter died before the age of 45; Dr. Newsholme concludes, therefore, that there is still considerable scope for public health enterprise. Among school children the principal causes of death were accidents, diphtheria, and rheumatic fever; while between the ages of 15 and 25 the most serious cause was tuberculosis, accidents coming second and heart disease third. Of the total number of deaths at all ages and in both sexes (10,613), no fewer than 1,220 occurred between the ages of 25 and 45, representing a very grave waste of effort in education and training. These deaths were caused principally by tuberculosis, pneumonia, and heart disease. After being stationary for several years the mortality from cancer again showed some increase, improved diagnosis being partly responsible, and also the fact that the proportion of persons of advanced age is undoubtedly increasing. No evidence was obtained to indicate that this disease was more prevalent in the older and less healthy sanitary districts. The death rate from respiratory diseases is slightly higher in Birmingham than in England and Wales, which is not the case as regards cancer or morbus cordis. The mortality in the central wards of the city was nearly twice as high as in the outer ring; in the body of the report information is given as to the steps which are being taken to improve matters. For example, in addition to increasingly strict control of factory chimneys, the Midlands Joint Advisory Council for Smoke Abatement has co-operated with the committee of the Birmingham Central Technical College in establishing a training course in smoke prevention for stokers and engineers. The first course given during the spring in this connexion consisted of a series of five lectures and four demonstrations, which were well attended and proved highly successful; a more detailed course is being held during the autumn. Observations each month on the atmospheric impurities carried down in the rainfall have

shown that the soot deposit in the centre of the city is about six times greater than in the suburbs. A five year programme of clearing unhealthy areas has been proposed by the city council. The anti-tuberculosis campaign—of which full details are given—makes special provision for preventing infection by the isolation of advanced cases, a large number of beds for their care and treatment being now available. It is recognized that the risk of infection from this type of patient usually increases during the last six months of life.

Radium at London County Hospitals

After a consideration of the existing radium units and the work done, the Central Public Health Committee has reported to the London County Council that radium treatment is available for all patients in the Council's hospitals for whom such treatment is indicated, and that no additional facilities are required at present. Treatment by radium is now being carried out mainly at Lambeth (General) Hospital, the North Western (Fever) Hospital, Hampstead, and Queen Mary's Hospital for Children, Carshalton. Lambeth Hospital has 511·64 milligrams, together with an outfit for producing deep *x* rays. At the North Western Hospital, where cases of carcinoma of the uterus are treated by radium—91 such cases last year—334 milligrams are available. St. Mary's Hospital has only 15 milligrams, used practically entirely for the treatment of tuberculous adenitis. At other hospitals under the Council's control, radium treatment is carried out to a limited extent by radium needles or radon seeds. There is no evidence of an unsatisfied demand for radium treatment in the Council's hospitals, nor have the medical superintendents experienced any difficulty in obtaining through some other institution, radium treatment for any patient requiring it. A few patients have been treated in the hospitals by means of hired or loaned tubes, but it is felt that this practice should be discouraged, because the technique of treatment demands highly specialized training and experience, and, except in very special circumstances, all patients should be treated in units possessing equipment and staff adequate in all respects. A further report on the question of treatment by radium and deep *x* rays is to be submitted in a year's time.

Medical Staff of L.C.C. Hospitals

It is proposed by the London County Council to make in the twenty-eight general hospitals under its control eighteen additional positions of permanent assistant medical officer. This decision has been made after taking into account various factors, such as the necessity that the staff of each hospital should be sufficient for ordinary working, for the proper medical care of every patient, and for the keeping of adequate records; also the requirement that the staff shall have adequate weekly leave. It was found on a review of the situation that the staff at sixteen hospitals should be strengthened without delay. Four temporary assistant medical officers and two clinical assistants will be replaced by the new appointments. The rate of remuneration for the assistant medical officers will be £250 a year, plus residential emoluments (or a non-residential allowance of £150 a year in those cases in which residential accommodation cannot be provided). These and other proposals in connexion with some of the special hospitals represent a stage in the policy of replacing temporary staff gradually by permanent staff with the object of securing greater efficiency and economy. It is hoped also by this increase of the permanent staff, and by close supervision of the annual leave arrangements at the hospitals, and the most economical use of the services of locumtenent medical officers to effect a saving of approximately £8,500 a year in the current cost of the employment of such staff. At present, the total annual cost of the employment of such locumtenents during the absence (owing to illness, holidays, or other reasons) of the permanent staff is £17,700.

Nuttall Portrait Fund

Professor G. H. F. Nuttall, M.D., F.R.S., retired last month from the Quick chair of biology at Cambridge, which he held for twenty-five years, and an influential committee has been formed to raise funds for the presentation to him of his portrait. A circular letter addressed to his friends and admirers recalls the conspicuous services rendered by Professor Nuttall to preventive medicine in the fields of bacteriology, immunity, hygiene, and parasitology, by his personal researches and encouragement to others. "In addition he has founded and edited two of the leading journals concerned with hygiene and parasitology, and by his efforts has obtained funds to found the Molteno Institute of Parasitology at Cambridge. As a result, there has arisen a school of research workers now scattered throughout the world, many of whom gratefully acknowledge the inspiration which they have derived from his teaching and example." Contributions, not exceeding three guineas, should be made payable to the honorary treasurer, Dr. C. M. Wenyon, but sent to the honorary secretary, Dr. Edward Hindle (32, Belsize Avenue, Hampstead, N.W. 3), and cheques should be crossed "The Nuttall Portrait Fund."

Correspondence

SUSCEPTIBILITY OF CELLS TO HORMONIC INFLUENCE

SIR,—Like Mr. T. C. Clare (November 7th, p. 870), I also regard tissue cell sensitivity to hormonic influence as a matter of fundamental physiological importance. It can, I think, be shown to occur in other conditions beside that of cancer. In the *Journal of Genetics* (February, 1914) I described a case of unilateral distribution of plumage, and other secondary sex characters, in a pheasant. In this case the asymmetric distribution could not be explained by hormonic influence alone, because the male or female sex hormone must necessarily be distributed equally to both sides of the body. The suggestion was made that the unequal distribution in this case depended on a difference in tissue susceptibility, or capacity of response, to the hormonic stimulus on the two sides of the body. In like manner it may well be that malignant cells differ from normal cells in susceptibility to hormonic influences of various kinds. May I at the same time express my appreciation of the value and suggestiveness of Dr. Susman's paper published in the *Journal* of October 31st.—I am, etc.,

Leicester, Nov. 8th. C. J. BOND.

THE PITUITARY IN THE ETIOLOGY OF CANCER

SIR,—The article by Dr. Susman concerning post-pituitary gland in malignant disease tends to confirm certain clinical experiences. My object in writing this note is to suggest that placental extract be combined with the post-pituitary. Most of my cases have been hopeless, but in one case of malignant disease of the hypopharynx with partial laryngeal paralysis the tumour has vanished after weekly injections; the paralysis, however, remains. The injections are made around the tumour. Pain and reaction may be severe, the severity seeming to presage improvement. I presume that human placental extract

may be more helpful still ; it seems impossible to obtain a satisfactory preparation in this country. There appears to be no doubt whatsoever that shrinkage occurs with pituitary extract alone injected *around the growth*.—I am, etc.,

Manchester, Nov. 4th. WM. WILSON.

CONVALESCENT SERUM IN PROPHYLAXIS OF MEASLES

SIR,—In your issue of November 7th you refer to the report of the Central Public Health Committee of the London County Council, in which it is stated that an epidemic of measles is expected in London during this autumn and winter. Various statistical data as to the number of children who have been affected in previous epidemics and the mortality at different age periods are given, and mention is made of the fact that such epidemics of measles cannot be prevented, but that their effects can be mitigated.

If one may judge by the abstract which you give in the *British Medical Journal*, and which was also given in the *Times* of November 2nd, among the measures which this report of the Central Public Health Committee recommends in order to reduce to a minimum the number of complications, no reference is made to the use of convalescent serum in the prevention of the disease in individual cases. This omission evidently resulted in the publication in a leading article in the *Times* of November 3rd of the statement that measles, "the most prevalent of all the diseases of childhood, remains almost wholly unpreventible." It would be regrettable if this idea were to become at all widespread, and particularly among the members of the medical profession, for since Nicolle and Conseil, in 1916, first succeeded in protecting children from measles by injection with convalescent serum, many observers in many countries have demonstrated the great value of convalescent measles serum in prophylaxis.

As a matter of fact, this method of preventing measles has been in use at the Great Ormond Street Hospital since 1928, and at the suggestion of the Ministry of Health our existing scheme for obtaining a larger supply of serum with the co-operation of Dr. R. Massingham of the London Fever Hospital, in order that some might be available for other institutions, was inaugurated. A summary of the results obtained by the use of the serum we have prepared was given by my colleague Dr. Signy and myself in a paper which we read at the Annual Meeting of the British Medical Association at Eastbourne last July (published in the *British Medical Journal*, October 3rd, 1931). Moreover, the treatment is referred to, and with approval, by Sir George Newman in his annual report as the Chief Medical Officer of the Ministry of Health for the year 1930, and, in the report on measles, dated July, 1931, by Dr. Kay Menzies, the medical officer of health and school medical officer of the London County Council. In fact, the last sentence in the Council's report states:

> "It is hoped that in the future concerted measures will be taken with a view to augmenting the supplies of serum, possessing as it does such potential value in the reduction of infant mortality during epidemics of measles."

In view of the facts which I have here brought forward, and of the acknowledged value of this method in various Continental countries and America, it seems to me a pity that in an official warning, such as the one to which I refer, no mention whatever is made of the real value of convalescent serum in the protection of young children. In my opinion we should take every possible measure to reduce the incidence of measles among children under the age of 3, because by so doing a considerable number of lives will be saved, and in these days of a greatly lowered birth rate this is a matter of no small importance.

During the past week the Great Ormond Street Hospital had requests from four different sources for several hundred doses of convalescent serum. Unfortunately the supply available is now so small that only a small fraction of these could be satisfied. It has been shown at Birmingham and elsewhere that it is not necessary for the blood to be that of a recent convalescent, but that any adult who has previously suffered from an attack of measles could furnish a useful serum. That being the case it should be possible by proper organization to arrange that a sufficiency of prophylactic serum be available in order that as many children as possible under the age of 3 or even 5 years be protected during an epidemic period. Such a scheme has already been working in Paris and other cities for several years ; it should surely be possible to organize such a scheme in London and the larger provincial cities.—I am, etc.,

London, W.1, Nov. 9th. DAVID NABARRO.

RHEUMATOID ARTHRITIS

SIR,—Your correspondent Dr. Graham-Bonnalie stresses an extremely important point, in his letter on the treatment of rheumatoid arthritis (November 7th, p. 871), when he states that "the fault with most forms of treatment, in the active stages of the disease, is that they are too drastic." This is a point which appears to be insufficiently borne in mind by many medical men ordering or applying treatment (both physical and otherwise) to patients who are generally already in a very low state of resistance as the result of their disease.

Dr. Coates, in his excellent letter in the same issue, encourages us to research along therapeutic rather than etiological lines. This, though of necessity often empirical, seems to be the rational plan. My work on transfusion in these cases, which was quoted by "Crippled" (in her second letter), rests on the assumption that the etiology in these cases is *not proven*, but is probably either (*a*) infective, or (*b*) metabolic (endocrine). In the former case antibodies are provided and stimulated ; whilst in the latter case the small amounts of endocrine secretion contained in a large transfusion of normal blood will prove the best stimulus for the glands of the patient to resume activity.

Finally, may I venture to doubt whether Dr. Jordan's explanation of the predominant female incidence of the disease, which he attributes to their greater liability to severe forms of chronic intestinal stasis, contains the whole truth. It would be difficult to explain the remarkable results which are sometimes obtained by means of intrapelvic diathermy (which is believed to stimulate the ovarian glands) if this were so.—I am, etc.,

London, W.1, Nov. 7th. W. S. C. COPEMAN.

PAIN IN THE ARM AND A DEAD TOOTH

SIR,—Dr. Sanguinetti misses my point. I do not advise the removal of teeth, tonsils, or appendices unless clinical experience—of which I have had a good many years, in a good many places—leads me to believe that the removal will be advantageous. But I do insist that, when clinical experience is in favour of removal, we should not hesitate *because* we are unable to "explain" how, why, or in what manner the removal "acts." Equally, when clinical experience leads me to believe—as it generally does—that vaccines will be useless, I insist that we should not give them, merely because a pathologist "explains" to us what he calls their "mode of action." In a word: I appeal to clinical experience, fortified by reason, rather than to laboratory-bred theory, supported by hope or *in*-credulity.—I am, etc.,

London, W.1, Nov. 7th. F. G. CROOKSHANK.

CARDIOSPASM

SIR,—May I be permitted to comment in brief upon Dr. Alfred C. Jordan's letter on cardiospasm in the *British Medical Journal* of October 10th (p. 678)?

Dr. Jordan commences by stating his preference for the name "cardiospasm" as compared to "the humorous one coined by Sir Cooper Perry." He refers, presumably, to the name "achalasia," which is becoming increasingly common in the literature, and which, since it certainly was not proposed by Sir Cooper Perry in jest, must have a humour apparent only to a certain few. Without wishing to suggest that achalasia is the name which will withstand the ravages of time, nevertheless I believe it to be the best of those at present available, since it not only expresses the outstanding feature of the disease, but also overcomes the incongruity of applying the term "cardiospasm" to cases such as Dr. Butler's, "in which there is no actual spasm" (the words quoted are Dr. Jordan's). Even in those cases which show spasm, there is no doubt in my own mind that such spasm is a purely secondary feature. However, it is not my purpose to do more than comment on Dr. Jordan's taste in nomenclature. The point is a small one, and perhaps the fact that "cardiospasm" has the advantages of hoary old age gives it, in spite of its inappropriateness, a Linnaean status.

It is on the question of the pathology of this condition that I wish to take open issue with Dr. Jordan. Dismissing in a very few words all work on this subject, he states that all his cases of genuine cardiospasm go to prove that the complaint is due to three things: (1) the traction of a large, heavy stomach on the cardia; (2) toxaemia of the tissues concerned; and (3) an idiosyncrasy of the individual. Let us examine this tripod of causes on which Dr. Jordan sets the disease. He says that the fact that the stomach is large, in spite of little food entering it, is proof positive that the enlargement precedes the oesophageal trouble. These are rash words. Proof positive in clinical medicine is something for which we all strive, but few, if any, achieve; nor in this case is the promise in any way fulfilled. It is by no means always the case that achalasia is complicated by an enlarged stomach. I myself have had occasion to pay careful attention to this point, not because I believed it to be a cause of the condition, but because I thought that an irregularity of action of the pyloric sphincter might well accompany the achalasia of the cardia. If I failed to find definite histological evidence one way or another, it was because such enlargement was not found in a sufficient percentage of cases. The suggestion that the gastric enlargement must precede the oesophageal disease because, after the onset of the latter condition, little food enters the stomach, is difficult to regard seriously. Many patients in whom the stomach is large have lived for years in a good or moderate state of nutrition, and certainly, except in very severe cases, quite enough food passes through to cause a secondary enlargement of the stomach. But even were the enlarged stomach present before the achalasia arose, a consideration of the mechanics of the part and a study of *x*-ray appearances should dissuade one from proposing that the former is the cause, or at least one of the causes, of the latter, though the oesophageal disease may be aggravated by the gastric enlargement once the disease is advanced.

With regard to Dr. Jordan's second factor—namely, toxaemia produced by intestinal stasis—it is unfortunate that he is not more exact in his description of this presumably important factor. Without more than mentioning the fact that intestinal stasis is not a constant, even if it be a frequent, complication, I should like to ask Dr. Jordan, (1) What does he suppose is the nature of the toxaemia? (2) Exactly what tissues does he mean by those concerned? and (3) What is the precise nature of the lesion entailed? We have surely arrived at a time when statements of the presence and action of intestinal toxaemia should be abandoned unless we have concrete evidence of their existence and activity. The process of explaining one unknown by means of another unknown is time-worn, but not time-honoured.

Finally, we find that Dr. Jordan summons to his aid an idiosyncrasy of the individual which he (Dr. Jordan) is unable to explain. I have already pointed out that it is a method only too well recognized to explain one unknown by having recourse to another. While I am the last to deny that differences in the individual do exist, and are important in certain specific instances, yet I am persuaded that the terms "idiosyncrasy" and "diathesis" have become convenient bolt-holes into which one can retire when the problem becomes too difficult to solve. Under such circumstances, the whole question of individual variation in relation to disease is placed in an invidious position, and is eyed askance by more sober and painstaking investigators.

In conclusion, may I say that with one of Dr. Jordan's statements I find myself in almost complete agreement—namely, that "the exact pathology of the disorder is still open to argument." I have always maintained that although a lesion of Auerbach's plexus has been present in every case of achalasia which I have studied, yet I do not think it probable that this is the only anatomical lesion which may produce the disease. Even were it the one and only lesion, yet, as I have stated frequently, the exact pathology is still in doubt until we have shown to what this lesion is itself due. Surely, however, the question should be considered as open to investigation rather than to argument. The latter method, while serving sometimes to consolidate the steps already made, and to point the way to future ones, can never of itself solve any problem. It is with further investigation, such as is even now in progress, that the exact pathology of achalasia of the cardia will eventually become known.—I am, etc.,

Rockefeller Institute for Medical Research, New York, Oct. 22nd. GEOFFREY W. RAKE.

SPINAL MANIPULATION

SIR,—Dr. T. Marlin, in his interesting article "Some common complaints amenable to spinal treatment," in your issue of October 24th, makes a number of statements that I cannot allow to pass unchallenged. Thus, he states that the benefit derived from spinal manipulation cannot be ascribed to bone-setting or to the breaking down of adhesions, because the force used in manipulation is not sufficient to break down adhesions, and that any sound heard during manipulation is due to separation of the articular surfaces, and not to the replacement of subluxations.

As regards the impossibility of breaking down adhesions, this cannot be correct. While admitting that very powerful adhesions cannot always be removed in the way described, it must be remembered that all adhesions arise by a gradual process from the slow organization of deposits or infiltrations, and that all adhesions are extremely weak at first, and slowly increase in intensity. During the initial stages they should present no difficulty whatever to their being broken down by manipulation, provided always that this is correctly applied. I can assure Dr. Marlin that I have broken down such adhesions in the vertebral column in thousands of cases.

As regards the causes of the articular sounds heard during manipulation I cannot see how they can be induced by mere separation of articular surfaces. If they were,

they would be heard again and again upon successive stretchings at intervals of a few seconds, such as is done when trying to remove tissue tension in the neck previous to manipulation thereof; this is, however, not the case. The sounds heard when force is applied with sufficient intensity to cause such separation are, in my opinion, *not* due to the separation itself, but to the fact that such separation allows of partial or complete reposition of displacements, because it has removed the obstacle to the muscles and ligaments that have been persistently trying (in consequence of their chronic state of overstretching) to effect such adjustment. I must also point out that if one has correctly diagnosed where and in which direction any displacement exists, makes a manipulative movement in the opposite direction, hears an articular sound, and then finds that change of position has resulted whereby the displaced bone has moved towards, or right into, its correct place, one is compelled to conclude that the sound heard was that of a bone moving. The best example of this is to be found in malrotations of the fifth lumbar vertebra on the sacrum, whereby a pelvic tilt is induced. Say that the spine of the vertebra in question is found deviated to the left, and that the posterior left half of the pelvis is higher than the right; after the usual preparation by relaxing movements, if a rotary movement is made of the lumbar region contrary to the one in which the malrotation exists, a loud articular sound is the usual result, and immediately afterwards the spine of the fifth lumbar vertebra is no longer to the left, and the pelvis is now level. This can only be due to an actual movement of reposition of the displacement in question.

Dr. Marlin stresses the point that the original skiagram that apparently showed a displacement can often be accurately reproduced in a second skiagram (after so-called reposition) taken with the patient in another position, and considers this to be evidence against any such reposition having been effected. To my mind it is rather the opposite, but in any case it is worthless as clinical evidence. The main point in comparative skiagrams is that they are to be taken with the same centring and with the patient in exactly the same position each time. I maintain that if, under such identical circumstances, it is found that the bones do not occupy the same positions, and that one cannot reproduce the original skiagram, then some alteration of position in the bones must have taken place.

In conclusion, I would like to emphasize the fact that the laws of pathology and clinical evidence concerning displacements in the extremities are the same as those concerning displacements in the vertebral column, and that the broad lines of treatment for such displacements are identical in both cases.—I am, etc.,

London, W 1, Nov. 5th. EDGAR CYRIAX, M.D.Ed.

INJURIES OF THE KNEE-JOINT

SIR,—Mr. Naughton Dunn's paper in the *British Medical Journal* of October 10th has drawn attention to one among several points of interest. I refer to the comparative freedom from septic infection in operations opening the synovial cavity. In my student days we observed with what caution—almost fear—surgeons operated on the knee-joint. To-day one surgeon alone can refer to a series of 250 operations for damage to cartilages and 34 for loose bodies. The treatment of wounds of this joint has shown a corresponding improvement. In the *Medical Journal of Australia* for September, 1920, I published a review of fifty cases of wound of the knee-joint under the care of my colleagues Major Bearne and Captain Carleton and myself, in a general hospital during the war. All were severe; many of the joints appeared hopelessly shattered; but of the fifty patients only two had to submit to amputation, the remainder being in due course evacuated to England, in nearly every case with strong, useful legs.—I am, etc.,

St. Luke's Hospital, Hebron, Palestine, Oct. 27th. H. W. WEBBER, M.S.Lond.

DOSAGE OF DIPHTHERIA ANTITOXIN

SIR,—In your issue of October 31st, "M.D., D.P.H." has attacked me with the full force of his logical artillery without, I think, inflicting any mortal wound. No one can deny that five days after a large intravenous injection there is still a theoretical excess of antitoxin in the blood, but my contention is that the patent may be helped if this excess is maintained at the highest possible level so long as there is reason to believe that any fresh toxin is being produced. "M.D., D.P.H." states that toxin, on making its way through the superficial tissues, encounters an overwhelming amount of antitoxin ready to neutralize it immediately. This seems to me to be the crux of the matter.

If the antitoxin does in fact immediately combine with *all* the toxin, then, *cadit quaestio*, a single dose is ample in all cases. But I cannot believe that this statement is an adequate description of what happens in the treatment of children suffering from diphtheria. If we grant, for the sake of argument, the questionable assertion that antitoxin does neutralize toxin *immediately*, there is still the affinity of the tissues to be considered. Surely there must always be some partition of toxin between the circulating antitoxin and the cells of the body. Only if the concentration of antitoxin in the blood stream becomes infinite (an absurdity), or if the tissues are highly refractory, will the coefficient of partition approach zero.

One cannot help feeling that the tissues of a young child are relatively more susceptible to the evil effects of diphtheria toxin than are those of a guinea-pig. (By the way, has "M.D., D.P.H." ever seen natural diphtheria, with the formation of a false membrane, in a guinea-pig?)

Unfortunately, in human diphtheria we are conducting our operations in a test tube which will insist on combining with one of the reagents. We must therefore do all that we can to assist the reaction to proceed in the required direction by supplying a large excess of our neutralizing agent. These efforts may be futile, but I am not convinced that they must be.

It is not very easy to accept the Schick test as the sole criterion of immunity in diphtheria without certain reservations. For instance, I myself am so Schick-positive that my arm desquamates for several weeks after an injection. Nevertheless, though I have come into intimate contact with cases of malignant diphtheria during the past five years, and though I have had membrane coughed into my face on numerous occasions, I have not, as yet, contracted the disease. Furthermore, we have at present under observation a Schick-positive boy of 6 who is carrying virulent bacilli in his nose and throat. Conversely, it is possible—*pace* "M.D., D.P.H."—to point to Schick-negative individuals who have contracted a disease clinically indistinguishable from diphtheria. It seems to me that a healthy adult, with no circulating antitoxin whatever, may still be able to mop up (so to speak) a considerable amount of toxin through the intervention of his reticulo-endothelial system. In children this mechanism is not fully developed, hence (among other reasons) their greater susceptibility to the disease.

On the whole, I am still not prepared to admit that in giving repeated doses of antitoxin I am guilty of any lapse from that austerity of mind which is (who could doubt it?) the natural perquisite of those fortunate individuals who are able to work in the cool, chaste atmosphere of the laboratory.—I am, etc.,

Grove Hospital, S.W.17, Nov. 2nd. J. B. ELLISON.

ACUTE SPONTANEOUS HYPOGLYCAEMIA

SIR,—The authors of the paper with this heading, in your issue of November 2nd (p. 837), do me the honour of referring to an article of mine on hypoglycaemia, which appeared in the *British Medical Journal* in 1930,[1] but, curiously enough, they do not mention an earlier article, published in 1924,[2] the same year as Harris's paper, nor another which appeared in 1927.[3] The former is, as far as I can discover, the first where the pathology and etiology of hypoglycaemia are discussed in detail and illustrated by different types of case. The authors complain that my 1930 paper is lacking in details, but, as it was concerned with a general survey and classification of 200 cases of chronic hypoglycaemia which had come under my observation, it was not possible to deal with individual examples, and readers were referred to my previous communications on the subject for these. I am aware that my 1924 paper, and the still earlier reference I made to the clinical importance of spontaneous hypoglycaemia in opening the discussion on "Acidosis and alkalosis in children" at the British Medical Association Meeting in 1923,[4] are not mentioned in American bibliographies on hypoglycaemia; but that is not unexpected, as it is common for American and Continental authors to overlook earlier work published elsewhere, and give priority to their own countrymen.—I am, etc.,

London, W.1, Nov. 7th. P. J. CAMMIDGE.

TREATMENT OF ANTHRAX BY N.A.B.

SIR,—In your review of the annual report of the Chief Inspector of Factories in the *Journal* of September 12th reference is made to the serum treatment of anthrax. It does not seem to be known in England that novarsenobenzol is a specific for anthrax infection. I do not know to whom the honour is due of introducing this method of treatment to the medical profession in South Africa, but I think I am right in saying that throughout the Union the N.A.B. treatment is the one generally adopted.

An intravenous injection of 0.6 gram daily or on alternate days, according to the severity of the symptoms, will not only save the life of the patient, but will render surgical intervention unnecessary in the majority of cases. Furthermore, serum is not always readily available to the general practitioner, whereas N.A.B. forms a part of his ordinary armamentarium.—I am, etc.,

Durban, Oct. 14th. A. B. M. THOMSON.

SIR,—The following case (reported by permission of Dr. R. Kelson Ford, medical superintendent of St. Olave's Hospital, Rotherhithe) appears to demonstrate the usefulness of treating anthrax by N.A.B., either alone or in conjunction with serum.

A lighterman, aged 28, was admitted to St. Olave's Hospital on June 8th, 1931, with a history of having four days previously scratched a small pimple on the left side of his face. The pimple increased in size, developed a dark centre almost the size of a shilling, and around it were some vesicles with considerable oedema. He had on admission a severe headache, temperature 101.8° F., pulse rate 96, and respiration rate 20, and was diagnosed in the receiving room as anthrax, a smear from the lesion showing the presence of anthrax bacilli. The following day another smear was taken, and anthrax bacilli found.

It was decided to try the effect of N.A.B., but we did not feel justified at first in treating the patient without Sclavo's serum in addition. Sclavo's serum, however, was *not used* after the initial dose. He was given soon after admission 0.6 gram N.A.B. and 80 c.cm. Sclavo's serum intravenously. This was followed by a slight rigor lasting five minutes. Aspirin 10 grains and phenacetin 10 grains were given for headache. That evening the patient's temperature fell to 98.6°. He vomited once. The next day his condition improved, oedema of face was less, and he was comfortable. The cervical glands were swollen. That evening the patient's temperature was 98.8°, and he was given 0.6 gram N.A.B. intravenously (no Sclavo's serum was used). The following day the patient's temperature was 98.4°, the oedema was still subsiding, pulse and colour were good, but he vomited a little on one occasion. At night his temperature was 97.2°, and he slept well. Next day the temperature rose to 99°, but the general and local conditions were still improving. He was again given 0.6 gram N.A.B., and from this time he made a rapid and uninterrupted recovery. The lesion gradually dried, scabbed, and separated. The patient's Wassermann reaction was negative.

Anthrax is treated, as a rule, with anti-anthrax serum, such as Sclavo's serum or Sobernheim's serum. The results are variable. Sclavo, by the use of large doses of serum over many days, reduced his mortality rate from 24 per cent. to 6 per cent. in a large number of cases. Other observers have a much higher mortality rate. It is now claimed that salvarsan acts as a specific in human anthrax. This treatment was first used by F. Becker. Pijper[1] [2] states that at Pretoria Hospital, South Africa, all cases entering with anthrax were treated exclusively with salvarsan. There were no deaths in records of over forty consecutive cases. The benign course of this case was in marked contradistinction to another case of anthrax admitted to St. Olave's Hospital some months previously, which was treated by Sclavo's serum only, but progressed to a septicaemia and death.—We are, etc.,

J. J. COGHLAN, M.R.C.S., L.R.C.P.
H. J. SHORVON, M.R.C.S., L.R.C.P.

Stamford Hill, N.16, Oct. 16th.

VACCINATION AND ECONOMY

SIR,—Like Dr. Floyd, I was an assistant medical officer on the small-pox ships in the 'nineties, an experience which to me (and I have no doubt to him) has been of inestimable advantage in after-life. There was then no suggestion that severe and mild small-pox were separate entities which bred true. Each was recognized as a phase of the same disease, and whether an individual developed a severe or a mild attack was regarded as depending upon the amount of his acquired or natural immunity. That the latter was considerable in some individuals was shown by the fact that mild discrete cases—or, in modern phraseology, "minor" small-pox—occurred in unvaccinated individuals, and even in children, who derived their infection from severe or major cases. On the other hand, confluent cases originated from the mild ones.

Dr. Haldin-Davis suggests the discontinuance of general vaccination on the grounds of economy, but in my opinion economy is not the most important consideration, but whether the present inefficient one-scar operation, as now officially recognized, is worth doing at all. Is it not giving rise to a sense of false security? And is it not likely that, in the event of "major" small-pox again predominating, the protection will prove to be an illusion, the children being the chief victims? If this is so, vaccination will be further discredited in public opinion, and opposition to it will be increased when efficient vaccination becomes again of paramount importance.—I am, etc.,

Gravesend, Nov. 8th. ARCHIBALD KIDD.

[1] *British Medical Journal*, 1930, May 3rd, p. 818.
[2] *Lancet*, December 20th, 1924, p. 1277.
[3] *Practitioner*, August, 1927, p. 102.
[4] *British Medical Journal*, August 25th, 1923, p. 320.

[1] Treatment of Human Anthrax, *Lancet*, 1926, i. 88.
[2] A. Pijper: Human Anthrax and Salvarsan, *Med. Journ. South Africa*, November, 1921, 17.
[3] Louw and Pijper: *South African Med. Record*, July 22nd, 1922, 273. (Eleven successful cases treated intravenously by N.A.B.)

"WHAT IS LIFE?"

SIR,—I appreciate the patience of Professor Haldane's reply to my letter. The argument in that letter was, summarily, that the conception of wholeness had been accepted much more widely by biologists than Professor Haldane's words would suggest. Was not General Smuts right when, in speaking to the British Association of the mechanistic ideas recently current in physiology and biology, he said, "All that is passing if not already past"? Such a work as that of Dr. E. S. Russell, *The Interpretation and Development of Heredity*, seems to be more representative of current biological thought than Professor Hogben's publication, and the text around which Dr. Russell's book is written is the essential unity of the living organism.

Professor Haldane considers that the conceptions of matter and mechanism which biology took over from physics still require some hard knocks before we can feel assured that they are satisfactorily dead, and it is not for me to question his judgement. On the other hand, the prospects of understanding that have been opened up by the remarkable disappearance of boundary walls between different branches of science make one impatient to see the work of synthesis continue and inclined to leave the few remaining "mechanists" to starve on their desert islands. I may, perhaps, without impertinence express my admiration for Professor Haldane's contributions towards that unification of study of the living organism which seems to promise results of which there was no prospect under the regime of sectional study.—I am, etc.,

Liverpool, Nov. 7th. K. W. MONSARRAT.

TEMPORARY TREATMENT WITHOUT CERTIFICATE

SIR,—The Mental Treatment Act has been in operation since the beginning of the year, and it has now become apparent that Section 5, which deals with the new class of temporary patients, a section from which so much was hoped that it was described in an official publication as an "epoch-making" advance, is little more than a dead letter.

In a communication which appeared in your columns on December 6th, 1930 (p. 979), I pointed out that on account of the ambiguity in the wording of Section 5 its practical application would depend on the view taken by the Board of Control. The Board's interpretation, it now appears, has been framed on the narrowest possible lines—on a literal reading, in fact, of the words "incapable of expressing himself as willing or unwilling to receive treatment."

It is hardly necessary to point out that this interpretation nullifies practically entirely the usefulness of the section. Interpreted in this way it can apply only to a very small number of cases—certainly less than 5 per cent. If that were all we might be able to reconcile ourselves to it as another example of official claudication. Further harm has resulted from the advertisement given to Section 5 in the beginning, and the consequent impression received by doctors and the public of its value as a means of avoiding certification. This impression, in view of the Board's decision, is now seen to be erroneous, but in the meantime the general bias on the subject of the stigma of certification has been intensified. The word "certification," in fact, has become invested with a new and somewhat sinister connotation.

The anomalous situation that has thus arisen renders the task of those who are attempting to treat mental patients within the terms of the Mental Treatment Act and the principal Act, one of exceptional and unnecessary difficulty. Is it not possible, therefore, for the Board of Control to reconsider their attitude in the light of modern therapeutic requirements, and adopt a more liberal interpretation of the section in question?—I am, etc.,

London, W.1, Nov. 9th. FREDERICK DILLON.

SUN-BATHING AND PULMONARY TUBERCULOSIS

SIR,—While the ultra-violet light of the sun has wonderful health-giving properties for many people, there is one notable exception, and that is where tuberculosis of the lungs is present, either diagnosed or unsuspected. A large number of people, without knowing it, suffer in greater or lesser degree from this disease, and in these circumstances uncontrolled use of the sun may do a great deal of harm, and may light up quiescent tuberculosis, thus turning it into an active case with fever, sputum, haemoptysis, loss of weight, and all the usual symptoms. It cannot be too strongly emphasized that care should be exercised when undertaking a course of sun-bathing, or indeed even when contemplating a course of ultra-violet light provided by mechanical means. The promiscuous use of this form of treatment may cause much damage.

Sun treatment is now admitted to be the most satisfactory method of treating cases of localized and surgical tuberculosis—that is, tuberculosis of bones, joints, serous membranes, glands, etc.—but, on the other hand, the treatment of pulmonary tuberculosis by heliotherapy has fallen into disrepute for very good reasons. There are, however, a limited number of cases of pulmonary tuberculosis for which sun and ultra-violet light treatment is beneficial, cases especially which approximate to the surgical or localized type, where there is, for instance, a small localized lesion, perhaps at one of the apices, which, although not in any sense active, refuses absolutely to shut off and heal. Cases of chronic pleurisy with much thickening and adhesions often improve in a remarkable manner under sun treatment. Open sores, fistulae, and unclosed empyemata are also very suitable for this form of therapy.

Sunning should be done as far as possible in an open space, with free circulation of air all round, and not in a confined space; it is the rays of the sun combined with the cooling power of the air (seen in such a marked degree in the Swiss Alps) which confer the benefit. Sun-bathing does not mean getting boiled and uncomfortable. It should be done gradually, the amount of exposure being graduated from day to day; the head and neck should be shaded, and patients should go brown and not red. The time of day to carry out the treatment should be in the early morning during the summer months, and towards the middle of the day during the winter months. Once the patient is pigmented and on the way to recovery, he can stand more and more exposure. If he becomes fatigued, perspires a great deal, or has a febrile reaction, then the time of exposure must be cut down. Dark-haired people become more easily accustomed to the sun's rays than the fair-haired and the red-haired.

What I particularly wish to emphasize in these few remarks is the very real and definite danger of uncontrolled sun-bathing—especially when there is tuberculosis of the lungs, already diagnosed or sometimes not even suspected.—I am, etc.,

BERNARD HUDSON, M.D., M.R.C.P.

Davos Platz, Oct. 30th.

WINTERING ABROAD

SIR,—Under the title "A plea for British spas" a correspondent calls attention (October 17th, p. 726) to "the enormous numbers of the wealthier classes who, partly obeying the dictates of fashion and partly through ignorance and prejudice, have adopted the practice of residing abroad for cures at spas or sanatoriums, or of wintering abroad to escape the so-called rigours of the English climate." He goes on to speak of "the claims and advantages of the Channel Islands, Malta, the British West Indies, South Africa, and even distant New Zealand." I do not question the sincerity of the patriotic zeal which inspires such a line of reasoning, but I venture to think that decisions based largely on patriotism are often unwise and, in the end, may prove disastrous to the individual as well as to the nation.

I spent several days in London last week. The weather, I was told, was fine. Certainly it did not rain, and there was no real fog. But to one with delicate throat or bronchial tubes, or even accustomed to the clearer clime of Southern France, there was a moist, clammy, muggy feeling in the air that bespoke the coming winter. There was little difference in conditions as I passed through Havre and Paris; the sky, perhaps a little clearer, but the valley of the Seine and of the Thames closely resemble each other. I left Paris on October 23rd, and, sixteen hours later, arrived in Cannes in clear sunshine, the thermometer remaining, between 9 a.m. and 3 p.m., close to 20° C., or 68° F. In this morning's paper I read that on the same day in London there was a hoar-frost, and that the thermometer had fallen below freezing point.

Now, Sir, I honestly do not desire to make any claim *pro domo mea*, but I maintain that such conditions spell danger for many individuals, young and old. The inference is obvious that it may be for their own and their country's benefit for many to winter abroad. An Englishman returning home in good health in spring is surely of more value to his country than a sick and ailing or dangerously ill Englishman remaining at home. Every doctor knows—the lengthening obituary column in our morning paper tells the tale—that with the fall of temperature in winter the death rate rises.—I am, etc.,

Cannes, Oct. 25th. A. A. WARDEN, M.D.

*** While not convinced by Dr. Warden's argument, we print his letter because of its topical interest.—ED., *B.M.J.*

Obituary

J. S. C. DOUGLAS, M.A., D.M., M.Sc.,

Dean of the Faculty of Medicine and Joseph Hunter Professor of Pathology, University of Sheffield

As briefly announced in our last issue, Professor J. S. C. Douglas died at Llandudno on October 30th, after a few weeks' illness. His death is a serious loss to the University of Sheffield and its Faculty of Medicine, with which he had been identified since his appointment to the chair of pathology in 1915.

James Sholto Cameron Douglas, elder son of Mr. Claude Douglas, F.R.C.S., consulting surgeon to the Leicester Royal Infirmary and past-president of the Midland Branch of the British Medical Association, was born in 1879, and from Haileybury College went, with an open science exhibition, to Christ Church, Oxford. He graduated B.A. with first-class honours in the final school of natural science in 1902, M.B., Ch.B. in 1905, M.A. in 1908, and M.D. in 1912. On leaving Oxford he entered Guy's Hospital with a university scholarship, and in 1903 was appointed Webb scholar in bacteriology at St. George's Hospital. As Radcliffe travelling Fellow he studied at Copenhagen and Dresden in 1906, and in the following year, after appointment to the Philip Walker research studentship in pathology, he returned to Oxford on his election as Fellow and lecturer in natural science at St. John's College. He was next appointed lecturer in pathology and bacteriology in the University of Birmingham, where he received the M.Sc. degree, and not long afterwards he accepted a corresponding position in the Victoria University of Manchester. During the war he was attached to the 3rd Northern General Hospital, with the rank of Captain R.A.M.C.(T.F.). In 1915 he was elected to the Joseph Hunter chair of pathology in the University of Sheffield, and became honorary pathologist to the Royal Infirmary and the Royal Hospital, Sheffield, also to the Jessop Hospital for Women and the Hospital for Sick Children; in 1921 he accepted the onerous post of dean of the Faculty of Medicine.

On two occasions Douglas was awarded scientific grants by the British Medical Association. At the Annual Meeting in Liverpool in 1912 he was secretary of the Section of Pathology; when the Association met in Glasgow in 1922 he was vice-president of the Section of Pathology, and at Nottingham in 1926 he was president of the Section of Pathology and Bacteriology.

A colleague writes:

During the sixteen years that Douglas was in Sheffield he won the affection and esteem of all who came in contact with him. His ripe experience and wide knowledge of pathology were always freely at the service of all who sought his advice, and he spared no pains to give them of his best. His department, with its various subsidiary laboratories at the hospitals of the city and its connexion with municipal departments, ran smoothly and efficiently under his excellent organization, because all who came in contact with him realized his transparent honesty of purpose and his high standard of conduct. Douglas had no axes to grind, and his word was always his bond.

Latterly he had been obliged to some extent to nurse his strength, and during the last ten years the heavy duties of dean of the Faculty of Medicine, added to those of the chair of pathology, occupied all his time and energy. Both were carried out with that care and thoroughness which characterized everything he did. His unselfish devotion to the University, the quiet dignity of his manner, and his kindly and generous nature will long remain happy memories to all his colleagues.

The death occurred in a nursing home in Liverpool on October 26th of Dr. PIERCE JONES of Portmadoc, at the age of 57. Soon after graduating M.B., Ch.B. of Glasgow University in 1900, he became assistant to the late Dr. W. Jones Morris, whom he succeeded in the appointments of Poor Law medical officer for Portmadoc and Glaslyn districts, and medical officer to the Post Office local staff and the constabulary. He had a large general and panel practice, and was highly esteemed by his patients and by all with whom he came in contact. He took great interest in local affairs, and thirteen years ago headed the poll for election to the urban council, of which he became chairman within four years of his first election. He was for several years chairman of the Health Committee and represented the council on the Carnarvonshire Joint Sanitary Authority. Dr. Pierce Jones was a member of the South Carnarvon and Merioneth Division of the British Medical Association, of which he was chairman in 1925–26, and was vice-chairman and representative of the Division on the Branch Council at the time of his death.

We have to record the death, on October 21st, of Dr. RICHARD JONES of Llandudno, aged 73. After studying medicine at the Universities of Glasgow and Edinburgh, he graduated M.B., C.M.Ed. in 1880, proceeding to the M.D. with honours in 1891, in which year he also obtained the D.P.H.Camb. He began practice at

Blaenau Festiniog as partner with the late Dr. Robert Roberts. He took a prominent part in the public life of Merioneth, having been appointed a justice of the peace, a member of the county council, and medical officer of health for Blaenau Festiniog. He removed to Llandudno in 1920, where he became popular with all sections of the community. He was a member of the North Carnarvon and Anglesey Division of the British Medical Association, and was an ex-president and for many years a member of the council of the North Wales Branch. He was representative of his Division at the Annual Meeting of the Association in Oxford in 1904. Dr. Richard Jones was medical officer of the Lady Forester Home, Llandudno, surgeon to the Sarah Nicol Cottage Hospital, Llandudno, and medical referee under the Workmen's Compensation Act. In 1929–31 he was a member of the Ministry of Health's joint advisory committee on disciplinary procedure.

Dr. F. C. FOSBERY, formerly of Bath, died on October 29th, aged 59. He received his medical education at the Bristol Royal Infirmary and St. Thomas's Hospital, and took the qualifications of the English Conjoint Board in 1894, and the degree of M.D.Brux. in 1899. After holding several house appointments he entered a partnership at Bath in 1900, and continued to practise there until a few months ago, when he retired through ill-health and went to live at Freshford. He was at one time public vaccinator of the Bath urban district, and assisted in the formation of the Bath Ante-natal Clinic, which he conducted until it was merged with the City Health Department. Dr. Fosbery was a member of the Bath Division of the British Medical Association, and was for some years treasurer of the Bath Panel Committee. During the war he was in medical charge of the Belgian refugees and of the Belgian convalescent soldiers in Bath, as well as medical officer of the V.A.D. Hospital at Rock House, Lansdown, and to the local branch of the W.A.A.C.

Dr. ISMAY BANNERMAN, who died on November 2nd, studied medicine at Edinburgh, and after graduating M.B., Ch.B., acted as house-surgeon at the Royal Infirmary. He then assisted his father, Dr. James Bannerman, in country practice at Stanhope in Weardale, where he was greatly liked by all his patients. Recently he joined the R.A.F.M.S., and was undergoing training at Halton Camp preparatory to foreign service. On October 29th he met with a severe motor accident. He was promptly conveyed to the R.A.F. Hospital, and there succumbed four days later, despite the most unremitting efforts of the staff.

The following well-known foreign medical men have recently died: Dr. LORTAT-JACOB, physician to the Hôpital Saint Louis, Paris; Dr. JOHN A. FOOTE, a Washington paediatrist, aged 56, of coronary thrombosis following influenza; Professor S. J. ZLATOGOROFF, a Leningrad bacteriologist, aged 58; Dr. AUGUST FOREL, the eminent Swiss psychiatrist and sociologist, and author of works on alcoholism, hypnotism, the sexual question, and the social world of the ants, aged 83; Dr. PAOLO DE VECCHI of New York, the oldest and most representative Italian practitioner in the United States, aged 84; Dr. DUJARIER, surgeon to the Hôpital Boucicaut, Paris; Dr. JOHN OSBORN POLAK, professor of obstetrics and gynaecology, Long Island College Hospital, aged 61, of heart disease; Lieut.-General ERNEST WIBIN, inspector-general of the Health Service of the Belgian Army; Dr. LOUIS VILAIN, a prominent Brussels surgeon, aged 61; Dr. LEONARD NAPOLEON BOSTON, professor of physical diagnosis in the University of Pennsylvania, aged 60, of erysipelas; CHARLES ALLEN PORTER, emeritus professor of surgery at Harvard University, aged 64, of carcinoma of the stomach; Dr. J. B. SHELMIRE, an eminent Dallas dermatologist, aged 73; and Dr. EUGEN LYMAN FISK, a pioneer in advocating the periodical examination of healthy persons by life insurance societies.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Pinsent-Darwin Studentship in Mental Pathology

An election to this studentship will be made next month. The studentship is of the annual value of not less than £200, and is tenable for three years. The student must engage in original research into any problem having a bearing on mental defects, diseases, or disorders, but may carry on educational or other work concurrently. Applications for appointment to the studentship should be sent before December 5th to the secretary, Pinsent-Darwin Studentship, Psychological Laboratory, Cambridge. Applicants should state their age and qualifications, and the general nature of the research that they wish to undertake. No testimonials are required, but applicants should give the names of not more than three referees.

At a congregation held on November 7th the following medical degrees were conferred:

M.B., B.Chir.—*R. B. Mayfield, G. H. G. Southwell-Sander*, W. H. Poole.

M.B.—W. J. Wilkin.

B.Chir.—D. Divine.

UNIVERSITY OF LONDON

Lord Irwin, the late Viceroy of India, and Lord Moynihan, President of the Royal College of Surgeons of England, have been nominated for the Chancellorship of the University of London in succession to Earl Beauchamp, who recently resigned. The election will take place on January 19th.

The following have been recognized as teachers of the University in the subjects indicated, and assigned to the Faculty of Medicine: St. Bartholomew's Hospital Medical College, Drs. Geoffrey Bourne and F. G. Chandler (medicine), Mr. F. C. W. Capps (oto-rhino-laryngology); Westminster Hospital Medical School, Mr. Walter H. Coldwell (radiology); London Hospital Medical College, Dr. Kenneth H. Tallerman (diseases of children—paediatrics); Middlesex Hospital Medical School, Mr. Arthur E. W. Idris (anaesthetics); London (R.F.H.) School of Medicine for Women, Miss Geraldine M. Barry (surgery); St. Mary's Hospital Medical School, Dr. Thomas C. Hunt (medicine).

The Ph.D. degree in hygiene in the Faculty of Medicine has been conferred upon Stephen L. Baker (Middlesex Hospital Medical School) for a thesis entitled "A study of the filterable sarcomas of the fowl."

The Vice-Chancellor has appointed the following additional examiners and associate examiners in obstetrics and gynaecology required for the M.B., B.S. examination in November: Examiners: D. W. Roy, J. D. Barris, and F. J. Browne. Associate Examiners: S. Dodd, W. Gilliatt, and F. Cook.

Presentation Day has been fixed for May 12th, 1932.

After the year 1932 Foundation Day will be celebrated on the Thursday preceding the fourth Monday in November.

The Brown Institution Lectures for 1931 on "The future of bacteriological research" will be delivered at the Royal College of Surgeons of England by Mr. F. W. Twort, superintendent of the Brown Institution, on December 2nd, 4th, 7th, 9th, and 11th, at 4 p.m.

Applications for appointment to the chair of medicine, tenable at St. Thomas's Hospital Medical School (salary £2,000 a year), should be received by the Academic Registrar by November 26th.

Applications for the Geoffrey E. Duveen travelling studentship in oto-rhino-laryngology, and for grants for promotion in research in the subject, should be sent on prescribed forms to the Academic Registrar by December 31st, 1931. The studentship, which is of the value of £450, is awarded annually, but its tenure may be extended. Grants may also be made from the trust fund of the benefaction for promotion of research in oto-rhino-laryngology. Full particulars can be obtained on application to the Academic Registrar at the University, South Kensington, S.W.7.

UNIVERSITY OF LIVERPOOL

Mitchell Banks Lecture

By invitation of the Council, Senate, and Faculty of Medicine Sir Robert Jones, Bt., lecturer in orthopaedic surgery in the University, will deliver the William Mitchell Banks Memorial Lecture, 1931, on "The problem of the stiff joint," on Thursday, November 19th, at 4 p.m. The lecture, which will be illustrated by lantern slides, will be given in the surgical theatre, the Medical School, and is open only to members of the medical profession.

UNIVERSITY OF GLASGOW

A graduation ceremony was held on November 7th, when Principal R. S. Rait presided and conferred the degrees. The honorary degree of Doctor of Laws was conferred on Dr. John Glaister, formerly professor of forensic medicine in the University.

The degree of M.D. was conferred on S. R. Leighton.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

A quarterly meeting of the College was held on November 3rd, when the President, Sir Norman Walker, was in the chair. Dr. T. D. Inch, O.B.E., M.C. (Gorebridge) and Dr. E. R. C. Walker (Aberdeen) were introduced, and took their seats as Fellows. Dr. J. D. A. Gray (Liverpool), Dr. J. G. McCrie (Edinburgh), and Dr. D. N. Nicholson (Edinburgh) were elected Fellows.

The Hill Pattison-Struthers Bursary in anatomy and physiology was awarded to Norman Macdonald, and the Wood Bursary to Alastair W. Wright.

A certificate of qualification to lecture was conferred upon Dr. Donald Stewart.

At an extraordinary meeting, held immediately after the quarterly meeting, it was decided to offer the Honorary Fellowship of the College to John Wheeler Dowden, President of the Royal College of Surgeons of Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

At the annual meeting of the Royal Faculty of Physicians and Surgeons of Glasgow the following office-bearers were elected for the ensuing year: President, Mr. R. Barclay Ness; Visitor, Dr. J. M. Munro Kerr; Honorary Treasurer, Mr. J. H. MacDonald; Honorary Librarian, Dr. E. H. L. Oliphant; Representative to the General Medical Council, Mr. G. H. Edington.

In demitting office the retiring president, Dr. John F. Fergus, gave a handsome donation to the Benevolent Fund of Faculty. He also took the opportunity of presenting to the Faculty a silver inkstand, a replica of that in the House of Commons. The stand has engraved upon it the arms of the Faculty and, on the obverse of the lid, an inscription "To the Faculty, Beloved and held in honour by Andrew Fergus, President, 1874-77 & 1883-1886, A. Freeland Fergus, President, 1918-1921, John F. Fergus, President, 1929-1931, from J. F. F. 1931."

Medico-Legal

CHARGE OF MANSLAUGHTER BY NEGLECT: ACQUITTAL OF MEDICAL MAN

At the Manx Sessions at Douglas, before Deemster Farrant and a jury, on October 30th and 31st and November 2nd, Dr. William John Dearden of Ramsey was tried on a charge of manslaughter by neglect of a patient, the wife of a labourer, who died during childbirth. The jury returned a verdict of "Not guilty." The case arose out of inquest proceedings.

The Crown prosecution alleged that Dr. Dearden had caused the woman's death owing to his neglect during her confinement, as, after visiting her when a difficult labour was beginning, he did not return, although sent for on several occasions. The woman was in labour for forty-four hours before her death. On the medical testimony brought forward by the prosecution it was shown that, when further medical help was called in, a shoulder presentation was discovered, and normal delivery could not take place. The Manx Attorney-General quoted authorities to show that, if left unassisted, an impacted shoulder meant very grave risk to the mother. He said that if a person of special knowledge, such as a doctor, did not take the ordinary precautions that should be taken, with the result that the person died, he must meet the consequences of the law. It was possible to be as criminal by doing nothing as by levelling a revolver at a person's head. Dr. Dearden had the responsibility of the normal duty expected of a doctor, and did nothing.

For the defence it was argued that Dr. Dearden did all that he could have done. He had visited the case on the day of the confinement, and had found everything progressing normally, though slowly. There was not the slightest evidence for an insinuation on the part of one of the witnesses—the mother of the deceased, herself a nurse—that he was not sober; he had had only one small whisky on the day in question. On that day he had attended several other urgent cases, and his movements were fully on record. He was awaiting a further summons to the case, but none came. On the following morning he was informed by a relative of the woman that two other doctors were in attendance, and so he concluded that his help was no longer needed. There was no evidence of malpresentation at the time he saw the patient.

Dr. Dearden, in evidence, said that he was engaged in April last to attend the confinement. On June 19th he was called to the patient in the early morning, when he found no sign of labour pains. He stayed at the house for an hour and a half, and returned later, and again stayed, by which time there were still no pains that could be called labour pains, and so he went on his round of visits, confident that everything was going on well. He returned later in the afternoon, and found no change in the patient's condition; she had not reached the second stage of labour, and the presentation was still normal. On arriving home late at night from a professional visit he again went to the house, but finding everything shut up and the lights lowered, and receiving no answer to his slight knock, he concluded that all was quiet, and went away. Neither he nor his family heard any bell that night. He was unable to understand how what was a normal presentation on the previous afternoon could have become a shoulder presentation early the next morning, though if the child was dead, as was the case, he thought there was more likelihood of such a change. He admitted in cross-examination that when asked to take on the case he was told that a previous confinement had been very difficult, and that the woman had been warned not to have any more children but he did not think it necessary to make an ante-natal examination; however desirable that might be, it was not done on the island. He had attended the patient some time previously for heart trouble, and had prescribed for her in the street; she was a very bad heart case.

After Dr. Dearden's evidence had concluded, although the defence announced that it had further evidence as to his sobriety and as to his movements on the critical day, the jury announced that they were satisfied on those points, so that no further evidence was necessary. Further medical evidence was also available on behalf of the defendant, but this was not tendered, and the case for the defence closed.

After concluding speeches, the Deemster, in summing up, quoted the opinion expressed by Lord Chief Justice Hewart in the Court of Criminal Appeal in 1925 (*Rex v. Bateman, British Medical Journal*, 1925, i, 1022), that no matter how many acts of negligence the jury might think a doctor had committed, the negligence must be of such a character as to be gross, or to show such disregard for the life and safety of others as to amount to a crime against the State. As to whether there was shoulder presentation in the afternoon, at the time Dr. Dearden last saw the deceased, no one could say except the mother, who had stated that she had made an examination then and had found a shoulder presentation, but that had not been stated in the previous proceedings. The defendant had to be judged, not by the elevated standard of a specialist, but by that of an ordinary skilled practitioner. If there was a shoulder presentation and the doctor went away without doing anything and did not come back, then there was a case of gross negligence, but if the doctor had come to the conclusion even though erroneously, that the woman was suffering from uterine inertia, and not malpresentation, then the evidence of negligence must be regarded as very remote. The difficult point the jury had to consider was whether it was necessary for the doctor at his last visit to have made a further examination so that the malpresentation might have been discovered. If there was any doubt about their conclusion they should give the defendant the benefit.

The jury, after an absence of half an hour, returned a verdict of "Not guilty." The Deemster, addressing Dr. Dearden, said: After a long and careful trial you have been discharged by a jury of your fellow countrymen. They have found you "Not guilty," and I have pleasure in congratulating you on the verdict.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

The King opened the new Parliament on November 10th. No health legislation was forecast in the Speech from the Throne. Joining in the debate on the Address in the House of Commons on the same day, Mr. Lansbury, as Leader of the Opposition, remarked that the Prolongation of Insurance Act would lapse at the end of 1931, and that if nothing were done many unemployed persons would lapse from National Health Insurance as well as forfeit pensions rights. He asked the Government to state its intention in the matter.

Mr. MacDonald said he hoped this part of the session would be short. The Expiring Laws Continuance Bill would have to be dealt with, and the question of the prolongation of insurance had not been overlooked. The Minister of Health had the matter in hand, and if a question was asked at the end of this week or the beginning of next week the House would be informed what the Government proposed to do.

The Parliamentary Medical Committee will be reconstituted at an early date.

Appointments announced on November 11th included that of Dr. Walter Elliot as Financial Secretary of the Treasury, a post he held before the General Election, and of Mr. Ernest Brown as Parliamentary Secretary to the Ministry of Health.

The Services

DEATHS IN THE SERVICES

Colonel Frederick James Greig, C.M.G., late R.A.M.C., died at Seaford, Sussex, on October 6th, aged 68. He was born in London on February 3rd, 1863, and was educated in the Medical School of the Royal College of Surgeons, Ireland, taking the L.R.C.S.I. in 1884 and the L.R.C.P.Ed. in 1885. Entering the Army as surgeon on August 1st, 1885, he became lieutenant-colonel after twenty years' service, and retired on August 26th, 1905. After retirement he was employed at Stirling, where he became senior surgeon of Stirling Royal Infirmary and honorary consulting surgeon to the Royal Victoria School, Dunblane, and also a J.P. for Stirling County. He served on the North-West Frontier of India in the Hazara campaign of 1891 (medal with clasp); in the Miranzai campaign of 1891 (clasp); and in the South African war in 1899-1900, when he took part in the relief of Kimberley, and in operations in Orange River Colony, including the actions at Paardeberg, Poplar Grove, and Driefontein, receiving the Queen's medal with three clasps. He rejoined for service in the war of 1914-18 on August 31st, 1914, was promoted to colonel on July 4th, 1915, and served as A.D.M.S. of the 36th Ulster Division, being mentioned in dispatches in the *London Gazette* of January 4th and May 29th, 1917, and receiving the C.M.G. in 1917. After the war he was employed as superintendent of the Ministry of Pensions Hospital at Newcastle-upon-Tyne. He married Isabella, daughter of the late James K. Morton, and leaves a widow and one daughter.

Colonel Frederick James Morgan, C.M.G., C.B.E., late R.A.M.C., died at Putney on September 30th, aged 69. He was born in London on June 21st, 1862, was educated at Westminster Hospital, and took the M.R.C.S. and L.R.C.P. Lond. in 1886. Entering the Army as surgeon on February 5th, 1887, when he passed first into Netley, he became lieutenant-colonel on May 12th, 1911, and colonel in the long war promotion list of March 1st, 1915, retiring on June 21st, 1919. He served in the South African war, 1900-2, when he took part in operations in Cape Colony; in the Orange Free State, including the actions at Paardeberg, Poplar Grove, Karee Siding, Vet River, and Zand River; and in the Transvaal, including actions at Johannesburg and Pretoria; was mentioned in dispatches in the *London Gazette* of April 16th, 1901, and received the Queen's medal with three clasps and the King's medal with two clasps. In the war of 1914-18 he served as an A.D.M.S., and subsequently as D.D.M.S., was mentioned in dispatches in the *London Gazette* of June 15th, 1916, January 4th, 1917, and May 25th, 1918, and received the C.M.G.

Medical News

The annual dinner of the Yorkshire Aberdeen Graduates' Association will be held at the Midland Hotel, Bradford, on Friday, November 20th. Lieut.-Colonel David Rorie, D.S.O., will be the chief guest. The honorary secretary, Dr. J. G. Thomson, 33, Vernon Road, Leeds, will be pleased to supply further information.

The eighty-sixth half-yearly dinner of the Aberdeen University Club, London, will be held at the Trocadero Restaurant at 7 for 7.30 p.m., on Thursday, November 26th, under the chairmanship of Mr. D. M. Cowan, M.A. (M.P. for the Scottish Universities). The secretary's address is 9, Addison Gardens, W.14.

Mr. H. Morriston Davies, F.R.C.S., will give a lecture on "Surgery in pulmonary tuberculosis" (with kodascope demonstration) at the next meeting of the North-Western Tuberculosis Society, to be held on Thursday, November 26th, in the anatomy theatre, Manchester Medical School. Medical practitioners are cordially invited to attend.

The tenth annual Benjamin Ward Richardson Memorial Lecture, before the Model Abattoir Society, will be given on Wednesday, November 25th, at 5 p.m., at 90, Buckingham Palace Road, S.W., by Mr. Hal Williams. The subject is "Disease and the public abattoir." Admission free, without tickets.

The next quarterly meeting of the Royal Medico-Psychological Association will be held on Tuesday, November 24th, at B.M.A. House, Tavistock Square, under the presidency of Dr. R. R. Leeper. The Maudsley Lecture by Sir Hubert Bond, entitled "Testimonied in his own Bringingsforth," will be delivered in the Great Hall at 3 p.m.

At a meeting of the British Institute of Radiology to be held at 32, Welbeck Street, W., on Thursday, November 19th, at 8.30 p.m., papers will be read by Dr. Ffrangcon Roberts on "Some criticisms of the international protection recommendations," and Dr. G. E. Vilvandre on "The radiology of gall-stones and the gall-bladder." On the following day, at 5.30 p.m., the use of the gastroscope will be demonstrated by Drs. David Levi and Courtney Gage.

At the next meeting of the Royal Microscopical Society, to be held on Wednesday, November 18th, at 5.30 p.m., in B.M.A. House, Tavistock Square, the following papers will be read and discussed: Mr. Conrad Beck, "The substage diaphragm and its functions"; Dr. A. A. Tarkhan, "The effects of fixatives and other reagents on cell-size and tissue-bulk."

As already announced, the annual meeting of Fellows and Members of the Royal College of Surgeons of England will be held at the College in Lincoln's Inn Fields on November 19th, at 3 p.m. A resolution suggesting the representation of Members on the College Council will be moved by Sir Ernest Graham-Little, M.P.

At a sessional meeting of the Royal Sanitary Institute, to be held at the Town Hall, Sheffield, on Friday, November 27th, Dr. H. J. Egerton Hutchins Williams will open a discussion on cerebro-spinal fever at 2.45 p.m.; and at 5.30 there will be a discussion on regional smoke abatement. On the morning of November 28th members will pay a visit to the Sheffield sewage disposal works.

The next monthly clinical meeting for medical practitioners will be given at the Hospital for Epilepsy and Paralysis, Maida Vale, W.9, on Thursday, November 26th, at 3 p.m., when Dr. W. G. Wyllie will demonstrate diplegia in childhood. Tea will be provided; it will be a convenience if those intending to be present will send a card to the secretary.

The Central Council for Health Education will hold its fourth annual conference in the lecture theatre of the London School of Hygiene and Tropical Medicine, Keppel Street, W.C., on Thursday, November 19th, from 11 a.m.

The Fellowship of Medicine and Post-Graduate Medical Association announces a whole-day course in diseases of the chest, from November 16th to 28th, at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park (fee £2 2s.). An afternoon course in venereal diseases will be held at the London Lock Hospital from November 16th to December 12th (fee £2 2s.). A whole-day course in proctology will be held at St. Mark's Hospital, City Road, from November 23rd to 28th (fee £3 3s.). Two courses will be held from November 30th to December 12th: in diseases of infants, at the Infants Hospital, Vincent Square, daily at 2 p.m. (fee £3 3s.); and in dermatology, at the Blackfriars Skin Hospital, every afternoon (fee £1 1s.). Free lectures will be given on Wednesdays at 4 p.m., at the Medical Society of London, 11, Chandos Street, Cavendish Square, as follows: November 18th, Dr. Isaac Jones on "Glycosuria"; November 25th, Sir Henry Gauvain, "Bone and joint tuberculosis"; December 2nd, Mr. Tudor Edwards, "Surgical chest diseases"; December 9th, Mr. Cecil Joll, "*Goitre, with special reference to thyrotoxicosis.*" Lectures for the M.R.C.P. examination will be given at the same place at 8.30 p.m. as follows: November 16th, Dr. Roodhouse Gloyne, "Clinical pathology of tuberculosis"; November 18th and 23rd, Dr. W. J. Adie, "Diseases of the nervous system," and at 10, Bedford Square, November 25th and 27th, Dr. Knyvett Gordon on "Anaemia" and "Leukaemia." Fee 10s. 6d. per lecture, payable at the lecture room. Copies of syllabuses of all courses, lectures, and demonstrations may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

According to a ministerial decree of October 22nd the following Italian universities have been chosen for conferring medical degrees: Bari, Cagliari, Catania, Milan, Modena, Naples, Perugia, Rome, Sienna, and Turin.

The October issue of the *American Journal of Surgery* is dedicated to Dr. Rudolf Matas of New Orleans, emeritus professor of surgery at Tulane University, on the occasion of his 71st birthday, and contains twenty-one essays by surgeons in the United States, Strasbourg, Rome, Paris, Barcelona, and Edinburgh.

The list of medical mayors elected on November 9th includes Alderman R. F. Bury (Leamington), re-elected; Dr. W. E. Llewellyn Davies (Llanidloes); Dr. T. R. Griffiths (Kidwelly); Dr. P. H. Seal (South Molton); Dr. J. W. A. Wilson (Wisbech).

After inviting applications from the medical staff of institutions under the London County Council's control, the Mental Hospitals Committee recommends the promotion of Dr. W. D. Nicol, at present deputy medical superintendent, to the medical superintendency of the Horton Mental Hospital, rendered vacant by the recent death of Dr. J. R. Lord.

The statistics of the notifiable diseases for the year 1929 in the various countries and large towns throughout the world have recently been published by the Health Section of the League of Nations. The tables are published, as in the previous two years, without accompanying text, as this is supplied in the monthly epidemiological reports issued by the League. It is noted that though the accuracy of notification is not the same in all countries, notification has recently improved in many.

The institute for the study and treatment of affections of the heart, erected at Bad Nauheim with a donation of 4,700,000 marks by Mrs. Louise E. Kerckhoff of Los Angeles, in memory of her late husband, was dedicated on October 17th. A "Kerckhoff Memorial Fund" of 2,000,000 marks has been provided, the interest of which is to be used for the granting of stipends for scientific research and education. The first of these stipends will be allocated in October, 1932.

Munich exceeded all other German towns in its consumption of milk in 1930; the daily consumption per head was 0.35 litre, as compared with 0.27 litre consumed by Berlin in 1928.

A new school for hygiene and public health is to be erected by the Rockefeller Foundation at Tokio.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Articulate Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medicava Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick street, Dublin (telegrams *Bacillus Dublin*; telephone 62350 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Naevus

"INQUIRER" writes: Would anyone with special knowledge answer the following queries about a V-shaped naevus on the forehead of a baby a few days old? It was present at birth, is only very slightly raised, and empties on pressure. (1) Prognosis? (2) Treatment recommended to produce least disfigurement? (3) When is correct time for treatment, and will any ill result from delay?

The First Child Welfare Consultation

Dr. J. C. G. DICKINSON (Braunton) writes: Perhaps one of your readers could give the reference to the date of the first child welfare consultation and the name of the patient; it was quoted recently in one of the medical journals, but I cannot now find it.

Anal Neuralgia

Dr. M. E. LYNCH (Newington Green) writes: If "Neuralgia" (November 7th, p. 877) will treat his patients as suggested by Colonel W. P. Macarthur in the *British Medical Journal* of August 22nd last, I am confident that he will find, as my patient has, that the "anal neuralgia" will go. My patient had suffered for years, for his sins, as he thought, and became resigned. The hot-water bottle gave relief. He got no better, but was satisfied when he was not getting worse. A pain so great suggested prostatic trouble, coccygeal trouble, perhaps it was cancer! But since using the saline injections for pruritus he has not had an attack of "anal neuralgia." When a husband and wife suffer similar pains, one is more than hopeful that the *Enterobius* may well be at the bottom of it, for the remedy is simple and to hand.

"SPASM" writes: The query of "Neuralgia" in your issue of November 7th interests me, as both my wife and myself, and my ten-year-old daughter, suffer from what he describes as "anal neuralgia," which occasionally awakens us in the night, but more usually comes on after defaecation. In my own case the pain appears to be localized at and at the level of the prostate, and gives the sensation of an intense cramp-like spasm of that organ, or possibly of one or other levator ani. It starts as a dull ache rapidly increasing to an almost intolerable pain in the rectum. After a few remissions and exacerbations, with possibly a feeling of moving from one side of the rectum to the other, it will die away. At its worst it is quite as intense as biliary colic, a sensation I know only too well. I have found heat good, but I think a small self-administered enema of very cold water stops the pain sooner than anything, especially if it is followed by absolute stillness in the recumbent position. I have searched the literature without avail for some mention of this complaint, and I have only had two patients complain of what I take to be the same thing. I do not think it is neuralgia, because it seldom lasts more

than half an hour, and if it were not that it seems to occur also in the female I would, from my own sensations, ascribe it to some sort of spasm in the prostate.

"C. G. E." writes: Both my father and myself have suffered from this complaint for many years. It occurs in nocturnal attacks, as in the cases quoted by "Neuralgia." I have always found immediate relief is given by the rectal injection of two drachms of glycerin. This is retained for a few moments and then evacuated. The injection is made by means of a small glass syringe.

? Cervical Adenomata

Dr. ARTHUR GREENE (Norwich) writes: With reference to "Cutis Vera's" question (October 31st, p. 831) I would suggest that possibly his patient is suffering from von Recklinghausen's disease.

Alopecia Areata

Dr. R. M. RUSSELL (Ash Vale, Surrey) writes in answer to "Area" (October 31st, p. 831), who inquired about the treatment of alopecia areata: A young man came to me with this trouble. He had small bare patches the size of a shilling, and I gave him the following to paint the patches with every day or two: acid. lact. ʒi or ʒii, ol. ricini ʒii, sp. vini ad ʒiv. In three months the hair grew, fair at first, and afterwards getting dark (he was dark). As his hair had been coming out all over the head this was treated with the follow fluid: thymol 40 grains, sp. vini rect. ʒii, The whole treatment was a complete success.

Income Tax

Change in Nature of Work

"Alpha" was employed as an indoor assistant up to July 31st, 1931. He then commenced practice on his own account, but the venture was a failure, and he has been doing locumtenent work in recent months. How should his liability for 1931-32 be calculated?

*** The definite break in his "employment" justifies—indeed requires—the previous year's basis to be discarded for 1931-32, and he is liable for that year on the amount of his earnings for the year to April 5th, 1932. He can set off his loss while in general practice under Section 34 of the Income Tax Act, 1918, but in calculating the amount of that loss he cannot deduct the capital outlay incurred in starting his temporary practice.

Assistant Receiving Maintenance

"B," an assistant, receives a salary of £500 plus maintenance. Is he liable on an amount estimated to include the value of the maintenance?

*** No, if the terms of the agreement for employment are as stated. But if the agreement were to provide, for instance, that "B" should receive £750 less a deduction of £250 so long as he was in receipt of "maintenance," then he would be liable on the £750.

Use of Car: Appointment

"H" is employed at a military hospital. To get to his work, a distance of four miles, he has to use a car. Can he claim any allowance for this expense?

*** The decided cases lay down the general rule that, while the travelling expenses incurred in carrying out the duties of an appointment are allowable, the expense of travelling from the place of residence to the place where the duties are performed is *not* allowable. [N.B.—This does not apply to profits of general practice assessable under Schedule D]

Obsolescence Allowance and Wear and Tear

"EQUITY" sold his practice as from January 31st, 1931, and is accordingly liable to a revision of the assessments for the year to April 5th, 1930, and the ten months to January 31st, 1931, to the actual profits of those periods. His accounts have usually been made up to July 31st. It has been agreed with the inspector of taxes that for the purpose of the revision of the assessments the earnings will be calculated from fresh accounts prepared for the actual periods. He replaced his car on March 29th, 1928, the obsolescence allowance being agreed at £57. What allowance does he now receive under that head, and how should the wear-and-tear allowance for 1930-31 be calculated?

*** Obsolescence allowances have to be treated as expenses of the year for which the taxpayer's account is prepared. As March 29th, 1928, is outside both the revision accounts "Equity" has no legal claim to that allowance. The wear-and-tear allowance, on the other hand, is in respect of the estimated loss by reason of wear and tear during the year of assessment. In 1930-31 the car was in use for ten months only, and, therefore, "Equity" is entitled only to ten-twelfths of what would be the proper allowance for twelve months.

Income of a Minor

"T. C." has a son to whom a sum of £250 was left when he was 4 years old. The original legacy and the accumulated interest are now represented by a holding of £300 4 per cent. Funding Loan—apparently standing in "T. C.'s" name as natural guardian. The inspector of taxes proposes to treat the interest as income of "T. C" unless evidence of the existence of a trust in favour of the son can be produced.

*** The appropriate evidence would be the probate of the will of the testator who bequeathed the £250 capital to the son. A copy of the relevant clause would show that that amount and the accumulated interest are in the *beneficial* ownership of the minor, and, therefore, that the investment, which is in the legal ownership of "T. C.," must be held by him, not for his own benefit, but as trustee for his son If "T. C." cannot obtain a copy of the clause—for example, by examining the original will at Somerset House—possibly he may still have some letters, etc., from the executors which the inspector can accept as evidence of the bequest.

LETTERS, NOTE

of the Royal Medico- be held on Tuesday, ouse, Tavistock Square, Leeper. The Maudsley cussion in the last two issues of th titled "Testimonied in on early circumcision, I heard to-d delivered in the Great cates and practises the circumcisio between the time of the delivery expression of the placenta. Surely ute of Radiology to be in the early performance of this ope Thursday, November ead by Dr. Ffrangcon

Dr. E. SUTHERLAND RAWLINGS writes the international pro- letter published last week under this G. E. Vilvandre on to be an error—namely, "Penile c he gall-bladder." On frequently in the circumcised than in se of the gastroscope This should have read vice versa: "Pe more frequently in the *non-circumcised* Levi and Courtney *cised*." I should be glad if you would which is of my own construction.

Measles in London

The secretary of the London Fever Hospital, Islington, N.1, writes: In view of the approach of an anticipated epidemic of measles it may perhaps be of interest to your readers to know that this hospital admits patients suffering from this disease, and that some 2,000 such cases have received treatment here during the past ten years.

Corrigenda

In our report published last week (p. 850) of Mr. Philip Hawe's paper on carcinoma of the breast, read before the Liverpool Medical Institution, the sentence commencing "Of 38 early cases" should read as follows: "Of 38 early cases, *excluding* 9 cases not traced, 29 patients were alive five to ten years after operation; of 74 late cases, *excluding* 10 cases not traced, 24 patients were alive five to ten years after operation."

In the *Epitome* for October 17th (para. 347) the dose of acetylcholine was erroneously given as 10 grams to 1 gram daily; it should have been 10 cg. to 1 gram daily. We are informed that Dr. Dainow recommends 10 to 20 cg. daily in spasms of the retinal or cerebral vessels; 40 cg. in arterial affections of the extremities; 1 gram in lead colics; 20 cg. in scleroderma; 10 cg. in varicose ulcer if the patient is confined to bed; and 20 cg. three or four times a week in ambulant cases of varicose ulcer.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 50, 51, 54, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 275.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

438 Enteric Fever in the Inoculated

J GADRAT (*Progrès Méd*, September 5th, 1931, p 1556), who records an illustrative case, states that the occurrence of enteric fever in the inoculated depends on three factors—namely, the environment, the date of inoculation, and the method by which it is performed. In the class of typhoid patients usually met with in hospital the number of those previously inoculated ranged from one-eighth to one-eleventh of the total. In the army, on the other hand, enteric fever in the inoculated is rare, except in war time, when fatigue and the consumption of contaminated water favour the opportunities of infection As regards the date of inoculation, the disease is liable to be contracted under two conditions: firstly, when the inoculation has been performed only a short time before, and secondly, when the interval has been too long. Lastly, the disease is much more likely to occur after ingestion than after subcutaneous injection of the vaccine. In the immense majority of cases enteric fever in the inoculated is attenuated, of short duration, and of good prognosis. Its occurrence can be explained by the non-development of an allergic state, and not by the failure of preventive inoculation. It is therefore advisable to test for the presence of an allergic state by the intradermal inoculation of typhoidin, which is a glycerinated filtrate of a typhoid culture; a positive reaction indicates that immunization had taken place. In cases in which the reaction is negative the inoculation should be continued until a positive result is obtained.

439 Amoebic Dysentery Carriers

R GRASSO (*Il Policlinico, Sez Prat*, September 28th, 1931, p 1425) examined the faeces of 60 patients in the medical clinic at Catania who were suffering from various diseases, mostly of a non alimentary character, and found including *amoeba histolytica* in 21 cases, or 35 per cent In the majority of cases (17) the vegetative forms only were found, and only four showed the cystic forms of the organism None of the amoeba carriers had ever suffered from any marked degree of intestinal disturbance Of the 21 patients, 15 had various affections of the respiratory tract, and ten of the latter were suffering from acute or chronic pulmonary suppuration Grasso also made collateral investigations among the families of three patients, and on examination of ten persons found that six were carriers of *Entamoeba histolytica*

440 Decompensated Portal Cirrhosis

Presenting an analysis of 112 cases of portal cirrhosis, in all of which ascites was present, and which were studied at the Mayo Clinic, C B CHAPMAN, A M SNELL, and L G. ROWNTREE (*Journ Amer Med Assoc*, July 25th, 1931, p 237) discuss this condition from various standpoints Snell deals with its clinical features, and gives in tabulated form the etiological factors, symptoms, and physical signs. Alcoholism was found to be the most common cause, and it was noted that practically all the known causes were preventable Ascites was the most prominent symptom, and there was definite evidence of decompensated portal circulation Gastro intestinal disturbances were marked, and abdominal pain and discomfort were frequent. The development of a collateral circulation was a most striking sign, especially in long-standing cases. The diagnosis is usually easy, but if it is doubtful, tests of the hepatic function with bromsulphalein are of value; the reactions are usually positive in portal cirrhosis with ascites The treatment outlined by Rowntree, Keith, and Barner (mercurial diuretics, ammonium salts, and a special diet) was given to 84 patients, 80 per cent. of whom showed some response Chapman points out that, though 84 of the 112 patients died within 16 months of the onset of ascites, the average duration of life of these, and of those still surviving, is longer than has been previously reported, and that the prognosis is more hopeful than is usually considered. From an analogy with compensated and decompensated cardiac disease and nephritis Rowntree believes that the treatment of portal cirrhosis should be instituted early, and be directed to the prevention of decompensation. His own method of treatment, and such surgical measures as omentopexy and the Eck fistula, are briefly discussed He adds that, if decompensation has occurred, the methods of treatment here suggested are the best possible

441 Toxaemia due to Spider Bite

J B BAYS (*Journ Med Assoc of South Africa*, August 22nd, 1931, p. 529) records a personal account of the results of a spider bite In his usual health he suddenly was attacked by complete anorexia and nausea, followed by a restless night and slight fever Next morning he noticed a small yellow mark with surrounding erythema on the dorsum of his right foot, this had been caused by the bite of a spider The redness and swelling, accompanied by considerable pain, rapidly spread up the calf of the leg to the knee, lymphangitis over the front of the thigh and swelling and tenderness of the femoral and inguinal glands ensued, accompanied by considerable constitutional disturbance. Numerous small bullae containing a pure culture of streptococci appeared on the calf; on the fifth day a profuse perspiration heralded a fall in temperature, and improvement in the general symptoms. Desquamation followed, and some swelling and tenderness were still present a month later Treatment consisted of the injection of manganese butyrate, with glycerin and ichthyol applications, and the administration of as much liquid as possible by the mouth

442 Acute Pulmonary Oedema in Measles

P. NOBÉCOURT and J LEREBOULLET (*Arch. de Méd. des Enf*, August, 1931, p 461), who record four illustrative cases in children aged from 4 to 7 years, one of which was fatal, states that pulmonary oedema—an unusual complication—most frequently appears at the height of the attack of measles The onset is always sudden, being characterized by intense dyspnoea, rapid respiration and pulse, increased resonance of the chest due to acute emphysema, weak breath sounds, and numerous fine subcrepitant rales. Under appropriate treatment recovery ensues, but may be delayed by the occurrence of otitis or broncho-pneumonia. Treatment consists in venesection or wet-cupping of the thorax and lumber region, hydrotherapy, the administration of cardiac tonics (of which ouabain in intravenous injections 1/8 or 1/4 mg for five or six days is best), and continuous inhalations of oxygen.

443 Prophylaxis against Rickets

A. G. DE SANCTIS and J. D CRAIG (*New York State Journ of Med*, September 15th, 1931, p 1133), in a preliminary report from the paediatric department of the New York post-graduate medical school and hospital, record that five groups of children were observed over a period soon after birth till the end of the first year of life All were given anti-rachitic treatment as follows Group 1 received three teaspoonfuls of a good brand of cod liver oil daily, Groups 2, 3, and 4 had ten drops daily of irradiated ergosterol, with vitamin D content of 100, 250, and 500 units respectively, while the children in Group 5 were given three tablets daily of a cod liver oil concentrate, approximately equivalent, in rat units, to the dosage in Group 1 The children were carefully watched for signs of rickets; cases showing doubtful signs, or "congenital beading" of the ribs, were excluded from the series. The principal

signs looked for were beading, craniotabes, grooving, and epiphyseal enlargement. It is stated that the dietary conditions, though varied in the whole number, may be considered as being similar in the various groups. It was found that in Group 1, 97 per cent. of children were completely protected from rickets; the other groups, in order, showed 77 per cent., 81.5 per cent., and 92.25 per cent. respectively, of protected cases. It is concluded that, although the anti-rachitic value of irradiated ergosterol increases according to its vitamin D content, this value is less than that of cod-liver oil containing a smaller amount of vitamin D units to the daily dose. The chief impression drawn from the observation is that the greater efficacy of cod-liver oil is due to the presence of vitamin A as well as D, and that in the present-day enthusiasm for concentrated and synthetic vitamin compounds, the merits of well-proved natural products should not be overlooked.

Surgery

444 Ureteral Strictures

W. MULVEHILL (*Amer. Journ. of Surg.*, August, 1931, p. 256) considers that urethral stricture is a more common disease than is sometimes recognized. Some cases show pathological signs of ulceration with little scar tissue; others present earlier stages of inflammation. Some cases show a full and complete scarring when the blockage is almost entirely due to the contraction of the scar, and only slightly to the active swelling resultant from the inflammation. Pathological end-results of ureteral stricture are ureteral and kidney stasis with infections above the stricture. Conditions which may be due to ureteral stricture are hydronephrosis, essential haematuria, pyonephrosis, pyelitis, urinary calculi, and some medical nephritides. The causative factors in most cases of stricture are the common pyogenic organisms such as *B. coli*, the staphylococcus, and the streptococcus. Hematogenous infection from the appendix, tonsils, teeth, or gall-bladder is responsible for the majority of cases. The most important symptom is a dull aching pain, which is not definite or intense in character, and may occur in the lower right or left quadrant of the abdomen, near the umbilicus or higher in the back. Backache, frequency of micturition, and menstrual pain are other symptoms which may be present. Treatment by dilatation of the strictured ureter is an effective method of dealing with the condition, and has proved completely successful in 50 per cent. of cases, giving relief for varying periods in a much higher percentage of cases. Dilatations may be repeated if necessary.

445 Removal of Tonsils by Diathermy

A. L. FORSTER (*Med. Journ. and Record*, September 16th, 1931, p. 290) advocates the use of diathermy in the extraction of tonsils. Specific indications for removal are: recurrent attacks of tonsillitis, chronic enlargement, fibrosis, and infection; diseases of the pharynx, trachea, and bronchi; enlargement of the cervical glands; laryngitis with attacks of hoarseness; diseases of the ear, nose, and accessory sinuses; suspected or incipient tuberculosis; arthritis, synovitis, and neuritis; gastro-intestinal derangements, general debility, and neurasthenia. The advantages of the diathermy method are that it is safe, clean, and effective; it does not necessitate hospitalization or loss of work for the patient. No general anaesthetic is required. The procedure is rendered painless by the application of cocaine to the throat, and it is seldom followed by more than trifling discomfort. There is no ss calculated, which is an obvious advantage in haemo- periods. He ose suffering from any condition in which obsolescence would be harmful. There is no danger of ance does he n any effective material is destroyed at the the wear-and-tear secondary infection is impossible, since

*** Obsolescence ng points, and there is no possibility penses of the year ctive matter into the lungs. Recur- prepared. As March consil never occurs when the proper technique is employed, since a sufficient number of applications for complete electro-coagulation can be made. There being no actual cauterization of tissue, no sloughing occurs, and there is no resulting mutilation of the throat. When the removal is performed in stages, four or five applications usually suffice, but both tonsils can be entirely removed at one sitting.

446 Diphtheria following Tonsillectomy

G. BISMUT (*Thèse de Paris*, 1931, No. 452) records eight cases in children, aged from 2 to 9 years, showing that diphtheria may take place a few days after removal of tonsils and adenoids when no preventive inoculation has been carried out. This occurrence is by no means rare, and the attack may be severe, partly owing to the difficulty of diagnosis, but mainly because of the rapid and early absorption of toxins by the operation wound. Children, therefore, should undergo preventive inoculation before being submitted to tonsillectomy and adenoidectomy. In the case of carriers a Schick test should be performed. If the reaction is negative the operation may be performed without any risk, but if it is positive, the child should undergo active or passive immunization.

447 Carcinoma in Osteomyelitis

That carcinoma may develop in old ulcers and sinuses has been known for many years, but has been little reported recently. E. B. BENEDICT (*Surg., Gynecol. and Obstet.*, July, 1931, p. 1) states that, though carcinoma is an extremely rare complication of osteomyelitis, only twelve cases having occurred in 2,400 of osteomyelitis at the Massachusetts General Hospital, the lesion is well defined, and important to recognize. In the twelve cases here recorded, the tibia was affected in eight, the foot in three, and the femur in one. Involvement of the jaw, humerus, or other scattered locations was not found. The complication is more common in males. In about half the cases, pain is a prominent symptom; not infrequently trauma has preceded the onset of the osteomyelitis. Usually surrounding the fistulous opening there is a cauliflower mass, easy of diagnosis; when the disease is deep-seated, its recognition is impossible until the osteomyelitic cavity has been explored and a biopsy performed, which should be done in all suspicious cases. Since the growth is ordinarily of the slowly developing epidermoid variety of low malignancy, and there is usually no metastasis in the groin, the prognosis is generally favourable. Treatment comprises prophylaxis, not permitting osteomyelitic sinuses to remain open indefinitely, and curative measures—namely, amputation in most cases.

448 Fat Embolism

B. M. VANCE (*Arch. of Surg.*, September, 1931, p. 426) describes fat embolism as a condition which occurs when a liquid oil enters the circulating blood, and is carried in globules large enough to obstruct the lumen of blood vessels in different parts of the body. There are two varieties of fat embolism: the pulmonary form in which the emboli obstruct the small blood vessels of the lungs, and produce symptoms of asphyxia; and the cerebral form in which the emboli enter the arterial circulation, block the arterioles in the organs, particularly in the brain, and produce symptoms referable to the central nervous system. The most general cause is some form of trauma, either to the adipose tissue or to the osseous system. In the latter case the trauma may be due to fractures, jarring of the skeleton, or orthopaedic operations. Trauma to the fatty viscera may also cause fat embolism. Most of the cases of fat embolism are either so slight that they do not cause symptoms, or so severe that death ensues in a few days from involvement of the lungs or brain. Fat embolism is therefore rarely diagnosed from clinical signs, and is most frequently discovered at the necropsy. There is no successful method of treatment; after the fat has entered the blood stream the result must be left to the natural defences of the body. The danger of the occurrence of fat embolism in the case of fractures can be lessened by the effective immobilization of the broken bones, which minimizes the passage of fat

into the venous circulation. In orthopaedic cases an Esmarch bandage may be used to obviate the transference from the operative site of an excessive amount of fat into the systemic veins. Severe fat embolism of the pulmonary type usually occurs in the first two days after the injury, and is referable to a marked obstruction of the arterioles and capillaries of the lung, with death from asphyxial symptoms. The emboli may pass through the pulmonary capillaries into the systemic circulation, and originate lesions in the brain, heart, and other organs. In this type of cerebral fat embolism death usually occurs in from two to seven days after the involvement of the nervous system.

449 Recovery from Generalized Streptococcal Infection

C. E. HAINES (*Journ. Amer. Med. Assoc.*, August 29th, 1931, p. 610) records a case, in a male infant aged 6 months, of peritonitis due to a haemolytic streptococcus and epididymitis secondary to streptococcal tonsillitis. Recovery followed laparotomy, but was delayed by the occurrence of purulent pleurisy which was treated by aspiration. Cultivation of the peritoneal and pleural pus showed the presence of *Streptococcus haemolyticus*.

Therapeutics

450 Treatment of Atophan Poisoning

K. EIMER (*Deut. med. Woch.*, September 25th, 1931, p. 1663) records the case of a man aged 52, who received large doses of atophan (118 grams in 41 days) on account of chronic rheumatism. During the treatment he became very ill; there followed severe jaundice, with tenderness and enlargement of the liver, and a rash which in places was definitely haemorrhagic. The urine contained bilirubin, and a trace of albumin, but no urobilin, tyrosine, or leucine. The faeces were pale, and contained no bile or hydrobilirubin. The coagulation time of the blood was somewhat increased (7 minutes), the bleeding time being normal. The van den Bergh test gave a positive direct reaction. During the period of serious illness the nitrogen excretion was very high (15 to 18 grams daily), denoting a marked breakdown of tissue proteins. As soon as the symptoms developed, atophan administration was discontinued, and 60 grams of dextrose and 20 units of insulin were given twice daily. Later on, duodenal lavage with magnesium sulphate solution was also instituted. The patient slowly recovered. The author mentions the serious outlook in these cases, as judged by the fatalities recorded. He believes that the energetic treatment used in this case was connected with the favourable result. The necessity for caution in the use of atophan, and particularly for frequent rest periods during treatment, because of the danger of accumulation, is also emphasized.

451 Pyrexial Treatment of Chorea

LUCY P. SUTTON (*Journ. Amer. Med. Assoc.*, August 1st, 1931, p. 299) records a case of the cure of chorea following accidental toxic pyrexia due to phenobarbital, prescribed as a sedative. A choreic boy aged 11 was speechless, helpless, and in constant violent movement. After eleven days the drug produced a generalized morbilliform eruption with moderate fever, but on one occasion the temperature rose to 106.4° F. After a few days the choreic movements diminished continuously, and in twenty-seven days the speech had become almost normal, the movements were only slight, and the boy gained strength rapidly. A week later he was free from all symptoms. He recovered from the drug intoxication without complications and remains well. Phenobarbital had been used previously in many cases of chorea with little benefit and without toxic symptoms, and it appeared that cure in this particular case was due to the fever. To solve this problem, daily intravenous injections of a mixed typhoid and paratyphoid vaccine were given to twenty-four choreic patients in a period of nearly two years, injections of malarial blood being considered too dangerous. The initial dose of vaccine was 0.2 or 0.25 c.cm. A sharp reaction followed; in one case the temperature was 107° F.; a smaller initial dose is therefore preferable. If the temperature rises to 105°–106° F., the same dose is repeated next day, and the third dose usually causes a feebler reaction. A dose of 2.5 c.cm. has been given in the later stages. Rigors commence about twenty minutes after the injection, with malaise and increased choreic movements. The temperature reaches its maximum in two to four hours, and falls to normal in six to eight hours. When the temperature rises to 105°, 5 grains of aspirin are given. Cyanosis occurs occasionally, but otherwise no ill-effects have been observed. The course of the chorea is a guide to the continuance of the treatment; pyrexia of one week's duration usually suffices. The average duration of choreic symptoms after vaccine treatment has been eight or nine days, whereas the average duration in 63 cases not so treated was forty-seven days. The author considers that this treatment has been more satisfactory than any other.

452 Calcium in Diphtheria

E. KAESPER (*Arch. f. Kinderheilk.*, September 11th, 1931, p. 205), in addition to the early injection of antitoxin, recommends the administration of calcium in laryngeal diphtheria, where it is specially indicated owing to its action on the oedema of the larynx. He also commends it in the treatment of severe cases of diphtheria, accompanied by the presence of extensive membrane, collateral oedema, and swelling of the regional cervical glands. The earlier the calcium is given, the better the effect. In the acute stage 5–10 c.cm. of the preparation of Sandoz was injected once or twice daily intramuscularly. After the acute symptoms had subsided, the calcium treatment was continued in the form of powders or tablets taken by the mouth. The action of the calcium is threefold; it dispels the oedema, is a cardiac tonic, and prevents or mitigates serum sickness.

453 Desiccated Whole-Hog Stomach in Anaemia

As the result of the administration of desiccated, defatted whole-hog stomach in fifteen patients, A. B. BROWER and W. M. SIMPSON (*Amer. Journ. Med. Sci.*, September, 1931, p. 319) conclude that this substance in adequate dosage is effective in producing a prompt and continued remission in cases of pernicious anaemia. A striking subjective improvement occurs in four or five days following the initial administration of the stomach powder; reticulocytosis reaches its peak in seven to nine days, after which the percentage of reticulocytes rapidly drops to the normal. Mild neurological symptoms, noted in eight patients, disappeared or were distinctly alleviated. The administration of dilute hydrochloric acid in association with the stomach powder is apparently unnecessary; stomach and liver therapy have eliminated the need for repeated transfusions. The optimum daily dose is 30 grams, and the daily maintenance dose is 10 grams. The powder may be given as a suspension in tomato (preferably) or any fruit juice. Occasionally patients may be found to respond more satisfactorily to stomach than to liver therapy. Subjects of advanced age may require larger doses than middle-aged ones. No aversion to the continued use of the desiccated stomach was noted, and the necessity of continuing treatment throughout the remainder of life must be impressed on the patient.

454 The Ketogenic Treatment of Epilepsy

C. BASTIBLE (*Irish Journ. Med. Sci.*, September, 1931, p. 506) reports a series of 29 cases of epilepsy, mostly of the grand mal type in adult females, which were treated for six months by the ketogenic diet, which is rich in fat, and poor in carbohydrate and protein. All these patients were so unmanageable as to be unfit to remain in their own homes. The typical daily diet was the equivalent of 2,128 calories; it included biscuits made from bran and "Carrigeen moss," an inexpensive seaweed found off the Irish shores, in order to enable the large amount of fat to be taken. In twenty cases there was a definite reduction in the number of fits, and complete cessation was induced in two by the end of the first

month. The addition of acid salts to the diet during the last two months, combined with some restriction of the fluid intake, seemed to have a definitely beneficial effect in still further reducing the number of seizures. In four cases presenting evidence of organic degeneration of the brain there was a substantially increased incidence of fits while the patients were on treatment. In several instances there were ketonuric interruptions, and a definite increase in the number of epileptic fits was noticeable when ketones were absent from the urine. Bastible considers that these results indicate that the ketogenic treatment, which is admittedly valuable in the epilepsy of childhood, is well worth more extended trial in the adult types of the disease, especially since all the other therapeutic measures are ineffective, and often cause definite organic degenerative changes to occur or increase. He adds that the diet should be continued for twelve months, even though the seizures have been controlled. The gradual return to a normal diet is made by first decreasing slightly the fat and increasing the protein, and then by still further diminishing the fat intake and adding a little carbohydrate in place of the saccharine previously employed. Epileptic patients should in any case avoid excessive amounts of carbohydrate, and keep their diet near the borderline of ketosis.

Radiology

455 Specification of X-Ray Quality

R. B. WILSEY (*Radiology*, October, 1931, p. 700) cites reasons for considering that tube voltage, the penetrometer scale reading, half value layer, effective or average wave-length, and the absorption coefficient, though all useful in themselves, are each inadequate as a general specification of quality of *x* rays. Thus the same effective wave-length, or absorption coefficient, can be produced by a wide range of combinations of tube voltage and filtration, but the corresponding radiations are not equivalent in their absorption and photographic effects. A homogeneity coefficient, derived from absorption data, can be used in addition to the absorption coefficient to define radiation quality more completely, but its determination is rather involved for routine purposes. Wilsey describes how the absorption curve (log I or I/Io, plotted against filter thickness) can be employed as a general specification of *x*-ray quality, being uniquely related to the spectral distribution of *x*-ray intensity, and discriminating more accurately than other methods of quality specification between different qualities of *x* rays. It distinguishes radiations having appreciably different degrees of absorption in tissues, and probably is sufficiently precise for quality variations differing measurably in biological or photographical effects. It is a simple form of expression, avoiding complicated calculations, and the principal characteristics of the radiation can be readily interpreted by inspecting the curve. Other methods of *x*-ray quality specification—such as half value layer, absorption coefficient, or effective wave-length, and homogeneity coefficient—can be derived from the absorption curve, and further research will probably indicate how additional information of value can be obtained from it.

456 Radiographical Diagnosis of the Pyelonephritis of Pregnancy

R. MAHON and R. GUICHARD (*Journ. de Méd. de Bordeaux*, September 20th–30th, 1931, p. 795) believe that a series of radiographs taken after the intravenous injection of urosclectan constitutes the method of election for exploring the urinary apparatus during pregnancy. It has the great advantage of revealing the exact anatomical and of the urinary passages without any artificial dilatation. The technique is simple; 70 to 100 c.cm. of urosclectan (30 grams of the salt dissolved in 70 grams of water) is injected intravenously into the patient lying on the *x*-ray table. Radiographs are obtained after a quarter of an hour, half an hour, one hour, and one and a half hours, respectively. Very little inconvenience is caused, and painful uterine contractions have never been observed in women near term. Results obtained from the comparison of normal pregnant women with those suffering from pyelitis showed that certain anatomical and functional modifications of the kidney pelvis and ureter occur in normal women; these may be dilatation, atony, or stasis. They are invariably more marked on the right side, and it is suggested that a foetal shoulder may be the cause of the compression. Such lesions would naturally favour the localization and development of bacillary infections, and therefore an examination with urosclectan does not eliminate the need for the usual bacteriological investigations.

457 X-Ray Treatment of Graves's Disease

O. SANDSTRÖM (*Nordisk Medicinsk Tidskrift*, May 23rd, 1931, p. 330) reviews the activities of Professor Forssell's institute, "Radiumhemmet," in Stockholm, with special reference to the 117 cases of Graves's disease admitted in the period 1918–28. Adequate after-histories were obtained in 92 of these cases; 43 patients completely recovered and became fit for work, while in 19 fitness for work with considerable improvement of health was achieved. There were 9 cases in which considerable improvement was effected without full capacity for work being restored. Twelve patients were neither better nor worse, and 7 had relapsed after considerable improvement had been effected. Two of the patients had died. *X*-ray treatment soon induces a subjective sense of improvement, but three or four months usually pass before definite objective improvement is demonstrable; the patients who recover completely usually take a year or two to lose all their symptoms. *X*-ray treatment does not, as has been suggested, spoil the chances of subsequent operative treatment by provoking adhesions; and provided that time is allowed for the hyperaemia of *x*-ray treatment to pass off, the surgeon will not be inconvenienced by it. The treatment occasionally increases the basal metabolism at the beginning, but the author has seen no case of prolonged disturbances of the metabolism traceable to this treatment. With regard to the comparative merits of *x*-ray and operative treatment, the field for the former would seem to be represented primarily by slight cases, and by those moderately severe cases in which it is possible for the patient to afford a treatment which takes long to be effective. Suitable for *x*-ray treatment are also most of the severe cases in which, for some reason or other, an operation is contraindicated. Some of these cases may be rendered operable by a preliminary course of *x*-ray treatment. The patient who refuses operation, or for whom other forms of treatment have failed, may also be recommended *x*-ray treatment.

Obstetrics and Gynaecology

458 Etiology of Endometrial Hyperplasia

The exact etiology of idiopathic uterine bleeding has not been determined, although a hypothesis of deficiency of the corpus luteum, first proposed by Schroeder, has been advanced. J. C. BURCH, W. L. WILLIAMS, and R. S. CUNNINGHAM (*Surg., Gynecol. and Obstet.*, September, 1931, p. 338) present an experimental analysis in which curetted material from 28 cases of prolonged uterine bleeding, and from patients with normal menstrual histories, was histologically examined; the effects produced by extracts of placenta and corpus luteum in spayed mice were also studied. The outstanding facts which correlate the menstrual cycle of the human with the oestrual cycle of experimental animals are briefly reviewed. The results of this study indicate that each of the oestrin and corpus luteum hormones exerts a definite characteristic action on the endometrium. The histology of the endometrium in Swiss cheese hyperplasia closely resembles that found in animals injected with placental extracts. This hyperplasia is due to an excess of oestrin acting on the endometrium, and bleeding takes place without the formation

of a corpus luteum. The failure to ovulate is probably an important factor in the disease, closely connected with the hypophyseal function. Extracts of corpus luteum might benefit this condition. In cases with mixed effects, it is possible to determine histologically which is predominant. Material from the follicular cysts of human cases of hyperplasia produced oestrus in mice and rats; the uterine changes in each case were very similar to those found in the animals.

459 Detection of Early Cervical Cancer

HAMANT and KOENIG (*Gynécol. et Obstét.*, September, 1931, p. 299) review the social methods which can be adopted in order to discover cancer of the cervix in its early stages. The perfecting of surgical technique and treatment by radium and *x* rays permit a high percentage of cures, but unfortunately, some 50 per cent. of women do not seek advice until the lesion is already well advanced. Analysis of the causes of delay between the appearance of the initial symptoms and the diagnosis and treatment shows that patients postpone obtaining advice from ignorance or fear; medical practitioners too often make an insufficient examination; and midwives, through ignorance, perform illegal operations, causing trauma, and give unwise reassurances. Emphasis is laid on the importance of the complete vaginal examination with speculum; if there is the least suspicion about the presence of malignancy, tissue should be removed for histological examination. A purely symptomatic anodyne should never be given in doubtful cases, or without complete examination. Midwives should be instructed in the schools, and in special courses, with regard to the danger of giving gynaecological advice, and it is added that the same applies to chemists. Periodical examinations of women would reveal some early cases of uterine cancer, and might well be systematized. Special watch should be kept in cases of abortion; metritis should be treated. The authors describe a scheme of co-ordinating existing gynaecological and cancer clinics with public health institutions and special preventive centres. They add that more needs to be done to suppress charlatanism and promote education of the public in the prophylaxis of malignant disease.

460 Clinical Features of Pelvic Endometriosis

T. CUZZA (*Riv. d'Ostet. e Ginecol. Prat.*, August, 1931, p. 328), while conceding that no sign or symptom is pathognomonic of intrapelvic endometriosis, holds that a pre-operative diagnosis is sometimes possible. The most constant symptom is dysmenorrhoea, experienced secondarily in adult life. It is very severe, and very resistant to treatment, and is sometimes accompanied by vomiting or rectal or vesical tenesmus. With cessation of the flow, the pain, which has not diminished previously, vanishes abruptly. A moderate degree of menorrhagia is usual, and married patients report dyspareunia. The uterus is somewhat enlarged and has a highly characteristic soft, elastic consistence; it may be retroflexed and may contain one or more myomata. When the ovaries are the site of endometriosis they are found to be moderately enlarged, fixed, and tender. The pelvic connective tissue, especially in the pouch of Douglas, is rigid, although nothing in the history or present signs points to pelvic inflammation.

461 Tuberculosis of the Genitals

B. WALLER (*Zentralbl. f. Gynäk.*, July 18th, 1931, p. 2215), who records a personal case, states that, according to the findings in the Anatomical Institute at Brünn, at least 2 per cent. of all diseases of the female genitals are caused by tuberculosis. The rarest form is isolated ovarian tuberculosis. As a rule all parts of the internal organs are affected, the tubes being most frequently involved. The cervix is very rarely attacked, since the mucous membrane is more resistant, and the os internum offers an obstruction to the extension of the process. According to Krönig the uterus alone is affected in 11 per cent. As regards age, the disease may occur at any period, but is commonest at puberty. Infection of the female genitals may be explained in three ways: (1) haematogenous and lymphogenous infection, which accounts for the majority of cases; (2) direct and continuous spread of the infection from the peritoneum and urinary system; and (3) cryptogenic infection. In such cases tubercle bacilli are introduced by the semen, or by injuries to the vagina. Waller's patient was a woman, aged 47, who was sterile although she had been married for 25 years; she was suffering from metrorrhagia. Curettings of the uterine mucosa contained necrotic tissue and typical Langhans's giant cells. Laparotomy revealed advanced tuberculosis of both Fallopian tubes; these were removed, together with the uterus, which showed signs of specific endometritis. The patient made a good recovery, and had gained 6 kilos in weight when seen three months after the operation.

462 Thyrotoxicosis Complicated by Pregnancy

Discussing thyrotoxicosis complicated by pregnancy, A. J. FLEISCHER (*Amer. Journ. Obstet. and Gynecol.*, August, 1931, p. 273) states that this form of hyperthyroidism may be entirely secondary to the pregnancy, or a latent case of the disease may be suddenly activated by the growth of the foetus. A case is reported in which the patient, a 2-para, dated back her history of thyroid disease to the commencement of puberty. This thyroid syndrome, which was at first very mild, became alarmingly intensified during the first pregnancy. It recurred during the second one, and, owing to the progression of unfavourable symptoms, pregnancy was terminated at 8½ months by laparotrachelotomy. The opinions of Beck and Seitz on this condition are cited. Fleischer deems the following as essential in the ante-partum care of pregnant women suffering from Graves's disease: absolute rest, sedatives being given if necessary; improvement of the hygienic conditions; and dietetic correction, proteins being excluded as much as possible. Where labour is spontaneous, shortening of the second stage by forceps is advised. Where it becomes necessary to terminate pregnancy as an emergency measure, the best procedure is laparotrachelotomy under spinal anaesthesia, preceded by morphine and scopolamine. Cases of hyperthyroidism so severe as to require emergency measures should also be sterilized.

463 Squamous Epithelium and Mucous Cervical Polypi

G. MOGLIA (*Ann. Ostet. e Ginecol.*, June 30th, 1931, p. 681), from examination of seventy-two mucous polypi of the cervical canal, concludes that metaplasia is a causative factor that plays a considerable part in epidermatization of the surface, which was present in fifty cases. This metaplasia begins in those cells of the cylindrical epithelium (of the surface or of the glands) which are just within the basement membrane. The squamous epithelium, thus formed, is found in multiple unconnected islets from which mitoses are absent. Metaplasia may extend along the cervical canal, so that after the removal of a polypus it is prudent to scrape its site of insertion, and the endocervical mucous membrane.

464 Limitations of X-Ray Therapy in Pelvic Tumours

J. C. BLOCH and BROSIO (*Bull. Soc. Obstét. et Gynécol. de Paris*, July, 1931, p. 517) describe a case which illustrates the histological changes which may be produced in an ovarian cyst by exposure to *x* rays. The patient, aged 60, had suffered from menorrhagia for six years. Brosio found a voluminous pelvic tumour, which he diagnosed as a fibroma, and advised operation. The patient refused consent, and a radiologist gave her a course of radiotherapy. At the end of four months the haemorrhage had completely ceased, but other troubles continued and increased. The patient was obese, had varicose veins, and suffered from alternate dysuria and polyuria with chronic fatigue. A year later Brosio found that the tumour had increased in size and was now fixed. Bloch performed a supravaginal hysterectomy, and the patient made a good recovery, except for some trouble from vascularization of the skin round the scar, attributable to the *x* rays. The tumour proved to be a bilateral ovarian cyst, particularly noteworthy because of superficial vegetations which partly covered the cyst on the

right side. Histological examination showed that these vegetations appeared benign, but their presence necessitated a guarded prognosis. Bloch suggests that they were caused by the *x*-ray treatment, and concludes that, when there is any doubt in the surgeon's mind whether a fibroma or cyst is present, an operation should be advised ; *x*-ray treatment should not be offered as an alternative. Radiotherapy in such a case is at least a risk, and serves no good end. In addition, a train of disorders, such as adhesions, cutaneous troubles, and vegetations, may be produced. *X* rays should only be used when the diagnosis of fibroma is precise and certain.

Pathology

465 Mode of Action of Anti-tetanic Serum

Though the prophylaxis of tetanus is sufficiently assured by subcutaneous injections of anti-tetanic serum, the curative efficacy of this method of administration is not unanimously accepted. S. Muetermilch and Mlle. E. Salamon (*Ann. de l'Inst. Pasteur*, September, 1931, p. 277) relate a series of experiments on rabbits which prove that meningeal injections (intracerebral or subarachnoid) are far superior to those made by the subcutaneous and intravenous routes. This method, first advocated by Roux and Borrel, not only causes a local production of specific antibodies, but also ensures their appearance in the blood in larger amounts than by other measures. These meningeal injections are well tolerated. The addition of tetanic anatoxin to the serum is most beneficial ; it produces an immediate neutralization of the toxin by the antitoxin, and a rapid active immunization of the organism. According to Dufour the injections are more active when given under chloroform anaesthesia. The mechanism of the favourable action of meningeal injections is discussed, three hypotheses being enumerated as regards the possible site of neutralization of the toxin ; it may be effected in the subarachnoid space, the peripheral nerves, or in the cells of the central nervous system. The authors believe the last-named to be the site, and state that antitoxin, inoculated meningeally, acts in two ways: it is fixed immediately by the nerve cells and destroys the toxin *in situ*, and, being resorbed into the general circulation, it neutralizes the toxin fraction present in the blood.

466 The Transmission of Typhus Fever

R. E. Dyer *et al.* (*United States Public Health Reports*, August 7th, 1931, p. 1869) describe an investigation designed to throw further light on the intimate association of the spread of typhus fever with the rat flea, *Xenopsylla cheopis*, the importance of which in this respect was clearly indicated by a systematic examination of wild rats trapped in Baltimore at typhus fever centres. White rats injected with endemic typhus virus were brought into contact with fleas of this species ; about two weeks later six fleas were removed from the cage, emulsified in normal saline, and injected into two guinea-pigs. One guinea-pig developed clinically endemic typhus, and this strain was continued in guinea-pigs and rabbits for three generations. Similar experiments were then made with other rats and rabbits ; guinea-pigs were successfully inoculated and developed typhus fever. The blood and organs in all cases were examined, and the specific agglutinins were always found to be present. Guinea-pigs which had recovered from an infection with an established strain of endemic typhus virus originally derived from a human case, and also guinea-pigs which had survived infection with endemic typhus virus isolated from rat fleas caught at typhus centres, were found to be immune to subsequent inoculations with the strains of virus recovered from infected fleas, and also to other strains obtained from rats. Careful repeated search of the cages and rats failed to show the presence of any blood-sucking parasite other than *Xenopsylla cheopis*.

467 Two Forms of the Diphtheria Bacillus

J. S. Anderson, F. C. Happold, J. W. McLeod, and J. G. Thomson (*Journ. Path. and Bact.*, September, 1931, p. 667), working at Leeds, describe the existence of two forms of diphtheria bacillus. The one variant, which they call *gravis*, grows with granular deposit and pellicle in broth, has a flattened lustreless colony of irregular outline, and actively ferments dextrin, starch, and glycogen ; it is associated with severe toxic cases of the disease. The other, which they call *mitis*, grows with uniform turbidity in broth, has a convex, partly translucent, glistening colony, ferments dextrin inconstantly, and has no action on starch or glycogen ; it is associated with milder cases of the disease. A small proportion of intermediate forms with constant characteristics have been encountered. The differentiation of the two main forms is most easily accomplished on a special chocolate agar medium containing potassium tellurite, and made up with beef infusion that has been sterilized by filtration instead of by heat. In an examination of 104 cases of diphtheria, 63 were found to be due to the *gravis*, 35 to the *mitis*, and 6 to the intermediate type. It is significant that all the 11 fatal cases were associated with the *gravis* type, and that 14 out of the 17 cases showing paralysis were due to this type, the remaining three being due to the intermediate type. As regards virulence, *gravis* strains were almost invariably endowed with some degree of virulence, while *mitis* strains were not infrequently avirulent to guinea-pigs.

468 The Gonadotropic Hormones

The well-known divergent effects following injections of various extracts of the anterior pituitary lobe, placenta, and pregnancy urine have been ascribed to the presence of two hormonic factors, ρ_1 and ρ_2. It has been assumed that they occur in varying proportions, and that both their relative concentration and their absolute quantity are concerned in determining the sequel ; ρ_1 is considered to be responsible for the first phase of ovarian secretion. B. P. Wiesner and P. G. Marshall (*Quart. Journ. Exper. Physiol.*, August 12th, 1931, p. 147) discuss the properties and effects of the ρ factors, or gonadotropic hormones, and describe two methods (by phosphotungstic acid and alcohol precipitation) of preparing potent extracts containing them from the urine during pregnancy, and also from the anterior pituitary lobe and human placenta. It was found that prolonged injections of small quantities, or fewer injections of large quantities, of ρ factors inhibited the oestrous cycle in mature mice, while small quantities actually induced premature oestrus in immature animals. A theory is advanced to account for these phenomena, and various chemical properties, in accordance with the observations of other workers, are recorded. A comparison is suggested in this respect between them and the polypeptides. These factors are not destroyed by pepsin, but they are inactivated by trypsin.

469 Red Cell Sedimentation Rate in Gonorrhoea

E. Kiene and E. Hammerschmidt (*Wien. klin. Woch.*, August 7th, 1931, p. 1023), using the method and apparatus of Westergren, have studied the red cell sedimentation rate in 300 different gonorrhoeal patients who were classified in 5 groups: (1) slight chronic or abortive cases ; (2) gonorrhoea without deep tissue inflammation ; (3) cases complicated with lymphangitis and epididymitis ; (4) patients with gonorrhoeal arthritis ; (5) cases with gonorrhoeal myocarditis. It was found that, after excluding other diseases, the acceleration of the sedimentation rate in cases of gonorrhoea is proportional to the severity of the case ; in abortive or chronic cases with only slight inflammatory symptoms there is no acceleration of the sedimentation rate. During convalescence the raised sedimentation rate returns to the normal value, though it is always possible for an acute infection to become chronic, or the patient to be a gonorrhoea carrier. The sedimentation reaction precedes the clinical determination of inflammatory processes, and serves as a therapeutic guide.

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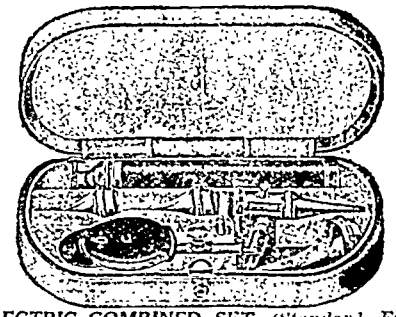
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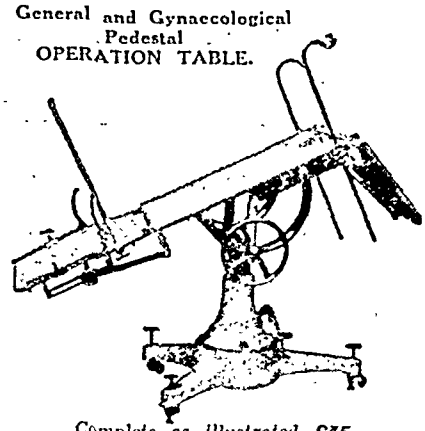
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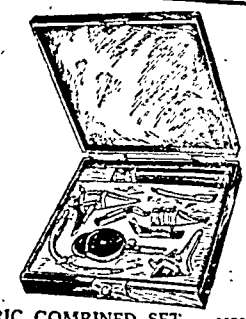


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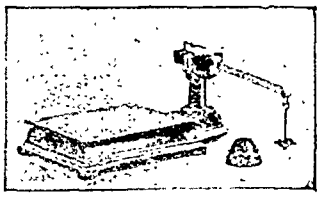
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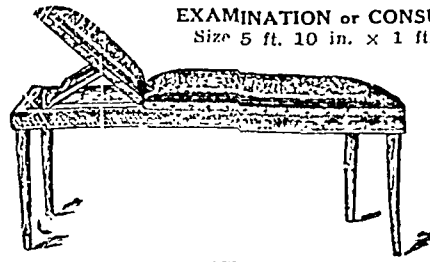


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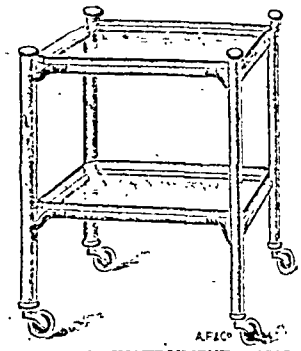
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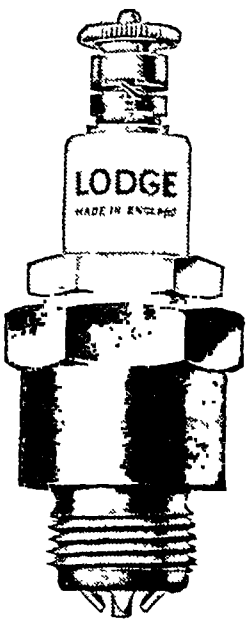


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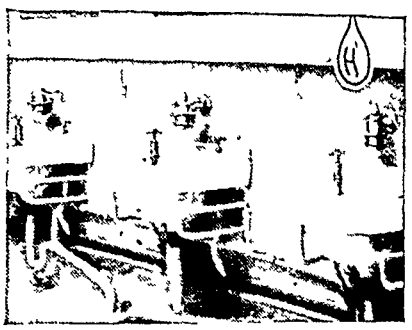
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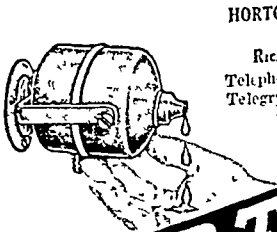
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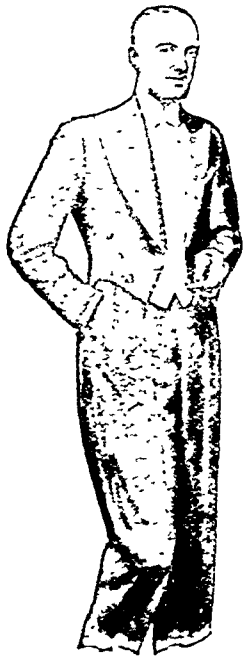
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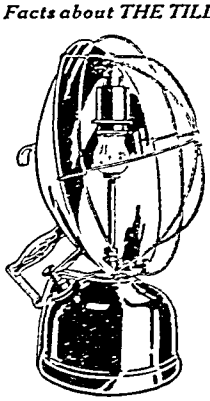
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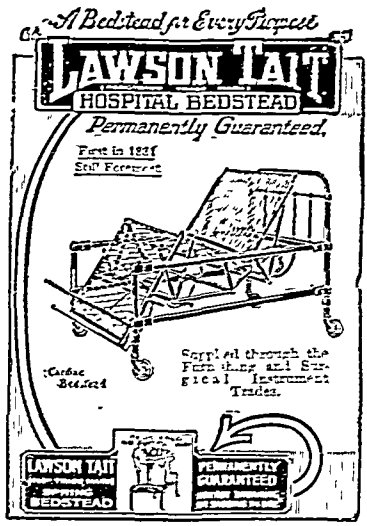
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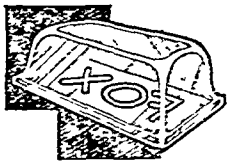
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FOR MENTAL DISORDERS,

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FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL.

The seaside house of St Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales On the North West side of the Estate a mile of sea coast forms the boundary Patients may visit this branch for a short seaside change or for longer periods The Hospital has its own private bathing house on the seashore There is trout fishing in the park

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

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FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An Approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X Ray, and Ultra-violet Light Diathermy and Foam Baths Billiards, tennis, etc. Fees from five gns per week.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self supported by its own farm and gardens, in which patients are encouraged to occupy themselves Every facility for indoor and outdoor recreation For terms prospectus, etc, apply MEDICAL SUPERINTENDENT.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel: 64117. *For terms, etc, apply to the Medical Superintendent*

The MAUDSLEY HOSPITAL

DENMARK HILL, S.E.5.

Telephone: RODNEY 4841–2

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER Voluntary patients ONLY RECEIVED.

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the Hospital Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

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Fees from 10 guineas per week.

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Medical Men having cases presenting any of those numerous states of ill health and disability now more generally recognised as often primarily due to minor psychoses and neuroses and in need of investigation with view to decide on the treatment best likely to promote recovery and to prevent further mental deterioration, are invited to apply for particulars below, where for some years past a number of such cases, in both sexes, have been successfully dealt with

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital

For particulars as to terms, etc, apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.

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Littleton Hall, Brentwood, Essex.

HOME for Large grounds, 400 ft above sea ladies Mentally afflicted. Voluntary Boarders received. Station: Brentwood and Shenfield 1 mile. Liverp'l St 25 min.—Apply, Dr HAYES.

RUTHIN CASTLE, NORTH WALES

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In view of the present economic position, the inclusive fees at Ruthin Castle, formerly from 17 guineas a week, have been reduced to from 15 guineas a week, beginning on October 19th, 1931.

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Address.—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 65

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FUNCTIONAL NERVOUS DISORDERS

Private Rooms, Broad Verandahs, Electrotherapy and Hydrotherapy, X-ray and Dental departments, Laboratories for investigation and research. For terms and particulars apply to the Physician in charge at the Hospital. Telephone: Tudor 4211.

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Telegrams "SUBSIDIARY, LONDON" *Telephone*: NORTH 0888

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites Voluntary Patients and Temporary Patients received without certification
Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the Medical Superintendent.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." **Telephone: Rodney 4741—4742.**

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas Chapel. Garden and dairy produce from own farm Terms very moderate

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

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This Registered Hospital for MENTAL DISEASES with the seaside branch Glan y Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 2231 GATLEY.

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This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders including Post Encephalitic conditions in adults. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent

DR MARY R. BARRAS, M.D., D.P.M.

FUNCTIONAL NERVOUS DISORDERS.

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RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent*

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The treatment is the outcome of many years' experience, and besides removing all craving for drink and drugs, it has a tonic action on the system, and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—
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THE HARE NURSING HOME.

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of the Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders.

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Fees 5—10 guineas. Ample amusements. 25 bedrooms. Annexe for mild cases. Quiet and pleasant situation.

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'Phone: Chislehurst 451. *Telegrams*: "Masters," Chislehurst.

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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2234.) Apply, J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8430.

BOREATTON PARK,

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres. Voluntary Boarders accepted.

Apply for particulars to Dr. SANKEY.

NORMANSFIELD

For Mental Defectives of all ages.

Under private management.

Apply to Dr. Langdon-Down,

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BROOKE HOUSE,

CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S. 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

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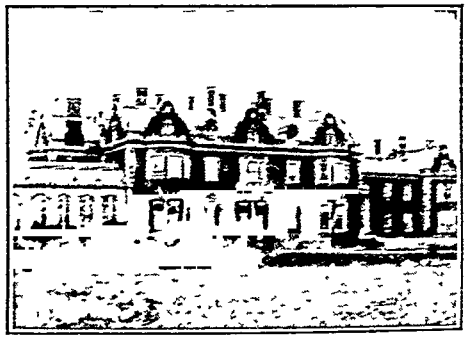
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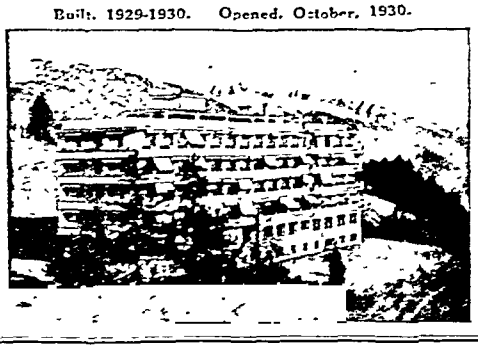
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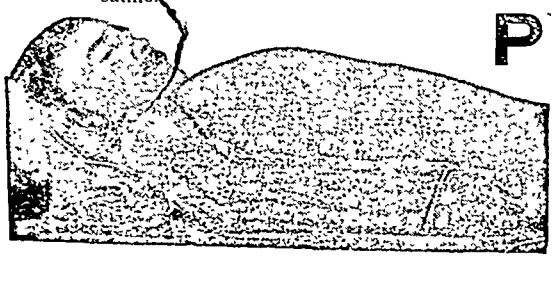
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Particulars and application forms obtainable from the Registrar, 118, Great Victoria St.,

J

COUNCIL, NORTHERN IRELAND.

EXAMINERS FOR MIDWIVES.

The above Council being about to revise their list of Examiners, invite applications from registered Medical Practitioners, including women, who would be willing to act.

Preference will be given to applicants resident within reasonable distance of Belfast.

Particulars on application to the Registrar, 118, Great Victoria Street, Belfast, to whom should be sent not later than

U ollege of South

WALES AND MONMOUTHSHIRE.

COLEG PRIFATHROFAOL DEHEUDIR CYMRU A MYNWY.

Applications are invited for the appointment of FULL TIME LECTURER & DEMONSTRATOR in ANATOMY.

The salary will be £500.

Further particulars may be obtained from the undersigned, by whom three copies of application must be received on or before Nov. 28th.

University College, Cardiff. D. J. A. BROWN, Registrar.

M.D. THESIS.

Advice and legitimate assistance by an expert in preparation of Theses. Also postal tuition for M.R.C.P. London and similar examinations.

T

CHILDREN, Shadwell, E.1.

There will be a DEMONSTRATION OF CLINICAL CASES on Wednesday, November 18th, at 3.30 p.m., to which you are cordially invited. Tea at 5 p.m.

St. Mary's Hospital, Institute OF PATHOLOGY AND RESEARCH.

Principal: Sir ALMROTH E. WRIGHT.

Applications are invited from qualified Medical Practitioners for a RESEARCH STUDENTSHIP. This will be tenable for six months, and may be renewed for a second period of six months.

The Institute comprises the following departments: Anatomy and Embryology, Physiology, Pathology, Chemical Pathology, Clinical Bacteriology, Systematic Bacteriology, and Immunology.

The student, who will receive an honorarium at the rate of £200 per annum, may elect to carry out his researches in any one of the departments, and would be required to work under the direction of the head of the department concerned.

Preference will be given to old St. Mary's Students.

For further particulars apply to the Secretary, Institute of Pathology and Research, St. Mary's Hospital, Paddington, W.2, to whom applications must be sent not later than Monday, November 23rd.

The University of Sheffield.

The University invites applications for the CHAIR OF PATHOLOGY, which has become vacant owing to the death of Professor J. S. DOUGLAS. Applications should be sent to the undersigned (from whom further particulars may be obtained) not later than November 27th.

T

UNIVERSITY OF OTAGO AND DUNEDIN HOSPITAL, NEW ZEALAND.

ited for the followin

OFFICER (Senior)
FFICER (Senior)

Candidates must hold a degree in Medicine of a British University, must have been qualified for three years, and have held resident Hospital appointments for at least one year.

The duties of the Resident Surgical Officer will be those of superintending House Surgeon with, in addition, certain tutorial work under the direction of the Professor of Surgery.

The Resident Medical Officer will be required to act as medical tutor under the direction of the Professors of Medicine, and as superintending House Physician and Medical Registrar.

Salary for each position to be at the rate of £500 per annum, with board and residence, less 10 per cent. reduction.

Full details may be obtained on application to the High Commissioner for New Zealand, Strand, W.C.2.

Applications to be received by the undersigned not later than January, 1932.

JOHN JACOBS,
Secretary, Otago Hospital Board,
Dunedin, New Zealand.

September 26th, 1931.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM.

are invited for the post of
initial rate of pay
mum (according to age
five or six biennial
d thence after the
rates of pay as w

as the conditions of service are subject to Government rules and regulations from time to time in force. (£E 1 = £1 0s. 6d.)

Applicants must be unmarried, and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience to Pathology), and copies be sent to the Director Research Laboratories

Khartoum, Sudan.

Further particulars regarding this post may be obtained on application to the Controller Sudan Government, London Office, Wellington House, Buckingham Gate, London, S.W.1.

Oldham County Borough.

EDUCATION COMMITTEE.

Wanted immediately, ASSISTANT SCHOOL MEDICAL OFFICER (man). Salary commencing at £500 per annum (less temporary reduction of £15), rising in accordance with the Memorandum of Recommendations. Applicants must have had at least three years' experience since qualifying. The person appointed will not be permitted to undertake any other duties.

List of duties and form of application which must be returned immediately, may be obtained from the undersigned.

Canvassing strictly prohibited.

W. KERSHAW,
Director of Education.

Education Offices,
Oldham.
November 7th, 1931.

The Hospital for Sick Children,
Great Ormond Street London, W C 1

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on January 1st 1932

Gentlemen are invited to send in their applications addressed to the Secretary before 12 o'clock on Monday November 30th with copies of not more than three testimonials given specially for the purpose and also evidence of their having held a responsible Hospital appointment

The appointments are made for six months Salaries at the rate of £100 per annum laundry allowance £5, board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practice

All candidates must be in attendance to appear before the Joint Committee if required at their Meeting on Wednesday, December 2nd, at 5 p m precisely

Forms of application and copies of the Rules, may be obtained from the Secretary

By Order of the Board of Management,
JAMES MCKAY,
November 1931 Secretary

The Hospital for Sick Children,
Great Ormond Street London W C 1

There are vacancies for CLINICAL ASSISTANTS in the Out patient Medical Department of this Hospital

The appointment is made for six months but may be held subject to re-election for a further period

Candidates must be registered Medical Men and must have held a responsible Hospital appointment and be prepared to take up the duties when appointed The selected candidates will be required to attend on two mornings each week from 9 a m until about mid day

Forms of application and copies of the rules for and details of the duties of the appointment will be supplied on application on to the Secretary

By Order of the Board of Management,
JAMES MCKAY,
November 1931 Secretary

City of London Hospital for
DISEASES OF THE HEART AND LUNGS,
Victoria Park, E 2
(Bus, Tram, and Rail, Cambridge Heath, L & N E Railway)

Applications (with copies of three testimonials) are invited to be sent to the undersigned on or before Friday, December 11th for the following posts subject to the rules and by laws of the Hospital

PRESIDENT MEDICAL OFFICER (male) for one year from January 1st 1932 Salary £250 per annum

HOUSE PHYSICIAN (male) for six months from January 1st 1932 Salary at the rate of £100 per annum

Board residence and laundry provided

GEORGE WATTS Secretary

Wrexham and East Denbighshire War Memorial Hospital.
(109 Beds)

TWO RESIDENT HOUSE SURGEONS (male or female) required by the above Hospital to commence January 1st 1932 Appointment for a period of not less than six months Salary £150 per annum with board and laundry

Applications stating age nationality experience and qualifications accompanied by copies of three recent testimonials to be sent to the undersigned as soon as possible

LESLIE SPENCER
November 7th 1931 Secretary

Royal Berkshire Hospital,
READING

RESIDENT MEDICAL OFFICER (woman) required immediately for BLAGRAVE BRANCH HOSPITAL (60 beds) for six months Candidates must be fully qualified and registered Remuneration at the rate of £150 per annum with board residence and laundry Suitable post for applicant working for examination or thesis

Applications with copies of testimonials, should be sent to the undersigned

F A LYON, Secretary

Chelsea Hospital for Women,
Arthur Street S W 3

There will be a vacancy for a JUNIOR HOUSE SURGEON (male) on January 1st 1932 Appointment for six months Salary £100 p a He will be expected to proceed to the Senior post (six months salary £120 p a) at the end of his term of office Candidates must be duly registered and preferably unmarried Applications accompanied by copies of three testimonials should be sent not later than Friday November 27th to the Secretary, HERBERT H JENNINGS

Manchester Royal Infirmary,
CENTRAL BRANCH PORY STREET, MANCHESTER.

HOUSE SURGEON (Lady)

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment Applicants must be registered and hold a Medical and Surgical qualification

The appointment is tenable for nine months commencing January 1st three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum together with board and allowance for laundry

Applicants must state age and qualifications and send twelve copies of their application and testimonials to the undersigned by 9 a m on Thursday, November 26th 1931

By Order
FRANK G HAZELL
General Supt and Secretary

County Mental Hospital,
LANCASTER

Applications are invited for the post of ASSISTANT MEDICAL OFFICER Candidates must be single and under 35 years of age Commencing salary £500 rising by annual increments of £25 to £600 with further increase on promotion subject to a deduction of 3 per cent under the Asylum Officers Superannuation Act There are no emoluments The selected candidate will be required to live in the Hospital and he will be provided with board, lodging etc, for which a charge of £150 a year is made

The possession of a Diploma in Psychological Medicine will entitle the Office, to an additional £50 per annum

Applications giving full particulars with testimonials (copies only) should be forwarded to the Medical Superintendent before Nov 23rd

Evelina Hospital for Children,
Southwark S E 1

Applications are invited for the post of HOUSE SURGEON (male) for six months from December 12th (first two months in Casualty and Outpatient Department) Salary at the rate of £120 per annum, with board and residence

Applications, stating age experience and qualifications accompanied by copies of four testimonials to be sent to the undersigned not later than November 23rd from whom rules and other particulars can be obtained

By Order of the Committee of Management
W D SIDNELL
Nov 3rd 1931 Secretary Supt

Jersey General Hospital and Poor
LAW INFIRMARY

RESIDENT MEDICAL OFFICER

Applications are invited for the above post (male) Applicants must be duly qualified Practitioners in Medicine and Surgery Salary £200 per annum, with board, residence in the Hospital, and laundry

The appointment is for one year, and is renewable Applications, with testimonials, must be sent in on or before Saturday December 5th addressed to the undersigned, from whom further particulars may be obtained

P BELZEVAL, Secretary

The St Helens Hospital

Applications are invited for the position of HOUSE SURGEON to this Hospital, at a salary of £200 per annum, plus board, residence and laundry Applications, accompanied by three recent testimonials to be sent to the Secretary, St Helens Hospital, Lancs, not later than November 17th

The successful candidate will be required to commence his duties on December 1st

The Infants Hospital,
VINCENT SQUARE WESTMINSTER

Applications are invited for the post of PATHOLOGIST The appointment is a half time one and the salary is £300 per annum Applications with copies of testimonials must reach the undersigned by November 30th

ALFRED J SMART
November 10th, 1931 Secretary

Margate and District General
HOSPITAL (98 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male)

Salary £130 per annum with board and laundry

Applications accompanied by copies of testimonials should be addressed to the Secretary at the Hospital as early as possible

Cardiff Royal Infirmary
(Associated with Welsh National School of Medicine)
(No of available beds—490)

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution The post is tenable for six months, but may be extended for a further six months This post is open to ladies

Salary is at the rate of £75 per annum with board residence Candidates must have experience of refractions

Graduates of other Medical Schools as well as the Welsh National School of Medicine, are eligible for this post

Applications together with copies of three recent testimonials should be sent to the undersigned as soon as possible as the post is now vacant

E APPLETON G
Nov 6th 1931 Medical Supt

Hospital of St Cross, Rugby
(114 Beds)

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER qualified

Salary at the rate of £100 per annum with full board etc

Six months appointment and eligible on completion of service for extension or other resident's posts

Candidates must be prepared to commence duties on November 30th

The practice of the Hospital offers excellent opportunities for wide experience

Certificates and other fees shared by P M O's

Applications stating age, full details with copies of three recent testimonials to be sent to the undersigned

(Signed) W COCHRANE
Superintendent and Secretary

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male) Duties to commence on January 1st next

Salary at the rate of £150 per annum with residence board and laundry

The appointment is for six months and is renewable

The Resident Staff consists of a Resident Surgical Officer and Two House Surgeons

Applications, accompanied by not more than three recent testimonials to be sent to the undersigned

Dated this 26th day of October 1931
ARTHUR H LIMB Secretary

New Cross Hospital,
WOLVERHAMPTON

Applications are invited from single gentlemen, duly qualified for appointments as ASSISTANT (RESIDENT) MEDICAL OFFICER.

Salary will be at the rate of £200 per annum, with apartments, board attendance etc

The appointment is limited to a term not exceeding one year

Applications, stating age, qualifications and experience and accompanied by copies of recent testimonials, must be addressed to—

A G ALDRIDGE
Wolverhampton Public Assistance Officer

Altrincham General Hospital,
CHESHIRE. (100 Beds)

Applications are invited for the position of JUNIOR HOUSE SURGEON Salary at the rate of £120 per annum, with board residence, and laundry The appointment is for six months in the first instance, commencing at once

Applications, stating age and experience together with copies of recent testimonials to be sent to the Secretary, Altrincham General Hospital forthwith

Bedford County Hospital
(124 Beds)

FIRST HOUSE SURGEON (male) fully qualified unmarried required for a term of not less than six months commencing at once Salary £165 with board lodging, and laundry

Applications stating age nationality qualifications together with three recent testimonials to be sent to the Hon Secretary Hon Medical Staff Committee, as soon as possible

Aberdeen Royal Mental Hospital

The office of JUNIOR ASSISTANT PHYSICIAN (male) in Aberdeen Royal Mental Hospital is vacant, and applications for it are invited.

Salary will commence at £300 per annum with board, lodging and laundry

Applications stating age and qualifications, with copies of testimonials should be sent to the Physician-Superintendent

County Borough of Dewsbury.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Dewsbury Corporation invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health for the position of Medical Officer of Health and School Medical Officer at a commencing salary of £900 per annum, subject to a temporary reduction of 7½ per cent. until October 31st, 1932, when the question of the continuation of the reduction will be reviewed.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, to reside in the Borough, and will not be allowed to engage in private practice. All emoluments or fees which may be payable to or received by him must be paid over to the Corporation.

The appointment will be made in accordance with and subject to the Public Health Officers Act, 1921, and the Sanitary Officers Order, 1926.

Canvassing, either directly or indirectly, is prohibited. Applicants may, if they desire, forward 15 copies of their application and testimonials for the use of the members of the Committee.

Applications, with copies of not more than three recent testimonials attached, to be sent to me, endorsed "Medical Officer of Health," not later than November 18th.

HOLLAND BOOTH,
Town Clerk.

Town Hall,
Dewsbury.
November 2nd, 1931.

Lancashire County Council.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited from duly qualified and registered women Medical Practitioners for the following posts at the above Hospital, which contains 87 beds:

SENIOR HOUSE SURGEON. Salary £250 per annum (less 5 per cent. temporary emergency deduction), together with board, residence, and laundry. Candidates must have had experience in a general hospital. Preference will be given to candidates who have had orthopaedic experience.

JUNIOR HOUSE SURGEON. Salary £150 per annum (less 5 per cent. temporary emergency deduction), together with board, residence, and laundry. Preference will be given to candidates who have held resident hospital appointments, and who are competent anaesthetists.

Both appointments will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than November 26th, to Dr. J. J. BUTTERWORTH, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence February 1st, 1932.

GEORGE ETHERTON,
Clerk of the County Council.

County Offices,
Preston.
November 2nd, 1931.

Royal Albert Hospital and Eye INFIRMARY, DEVONPORT.

Applications are invited from duly registered and unmarried Practitioners for the following resident appointments:

HOUSE SURGEON.
ASSISTANT HOUSE SURGEON.

Salary: House Surgeon £150 per annum; Assistant House Surgeon £100 per annum. Apartments, board, and laundry free.

Applications, stating age, together with copies of not more than three testimonials, should be forwarded to the undersigned without delay.

By Order of the Committee,
FRANK ROWE,
Secretary.

General Infirmary, Salisbury.

(General Hospital—161 Beds.)

TWO HOUSE SURGEONS (male) required to commence duties on January 3rd, 1932.

Candidates must be unmarried, fully qualified and registered. Salary £150 per annum, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

St. Thomas's Hospital Medical SCHOOL.

VACANCY.

PATHOLOGIST to the Medical and Surgical Units. Salary £400 per annum.

Applications, accompanied by full Academic record and two testimonials, to be rendered to the Dean's Office by November 20th.

City of Liverpool.

RESIDENT ASSISTANT MEDICAL OFFICERS.

SMITHDOWN ROAD HOSPITAL, LIVERPOOL (1,100 Beds).

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

ALDER HEY CHILDREN'S HOSPITAL, LIVERPOOL. (900 Beds.)

RESIDENT ASSISTANT MEDICAL OFFICER (Female).

Applications are invited for the above appointments for a period of one year. Salary at the rate of £200 per annum, together with the usual residential allowances.

All fees received in connection with the appointments to be handed over to the City Council.

The appointments will be made in accordance with the Standing Orders of the City Council, and canvassing will be deemed a disqualification.

Candidates must be single, fully qualified, and registered.

Applications, stating age, qualifications, etc., with copies of three recent testimonials, to be endorsed on the envelope "Resident Assistant Medical Officer," and sent to the undersigned so as to be received not later than Monday, November 23rd.

WALTER MOON,
Town Clerk.

Municipal Buildings,
Liverpool.
November 9th, 1931.

Borough of Mansfield.

TEMPORARY ASSISTANT (FEMALE) MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Temporary Assistant (Female) Medical Officer of Health for the Borough of Mansfield, for a period of twelve months, at a salary of £500 per annum.

The duties will include the Medical Inspection of school children work in connection with Maternity and Child Welfare Centres, Antenatal Clinics, etc.

Candidates must be registered Medical Practitioners, hold a Diploma of Public Health, and have had at least three years' experience of post-graduate work.

The successful candidate will be required to devote the whole of her time to the duties of the office and to reside in the Borough.

The appointment will be subject to the approval of the Ministry of Health.

Applications, which must be made on forms obtainable from the undersigned, accompanied by copies of three recent testimonials, endorsed "Temporary Assistant Medical Officer of Health," must be received at my office not later than November 21st.

A. C. SHEPHERD,
Town Clerk.

Town Clerk's Office,
Mansfield.

London County Council.

Applications are invited for appointment as RESIDENT MEDICAL SUPERINTENDENT in Public Health Department for duty at ARCHWAY HOSPITAL, Archway Road, Highgate, N.19. Person appointed will be required to act under direction of Medical Officer of Health, and, should occasion arise, assist at any other establishments under control of Council. Salary £1,000 a year, rising by £50 a year to £1,250 a year. Unfurnished house, free of rates and water charges, valued provisionally at £100 a year, will be provided.

Candidates must be duly qualified Medical Practitioners of at least five years' standing, have held appointment of House Physician or House Surgeon in a public general Hospital, and have had experience of Hospital administration.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, Westminster Bridge, S.E.1, and must be returned by November 25th. Canvassing disqualifies.

London County Council.

Applications invited for position of CONSULTING DENTAL SURGEON (part-time) in the Public Health Department. Appointment will be for five half-days a week, and duties will be in connection with the Council's scheme for Dental Treatment of School Children and Dental work at Council's general Hospitals. Salary £400 a year, subject to review, and travelling expenses. Candidates must possess the qualification of Licentiate of Dental Surgery and have had experience of public Dental work.

Application forms (stamped addressed foolscap envelope necessary) obtainable from Medical Officer of Health and School Medical Officer, County Hall, Westminster Bridge, S.E.1, and must be returned by November 30th. Canvassing disqualifies.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

LAKE HOSPITAL AND DARNTON HOUSE, ASHTON-UNDER-LYNE, Nr. MANCHESTER.

APPOINTMENT OF SENIOR ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of Senior Assistant Resident Medical Officer at the above Hospital and Institution, at a salary, subject to an emergency deduction of 5 per cent., at the rate of £200 per annum.

Candidates must be unmarried.

The appointment will, in the first instance, be for a period of six months; the successful applicant, however, will be eligible for reappointment for a further period of six months at the end of that period.

In addition to the salary, the Resident Medical Officer will be provided with the usual residential allowances.

The Hospital comprises 300 beds, and the Institution 600 beds.

Applications, accompanied by copies of not more than three testimonials, should be forwarded to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than November 28th. Envelopes should be endorsed "Senior Assistant Resident Medical Officer."

GEORGE ETHERTON,
Clerk of the County Council.

County Offices,
Preston.
November 10th, 1931.

County Council of Inverness-SHIRE.

PARISHES OF KILMUIR AND SNIZORT.

LOCAL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the appointment of Local Medical Officer for the Parishes of Kilmuir and Snizort, Skye.

Income is derived from the following sources:
(1) County Council in respect of services to that Authority, approximately £250 per annum.
(2) Private Practice.
(3) Highlands and Islands Medical Service Fund.

Applications, with statement of qualifications and experience, accompanied by copies of three recent testimonials, to be lodged with the undersigned not later than Friday, November 20th.

J. W. McKILLOP,
County Clerk.

County Buildings,
Inverness.
November 7th, 1931.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified Medical Women for the following posts:—

HOUSE PHYSICIAN, OBSTETRIC ASSISTANT, TWO HOUSE SURGEONS. Appointments for six months from January 1st next. Salary at the rate of £50 per annum, with board, residence, and laundry.

CLINICAL ASSISTANTS (Senior for two years—Junior for one year) are also wanted in the Out-patient and Special Departments.

Applications, with copies of three testimonials, should be sent to the Secretary before Monday, December 7th.

JEAN R. MURRAY, Secretary.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.

(POOLE ROAD BRANCH—66 Beds.)

HOUSE SURGEON (male, British nationality) required to commence duty at end of November. Salary £150 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act. Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
Secretary.

November 9th, 1931.

Cheshire Joint Sanatorium, MARKET DRAYTON, SALOP.

HOUSE PHYSICIAN required (male).

The appointment will be for twelve months. Inclusive salary £250 p.a., with board, residence, and laundry. Applications to be made on forms obtainable from the Medical Supt.

Princess Alice Memorial HOSPITAL, EASTBOURNE.

Applications are invited for the post of HON. CONSULTING EAR, NOSE, & THROAT SURGEON. Particulars may be obtained from the Secretary, to whom applications must be sent to reach him by November 23rd.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh)

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(cont'd)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MAERDY, GLAMORGAN *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male)*
EBBW VALE IRON *(Workmen's Medical Society)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	LOWESTOFT BOROUGH *(Assistant Medical Officer—Female)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*	NEATH AND DISTRICT *(Medical Aid Association)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*
LLWYNYPIA CLYDACH VALE, PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	OAKDALE IRON *(Medical Officer for Medical Aid Association)*	
	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr I G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary South Australian Branch B M A House 206 North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec, New Zealand Branch) British Medical Association P O Box 156 Wellington New Zealand
QUEENSLAND *(Brisbane Associated Friendly Societies Institute)* *(Toowoomba Associated Friendly Societies, Medical Institute Toowoomba)*	The Hon Sec, Queensland Branch British Medical Association B M A Building Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec Victorian branch) British Medical Association Medical Society Hall East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch British Medical Association No 6 Bank of N S W Chambers St Georges Terr Perth Western Australia.

November 11th, 1931 By Order of the Council ALFRED COX, Medical Secretary

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Leicestershire and Rutland MENTAL HOSPITAL NARBOROUGH, near LEICESTER

ASSISTANT MEDICAL OFFICER REQUIRED

Candidates must be registered and not more than 35 years of age unmarried Salary £350 per annum rising £25 per annum to £450 In addition £90 per annum will be given if the candidate holds the Diploma of Psychological Medicine Apartments full board and attendance in addition to the above valued for Superannuation purposes at £130 per annum The appointment is subject to the provisions of the Asylums Officers Superannuation Act 1909

Applications with copies of not more than three recent testimonials to be sent to the Medical Superintendent forthwith

Darlington General Hospital.

The Committee of the above Hospital (120 beds) invite applications for the post of SENIOR HOUSE SURGEON male British Salary £175 per annum with board residence and laundry Duties to commence mid December

Special Departments—Maternity, Eye, Ear, Nose and Throat Orthopaedic etc

Applicants giving age, experience, accompanied with copies of two recent testimonials, to be addressed to the undersigned

ARTHUR PIDDLE Secretary

East London Hospital for CHILDREN Shadwell, E 1

[illegible] for the post of CER (male), vacant

Applicants must be duly qualified Practitioners in Medicine and Surgery Salary £200 per annum with board residence and laundry The appointment is for one year and is renewable Applications with testimonials must be sent in on or before Saturday November 28th

W M WILCOX, Secretary

East Sussex County Mental HOSPITAL HELLINGLY

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER

Applications are invited for the above post from duly qualified registered gentlemen (unmarried) Preference will be given to those holding a University degree

Salary £350 a year rising by four annual increments of £25 to £450 together with board, lodging washing and attendance valued for superannuation purposes at £90 a year, an additional £50 a year will be paid to any candidate appointed who holds the Diploma in Psychological Medicine, or a similar Diploma

The appointment is subject to three months notice on either side to the provisions of the *Asylums Officers Superannuation Act, 1909* and to any general percentage reduction in salaries which may be decided upon by the Visiting Committee

Applications, marked 'M O,' giving particulars of previous experience, and copies of not more than three testimonials (ad hoc) should be addressed to the Medical Superintendent not later than November 18th

Radcliffe Infirmary and County HOSPITAL, OXFORD

Applications are invited for the following posts on the Honorary Medical Staff of the above Hospital

(1) HONORARY PHYSICIAN

(2) HONORARY ASSISTANT PHYSICIAN in the event of one of the existing Assistant Physicians being elected Honorary Physician (Candidates may apply for (2) as an alternative to (1)

(3) HONORARY ASSISTANT RADIOLOGIST

Twenty five copies of applications and testimonials which will be forwarded to members of the Electing Committee must be sent to the undersigned not later than Saturday Dec 5th

L G E SANCTUARY, Administrator

The Mount Vernon Hospital, NORTHWOOD MIDDLESEX (The National Centre for the Study and Treatment of Cancer)

There is a vacancy for a RESIDENT MEDICAL OFFICER

Candidates must be fully qualified and registered. Salary at the rate of £250 per annum, with board lodging etc

Applications, with copies of three testimonials to be sent to the undersigned not later than November 28th

W J NORTON Secretary

Offices 32 Fitzroy Square W 1

St. Mary's Hospital, W.2.

Applications are invited for the post of ORTHOPAEDIC SURGEON, who will be a member of the Hon Surgical Staff Candidates for the appointment are requested to forward their applications with copies (not originals) of testimonials not exceeding six in number on or before November 20th

Candidates must be Fellows of the Royal College of Surgeons of England.

The appointment is for five years at the expiration of which term the holder will be eligible for re-election

W PAPPES Secretary

Royal Isle of Wight County HOSPITAL, RYDE.

RESIDENT HOUSE SURGEON wanted for November 28th either sex, unmarried Since hanged appointment Duly qualified and registered. State age and nationality Salary at the rate of £180 yearly, with board, residence and laundry Apply, enclosing copies of testimonials to Secretary before Tuesday, November 17th. Personal interviews for selected candidates.

A S GORDON, Secretary

(Appointments continued on p 54.)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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ASSISTANCIES.

Wanted. — Assistantship, with view early Partnership from income. Scots, L.R.C.P., L.R.C.S., L.R.M.P.S., qualified Jan., 1928, age 33, marrying soon. Keen and capable. Surgery, Obstetrics, ex H.S., H.P., G.P. experience. Good district. Free Jan. 1st. or by arrangement.—Address, No. 7016, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view Succession or Partnership, London or S. Counties, by Scot, aet 33, married, M.B., Ch.B. (Edin. 1924); ex H.P.; 6 years' G.P.; keen and well-received; used sole charge. Own car. Free as required.—Address, No. 7022, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship, by M.B., Ch.B., London or S. Eng., in or out, winter months or permanent. Several yrs.' exp. panel, private; single, well rec.; numerous recom'd'ns. 'Phone, Abbeyn 1247 before noon. —No. 7054, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, with view to early Partnership in high-class seaside resort. Must be ex H.S. and H.P. Required immediately. State age, experience, and enclose testimonials. — Address, No. 7013, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, married preferred, experienced in General Practice, Sussex. English, Irish, or Scotch, not later than Jan. 1st. Salary £500 & house. Car allowed. Essen. parties & photo.—No. 7035, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, mixed Practice, South Devon. Please state qualification and experience, and furnish references. Salary according to experience. Partnership entertained later. — Address, No. 7025, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor, by Scottish Graduate, aged 35, married, Hospital ex Resident. Conscientious and reliable. Available almost at once, and could arrange prior interview.—Address, No. 7021, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by Scot; single, 29 years. M.B., Ch.B. (Glasgow, 1927). G.P. exper. and sole charge. Well recom., month's notice. London or Glasgow preferred. — Address, No. 7027, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, in large panel and private Practice in Urban district, West Country. Able to ride motor-cycle.—Address, stating age, and other essential particulars, No. 7052, B.M.A. House, Tavistock Square, W.C.1.

Wanted, January 1st, Male ASSISTANT, with view. Protestant, British Industrial Practice near Manchester. Indoor or out. State age and full particulars. —Address, No. 7029, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, unmarried, for panel and private Practice in Midland City. Cyclist. English or Scotch. Salary £400, furnished rooms and attendance. Petrol allowance if own car.—Address, No. 7015, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with or without view; good salaries; state full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant for mixed Practice in North-East. Salary according to experience. State full particulars. —Address, No. 7018, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, mixed Practice South London. Work light; time for reading. Salary £250 p.a., all found. — Address No. 7028, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, industrial Practice, near Manchester. £200, live in. All found. Work light.—Address, No. 7055, B.M.A. House, Tavistock Square, W.C.1.

Assistantship desired by M.B. (Lond.), Bart's, 1925; with or without view. Welsh, single, disengaged. Experienced hospital and general practice. London or South Wales town preferred. Motorist.—Address, No. 7039, B.M.A. House, Tavistock Square, W.C.1.

Indoor Assistant (either sex) in S. Wales industrial district. Ample time for Classes and Study arranged. £15 per month. Full particulars. — Address, No. 7009, B.M.A. House, Tavistock Square, W.C.1.

Male Assistant, Scot preferred, definite view early Partnership in Practice (£4,200 per annum) in Yorkshire City. Panel 2,400. Capital desirable, but ability, energy, and personality essential. Replies should give fullest personal and professional details (if possible photograph) and date free. —No. 7017, B.M.A. House, Tavistock Sq., W.C.1.

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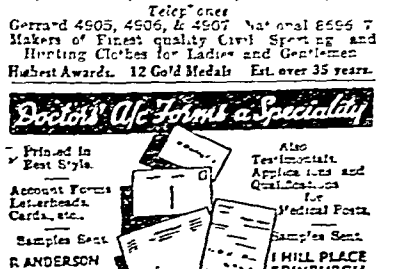
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APPOINTMENTS.—Contd.

The Cancer Hospital (Free)
(Incorporated under Royal Charter),
Fulham Road, London, S W 3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON Salary at the rate of £100 per annum.

The appointment is for six months, and subject to rules.

Candidates must call upon each member of the Medical Committee not later than Monday, December 7th

A copy of the Rules and the names and addresses of the Medical Committee may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable

Applications, with three (copies only) of testimonials, to be sent to the undersigned not later than the first post on Saturday, Nov. 28th.

J COURTNEY BUCHANAN, Secretary.

Royal Alexandra Hospital for
SICK CHILDREN, BRIGHTON.
(100 Beds)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing No canvassing allowed. To commence duties on December 1st.

Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, on or before Nov. 20th.

October 24th, 1931

Royal Alexandra Hospital for
SICK CHILDREN, BRIGHTON.
(100 Beds)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing Good experience, including Sun ray Treatment No canvassing.

To commence duty on January 1st, 1932

Applications in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

East Ham Memorial Hospital,
Shrewsbury Road, E 7. (100 Beds)

Applications are invited for the post of PHYSICIAN in charge of the Skin Department, which is about to be formed

Candidates must hold a University degree in Medicine and Surgery, and be Fellows or Members of the Royal College of Physicians of London, and engaged solely in Dermatological practice

Applications should reach the undersigned on or before December 7th

REGINALD PERRY, Secretary.

Royal Sussex County Hospital,
BRIGHTON.
(Stephen Ralli Memorial Department, Brighton.)

JUNIOR ASSISTANT PATHOLOGIST (male or female) required. Salary £300 for the first year; non resident

Candidates (who must possess some knowledge of Clinical Laboratory work) must apply, submitting particulars of medical qualifications and copies of not more than three recent testimonials, by November 28th, to the undersigned, from whom further information regarding the duties of the office may be obtained

L L. W. LANCASTER-GAYE,
Secretary Superintendent.

York County Hospital.
(200 Beds)

The post of HOUSE SURGEON in the Ear, Eye, Nose, and Throat Department will become vacant on January 1st, 1932 Woman preferred.

Salary £150 per annum, with board, residence, and laundry.

Duties include attendance on Casualties.

Appointment for not less than 12 months

Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than November 30th.

H. E RYAN, Manager.

Clayton Hospital, Wakefield.

A vacancy exists for a HOUSE SURGEON (male, British), for which post applications are invited. The appointment is for six months in the first instance, and the salary at the rate of £200 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, should be sent to the undersigned as early as possible.

H J LANCASTER,
Gen Superintendent & Secretary.

North Ormesby Hospital,
MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried) Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once

GEORGE WATTS,
Secretary-Superintendent

Royal National Orthopaedic HOSPITAL.

MEDICAL REGISTRAR.

The Committee proposes to appoint a Medical Registrar, whose duties will include a daily visit to the Hospital to see Medical cases in the Wards. Honorarium at the rate of £150 a year. Applications from Fellows or Members of the Royal College of Physicians, and accompanied by three recent testimonials, should reach the Secretary, 234, Gt Portland Street, W.1, on or before December 2nd.

National Hospital, Queen Sq., W.C.1.

The Board of Management invite applications from qualified Medical Men for the post of HONORARY ASSISTANT RADIOLOGIST.

Applicants should possess a diploma in Medical Radiology and Electrology, preferably the Cambridge Diploma. Applications should be sent to the undersigned, together with copies of recent testimonials, on or before Dec 1st.

GODFREY H. HAMILTON,
Secretary.

The Sheffield Royal Hospital.
(340 Beds)

TWO ASSISTANT CASUALTY OFFICERS (male), who will also act as House Surgeons to [illegible] of 22 beds Also

Three months' for other resident £80 per annum

for first six months, then £100 per annum

W. H. BOOTH, Supt & Secretary.

Bristol Eye Dispensary.
(Established 1812)

There is a vacancy for an ASSISTANT OPHTHALMIC SURGEON on the Staff of this Institution

For particulars, apply Secretary, 17, Orchard Street, Bristol.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W 9

HOUSE PHYSICIAN required at once

Applications are invited for the post of House Physician.

The salary is at the rate of £100 per annum, and the appointment is for six months Applications, accompanied by copies of three recent testimonials, should reach me by November 21st.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments

H W BURLEIGH,
Secretary and General Superintendent

Queen's Hospital for Children,
Hackney Road, London, E 2

HOUSE PHYSICIAN required January 1st, 1932

CASUALTY OFFICER required January 6th, 1932. Some Dermatology additional Six months' appointments. Salary at the rate of £100 per year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before December 5th

CHARLES H. BESSELL
Nov. 9th, 1931. Secretary

The Children's Hospital,
SUNDERLAND (70 Beds)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female). Candidates must possess double qualifications (registered) Salary £140 per annum, with board, residence, and laundry The appointment is for six months Applications stating age, with copies of three recent testimonials, to be sent to the undersigned

S C FRYERS,
House Governor & Secretary

Burslem Haywood and Tunstall WAR MEMORIAL HOSPITAL

Wanted, SECOND RESIDENT MEDICAL OFFICER (male) Salary £150, with board and residence Must be fully qualified Experience in Ear, Nose, Throat and Eyes preferred Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me

F. C POWELL, F.C.I.S, Secretary
Public Offices, Price Street, Burslem

St. Mary's Hospitals, Manchester.

HOUS[illegible] WHITWORTH PARK Dept) for a [illegible]mber 1st next period [illegible]

Salary at the rate of £50 per annum, with board and residence

Applications, with copies of three testimonials, to be sent to the undersigned on or before the 25th instant

R RATCLIFFE, Secretary

Weymouth and District HOSPITAL, WEYMOUTH

Wanted, early December, HOUSE SURGEON, male, European Salary £180 per annum with board, residence, and laundry. Applications, stating age, qualifications and copies of testimonials, to be sent to the undersigned not later than November 23rd

MORRIS LODGE, Hon Secretary.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male, qualified). A knowledge of Eye work is desirable Salary £200, with board, residence, and laundry.

Applications, with copies of recent testimonials, to be sent to the Secretary, G W. ROBERTS, 8, Moorgate Street, Rotherham

Royal Cornwall Infirmary, TRURO (84 Beds)

HOUSE SURGEON (male) required with experience of Anaesthetics Salary £170 per annum, rooms, board, and washing Applications, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

Taunton and Somerset Hospital, TAUNTON.

JUNIOR HOUSE MEDICAL OFFICER (male) as House Physician, required end of November. Two other residents Period of appointment not exceeding six months in the first instance. Salary at the rate of £100 per annum

Applications, with testimonials, to F. J. J. STACEY, Secretary.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH (240 Beds)

RESIDENT SURGICAL OFFICER (male) HOUSE SURGEON (male)

Salary £150 and £100 per annum respectively, with board, residence and laundry. Appointments are initially for six months and are subject to renewal. Duties to commence November 30th and December 8th respectively. Candidates must be registered under the Medical Acts.

Applicants must state if in the event of their being unsuccessful in these applications they are willing to be considered for the other.

Applications stating age and qualifications together with copies of recent testimonials to reach the undersigned not later than November 18th

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH (240 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (male).

Salary £120 per annum with board, residence and laundry. Appointment is initially for six months and is subject to renewal. Duties to commence about 16th December. Candidates must be registered under the Medical Acts.

Applications stating age and qualifications together with copies of recent testimonials to reach the undersigned not later than November 18th

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH (240 Beds)

A RADIUM OFFICER is required for the NATIONAL RADIUM REGIONAL CENTRE at Plymouth (South Devon and East Cornwall Hospital). Candidates who must be on the Medical Register of the United Kingdom or of the Irish Free State must hold the qualification of D.M.R.E., and have had special experience of Radium Therapy. Salary commencing at £600 per annum. Applications, with three recent testimonials, should be sent not later than November 28th to the undersigned.

ARTHUR R. CASH,
November 2nd, 1931. Gen. Supt. & Sec.

The Hospital for Women,
Soho Square, W.1.

A vacancy is about to occur in the office of PATHOLOGIST and REGISTRAR, and applications are hereby invited for the post.

Candidates must be Graduates in Medicine of a recognized University. The appointment is for twelve months from January 1st, 1932, and the holder is eligible for re-election for a period not exceeding three years. Honorarium £100 per annum.

Applications and testimonials must be forwarded to the undersigned by Tuesday, November 24th. Candidates are invited to call upon the members of the Medical Staff, from whom further information may be obtained.

J. P. FEMING, Secretary.

Liverpool and District Hospital
FOR DISEASES OF THE HEART

HOUSE PHYSICIAN (male or female) required for period of six months from January 1st, 1932. Salary at the rate of £100 per annum with board, residence, and laundry. Applications not later than November 30th to Miss LEWIS, Secretary, 14, Cook St., Liverpool.

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Scotland.—Nr. Glasgow. — Over £850 p.a. Panel 1,300. Appts. £75. Fees 3/- to 7/6. 5 bed, 3 recep., etc. 1½ yrs' purchase.—No. 8929.

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Death Vacancy.—Devon Resort. £900 p.a. prog. Panel 500. Fees 2/6—10/6. Lease of house, 7 bed, 2 recep., etc., and half acre.—No. 8916.

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HOME COUNTIES. — PARTNERSHIP in good class Practice situated in well-known country town. Receipts approx. £6,000. Select easily run panel. Medium sized house to rent. Premium for 1/4 share 2 years' purchase. This Practice has been known to the Agency for many years, and is highly recommended. It is essential that the incoming Partner shall hold the F.R.C.S., and be aged about 30. Appointment to Hospital Staff

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YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds). Receipts approx. £1,000. Panel 620. Fees 3/6 up One appointment Premium 1½ years' purchase.

YORKS.—PARTNERSHIP in busy rapidly increasing town Practice Receipts £2,300. Panel 1,500. Suitable house available 1/3 share, with view to succession, 2 years' purchase

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EAST MIDLANDS.—PARTNERSHIP in better middle class Practice 10-roomed house available. Receipts nearly £2,000 Fees 3/- up Up to date Hospital. Scope for surgery. Premium 1/3 share, with view to larger share £1,300.

WELSH BORDERS.—Excellent middle class Town PRACTICE, situated in *delightful locality. Good social amenities.* Receipts approx £1,800 Panel 700. Several appointments. Premium 1½ years' purchase. Partnership would be entertained Knowledge of Welsh not essen. Help

LONDON, N.W. — Well established mixed PRACTICE, mainly better class, with excellent house, situated on main thoroughfare Receipts approx £900 Panel over 420. Fees 3/6 up Normal midwifery. One appointment Part of house sublet if desired Vendor has developed better class of Practice at good fees Premium £1,300 cash

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DEVON. — DEATH VACANCY — Well established General PRACTICE, situated in seaside resort. Detached double fronted house, with separate ant to profess. quarters Rec nrly £700. Fees 2/6 up Panel 500 Prem £500

CHESHIRE.—Near Coast.—Small G.P., with excellent scope for expansion, situated in working class *and residential district* Receipts £600 Panel 900. Suitable house available. Premium 1½ years' purchase Excellent scope for keen and energetic man.

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NORTH WEST COAST.—SEASIDE RESORT.—Old-established PRACTICE. Cash receipts 1930, £874. Small select panel. Excellent freehold house, 5 bedrooms. Garage and garden.—No 266.

MANCHESTER.—PARTNERSHIP in Practice of about £1,600 p.a. Panel 1,550. House available to rent. Premium—half-share—1½ years' purchase.—No 305.

NEAR PRESTON.—PRACTICE offering scope. Cash receipts 1930, £625. Panel 250. Good house, 2 reception, 4 bedrooms. Rent £70 p.a. Premium £800, or near offer.—No 294.

MANCHESTER.—Old-established PRACTICE. Cash receipts 1930, £688. Panel 578. House on main road, 2 reception, 5 bedrooms, and garage. Premium—Practice—1½ years' purchase.—No 292.

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(FOUNDED 1880)

12, Stratford Place,

Tele Address: Triform, Wesdo—London. Oxford Street, W.1. Telephone: Mayfair 1782 1783

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2 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE doing about £450 p.a., capable of increase. House (5 bed and dressing rooms, 3 attics) in own grounds in residential quarter, to rent

3 LONDON, S.E.—Practice averaging about £1,400 p.a. in populous suburban district. Panel about 1,000. House, with 5 bedrooms, to rent. Premium £2,500.

4 MIDDLESEX.—Steadily increasing PRACTICE in rapidly growing residential district. Earnings past 13 months £600. Panel 500. Excellently situated house (4 bedrooms, etc.), for sale. Very good scope for increase. Cottage Hospital. Premium £700.

5 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase. Cottage Hospital. One fifth share for disposal.

6 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main thoroughfare. Panel 125. Shop fronted house to rent on lease. Good scope for increase. Premium £300.

7 E. ANGLIA. — Partnership in Practice of about £3,000 p.a. in beautiful residential and agricultural district. Panel about 1,900. After preliminary Assistantship a one-sixth or one third share would be sold at 2 years' purchase. Partner should be for preference a London Graduate.

8 N. LONDON. — Partnership in Practice, averaging over £4,350 p.a., in thickly populated suburban district. Vendor only recently joined the panel. Accommodation consists of 3 bedrooms, etc., to rent. Premium one half share 2 years' purchase, with succession to whole Practice in 12 months if desired.

9 S. OF ENGLAND. — Partnership in good middle class Town Practice, over £5,300 p.a. No panel. Suitable house to purchase. Premium, one fourth share, £2,000. Preliminary Assistantship.

10 OPHTHALMIC Practice, doing about £500 p.a., in the West End of London. Premium £500.

11 MIDLANDS. — Partnership in Practice nearly £3,800 p.a. in beautiful suburb of Manufacturing Town. Panel 2,200. House, with 5 bed and dressing rooms, in good residential part, for sale or rent. Unlimited scope. Excellent Hospitals. One-third share at first at 2 years' purchase.

12 ABOUT 30 MILES FROM LONDON.—PRACTICE, averaging £275 p.a. (carried on by Medical Woman) in town of 60,000 inhabitants. Panel about 200. Detached corner house, with 9 rooms, for sale or rent. Any reasonable offer entertained.

13 MIDLANDS.—Partnership in Practice over £2,200 p.a. in agricultural district, easy reach of County Town. Panel over 1,200. Suitable house at a rental. One half share at first at 1½ years' purchase.

14 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

15 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one half 2 years' purchase. Up to date Cottage Hospital.

16 E. COAST.—Partnership in lucrative PRACTICE of over £5,250 p.a. in large seaport town. Panel over 5,800. Prem., one-fourth share, £2,500. Good scope for increase.

17 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Select panel about 417, with scope. Corner house, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

18 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town. Panel 1,100. Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

19 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 bedrooms. Garage and garden. Rent £150 p.a. Scope for increase. Premium 1½ years' purchase.

20 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £700 p.a. and a panel of 650. Good house (6 bedrooms), with garage, and one acre of garden, for sale. Premium 1½ years' purchase.

21 ESSEX.—Country Practice of £700, including panel and appointments worth about £550 p.a. Premium £1,100.

22 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 360. Substantially built 9-roomed house for sale. Scope for increase. Premium £725.

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Practices and Partnerships for Disposal (continued).

23 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

24 LONDON, S.E.—Good middle-class Practice of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bed rooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

25 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort. Receipts past year £623. Panel 500. House (7 bedrooms), garage, and half acre of garden, for sale.

26 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE, about £1,800 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,250.

27 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and very little midwifery. Well situated house (6 bedrooms), good garden and garage, for sale. Good scope. Premium 1½ years' purchase.

28 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round. Receipts about £150. No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—House and Practice—£1,250.

29 YORKSHIRE (W.R.).—Partnership (after Preliminary Assistantship) in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. House available. Applicant with surgical experience preferred. Premium one-third or one-fourth share 1½ years' purchase.

30 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Beautiful modern house to purchase or lease. Premium one-half share 2 years' purchase. Partner should be young and hold F.R.C.S. Or whole Practice would be sold.

31 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

32 WEST HAM. — Practice (carried on by Medical Woman) in populous area. Receipts last year £580 p.a. Small panel. No midwifery. Six roomed house to rent. Premium £750, most of which may be paid by instalments.

33 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven roomed house, with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

34 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. One third share for disposal.

35 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well-treated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

36 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

37 MIDLANDS.—Partnership in non-dispensing Practice about £4,400 p.a. in first rate town. Panel 1,344. Good house (6, 7 bedrooms) to rent. Premium one third share 2 years' purchase.

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39 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

40 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,300 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one-half share 1½ years' purchase.

41 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Look up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

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43 S. AFRICA.—CAPE PROVINCE.—Practice of over £1,450, in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent. Premium £500.

44 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in beautifully situated Country Town. Panel about 650. House (5 bedrooms) to rent. Good schools. Excellent sport. First-class Hospital. One third to one half share at 1½ years' purchase. Welsh not necessary.

45 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 170. House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase.

46 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one half share 1½ years' purchase.

47 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000. Premium for one-fifth share 2 years' purchase.

48 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. Prem. £1,100.

49 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

50 LONDON, N.W.—Partnership in Practice of £2,290 p.a. in suburban district. Panel 2,525. Scope for increase. Premium one-half share 2 years' purchase.

51 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 250. Convenient semi-detached house (4 bedrooms), with good garage and secluded garden, for sale or rent. Great scope. Premium 1½ years' purchase.

52 CO. DURHAM. — Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale. Premium for one half share only £1,000.

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2. SOUTH-WEST OF ENGLAND.—FAVOURITE COAST TOWN.—Old-established good middle-class non-dispensing PRACTICE, averaging £2,100 p.a. Selected panel of 700. Very good appointments worth about £400 p.a. Fees 5/- to 21/-. Midwifery from 5 gns. About 10 cases yearly. House contains 2 reception, 4 bedrooms, etc., waiting, and consulting rooms. Freehold can be bought, or other suitable houses available. Good hospital in the town, and excellent scope for surgery, particularly if successor holds a Fellowship. Premium 2 year's purchase.
3. ESSEX.—COAST TOWN.—Increasing PRACTICE, situated in good residential district, and producing over £1,000 p.a. including selected panel of 100, and good appts. worth about £210 p.a. Large modern house, with beautiful garden; can be rented or bought. Premium £1,150.
4. LONDON, S.W.—Good middle-class PRACTICE, offering considerable scope, and producing for the past 12 months over £670, including panel of nearly 400. Fees from 2/6. Midwifery 3 gns. (about 30 cases yearly). Suitable house, with dining room, consulting room, and dispensary, 3 bedrooms, sitting room, etc. Price for leasehold (94 years to run) £1,200, part on mortgage. Premium £1,050.
5. MIDLANDS.—PARTNERSHIP.—A one-third share is offered in a very sound middle and working-class Practice, held by the senior partner for 35 years. Average gross cash receipts for the past three years nearly £3,000. Panel of over 1,600. Fees 3/6 to 21/-. Midwifery from 3 gns. (about 60 cases). Suitable house available on rental, with 2 reception, 3 bedrooms, etc. Small garden. Garage. Sport of all kinds, and very good schools within reach. Prem. 2 years' pur.
6. NORTH OF ENGLAND.—FAVOURITE COAST TOWN.—Old-established middle and upper-class non-panel PRACTICE, averaging for the past three years nearly £5,000. Fees from 5/- to 21/-. Very suitable for two friends in partnership, one holding the F.R.C.S., as there is excellent surgical scope. Two good houses available, with ample accommodation, either on rental, or by purchase.
7. MID-WALES.—Agricultural District.—Mixed-class PRACTICE, producing about £880 p.a., including small panel of 130. Fees 3/6 to 21/-. Small house, with 2 reception, 3 bedrooms, etc. Price £550. Fishing, shooting, and other sport. Premium 1 year's purchase.
8. WEST OF ENGLAND.—Old-established general PRACTICE, situated in exceptionally nice neighbourhood, with good sporting and social facilities. Income averages about £1,000 p.a., with small panel of 400. Fees from 3/6 to 1½ gns. Particularly good house, with beautiful garden, and containing 2 reception, 7 bedrooms, etc. Price for freehold £2,000, part on mortgage. Excellent surgical prospects. Premium 1½ years' purchase.
9. WOMAN DOCTOR'S PRACTICE.—YORKS.—LARGE TOWN.—Established eight years, easily worked, and producing nearly £700 p.a. Panel of 500. Fees 5/- to 7/6. Midwifery 3 to 5 gns. Compact house, with 2 sitting, 2 bedrooms, 4 attics, etc. Garden. Garage. Rent on lease £42 10s. p.a. Prem. 1½ years' purchase, or near offer.
10. SOUTH OF ENGLAND.—Favourite Coast Town.—NURSING HOME, with small private Practice combined, the latter offering very good scope for development. Total receipts last year about £600. Very nice detached house, with excellent accommodation, very well appointed. Price for leasehold (87 years to run) £2,100, or can be rented at £140 p.a. Premium for goodwill, to include handsome furniture, fittings, etc., £1,250.
11. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-fourth share is offered in an exceptionally sound good mixed-class Practice, averaging over £6,000 p.a., including panel of 3400. Lowest fee 4/-. Very little midwifery. If single, purchaser can live in comfortable rooms; otherwise choice of houses for sale or on rental. Premium 2 years' purchase.
12. NORTH OF ENGLAND.—GOOD TOWN.—A one-third share is offered in a very sound Practice, averaging about £5,000 p.a. Ingoing Partner must be well qualified and not over 35, and interested in medicine. Suitable house available. Premium 2 years' purchase.
13. CHESHIRE.—NEAR COAST.—Old-established middle and working-class PRACTICE, averaging for the past three years over £1,300. Panel of 550. Fees from 3/6. Good house, with 3 reception, 7 bedrooms, etc. Price for freehold £1,200, part on mortgage. Premium 2 years' purchase.
14. WITHIN TEN MILES OF LONDON. — PARTNERSHIP. — The third share of an old-established good middle and working-class Practice is for disposal, offering excellent future prospects. Cash receipts last year amounted to nearly £2,700, including panel of nearly 1,500. Suitable house available at moderate price. Premium £1,800.
15. WITHIN FOUR MILES OF THE BANK.—Old-established working-class PRACTICE, producing for the last 12 months £2,300, including panel of over 2,800. Appts. worth about £160. Visits from 2/6. Low expenses. Suitable house can be rented or bought. Surgery premises on rental. Premium £4,000 cash.
16. NORTH-WEST COAST.—SURGICAL PARTNERSHIP.—In a popular residential seaside resort the half share of middle and upper-class Practice is offered to a suitable gentleman possessing the F.R.C.S., as the retiring partner does the surgical work, the remaining partner the medical side. Receipts average nearly £5,000 p.a. Very good modern house, recently built, with ample accommodation, good garden, tennis court, etc. Rent on lease £240, or can be purchased. Premium 2 years' purchase.
17. PARTNERSHIP.—In a most desirable outlying residential suburb of London, a suitable partner (experienced, not over 30 years of age and married) can acquire a share producing (to commence with) about £1,200 p.a., in an old-established good mixed-class Practice averaging just over £10,000 p.a. Very good house, with ample accommodation. Rent £150 p.a. Premium 2 years' purchase cash.
18. MANCHESTER.—Good mixed-class PRACTICE, averaging over £1,300 p.a., but capable of much increase. Vendor having neglected work owing to ill-health. Panel of about 550. Fees 3/6 to 7/6. House, with 2 reception, 5 bedrooms, etc. Garden. Garage. Price £2,700. Premium 1½ years' purchase, payable by arrangement.
19. SOUTH AFRICA.—Within 100 miles of East London.—Increasing PRACTICE, in very pretty Township near sea coast, producing last financial year £1,066. Practically all fees cash. Climate excellent. No night work and little or no visiting. Living cheap. Bungalow residence in 3/4 acre of productive garden. Price £750, £400 on mortgage, or premium for quick sale £1,100 for Practice and house. Sport of all kinds.
20. BORDERS OF BERKS AND HANTS.—In a delightful sporting and agricultural district, within reach of market town, an old-established mixed-class PRACTICE averaging about £850 p.a., including panel over 400. Visits 5/- to 10/6, medicine extra. House contains 2 sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. Rent £50 p.a. on lease. Premium £1,100.
21. DEVON.—PARTNERSHIP.—Half share of very old-established unopposed Country Practice, offering scope, and situated in pretty village within reach of large town. Cash receipts last year £2,220, including appts. and panel of 880. Visits 3/6 to 21/-, medicine extra. House contains 2 reception, 4 bedrooms, bathroom, etc. Garden. Garage. Rent £30 p.a. Premium £2,000. Hunting, shooting, fishing, etc.
22. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-third share (with increase to one-half later) is for disposal in a particularly sound well-established mixed-class Practice, owing to the retirement of the senior Partner. Gross cash receipts average £4,379 p.a. (last year £4,437). Panel of 1,344. Consultations 3/6 upwards. Visits 5/- to 21/-. Very suitable house, with 3 reception, 6 to 7 bedrooms, etc. Garden. Garage. Rent on lease £100 p.a. First-rate schools and sport. Premium 2 years' purchase.
23. NORTH DEVON & CORNWALL BORDERS.—Very old-established unopposed Country PRACTICE, in beautiful district near coast. Cash receipts average just over £1,100 p.a., including appt. and panel of 330. Suitable house available. Premium £1,600, to include drugs, etc. Hunting, golf, fishing, etc.
24. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old-established middle and upper-class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 3/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,500.
25. CATHEDRAL CITY (NORTH).—PARTNERSHIP.—Third Partner required in very old-established lucrative and increasing middle and working-class Practice. Cash receipts for past three years average £4,544 p.a. (last year £4,911), including panel about 4,000. A fifth share is for disposal, with increase to a third later. Suitable accommodation available. Premium 2 years' purchase.
26. NORTH MIDLANDS.—WITHIN 3 MILES OF FAVOURITE TOWN.—Old-established good middle-class PRACTICE, offering large scope. Cash receipts for last 12 months £1,332, including panel of over 1,000. Fees from 3/6. Mid. from 2 gns. Exceptionally nice house, in about 4 acres of ground, with tennis lawn, fruit and vegetable gardens, etc., containing 3 reception, 6 bedrooms, etc. Freehold for sale. Premium 1½ years' purchase.
27. MANCHESTER.—Semi-residential Suburb.—Very old-established non-dispensing mainly middle-class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of Midwifery from 5 gns. Well-situated house, with good accommodation. Price (freehold) £1,600. Premium £3,750.
28. LINCS. — PLEASANT MARKET TOWN. — PARTNERSHIP. — A half share, with possible succession in two years' time. Average income for past three years £1,900, including appointments and panel producing £500. Advice and medicine 5/- upwards; visits from 5/-. Very few midwiferies from 2 to 3 guineas. Large house with garden and garage. Price freehold only £1,200. Sport of all kinds, and excellent schools for boys and girls. Premium 2 years' purchase, payable £1,000 down, remainder by arrangement.
29. LANCS.—LARGE TOWN.—Old-established better and middle-class PRACTICE, producing last year over £1,400, including panel of 970. Visits 2/6 to 10/6, with medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Garage, garden. Rent on lease £90 p.a. Premium £2,050.

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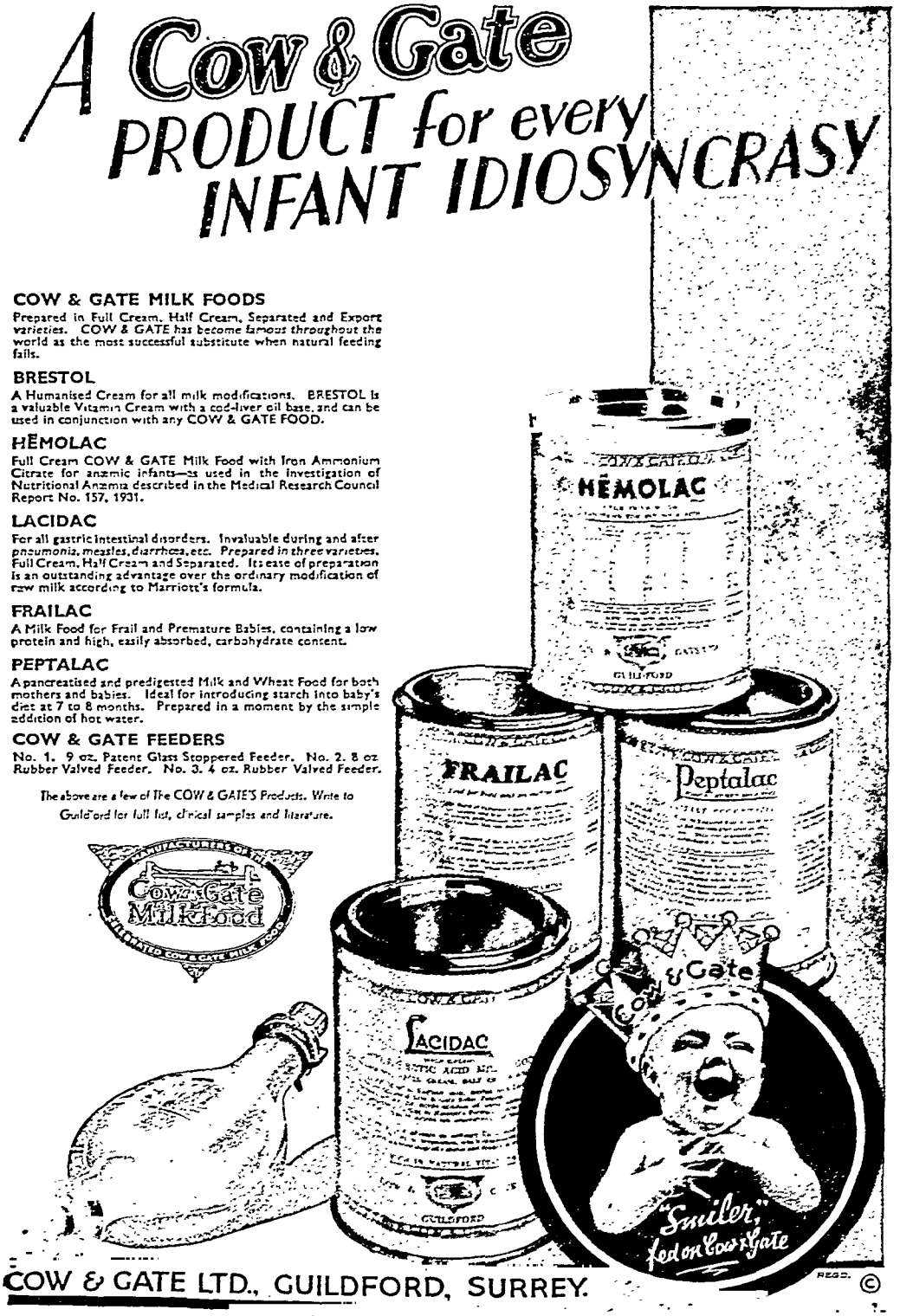
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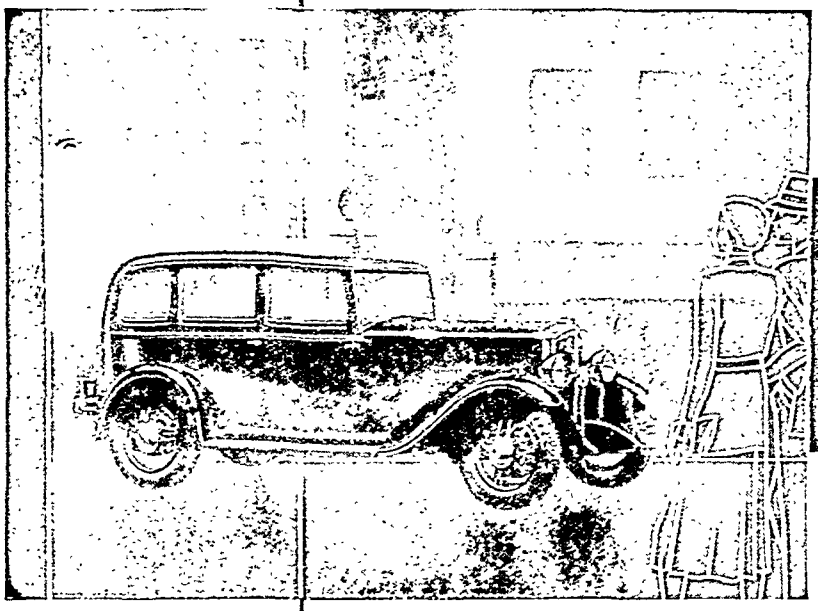
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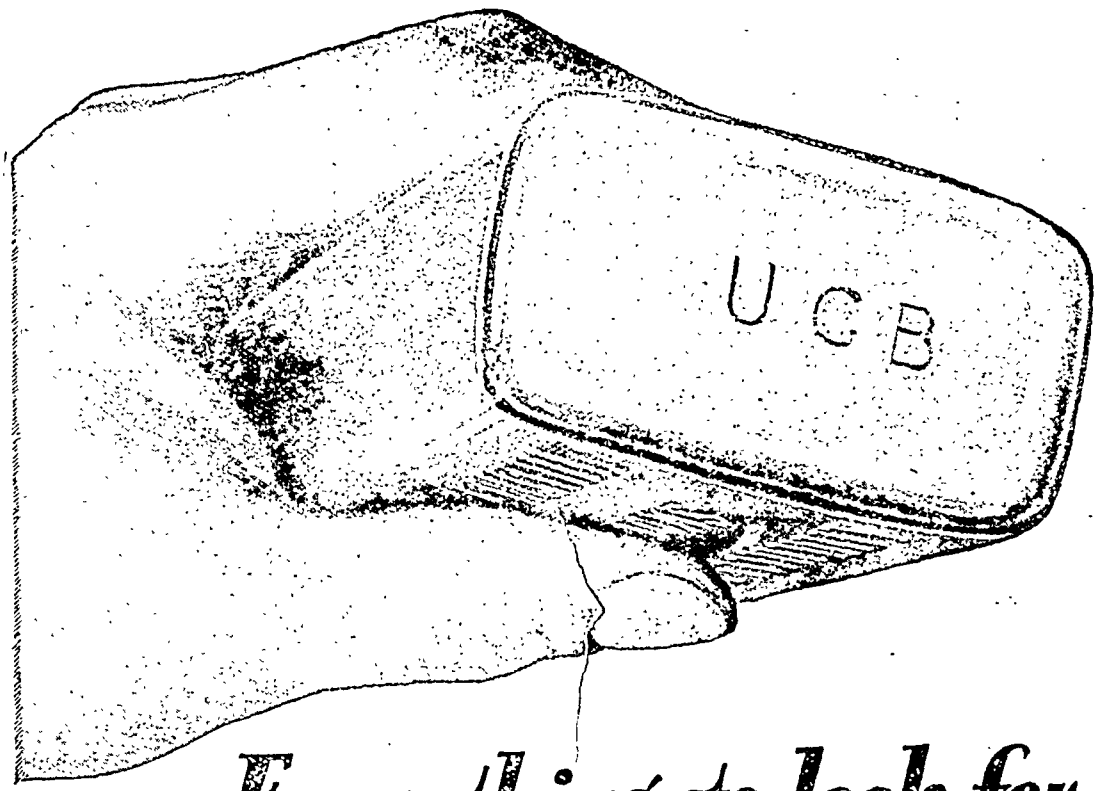
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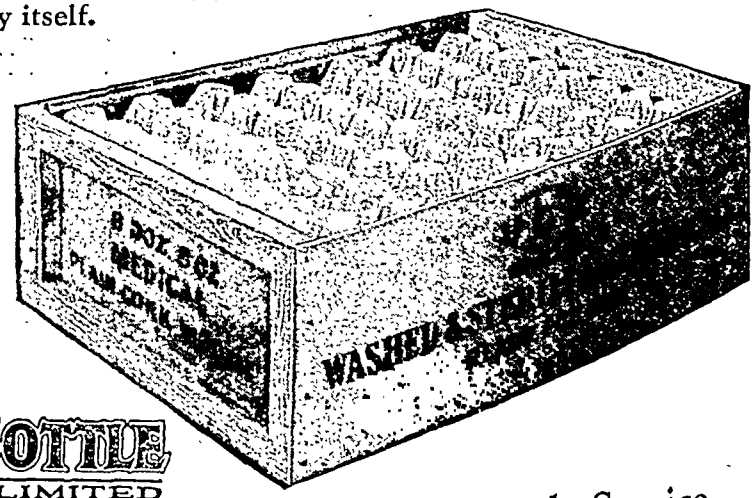
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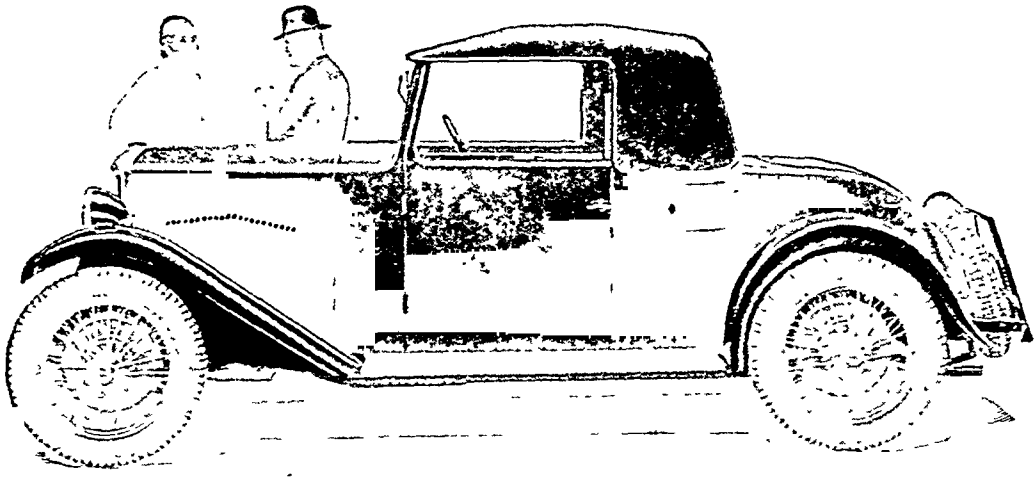
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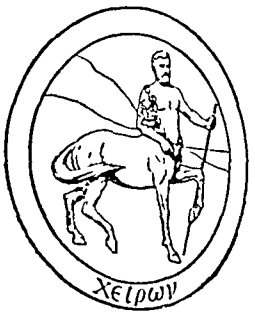
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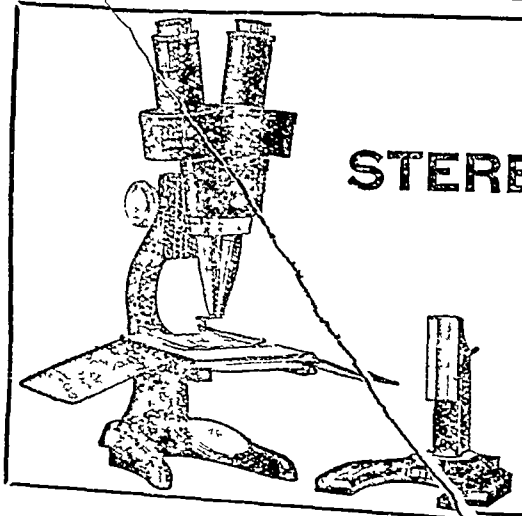
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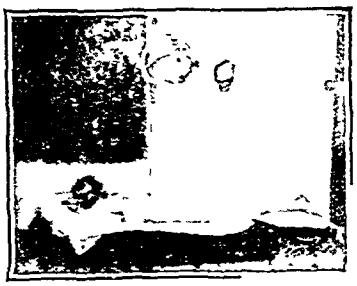
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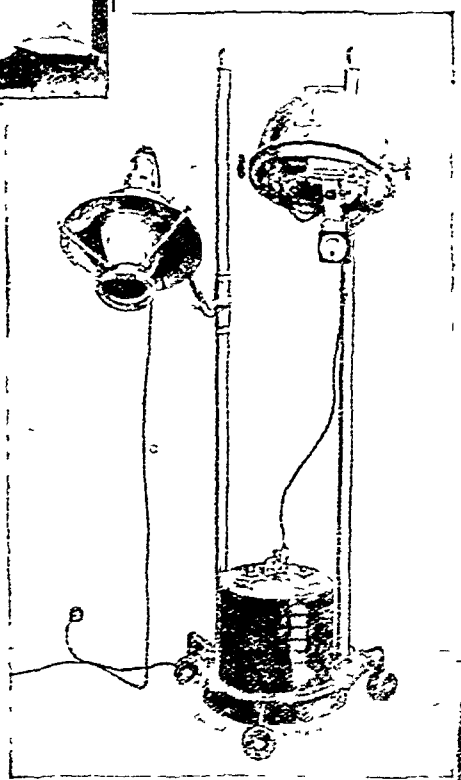
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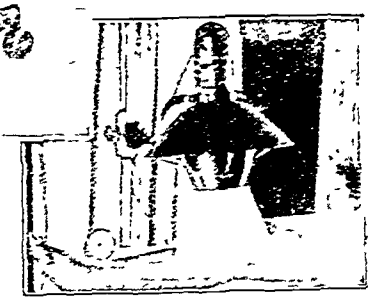
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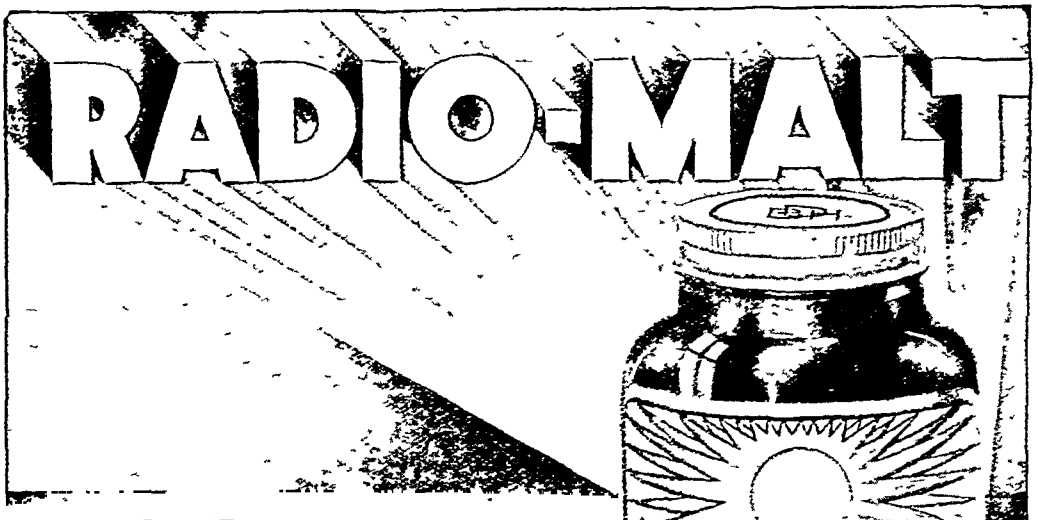
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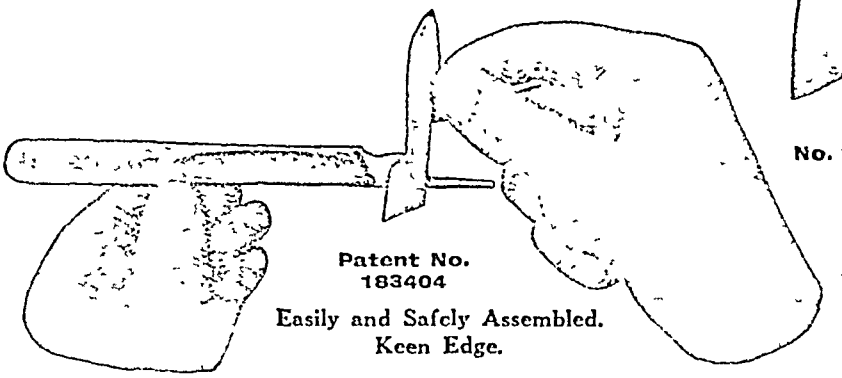
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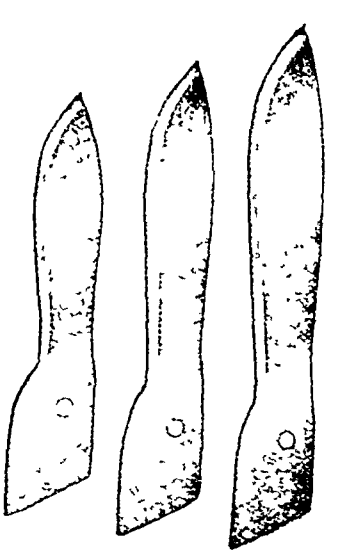
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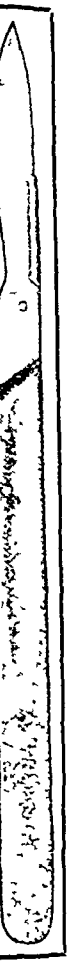


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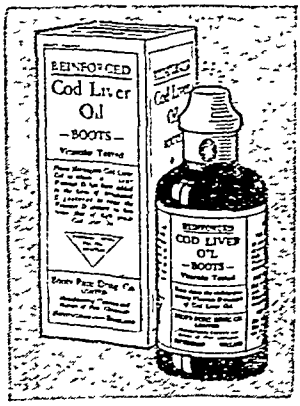
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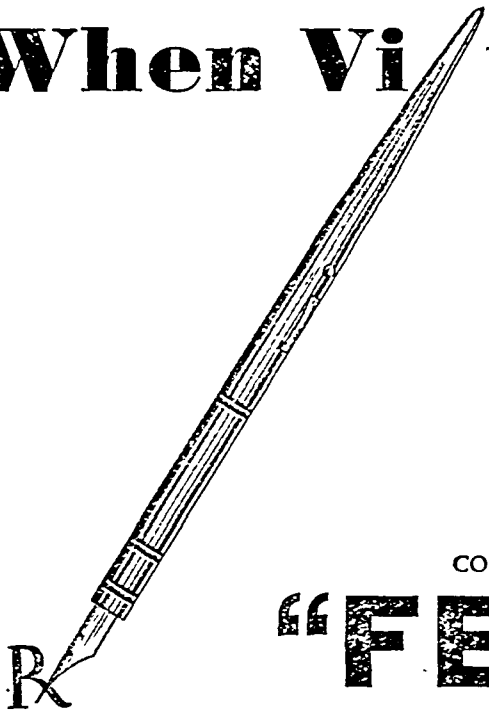
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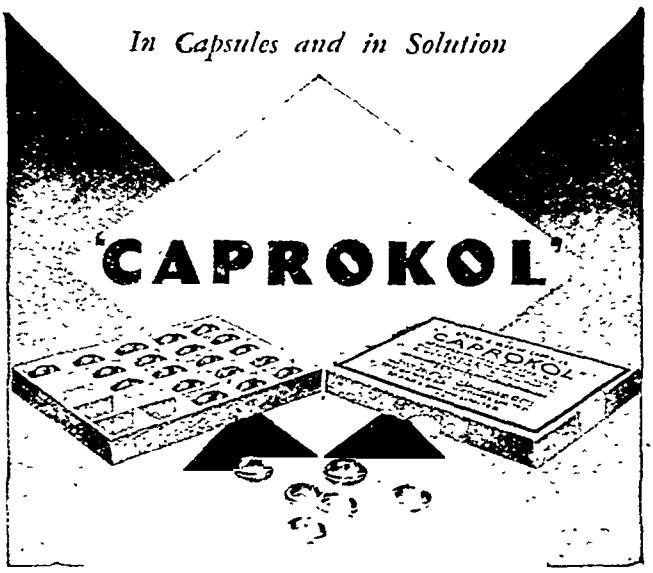
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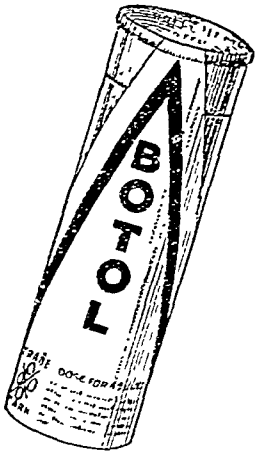
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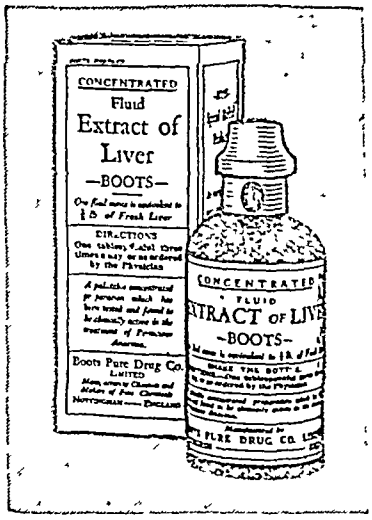
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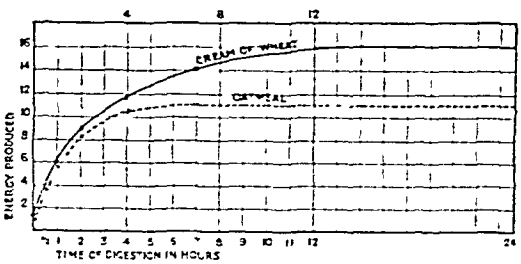
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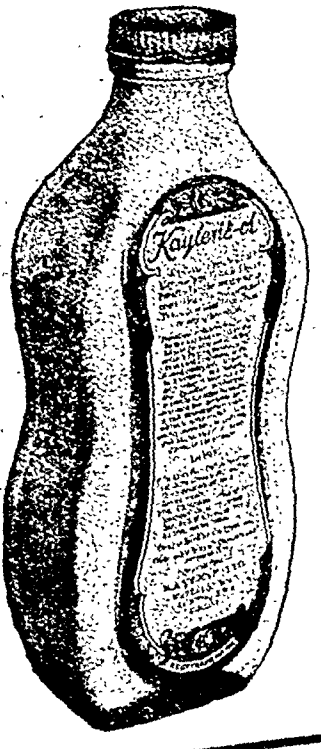
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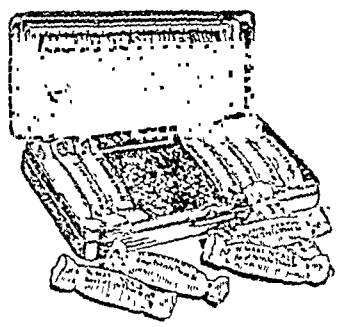


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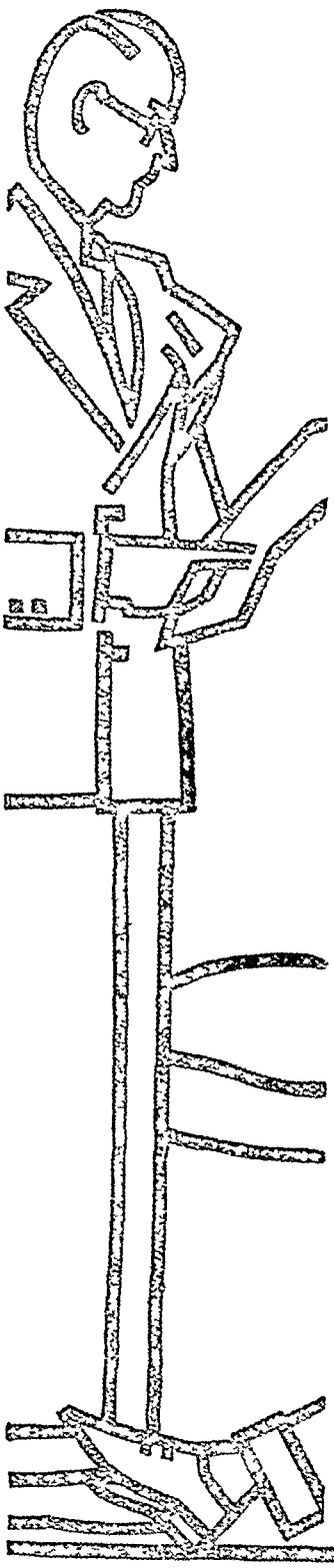
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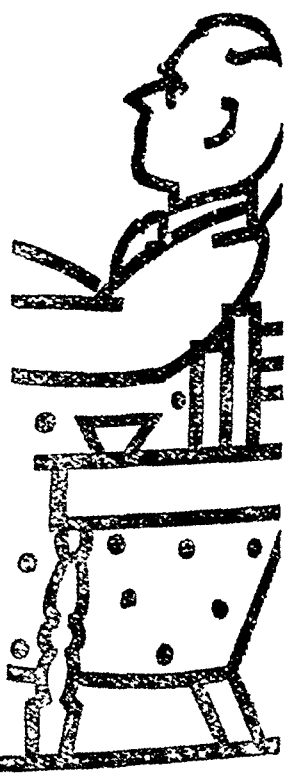
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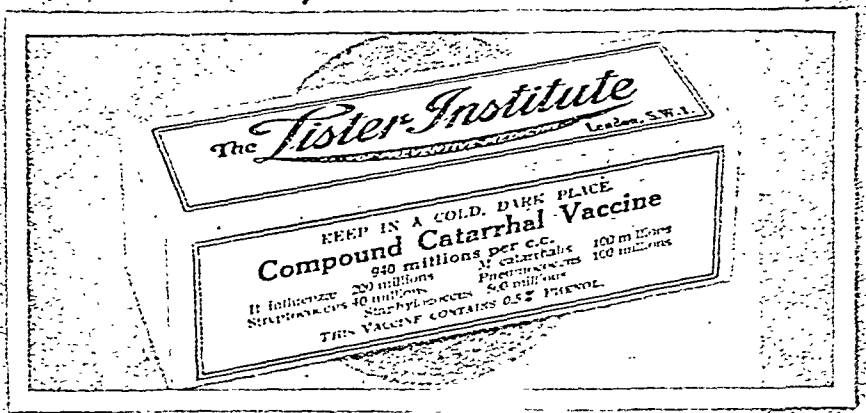
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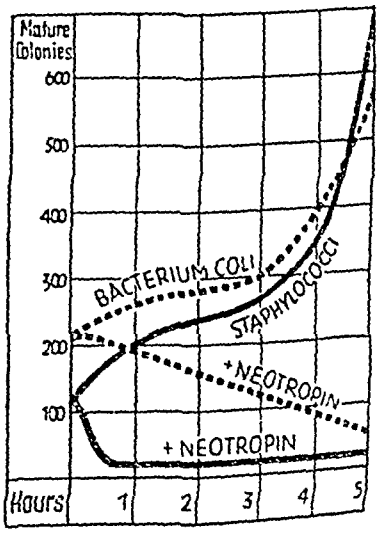
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Remarks on ENDOMETRIOSIS AND ENDOMETRIOMATA*

BY

DANIEL DOUGAL, *M.C.*, M.D., F.C.O.G.

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY IN THE UNIVERSITY OF MANCHESTER; HONORARY SURGEON TO THE ST. MARY'S HOSPITALS; LATE HUNTERIAN, AND HONORARY ASSISTANT GYNAECOLOGICAL SURGEON TO THE MANCHESTER ROYAL INFIRMARY

It is just ten years since J. A. Sampson read his epoch making paper on perforating haemorrhagic cysts of the ovary,[1] and a sufficient interval has now elapsed to enable us to take stock of the position and assign these endometriomatous tumours to their proper place in gynaecological pathology and practice. This is easier to-day, because the novelty and glamour surrounding these tumours has largely disappeared, and the more adventurous spirits in gynaecology are turning their attention to other problems. I cannot pretend to discuss the subject adequately in the time at my disposal, but will endeavour to place before you the principal biological, pathological, and clinical features, reinforcing them as far as I can by statistics from a series of 137 cases operated on by myself during the past five years.

By endometriosis is meant the pathological state brought about when fragments of endometrium leave their proper situation in the uterus and implant themselves in neighbouring tissues, and by endometriomata the tumours which develop if conditions are favourable for the growth of these implants. In my opinion the vast majority of endometriomata arise in this way, but possibly a small number may be derived from Müllerian rests.

An endometrioma is therefore a tumour containing endometrial elements, or, at any rate, elements which look and behave like endometrium. Gland tubules in a richly cellular stroma are the histological criteria, but there may also be present a variable quantity of effused blood, cystic spaces lined by columnar or flattened epithelium and containing tarry blood, or hyperplasia of the muscular or fibrous tissue of the organs invaded. Physiologically these endometrial elements betray their origin by passing through the various phases of the menstrual cycle, including that of menstrual haemorrhage, and by undergoing a decidual change during pregnancy, though the latter, of course, is not specific to endometrium, but found constantly in the ovaries, and frequently in the peritoneal covering of the other pelvic organs.

Etiology of Endometriosis

In 1908 Cullen[2] examined a number of specimens of diffuse endometrioma of the uterus, or diffuse adenomyoma as it was then called, and found as a result of his investigations that in places there was direct continuity between the endometrium proper and that contained within the tumour and frequently an actual communication between the uterine cavity and several of the cystic spaces in the growth. This became known as the diverticular theory, and may be regarded as the simplest form of endometriosis. In certain other uterine endometriomata no such continuity can be demonstrated, and in these it must be assumed that the misplaced endometrium has reached its new situation by metastasis through the lymph vessels or venous channels of the uterine wall. Similar tumours not infrequently follow tuberculosis of the uterus or tubes, so it is possible that an inflammatory process may be a factor of some importance.

Many theories were advanced to explain the occurrence of extrauterine endometriomata, different authorities suggesting that they were derived from Wolffian or Müllerian rests or by metaplasia from the peritoneal endothelium. In 1921, however, Sampson illuminated the whole problem with his theory of retrograde menstruation and cellular spill. According to this theory, some of the menstrual discharge with its normal content of endometrial fragments may pass backwards through the Fallopian tubes and so reach the pelvic cavity. The structures lying in closest relationship to the fimbriated ends of the tubes naturally receive most of the fragments, or implants as they are now called, but gravity and the normal movements of bowel and bladder render a much wider dissemination possible.

That retrograde menstruation is more than a mere theory, and does actually occur, is within the experience of every gynaecological surgeon; as when performing abdominal operations during the menstrual period he must have occasionally observed blood dripping from the fimbriated ends of the tubes or lying in the posterior cul de sac. Parity, retroversion of the uterus, enlargement or distortion of the uterine cavity by fibroids, or any obstruction to the flow of menstrual blood through the cervix, may all predispose to this retrograde flow. Direct endometriosis of the peritoneal cavity through the uterine wall may of course follow such operations as involve incision or puncture of the uterine wall—Caesarean section, or myomectomy, for instance. In my own series of cases, previous operations included 10 per cent. of curettings, 1 Caesarean section, 3 operations upon the appendages, and 7 appendicectomies.

However brought about, the result is a shower of implants which reaches the pelvic cavity and the various organs lying within it. The subsequent fate of these implants then depends on several factors—among others, their vitality and virulence, and the nature and resisting powers of the tissue invaded. The ovary and recto-vaginal septum appear to offer the best conditions for active proliferation, and it is therefore in these situations that extrauterine endometriomata are most commonly found. Three possible explanations in the case of the ovary may be the absence of a peritoneal covering, the breach of surface continuity which follows ovulation, and the greater concentration (possibly) in the ovary of the specific hormones controlling menstruation. There is always a definite reaction on the part of the invaded structures, and this leads to adhesions of great density and to hyperplasia of any fibrous or muscular tissue which may be present in the vicinity. The menstrual products of the tumour itself are also peculiarly irritating and still further intensify the local reaction.

From its very nature, endometriosis must result in a wide distribution of endometrial elements, and this is particularly so when it has followed retrograde menstruation and cellular spill. Even in the case of direct invasion of the uterine wall from the cavity it is quite possible that the resulting diffuse tumour really represents a number of different implants, each of which is surrounded by hyperplastic fibro-muscular tissue. The usual result of endometriosis, therefore, is the formation of multiple tumours in the pelvic organs, though not all of these become sufficiently prominent to form part of the clinical picture.

Pathology of Endometriosis

The various elements composing endometrial tumours have already been referred to, and it is only necessary at this stage to describe the naked-eye appearances of pelvic endometriosis and the various fully developed tumours which may arise from that condition. Endo-

* Paper read to the Section of Obstetrics at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

metriosis following direct invasion of the uterine wall from the endometrium usually results in a diffuse tumour, largely made up of hyperplastic fibro-muscular tissue, but also containing numerous islets of misplaced endometrium, some of which have become cystic and filled with blood. The external contour of the uterus is not usually altered, as the enlargement is uniform. The tumour differs from a fibroid in possessing no capsule, and in having its cut surface studded with the endometrial areas already referred to. Like a fibroid, however, it may occasionally grow outwards or inwards, and become pedunculated subserous, or submucous, as the case may be. In cornual tumours there is a localized swelling near the inner end of the tube, and on section this is frequently found to contain a cyst filled with tarry blood.

Endometriosis following retrograde menstruation and cellular spill produces naked-eye appearances which are unmistakable. The fimbriated extremities of the Fallopian tubes are usually patent. Dotted about the pelvic peritoneal cavity are numerous purplish blebs which microscopical examination will demonstrate to be endometrial implants. Some of these have irritated the peritoneal surfaces and led to dense adhesions, as evidenced by fixation of the ovaries and tucking up of the utero-vesical or utero-rectal peritoneum.

If conditions are favourable for further growth, definite endometriomata are produced ; these differ in their naked-eye appearances according to the particular organ affected. In the ovary the physiological activity of the implants as judged by the amount of blood effused during menstruation is most marked, and the tumour therefore becomes cystic and filled with tarry blood. Sampson, indeed, regards the ovary as "a sort of intermediate host, hotbed, or incubator, which may impart greater virulence to the tumour elements, and, if subsequent rupture occurs, [illegible] tumour [illegible] times much [illegible] to a wider distribution of the neoplasm." The [illegible] of a large unilo[illegible] usually about the size of a walnut, but sometimes larger, and may even reach the dimensions point of implanta[illegible] always escape when the [illegible]dar cyst. It is adherent at the original The firm walls of the cyst the[illegible] and, consequently, its contents and the point of rupture remain[illegible]ry is separated at operation. addition to the primary adhesion, [illegible] prevent complete collapse, present, and these firmly attach the ova[illegible]ers are usually structures, and, when separated, expose a raw [illegible] adjacent surface. These adhesions probably result from leaka[illegible] [illegible]nular the irritating cyst contents. [illegible] of

Next in importance comes the tumour of the recto-[illegible] vaginal space, which develops presumably from an implant [illegible] in the pouch of Douglas. The appearances are aga[illegible] characteristic, the rectum being tucked up and adhe[illegible] to the posterior surface of the uterus and its wall [illegible] thickened and nodular, sometimes to such a degr[illegible] it closely simulates a malignant tumour. The gro[illegible] also involve the cervix and posterior vagina[illegible] even project as nodules or polypi into t[illegible] vaginal fornix.

The uterine wall itself may develo[illegible] as the result of endometriosis of t[illegible] implants attaching themselves primar[illegible] surface of the uterus or invading it fr[illegible] established in the ovary, recto-vaginal [illegible] The direct[illegible] of growth is towards t[illegible] however, and not away from it, as in th[illegible] already described.

Similar tumours are not infrequently f[illegible] Fallopian tube, round or utero-sacral ligam[illegible] colon, small intestine, and more rarely as p[illegible] curiosities in the appendix, umbilicus, inguinal [illegible] scar of a previous abdominal operation.

DOSAGE

In my own series the distribution of the principal tumours was as follows:

Diffuse uterine	6 cases
Cornual	6 cases
Ovarian	44 cases
Recto-vaginal	44 cases
Ovarian and recto-vaginal	34 cases

The ovarian and recto-vaginal tumours, in addition to being frequently present together in the same case, were often associated with similar growths in the utero-sacral ligaments, uterus, or bowel ; but separate classification of these is unnecessary, as all are essentially part of the same process.

The question of other lesions associated with endometrioma is important, and, of these, uterine fibroids must take first place. They were present in 40 per cent. of my own cases, and of sufficient size to be of clinical importance in 27 per cent. Looking at it from the opposite point of view, 10 per cent. of all fibroids operated on during the five years covered by the series were associated with endometrioma. Their influence as a possible factor in retrograde menstruation has already been mentioned, and would be expected to be more apparent in the case of single or nulliparous women. In single women the percentage of fibroids was actually about 50. Sampson has advanced a theory that fibroids may actually originate in endometriomata of the uterine wall, the endometrial elements disappearing at a later stage, and leaving only the fibromyomatous stroma.

True pelvic inflammation may be associated with endometriosis, but is unlikely to have advanced to the stage of tubal occlusion, as retrograde menstruation would then be impossible. Curtis[3] believes that the two conditions are actually antagonistic, having noticed that, with improved prophylaxis in the management of gonorrhoeal infection and the resultant decrease in the incidence of salpingitis, there has been an enormous increase in the number of patients with misplaced endometrial tissue.

There appears to be no relationship between endometrioma and carcinoma of the uterus, but in two of my cases there was an associated malignant growth of the cervix. With ovarian carcinoma it is otherwise, however, and Sampson,[4] after examining a number of specimens, has come to the conclusion that malignant ovarian disease may develop in misplaced endometrial tissue.

Clinical Features of Endometrioma

Endometriosis is possible at any age between puberty and the menopause, but treatment of the resulting endometriomata is usually carried out during the period of sexual maturity. In my own cases 91 per cent. were operated on between the ages of 30 and 50 years. Twelve patients were under 30 years and nine over 50. The tumours are found most commonly in married women, there were only 17 single women among my 137 cases of endometrioma.

It is not possible to give statistics as to the frequency of endometriosis, but the number of endometriomata producing symptoms is considerable. I operate on between twenty-five and thirty of these cases each year, the laparotomies amounting to about 11 per cent. of the total abdominal operations. This figure is not very different from that given by Sampson, which is 12 per cent. of abdominal operations carried out during sexual maturity.

In its early stages, endometriosis produces few symptoms for which it can be held responsible, and may only be discovered accidentally when the abdomen is opened for some other condition. As the implants mature and adhesions form, however, there will usually be increasing pelvic discomfort, dysmenorrhoea, and disturbances of the menstrual flow. Even then, certain associated pathological

such as fibroids or malignant disease may dominate the clinical picture and produce the symptoms for which the patient actually seeks advice. After consideration of my own cases, I came to the conclusion that endometrioma was entirely responsible for the symptoms in 65 per cent., and partly responsible in 8.7 per cent., while fibroids were entirely responsible in 21 per cent.

Coming to the question of symptoms it must be stated at the outset that there is not one which will definitely point to the existence of endometrioma. Lower abdominal pain is very common, and in my series was present in 40 per cent. of cases. Dysmenorrhoea, particularly of recent origin, is probably the most characteristic symptom, but it is by no means constant, and was complained of in only 31 per cent. of cases. When present, it is presumably due either to pre-menstrual congestion of the endometrial elements or to tension following accumulation of menstrual blood. Menorrhagia or epimenorrhagia is another common symptom, and was also found in 31 per cent. It has been suggested that this symptom is more likely to be due to associated fibroids than to endometrioma, but this is not borne out by my own figures, as the percentage of fibroids in patients complaining of this symptom was very little higher than that for the whole series—47 as against 40. Bearing down and rectal discomfort are frequently met with when the growths are in the recto-vaginal space, or when there are adhesions in the neighbourhood of the rectal wall. Backache is such a common complaint in women that its value in differential diagnosis is strictly limited, but this symptom is prominent when the ovaries are adherent in the pouch of Douglas or when the rectum or back of the cervix is involved. Dyspareunia is frequently complained of in similar circumstances, also shooting or "electric" pains extending down into the uterus and vagina. Occasionally there may be pain down one or other leg when an ovarian endometrioma is adherent to the pelvic wall. Marked constipation may be associated with extensive involvement of the rectum or other parts of the alimentary tract, and a blood-stained discharge present when a recto-vaginal growth has perforated the vaginal wall.

The physical signs naturally depend on the situation of the tumour. In the ordinary diffuse uterine tumour there will usually be moderate and uniform enlargement of the uterus, but with cornual tumours there may be definite irregularity. In either case the physical signs will closely resemble those of a uterine fibroid, and differential diagnosis will be impossible unless increasingly severe dysmenorrhoea has led one to suspect the true state of affairs.

In ovarian endometrioma there will be an enlargement and fixation of one or both ovaries, and as these are usually adherent to the back of the uterus, the latter will be retroposed and its mobility lessened. In the absence of evidence pointing to pelvic infection, such a finding should lead one to suspect an endometrial tumour. When the growth is in the recto-vaginal space, the physical signs are most characteristic, the infiltrating character of the tumour and the presence of tender shotty nodules in the wall of the posterior fornix being sufficient evidence upon which to base a diagnosis. Recto-vaginal examination will prove helpful in these cases, as it may reveal fixation of the rectum to the back of the tumour.

To sum up, it may be stated that there are no pathognomonic symptoms of endometrioma, but that increasing dysmenorrhoea, menorrhagia, and dyspareunia should lead one to suspect the condition. The physical signs, however, are more characteristic, at any rate in the case of extrauterine growths, and fixation of the uterus and ovaries associated with a shotty nodular tumour behind the cervix affords conclusive evidence.

Endometriomata and the Reproductive Function

That endometriomata seriously interfere with childbearing is shown by the fact that patients with these tumours usually give a history of sterility or of no births having occurred for several years. In my series of 137 cases, after excluding 17 single women and 8 women who had been married less than three years, 41 per cent. were sterile. Of the parous women 75 per cent. had not been pregnant for at least five years and 50 per cent. for at least ten years. There was no special incidence of abortion, the abortion/full-term ratio being 1 to 5.8. Associated fibroids may be partly responsible for the absolute or relative sterility met with in those cases, but that their influence is not very great is shown by the fact that there is little difference in the incidence of these tumours in nulliparous and parous women, the percentages being 46 and 41 respectively. Endometrioma, at any rate in its early stages, is not an absolute bar to pregnancy, and I certainly know of one patient with a well-marked endometrioma of the recto-vaginal space who subsequently became pregnant, although no actual treatment was carried out for the tumour itself.

Treatment

As endometriomata are usually widely distributed and of an infiltrating character, it will be understood that conservative measures are only possible in the early stages, and that even then the chances of recurrence are considerable. A conservative policy is only justifiable, however, if one ovary alone is involved, or if there are isolated nodules in the recto-vaginal space causing dyspareunia.

In my own series I find that the uterus and all ovarian tissue were removed in 83 per cent. of cases, the operations on the remainder consisting of excision of one ovary or of nodules in the recto-vaginal space. I have no experience of radium in the treatment of endometrioma, but I would prefer local excision in early cases as being less likely to interfere with ovarian function. Owing to the dense adhesions present and the frequent involvement of bowel, radical operations may be among the most difficult in gynaecology, but the results both immediate and remote are extremely good. Total is preferable to subtotal hysterectomy, and it is quite unnecessary to excise infiltrating growths in the rectum or other parts of the alimentary tract, as atrophy will follow if both ovaries are removed.

There was only one death in the series, representing an operative mortality for the radical operations of 0.8 per cent. One of the patients treated by removal of the affected ovary has since been delivered of two full-term children. This is my only experience of pregnancy following conservative surgical treatment of endometrioma.

Summary

1. Endometriosis is defined as the pathological state brought about when endometrial fragments invade the uterine wall or, passing through the Fallopian tubes in regurgitant menstrual blood, reach the pelvic cavity and the structures within it.

2. Cullen's diverticular and Sampson's retrograde menstruation and cellular spill theories are therefore accepted as providing the most reasonable explanation of uterine and extrauterine endometriosis respectively.

3. Endometrioma is defined as one of the tumours which develop when misplaced endometrial fragments or implants proliferate sufficiently to form clinico-pathological entities, and is accepted as the most suitable term to apply to all such tumours, whether uterine or extrauterine.

4. The clinico-pathological features of endometrioma are described, and stress is laid on the multiple character of the lesions resulting from endometriosis.

5. Surgical treatment is discussed, and radical measures are advocated for all but the earliest cases.

6. Statistics are quoted from a personal series of 137 cases operated on during the last five years, and individual cases referred to where necessary.

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JAUNDICE IN CHILDHOOD*

BY

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Although, strictly speaking, the term "jaundice" implies staining of the skin, mucous membranes, or conjunctivae, such general staining by bile-pigments is always associated with an excess of bilirubin in the blood; and as such excess is the most constant finding, and precedes the staining of the tissues, it is convenient to regard excess of bilirubin in the blood as the measure of the condition under discussion. Before dealing with the various conditions, which in children are characterized by jaundice, it is useful briefly to review the mechanism of its production.

The modern view, well supported by experimental and clinical evidence, suggests that bilirubin is formed from haemoglobin by the cells of the reticulo-endothelial system, chiefly by those of the spleen, liver and bone-marrow. The bilirubin so formed is further changed by the polygonal cells of the liver and excreted through the bile-channels into the alimentary tract. The two forms of bilirubin are not physio-chemically identical, and can be distinguished by the test devised by Hijmans van den Bergh.[1] The bilirubin produced by the action of the endothelial cells gives an "indirect reaction" to the test, while that formed by the action of the polygonal cells gives a "direct" reaction. When the latter accumulates in the circulating blood, it is excreted as bile by the kidneys, but the former variety is rarely so excreted, the urine containing only an excess of urobilin. According to this conception, jaundice may be produced by (1) obstruction at any point in the biliary channels, the bile stagnant in the ducts being re-absorbed into the blood stream (van den Bergh's reaction "direct"); (2) disease of the polygonal cells, in which bilirubin, unchanged by and not excreted by these cells, passes into the general circulation (van den Bergh's reaction "indirect"); (3) disease of the liver, which may in one part involve the polygonal cells, and in another cause obstruction of the bile-channels (van den Bergh's reaction "biphasic"); and (4) excessive haemolysis, with the production of more bilirubin than the polygonal cells can change and excrete, the excess passing into the general circulation (van den Bergh's reaction "indirect").

Certain types of jaundice which will be discussed in this paper are undoubtedly due to toxins, and these types illustrate very well the important principle, perhaps even now not sufficiently realized in our attempts to understand and combat disease, that seldom if ever are morbid processes due to one factor only: practically always it is necessary to consider what may be termed the "seed" and the "soil," and often, in addition, factors which we may liken to "fertilizers" in the parallel suggested. The liver is markedly prone to suffer from the presence of certain toxins in the circulating blood, but there is an equally marked tendency for some individuals to suffer more than others. As an example of this idiosyncrasy may be mentioned the well-known tendency of certain people to become jaundiced after comparatively small doses of atophan or novarsenobillon. But, in addition to this personal idiosyncrasy, the same individual may show a greater effect at one time than at another. During pregnancy, for example, the function of the liver appears to be more easily upset. Age, too, exerts an influence: other conditions being equal, the child's liver is more prone to suffer than that of the adult, though the effect may be counterbalanced by the greater tendency to repair in the former. Poisons which exert their toxic effects on the liver usually show a maximal effect in the infant.

The study of jaundice in childhood is therefore of considerable value, and deductions drawn therefrom may often with advantage be applied to corresponding conditions occurring in adults.

It follows from what was said in the opening paragraphs of this paper that jaundice is a symptom or sign found in a variety of conditions, and is in no sense to be regarded as a disease in itself. Some of the conditions which will be discussed are clinically quite distinct and comparatively easy of diagnosis: others, though fairly obvious in typical cases, show a tendency to merge into related conditions, of totally different prognosis: as an example of the latter class may be instanced the cases of acute or subacute necrosis of the liver which appear to have commenced as so-called "catarrhal jaundice."

JAUNDICE OF THE NEWLY BORN

Jaundice is such a common sign during the early days of life that it is convenient to discuss these cases as a group.

Icterus Neonatorum (Physiological Jaundice)

Obvious jaundice occurs in a considerable percentage of infants during the early days of extrauterine life. In a still larger percentage it is masked by the pink coloration of the skin, and in these it can be rendered apparent by carefully emptying the capillaries of blood. Probably all infants at birth show an excess of bilirubin in the blood: this was so in every case of a large series I personally investigated, the results being in agreement with those obtained by Bang[2] and Ylppo.[3] The average concentration of bilirubin was 1:75,000, the normal in the adult being 1:400,000 to 1:1,000,000. Obvious jaundice does not appear before the second day, when it can usually be seen on the face, chest and back. It then makes its appearance on the upper parts of the limbs and on the abdomen. The sclerotics are the next to show the coloration, which appears last on the hands and feet. Mild cases may only show staining of the face and chest. The colour deepens for a few days and then gradually fades, fading taking place in the reverse order to the appearance, except that the sclerotics and the nails of the fingers and toes may retain the colour for a considerable time. The condition is more likely to be marked in premature babies. Except for a little drowsiness when the jaundice is deep, the health of the infant appears to be entirely unaffected, and the condition should be regarded as physiological. When an opportunity is obtained for post-mortem examination, as when death follows a birth-injury, it is of interest to note that staining of the tissues involves cartilage, cerebro-spinal

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fluid, and the nuclei of the brain, parts not stained in other forms of jaundice.

Many suggestions have been made in order to explain the origin of the jaundice—cooling of the skin after birth, compression of bile-ducts by dilated liver veins, re absorption of bile from the alimentary tract, post natal infection, and obstruction of the bile-ducts by mucus. Obstruction has not been demonstrated; indeed, all the evidence is in favour of a considerable flow of bile into the alimentary tract, and no striking evidence has been adduced in favour of infection. Observers were naturally impressed by the advent of jaundice after birth and sought post-natal causes to account for it.

In an attempt to investigate this problem some seven years ago, I was impressed by the high value of the bilirubin in the umbilical vein at birth. While the work was being conducted, an opportunity occurred to examine a case of paroxysmal haemoglobinuria; an attack was induced by immersing one of the patient's legs in cold water; although haemoglobin did not appear in the urine till six hours later, the plasma gave a well-marked indirect reaction to van den Bergh's test within half an hour. It appeared that quite a short time was sufficient for the production of an excess of bilirubin in the blood, and it was therefore possible that in the case of the newborn infant the jaundice was due to changes occurring during parturition.

Through the kindness of a number of obstetric surgeons, I was able to obtain specimens of blood from infants delivered by Caesarean section under spinal and under general anaesthesia. These all showed quantities of bilirubin in the blood of the same order as was found in infants delivered *per vias naturales*. In a series of cases of induced abortion, bilirubin was present in small amounts between the fourth and fifth months of gestation, and in increasing amounts up to term. After birth, there is a sharp rise in the value up to the third or fourth day, and then a gradual decline, till at the fourth to the sixth week the normal value is attained. It would appear that the post-natal rise differs in degree only from that occurring ante natally. Before birth, the foetus has two possible methods of excretion—through its liver and its own alimentary tract, and through the placenta into the circulation of the mother. At birth, the second method is withdrawn, and the liver of the infant must take upon itself the entire work of excretion. It is possible that the liver may be some time after birth before assuming its full function, the presence of bile salts in the pericardial and other body-fluids supports such a supposition, and similar delays are found in the case of the kidney and of the alimentary tract. Such a supposition might explain the degree of the post-natal rise.

There is another consideration which bears on this problem. During intrauterine life, haemosiderin is deposited in certain organs of the foetus, and a study of the age of the foetus in relation to the extent of the deposit suggests a parallel to the bilirubinaemia. Immediately after birth there is a considerable degree of haemolysis, and this may also account for the increase in bile-pigment in the blood after birth. Such an explanation would regard the condition as being allied to a haemolytic anaemia. In work carried out in association with M. Maizels,[4] it was found that in pernicious anaemia and other haemolytic anaemias there was a large difference in acidity between the red cells and plasma, the degree of this being correlated with the degree of haemolysis. In all these cases, the difference was due to increased acidity of the cells, that of the plasma being about normal. In a few observations I have had the opportunity of making on blood from the umbilical vein of newborn infants, the reaction of *both* plasma and cells has been more acid than normal, the *difference* being about equal to the normal difference found in the adult. Further observations tend to show that an increase in the alkalinity of the plasma has comparatively small immediate effect on the reaction inside the red cells. Under conditions where the plasma becomes more alkaline, a condition of the red cells would be established, comparable to that found in haemolytic anaemias—i.e., there would be a large difference in acidity between the red cells and plasma. In the placenta, where the plasma of the foetus becomes oxygenated by the mother's blood, such conditions would be to some extent realized; and after birth, when pulmonary respiration is established, to a much more marked extent.

The observations on which these remarks are based are few, and estimations other than on blood from the umbilical vein are exceedingly difficult, but if further work confirms them, a definite theory can be advanced for the explanation of icterus neonatorum, an explanation certainly independent of bacterial invasion of the alimentary tract, which is the basis of a theory still held by a number of authorities.

Icterus Gravis Neonatorum

I have discussed at some length the benign icterus neonatorum because of its similarity to another condition, which if untreated is almost invariably fatal. This is a condition tending to recur in successive members of the same family, though often the first-born escapes. Of 130 cases collected by Sir H. Rolleston[1] in 1920, 77 per cent. proved fatal, and in an account which I published in 1929,[2] 83 per cent of 90 untreated cases occurring in 17 families had been fatal. The condition appears to be commoner than the published figures suggest. From the returns of the Registrar-General for England and Wales, it appears that during the seven year period from 1921-1928, at least 1,800 infants died of jaundice during the first four weeks of life, without obvious cause, such as *sepsis, syphilis, or obliteration of the bile-ducts, and* in arriving at this figure all deaths from such conditions as umbilical sepsis have been deducted from the figures for jaundiced infants—although only a proportion of these develop jaundice: the figure, therefore, probably errs in being too low. Personal communications from doctors, and the histories in more recent cases which I have seen, suggest that many lives are still lost from a condition which is in many cases probably open to successful treatment.

The jaundice usually appears within twenty-four hours, and may be noted a few hours after birth, or even in a few instances at birth. The colour then rapidly deepens. At birth, apart from possible jaundice, the infants appear strong and healthy, but with the increasing jaundice become drowsy, take the breast poorly, and lose weight. The liver and spleen are not usually enlarged, indeed, it is suggested that cases with considerable enlargement of these organs probably belong to a different group, for there can be little doubt that the group is a composite one. The temperature usually tends to be sub-normal, but occasional cases show a considerable rise, here, again, in several instances there has been evidence of maternal toxaemia during the pregnancy—a condition strikingly absent in the majority of cases—and the cases probably belong to a separate group, from the point of view of treatment it seems important to recognize this differentiation. The stools are normal in colour and the urine is dark, containing an excess of urobilin and at times bile. Haemorrhages may occur near the end, particularly in the subcutaneous tissues over the forehead, where they give rise to a bruised appearance, not to be confused

with the spider-naevi which are common in all jaundiced babies. The infants become increasingly anaemic. Towards the end there are often attacks during which the infant's face shows a peculiar shade of greyness mixed with the icteric tint. In these attacks respiration is very shallow and the pulse is barely perceptible. Often there are convulsions, and the child usually dies in coma within three weeks of birth. In all cases the Wassermann reaction is negative, and at necropsy there is nothing to suggest a syphilitic basis: indeed, the post-mortem appearances are very like those of the simple icterus neonatorum.

Excluding such cases as those of Nason,[7] Tylecote,[8] Rolleston,[9] Smith,[10] and Ritchie,[11] and a number of cases within my own experience in which there was evidence of maternal toxaemia, the resemblance to physiological jaundice is sufficiently striking to suggest a common basis. Assuming a delay in assumption of hepatic function in the simple variety, a lesser competency on the part of the liver or an increased haemolysis in icterus gravis might result in a fatal toxaemia. Working along these lines, in young rabbits it was found that injection of haemolytic products invariably retarded growth, though proportionate amounts in older animals appeared to have little effect: in the pregnant animal the procedure resulted in the death of the foetuses *in utero*, and in two such cases in which the pregnancy was early there was the formation of a mole. It is of interest that in the animals which survived, the teeth became green, and remained so until the part of the tooth affected was worn away; green teeth have been reported in icterus gravis by Thursfield and Langmead.[12]

If toxaemia be due to haemolytic products, treatment should be directed to decreasing haemolysis. Experimental work suggested that serum might have this effect, and for this reason human serum has been given intramuscularly in these cases in amounts of about 15 c.cm. daily for three or four days. In 22 out of 23 cases I have personally treated, the recovery has been perfect, and the remaining case was practically *in extremis* when seen. In marked examples of simple icterus neonatorum, serum seems to have led to more rapid subsidence of the condition. In other cases in which the liver and spleen were enlarged, or in which the infant was pyrexial, the results have not been so good: the jaundice has subsided, but the infant in some cases has died of complications, such as cerebral haemorrhage or haemorrhage into the suprarenals. In these cases I have for some time associated the injection of serum with the inunction of mercurial ointment, which in many cases gives good results, though not so strikingly satisfactory as in the main group, in which, if recovery occurs, it appears to be complete. One such case is of sufficient interest to record.

The child was born at full term. Jaundice appeared within twenty-four hours and progressively deepened. When seen on the fourth day, the lower edge of the liver extended to the umbilicus: it was fairly hard, but not as hard as that usually found in obstruction of the bile-ducts. The spleen could be felt one inch below the costal margin. The head was retracted, and the fontanelle was rather full. Meconium had been passed, and the stools contained bile. The child was comatose. Lumbar puncture showed bile-stained fluid containing blood. The Wassermann reaction was negative. The child was treated with injections of serum and with daily inunctions of mercurial ointment. She appeared to make a good recovery and liver and spleen became impalpable: now, two years later, she shows a well marked cerebral diplegia.

It is of interest that Spiller[13] has reported four cases of cerebral diplegia in association with icterus gravis. I have twice encountered it in association with congenital obliteration of the bile-ducts, of which the case recorded may have been another example. Head retraction does not necessarily mean haemorrhage: one of the most marked cases I have seen in association with jaundice was one of obliteration of the ducts, and at necropsy there was no evidence of haemorrhage, but intense bile-staining of the cerebral nuclei, especially the lenticular nuclei.

Congenital Obliteration of the Bile-ducts

In this condition, jaundice is usually manifest on the second day and is progressive, though the degree is variable. Meconium is usually passed, and this is followed by pale stools. Occasionally the stools are white from the beginning: on the other hand, the passage of meconium may be followed by pale stools which contain a fair amount of bile pigment. The urine is dark and contains bile. The liver is large, even after death, thus contrasting with the enlarged liver of obstructive jaundice at a later age; but the clinical observation which impresses one most is the extreme hardness of the organ. The spleen is also enlarged in the majority of cases. The condition runs a variable course, and the infant is often surprisingly fit till late in the disease, when wasting may be marked. There is, however, a great tendency to haemorrhages from the mucous membranes and subcutaneously. Often, too, there are periods of pyrexia, sometimes accompanied by convulsions, though these usually only occur terminally. According to Weber,[14] the cerebro-spinal fluid does not contain bile, but in cases of my own, in which death has occurred early, the fluid has been stained, and in one case referred to above the cerebral nuclei were very deeply stained. At necropsy there is usually complete obstruction to the flow of bile, the obstruction in the majority of cases being extra-hepatic; the lower part of the common bile-duct may be represented by a fibrous strand. The lumina of the ducts above the obstruction are not dilated, thus contrasting with the condition usually found in adults as the result of obstruction. The hard, enlarged liver shows evidence of biliary cirrhosis, and is often dark green in colour. The glands in the portal fissure may be enlarged. Syphilis has been suggested as a cause, but there is no evidence for this either in the Wassermann reaction on parents and infants, or in section of the organs after death.

Two main theories have been advanced to account for the condition. First, that supported by Thomson,[15] Beneke[16] and Milne[17] suggests a developmental narrowing of the ducts, giving rise to partial obstruction, predisposing to a catarrhal condition which completes the obstruction. The stagnant bile is presumed to be toxic, and this, it is suggested, gives rise to the cirrhosis. In support of the theory it may be mentioned that the condition has on rare occasions been associated with other congenital abnormalities, as for example hypertrophic stenosis of the pylorus (Barker and Mackey),[18] and in two cases recorded by Poynton and Wyllie[19] in association with congenital heart lesions—one of these also showing deformity of the feet and the other occurring in a mongol.

The experiments of Rous and Larimore[20] are of interest in the discussion. By obstructing the large bile-ducts they produced a stellate fibrosis around them; obstruction in the intra-lobular canaliculi led to a diffuse intra-lobular cirrhosis; while obstruction in the small bile-ducts produced a pure unilobular cirrhosis. From the experimental point of view it would appear that the lesions, if primary in the ducts, would have to be multiple, though perhaps it is unfair to compare the foetal liver with that of experimental animals. The other suggestion, supported by Rolleston,[21] is that toxins passing from the mother through the placenta reach the foetal liver through its double circulation and are excreted into the bile-ducts: in their passage through the liver they give rise to a mixed cirrhosis, and after excretion give rise to inflammation of the

ducts, and ultimate obstruction. There is much in the latter theory which fits in with the clinical facts: the lesion is undoubtedly progressive in the majority of instances, and occasionally a patient dies before obstruction is complete, but cirrhosis is found to be advanced. On the other hand, one would perhaps expect the mother to show some evidence of the toxaemia, and this is surprisingly absent; other conditions, however, which markedly affect the foetal liver—for example syphilis—may have very little obvious effect on the mother.

Treatment, in the main, has been inefficacious. A few cases would appear to lend themselves to surgery, especially when the gall-bladder is dilated, but it must be admitted that good results from such treatment form surgical curiosities. During the last four years, I have been treating these and allied conditions by mercurial inunction. In some, serum has been given in the earlier stages with the object of reducing haemolysis and so lessening the production of bile. The results are, I think, the most promising hitherto obtained. The mercury must be pushed, suspending treatment for a time if signs of mercurial poisoning such as buccal ulceration appear, but continuing again after an interval.

One case so treated appeared to improve for a time, and was discharged for the mother to continue treatment at home. The child was later re-admitted into hospital and died. The liver had decreased in size, and necropsy confirmed that the organ was much smaller than that usually found in this condition. The common bile-duct was completely impervious. The interesting feature, however, was that above the obstruction, the bile-duct was greatly dilated and contained a large quantity of bile. The case is suggestive of partial recovery.

From experience of the use of mercury in other conditions of the liver, I have formed the impression that it is more likely to be beneficial when the smaller bile-ducts are mainly involved, and the results of treatment so far support the theory of a descending change rather than the reverse. Other cases of biliary cirrhosis show on the whole fairly satisfactory results from the same form of treatment, though it must be stated that the older the patient the less satisfactory have the results been.

Syphilis

Congenital syphilis may rarely produce a peri-cholangitis with enlargement of the liver and spleen. The liver is firm, but not so hard as that found in the previous condition; it is usually tender. Jaundice is not rare in this condition, though it is usually absent; it is probably due to inflammation of the small bile-ducts, though occasionally it may owe its origin to enlarged lymph glands. When jaundice is present at all, the infants are usually icteric when born, but it may commence weeks later, and then may be recurrent and associated with multiple haemorrhages: such cases are possibly due to secondary infection. Other evidence of syphilis is usually present, and the infants are debilitated, wasted and anaemic, with a tendency to vomiting and diarrhoea. The treatment of the condition is well known and needs no amplification here, save to stress that, unless it is persisted in, relapses are common. In gauging the effects of treatment it should be remembered that the results of the Wassermann test on the infant may be fallacious.

Toxic Jaundice

Jaundice in the young infant may be associated with sepsis of the umbilicus or with alimentary infection (cf. Winckel's disease and Buhl's disease). Such infants are extremely ill, and the extremities are usually cyanosed. There is a very marked tendency to haemorrhages. In the less marked cases, the temperature is generally raised, but in the worst forms, may be sub-normal. The condition usually rapidly progresses to coma and death, though the end may sometimes be delayed for weeks by vigorous treatment.

Epidemic Infective Jaundice (Catarrhal Jaundice)

Of cases of jaundice occurring at a later age, the commonest are examples of so-called catarrhal jaundice. The name is bad, implying as it does the original conception of an obstructive jaundice, secondary to plugging of the ducts with mucus—an explanation which has been offered in so many different types of jaundice and almost without exception proved to be incorrect. On rare occasions the condition has occurred in pandemic form, but is usually met in epidemics or sporadically. The causal virus is unknown. Apart from possible relapses during the course of the complaint, it appears to confer a lasting immunity. It is essentially a disease of childhood, but may be encountered in adults. The age incidence is of interest in that adults may have increased general resistance, or may have had the condition previously without manifesting the main symptoms. Cases illustrating the latter occur during epidemics; Wallgren [2] stresses their incidence, and I have personally encountered the case of a child with typical catarrhal jaundice in whose sister the only abnormality found was a temporary enlargement of the liver; this was only discovered during the course of a routine examination which I was at that time conducting.

It is well known, of course, that a child may be brought to the doctor for malaise alone, the jaundice being so slight that it is not noticed by an untrained eye. It appears more than likely that some patients acquiring the disease may have only the slightest symptoms. A consideration of increased resistance with age is also of interest. During epidemics, I have encountered two families in which in one instance three children out of seven, and, in the other, two out of five acquired the disease; the five who became jaundiced gave a very strong history of cyclical vomiting, such a history being entirely absent in the remaining members of the families. It is well recognized that cyclical vomiting is pre-eminently a condition of childhood, and whatever its exact etiology may ultimately prove to be, it is generally admitted that the liver plays a part in the manifestation. It is, of course, not suggested that catarrhal jaundice only occurs in the subjects of cyclical vomiting, but the example given does suggest that the "soil" is of importance. In the same connexion, the effects of toxins on the liver at various ages have already been referred to. The maximal incidence appears to be between the ages of five and ten. The majority of the cases occur in the autumn.

At the onset there is usually slight fever, but in cases not seen early this is generally missed. The first symptom as a rule is malaise, associated with anorexia: nausea and vomiting are not uncommon. Jaundice then makes its appearance, first noticed in the sclerotics; the liver becomes enlarged and tender, the enlargement often being associated with pain in the epigastrium and over the right lobe of the organ; the urine is dark with bile, and this may be the first manifestation noticed by the parents; the stools are pale, both from diminution or absence of bile, and from excess of fat associated with the same deficiency; the spleen is enlarged in a fair proportion of cases. Van den Bergh's test usually gives a positive direct reaction in the earliest stages, and thereafter is biphasic. The rapid and tender enlargement of the liver is presumably due to vascular engorgement, and usually precedes the diminution of the flow of bile; the degree of enlargement bears no direct relationship to the depth of the jaundice. The picture suggests a hepatitis, and this is confirmed by sections of the liver

taken from living patients by Nordmann[23] and Eppinger, and also by sections obtained from patients who have died from other causes (Eppinger[24]).

The course of the disease in the vast majority of cases is uneventful, though the duration of symptoms is variable; the liver in many cases may be enlarged for weeks after all jaundice has disappeared; it is no longer tender, but remains as evidence of a hepatitis which has not entirely subsided. When the jaundice does not rapidly subside, it must always give rise to a doubt as to whether the case may not be one of subacute necrosis of the liver; and occasionally cases suddenly take on grave characters and pursue the course of acute necrosis. How far these were originally true examples of the condition under discussion is difficult to prove, but it is suggestive that during the epidemic in Gotenburg between 1924 and 1926, there were more cases of this grave type than in other years, and that the increase of such cases was confined to the epidemic area. Such statistics are fortunately easy to obtain, the condition being a notifiable one in Sweden. In epidemics, cases may be seen in which the jaundice recurs; how far such cases are due to the original virus, and how far to superadded infection in a patient whose liver has not fully recovered from an inflammatory attack, is again difficult to say. If seen for the first time in the second attack, such cases may readily be diagnosed as biliary cirrhosis, for prodromal symptoms are usually absent. One of Wallgren's cases,[22] occurring during the Gotenburg epidemic, I quote rather fully, as it demonstrates many of the points under discussion, though unfortunately he does not prove a source of infection by contact in this case:

A boy, aged 14, was taken ill in April, 1926, with some fever, vomiting, and abdominal pain. Jaundice developed and the condition was diagnosed as catarrhal jaundice. The icterus subsided and in May he is stated to have been perfectly well. Later, he suffered from attacks lasting about two days, during which he "felt ill," complained of pain in the abdomen, and became icteric. The urine contained bile. At the end of August, he was admitted to hospital. The liver was not palpable and appeared small. The spleen was greatly enlarged. There was no ascites. The temperature was normal; the pulse rate about 80. The urine contained bile. The red cells showed slightly increased resistance to hypotonic salines. The haemoglobin was 80 per cent., colour index 1.2. The Wassermann reaction was negative. After investigation, he was sent home under the care of his doctor. On October 11th, he had a sore throat with raised temperature, and vomited blood. He was again admitted to hospital, where he had repeated haematemeses, and passed dark blood per rectum. The haemoglobin fell to 40 per cent. and the patient died. At necropsy, the veins at the cardiac end of the stomach were grossly varicose and presumably formed the site of the bleeding; the spleen was enlarged, the surface being irregular; the liver weighed only 891 grams, and had a nodular surface, each nodule being about the size of a hazel nut. On section, the nodules showed a yellow-brown surface with spots of a greyish colour. The bile-ducts showed no obvious abnormality. Histologically, there was much fibrous tissue, with many cells showing an obvious attempt at regeneration; there was, however, an entire absence of lobular arrangement.

Marchand,[25] and Pratt and Stengel,[26] have recorded similar cases, occurring almost entirely in children. With Mallory, they regard the condition as a "toxic cirrhosis"—an attempt at regeneration after an acute process.

The condition is obviously infectious. During epidemics, cases arise, in which after the most careful search no direct contact can be established; and this is an argument in favour of the existence of carriers. It would appear that cases must be regarded as infectious both during the prodromal period and for some time after the jaundice has subsided. It is certain that infection may take place during a short interview; there is no evidence in favour of infection through the alimentary tract. In some cases, a running ear appears to have been responsible for spreading the infection. The incubation period is difficult to establish. During epidemics the majority of cases appear to develop the condition between 21 and 28 days after contact. A few appear to occur after one or two weeks, but in these it is difficult to exclude a previous contact. In Wallgren's cases, occurring among patients who were in hospital at the time of actual infection, the average time was about 21 days.

From the point of view of treatment there is little to add to that commonly advocated, but I would condemn the use of atophan suggested by Grunenberg and Ullmann,[27] as being contraindicated in a condition which appears to be essentially an acute hepatitis. In those cases where a graver condition is suspected I think that intravenous glucose, together with small doses of insulin, may be of considerable value, as also may be the administration of calcium, given intravenously in the form of a 10 per cent. solution of the gluconate.

Other Conditions with which Jaundice is Associated

It is not possible in this paper to discuss fully the association of jaundice with *Mumps*. Usually, it follows the enlargement of the salivary glands, but may occur apart from this. Possibly the occurrence of diarrhoea, and the greater degree of abdominal pain, not so obviously associated with the enlargement of the liver, may help in the differentiation from the previous condition. *Cholangitis, Cirrhosis,* and *Haemolytic Jaundice* are conditions which might profitably have been discussed, and I hope that we may hear something of them from subsequent speakers.

There are many other conditions which may be associated with jaundice in childhood, examples being infective conditions such as pneumonia and typhoid fever, syphilis in forms other than that discussed above, heart failure, and such rare conditions as Wilson's disease, and obstruction due to gall-stones; but I have confined myself in the main to a short survey of comparatively common conditions, where suggestions as to pathology and treatment may, I hope, form the basis of a discussion not entirely without profit to us.

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EXOPHTHALMOS OF CENTRAL ORIGIN *

BY

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By exophthalmos of central origin I mean exophthalmos occurring in connexion with signs clearly pointing to an organic lesion of the central nervous system. In the short time at my disposal I can give you only a brief account of these associated symptoms and their pathological bases, and then show you the photographs of ten patients illustrating these points which I have chosen as representative, from a total of between twenty and thirty patients.

The following clinical features appear to me to be of special importance. (1) Exophthalmos may be associated: (*a*) with supranuclear ocular palsies, especially with paralysis of conjugate vertical movement and convergence; (*b*) with external ophthalmoplegia—some of these cases are etiologically obscure and exhibit bizarre defects of ocular movement; and (*c*) with internal ophthalmoplegia—in one case unilateral exophthalmos was associated with an Argyll Robertson pupil in the same eye; in another the reaction to light was sluggish in both eyes. (2) Exophthalmos may be unilateral or bilateral, and if bilateral it may be equal or unequal in degree on the two sides. (3) It may be associated with lid retraction, or with ptosis, either of which, again, may be unilateral or bilateral, and equal or unequal. There may be lid retraction on one side and ptosis on the other. (4) Exophthalmos may occur with or without enlargement of the thyroid. (5) It may occur with or without disturbance of sugar metabolism.

A wide range of combinations of these disturbances is encountered.

Pathology

The lesions associated with exophthalmos are pathologically varied and usually obscure; I have no post-mortem material. Encephalitis lethargica is responsible for a small number, usually with Parkinsonism. Several have high blood pressure, though in only one case is there evidence that the lesion was vascular. One patient falls into the group of internal ophthalmoplegia with absent tendon reflexes. Several can only be described as nuclear ophthalmoplegia of unknown origin. The most important single group is that in which ophthalmoplegia is associated with enlargement of the thyroid, though the relationship between the two is difficult to explain. Some of these cases have been described as myasthenia gravis associated with exophthalmic goitre. On clinical grounds it is clear that the lesion is usually situated in the mid-brain.

Case I

The patient is a man, aged 59, who in 1927 had an illness which appeared to be encephalitis lethargica. Since then he has developed a bilateral progressive exophthalmos. He has lost conjugate ocular deviation upwards, and convergence is almost lost. There is no thyroid enlargement. His pulse rate is 72; he has lost no weight, and has an increased sugar tolerance, with a low renal threshold.

Case II

The patient is aged 24. She began to develop Parkinsonism two and a half years ago, and now has generalized tremor and rigidity, with attacks of oculogyral spasm. She has bilateral exophthalmos, more left than right, and ptosis. There is no thyroid enlargement.

[In another case of encephalitic Parkinsonism bilateral exophthalmos was associated with lid retraction, weakness of ocular deviation upwards, sweating, tachycardia, hyperglycaemia, and glycosuria, but the thyroid was not enlarged.]

Case III

In 1917 the patient, a man, developed exophthalmos, tachycardia, and external ophthalmoplegia. His condition has been stationary since. He has bilateral exophthalmos and lid retraction, with partial external ophthalmoplegia. His blood pressure is 160/80; his pulse rate is 96, and he has glycosuria. His thyroid is not enlarged, and there has been no loss of weight.

Case IV

The patient is a man aged 52, with a blood pressure of 230/120. He recently had a stroke, which left him with sensory aphasia and right homonymous hemianopia. After this he gradually developed bilateral exophthalmos with lid retraction. He has a diabetic curve in his sugar tolerance test. His thyroid is not enlarged.

Case V

The patient is a girl, aged 23, who exhibits the syndrome of internal ophthalmoplegia, with absent tendon reflexes. In addition she has unilateral exophthalmos with lid retraction.

My last five patients all have an enlarged thyroid.

Case VI

This patient has for six months had unilateral exophthalmos of the left eye, lid retraction, and tremor of the left hand. Her pulse rate is 108; her thyroid was not enlarged at first, but it became slightly swollen later.

Case VII

This case, that of a girl aged 25, may be called a typical case of exophthalmic goitre, except that the patient has bilateral exophthalmos, associated with lid retraction on one side and ptosis on the other.

Case VIII

This case, for which I am indebted to Dr. Symonds, resembles Case III in exhibiting external ophthalmoplegia with unequal bilateral exophthalmos. The ophthalmoplegia developed first, being followed by the exophthalmos, which is associated with ptosis. The thyroid is enlarged, and there is tachycardia, hyperglycaemia, and glycosuria; there has been loss of weight.

Case IX

The patient is a woman, aged 41, who developed acutely bilateral exophthalmos, ptosis, loss of convergence, and conjugate deviation downwards, and a myotonic reaction of the pupils on accommodation. The thyroid is enlarged and nodular; there is tachycardia. The blood sugar is normal.

Case X

A woman aged 59 began four and a half months ago to suffer from diplopia; at the same time the right eye became prominent. She feels nervous, and complains of palpitations. She has always been thin, and has lost 6 lb. in the last two years. The pupils react sluggishly to light. There is marked right exophthalmos, with bilateral lid retraction and marked weakness of upward deviation of the right eye. There is a rounded enlargement of the right lobe of the thyroid the size of a walnut; tremor of the hands, pulse rate of 100, and a blood pressure of 190/100. The blood sugar curve is normal, and the Wassermann reaction negative.

The cases I have described raise many difficult questions which I hope to discuss more fully later. All I can say now is that there seems to me to be no sharp line dividing exophthalmic goitre from certain cases of acute and chronic lesion of the nervous system, involving especially the upper part of the mid-brain.

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THE SKELETON BARIUM MEAL IN GASTRIC DIAGNOSIS

BY

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It has long been customary to commence the radiological examination of the stomach by watching the first mouthful of barium swallowed and looking for a fleck of barium held up in an ulcer niche if this were present. If this first mouthful is spread over the interior of the stomach by palpation a good view of the relief pattern of the mucosa is often obtained. But this procedure has its limitations; the ordinary barium meal is not perfectly adapted for the demonstration of the mucosa, and, in spite of the fact that much work has been done on the subject, it may be said that the study of the alimentary mucous membrane has not yet received the attention it deserves. Some of this neglect is due to the incompleteness of our knowledge of the great variations which may occur in the appearances of the normal relief pattern. Nevertheless, the study of the gastric mucosa is by now a valuable supplement to the usual radiological investigation, and the method of the "thin film," or skeleton meal, reveals details that cannot be otherwise discovered.

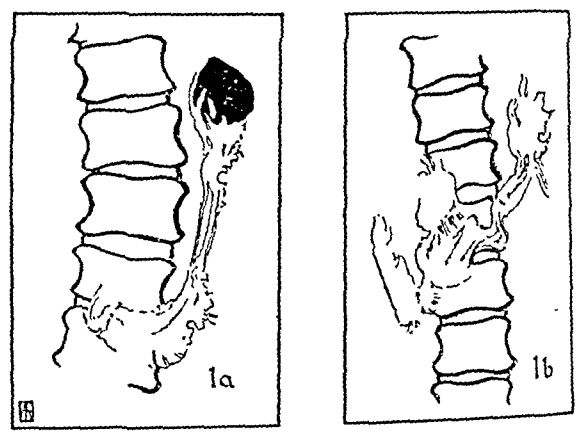
The systematic radiological study of the gastric mucosa originated with Forssell, and was extended to the duodenum by Akerlund. The evolution of a technique for clinical use is due to numerous authorities, the chief of whom, in addition to those already mentioned, are Gutzeit, Chaoul, and especially Berg. These workers have greatly enlarged the scope of the gastric examination and have paved the way to a genuine comprehension of the conditions underlying the appearances seen.

TECHNIQUE

The procedure for the demonstration of the gastric relief pattern varies slightly with different authors. The essential preliminary is the preparation of a solution adapted for adhering to the mucosa. Berg uses a solution of 250 to 300 parts of barium sulphate to about 400 of water; Chaoul uses about the same proportions with the addition of small amounts of tragacanth, spirit, and amyl acetate. A useful solution is the following: 10 ounces of barium sulphate, 50 grains of tragacanth powder, made up to 20 ounces with chloroform water. The patient is first examined in the supine position with a slight tilt to the left, a sip of the barium is swallowed, and the cardia screened. By palpation and changes of posture the barium is spread over the mucosa and the patient examined in the prone position with graduated compression. Further sips are given until the mucosa is perfectly covered with the preparation. It is unwise to allow the procedure to become stereotyped; each case has its peculiarities which should be studied individually. The principal sites of ulcer should be screened at every possible angle and examined at different stages of filling. Films are taken when necessary; they may be taken from below or from above the couch. Graduated compression is required to get good relief patterns. The patient is then examined standing, and if the investigation seems complete the stomach is filled with barium and examined in the usual manner. Difficulties can arise if there is excessive fluid or mucus in the stomach, as this can prevent the close adherence of the barium to the mucosa; this can sometimes be dealt with by injecting 1/100 grain of atropine an hour before the examination.

NORMAL APPEARANCES

The normal appearances, as noted above, are subject to great variations, and different patterns appear at different times in the same stomach; this is due to the fact that the pattern depends largely on the state of contraction of the muscularis mucosae. A constant feature is the presence of four well-marked longitudinal ridges, visible on oblique illumination, running down the lesser curvature; these enclose the stomach path of Aschoff, which is the chief ulcer-bearing area. Towards the greater curvature the longitudinal folds become more and more tortuous, and transverse folds appear. A serration on the greater curvature in the completely filled stomach has long been noted; it was considered by some authorities to be a sign of chronic gastritis. It is probably due to the formation of strong transverse ridges in the mucosa caused by local contraction of the muscularis mucosae, these ridges acting as slings to support the heavy part of the filled stomach. Under normal conditions the relief pattern is delicate and easy to deform or obliterate by palpation; pathological changes cause it to stiffen; it then becomes permanent and cannot be altered by pressure. Slow alterations in the pattern can sometimes be observed, and the part played by the muscularis mucosae in evacuating the stomach forms the subject of an interesting paper by Sick. Fig. 1a shows a fairly normal relief pattern in the standing position.



CHRONIC GASTRITIS

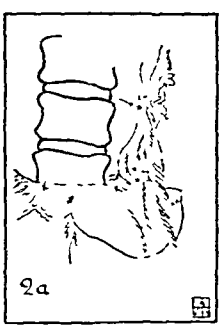
In hypertrophic gastritis the folds of the relief pattern are thickened and stiff; in atrophic gastritis they are very delicate and may be partly absent. Difficulties arise from the fact that hypertonic stomachs have strongly marked folds resembling those of hypertrophic gastritis, while atonic and dilated stomachs show delicate folds like those of atrophic gastritis. Great irregularity and stiffness of the folds favours the diagnosis of gastritis, and a still more trustworthy sign is the presence in the relief pattern of rounded or oval translucent islands due to patches of atrophy. Much of the work on gastritis has been done by Gutzeit, using gastroscopic control. It should be mentioned that the distension of the stomach by gas in gastroscopy has a tendency to obliterate the ridges which form the relief pattern.

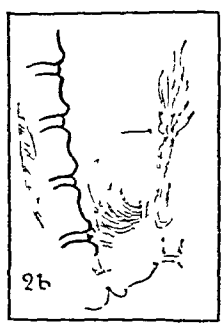
Korbsch relies on indirect signs in the diagnosis of gastritis, as increased tone and peristalsis, serration of the greater curvature, local tenderness, etc. Although the diagnosis of gastritis by the skeleton meal is by no means easy or free from the possibility of error, there is little doubt that when its normal appearances are better known it will be found more reliable than any method depending on indirect signs. All the signs enumerated by Korbsch can be found in conditions other than gastritis, and the serration of the greater curvature is found in stomachs that are innocent of any pathological change. Fig. 1b shows gastritis in a case of cholecystitis.

The gastritic changes concurrent with gastric ulcer and carcinoma are of great interest, and it has even been suggested that their study may enable us to foretell the later onset of ulcer and carcinoma. This, perhaps, is unduly optimistic, at any rate as far as carcinoma is concerned, but the study of the relief pattern may shed some light on the factors at work. Another interesting field of study is provided by the cases of gastritis following gastro jejunostomy.

Peptic Ulcer

In the skeleton meal, as in the full meal, the direct evidence is given by the actual niche. There are both advantages and disadvantages in the former procedure; it is sometimes difficult to fill the niche when the main cavity of the stomach is empty. On the other hand, in ulcer of the cardia, and in ulcer of the corpus away from the sky-line of the lesser curvature, as well as in pyloric and pre-pyloric ulcer, the filling and visualization of the niche is often very much easier in the skeleton meal. The conditions of the mucosa around the ulcer can also be studied. Barclay has emphasized the fact that the apparent size of an ulcer depends on the heaping up of the mucosa around it; so the decrease in size of a niche under treatment can be misleading. The presence of radial striæ in the mucosa converging on the site of an ulcer is another valuable sign. Duodenal ulcer can often be diagnosed by the skeleton meal, but the best method is that described by Akerlund, Attinger, and Berg. This is, to fill the duodenal cap completely by pressure on the stomach and on the descending duodenum. The cap is then examined at all possible angles for contour deformities, and then completely emptied by compression or manipulation and examined again for any residue in a niche. The skeleton meal is especially well adapted for the diagnosis of jejunal and gastro-jejunal ulcer, and also for the differentiation between ulcer and diverticulum. Fig. 2a shows a small ulcer niche on the lesser curvature,



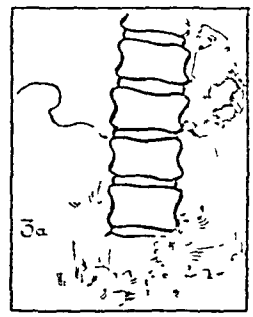


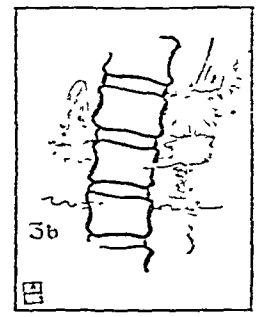
with interruption of the mucous folds from infiltration; Fig. 2b shows a small diverticulum of the lesser curvature with normal folds running into it.

Carcinoma

The patient with carcinoma of the stomach too often has a well marked filling defect by the time he comes for investigation. In such a case the examination of the completely filled stomach often gives an easy diagnosis. The skeleton meal here finds its application in determining to what extent the growth has penetrated into the stomach walls beyond the actual filling defect, and it may give valuable information as to the mechanical, as apart from the metastatic, possibilities of resection. It is also of value in the diagnosis between chronic callous ulcer and the malignant ulcer; according to Haudek and Barclay the mucous membrane is abruptly cut off in carcinoma, while in simple ulcer it has an infolded appearance. It is probable that a break in the relief pattern caused by a growth could be recognized long before the formation of a filling defect. Striation of the mucous folds "against the grain" is considered by Berg to be an early sign of carcinoma; I have seen it in the neighbourhood of an early growth.

Fig. 3a shows the relief pattern in a case in which the growth had penetrated far beyond the filling defect; the





extension in the gastric wall is seen high in the cardia, while the filling defect is low in the body. Fig. 3b shows the pattern in a case that had a large filling defect in the corpus; the mucous folds of the upper third of the stomach are seen to be free from invasion, partial gastrectomy was successfully performed.

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THE SHAPE OF THE PELVIC BRIM AS THE DETERMINING FACTOR IN CHILDBIRTH*

BY

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Those who practise midwifery in the East, whether in India or in China, are soon aware of the fact that under certain conditions of life childbirth is easy and safe, while the opposite conditions render it difficult and dangerous for both mother and child. The field worker, the woman who lives out of doors tending the cattle, planting out crops often knee-deep in cold water in the rice fields, rowing the heavy boats used for transporting grain, the tent dwellers—such as the women of the nomadic tribes on the North-West Frontier of India—all these have

* A paper read in the Section of Obstetrics at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

their children safely and with no more difficulty than the animals around them have in parturition. On the other hand, the city dwellers, and especially women who on account of the custom known as " purdah " must remain in seclusion and live indoors from 8 years old and onwards—these women find their confinements increasingly difficult and dangerous for themselves and their offspring. In China, the women who bind the feet are the class from which the difficult obstetric cases come.

That it is not a racial question, but due to a certain manner of life is seen when, on inquiry, one finds that women of the same race and even of the same family in open-air surroundings have easy confinements, while part of the family who have migrated to the town after some years suffer as the townspeople do. The negress provides a good illustration. In her natural surroundings she gives birth to children with ease, but in America, living in big cities such as New York and Baltimore, Whitridge Williams tells us she has more obstetric difficulties than the American white woman herself, and he suggests that this must be due to something in the manner of life in the crowded quarters of great cities.

In the Carnegie Trust Report for 1917 we read of easy labours and large families among the Highland women who, bare-footed, haul in the nets with the men, follow the plough, and engage in field work, and mention is made by local authorities of the tinker women who live in tents and whose custom it is to be delivered safely and rapidly by the roadside before any doctor or nurse can be called to assist. Strong contrast, this, to the maternal mortality rate and the infant death rate to be met with in cities such as Edinburgh and Glasgow. In England we still have our gipsies and canal-boat women, with their large families and easy and safe confinements, and yet our maternal mortality rate shows no decrease in the last twenty years, and industrial towns like Swansea, Cardiff, Barnsley, Bradford, and Rochdale head the list with their maternal death rates.

The fundamental cause of difficulty is obvious: that for some reason the child's head and the mother's pelvis do not fit, and delayed and difficult labour is the result; bruising of soft parts, exhaustion of the mother, the risk of sepsis—all these things follow on this primary failure of adaptation. Is the foetal head too big or the maternal pelvis too small?

In the hope of getting some light on this problem I consulted Sir Arthur Keith, who told me he thought that undoubtedly the heads of the race were getting larger among civilized peoples, but the pelves of the race did not seem to keep pace with them. With his permission, therefore, I was allowed to examine and measure any specimens I wanted at the Royal College of Surgeons.

There were two factors to be considered: (1) the unyielding pelvic brim of the mother; (2) the yielding foetal head which passes through the brim.

The Brim of the Pelvis

It was at once noticeable what a variety of shapes the female pelvic brim assumed—kidney-shaped, oval, round, Y-shaped, and irregular, or one side larger than the other. Verneau in 1875 published a treatise on variations of pelvic shape as regards both sex and race, but he found, like our obstetricians of to-day, that the female pelvis was subject to such extreme variations in shape, *even in the same race*, that in the end he confined his observations almost entirely to the male pelvis among the different races of mankind. But my object was to find the area available for the passage of the foetal head through the brim. A piece of string was used and carried round the brim following the ilio-pectineal lines, then across the back of the pubic symphysis, and, in order to keep in the plane of the brim, it was carried across the sacrum just below the promontory.

It is obvious that the same circumference arranged as a circle encloses a larger area than the same boundary line arranged in any other form, and that, circumferences being equal, the shape of the brim determines the capacity of the pelvis. How did the pelves vary from the circular form? The European—Englishwoman, Frenchwoman, and Russian—were flattened from before back, having the long diameter transverse. Then there were pelves whose brim approached the circle, and finally the Andaman Island female specimens 1216, 1212, 1213, the Bushwoman 1311, the Sikh woman 631 B, Peruvian f 1013, South Australian f 1068.15, and Negress f 1256.51, whose transverse and antero-posterior diameters are of equal length, and consequently the pelvic brim is a perfect circle. There were also innominate bones, one from Ur of the Chaldees, one from Salisbury Plain (Ancient British), and an Anglo-Saxon specimen, where the great roundness of the ilio-pectineal lines was so marked that one was led to conclude that the more primitive the habits of the life the more circular the pelvis. All these people must have borne children safely without doctor or midwife.

Turner, writing in 1866, regarded all pelves as circular if they had an index 90:100, but he dismisses such as belonging to a lower grade of civilization than the European. But are the differences in form really racial? They are not, for it was at once apparent that the round-headed race, such as the European, is born of the oblong or kidney-shaped pelvis, while the long-headed race, such as the Bushman, is born of the round pelvis, so that the variations in shape of the female pelvis serve no useful purpose. Besides, Lynch in America published x-ray studies of parturition showing that the head passing through an oval brim left the ends of the oval empty, and when we consider

The Foetal Head

we find that, unlike the pelves, which differ in shape so widely even in the same family, the part of the infant's head which engages in the pelvic brim is a circle, among all people of whatever race, whether they are dolichocephalic or brachycephalic. This is the part we know as the suboccipito-bregmatic circumference, which in full flexion is brought into the maternal brim; and it has recently been shown that it is in this plane, and in this plane alone, that the foetal head can safely be diminished in volume, while still preserving its circular form. Unequal pressure or pressure in other planes leads to tearing of the tentorium and haemorrhage, one of the commonest causes of stillbirth and also of feeblemindedness. We are reminded of a cup and ball—any departure from the circular, however slight, in the cup, will prevent the ball from entering, and so a measure just sufficient to encircle the child's head will prove inadequate if it is out of shape in the least degree.

In England and America want of light, and incorrect food, show themselves first by decalcification and decay of teeth, so that rickets must be almost universal, and, as we know, affects the bone most where growth is most rapid and calcification is proceeding most quickly. Such a part of the body is the pelvis. At puberty the brim measures more than seven times what it did at birth. It would take too long to recall the stages of development of the pelvis in detail, but we must remember that at birth it consists entirely of cartilage, containing forty-eight active centres of ossification. Shortly before puberty the three portions of the innominate bones fuse.

Sacro-iliac Joints

Duncan pointed out that pelvic development was influenced by the sacro-iliac joints, and we know that ankylosis of these joints produces atrophy of the pelvis,

and that where only one sacro-iliac joint is affected, the pelvis fails to develop only on the ankylosed side, and the earlier this morbid change takes place the more complete is the deformity produced. Whitridge Williams and Merkel have both testified to the rapid growth of the pelvis in girls just before puberty, and they draw attention to the fact that it chiefly affects all the parts near the sacro-iliac joints

In handling the pelves at the Royal College of Surgeons, I noticed how well developed the sacro-iliac joints were in native races All circular pelves have this joint well developed In all these the knob or boss on the auricular surface of the ilium was well marked and the articular surfaces extensive Havelock Charles in 1894 showed how the influence of function has modified the Punjabi sacro-iliac joints, producing a larger articular surface, which, he says, is common to all Oriental races and is similar to those found in prehistoric man

There should be in all men and women, as in Orientals, a mobility of this joint and a constant change of pelvic inclination as the subject walks, runs, sits, stands, or crouches, and the immobility of the joint leads to serious changes in pelvic shape The squatting posture used by both men and women while sitting, and also when attending to the calls of nature, was, of course, also employed by primitive man for the same purpose

In adults I find that the two halves of the pelvis can be seen and felt to move apart with change of posture This can be tested by noting the position of the anterior superior spines and the tubera ischii—first in the tiptoe position as if preparing for a dive, and again in the squatting position The whole pelvis is expanded to its utmost capacity in the squatting position, and this is most marked while the component parts of the innominate bones are still cartilaginous—that is, at any time before puberty

It is the swing of the sacrum between the innominate bones that influences the final shape of the pelvic brim, which should be a circle In India, when the girl has lived a confined life and has sat in a more or less crouching position for years, one often sees the antero posterior diameter of the pelvis lengthened at the expense of the transverse, and St John Brooke in Africa notes the change in pelvic shape in Zulu girls due to a custom prevalent among them of sitting so that their weight is borne on one thigh only.

In England the still soft pelvis is bent by long sitting at school, and this is not counteracted as it should be by the proper action of the sacro-iliac joints, which should be used daily, if only during the acts of defaecation and urination The wearing of high heels also limits and cramps their movements, the body weight is thrown forward on to the arch of the foot instead of the heel, the pelvic angle is altered, and the back unduly hollowed to preserve the balance That these facts are the real explanation of our increasingly difficult maternity is clearly seen when we compare them with conditions where motherhood is still natural and easy

Observe the habits of the Indian woman, of the Shetland woman, the tent dwellers, the boatwomen, the tinkers and the gipsies—in fact, of all those who live natural lives out of doors and exercise their sacro-iliac joints by hard manual labour, digging, weeding, hauling in nets carrying and lifting heavy weights, and, more important than all, the daily crouching posture used in attending to the calls of nature This posture is really the natural and only satisfactory one, and all these people are without the modern closet and most of them without chairs The infants are breast fed, later they have coarse but natural and fresh food They roll and kick and tumble and squat and climb and run as much as they like Their elders have perfect teeth—the only really satisfactory evidence of the absence of rickets in a community Maternity is consequently easy, the balance of the sexes well preserved because the larger-headed children are not destroyed by injury during birth, and the feeble minded are not made, as so often among us, by the *successful* attempt to force a round head through an oval pelvis

Conclusion

To sum up maternity is a natural function and is easy and safe when the pelvis of the race fits the head of the race The misfit is due to loss of area in the pelvic brim owing to a circle being bent into an oval The change is caused by rickets and disuse of the sacro-iliac joints before 14 years of age Perfect teeth are found with the round pelvis, and this is well understood among primitive people, who consider such teeth essential in a bride

[The paper was illustrated by tracings and specimens, and a preparation to show the movements of the sacro-iliac joints]

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SPONTANEOUS HAEMOPNEUMOTHORAX WITH UNUSUAL POST-MORTEM FINDINGS

BY

E GERARD HOUSDEN, M D Lond.

AND

ALLEN PIGGOT, M R C S, L R C P.

Haemopneumothorax is not a common condition. The majority of cases follow trauma either in military or civil life, but the spontaneous form is distinctly rare After a close scrutiny of the literature of the past thirty years we have only been able to find eight recorded cases of which five occurred in this country Dr Newton Pitt[1] who recorded a case in 1900—almost identical with the case described below—stated that there is no reference to haemopneumothorax in the Index Catalogue of the United States Library, nor is it discussed in any of the standard treatises on medicine in either English, French, or German," and at that date he could find only one case in the literature unassociated with trauma Most modern textbooks make no mention of this condition, and no post-mortem examination of a spontaneous haemopneumothorax is to be found recorded since Newton Pitt and Sir Humphry Rolleston[2] reported two to the Clinical Society of London in 1930

The case described here is remarkable because of the rapidity with which the patient died, and the unusual findings post mortem.

The patient was a plumber, aged 44, who for at least the last nine years had complained of a winter cough, with an expectoration which had never contained blood. Associated with the cough, and persisting throughout the year, were attacks of pain referred to a point below the left clavicle. The pain had existed as long as the cough. The attacks came on at irregular intervals every few days, but were often of short duration. The intensity of the pain had been more severe for the past five years, and during the last three years the patient had noticed an increasing shortness of breath. He attributed his symptoms to muscular rheumatism, and as he had never consulted a doctor about them there is no record of previous investigations. Instead of the cough subsiding with the advent of warmer weather, this year it persisted, and since Christmas, 1930, the pain below the left shoulder had occasionally been sufficiently severe to disturb the man's sleep.

The patient was first seen on June 17th, 1931. The previous day he came home from work feeling quite well, but during the night, for half an hour, from 2.30 a.m., he had what he described as "a perfectly awful attack of coughing, when I seemed absolutely full of phlegm." There was some mucopurulent sputum, and he afterwards slept soundly till morning. He awoke with pain in his left pectoral muscles, but this worked off and he got up to go to work. Later the pain returned and he retired to bed again. He was a pale, thin-faced man, moderately well covered, and he demonstrated the position of the pain, as he sat in bed, over an area covering the pectoralis minor on the left side. His pulse, temperature, and respiration were normal. The chest showed some flattening over the apices, but movement on both sides was equal. The percussion note was unimpaired, and the heart appeared to be normal. No abnormality was found to account for the pain. As the pain eased he got up at midday, but returned to bed again at 8.30 p.m., complaining of pain in the same position. That night he slept well.

The following day, June 18th, he went to work but returned home because of pain. This subsided about midday, and apart from some cough he appeared quite well and pottered about in his garden in the evening. He again had a good night.

On June 19th he resumed work, feeling no pain, but returned home about midday because the pain had become severe, and went to bed at 3.30 p.m. Apart from the pain he felt well until 8.30 p.m., when he got out of bed to evacuate his bowels. Following defaecation the pain became intense, and he suddenly became faint and would have fallen if his wife had not saved him. He was examined again at 9 p.m. The pain had become very severe, and had spread over the whole of the left side of his chest. He also complained of pain in the abdomen and left leg. He was obviously very ill. His face was sallow and anxious, and the skin was cold and clammy. Temperature subnormal, pulse 100, respirations 40. The movement and air entry on the left side were diminished, and the percussion note was more tympanitic on the left side than on the right, but definitely less resonant than the note over the stomach. Owing to the collapsed condition of the patient he was not moved. The rectus abdominis muscles were rigid, but in view of the respiration rate and the condition of shock, pneumothorax was suspected.

Seen again at 6 a.m. on June 20th, his temperature was still subnormal, the pulse rate 120, very weak and thready. Respirations were still 40. The cardiac dullness was obliterated, and the percussion note over the left chest was definitely tympanitic, except at the extreme base, where it was dull up to the eighth rib, indicating the presence of fluid. The chest showed no bulging on this side, and a distant respiratory murmur was still audible. He was examined at 9 a.m. with Dr. H. Campbell Ferguson, who made the observation that the appearance of the man suggested an internal haemorrhage, and this, together with signs of air and fluid in the left chest, suggested the rare but probable diagnosis of spontaneous haemopneumothorax.

At 12.30 p.m. there was no cardiac dullness present to the left of the sternum. The percussion note over the whole of the left chest was tympanitic as far out as the axillary border. Outside this point it became dull, the dullness shifting and becoming replaced by hyper-resonance on the patient being turned towards the right side. No bruit d'airain could be demonstrated. A very faint respiratory murmur could still be heard. From this time on, the patient gradually sank, showing all the signs of internal haemorrhage, and died at 7 p.m.

Post-mortem Examination

On the abdomen and thorax being opened the left dome of the diaphragm was seen to be bulging down into the abdomen. The left pleural sac contained air and blood in considerable quantity (two pints), much of which was clotted. The heart and mediastinum were displaced to the right. The left lung was completely collapsed.

On removal the left lung was found to be entirely airless, and showed a small puckered tuberculous scar at the apex. There were also present near the apex two subpleural blebs. These apical blebs intercommunicated and opened out into a small, thin-walled, smooth cavity. There was no caseous matter present in the cavity, and it appeared to be formed by the coalescence of many emphysematous dilatations. Attached to the apex of the lung, one of them to the emphysematous blebs, were two firm, cordlike adhesions, which appeared to have been torn away from the chest wall before death. On section the lung tissue appeared to be normal. There was no blood present either in the trachea or bronchi, and but scanty secretion. Careful search failed to reveal in the lung the site of its rupture or of the haemorrhage.

The right lung showed some general emphysema. At the apex was a scar adherent to the chest wall, and in the centre of the scar was a small calcareous nodule. Around the apical scar were several emphysematous blebs similar to those in the left lung. The heart, aorta, liver, kidneys, spleen, and oesophagus were all quite normal in appearance.

Discussion

The chief interest of this case lies in the cause of the rupture of the lung and of the haemorrhage.

Of the eight previous cases mentioned six appear to have recovered. Two cases reported by G. A. Allan[3] in 1925 were confirmed by *x* rays to be due to tuberculosis. Others reported by R. B. Ness and G. A. Allan[4] (1910), R. Doria[5] (1928), L. M. Hurxthal[6] (1928), and A. H. Terry[7] (1930), were all of uncertain etiology. Of those which were examined post mortem, one mentioned by Newton Pitt[1] revealed a large phthisical cavity with an eroded branch of the pulmonary artery running through it. At the post mortem of Rolleston's case no air was found in the pleural cavity although it was present during life, and after a minute examination the origin of the blood remained in doubt. The post-mortem findings in Newton Pitt's[1] own case were not unlike those in the present one. An emphysematous bulla, about half an inch across, with an imperfect wall, was found, attached to which was a fibrous band that had been torn across. No obviously patent vessel could be seen, but the adhesion was suggested as a probable source of the bleeding.

In the case described by us the necropsy revealed the presence of a firm pleural adhesion attached to an emphysematous cavity at the apex of the left lung. The adhesion appeared to have been torn away from the chest wall during life, and it seems quite possible that it was from the torn adhesion that bleeding took place. In support of this contention we would mention a case reported by Krause and Heise[8] in which a man undergoing artificial pneumothorax treatment died of haemothorax due to a torn pleural adhesion.

The rapid death of the patient made further clinical investigations impossible, but in the absence of any other cause we are inclined to the view that the abnormalities found in the lung post mortem indicated the source both of the pneumothorax and of the haemorrhage, and that the strain caused by the violent attack of coughing during

the night of June 17th, and again by defaecation on June 19th, played a part in the production of the spontaneous haemopneumothorax.

We wish to thank Dr. H. Campbell Ferguson for helpful suggestions in connexion with this case.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

ABDOMINAL MANIFESTATIONS IN RHEUMATISM

The article by Dr. K. H. Tallerman on abdominal manifestations in rheumatism (*British Medical Journal*, November 7th, p. 844) tempts me to report a case at present under my care.

On September 22nd a boy, aged 8, complained of severe headache, sore throat, and pain in the abdomen, left shoulder, and back of the legs. He was sick once, and his tongue was heavily furred. There was general abdominal tenderness, but no rigidity. The temperature was 102°; a few moist sounds were present in the chest, but disappeared after a few days.

He passed green stools once or twice a day during the first week, after which they became normal in colour, but constipated. The temperature remained between 101° and 102° until October 2nd, then fell by lysis. After the first week he ceased to complain of any pain except headache, which lasted a further week. There was no swelling of any joint, no rheumatic nodules or enlarged glands were noticed. The persistent headache, with slightly distended tender abdomen and a relatively slow pulse, suggested typhoid fever, but a Widal test on October 2nd was negative.

By October 21st the temperature was normal, and the child was eating and sleeping well. On October 29th he again complained of pain and stiffness in the left shoulder. The temperature was 100°, and there was no sore throat. The pain had disappeared and the temperature returned to normal by November 2nd. No abnormality has been found in the heart throughout. He has had diphtheria twice, once very severely, otherwise he has had no serious illness. He has occasionally complained of "growing pains" during the last three years. There is a strong family history of rheumatism.

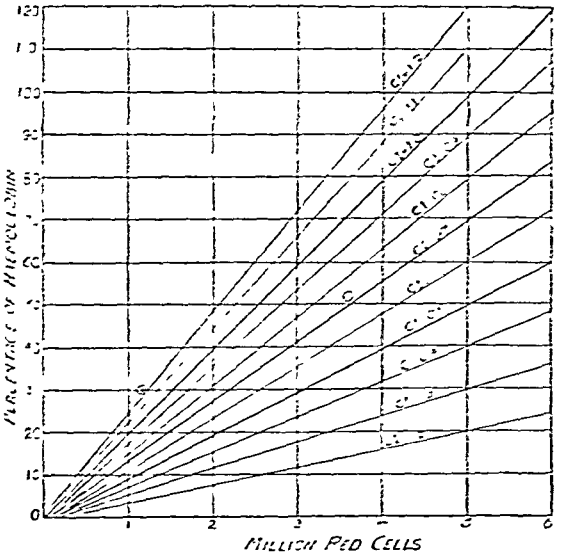
Dr. Tallerman's cases strengthen my suspicion that this child's illness has been rheumatic in origin.

Leyton — HELEN M. JARDINE, M.B., Ch.B.

RAPID METHOD OF WORKING OUT COLOUR INDEX

The present interest in microcytic anaemia prompts me to publish a chart which I made some years ago for determining the colour index, in order to avoid the usual calculation. Along the ordinate is marked the percentage of haemoglobin, and on the abscissa the number of red cells. A straight line is drawn from zero to the point of intersection of RC = 5 million with Hb = 100 per cent.; every point on this line represents CI = 1.0; thus, if there are 3·5 million red cells and 70 per cent. haemoglobin, a glance at the diagram shows the intersection of these lines to lie on the CI = 1·0 line. Another straight line is drawn from zero to the point RC = 5 millions, Hb = 50 per cent., every point on this line represents CI = 0.5; for example —2 million red cells and 20 per cent. haemoglobin lies on this line, so the CI in this case is 0.5. Other lines are drawn from zero to points above the RC = 5 million mark, each line representing CI = 0.1, 0.2, 0.3, and so on.

As examples: if RC = 3·6 millions and Hb = 52 per cent., the point of intersection will be seen to be just



above the CI = 0.7 line; by calculation CI = 0.72. Again, if RC = 1.2 millions and Hb = 30 per cent., the intersection is just above the CI = 1·2 line, by calculation CI = 1.25.

For accuracy the diagram should be drawn six inches square.

Westgate-on-Sea. — FREWEN MOOR, M.A., M.D.

CARCINOMA IN A LONG BONE SECONDARY TO CARCINOMA OF RECTUM

This condition must, I think, be exceedingly rare, and I therefore report the following case.

The patient, a man aged 69, had a colostomy performed for carcinoma of the rectum in December, 1928, and in the following February the growth was excised. In August, 1930, a swelling commenced on the left tibia, about the junction of the upper and middle third. As the growth gradually enlarged the pain increased, and the skin over it became tense and discoloured. The growth was of firm consistency, but not bony hard. The Wassermann reaction was negative.

Diagnosis of secondary carcinoma was made, but in view of the extreme rarity of this condition the possibility of an osteosarcoma could not be overlooked.

Report of X-Ray Examination.—The compact bone of the tibia below the superficial swelling shows destruction without any defined outline. Extending beyond the surface of the tibia into the swelling, there is an irregular and ill-defined shadow of bony structure. The appearances indicate a secondary carcinoma involving the tibia.

In March, 1931, the leg was amputated, and the pathological report of the tumour was as follows. Sections show a mass of very fibrous tissue in which are areas of haemorrhage, and scattered throughout are areas of osseous tissue. Interspersed among the osseous tissue are masses of very definite columnar-celled glandular tissue resembling that seen in a columnar-cell carcinoma of the rectum. The condition is undoubtedly a secondary deposit of a columnar cell carcinoma in the shaft of the tibia.

My thanks are due to Drs. Greller and Barlow, radiologist and pathologist respectively, for the care and interest taken in their investigations, and for the above reports of this case.

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Reports of Societies

THE FITTING OF CONTACT GLASSES

At the meeting of the Section of Ophthalmology of the Royal Society of Medicine on November 13th, Mr. E. W. BREWERTON presiding, a short paper was given by Mr. RUGG-GUNN on the fitting of contact glasses.

Mr. Rugg-Gunn said that, looked at superficially, the fitting of contact glasses seemed fairly simple, and fortunately in many cases this was so. There was, however, a considerable residuum of cases in which difficulty was experienced in acquiring tolerance. The manner of fitting which he employed had been gradually evolved for himself, but it was identical, or practically so, with that at various Continental clinics. The determination of an exact scleral fit was of first importance. The fine determination of the scleral curvature ultimately prescribed must be done without the aid of any anaesthetic. The ideal plan was to fit the contact glasses provisionally selected in the morning, and to ask the patient to return in the afternoon, after a few hours' wear, before making a final decision. The average radius of curvature of the adult sclera was about 12 mm., and the great majority of eyes took scleral brims of 11.5 to 12.5 mm. The scleral brim was a section of a sphere cut parallel to its equator, and its mean diameter varied in size according to whether the cut was nearer the equator or the pole. Thus a section which fitted perfectly one eye with a rather small cornea would fail to fit a similar eye in which the corneal diameter was larger. This difficulty was not adequately met by applying a glass of slightly larger radius, though at present that was the only method of overcoming it in the case of Zeiss glasses. Uncertainty with regard to these measurements at present constituted a very real obstacle in the way of adequate comfort. Cases of high myopia were most difficult to fit, possibly because the length of the eye by increased leverage tended to flick off the glass. For high myopes a wider scleral brim, giving a broader zone of contact, would be an improvement. Turning to the corneal part of the contour glass, Mr. Rugg-Gunn said that it seemed best to divide the corneal series into two groups: (1) those of small curvature, which came into contact with the cornea only at the margin of the crown, and (2) those of larger curvature, which might come in contact with the cornea in the neighbourhood of its centre. Glasses from either of these groups would cause discomfort and possibly injury to the cornea; he had never seen anything in the way of abrasion, but he had seen corneal oedema, and had known of cases where patients had complained of dimness of vision and of haloes around lights after a few hours' wear. His experience with patients with conical cornea suggested that observations with the aid of fluorescein were indispensable in this condition. Contact near the limbus was better tolerated than contact near the centre. Cefact in the pupillary area of the cornea was very badly borne. Contact in the intermediate zones was least painful at the periphery, and became more painful the nearer it approached to the corneal centre. The principle of choosing, not the contour glass which gave the best visual result, but the one approximating to the nature of the cornea itself, and superimposing a spherical correction on its outer surface, must be observed in the interests of comfort. Mr. Rugg-Gunn added that in his opinion the practice which had arisen amongst a certain number of dispensing opticians of undertaking the fitting of contour glasses themselves was to be deplored. Many opticians now possessed sets of trial contour glasses, some of them very complete ones, which they lent or hired to ophthalmic surgeons who wished to use them. That was perfectly legitimate, for at the present rate of exchange a full set of Zeiss trial contour glasses cost something like £260, and could hardly be considered part of an ophthalmic surgeon's equipment. But the actual fitting should always be in the hands of the ophthalmic surgeon.

The PRESIDENT said that the Section owed a debt to Mr. Rugg-Gunn for the very clever work he had lately done on this subject. With regard to measuring the distance between a lens in a trial frame and the contact glass, when the patient had the contact glass on, one could actually put one's lens in contact with the glass, or almost so. The simplest plan when the contact glass was in position was to do a retinoscopy on the patient.

USE OF ANTISEPTICS IN THE CONJUNCTIVAL SAC

At the same meeting Mr. F. RIDLEY described some experimental work to determine the value of various antiseptics in the conjunctival sac. The problem was whether the antiseptic would destroy the organisms present before it was rendered ineffective by dilution in tears, or for what subsequent period it would inhibit the growth of organisms, taking into consideration the further dilution, and, moreover, whether the antiseptic was more destructive to the natural protective agent in the tears than it was to the organisms present. The first experiment related to fluorescein, and showed that even in the normal eye, with the minimum of irritation, the fluorescein which could be introduced into the conjunctival sac was diluted thirty-two times in eleven minutes. With this substance the dilution did not proceed in geometrical progression, whereas this principle did apply with other substances. With argyrol, for example, one-fifth became one-tenth in about forty seconds, and one-tenth became one-twentieth in the same interval. Mr. Ridley showed the results obtained with a number of substances in common use in the eye, stating the maximum dilution to kill the staphylococcus or streptococcus in fifteen minutes in 10 per cent. serum at 34° C. From these experiments it appeared that zinc sulphate in 1 per cent. strength had no killing power, but would inhibit down to a dilution of 1 in 600, and the same was true of many other substances. The most effective substance proved to be silver nitrate; 10 per cent. silver nitrate would kill down to a dilution of 1 in 1,000 and inhibit down to 1 in 25,000 or even 1 in 50,000. Only the results on staphylococci and streptococci had been tested, and, of course, it was unjustifiable to apply the results to other organisms. The question was simply whether the antiseptic in the time available destroyed the organisms present before it was diluted by tears. Only silver nitrate, among some twenty substances tried, survived this test. It was usual to ascribe the beneficial action of silver nitrate to the desquamation it produced, but it was none the less a very efficient germicide. Argyrol and protargol might exert an inhibiting action for a quarter of an hour, but silver nitrate in the eye might fairly be assumed to exert a powerful inhibiting action. As to the effect of these substances on the natural protective agent in the tears, silver nitrate destroyed it in high solution, but a concentration of 1 in 25,000 silver nitrate which was actively inhibitory to the organisms, did not affect the bactericidal power of the tears. He concluded that silver nitrate, argyrol, and protargol were the only effective antiseptics in this connexion, and of these silver nitrate was the most efficient, and might be used, he thought, with benefit in solutions weaker than the commonly employed.

The PRESIDENT said that he was glad to hear that the old-fashioned remedy, silver nitrate, was still useful. He was strongly in favour of very weak silver nitrate. He himself constantly painting lids with silver nitrate solution, and thought it useful.

Sir ARNOLD LAWSON said that he hoped to try silver nitrate in solutions of 1 in 100, and see what happened in very weak

He himself had been most interested in flavine, which he regarded as an inhibitor. He did not think flavine was of any use once there was a state of active infection, when, indeed, all these things were perfectly useless; but when it was desired to inhibit or prevent something coming which had not yet come, then flavine had its uses. Mr. M. S. Mayou said that the staphylococcus was frequently found on taking cultures from the conjunctival sac before doing a cataract operation. But the various parts of the conjunctiva did not show an equal distribution of organisms. The upper fornix, he thought, was practically always sterile. More colonies came from the lower conjunctival sac. Generally sections were made upwards, and that was the reason why cases did not go septic more frequently.

ANAESTHETICS FOR DIATHERMY AND ENDOSCOPY

At the first meeting of the Section of Anaesthetics of the Royal Society of Medicine, held on November 6th, with the president, Mr. G. Ramsey Phillips, in the chair, a discussion on anaesthesia for diathermy and endoscopy was opened by Dr. H. W. Featherstone.

Dr. Featherstone said that of recent years two of the more important developments in surgical technique were the use of high-frequency currents for cutting or burning tissue, and the examination of cavities and viscera of the body by illumination with electric lamps. These brought certain risks when they were employed in operations on the lungs and air passages and in the neighbourhood of the mouth. Chloroform, or a local anaesthetic alone, was often employed; but the former was not always advisable, and local anaesthesia might not be practicable. Chloroform did not burn, even in an oxygen atmosphere, but if heated strongly it disintegrated; the product, phosgene, was highly poisonous, and other resultants were irritating to the mucous membrane. Under ether anaesthesia it might become necessary to employ diathermy, and the anaesthetist must be aware of the main facts as to the possibility of explosions. In a case in Canada, attended with fatal results, the patient was given ethylene and oxygen for a pharyngeal operation. Diathermy became necessary, the ethylene was stopped, and nitrous oxide and oxygen were given for some minutes. After the diathermy had been applied for a few minutes an explosion occurred and fatally injured the patient. It was held to have been due to some of the ethylene-oxygen having been swallowed and regurgitated later. Dr. Lundy of the Mayo Clinic had stated that in 39,000 administrations in that clinic there had been no explosion. Sometimes the blowing of ether and oxygen into the pharynx had resulted in explosion. Ether-oxygen mixture could be ignited at a temperature of 190° C. It was a common practice for anaesthetists to use an apparatus which permitted administration of ether and air or of ether and oxygen at the beginning of the operation, changing to chloroform or chloroform and oxygen a few minutes before an electric lamp or a diathermy apparatus was to be used. This was the procedure in the recent case at a Birmingham hospital in which the patient received fatal injuries. Post mortem there were found extensive bruising of the pharyngeal mucous membrane and a ragged tear in the mucous membrane of the pyriform fossa. There was intense inflammation of the bronchial tree. The first explosion occurred in the mouth, and was transmitted along the rubber tube to the anaesthetic apparatus. A defective control between lamp and holder resulting in a spark started the trouble. Ethylene-oxygen should never be used in conjunction with any form of electrical appliance. There was a high range of explosibility, between 2 and 20 per cent. Large quantities of ethylene might be liberated in an operating theatre. Ethylene explosions were very powerful. The ether-air mixture delivered into the trachea from an endotracheal apparatus, if rich enough to maintain anaesthesia, could always be ignited, and this should be remembered when diathermy of the lung was to take place.

Was the exhaled air and ether mixture from the lungs of a deeply anaesthetized patient combustible? A spark or flame had been applied to (1) specimens of expired air and ether collected immediately after the withdrawal of a heavily impregnated ether mask; (2) to collected expirations during deep ether anaesthesia; and (3) to a mixture exhaled directly after deep inspiration of a strong ether-air mixture. None of these specimens could be ignited. This accounted for the rarity of serious damage to patients in whose mouths a mild explosion or burst of flame had occurred during intrapharyngeal administration of ether and air. Hence it seemed safe to apply diathermy in the mouth of a patient who had been given ether, provided (1) that the patient took a dozen breaths of fresh air following discontinuance of the ether before the diathermy was applied, and (2) that care was taken that the stomach was not distended with ether vapour and air swallowed during induction. Nitrous oxide was not in itself a combustible gas. The administration of a basal narcotic permitted the use of gas-oxygen or a light chloroform anaesthesia, or even of no anaesthetic at all during diathermy or endoscopy.

J. D. Morgan, D.Sc., said that most gases supported combustion only when united with air or oxygen within certain proportions. If a mixture of maximum inflammability was ignited in a glass tube the flame moved rapidly through the whole tube. Either a richer or a weaker mixture would burn less rapidly, but the flame would not be extinguished till it had passed through the whole tube. The lower limit for ether-air was about 2 per cent.; the upper limit seemed incapable of precise measurement. The lower limit of ether-oxygen was less than 2 per cent. In ether-oxygen, increase of the oxygen content increased the ignitibility of the mixture. An ether-air mixture of strength sufficient for anaesthesia would stand a large spark without exploding, but the same spark would readily ignite a mixture of the same proportions of ether and oxygen. He emphasized the relatively low ignition temperature of ether-air and ether-oxygen mixtures. Liquid ether, when containing impurities, might ignite at a temperature as low as that of boiling water. It was very important for anaesthetists to know that ether-oxygen mixture would ignite more readily than ether-air. When ether and oxygen were combined in a maximum inflammability mixture the greatest danger existed, and the slightest spark would cause ignition. He had found that the mixture of ether obtained when air or oxygen was passed through the chloroform bottle of a Shipway apparatus was one approaching maximum inflammability. The outlet of the ether bottle was always open to the delivery pipe, and ether vapour was free to pass to the delivery tube by either diffusion or suction. The danger was increased when warm water was placed round the ether bottle; conversely, the danger might be absent when the ether was very cold. Dr. Morgan said that he had arrived at two conclusions: (1) no electrical apparatus of any kind capable of giving a free spark or exposing a hot surface should be put into the mouth of a patient while ether-air, and especially ether-oxygen, was being administered; (2) the Shipway apparatus, when employed in operations where risk of ignition occurred, should be fitted with a cock which closed the outlet from the ether bottle when air or oxygen was diverted to the chloroform bottle. He exhibited a pencil light and a cock devised to obviate the kind of risks which preceded the Birmingham explosion.

Mr. MUSGRAVE WOODMAN said that, however bad the patient might be, oxygen should never be used when a lamp was placed in the mouth. He did not rely on switching on chloroform after ether, but inserted the lamp the moment the anaesthetist stopped, thus securing the richest mixture in the mouth and not waiting for inflammable dilution. Dr. C. F. HADFIELD drew attention to the valuable work on the subject which was done by the late Professor W. E. Dixon, and said the attitude of the anaesthetist should be one of excessive caution. The danger of a serious result was greater when the vapour was being given endotracheally. The use of the diathermy knife increased the range of danger, even if the spot at which it was applied was some distance from the anaesthetic. Even if the patient was surrounded by a towel, ether had been found capable of getting through or round the folds. Dr. KIRKBY THOMAS related an incident showing the low temperature at which ether vapour would explode. Dr. A. LOWNDES YATES spoke of the chance of aspirating apparatus for the removal of mucus from the nose becoming hot enough to cause an explosion. Explosions might be attributed to the lamp when it was not guilty. Mr. V. E. NEGUS said that if the suction pump was properly enclosed there was safety from explosion. The majority of endoscopic examinations could be carried out without a general anaesthetic, and for diathermy chloroform could be employed. Dr. [illegible]NGTON HEWER said he had carried out intubation under [illegible]er many times, and had never heard of an explosion [illegible] those circumstances. He referred to the possible risks of giving anaesthetics in a private room a few feet away from a fire.

The PRESIDENT reported a case of combustion in a gas-and-oxygen apparatus said to be due to the sudden liberation of oxygen at high pressure (1,750 lb. to the square inch) into the space between the bottle valve and the reducing valve. The heat produced by the sudden compression of the air between the two valves was sufficient, in the presence of oxygen, to ignite the material of which the valve was composed. He had been informed by the manufacturers of oxygen that appreciable quantities of ether were occasionally found in oxygen bottles returned for refilling. To reduce the former risk the reducing valve should always be opened first, and the bottle valve then turned on very gradually. To avoid the second, the oxygen valve should be turned off immediately the bottle was empty. Mr. HOWARTH spoke of the value of basal narcotics where inhalation anaesthesia involved explosive risks. He had carried out many operations of the kind with basal narcotics and no further anaesthetic.

INNERVATION OF THE BLOOD VESSELS

At the opening meeting of the Manchester Medical Society on October 7th the President, Professor J. S. B. STOPFORD, gave an address on the innervation of blood vessels.

After reference had been made to certain important facts regarding the histology of blood vessels, the speaker described the innervation of the vessels of the limbs by branches from two sources of supply—a proximal source from the sympathetic system, and a distal source from neighbouring peripheral nerves. The investigations made by Blair and his co-workers and Woollard were discussed, and consideration was given to the perivascular plexuses, and the source, distribution, and function of the different types of nerve fibres found in them. Special reference was made to the question of innervation of the capillaries, and the value of the histological and experimental evidence bearing upon this subject was critically analysed. Professor Stopford then went on to consider whether the blood vessels were sensitive. He pointed out that there was no anatomical support for the view that there was a sympathetic sensory path from the blood vessels, and indicated the fallacies in certain clinical observations which had been submitted in favour of this contention. After reference had been made to recent animal and human experiments in this connexion, he expressed the opinion that there was some reason for believing that some blood vessels might be sensitive, but that the sensory path in such case must be in the cerebro-spinal nerves. In conclusion, Professor Stopford presented the evidence from his own observations and those of Telford, which demonstrated that prolonged irritation of vasomotor fibres was liable to provoke serious changes in the walls of blood vessels; these were liable to be succeeded by thrombosis and vascular occlusion. He submitted a theory suggested by Telford and himself as to the way in which the vessels reacted to prolonged irritation of their vaso-constrictor fibres, and described the changes which occurred in the vessel wall.

CRIMINAL ABORTION

At a meeting of the London Association of the Medical Women's Federation on October 29th, with the president, Dr. LETITIA FAIRFIELD, in the chair, Sir BERNARD SPILSBURY read a paper on criminal abortion.

He said that the terms "abortion" and "miscarriage" referred to loss of the foetus before the sixth month; the term premature labour was used when the loss occurred after the sixth month. The act was only criminal when proof of intention was forthcoming—for example, when a medical man passed an instrument into the uterus of a woman whom he knew or suspected to be pregnant, he clearly showed his intention to procure miscarriage. He would be held guilty unless he could show some good and sufficient reason why pregnancy should be terminated prematurely in her case. The act which procured abortion might be capable of an innocent explanation—for example, following injection of fluid into the vagina, in the course of treatment for gonorrhoea. Only the absence of any disease which would justify such treatment would lead to suspicion of the practitioner's motives.

Criminal abortion might be: (1) self-induced—most often by general violence and drugs, but occasionally by local violence; or (2) induced by another—most often by drugs and local violence, seldom by general violence. General violence was commonly the first attempt at self-induction. Methods used were excessive exercise, tight lacing, lifting heavy articles, very hot baths, jumping or falling from a height. Occasionally these methods were effective, notably in women who aborted easily, but they might result in death, or endanger life through injury. Local violence could be defined as any mechanical means employed upon the uterus or adjacent structures which either would stimulate the contraction of the uterine muscle directly, or, by damaging the ovum or detaching it from the uterus, would indirectly bring about the same result. The means included the passage or attempted passage of an instrument. The instrument used by a woman on herself might be a skewer, hatpin, knitting needle, hairpin, or crochet hook; abortionists used catheters, sounds, bougies, curettes, tents, or other dilators. The use of such instruments by an unskilled person required some anatomical knowledge, and malposition of the uterus might foil such attempts. In many cases when instruments were used by a skilled person no injury resulted, though undue haste, or the intemperate habits common in professional abortionists, sometimes caused them to make mistakes. Possible dangers were: sudden stretching of the cervix, causing a tear; sudden overcoming of the resistance at

the internal os leading to penetration of uterine wall or injury to placenta; malposition of uterus; and an abnormally placed placenta. Non-instrumental methods included injections into the vagina, which might be self-administered, or intrauterine injections, which were nearly always administered by skilled abortionists. These included watery fluids which might contain antiseptics, or a soap solution. Other methods were blowing air into the uterus; manipulation of the external os; packing the vagina; massage of the uterus through the abdominal wall; passage of electric current through the uterus; dilatation of the cervix and removal of the contents of the uterus with a curette. The dangers of local violence were septic infection, haemorrhage (which might be internal if perforation had occurred), and shock. Infection in the early stage was limited to the uterus and adnexa. The bold surgical policy of removing the uterus completely was more likely to save life than more conservative methods. The risk of shock could not be anticipated; and death from it sometimes occurred in the most unexpected cases at the moment when an instrument was passed into the uterus. Fatal shock might follow the sudden distension of the uterus by injection of fluid, or the sudden stretching of the cervical canal.

In discussing abortion induced by drugs, Sir Bernard Spilsbury quoted a statement by Dr. F. J. Smith, that there was no drug or combination of drugs which would, when taken by the mouth, cause a healthy uterus to empty itself, unless it were given in doses sufficiently large seriously to endanger, by poisoning, the woman's life. It was in women with whom miscarriage normally happened with little provocation that abortion was procured easily with drugs.

It was often difficult for a practitioner called to a case of abortion to know whether or not the abortion had been induced, unless the circumstances excited suspicion. Sometimes the patient invented an accident, such as a severe fall, or a blow upon the abdomen, to explain the miscarriage; thus the association of cause and effect between an accident and miscarriage might be less frequent than was usually supposed. The patient rarely took the doctor into her confidence, and, faced only with symptoms of a secondary infection, he might never suspect that he was dealing with a septic abortion, especially if called in only some time after the abortion had taken place. It was therefore a reasonable assumption that criminal abortion was more frequent than was generally suspected, and the evidence obtained in many criminal cases of the long career of the abortionist, and the large number of cases that had been treated by him before detection, supported that view. A useful pointer to diagnosis was the time-relation to the miscarriage of a febrile infection traceable to an infection of the genital tract. If an interval of time followed the miscarriage before the symptoms and signs of infection appeared, then the infection was likely to have occurred as a *complication* of the miscarriage. If the infection occurred either before, during, or immediately after a miscarriage, then there was some ground for suspecting that it had been procured by some means of local interference.

In the course of the discussion, Mrs. IVENS KNOWLES confirmed, from her own experience, the good results of complete removal of the uterus in septic cases. The PRESIDENT commented on the deductions to be drawn from the risks that Sir Bernard Spilsbury had described—that some degree of sepsis followed many cases of abortion which were never discovered, because the woman survived, and that much disability and ill-health in after life might be attributable to this cause. Sir BERNARD agreed, and said that the greatest factors in producing sepsis were the haste and secrecy in which criminal abortion had to be performed.

MEDICAL SERVICES IN A FUTURE WAR

A brief but interesting discussion took place at the Royal United Service Institution on November 4th, following a paper by Major G. Wilson, R.A.M.C., on "The Army Medical Services in a future war."

Major WILSON in his review stressed the importance of peace-time training for war, incidentally making it clear that, in so far as the medical services were concerned at the present moment, the training left much to be desired; he stressed the importance, also, of liaison between the medical services and the combatant branches, which is in some danger of diminishing, and he paid a tribute to the science of hygiene and what it had done for the Army in the past. With regard to the collection of wounded, he referred to a topic on which there had been a good deal of discussion—namely, the arrangements for the collection of wounded from tanks, and also the use of the aeroplane. Another point was that casualty clearing stations, in his opinion, should be given a greater mobility, or that one part of the casualty clearing station might be sent forward to reduce the number of uncomfortable journeys which had to be contemplated when long distances intervened.

Major-General J. A. HARTIGAN said that the importance of peace-time training in the medical services was well realized by their officers. He was constantly being asked for field medical units, either complete or in skeleton, but as a rule he had to say that, owing to the temporary shortage of officers, and to the fact that the establishment of other ranks was cut down to the bare minimum required to run the routine duties of a station, it was impossible to take any part in manœuvres and exercises. In consequence, medical officers had very little chance of acquiring practical knowledge of the tactical handling of units in the field, and—what was equally important—commanders and staffs of formations had no opportunity of learning the functions and organization of those units. In view of the fact that the collection and disposal of his casualties was by no means the least of the anxieties of the commander in the field, it seemed to General Hartigan a great pity that that problem was entirely overlooked in ninety-nine exercises out of a hundred carried out in the Army to-day, and for that reason the exercises and manœuvres lost much of their practical value. With regard to the disposal of casualties by aeroplane, he foresaw the time when this method of transport would come very much more into the picture. The changes which had lately taken place in military science were almost entirely in the direction of mechanization, the object of which was to increase mobility, and with this increased mobility, as he saw it, the difficulties of the medical services in the field would be increased to a very great degree, simply because the distance between the mobile medical units of a division and the immobile units would be enormously extended. In the aeroplane lay the greatest hope for dealing with this increased mobility, and in future armies, he suggested, the D.D.M.S. of a corps or an expeditionary force would have on its strength one or more fleets of aeroplanes for the evacuation of the wounded from the main dressing station to the railway.

Major-General P. H. HENDERSON supported General Hartigan's view about aerial ambulance, saying that on several occasions during the great war he had felt the need of such transport, and had asked for it without success. But he felt that unless the medical services stressed the need for a properly organized aerial medical service in peace time, the other branches of the Army would not rise to the necessity of it, and, should in the war break out, this essential would still be lacking. General Henderson also mentioned that from his experience he had felt that the wounded were unnecessarily

taken from the advanced dressing station to a main dressing station before being evacuated at the casualty clearing station. The essential thing was to get the wounded man from the battlefield to a hospital at the earliest possible moment, so that he could receive not only adequate treatment, but adequate rest after treatment. With the more rapid means of transport available, the main dressing station might in many cases be eliminated. The statistics which it was customary to collect there could quite well be obtained by attaching one or two clerks from the field ambulance to the casualty clearing station to which the wounded were going, and passing on the information to the division concerned.

Major WILSON, in replying to a question as to co-ordination with the Royal Air Force, said that as things stood at present, the regulations governed co-ordination between the Air Force and the Army to this extent—that all casualties from the Air Force in war time, where the Air Force was functioning with the Army, were dealt with by the Army medical organization, but the Air Force had the responsibility of collecting these casualties and transporting them to the nearest Army medical unit. No difficulty was anticipated in a future war in maintaining a co-operation with the Air Force.

Lieut.-General Sir HAROLD FAWCUS, D.G.A.M.S., who presided, remarked that it seemed to all R.A.M.C. officers that enough prominence was not given, and never had been given, to medical problems on staff exercise. Staff exercise in higher formations really did not go beyond Corps formations, and hardly touched the Divisions, whereas the main operation of medical interest was the evacuation of wounded in the divisional area.

CARDIOSPASM

At a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on October 30th, with the president, Mr. R. ATKINSON STONEY, in the chair, Sir WILLIAM WHEELER showed a case of cardiospasm or achalasia after operation.

The patient, a man aged 42, gave a history of dysphagia for twenty-three years. In 1913 he was treated for four months by the passage of bougies, and he was dilated with a hydrostatic bag in 1929. When seen four months previously he had been losing weight. He vomited after every meal, fluids being as difficult to swallow as solids, but there was no epigastric pain. There was no hydrochloric acid in the regurgitated food, the blood picture was normal, and the faeces contained no occult blood. The patient's age, the length of history, and the nature of the vomited material made the diagnosis of achalasia possible before *x*-ray photographs were taken; these revealed intermittent obstruction at the cardia, and enormous dilatation of the oesophagus. One month after the operation *x* rays showed very little obstruction at the cardia, but the oesophagus was markedly dilated. A month later there was very great improvement, as seen both by screening and by photographs. Thick fluid emulsion passed easily through the cardia, and the dilatation of the oesophagus was greatly reduced. Four months after the operation, however, the passage of barium was not quite so free as on the previous occasion. A few days after the operation the patient appeared clinically well. He was able to eat all kinds of food, and in three months his weight had increased by two stone.

Sir William Wheeler emphasized the fact that it was wise to wash the oesophagus out for several days before an operation; otherwise, when the cardia was dilated by the retrograde method, the field might become flooded with foul oesophageal contents.

He also drew attention to Walton's observation that at each respiration the cavity of the oesophagus opened and closed, the air being audibly sucked in and out. The patient had "oesophageal respiration." At the commencement of the operation a tube was passed, and the sucking in and out gave the false impression that it had been passed into the trachea. The possible causes of achalasia were discussed, and the case was compared with one of Hirschsprung's disease, which had been recently operated upon successfully, by removal of the sympathetic plexus controlling the pelvi-rectal sphincter. In the treatment of these cases, Sir William Wheeler recommended conservative treatment along the lines advised by Hurst (the passage of a mercury tube), or dilatation with a hydrostatic bag after the method of Plummer. He believed, however, that there were many cases in which conservative treatment could not be employed with success. Retrograde dilatation of the cardia with the fingers through an opening in the stomach had been almost universally successful. Before operating, it was wise to have a silk thread or small bougie passed into the stomach, since it might be difficult to locate the cardia when the stomach was opened. In the present case, no obstruction was felt at the operation. The cardia was easily dilated with three fingers, and there did not appear to be any abnormality or tightening at the diaphragmatic opening, a condition which had been observed by some authorities.

Dr. T. GARRATT HARDMAN demonstrated lantern slides, showing the radiographic appearances of the case before and after operation. The PRESIDENT mentioned a case of achalasia in a woman, aged about 40, seen three years previously, which was relieved by palliative methods. He quoted a paper by Plummer, in which it was stated that every patient could swallow thread, provided the right type of thread was given in the right way. Mr. A. A. MCCONNELL referred to the relative ease with which the fingers could be passed through the cardia, and said that it seemed extraordinary that an opening into which the fingers could be so readily passed could give rise to such marked obstruction.

PAROTID TUMOURS

The PRESIDENT showed a patient from whom a tumour of the left parotid gland had been removed some years before. After a year, however, the tumour recurred, and for the last three years had been increasing in size. It was now very large and hard, and spread backwards behind and underneath the ear; it was rather tender, but there was no sign of facial paralysis. The patient had had treatment by deep *x* rays, but Mr. Stoney doubted if this would do much good, except that it might decrease the size of the tumour and make operative removal possible. These tumours, he added, were usually classified as sarcoma, carcinoma, and mixed tumours; the last were more or less innocent in the early stages, but had a tendency to recur. The present case was almost certainly a mixed tumour, which was possibly undergoing malignant change.

Mr. A. B. CLERY mentioned five cases of parotid tumour, four of which were small and easily removed under local anaesthesia. In the fifth, which was larger, rapid recurrence took place. Dr. H. B. GOULDING said that it was formerly considered that such tumours were chondrified sarcomas, but the PRESIDENT, in reply, said that they were now thought to develop from endothelium. Mr. CLERY showed a child, aged 5, who had been extensively burned at the age of 18 months. The tip of the nose was drawn up to the eyebrows, as a result of contraction, necessitating a complicated rhinoplasty. He described by means of lantern slides the operative procedure adopted.

Mr. W. DOOLIN read an interesting and entertaining paper on "Some old journeymen surgeons," illustrated by lantern slides.

Reviews

CLINICAL CHEMISTRY

Quantitative Clinical Chemistry,[1] vol. i, *Interpretations*, by Professor J. P. Peters and Dr. D. D. Van Slyke, is the first half of an important textbook that has been prepared by these authors. The general scheme of the work is that each chapter treats of a single chemical substance, the biochemistry being first discussed and then the variations produced by disease. For example, the chapter on haemoglobin contains a description of the physical chemistry and biochemistry of haemoglobin, and this is followed by a discussion of such problems as anaemia, anoxia, cyanosis, carbon monoxide poisoning, and methaemoglobin. The volume therefore presents a full survey of pathological chemistry, together with a clear explanation of its relationship with normal biochemistry. The authors explain in their preface that the original intention was to write a textbook of pathological chemistry, but that they found it impossible to give an intelligible account of this subject without dealing at the same time with the normal biochemistry on which it must be based. They are to be congratulated on their decision, for in the past an enormous amount of time and energy has been wasted in the attempt to interpret pathological chemical changes without understanding the chemical processes that occur in normal individuals. There are numerous instances of complex chemical tests for disease, which were applied for years, but which were finally shown to be of little value, because most of the results that were assumed to indicate disease really fell within the limits of normal variation.

The scale of the work is one that deserves comment, containing as it does nearly 1,300 pages. Works of this size are commoner in German than in English, and are usually composed of a series of monographs of unequal value and poorly co-ordinated. This volume, however, presents a uniform review of the field of inquiry. One of the authors is a professor of clinical medicine, the other is a distinguished biochemist, and they have collaborated in all that has been written. In this way a fair balance has been maintained between the laboratory and the clinical aspects of the problem. They mention that the volume has been six years in preparation, and perusal of it shows that it has been put together with great care. Textbooks as large as this are apt to degenerate into a kind of synthesized card index which provides the readers with a brief summary of a series of conflicting opinions. Here the authors have given a clear and critical digest of the evidence. Their subject is a thoroughly difficult one, and the book cannot be considered easy reading, but it does give the reader a rational account of the present state of knowledge. In this regard it may be mentioned that the bibliography is very full, and that adequate attention has been paid to the literature of all languages. One specially valuable feature of the work is the excellent graphs.

A glance through this volume brings home the fact that the astonishing growth of biochemistry during the present century is now resulting in a remarkably rapid development of pathological chemistry. Unfortunately, the increase of knowledge is revealing very clearly the difficulties of the latter. The simplest system in biochemistry is much more complex than any that a physical chemist cares to work with, but pathological chemistry has to try to account for the manner in which these complex systems are deranged by disease. The frequent use of complex formulas to express and interpret results obtained in clinical chemistry is a feature that is comparatively new and unfamiliar in this subject, and may prove a trial to readers unfamiliar with the methods of physical chemistry. In general, the authors have produced an authoritative and comprehensive textbook which should advance the science of clinical chemistry. In the first place, they have provided a reliable guide to the literature; and in no science is this more needed than in clinical chemistry, for its development is so rapid that results often pass out of date almost as soon as they are published. Still more important, however, is the fact that they have made a serious effort to establish clinical chemistry on a firm scientific basis.

[1] *Quantitative Clinical Chemistry*. By John P. Peters, M.D., and Donald D. Van Slyke, Ph.D., Sc.D. Vol. i: *Interpretations*. London: Baillière, Tindall and Cox. 1931. (Pp. xvi + 1,264; 1[illegible] figures. 54s. net.)

ABDOMINO-PELVIC DIAGNOSIS IN WOMEN

Dr. Arthur John Walscheid has presented an elaborate account of the clinical aspect of gynaecology in *Abdomino-Pelvic Diagnosis in Women*.[2] The book is offered to the post-graduate student, and the author's aim has been to give an advanced description of the symptomatology of this branch of medicine. He has limited himself to a description of symptoms and physical signs, omitting references to treatment and paying no great heed to pure pathology. It is a comprehensive work, and most methods of investigation are described in detail. Even such procedures as illuminating the bladder and rectum to diagnose cystocele and rectocele are referred to, and mention is made of utero-salpingography in the diagnosis of retrodisplacement. The most remarkable feature of the book, however, is its size compared with the information it contains. Most of the chapters could conveniently be reduced in length if the style adopted were more concise. The scheme which the author has followed of representing personal impressions merits respect, but it suffers from the grave disadvantage that these experiences are not usually supported by corroborative evidence from the literature. References are extremely scanty, and in a volume of these dimensions a fairly complete bibliography is essential.

Dr. Walscheid has endeavoured to build up his arguments on an anatomical basis. The modern tendency is to write clinical descriptive works upon a basis of pathology. A book of this scope can appeal only to gynaecologists, and it is extremely doubtful if their needs will be satisfied by a work which dismisses the pathological side so summarily. For example, there is a small section on gonorrhoeal metritis which gives no pathological evidence of the existence of this condition. It is improbable that many gynaecologists in this country would admit the existence of a metritis of gonococcal origin; consequently, in spite of the interesting clinical descriptions, this section gives an impression of unsoundness. Again, in the section dealing with dysmenorrhoea there is no accurate account of the pathology of this complaint, and the rare condition, nasal dysmenorrhoea, is over-emphasized. The illustrations are of a mixed quality. The diagrams and photographs of specimens are fairly good, but the photomicrographs are hardly up to the standard of recent productions from America.

Nevertheless, the book contains useful material, and any contribution which presents a mature experience with practical instruction is always to be welcomed. The section on special gynaecology, with its descriptions of the clinical aspects of new growths, is very valuable, and particular mention should be made of the admirable way in which diseases of the vulva and vagina have been treated. On the other hand, the subject of ovarian

[2] *Abdomino-Pelvic Diagnosis in Women*. By Arthur John Walscheid, M.D. London: H. Kimpton. 1931. (Pp. xviii + 1,099; 397 figures, 1 plate. 52s. 6d. net.)

tumours has been badly neglected, and the accounts that are here given hardly represent the importance of ovarian tumours in gynaecology; further accounts might have been given of uterine adenomyomata and of chocolate cysts of the ovary. It is doubtful if Dr. Walscheid's book will achieve popularity in this country. The style is foreign to that of our contributions, and it is not always easy to understand quite what the author means.

RENAL FUNCTION

A seven hundred page monograph, entitled *On the Principles of Renal Function*,[3] by EKEHORN, must be regarded as a definite contribution to renal literature. The weaknesses of many of our renal hypotheses are exposed, and the author has dealt with much of our existing knowledge of the kidney in an original way. His central theme is that, despite claims to the contrary, most of our present knowledge is only concerned with the function of the kidney as a whole, and reveals nothing of the separate parts played by the glomeruli and tubules. Occasionally his arguments are somewhat vague, but in the main they appear scientifically sound, and his stated opinion that certain types of experimental work cannot by their very nature yield information on the separate mechanisms of renal function is probably correct.

In the experimental section of this monograph the author writes for the man who would repeat his work, and therefore gives a detailed account of his technique. This section deals with the methods he has used in glomerular puncture, and the subsequent analysis of the minute amounts of fluid thereby obtained. Ekehorn's technique resembles that of Richards and his co-workers, but he has modified earlier methods and obtains even larger quantities of protein-free fluid from a single glomerulus. The technical difficulties in the collection, manipulation, and analysis of this fluid are so numerous that the possibility must still remain of some uncontrolled factor which, if known, would alter the significance or nature of the results. The author is fully aware of these difficulties, and consequently his deductions from this section of his work are cautious. In the section dealing with the "protein proof" of glomerular "filtration," in contradistinction to "secretion," his arguments appear less carefully thought out, and his inability to recognize obvious gaps in the chain of his deductions is disappointing even to those who are in entire agreement with his conclusions that the glomerulus is an ultra-filter. In the opinion of the reviewer the "protein proof" is not, as Ekehorn suggests, almost the only valid evidence of glomerular ultra-filtration, but is simply to be added to the heap of other inconclusive evidence.

Ekehorn's monograph is much to be commended for its clearness of outlook, and for an excellent summary of literature bearing on the essential problems of renal function. Of particular interest is his summary of the many studies on the frog. It has been claimed that ligature of the renal artery in these animals cuts off the entire blood supply of the glomeruli, and that substances appearing in the urine after renal-portal transfusion can therefore only be the result of tubular secretion. Ekehorn rightly gives prominence to Adami's paper, in which it was conclusively shown that in not one instance were all the glomeruli shut out from the circulation by the most careful ligature of the renal arteries. Ekehorn stresses also the fundamental importance of determining, if we can, the amount of fluid coming from the glomerulus. If the total amount of glomerular fluid is really large, then the relatively high concentration of some urinary constituents must be explained by simple resorption from the tubules. On the other hand, if the total amount of glomerular fluid is relatively small—two or even ten times the amount of the urine as finally excreted into the bladder—then both secretion and resorption must be assumed to explain the high concentration in which creatinine and urea appear in the urine and the low concentration of other substances relative to the blood plasma. Ekehorn gallantly tackles the work of Starling and Verney, and rightly so, since their papers represent one of the chief difficulties confronting supporters of pure filtration-resorption hypotheses.

[3] *On the Principles of Renal Function.* By Gösta Ekehorn. *Acta Medica Scandinavica*, Supplementum xxxvi. Stockholm: P. A. Norstedt und Soner. 1931. (Pp. viii + 717; 63 figures.)

A COMPENDIUM OF HAEMATOLOGY

Compendium is a good name for an interesting collection of facts and discussions about the blood in its association with a dominant reticulo-endothelial system by Professor FELIPE JIMÉNEZ DE ASÚA.[4] Unlike most books on haematology, it is in no sense for laboratory use or for junior students. Descriptions of routine methods of examination are omitted, the normal function of the blood is barely mentioned, and the meaning of the amount of haemoglobin present in the blood, how it is estimated and how it varies, seems to be of less interest than the degree of resistance of the red cells to saline solutions. The volume of the blood and the application of its variations to clinical medicine are not referred to. The author introduces his subject with a description of the reticulo-endothelial system, in which he includes an account of the vascular distribution in the spleen and its relation to the circulation and reticulo-endothelial system of the liver, and discusses the parts played by the spleen and liver in the destruction and regeneration of blood cells, together with the fate of haemoglobin and the vexed question of the source of bilirubin. A further section deals with the relation of the haemopoietic apparatus and the reticulo-endothelial system to immunity and the production of antibodies. In his account of the histology and development of blood cells the various schools of unitarismus and dualismus are described, but the author makes no personal statement of his views on these much-debated theories. The classification and description of the various types of anaemia and leukaemia are well set out, with short notes on the treatment of these diseases. Dealing with the liver treatment of pernicious anaemia, no mention is made of the "reticulocyte response," now regarded as of first importance in the treatment, prognosis, and diagnosis of this disease; nor is there any reference to treatment by stomach extract. These and other omissions may possibly be explained by the fact that the book is dated 1929. Discussions on sprue, sickle-cell anaemia, and familial acholuric jaundice would have been welcomed. In spite of its omissions this is an enjoyable book to read. It would be much improved by a good index and a stronger binding.

ADDISON'S DISEASE

The clinical wealth of the Mayo Clinic has enabled Drs. L. G. ROWNTREE and A. M. SNELL to analyse no fewer than 108 cases, and has thus provided opportunities for improving the unsatisfactory treatment of this comparatively rare disease. In their recent monograph, *A Clinical Study of Addison's Disease*,[5] they first sketch the knowledge of the adrenal glands from their discovery in the sixteenth century up to the publication of Addison's original and classical account of "The Constitutional and

[4] *Compendio de Haematologia.* Por Felipe Jiménez de Asúa. Cordoba (Rep. Arg.): Imprenta de la Universidad Nacional. (Pp. 302; 58 figures.)

[5] *A Clinical Study of Addison's Disease.* By Leonard G. Rowntree, M.D., and Albert M. Snell, M.D. Mayo Clinic Monographs. Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 317; 41 figures. 18s. net.)

local Effects of Disease of the Suprarenal Capsules" in 1855, which is here reproduced in full on account of its great historical value and its relative inaccessibility. Whereas Osler had only seventeen cases of Addison's disease, 33 [illegible] published hospital and consulting practice in America [illegible] at the 108 Mayo Clinic cases have come to necropsy [illegible] this represents the experience of twenty-two years' [illegible] which 696,789 patients registered at the clinic—an incidence of 1 in 6,450. Two methods of treatment have been employed by the authors; in 1926 the Murlin [illegible] of intensive treatment by adrenaline and adrenal [illegible] substance was started and given to fifty-seven [illegible] of whom thirty-two are recorded as having [illegible] and a sixth of the total were living after ten years. This treatment, named after a medical man [illegible] whom it was first tried, is compared with that of [illegible] and radium on carcinoma, which also commonly [illegible] temporary improvement. Since January, 1929, the hormone extracted from the adrenal cortex by Swingle and Pfiffner has been given by intravenous injection to nine patients, whose cases are fully reported. Though the present report is admittedly of a preliminary nature, the results point to a real advance in treatment, and, indeed, are compared in this respect to the use of insulin in the coma of diabetes mellitus. It is remarkable how, when given in a crisis of Addison's disease, it restores the patient to health within two to five days, banishing anorexia and increasing the appetite to the point of hunger, producing a feeling of well-being and a gain in body weight. This beneficial effect lasts about two weeks, and it appears that patients dying of Addison's disease fall short of good health through a lack of a little only of the cortical hormone. Unfortunately the supply of it is at present extremely limited, but steps are being taken to meet this need. In addition to the account of treatment the other aspects of the disease are fully described.

NOTES ON BOOKS

The first edition of Professor Rudolf Grashey's Atlas of Surgical and Pathological X-Ray Pictures[1] appeared in 1903, the second in 1924, and the third, improved and enlarged, was published last March. It is now a book of established reputation. The first part consists of a summarized text, beginning with the subject of foreign bodies and methods of detecting them and of localizing them, in relation to landmarks on the skin, in various parts of the body, and the use of the fluorescent screen. The next part is devoted to a general review of concretions, such as genito-urinary calculi, gall-stones, and so forth. Then follow discussion of bone and joint affections, deformities, tumours, and pathological changes in the soft parts, luxations and distortions, and fractures. All these, occupying 79 pages, are illustrated with outline drawings of radiographs. The rest of the volume consists of the atlas proper, of autotype reproductions of roentgenograms dealing with 438 subjects with descriptive text, a great many of which are illustrated with more than one or two films. This is a valuable book of reference and of pathological study for the radiographer, the pathologist, and the surgeon, for it is broad based on a great mass of accurate observations.

An unusual title for a monograph of over two hundred pages is *L'Hypochlorémie*,[2] by Marcel Rudolf, published recently by G. Doin of Paris. Diminution in the amount of sodium chloride in the blood plasma hypochloraemia is well known to occur in such diverse conditions as acute intestinal obstruction, diabetes mellitus, repeated vomiting, and some forms of nephritis. Often, in these cases, there is also a high retention of nitrogenous products in the blood. The opposite condition of salt retention is much better known to us, and is believed to have some influence on the production of renal oedema. Dr Rudolf has tried to unravel some of the problems involved in what may be conveniently termed the metabolism of sodium chloride in the body, but it is not his fault that he is able to give us little practical help. The problems are there, but at present are not capable of solution, and this monograph is therefore premature. The bibliography, almost entirely of French publications, is useful.

The *Trial of Alfred Arthur Rouse*,[3] a volume in Hodge's Notable British Trials Series, is edited by Helen Normanton, who outlines the main circumstances of the case ("the blazing car mystery") in a useful introductory chapter. Among other points she refers to the discrepancies in the reports by the three police officers who saw the body of the victim immediately after death, and to the fact that no medically trained observer was present before the body was removed. It may be recollected that Mr Justice Talbot, in his charge to the jury, expressed his astonishment that "the utmost care should not have been taken that the car and its contents remained as they were until they could have been removed to a proper place, having been properly examined." A full report of the trial is supplemented by appendices and illustrations.

[1] *Atlas of Surgical and Pathological X-Ray Pictures*. By Prof. Dr. Rudolf Grashey. Dritte, Verbesserte und erweiterte Auflage. Lehmanns Medizinische Atlanten, Band VI. München: J. F. Lehmann. 1931. (Pp. 214 + 243; illustrated. R.M.30.)

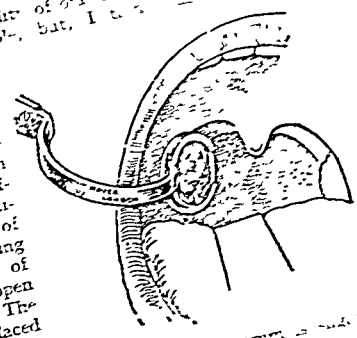
[2] *L'Hypochlorémie*. Par Maurice Rudolf. Paris: G. Doin et Cie. 1931. (Pp. 218. 35 fr.)

[3] *The Trial of Alfred Arthur Rouse*. Edited by Helen Normanton. Notable British Trials Series. Edinburgh and London: W. Hodge and Co., Ltd. 1931. Pp. [illegible] 8s. 6d. net.)

PREPARATIONS AND APPLIANCES

A Tonsil Retractor

Mr. C. Bereseley Wix, M.B., B.S., [illegible] and [illegible] Surgeon, Farnaglon Diapensary, [illegible] from the ordinary [illegible] It is difficult in the ordinary [illegible] mucus fus expressed from the tonsil [illegible] to the patient or for bacteriological [illegible] and the gagging of the throat is unsatisfactory. [illegible] infection owing to the liability of oral contamination. I have therefore designed a simple, but, I think, useful spatula for use in the examination and treatment of tonsillar sepsis. It is made of stainless steel and is similar to a simple tongue depressor with fenestrated end, the difference being the addition of a gutter 3/16 of an inch wide, encircling the upper surface of the fenestrum and open opposite the handle. The end is shaped and placed at an angle to the handle suitable for application against the tonsil, and the edge of the fenestrum is rounded and blunted.



After gargling, first with an antiseptic and afterwards with sterilized water, the instrument is passed against the tonsil with an outward pressure to empty the crypts, then a short upward movement is made to collect the pus in the gutter. The instrument can now be removed from the mouth and the pus collected on a sterile swab for bacteriological examination. It contamination with other oral [illegible] is prevented. As the tonsil collected on a sterile swab for bacteriological examination. It demonstration to the patient [illegible] the [illegible] fenestrum the instrument can be used [illegible] tonsillectomy is declined the [illegible] example ultra violet radiation [illegible] —are best preluded by the [illegible] With this instrument I claim that [illegible] is feasible and the infected material [illegible] the mouth [illegible]

The instrument [illegible] for me by Messrs. Maw and Phelps, 59 61 New Oxford Street, London, W.1.

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CONSERVATION OF MAN-POWER IN WAR

Nothing comparable to the final volume of the *Medical History of the War*[1] has been produced by any other of the countries which took part in that great conflict. France and Germany have limited their analyses to cases treated in their base hospitals, while the American records are concerned only with one period of the struggle, and that confined to one front. This British account analyses and classifies more than eleven million casualties suffered by the British Expeditionary Forces at home and over-seas, but, owing to unavoidable omissions, even this enormous figure is not complete. The term "casualty" includes both battle and non-battle casualties, whether temporary or permanent. Non-battle casualties embrace all cases of sickness and of injury not due to enemy action. Vast as the published records appear, the work falls far short of the original intent. It had been hoped to add a complete classified analysis of some twenty-three million individual case records, but for reasons of financial economy it was finally decided to confine the analysis to the cards of British troops only, and, of these, to include only about a million cases taken in numbers proportionate to the strength of the various branches of the service.

The volume is not a medical treatise. The authors' aim is to present a study of the means of conserving man-power in war, and they show that an efficient medical service, properly supported, is a main factor in preventing wastage of man-power, and thus maintaining the fighting strength of troops in the field, a function of the medical services often overshadowed by stressing the humanitarian aspect of their work. The prevention of disease, a higher recovery rate, and a reduction of the period of detention in hospital, ensure a flow of trained reinforcements to the front. But it must be emphasized that the highest degree of professional skill may be rendered impotent if field medical units are unable to secure the rapid and orderly collection and evacuation of casualties from the line. Thus the provision of ample personnel, equipment, and transport not only lessens suffering, but gives a material return in the long run. It is a lasting monument to the skill and devotion of those responsible that 82 per cent. of the wounded, and 93 per cent. of the sick admitted to medical units in the great war, returned to some form of duty. The casualties caused by disease were twice as numerous as those of battle, whereas in the South African war sickness was responsible for about sixteen times as many admissions as the enemy. It is gratifying to learn, too, that in spite of the large proportion of wounds caused by shell fire, and the greater liability to septic contamination, the percentage of recovery was higher than in the South African campaign. Of over two million wounded who were admitted to casualty clearing stations, shell fire accounted for 58 per cent., rifle and machine-gun fire for 39 per cent., bombs for 2 per cent., while only 0.3 per cent. of wounds were due to the bayonet.

A striking feature of the statistical review is that the greatest temporary wastage of man-power was caused, not by the major epidemic diseases associated with armies in the field, but by the common and everyday ailments of ordinary life—diseases of the respiratory and digestive systems, rheumatism and its allied conditions, skin diseases, minor septic infections, and influenza. Although the dreaded and anticipated epidemics were kept at bay, other diseases of war broke out to swell the numbers of the sick, and to strain further the resources of medicine. The forgotten maladies, re-named trench foot and gas gangrene, reappeared, the former demanding the evacuation to the base of over 80 per cent. of those attacked. Trench fever, doubtless flourishing in earlier campaigns but then masked by typhus, called for long and sedulous research before its nature was disclosed. War nephritis was responsible for thousands of casualties, but its exact etiology baffled discovery. Dysentery and its allies—though never assuming widespread epidemic form—filled from first to last over 200,000 beds, and malaria twice that number. Paradoxical as it might appear, in the Eastern theatres of war victory was more to be feared as a causal factor of epidemics than defeat, for the occupation of enemy positions, always insanitary and often heavily contaminated, intensified infections already in evidence, and, at times, caused an outbreak of some disease which the force had previously escaped. The authors indicate how, in the unfortunate event of another war, the early misunderstandings and mistakes of the last can best be avoided; but, in justice to the medical services, it must be reiterated that the responsibility for a breakdown of medical organization cannot necessarily be laid to their charge. As is stated in the *Report on Medical and Sanitary Matters in German East Africa*, 1917: "The medical services are dependent on other departments, and if these fail them in any way, whether as regards supplies, transport facilities, disregard of advice, or slowness in taking action upon a recommendation, then the responsibility does not rest with the director of medical services."

Throughout the whole struggle in France and Flanders, the British Expeditionary Force incurred the astounding total of six million-odd battle and non-battle casualties. It staggers the imagination to picture what this vast host of sick and wounded demanded in the way of organization, accommodation, treatment, and transport. Some four million were evacuated from casualty clearing stations to the base, and over a million were transported across the Channel. Nearly three

[1] *History of the Great War Based on Official Documents. Medical Services: Casualties and Medical Statistics of the Great War.* By Major T. J. Mitchell, D.S.O., M.D., Ch.M., R.A.M.C., and Miss G. M. Smith, M.B.E., M.A. London: H.M. Stationery Office. 1931. (£1 1s. net)

millions of those admitted to hospital in France for wounds or disease returned to duty in the theatre of war, to which must be added the unstated number who returned to duty after evacuation to the United Kingdom. The general survey of the work of the Ministry of Pensions shows the appalling loss suffered by the nation in the form of post-war disablements. More striking than pages of descriptive writing is the bald statement that of the British forces, excluding Dominion and all other troops, 2,414,000 persons, or 40 per cent. of those who served, suffered death, or some form of war disability for which State compensation was required.

It would be impossible to praise too highly the form in which these masses of figures are presented. The narrative is written in an easy and attractive style, and technicalities are avoided as far as possible. To many the word "statistics" has a repellent sound, but here simplicity and human interest have not been butchered to make a mathematical holiday. This unique volume should be studied by every officer in the Army. It should be read, too, by all those concerned with the welfare of the nation, for should such another calamity overtake us, its teachings will reduce wastage of manpower, mitigate the sufferings of thousands, and lighten the residual financial burden of the State.

MEASLES CONTROL IN LONDON

The medical publications of the London County Council are distinct in cover and contents, usually repay perusal and the Report of the Medical Officer of Health and School Medical Officer on the Measles Epidemic, 1929–30[1], is no exception. Dr. Kay Menzies, in referring particularly to the last London outbreak of measles, has done well to put on record an account of how the perennial problem of measles is being tackled in the country's largest city.

The Health Department of the L.C.C., like other administrative authorities, realizes that the entire prevention of measles is a vain hope, even if such a consummation is altogether desirable, but efforts to control the disease, both in the manner of its incidence and in its clinical course are an objective which can, and should be, aimed at everywhere. The scheme at present used for dealing with the biennial outbreaks in London is based on certain primary considerations, and (as the report points out) is the result of many previous administrative adventures. In the first place, it is realized that among a large part of the population measles is still lightly regarded, despite the fact that in London during the past four years it has been responsible for eight times as many deaths as scarlet fever, and one and a half times the number of deaths from diphtheria. In the second place, many cases, partly because of this complacency, are either not brought to the notice of the Health Department, or, if so, are reported only when the children are seriously ill. Thirdly, in order to minimize the risk of a fatal result, the incidence of the disease among children under 5 years of age, and more especially under-nourished children living amid insanitary surroundings, should, as far as possible, be prevented. Lastly, it is recognized that to prevent the development of complications and to reduce the mortality, good facilities for home nursing, and medical treatment in hospital or otherwise, are essential. The scheme is administered by the County Council in co-operation with the various metropolitan borough councils and certain voluntary associations.

The leading part in the campaign is naturally taken by the school authorities, who utilize fully all their resources in personnel for the early detection of measles among school children, and for the instruction of parents. Thus head teachers, attendance officers, and school nurses are all concerned, not only with the detection of cases at school or at home, but also with the duty of promptly bringing all cases needing attention to the notice of the school medical officers and borough medical officers. In epidemic times the school nurses daily visit the infant departments of schools (and primarily those in congested districts) for the purpose of excluding from school and bringing to the notice of the medical officer of health concerned all suspected cases of measles, they also report to the district health visitor the names and addresses of all children absent from school. During the last epidemic no less than 53 per cent. of the suspected cases excluded by nurses proved to be cases of measles, and 41 per cent. of the absentees were also found to be suffering from the disease. But the school net alone is obviously not sufficient, and in two of the metropolitan boroughs (Paddington and Fulham) all cases of measles are notifiable, while in seven other boroughs the first case in each household must be reported. Partly through these means and partly through the vigilance of health visitors some 20,506 cases, in addition to the 34,494 discovered by the school authorities, were brought to light during the seven months ending June 28th, 1930.

A long and unrivalled experience has convinced the school medical authorities that neither class closure nor the exclusion of unprotected children is thoroughly successful in limiting the spread of measles in the schools. More importance is attached to the visitation and instruction of households where cases have been reported, or are suspected to exist, and to the instruction of households with young children situated within infected areas. Warning notices are distributed to these households, and among other matters attention is drawn to the fact that arrangements for the removal of a measles patient to hospital or for nursing assistance in the home may be made in special cases where the need for this is known to the borough medical officer of health. The London County Council as the result of the Local Government Act, 1929, is particularly fortunate in the possession of institutional facilities for the treatment of fever cases and in addition to the infirmaries and fever hospitals inherited from the late guardians and the Metropolitan Asylums Board, respectively, certain children's hospitals set aside a

[1] London County Council Measles Report of the Medical Officer of Health and School Medical Officer on the Measles Epidemic, 1929-30. London County Hall, Westminster Bridge, S.E.

limited number of beds for the study and treatment of measles cases.

During the recent epidemic 2,638 cases, 302 of which proved fatal, were admitted to the Council's general hospitals, and 6,452 to the Council's acute fever hospitals. The fatality rate for all cases in the latter hospitals was 6.5, but among the 1,847 cases admitted with complications the death rate was 20.4 per cent. Children who on leaving hospital are considered by the medical superintendent to need further care are, through the medical officers of health concerned, put in touch with the Invalid Children's Aid Association, and are enabled to continue their convalescence in suitable seaside or country homes. All the metropolitan boroughs have made arrangements under the Maternity and Child Welfare Act, 1918, or the Public Health (London) Act, 1891, for the home nursing of measles, and usually with the district nursing associations; in a few boroughs the direct employment of nurses for domiciliary treatment under the medical officers of health has been sanctioned. Dr. Menzies notes that little progress has so far been made in the application of serum treatment, either as a prophylactic or curative agent, but in the experience of Dr. F. Thomson and of other medical officers in charge of County Council cases convalescent serum used for prophylactic purposes has proved very useful; the supply, however, is too limited to meet the wants of hospital practice, apart from outside needs.

The report is instructive and interesting, and the account given of the administrative scheme for dealing with measles shows what can be achieved by a central authority co-ordinating all the resources at its disposal. The main result in this instance is that the number of deaths from measles among London school children has during the last twenty-five years progressively declined from 9,538 deaths during the period 1906–10 to 3,715 deaths during the period 1926–30.

CONTROL OF MALARIA IN PALESTINE

In practically every instance where a large number of non-immunes have been introduced into a highly malarious region the new arrivals have suffered most severely, and the disease has taken its toll in sickness and in human life. The determined attempt by communities of Jews to colonize in Palestine might almost have been doomed at its inception, and, indeed, because of the prevailing hyperendemic conditions might have proved a most disastrous failure, had it not been for the particularly able manner in which defensive measures were gradually introduced. In the near future it will be no empty claim that country-wide malarial control has been established. The volume by Kligler on the epidemiology and control of malaria in Palestine[1] is partly an account of the problems encountered and the measures undertaken in controlling the disease; it is also, in a way, a record of the excellent work done by the members of the Malaria Research Unit. The situation, as revealed, is a most curious one, and likely to appeal, not solely to the malariologist, but to the student of current events as well, for the social, economic, and racial tendencies have a definite bearing on the numerous factors influencing the incidence of malaria. Palestine is a country of mixed peoples, many religions, and all gradations of civilization, which vary in the country districts from the primitive, pastoral, nomadic Bedouin, through the grades of the native Arab agriculturists to the more progressive Jewish settlers. The Jewish colonists most frequently settled in the neighbourhood of that precious commodity, water, with the result that in a very short time malaria was rife, and, as in the village of Hulda, the settlements could only be maintained by annual replacement of part of the population. Beginning on a small and experimental scale, those conducting the anti-malarial campaign were soon able to extend the scope of their activities. One of the first signs of improvement was the changed attitude of the population, especially that section composed of the Jewish elements. Gone was the old indifference. And now a small outbreak of malaria in a Jewish settlement is the occasion for a storm. From the administrative side, also, the important principle is realized that it is neither good economics nor sound practice to settle people in malarious areas which have not first been subjected to adequate sanitary measures. As a result of the war experience and the data accumulated in the post-war period, it is now understood that malaria is eminently a local problem, and that a successful attack can be carried out only after a careful study of the local conditions combined with systematic experiments in control. Kligler has dealt with the subject in this manner; beginning first with topography and climate and a study of the social, economic, and health conditions of the inhabitants, he passes next to the consideration of the breeding places and bionomics of the anopheles. Then he deals with the incidence, etiology, and epidemiology of malaria, ending with a discussion of methods and results of control and experimental measures adopted in districts where anti-larval expedients had proved unsuccessful.

[1] *The* ... Israel Cambri ... *Control of Malaria in Palestine.* By ... niversity of Chicago Press; London: (22s. 6d. net.)

THE BUCKSTON BROWNE DINNER

The fourth Buckston Browne annual dinner of Fellows and Members of the Royal College of Surgeons of England was held on November 12th at the College in Lincoln's Inn Fields, with the President, Lord Moynihan, in the chair. The company numbered in all 105, the great majority of the guests being Fellows or Members of the College. Formal speeches were not made, but the President welcomed the guests in a few graceful words, mentioning in particular Sir Robert Hadfield, Sir Louis Barnett of Dunedin (President of the Royal College of Surgeons of Australasia), Sir Gerald Ryan, Professor Frederick Hobday (Principal of the Royal Veterinary College), and the Editors of the *Lancet* and the *British Medical Journal*. Lord Moynihan referred also to the forthcoming visit of Mr. C. H. Fagge to the Antipodes, when he will present a silver mace to the Royal College of Surgeons of Australasia. This work of art, designed and executed by Mr. Omar Ramsden, was on view after dinner. A dedicatory inscription records that it is "The gift of

the President and Council of the Royal College of Surgeons of England, as from brothers to brothers, MCMXXXII." In proposing the health of the donor of the banquet, Lord Moynihan described Mr. George Buckston Browne as the greatest benefactor of medicine in recent times Mr Buckston Browne, in a brief acknowledgement, spoke of his pride at being surrounded by pioneers in every branch of modern surgery, and his admiration for the enterprise and zeal for research shown by Fellows of that great College. He himself was no believer in finality in surgery, and he had great hopes for the future of the surgical biological research station at Downe. Sir Louis Barnett said that the visit to Australia and New Zealand of Professors Wright and Buckmaster, as examiners for the primary Fellowship, had been a great encouragement, and the mace would be valued by Australasian surgeons as a symbol of friendship and good will Each person present at the dinner received as a gift from Mr Buckston Browne an illustrated catalogue of portraits and busts in the College, with short biographical notices.

VITAMINS AND BONE GROWTH

"Cod-liver oil and the vitamins in relation to bone growth and rickets," by H. A. Harris, is an essay that was awarded the Alvarenga prize of the College of Physicians of Philadelphia in 1930.[1] It is a critical disquisition written in a bright and provocative manner The author scores amusing but somewhat cheap points against research workers on account of the frequent changes of doctrine that have occurred owing to the rapid development of vitamin knowledge He has sounder grounds for his criticism of the way in which every new discovery has been immediately subjected to commercial exploitation. In his introductory remarks Dr Harris says: "I propose to consider the history of cod liver oil in therapeutics, as it affords a singularly clear example of the manner in which the empirical common sense of the layman has triumphed over the alternating scepticism and hasty speculations of the scientist, and, in particular, of the biochemist in medicine." This inquiry leads the author to the conclusion that the most reliable weapon in the treatment of rickets is cod-liver oil "The recognition of the merits thereof is not due to any specific contribution to clinical medicine in these days, but, as is the case with so much in life, is part of the wonderful clinical heritage of the past" The fact that this essay has received the approbation of an important medical foundation makes it necessary to consider these conclusions carefully. They are simple and unqualified, and appear to us to be contradicted by the statements contained in the essay itself The author mentions that cod-liver oil was used as a household remedy by the inhabitants of the Atlantic sea-board in very early times, that it was introduced into English medicine in the latter half of the eighteenth century and that Schutte in 1824 described its curative action on rickets, stating that the oil would produce a cure in from five to nine weeks. This is in agreement with the conclusion that has been quoted, but the author goes on to point out that in 1912 one of the leading London paediatricians affirmed in relation to rickets: "There seems no specific virtue in cod-liver oil any other oil will do equally well." We may add that reference to the standard medical textbooks published in the early years of this century will show that this attitude was the usual one, for most writers at that period emphasized the disadvantages of cod-liver oil, and suggested that it was an overrated remedy. To us the salient facts appear to be that clinical workers, untroubled by any biochemists, had full opportunity for more than a century to study the action of cod-liver oil on rickets A few persons of exceptional acumen recognized clearly the remarkable specific action of cod-liver oil on rickets, and described its effects in detail. In spite of this clear lead the majority of clinical authorities failed to recognize the virtues of the oil, and severe rickets continued as a common disease Direct experimental proof that rickets could be prevented or cured by fat-soluble vitamins was provided by E. Mellanby in 1918, but this conclusion was vigorously opposed by a substantial body of clinical opinion, and it triumphed only because the combined experimental and clinical evidence was overwhelmingly in its favour It is a matter of historical fact that experimental work on vitamins has been followed by a far greater advance during the last ten years in the prevention and cure of rickets than that made during the previous century by clinical observation unsupported by experimental evidence. The only conclusion we can draw from this history is that the recognition of the merits of cod-liver oil in rickets was directly due to the provision in recent years of certain experimental evidence, and we do not understand why the author considers that it proves the opposite.

THE WINSFORD ANTE-NATAL SCHEME

Since 1930 an ante natal scheme depending on general practitioner service has been in action at Winsford in Cheshire, and has proved to be more appropriate to the district than an ante-natal clinic run in connexion with the child welfare centre During all the years the ante natal and maternity centre was in nominal existence, "only one single woman" attended for examination (We assume that this means only one woman—married or single) The urban district council therefore put forward a general practitioner scheme which was accepted, after some legal delays, by the Ministry. At the present time the council pays 10s 6d for the examination of every pregnant woman who is not insured under the National Health Insurance Acts no fee is paid for the examination of an insured woman but the medical practitioners under the scheme supply reports to the medical officer of health on patients of either class. In his annual report as the medical officer of health for Winsford, Dr L J Picton suggests that a fee of 7s. 6d. for each class of patient would be more equitable. Under the National Insurance Acts but patients are entitled to free ante natal supervision by the doctor is under no obligation to supply a report on the case to the municipal authorities. In Winsford the majority of women are not insured but in an area with a large insured population a fee for all reports would be essential if local practitioners were expected to undertake the extra office work involved. Between the spring of 1930 and the summer of 1931 104 reports were received under the Winsford scheme by the medical officer of health The reports are made out

[1] Am. Journ. Med. Sci., April, 1931.

on a form which covers the previous obstetric history of the patient; the date of the first ante-natal examination and the findings, including pelvic measurements; the constituents of the urine; details of the general health, with special reference to the state of the teeth, digestion, heart, and lungs, and to the presence of oedema, varicose veins, piles, or anaemia; the findings at a second examination late in pregnancy; and the history of the labour. Each item is dismissed in a word or two, but the result is a concise yet comprehensive picture of the case. The county council has accepted the principle of an ante-natal scheme run by general practitioners for application elsewhere in the county, and it will be interesting to observe whether similar schemes are adopted for general use in Cheshire.

ASTHMA RESEARCH

In a report of progress from June 1st, 1930, to October 31st, 1931, the Asthma Research Council outlines the work that is being undertaken at its various research centres. New methods of treatment have been introduced, and old ones modified, so that the average asthma patient can now be treated with more hope of success than was formerly possible. At the Guy's Hospital Clinic over three hundred patients have been investigated. While the main concern has centred round problems of the "urinary proteose" and the bacteriology of the sputum, factors such as diet, heredity, physical habit, lung lesions, presence of sensitization to food, dust, pollen, or animal emanations have also been studied. In the latter connexion the clinic expresses its desire to obtain examples of specific sensitization in which contact with particular substances induces asthmatic attacks. Patients with hay fever are also invited to attend—during the winter, if possible—in order that steps may be taken before the commencement of the "season." It is pointed out, in passing, that the aim of the clinic is to carry out an accurate study of individuals rather than to obtain statistical data from a large number of cases. Research has already shown that, during the asthmatic paroxysm, besides the occurrence of profound changes in the blood an albuminous substance is excreted in relatively large amounts in the urine. This probably contains an albuminous complex to which the patient is sensitive, and a protective substance elaborated against it by the organism. Hay fever patients and asthmatics excrete proteose during an attack, but whereas in hay fever proteose obtained from one patient can be used in diagnosis or treatment of another, in asthma a mutual proteose reaction is unusual. An exception is found, however, in specific sensitization cases where, as in horse asthma, the proteose is similar if the sensitization is the same. It is hoped that further studies in this direction may unravel the mechanism of the asthmatic paroxysm, throw light upon the more complex forms of the disease, and have a practical application in eczema and certain forms of rheumatism, in which a similar condition of proteosuria exists. A large number of patients have already been treated with desensitizing injections of proteose, and very satisfactory results are reported in some instances. Bacteriological investigation of the sputum has been concerned with the histamine-forming organisms found in both bronchial secretions and culture media taken from asthmatics, and though it is doubtful whether these bacteria can induce asthma by local formation of histamine, the good results obtained with vaccines made from them augur a promising line of investigation. Other matter reported from the Guy's clinic includes glucose and hygienic treatment in children, respiratory exercises, and the testing of unorthodox remedies. The use of sanocrysin in ten patients proved unsuccessful. The Hospital for Sick Children, Great Ormond Street, provides interesting information on hereditary and other aspects. In two out of every three cases some relative of the asthmatic child suffered from the disease. The affected relative was found twice as frequently on the mother's side as on the father's. On the other hand, three times as many boys as girls were affected before adolescence, while after this males and females were equally susceptible. Normal changes at puberty would therefore appear to be beneficial to the asthmatic boy and detrimental to the asthmatic girl. As a result of the inspection of many hundreds of homes it was concluded that the most common causative factors were feather or horsehair beds or pillows, animal pets, and dust. Investigation of food hypersensitivity revealed that the great majority of patients had deficiency or absence of acid gastric juice, with consequent inability to digest protein food. Work in the Department of Physiology at King's College deals with blood chemistry in relation to locality asthma, and the influence of certain articles of diet which, while not involving hypersensitivity in the ordinary sense, may upset the calcium, potassium, and carbon dioxide balance in the blood, and so prove harmful. Interesting research has also been done on the desensitization of the bronchial tubes. This opens up the possibility of desensitizing asthmatics at a single treatment, without the need for the innumerable injections which have hitherto been necessary.

DR. GUILLOTIN

At a meeting of the Osler Club on November 13th, Dr. J. D. Rolleston gave a short sketch of the life of Dr. Guillotin, whose name is linked with the instrument of capital punishment introduced at the time of the French Revolution. Joseph Ignace Guillotin was born at Saintes (Charente Inférieure) in 1738, and after serving as professor of literature at the Irish College at Bordeaux, studied medicine at Rheims, where he qualified in 1768, and two years later obtained a doctor's degree in Paris. He subsequently acquired some distinction in the capital, as he served on a committee appointed by the Government to inquire into Mesmer's exhibitions, and was made one of the ten deputies of Paris in the Assemblée Constituante. On October 10th, 1789, he made a proposal to this body that there should be a uniform method of execution, by decapitation, in place of the barbarous methods hitherto employed, such as burning, mutilation, drowning, and hanging. The Assembly, however, was moved to laughter when he claimed that a machine which he had invented caused an immediate and painless separation of the head from the trunk, and it was not until two years later that a law was passed that everyone condemned to death should be decapitated. At the request of the Assembly Dr. Antoine Louis, the perpetual Secretary of the Académie de Chirurgie, who died peacefully in 1792 (and not, as has been erroneously stated, by the guillotine), drew up a report in which he called attention to the fact that decapitation

by a machine was already in use in England, and stated that it would be easy to construct a similar machine in France. Louis might have added that a similar machine had been employed in Germany before the middle of the sixteenth century, and also in Italy at the beginning of the eighteenth century. The engine of the law appears finally to have been made by the collaboration of Louis with Schmidt, a German pianoforte maker, and Sanson, the notorious executioner, but without Guillotin's help. The instrument was indeed at first called "la petite Louison," or "la Louisette," before the name "guillotine" was finally substituted. Dr. Rolleston suggested that the legend that Guillotin was one of the first to perish by the machine to which his name was given rested on the fact that Fouquier Tinville had him thrown into prison on discovery of a letter from a Count Méré about to be executed, commending his wife and children to the doctor's care. Guillotin, however, was subsequently released on the fall of Robespierre, and lived until 1814, when his death was due to a carbuncle of the left shoulder. It is noteworthy that Guillotin was one of the earliest French supporters of Jenner's discovery, and in 1805 was made president of a comité de vaccin in Paris.

CANCER AND TUBERCULOSIS

Dr. Thomas Cherry of Melbourne published his first papers on the relationship between tuberculosis and cancer in 1922, and as a result of statistical studies he came to the conclusion in 1925 that the correlation between the two diseases was so intimate that experimental research was necessary to test his new definition of malignant disease. This definition ran as follows: "Cancer is in most cases the expression of the resistance of the cells to a second or subsequent invasion by the *Bacillus tuberculosis*." He then proceeded to carry his work a step further by experiments on mice, and two papers—the fifth[1] and sixth[2] in this series—have recently been published. The former of these deals with the results of inoculating 879 mice with tubercle bacilli, the dose being on the average of the order of 50,000 bacilli. A certain number of the mice have died of what is called pseudo-tuberculosis, etc., and over two hundred are still alive, so that available for the report are 349 mice, which are compared with a control group of 305 mice, all over 6 months old. In the inoculated group 80 tumours have occurred, as compared with 9 in the control group, giving a percentage incidence of 23 and 3 respectively. The classification of these tumours indicates that they exhibit an absence of uniformity and site distribution as erratic as in human cancers. The mamma is one of the principal sites, but does not show the overwhelming preponderance seen in spontaneous tumours of the mouse. The commonest site is in the gastro-splenic region and the mesentery, where a persistent lymphocytic infiltration associated with enlarged glands is often found. A group consisting of tumours of the skin and pancreas and some of the sarcomata furnishes strong evidence that they have been caused by the inoculations. For example, four cases of skin epithelioma occurred in the series, and since epithelioma is rarely seen in mice, and all this group appeared close to the site of inoculation, there seems ground for assuming some causal connexion. It is not suggested that the tubercle bacillus is directly connected with tumour formation, but rather that the bacillus must be added to the list of carcinogenic irritants. It has been observed that in the tissues adjoining the tumours there are many collections of lymphocytes, and these cells are prominent features of nearly all the lesions of this experimental group of mice. To this point Dr. Cherry returns in more detail in the sixth paper of this series. Here he compares the appearances found in the gastro-splenic region in 50 mice inoculated with tubercle bacilli with those in 50 control mice affected with a spontaneous outbreak of pseudo-tuberculosis. This is a disease occurring in mice and other rodents caused by an organism of the plague group. In the pseudo-tuberculosis group the infiltrating cells about the pancreas are almost exclusively polymorphonuclear leucocytes, while in the inoculated group the dominant cell is the lymphocyte. Dr. Cherry suggests that since the polymorph is the characteristic cell of septic conditions in the mammalia there is an antagonism between such conditions and cancer. Chronic wounds, he observes, seldom become malignant, and there is a well-recognized antagonism between cancer and florid phthisis. Conversely, conditions where a lymphocytic infiltration is characteristic are more prone to undergo malignant change. He argues that "the lymphocytes take an active share in the production of malignant disease, and are an essential link between the mouse and the malignant cell."

WELLCOME RESEARCH INSTITUTION

Lord Moynihan, President of the Royal College of Surgeons of England, will lay the corner-stone of the Wellcome Research Institution on Wednesday, November 25th, at 2.30 o'clock. This is the new building now in course of erection in Euston Road and Gordon Street, W.C. When completed the institution will embrace the following affiliated laboratories and museums: bureau of scientific research, physiological research laboratories, chemical research laboratories, historical medical museum, and museum of medical science. The architect's design for the building was exhibited at the Royal Academy last summer.

The biennial Huxley Lecture on recent advances in science in their relation to practical medicine will be given at Charing Cross Hospital Medical School on Thursday, November 26th, at 4.30 p.m., by Sir Almroth Wright. His subject is "Immunity: the old doctrine and the new." Admission to the lecture is free by ticket, to be obtained on application to the dean of the School, Chandos Street, W.C.2.

The seventh Norman Lockyer Lecture will be delivered before the British Science Guild by Dr. H. H. Dale, secretary of the Royal Society, on Tuesday next, November 24th, at 4.30 p.m., in the Goldsmiths' Hall. The subject of the lecture is "Biology and civilization."

Sir E. Farquhar Buzzard and Mr. W. Sampson Handley have been appointed members of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in succession to Sir Archibald Garrod and Sir Charters Symonds, resigned.

[1] *Cancer and Tuberculosis.* Melbourne: The University Press, 1931. (4s. 6d.)
[2] *Med. Journ. of Australia*, 1931, i, 275.

SIR CHARLES HASTINGS MEMORIAL FUND

THIRD LIST OF CONTRIBUTORS

The following have contributed to the Sir Charles Hastings Memorial Fund since the publication of the list in the *British Medical Journal* of September 12th, 1931.

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ROYAL SOCIETY OF MEDICINE

ANNUAL DINNER

The annual dinner of the Royal Society of Medicine took place at the May Fair Hotel, London, on November 12th, when Dr. T. WATTS EDEN presided over a company of about 150 Fellows and guests. The principal guests were: Sir William Bragg, Sir George Buchanan, Sir Farquhar Buzzard, Lord Dawson of Penn (President, Royal College of Physicians), Dr. F. E. Fremantle, M.P., Sir Henry Gauvain, Sir Ernest Graham-Little, M.P., Sir F. Gowland Hopkins (President, Royal Society), the Right Hon Sir Donald Maclean, M.P. (President, Board of Education), Sir Ewen Maclean, Sir Milsom Rees, Mr. Herbert Tilley (President, Medical Society of London), and Dr. W G. Willoughby (President, British Medical Association).

At the reception the President wore a new gown, maroon in colour, copied from the robe of a doctor of medicine of Padua of the eighteenth century, as illustrated in a volume in the library of the Royal College of Physicians. The gown is a gift to the Society by Lord and Lady Dawson, who have spent a great deal of time upon its selection and production. The fabric is of British manufacture, and the garment was made in Scotland.

Sir DONALD MACLEAN, in proposing the toast of "The Society," made a passing reference to his recent electoral struggle, mentioning the fact that one of the reasons for his success was the fact that his brother (Sir Ewen) spoke very often on his behalf, and nobody had any idea to which party he belonged! His own profession, that of the law, Sir Donald went on, owed a great deal to the Romans, while the medical profession owed much to the Greeks. Unfortunately, the Greeks had no method of centralizing medical education and science and of standardizing teaching. What might medical science have been to-day if in those far-off times there had been a Sir John Macalister to fuse into one great royal society the medical library at Alexandria, the school of Cnidus, the school of Cos, the Sicilian school, not to speak of Herophilus and Celsus! He proceeded to say a few words about the Board of Education and such efforts as it had made to promote the well-being of children in the schools. He found on taking office that he was responsible for 1,300 school medical officers, 3,000 school nurses, 1,000 specialists—"whatever that may mean"—and 750 dentists. Sir George Newman, for whose work in connexion with public health the nation owed a great debt of gratitude—in his recent report stated that since this national service was established in 1907 hundreds of thousands of defective or ailing children had been effectually treated and their physical disabilities remedied. In a word, there had been provided repair on a vast scale. "I am by no means unacquainted," Sir Donald Maclean went on, "with the difficulties which are obvious, and indeed unavoidable, as between the medical services attached to the various State departments and the great outside practising profession. Let me express the hope that I shall never live to see the day when the voluntary practice of medicine is in any degree lessened, but I am quite sure there is not only room, but ample opportunity, for a much larger measure of co-operation and co-ordination between the medical services of the departments of the State and your own great organization. I know that this is very difficult ground, but I will only say—and I say it officially—that if there is anything which the Board of Education can do by way of co-operation and co ordination and friendly working together, it shall gladly be done. I am sure that is the best line of progress instead of endeavouring to drive unwilling units under the State umbrella." With regard to the Royal Society of Medicine, he said that its record showed what an immense amount of work could be done by skilled and friendly co-operation. It was a great federation of medical and surgical activities. Within it the physician could tell the surgeon what he thought of him, and the surgeon could equally tell the physician. It was a pity that there was not a department for eliciting the frank opinion of the patients. But the great work which had been accomplished was evident to all those who took the least care to see and read what had been done. "You have no difficulties about dumping at all; I welcome you all as free traders. You exclude no knowledge which is of the slightest use to the human race, come from where it will. But I am very conscious of the fact that there is nothing quite so good in the medical and surgical world as home products, and I am very proud of the fact that the great medical profession, as practised in Great Britain, stands at the highest point which the profession has ever reached in any country, not only scientifically, but ethically also. I know that some people talk about doctors' etiquette in terms of impatience, and occasionally it is possible that such impatience may be justified. But that etiquette is only a symptom of a profoundly vital fact in the realm of progress of general medicine, and in what you do among yourselves in your profession you set a splendid example to the whole world."

Dr. WATTS EDEN, in responding, said that the Society was really a great organization by means of which medical men and women were carrying on their own education, and the wise founders of the Society built upon the very broad foundation of "physick and surgery and the sciences connected with them." Its interests were therefore catholic and not sectarian, and although the Society carried on its work by means of a large number of Sections, each concerned with its own corner of the medical field, its real object was medicine as a whole. Medicine was now a highly specialized subject, and in consequence was in some danger of becoming split up into disconnected units, each having but a narrow and limited outlook—a keyhole view, as it were, of the whole field. This outlook was inimical to broad views of disease, of diagnosis, or of treatment, and if a specialist, no matter how distinguished he might be, strayed from his own

path, he was in danger of becoming a nuisance. The Society supplied the corrective to that tendency, for it could offer to physicians an insight into surgery, to surgeons an insight into medicine, and to specialists an insight into both, to the very great benefit of them all. It formed a cohesive power which would help to promote the unity of medicine, to prevent exaggeration by men of one brilliant idea, and thus to keep practice upon an even keel; and if medicine was to give the best service to the nation an influence such as this was clearly needed.

In closing, Dr. Eden referred to some indications of vitality which the Society had recently shown, including the creation of the Sections of Physical Medicine and of Radiology. He thought that this was a happy indication of the elasticity of its constitution, and of its readiness and ability to meet fresh requirements as they arose.

Mr. W. Girling Ball, in proposing the health of the guests, referred to each of them in complimentary terms. Sir Donald Maclean, he said, represented the National Government, and he and his colleagues had taken up a task which was as difficult as any body of men had been set to carry out during the history of the nation. With regard to Sir William Bragg, it was particularly delightful to have him as a guest in the year in which the centenary celebrations in honour of Faraday had been held. Sir William was the apostolic successor of Faraday in the Fullerian Professorship of Chemistry, and he had little doubt that when the centenary of that great man came round again the name of Bragg would be found coupled with his, so well had he carried on the tradition. Among the medical guests, the Society offered its congratulations to the President of the Royal College of Physicians, Lord Dawson of Penn. It was difficult to think of him as a guest, for he was the immediate Past-President, in which capacity he had served the Society well. During the time of his presidency he passed through the harassing months of the King's illness, and although they all knew how trying a time he had had, he would come from the royal sick chamber into their midst apparently completely unruffled. Other guests to whom he extended a welcome were Mr. Tilley, the President of the Medical Society of London, which claimed to be the oldest of all the medical societies, and Dr. Willoughby of Eastbourne, the President of the British Medical Association, who was the first medical officer of health to become President of that body. The medical press were always welcome, for it was through their aid that the wisdom—or the folly—which was spoken in the Society was transmitted to the unfortunate people who did not happen to be its members. The medical journals performed a great service by co-operating in every way in the Society's work, and gave their services ungrudgingly.

Sir William Bragg, in his reply, referred to some of the contributions of the physical sciences to the health and well-being of the nation. He said that he had looked through lists of works in various libraries, and it was remarkable how much scientific research in this country was directly connected with health. He was thinking of subjects rather of a wide character as related to the general well-being, such, for example, as the work done on the refrigeration of food, on the measurement of noise, on the distribution of light, and on the detection and removal of pollution from the air and from water. There was an interesting distinction between the ways of applying the knowledge so gained. It might, to take an example from the work on sound, be used for the design of instruments which measured the amount of noise in a room or street, with a view to aiding the guardians of the law in prosecutions for offences. Such instruments would have to be extremely complicated if they were to record not only the actual amount of energy of the noise, but also the many other concurrent effects which helped to determine whether the noise was a nuisance. They might be valuable as deterrents, but the prevention of offences was better than prosecution for infringement. It was possible to measure noise, but not to trust the instrument for so doing in the hands of a policeman. The results of scientific research were best applied to the design of streets, buildings, rooms, machinery, and so forth in such ways as to reduce unnecessary noise or glare or deficiency of light or atmospheric pollution. It was now known, generally speaking, that it was possible before a building was put up to determine exactly what would be the consequences in the way of sound and lighting, as well as other characteristics, and it might be that these utilitarian considerations would render the building less dignified or beautiful. But when those who had to do with design and construction in building knew beforehand what could be done in this respect a very great power was placed in their hands. It was possible, for example, so to treat a room that all sounds would be perfectly well heard in every part of it, also to distribute the illumination so that the source of light would scarcely be noticed and yet be wholly satisfactory. All this was due to quite modern effort; and, as showing how modern the science of illumination was, he mentioned that in an encyclopaedia of not any great age, on turning to "illumination" he read "see 'fireworks'"; A great deal of comfort, in respect to silence and other matters depended upon architectural design. The ancient Romans understood this, as witness the dwellings at Pompeii, when they placed the backs of their houses to the noisy streets. These were but isolated examples of the knowledge that was now becoming general, and the more such knowledge was available to those responsible for the health and comfort of the community the less frequent would be the occasions for offence.

HEALTH OF THE SCHOOL CHILD

SIR GEORGE NEWMAN'S REPORT

[Second Notice*]

Nursery Schools

Nursery schools offer one method of providing supervision for the pre-school child. Of approximately two million children between the ages of 2 and 5 only about 3,000 are in nursery schools, about 160,000 are in the ordinary elementary schools, and the rest at home. There are now 44 recognized nursery schools with accommodation for 3,335 places. The experience of the last twelve years shows that the nursery school child is less susceptible than others to the ordinary ailments of childhood, particularly those of a catarrhal and rickety nature. The advantages of fresh air, rest, and suitable diet prove of inestimable value in raising the resistance to tuberculosis. In Manchester the "nursery class" in the ordinary school has been found a less costly form of provision. But premises are not always suitable, playgrounds have to be shared, and the infants do not get undisturbed sleep. Bradford has experimented in joint nursery schools and infants' departments. The object has been to avoid the break in school life which comes when the child is transferred from the nursery school to the elementary school. It is claimed that this plan brings the best of the methods and atmosphere of the nursery school into the infants' department.

Open-air Schools

There is now accommodation for 10,162 in day schools, and 3,278 in residential, an increase of 2,200 places on last year. The influence of these schools is wider than this. At the present time 89 per cent. of the school building plans submitted to the Board for approval contain proposals for throwing open to the outside many of the class rooms—a very valuable method of extending the open-air principle. One of the chief problems is heating. During cold weather the children attending unheated open-air schools are not able to work with more than about half the average efficiency of children attending warmer schools, and even then they need special aids to the

* The first notice of the annual report of the Chief Medical Officer of the Board of Education for the Year 1929 appeared in the *Journal* of November 14th (p. 913).

maintenance of bodily warmth, such as extra food and extra clothing. It may be urged, however, that it would be better to allow a small loss of manual efficiency and a small reduction in attendance rates if such losses were balanced by an improvement in the health of the children.

Artificial Light Treatment

There is still a suspense of judgement on the value of ultra-violet light treatment. Many children undergoing treatment were also receiving other treatments at the same time by tonic or operation, also there is little doubt that the greatest improvement occurs in cases which from the nature of the defect have a natural tendency to improve apart from any special form of treatment. Nevertheless, there is a general agreement that for the debilitated child, and especially the child weakened by acute illness, artificial light has a definite if not a precisely measurable value. The signs of improvement are to a large extent subjective—increased activity, improved appetite, more refreshing sleep. Objective signs, such as increase of weight and improvement in the percentage of blood haemoglobin, are less constant. As a means of preventing the common cold actinotherapy has been generally disappointing ; indeed, a recent investigation in America indicates that the irradiated group has a slightly higher incidence of nasal catarrh than the control group! Similar difficulties arise in the evaluation of the light in rheumatism ; some observers found much remission of the symptoms, so that when the radiation was stopped there was a request for second courses ; Leicester, on the other hand, reports "no effect was noticed in the rheumatic cases." No definite evidence is found that the light has any advantage over local treatment for impetigo and other septic conditions of the skin. For external eye diseases such as blepharitis and phlyctenular conjunctivitis there were diversities in the reports ; some considered it a useful adjuvant to other forms of treatment, but most areas indicated a very limited amount of success. The present conclusion is that artificial light has a tonic effect on debilitated children, but it must in no sense be regarded as a substitute for proper feeding, natural sunlight, and improved environment. As Dr. Atkinson of Manchester notes: "Children coming from good homes or fairly good homes do well, but those from really slum areas do not benefit to so great a degree from the treatment." The evidence tends to show that the light has little or no effect in the prevention of colds or other infectious diseases.

School Feeding

Observations have been continued upon the state of the children in mining areas. It appears that remedial measures are effective, save that in colliery districts and in some large industrial areas there are more or less isolated pockets of a socially inferior population, and it is in these that the greatest incidence of malnutrition is to be found. The value of milk as a supplementary ration was investigated in Lanark ; 10,000 children received three-quarters of a pint daily, another 10,000 none. The addition of the milk to the diet of the children had a striking effect in improving physique and increasing mental alertness. It is suggested that milk may enable other constituents of the ordinary diet to be fully utilized as growth factors.

The Problem of the Cripple Child

There is a steady development of the provision of clinics, hospital accommodation, and education for cripple children. Results are now under investigation. To the question whether these cripples are being mended and returned to the ranks of the normal school children or being made fit for employment, there is given the answer, Yes. In Leeds, of every 100 children treated 75 have been returned to school. In Bath also 75 per cent. were able to lead a normal life. In Manchester, of 140, as many as 90 went into ordinary employment, 20 were unemployable, and 25 went to the ordinary school. In Shropshire, of 1,671, 67 per cent. returned to school, though many of them were serious cases. Apart from treatment they would have been likely to become, and remain, physical derelicts.

Physical Training

A notable development has taken place owing to the generous offer of £30,000 made by the Carnegie United Kingdom Trust, for the purpose of providing a Physical Training College for men teachers. The Leeds local education authority have this year decided to erect a building to be known as Carnegie Hall, in connexion with the City of Leeds Training College and in its grounds at Beckett Park. The intention is to provide an institution of a national character to fill the gap hitherto existing in the facilities available for men teachers of physical training. There will be one-year courses for teachers who have completed a two-year course in an ordinary training college or university training department. It is not intended that the institution should give training in this subject to those who are not qualified as teachers generally, for it is not desirable that the subject should be in the hands of those whose qualifications are limited to physical training, nor is it in the interests of the teacher that he should be limited to a subject which he can rarely hope to teach effectively after middle age. In addition to these courses there should be ample opportunity of organizing short refresher courses of great value. Plans of a building to accommodate about sixty students and staff, and of a gymnasium, have already been approved.

Among the appendices to the report will be found a list of inquiries and researches undertaken by school medical officers and their colleagues. The list shows between eighty and ninety separate reports: eight researches into enlarged tonsils, adenoid, and throat diseases; eight into rheumatism and its effects in childhood and adolescence ; four into epidemics ; more than a dozen into nutrition ; and some forty to fifty into current problems arising out of routine work. This is evidence of keen interest and vitality in the school medical service.

India

Medical Services of the G.I.P. Railway

The annual report of the medical department of the Great Indian Peninsula Railway for 1930–31 affords an interesting example of the way in which the general public health is promoted in the districts served by this organization. Thus, the railway lands are regularly inspected by the health staff under the direct control of skilled investigators of malarial conditions ; destruction of the mosquito larvae is systematically organized, their breeding being prevented by levelling and drainage operations where indicated by careful preliminary surveys. Reports on the results of the various anti-malarial measures are received and collected. In the Bombay district, for instance, 8,801 actual and potential breeding places were treated with nearly 10,000 lb. of crude oil during the year under review. In the Igatpuri district the staff quarters and their surroundings were regularly inspected in order to detect mosquito breeding places; drains were cleared of vegetation, wedges soaked in oil were kept ready for their automatic oiling, and specimens of larvae were examined for identification. In the Bhusaval district the conclusion was reached that the River Tapti constitutes a very serious source of malaria, and is an obstacle to measures undertaken for its control. Adult mosquitos collected during October and November

when the incidence of malaria was high, revealed that the percentage of the anopheline species was 2.6, as compared with the culicine. It is obvious from the report that the railway is compiling a most valuable series of records indicating the prevalence and distribution of malaria centres and the relative efficiency of the different ways of dealing with dangerous conditions. The influenza rate among the staff increased slightly as compared with the previous year, but decreased among the members of the families of employees. The incidence of venereal disease was slightly higher; evidence is being obtained that infection is too often concealed, and that treatment is not being obtained. There was also a slight rise in the incidence of pulmonary tuberculosis and of enteric fever, but plague and small-pox have been kept down by prophylactic inoculation. Measures of economy are being undertaken, the effect of which will be recorded in the next annual report. The main line of policy followed has been the maintenance of the best medical facilities suitable for the railway employees and their families, economies being effected by closing dispensaries wherever this proves practicable.

Medical Aid in the Central Provinces and Berar

Regret is expressed by Colonel F. E. Wilson, I.M.S., Inspector General of Civil Hospitals in the Central Provinces and Berar, in his annual report for 1930, that the establishment of a large number of dispensaries has had to be postponed owing to the inability of the Government to contribute its share towards the scheme, in consequence of the prevailing financial stringency. It appears that the local bodies concerned were prepared to pay their quota, and that the required subscriptions had been collected locally. Temporary camp dispensaries in areas afflicted by famine proved very effective in dealing with outbreaks of disease. The scheme for subsidizing medical practitioners settling in villages was continued during the year, but the working of some of the dispensaries conducted by them has proved very disappointing. An investigation of the scheme as a whole is therefore being undertaken with a view to determining whether the degree of success justifies the expenditure incurred. The treatment of leprosy in certain dispensaries has won little popularity, and the suggestion is made that it would be preferable to deal with these patients in their own homes by a travelling dispensary. The social stigma of this disease is very great, and there is a strong natural desire to conceal it. It is felt, however, that unless a small area is chosen, and two assistant medical officers are appointed to it—one to give treatment at the hospital and the other to carry on intensive propaganda throughout the year—the experiment is not likely to be attended with the success it deserves. It happened, unfortunately, that no grant in aid of the free treatment of pauper lepers could be given during the year. The training classes for probationer nurses at the Mayo Hospital, Nagpur, continued to do well, and a new class has been started at the Victoria Hospital, Jubbulpore. Health propaganda lectures are being delivered by all assistant medical officers in charge of outlying dispensaries; the system of distributing simple remedies through village schoolmasters has been started at two centres, with very encouraging results.

Prevalence of Infantile Biliary Cirrhosis

An attempt has been made in the State of Mysore to determine the relative extent of the incidence of infantile cirrhosis of the liver, and to collect data relating to the probable causes of disease, with the ultimate object of discovering means for its successful treatment. A preliminary report has now been issued by the Government of this State covering the work undertaken during the first six months of 1930. Instructions to the various medical officers and their subordinates to report cases of infantile cirrhosis coming within their cognizance were not very fruitful, but the survey of conditions in the districts, though cursory, has afforded a useful supplement to the systematic work in progress at Bangalore. Most of the cases recorded were among Brahmin infants, males seeming to be more prone to this condition than females, and the onset being most commonly between the ninth and fifteenth months of life. Poverty was indicated as an important factor, but the question of diet seemed also to have special significance. The disease was particularly prevalent in certain areas, and these are now being investigated more carefully with a view to finding out whether vitamin deficiency is one of the etiological factors. Two dietetic customs, the 'malnad' and the 'maidan,' have to be considered in this respect. The first of these implies the giving of cow's milk as a routine from birth; it is highly adulterated, germs with bacteria, and nothing is done to bring its composition as far as possible to that of human milk by dilution and the addition of cream and milk sugar. Rice is given as early as the fourth month of life, fruit juices are omitted from the infant's dietary, and fat in the form of ghee is probably administered beyond the child's requirements. The 'maidan' custom is to delay the administration of cow's milk somewhat, and rice does not enter the dietary until after the ninth month. A comparative study of the effects of these customs is in progress. The maternal health was usually found to be poor, malaria and helminthic infections being common. The quality of the mother's milk is thus impoverished, with consequent deterioration of the health of the child. Investigation of the stools is in progress with a view to discovering whether some specific protozoan or infection is concerned in causing the hypochromia characteristic of the early stages of infantile biliary cirrhosis.

Scotland

Child Adoption in Scotland

The annual meeting of the Scottish Branch of the National Children Adoption Association was held in Edinburgh on November 19th, under the presidency of Councillor Mrs. Monson Millar. The association is under the control of the Child Welfare Department of Edinburgh Corporation, and was founded in 1923, to obviate the unsatisfactory conditions then prevailing whereby children with a money bounty were adopted without medical examination. The chairman said that the society existed for the protection of the child, and took care that when adoption was necessary it was carried out, not for money payment, but for the sake of the child. In the last few years two hundred adoptions had been arranged, and the officials of the society kept in touch with these cases. For the reassurance of persons who were thinking of adopting children Dr John Guy, medical officer of health for Edinburgh, said that the health of any child adopted through the association was carefully examined beforehand.

Alcohol in Treatment

In a lecture [illegible] on November 5th, [illegible] Ward Temperance Association, Edinburgh, Dr. Macnicol said that physiological experiments [illegible] alcohol acted upon the nervous system [illegible] not as a stimulant. Alcohol had a [illegible] tion of increasing the vital activity [illegible] but it was now regarded as a depressant so that in hospitals and infirmaries much less alcohol was used than

formerly. The records of the Edinburgh Royal Infirmary, for example, showed that in 1861 the expenditure upon alcohol was £2 0s. 6½d. per patient, while in 1917 the rate per patient was 6d. Similarly in Liverpool and London hospitals the use of alcohol had greatly diminished, while the consumption of milk had proportionately increased. The real place of alcohol, the lecturer contended, was in certain cases of weakness when ordinary food could not well be taken, and food could to some extent be replaced by small doses of alcohol.

Medicinal Baths in Edinburgh

At a meeting of the Baths and Wash-houses Subcommittee of Edinburgh Town Council on November 13th, a report was submitted by Dr. John Guy, medical officer of health for Edinburgh, on medicinal baths, which it is proposed to install at the Warrender Baths in the city. It was stated that similar baths had already proved successful at Dundee, and that there would be an installation of sweating baths, pine baths, tonic baths, oxygen baths, and carbon dioxide baths, which would be advantageous for the treatment of obesity and rheumatism. It was resolved to recommend the Town Council to make a grant for the necessary structural alterations in the establishment.

Largs Infectious Diseases Hospital

At a meeting of the Largs Town Council on November 6th it was agreed to protest against the decision of the Ayrshire County Council to close the Clark Hospital for Infectious Disease at Largs. The proposal of the county council was to transport the patients with infectious disease from Largs to the neighbouring Springvale Hospital at Saltcoats. It was stated at the meeting that the Clark Hospital had been quite satisfactory, and that there was doubt whether the arrangements proposed by the county council on the grounds of economy would save any expenditure in view of the growth of the community. For the retention of the local hospital it was urged that in the event of a child becoming seriously ill, the parents could be summoned immediately.

England and Wales

Medical Women's Federation

The autumn council meeting of the Medical Women's Federation was held on November 6th at the Medical Institute, Fanning areas. A resolution was passed that medical ective, save that in colliefy available, for those wonge industrial areas there are more or amination pockets of a socially inferior population, and it is council that the greatest incidence of malnutrition is to be foon. The value of milk as a supplementary ration was investigated in Lanark; 10,000 children received three-quarters of a pint daily, another 10,000 none. The addition of the milk to the diet of the children had a striking effect in improving physique and increasing mental alertness. It is suggested that milk may enable other constituents of the ordinary diet to be fully utilized as growth factors.

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lines of what Miss McMillan had done for the "under fives" in England. The toast was also briefly seconded by Miss Gertrude Herzfeld. During the dinner a telegram was sent from the assembled council and guests to Miss Eleanor Rathbone, congratulating her on her return at the top of the poll in the Joint Universities parliamentary contest. The annual general and council meetings will be held in Oxford in May, 1932.

After-History of Tuberculosis Cases

The London County Council publishes every year a statement of the after-histories of patients who received residential treatment under its tuberculosis scheme, and were discharged five years previously. It has been possible to trace the after-histories of 3,768 cases of adults who were discharged from institutional treatment in 1925. The results are shown in the following table:

Class	Males			Females		
	No. of Cases	Alive 5 Years after Discharge	Dead	No. of Cases	Alive 5 Years after Discharge	Dead
Pulmonary:		Per cent.	Per cent		Per cent	Per cent.
Sputum-negative...	283	77.0	23.0	250	73.6	26.4
Sputum-positive:						
Early cases ...	155	62.0	38.0	123	61.3	38.7
Moderately advanced	1,264	32.7	67.3	644	27.5	72.5
Advanced ...	550	4.7	95.3	268	2.6	97.4
Non-pulmonary (surgical)	113	76.1	23.9	112	82.1	17.9

Particulars are also given of 582 children discharged from residential institutions after having received at least one period of residential treatment; of this number 215 were pulmonary cases and 367 non-pulmonary. The mortality records show that 155 of the pulmonary cases and 329 of the non-pulmonary were surviving after five years.

Central Midwives Board

At the meeting of the Central Midwives Board for England and Wales held on November 5th, the Standing Committee reported that it had had under careful consideration a summary of the replies from lecturers with regard to the methods of the disinfection of hands and the use of rubber gloves taught by them, and that in connexion therewith it had also considered what instructions (if any) should be given to midwives as to the methods of disinfection of hands and the use of rubber gloves. The Board passed the following resolutions:

That, in view of the fact that the replies indicate that the technique adopted in the various training institutions is very diverse in character, it does not prescribe any uniform method of the disinfection of hands and the use of rubber gloves by midwives. This resolution does not invalidate any instructions given in the rules of the Board or in any memoranda issued by it.

tions that a copy of the foregoing resolution, together with Reports of the summary of the replies, be sent to the measures are Health.

y of the summary of the replies be sent district, for inst lecturers who gave information to the places were treated caching in the matter.

during the year und k of the year ended March 31st, the staff quarters and d signed by the chairman and inspected in order to c to the Ministry of Health. drains were cleared of ve were kept ready for their a

poisoning Outbreaks

of larvae were examined some months ago resolved Bhusaval district the conclu fication of cases of food River Tapti constitutes a very premises where potted and is an obstacle to measures u prepared. The wording Adult mosquitos collected during oted by the Council

nditions in London,

where the sanitary authorities are the City Corporation, the metropolitan borough councils, and the overseers of the Temple. The Central Public Health Committee of the L.C.C., however, proposes that copies of the notifications of cases of food poisoning to the sanitary authority should be required to be forwarded to the Council within twelve hours of their receipt, for the reason that such cases can properly be dealt with only if the area investigated is not limited by the borough boundaries, so that the Council, if quickly informed, would be able usefully to assist in the investigations, by virtue of its administration over every part of the county. The sanitary authorities will pay the fees to the medical practitioners, and the Council will refund to these authorities the fees paid by them for certificates, of which copies had been supplied. It is also proposed to take power to refuse or cancel the registration of premises used for the preparation of potted and preserved food if the premises are unsuitable.

Correspondence

TEMPORARY TREATMENT WITHOUT CERTIFICATION

SIR,—I sympathize with Dr. Dillon (November 14th) because all that he says of the limitations of the Temporary Treatment Clause of the 1930 Act is true. For practical purposes it is not of much use if it applies to less than 5 per cent. of the admissions—namely, for delirious and utterly confused cases only. No other interpretation can be put on the terms of the Section, and no other was intended by our legislators. While not of extensive or even considerable applicability, the Section is nevertheless an epoch-making advance in a legal sense. It forms the thin end of the wedge, and it is up to Dr. Dillon and other psychiatrists who care for the welfare and happiness of their patients to drive the wedge home by educating the public. Temporary treatment is a great advance on the old method of certification and a magistrate's order, or even on the provisional treatment order recommended by the Royal Commission only five years ago. The Commission, a strong body and not unfavourable to medical views, reported that they doubted if public opinion was ready to countenance a departure from the practice of employing a magistrate, and that, as they were recommending reforms that may be practicable in the immediate future, they came to the conclusion, though not without reluctance, that magisterial intervention was necessary. Within four years of this overcautious and somewhat timorous pronouncement, Parliament passed the Temporary Treatment Clause, doing away with certification and legal intervention in certain cases. This surely marks an epoch from the legal point of view, for which we ought to be grateful.

The provisions of the Temporary Treatment Clause are taken with modifications from the Scottish Schedule G, which was passed in 1857. In Scotland we are able to keep private patients in nursing homes for a period not exceeding six months, and, if necessary, under compulsion, on the recommendation of a doctor, this schedule applies to every private patient whose mental disorder is of recent origin, and who is being treated with a view to recovery—a very inclusive category. These provisions do not, but should, apply to mental hospitals as well as to nursing homes, because the former are under regulation and inspection, and irregularities and neglect are less likely to occur in them than in nursing homes. It is also unfair that the rich should have enjoyed a privilege in Scotland for over seventy years, whereas the poor and those of small means, who must be treated in mental hospitals, should have been deprived of the advantages of this form of treatment during that time.

It should be the object of all interested in the care of the sick in mind to induce Parliament to extend the provisions of the Temporary Treatment Clause, and of Schedule G (with amendment) to all recoverable patients admitted to mental hospitals in Great Britain.—I am, etc.,

University of Edinburgh, Nov. 16th. GEORGE M. ROBERTSON.

SIR,—I write to express my agreement with Dr. Dillon's views. I was physician superintendent at Bethlem Hospital when the Lunacy Act of 1890 came into force. Before that, patients of the private class had been admitted on two medical certificates and the request of a relative and without a magistrate's or justice's order. But the Act of 1890 imposed the latter, and largely increased the red tape working of the hospital.

Since then public opinion has gradually grown against "the stigma of certification," and whereas voluntary boarders were being increasingly admitted to mental hospitals and licensed houses, at last it has become legal for them to be admitted to county and borough mental hospitals as voluntary patients. This is no doubt a step in the right direction. But it had been hoped by those of us who are familiar with the large number of acute and curable cases needing the care and treatment of well-equipped mental hospitals and asylums, that many such patients might be put under care as temporary patients without a magistrate's or justice's order. The Mental Treatment Act of 1930 has, however, imposed the restriction that only a person who "is for the time being incapable of expressing himself as willing or unwilling to receive such treatment" can be admitted as a temporary patient.

It is, of course, a well known fact that many acute and curable cases do not in the early stage recognize their need for special care, and are unwilling to submit to treatment, but as convalescence approaches they begin to realize that they were unfit to care for themselves and in the end are very grateful for what has been done for them. Such cases are still, therefore, obliged to be certified, and a reception order must be obtained, although they may need only temporary care. It seems a great pity that such cases cannot be admitted as "temporary" patients. At present only the extreme confusional or stuporous cases can be so admitted, and if they pass out of this stage and become restless and discontented ("the stage of discontent") they must, after a short time, be certified, and a reception order be obtained. I am sure the Senior Commissioners of the Board of Control must recognize that this is a blot on the Mental Treatment Act, and we must hope for an amendment Act before long.—I am, etc.,

London, W.2, Nov. 16th. R. PERCY SMITH, M.D., F.R.C.P.

BRILL'S DISEASE AND TYPHUS

SIR,—The case reported by Dr. Rood-Jones in the *Journal* of November 14th is interesting, but why has it been labelled "Brill's disease"? It does not appear to have exhibited any of the symptoms of that disease except pyrexia and the Weil Felix reaction. The diagnosis was, in fact, based on that reaction. I understand that the case was one of a mild epidemic of influenza. Was the blood of any of the other patients examined for the Weil Felix reaction? For I venture to ask: May not a positive Weil Felix reaction be found occasionally in cases which are not typhus, just as the Widal reaction may occur in a case which is not enteric?

Dr. Brill admitted that the cases he described were not to be distinguished from classical typhus in respect of their symptoms. But he was impressed by the facts that none were fatal and that there was no evidence of contagion amongst them. Curiously enough, Brill, while emphasizing the latter point, entitled his paper "An acute *infectious* disease of unknown origin" (the italics are mine).

The so-called "tropical" typhus was also separated from classical typhus by its mildness and apparent non-infectivity. But Fletcher and Lesslar, who first drew attention to it, admitted that as regards the symptoms it could not be distinguished from classical typhus. Yet since they first described it in the Federated Malay States the disease has become as fatal there, if not more so, than classical typhus used to be in England. During the year April 1st, 1930, to March 31st, 1931, there were notified in those States 106 cases with fourteen deaths, which gives a fatality of 13.2 per cent. I may add that fatal cases of Brill's disease have been observed to occur in the United States of America. Since typhus ceased to be epidemic or endemic in London, isolated cases have from time to time appeared in that city.

May I take this opportunity of drawing the attention of those who are interested to another question—namely, What value is to be attached to the figures of the notifications and deaths in various diseases which appear in the Monthly Epidemiological Reports of the Health Section of the Secretariat of the League of Nations? The typhus returns for the Federated Malay States are a case in point. They were first given in No. 119 (October 15th, 1928). They related to notified cases dating back to the second quarter of 1927. I have extracted the figures as they are given in the Monthly Reports from No. 119 onwards, and from them it appears that there were no cases during the last three quarters of 1927, and only one during the year 1928. Yet according to a table given on page 479 of No. 133 (a number which contained a special article on typhus), confirmed by a statement made on page 493, there were eighty-four cases notified during 1927, and fifty-seven during 1928. It is disconcerting to find such discrepancies in an official publication of so important a body as the League of Nations. I may add that I received private information a year or two ago that the League's returns relating to small-pox in a certain African territory were by no means to be relied upon.—I am, etc.,

West Hampstead, N.W., Nov. 16th. E. W. GOODALL.

"WHAT IS LIFE?"

SIR,—I have tried to point out in my little book, the *Philosophy of a Biologist*, that loss and replacement ceaselessly go on, both in living and in dead substances. If the organisms of a species show individualism, so do atoms; chemical and physical constants are merely statistical averages of an infinite number of individuals summarizing a variable population. Atoms, no less than organisms, may retain their identity in spite of ceaseless change; each instant activity of either atom or living cell is creative; the identity swings about a mean and is never the same for two moments. To the claim that "there is present in the living thing an active principle organizing it to carry out a set of self-interested purposive actions" science answers: Can we deny self-interested purposive action to the spontaneous emission of alpha particles from radium and the play of protons and electrons? Professor Haldane himself has said that "modern physical investigation of the atom and molecules seemed to be endowing them with something very like an individual life." Each atom of a crystal or of a drop of water is complex, active, evolving, unknowable in ultimate nature as is a living cell. Progress is made and tested by experimental operations, and theory based on operation and observation has led astronomers, physicists, and biologists over and over again to fresh operation and observation and to new discovery. Let us, while reverencing the infinite unknowable "power behind the sun," get on with our operations and observation which yield fruitful results alike for dead and living substances.—I am, etc.,

LEONARD HILL.

INJECTION OF LIPIODOL

SIR,—I can fully endorse Messrs. Philip Franklin and Alexander Orley regarding the advantages of their method of injecting lipiodol into the bronchi (November 7th, p. 847). When watching Mr. I. W. Magill administer an intratracheal anaesthetic on one of the patients I was struck by the ease with which he introduced a soft catheter into the trachea, via the nose, without any apparatus or preparation, except spraying the nasal passage and pharynx with cocaine solution. For the past three or four months I have been using this method for introducing lipiodol, and my house-physician, Mr. N. S. Plummer, has also used the method on a number of patients at Guy's Hospital. The method has proved easy and successful in dealing with men, but we have found it more difficult in the case of women, and have once or twice failed, probably because the passages in their upper respiratory tracts are smaller. In general, I find that this method causes the patient less discomfort and tedium than any of the others that I have employed. —I am, etc.,

London, W.1. GEOFFREY MARSHALL.

TOXINS AND ENZYMES

SIR,—In Dr. Woodcock's interesting letters on the distinction between toxins and enzymes a definition of a "true toxin" is attempted. In his letter published on October 17th a "true toxin" is described as "poisonous" and "deadly," and the further statement is made that a toxin cannot be regarded "as imposing an altered mode of functioning upon a cell; it just poisons it, kills it, and that is the end." This rather arbitrary summing-up leaves us still unenlightened as to the mode of death of the cell. If the inquest on the cell is pursued a little further, fresh light is shed on the relation between toxins and enzymes.

Coca (*Journ. Infect. Dis.*, 1915) has shown that the haemolytic toxin of cobra venom is a fat-splitting enzyme—a lipase. This lipase breaks up the lecithin of the red blood corpuscle into oleic acid and desoleolecithin; both these substances disrupt the blood cell. Dr. Woodcock suggests that bacteriolysin may be classed as an "abnormal" enzyme. It may be claimed that toxins can also be grouped under the heading of enzymes, their peculiar or "abnormal" feature being the production of antibodies when injected into animals. Anti-enzymes as well as antitoxins exist naturally; witness the antitrypsin in normal serum. There is some evidence that anti-enzymes appear after the injection of enzymes into animals (Luers and Albrecht, 1926), but the work is not accepted as free from error by Haldane (*Enzymes*, p. 165).

Locke and Main (*Journ. Infect. Dis.*, 1931) have pointed out that selective specificity is characteristic of both enzymes and toxins. They have demonstrated the resemblance between the properties of neurotoxin, oxidase, and erepsin on the one hand, and haemotoxin, dehydrogenase, and papain on the other. They have also shown that some bacterial toxins may owe their poisonous characters to their copper-carrying respiratory enzyme,

which proves intolerable to the cells in the more highly organized aerobic tissues into which the toxins diffuse (*Journ. Infect. Dis.*, 1930). As knowledge of the mode of action of the toxin increases, the resemblance to enzyme action becomes more apparent.

A very large number of chemical substances may depress the action—that is, poison an enzyme—and among them surface-acting substances such as substituted urethranes (Haldane) This may be the rationale of the use of S U P and S U.M. 36 and 468 by McDonagh (*Nature of Disease*, vol. II). The claim is made that these drugs do not kill the invading organisms, but that they increase the resistance of the patient. On the other hand, it is equally possible that they depress the activity of the enzymes or toxins of the invading organism.—I am, etc ,

FRANK BODMAN.

Bristol, Nov 8th

LOCKED TWINS

SIR,—I had recalled to me, a few days ago, a neglected duty, that of reporting a rare and interesting case, which I attended several years ago. It was a case of twins, where the registrar of births doubted the parents' statement that neither child had priority of birth. I have full notes of the case, and, as it has not lost its interest, I hope you will find space to publish it.

On the afternoon of February 21st, 1924, I was called to Mrs C , who was in labour at full term. She was a healthy, well-built young primipara, with a muscular abdominal wall and a roomy pelvis The os admitted two fingers, the membranes were intact, and a head was felt about to engage, the anterior fontanelle to the right posteriorly Just at this point my fingers touched something that felt like a loop of cord within the membranes On my pressing this against the skull it was suddenly withdrawn and I concluded it was a hand. This constituted the only worry I had about the case when I left it in the hands of the midwife, with instructions to report any unusual happening

Several hours afterwards I was called urgently by the nurse and was astonished to find her pulling on the legs and body of a breech case. My next surprise was that, though the body looked small and limp, it gave such a sense of rigid union with the mother's body that I immediately desisted At a glance it was very striking how tightly the shoulders were pressing against the upper part of the vulva, so that they could not be drawn away from it or towards the perineum the neck passing close up from behind the symphysis There was no bulging of the perineum. On inserting my fingers I found, midway up in the pelvic canal, a small, firm head, lying almost in the second position. For convenience in description the infants may be called No. 1, the first seen, and No 2. Traction on No 1 made no impression on No 2.

After waiting over twenty years I had come up against my first case of locked twins. My long wait was not surprising, for, on inquiring, I found that this complication had come to be looked upon as a myth in at least one large maternity hospital, no cases having been recorded for very many years.

The question now arose how I was to deal with it. Of treatment, all I could remember was that amputation of No 1's head would probably become necessary. I presumed, however that that would be only after simpler measures had failed Why not try traction with forceps on No. 2's head, There were indications for doing so. The head of No 2 was small , so also, probably, was its body. There was room in the pelvis for No. 2's head and No. 1's neck ; so, also, should there be room for No. 2's body and No. 1's neck No 1's head appeared to be at the pelvic brim, and so probably capable of being displaced to let the other's body pass as it could not be if it were well engaged in the pelvic canal So the most reasonable thing to do would be to hold No 1's head *in situ* and make traction on No 2's shoulders tightly against the symphysis, without much difficulty No 2 came away, its feet accompanied by No 1's head, so that I could not give either the priority of birth. It was virtually, though not actually, a case of *neck and neck*

The midwife a lady of long experience, was astonished to see a child born apparently before the one she had been making traction on so long

Both infants looked inanimate, and No 1 being considered hopeless from the first, all the efforts at resuscitation were applied to No 2. After a short time it breathed but most surprising of all, No. 1, who had been being meanwhile uncared for, began to make feeble inspiratory efforts, and in about half an hour was breathing well

The infants were females, in a common sac with united placentæ Their weights were, No 1 3¼ lb , No 2 a little over 3 lb Both came away considerably below Both did well for about two months, when the bigger, No 1 died of an acute bronchial trouble.

Reviewing the case, on my first examination it must have been No. 1's foot I felt behind and to the right of No. 2's head. Where, how, and when the body passed the head and then slipped round in front I am sorry I was not there to see , but the nurse reported that it was a head presentation till shortly before she had had to send for me My opinion was that uterine contractions had been feeble till the parts had become relaxed, and then, with strong pains, the complication had developed rapidly, owing to the wedge action of the feet and legs passing behind the head No doubt No 2's head was pushed aside while the body passed, and, later, interlocking of the heads had caused No. 2's head to be pulled down into the pelvis. Other factors which helped to bring about the complication were, the roomy pelvis, the small heads, the common sac, and pulling on No. 1 Naturally, at the point where the uterine efforts or traction caused the upper head to press the lower against the hollow of the sacrum instead of in the axis of the pelvis, the normal mechanism of labour was defeated

It may be said that this was not really a true case of impacted twins, because only one head could be said to have been in the pelvic canal It was truly a case of locked twins, and, certainly, decapitation would have become necessary if I had persisted in trying to deliver No. 1 first Supposing I had found both heads in the pelvic canal, I think I should have employed the same treatment, with the modification that I should have encouraged No 1's head to follow No 2's, my reason being that, the pelvis being capable of containing both heads and necks, the outlet, unless abnormally contracted, ought to let them through. In such a case, of course, No 2's head would be so near at hand, distending the perineum, that it would be calling for traction.

Besides contracted outlet there is another condition that might render delivery without decapitation impossible, and that is, if No. 1's head has partially entered the pelvis but is too big fully to enter with the other child's neck. It is extraordinary, however, how pliable, extensible, and compressible the human newborn infant is, and, as the heads are compressing one another in a manner unfavourable to delivery, it is surprising what a little traction might do to relieve this.—I am, etc ,

ALEX. MACINTYRE, M B , Ch B

Airdrie, Lanarkshire, Oct. 31st

DIET AND PUERPERAL SEPSIS

A Farmer's Observations

SIR,—I read with great interest the article entitled "Diet as a prophylactic agent against puerperal sepsis" in the *Journal* of October 3rd, and thought that perhaps the work and observations of a farmer patient of mine might be of interest

He told me that he had been reading an article in the daily paper and had no idea that puerperal fever was so common among women, and also that doctors seemed surprised that so few cases occurred in slum districts, but

that that was just what he would expect. He went in for breeding pedigree stock, and twenty years ago he found that at the end of nearly every season he lost one or two ewes as the result of puerperal fever; sometimes he would lose five or six, occasionally none, but the deaths always occurred towards the end of the season. Later he began to lose them earlier in the season, and the numbers lost became much greater, so much so that the outlook became alarming, and as many as 60 per cent. died.

He consulted many veterinary surgeons, and all advised that the lambing pen should be changed. But my farmer friend would not agree to this. He had already carried out various experiments, which seemed to prove to him that infection was not the cause, or at any rate not the sole cause, of the trouble. In spite of many precautions taken to prevent infection, the mortality had not decreased. He had taken five ewes, a few weeks before 'ambing was due, and put them in a field by themselves. They were left out day and night with no one to tend them, and were allowed to lamb without aid; yet three died as a result of puerperal fever. He had lambed some in a new pen treated with creosote, yet the first ewe to lamb had died.

He gave up all idea of infection being the real cause, and looked about for some other reason, and finally hit upon what he believes to be the solution. Contrary to all advice, he had the courage to test his own convictions, and decided to lamb forty ewes in the same pen in which he had lost some 60 per cent. a few weeks earlier; in this pen there was the same six inches of manure on the floor into which had soaked the discharges from those ewes which had died as the result of puerperal fever. He did not lose a single ewe, though he kept them in the pen for three days instead of letting them out as usual. Since that year he has not lost a single ewe from puerperal fever—that is, for nineteen consecutive years. But during that year he made various experiments. He divided his flock into two groups—treated and untreated—and deliberately tried to infect his treated ones with the lochia of those ewes dying as the result of puerperal fever, but he was unable to do so. He found he could produce the disease when he wished, and stop it when he wished, but he could not cure it when it had once developed. As I have said, at first he usually lost a few cases at the end of each season. Possibly he would start with 100 ewes; each day some would lamb, and so the numbers that remained to lamb would be reduced; yet, roughly, the same amount of food would be given, so that perhaps 50 ewes would be getting just as much food as had been previously given to 100. Deaths then began to occur.

He started to go in for pedigree stock, and was anxious to get fine ewes; the finer the animals he got the more he lost as a result of puerperal sepsis, and he began to lose them at the beginning of the season. He also noticed that those farmers who took great care of their flocks and fed them well lost most ewes. When he cut down the ration he did not lose a single case, but he was keen on getting fine animals, and gradually increased the food until cases of sepsis began to crop up. He next cut down the food, and no more cases occurred. He then deliberately put aside the last five ewes, fed them up well, and lost three. The five put into the field by themselves had to contend with the elements, and were therefore fed very well, and three of them died.

He has convinced himself that the whole cause of puerperal fever in ewes is due to fattening up and overfeeding with artificial foods, such as cake. Natural foods such as hay and turnips do not matter. The treatment, or rather prevention of the disease, is simply starvation, or rather giving a strictly limited ration with natural foodstuffs. He finished by saying: "Of course, doctor, I don't know much about human beings, but it seems to me that in many ways what applies to animals applies very much the same to them, and if it is true that puerperal fever occurs more amongst the well-to-do, and not amongst the poor, then feeding up with unnatural foods may have something to do with it."—I am, etc.,

H. P. Dawson.

Grantham, Lincs, Nov. 3rd.

"FAILED FORCEPS" CASES

Sir,—The account of the 100 consecutive cases after forceps application admitted to the Liverpool Maternity Hospital[1] is a perfect example of how deceptive quite accurate figures can be. There is no indication of whether these cases were admitted in a month or in a year. "In 59 instances the patient was in the first stage of labour, the smallest degree of dilatation being a two-finger os." This gives the impression that in Liverpool doctors are brandishing forceps night and day, and applying them to every undilated os on Merseyside. It is a relief to read further on that only three cases of ruptured uterus were admitted. One had gathered the impression that there is scarcely an unruptured uterus in Liverpool. The paper then goes on to draw conclusions about the inadequacy of midwifery teaching. I suggest that a man who puts on forceps in the first stage is unteachable; why waste the time of the ninety-nine for the unteachable one?

Such statements as these are entirely misleading, because they give only a part of the truth. What percentage of forceps applications in the area served by the hospital do these hundred cases represent? Nobody knows. All that the figures prove is that there are a certain number of medical men in a big city who are unfit to practise midwifery. As this is a self-evident fact, why waste time and paper by going into fantastic percentages?—I am, etc.,

R. W. Cockshut.

Hendon, N.W., Nov. 10th.

TREATMENT OF ANTHRAX BY N.A.B.

Sir,—My statement is from memory, but I think I am correct in saying that Professor Eurich treated anthrax with N.A.B. at Bradford in 1913.

Since Pijper's article in the *Lancet* in 1926, to which Drs. Coghlan and Shorvon refer in the *Journal* of November 14th, there have been two or three subsequent articles on the same subject in the *Lancet*, and also in the *Guy's Hospital Gazette*, which contains yet another account of this treatment in its current number. A reference to the report of the Chief Inspector of Factories for 1930 would show that N.A.B. is widely used in this country for the cure of anthrax.—I am, etc.,

C. G. Brentnall, M.B.,
Physician in Charge of Anthrax Department, Warrington Infirmary.

November 14th.

PAIN IN THE ARM AND A DEAD TOOTH

Sir,—In spite of any appearances to the contrary I did not so much miss Dr. Crookshank's point as feel that it was far from clearly expressed in his first letter. Without this further explanation his advice, if followed, would have led to much unnecessary tinkering with patients. We dare not attempt to put all right that is wrong; sorely tried Nature must be allowed some field for her recuperative activities. Were there more thorough co-operation between clinician and pathologist there might be less reason for the latter to receive the hopeful therapeutic excursions of the former with incredulity.—I am, etc.,

Harold H. Sanguinetti.

Kensington, W., Nov. 16th.

[1] *British Medical Journal*, November 7th, 1931, p. 849.

FOREIGN BODIES IN THE ALIMENTARY TRACT

SIR,—After reading Mr. Gordon Bruce's paper in your issue of October 24th, an interesting case came to my mind.

My brother, the late Dr. R. J. Collier of Manor Park, was called in to see a woman who complained of a large painful lump in the right iliac fossa; thinking this was a growth, and considering that the patient was very ill, he called in a surgeon from the London Hospital, who operated pretty soon, I believe. During the operation a hard substance was encountered, and to the great surprise of the surgeon and my brother, a large smoker's knife, with the blade open at a right angle to the shaft, was pulled out. It seems that the woman, in a drunken fit, had tried to commit suicide by pushing the knife down her throat four months previous to the operation; after its perilous journey it anchored at the caecum. I saw the knife some days after the operation, and I believe the intention was to find a place for it in the London Hospital Museum; whether this was carried out or not I do not know. I may add that the patient did not live long after her operation.

—I am, etc.,

Westminster, S.W., Nov. 9th. W. A. COLLIER.

BIOPHYSICS

SIR,—In your issue of October 31st (p. 804), the reviewer of Dr. Wishart's book on *Groundwork of Biophysics* says: "Those portions of the subject [physiology] which are investigated with the aid of exact physical measurements are now often called biophysics." In June, 1930, the Society of Apothecaries published the first official *Register of Bio-Physical Assistants*, at the instigation of the British Medical Association at its Annual Meeting in 1929. If the term "biophysics" has the meaning which your reviewer suggests, then the official *Register of Bio-Physical Assistants* is totally misleading, and it is obvious that either the Society of Apothecaries must claim precedence in choosing this term or else change the title of these assistants in physical medicine. Personally I should prefer the latter course, since the term "bio-physical assistants" does not convey, to the ordinary medical man, the real nature of the work undertaken by these assistants. The whole nomenclature of physical medicine needs overhauling, and it is time some authoritative body undertook this.—I am, etc.,

R. KING BROWN,
Editor, British Journal of Physical Medicine

London, S.E.5, Nov. 12th

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons this week carried a financial resolution authorizing the introduction of the Abnormal Importations (Customs Duties) Act. The Government proposed to carry this Bill into law during the week.

The Parliamentary Medical Committee arranged to hold its first meeting on November 18th, and to dine together that evening.

The Minister of Health and the Secretary for Scotland have now presented a resolution explaining the proposed resolution prolonging the health insurance of genuinely unemployed persons.

Social Services

During the debate on the Address in the House of Commons Sir STAFFORD CRIPPS, for the official Opposition, moved an amendment, on November 12th, which ended by expressing regret that there was no mention in the King's Speech of any intention to restore and develop the social services.

Speaking against the amendment, on the same day, Dr. F. E. FREMANTLE said that Conservatives could share the feeling expressed in the last words of the amendment. They had to maintain the social services in a time of fluctuating money exchanges and price levels. They must maintain the efficiency of institutions and personnel. They must make better use of what they had, and must progress slowly but surely. They wanted to feel sure of a general countenance of the movement for housing the people, but with a stop in the waste that had been going on. With all the £12,000,000 a year for housing subsidies with which the Exchequer was saddled for the next forty or fifty years there had been little or no improvement in the housing of those who could afford only to pay 10s. or less a week in rent. Parliament must stop subsidizing people who could build for themselves and focus attention on slum clearance and the building of houses at lower prices. He thought they could expect the Town and Country Planning Bill to be put into law, with the necessary amendments, very soon. The country required less costly administration in some of its institutions. The Board of Control lately made an excellent report on their permanent institutions, especially those for mental defectives. They had learnt from foreign countries. There was extravagance and unnecessary expenditure in these institutions. The whole trend of medical and surgical science of recent times had shown they could get on better with cheaper material. There was enormous waste in the building and furnishing of present institutions. They did not want things that would last for a hundred years, nor marble corridors, but cheaper, and at the same time good, building. They must maintain the efficiency of the institutions and of their personnel. Whatever Parliament did, it must keep its hands off research. He hoped the scheme of veterinary research would be brought to fruition. The Local Government Act, 1929, had caused tremendous developments, and a breathing space for a year or two would be good for local administration. If instead of passing new legislation and setting up new officials they got down to the proper administration of that Act, local authorities could progress without further expenditure. Dr. Fremantle asked the House to consider the institutions under the Ministry of Pensions, which were becoming obsolescent. The number of persons dealt with by the Ministry of Pensions was shrinking, but another Department was building new hospitals and setting up new staffs. Much could be done if they got the medical departments of the different Ministries to co-operate. He emphasized the great value of voluntary institutions in addition to official institutions. Large spheres had up to now been most usefully covered by voluntary institutions and services, the hospitals and the nursing services were two instances. They should develop them. People should be taught that they must help themselves if they were to get full value from the opportunities which were provided. As long as the amount of good done was measured by the amount of money spent, so long would people of all classes be diverted from the parts they should play.

Miss CAZALET said that she entirely agreed with what Dr. Fremantle had said last week in regard to housing. Although we were spending more than £12,000,000 in subsidies we were not meeting the needs of those who could only afford 5s., or at the most 7s. 6d., for their weekly rent. A far simpler form of flats and tenements ought to be constructed if the immediate needs of the poorest citizens were to be met. With the co-operation and consent of the Ministry of Health a great deal more could be done in this direction and she urged the Minister of Health to consider the question very carefully at the earliest possible moment.

Excessive Imports

On November 16th Mr. RENDALL, speaking on the Government's proposals for dealing with excessive imports, said that during the last few weeks there had been anticipations abroad that the imposition of customs duties might be part of the policy of the Government. The result had been that clever folk abroad had been trying to get their imports into this country. In the opinion of the Government too much had been done to an excessive amount. Such imports included knives and surgical instruments. The Government had come to the conclusion that the best way to deal with this abnormal

importation, and at once, was to give the Board of Trade power to issue an Order which would impose a duty, not exceeding 100 per cent., on the value of the articles. It was hoped that a Bill authorizing this would be passed through all its stages and receive the Royal assent on November 20th. The powers which were being asked for were emergency powers, and the Government's proposals must come up for consideration again in six months, or something else must take their place.

The motion for the Address was carried without a division.

Mr. HORE-BELISHA, replying to Sir H. Page-Croft on November 16th, said that for the ten working days ended November 10th last the value of imported chemicals, drugs, dyes, and colours was £895,399.

Highbury Pensions Hospital

Replying to Mr. Crooke, on November 12th, Major TRYON (Minister of Pensions) said that, owing to the steady decline in the number of patients in the Highbury Hospital, Birmingham, it had been decided, in agreement with the hospital committee, that the maintenance of this institution as a Ministry of Pensions hospital could no longer be justified. It would be closed at the end of December. The number of men still requiring institutional treatment at the end of the year would be small, and treatment would be given them in a Ministry or in a civil hospital. They would enjoy the same privileges as other pensioners undergoing treatment in those institutions. Dr. FREMANTLE asked whether any use was to be made of Highbury Hospital, or whether it would be shut down and its value thrown away, when so many hospitals had to be built. Major TRYON asked for notice of this question.

Foot-and-Mouth Disease

On November 16th Sir J. GILMOUR, replying to Mr. Hurd, said that he had considered the latest report of the Foot-and-Mouth Disease Research Committee as affecting the risks involved in the importation of dried milk and other milk products from foreign countries where disease was prevalent. While it would appear from the laboratory experiments so far conducted that milk powder, in common with many other commodities, might be a potential carrier of foot-and-mouth disease, it had not been demonstrated that the virus survived in milk powder under trade conditions. The practicability of carrying out further tests under trade conditions was under consideration.

Unemployed Insured Persons.—In reply to Mr. Rhys Davies, on November 12th, the Minister of Health, Sir E. HILTON YOUNG, said he proposed to introduce immediate legislation to protect the health insurance and pension rights of those unemployed insured persons who would otherwise lose these rights at the end of the year.

Housing.—Sir E. HILTON YOUNG informed Dr. F. E. Fremantle, on November 12th, that 618,547 houses had been built in England and Wales by local authorities from 1919 to September 30th, 1931. Approximately 1,135,000 houses had been built by private enterprise during the same period.

The Services

DEATHS IN THE SERVICES

Deputy Inspector-General Henry Laurence Crocker, R.N. (ret.), died recently at Plymouth, aged 79. He was educated at University College Hospital, and took the M.R.C.S. in 1875 and the L.R.C.P.Ed. in 1876. Entering the Navy as surgeon on March 31st, 1876, he attained the rank of fleet surgeon on September 5th, 1893, and retired, with an honorary step in rank, on June 1st, 1906. He was granted a Greenwich Hospital pension in 1915.

Colonel William Mitchell Houston, I.M.S., died on October 30th in King Edward's Hospital for Officers, Osborne, Isle of Wight. He was born on November 2nd, 1875, and was educated at Trinity College, Dublin, where he graduated B.A. in 1897, and M.B., B.Ch., and B.A.O. in 1899. Entering the I.M.S. as lieutenant on June 28th, 1900, he attained the rank of colonel on August 7th, 1929. He served in Somaliland, East Africa, in the campaign of 1903-4, receiving the medal with a clasp. On the outbreak of the great war he was appointed to the staff of the Indian hospital ship *Gurkha*, which was engaged in carrying Indian and Australian wounded from France and the Dardanelles to England. In 1915, when arrangements were being made in India to cope with the large contingents of wounded then arriving from Mesopotamia, he was recalled to India to serve as registrar of the Victoria War Hospital, Bombay, and the following year he was appointed officer commanding the Officers' Convalescent Home, Nasik. Thereafter he served as health officer of the Port of Bombay, until his appointment in 1929 as Inspector-General of Civil Hospitals, Bihar and Orissa, an appointment which he had to relinquish in December owing to ill-health. Colonel Houston had the honour of being appointed honorary surgeon to the Viceroy, in May, 1929.

Lieut.-Colonel Paul Knighton Gilroy, *M.C.*, Indian Medical Service, died after a long illness on October 22nd, aged 46. He was born on June 7th, 1885, and was educated at Emmanuel College, Cambridge, and at St. George's Hospital. He took the M.R.C.S. and L.R.C.P.Lond. in 1909, and graduated as B.A. (with honours), M.B. and B.Chir.Cantab. in 1910, and as M.D. in 1913. After filling the post of house-physician at St. George's, he entered the I.M.S. as lieutenant on January 29th, 1910, and became lieutenant-colonel on July 29th, 1929. He served in the war of 1914-18 in Iraq, 1915-18, was mentioned in dispatches in the *London Gazette* of June 15th, 1916, and March 12th, 1918, and received the Military Cross on January 1st, 1918. At the time of his death he held the appointment of superintendent of St. George's Hospital, Bombay.

Lieut.-Colonel William Lapsley, O.B.E., of La Porte, St. Jacques, Jersey, died there suddenly on October 21st, aged 56. He was born on July 28th, 1875, educated at Queen's College, Cork, and graduated as M.B., Ch.B., and B.A.O. of the Royal University, Ireland, in 1899, and afterwards took the D.T.M., with distinction, at the London School of Tropical Medicine, in 1912. Entering the I.M.S. as lieutenant on June 28th, 1900, he became lieutenant-colonel on December 28th, 1919, and retired on July 24th, 1928. He served in the Waziristan campaign on the North-West Frontier of India in 1901-2, gaining the frontier medal with a clasp; and in the war of 1914-18; in Persia in 1918-19, when he was mentioned in dispatches in the *London Gazette* of February 3rd, 1920, and received the O.B.E. on June 3rd, 1919.

Universities and Colleges

VICTORIA UNIVERSITY OF MANCHESTER

Dr. E. H. Walker has been appointed Lecturer in Public Health Administration.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary meeting of the Council of the Royal College of Surgeons of England was held on November 12th, when Lord Moynihan, the President, was in the chair.

Diplomas of Membership were granted to 122 candidates who had passed the examination in medicine, surgery, and midwifery of the Examining Board in England.

Diplomas in Public Health were granted jointly with the Royal College of Physicians to nineteen successful candidates.

The lists of successful candidates for the diplomas of Membership of the College and in Public Health were printed in the report of the meeting of the Royal College of Physicians published in our issue of November 7th (p. 876), with the exception of H. K. G. Nash and Marie W. E. H. Schuyt van Castricum, who were granted the diploma of Membership.

It was reported that two candidates had been successful at the Primary Examination for the Fellowship held at Toronto in October.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the meeting of the President and Fellows held on November 6th, the following Members of the College were admitted to the Fellowship: Daniel Moriarty, Robert Henry Joseph Mulhall Corbet, Gerald Spence Smyth, Henry Francis Moore. Yang Lin was admitted as a Member and Licentiate of the College.

Obituary

BILTON POLLARD, M.D., F.R.C.S.

Consulting Surgeon, University College Hospital; Emeritus Professor of Clinical Surgery, University College, London

Mr. Bilton Pollard, whose death at Bournemouth on November 5th we announced in our last issue, spent the greater part of his professional life in close association with University College Hospital and its medical school. Since his retirement from practice seventeen years ago he had rather lost touch with the medical world of London.

Bilton Pollard was born on November 11th, 1855, at Rastrick in Yorkshire, where his father, Tempest Pollard, M.R.C.S., was in general practice. From Epsom College he went to University College, London, in 1874, and gained first class honours in the intermediate and final examinations for the M.B. degree of London University. He obtained the M.R.C.S. diploma in 1879, graduated M.B. and B.S. in 1880, and became M.D. and F.R.C.S. in 1881. For a year he was demonstrator of anatomy at University College under Professor Thane, having Rickman Godlee and Quarry Silcock as his colleagues. In those days a young surgeon in London had very slight opportunities for operating, even when on the staff of a hospital. Pollard accordingly went to Manchester, and gained his early experience as resident surgical officer at the Royal Infirmary; he then returned to University College Hospital as surgical registrar. From 1885 to 1897 he was surgeon to the North-Eastern Hospital for Children (now known as the Queen's Hospital) in Bethnal Green. He was elected assistant surgeon to University College Hospital in 1887, was promoted full surgeon in 1894, and two years later became professor of clinical surgery at University College. On his retirement from the active staff in 1914 he was elected consulting surgeon and emeritus professor.



Bilton Pollard.

As an operator Pollard was deliberate, but he was very sure and safe, his colleagues knew this, and often asked for his services for themselves and their families. As a teacher he took great pains, never allowed himself to be hurried, and was always willing, and indeed anxious, to help students. Thus he acquired a great reputation among University College Hospital men, and built up a considerable practice. Before a special department was formed, he was in charge of ear and nose cases at the hospital. At various times he acted as examiner in surgery in the Universities of Oxford and Manchester; he was for ten years a member of the court of examiners of the Royal College of Surgeons of England, and from 1910 to 1918 he served on the Council.

As surgical registrar in the early 'eighties Bilton Pollard was responsible for four issues of the University College Hospital surgical reports, and he contributed papers on surgical subjects to this and other medical journals. Outside his own hospital he was perhaps best known to students as editor of the twelfth, thirteenth, and fourteenth editions of Christopher Heath's *Minor Surgery*. Apprehensions about his health led him to retire from practice earlier than most surgeons, and he went to seek quiet life on the south coast, living first at Sidmouth, and later at Bournemouth.

We are indebted to Mr WILFRED TROTTER, F.R.S., for the following appreciation:

Bilton Pollard was the last survivor of four men who, in the early years of this century, gave a special quality to the surgery school of University College Hospital. The others were Arthur Barker, Rickman Godlee and Victor Horsley. Barker was perhaps the most elegant surgical technician of his time. Godlee was an anatomist, an artist, a scholar and a surgeon of great ability in the best academic tradition. Horsley was an acknowledged genius, in whose company even the most obtuse could not miss the thrill of contact with great powers. In this very distinguished group Pollard easily held his own as an influence and a force. He was no virtuoso of the operating theatre, he was no profound scholar, he had opened up no new province of surgery, but he was a complete practical surgeon armed in every branch of the art, and the confident master of his equipment. If the light he shone with was relatively mild, it was also supremely constant and without those intermittences which seem to be unavoidable by great brilliance.

To the superficial his practice might have seemed wanting in animation and vigour, for he came to a decision slowly, and he was one of the most deliberate operators of his generation. He has been known, at the end of an operation, when all his assistants were sinking with fatigue, to take down an elaborately completed line of suture because, after long and placid contemplation, it was found not to reach his standard of the exact and safe. His methods, however, as a whole must have been in fundamental harmony with the needs of the living body, for his patients commonly behaved in a way not always shown by those of more dashing operators, in promptly getting well. The degree and the consistency of his practical success found their most solid testimonial in the fact that he early became the students' surgeon, and it was to him that they brought their mothers and their aunts, knowing that they would find him as sure and realistic in diagnosis as he would be competent and determined in treatment.

Pollard's whole career was an exemplary demonstration of the familiar truth that for effective use in every so technical an art as surgery character can contribute as

much as, if not more than, aptitude. He was a Yorkshireman, and to the attentive ear his native county lingered faintly and pleasantly in his speech. His figure was sturdy and comfortable, his expression was mild and benevolent, but with a straight look that showed he could be resolute and formidably direct. When reproof was necessary he had the admirable art of giving it weight without anger, so that it did its work and left no by-product of bitterness and discouragement. His mind was shrewd and realistic rather than actively intellectual, and he had an implacable good sense that no ingenuity could delude. His strongest personal characteristic was his rock-like placidity. This was no mere inertia, but an inward calm in which the perplexities of diagnosis were surprisingly often resolved, and which made him as an operator extraordinarily independent of his audience, and unruffled by complications. His serene temperament was undoubtedly the very substance of his being, and in the last analysis the quality that put him among the very small band of the soundest, the most uniformly successful, and, above all, the most trusted surgeons of his time.

ROBERT ALEXANDER MURRAY, M.D., C.M.

Consulting Surgeon, Stockport Infirmary

We regret to announce the death, on October 4th, of Dr. R. A. Murray, who for the last fifty years had been one of the most prominent personalities in Stockport.

Robert Alexander Murray was born in 1858, and received his medical education in Edinburgh and Paris. He graduated M.B., C.M.Ed. in 1879, and proceeded M.D. in 1893. He was appointed house-surgeon to the Stockport Infirmary at the age of 22, and six years later was elected honorary surgeon. For twenty-five years he served the institution in this capacity, and when he retired as senior surgeon in 1912 he continued to act as vice-president of the board of management, and was appointed honorary consulting surgeon. He conducted a large private practice without specializing in any one direction. With the outbreak of war he devoted his energies to the treatment of the wounded, and it was largely due to his influence that several of the fine new schools which had recently been erected in Stockport were placed at the disposal of the military authorities for use as hospitals. He was in a great measure the author of the scheme whereby these schools, together with the town hall and other buildings, could be most advantageously employed. He became the principal medical officer of the local military hospitals, and in recognition of his services received the O.B.E. When Brinnington Manor was taken over by the British Red Cross Society as a neurological hospital for shell shock cases Dr. Murray was appointed its consulting surgeon; he also acted as medical referee for the War Pensions Committee.

For twenty-seven years Dr. Murray had been a member of the Stockport Town Council, and in 1920 was appointed alderman; he was chairman of several committees, and associated himself particularly with the improvement of sanitation in the erection of public buildings. He was a senior magistrate in the town, having been appointed in 1892. He was the governor of several educational institutions, and a member of the court of governors of the University of Manchester. For nearly fifty years he played a leading part in electoral campaigns as a prominent Conservative, being chairman of the Stockport Conservative and Constitutional Association from 1910 to 1926; on relinquishing that position he became president. He was a member of the British Medical Association, and of the Chester, Lancashire, and Stockport Panel Committees.

America has recently lost another eminent obstetrician in Professor JOHN WHITRIDGE WILLIAMS of Johns Hopkins University, Baltimore. He died on October 23rd, the very day on which, had his health allowed him to travel to England, he was to have received the Honorary Fellowship of the British College of Obstetricians and Gynaecologists. Through his classic textbook Professor Whitridge Williams was probably better known than any other English-speaking obstetrician, and his death, coming so soon after that of Professor Polak, is a heavy loss to obstetrics and gynaecology in America, and indeed throughout the world.

The death of EDWIN MORTON, M.D., at the age of 68, leaves a gap in the medical life of Oxford which it will be hard to fill. A graduate in medicine of Edinburgh, he took his M.A. at Oxford and the D.P.H. of the R.C.P.S.I. After some years of general practice in Redditch and Woodstock he became assistant school medical officer for Oxfordshire in 1908, and medical officer of health for North Oxfordshire combined districts in 1912. After taking this public appointment his interest in the clinical side of medicine remained as keen as ever. He was a regular attendant at meetings of the Oxford Medical Society, and was always ready to discuss modern ideas and methods. As an M.O.H. he was always intensely alive to the position of the general practitioner, and showed much kindness to newcomers to his area. Dr. Morton's interest in Oxford, and particularly in his old college, Christ Church, was one of the marked features of his life, as were his sense of humour and his unfailing tact and courtesy the keynotes of his association with his fellow practitioners.

Medical News

The Purvis Oration before the West Kent Medico-Chirurgical Society will be given by Sir William H. Willcox at the Miller General Hospital, Greenwich, on Friday, December 11th, at 8.45 p.m.; the subject will be recent researches into the causation of chronic rheumatism.

At the meeting of the Medico-Legal Society to be held at 11, Chandos Street, W.1, on Thursday, November 26th, at 8.30 p.m., Dr. Emanuel Miller will read a paper on the social aspects of juvenile delinquency, to be followed by a discussion. The annual dinner of the society has been indefinitely postponed.

At the next meeting of the Society for the Study of Inebriety, to be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Tuesday, January 12th, at 4 p.m., Dr. W. Norwood East, H.M. Commissioner of Prisons, will open a discussion on mental defectiveness and alcohol and drug addiction.

The autumn dinner of the Irish Medical Schools' and Graduates' Association will be held in the Georgian Suite, Piccadilly Hotel, on Thursday, November 26th, at 7.45 p.m., with the president, Mr. Andrew Fullerton, F.R.C.S.I., in the chair. The High Commissioner for the Irish Free State and Dr. W. G. Willoughby, President of the British Medical Association, will be the official guests. Dinner tickets, for members and guests, ladies and gentlemen, 15s. 6d. (exclusive of wines). Application, accompanied by remittance, together with names of guests, should be forwarded as early as possible to Mr. James Carver, F.R.C.S., St. George-in-the-East Hospital, E.1.

The annual dinner and dance of the British Serbian Units Branch of the British Legion will be held at the Lysbeth Hall, Soho Square, W.1, on Saturday, December 5th, at 7 for 7.20 p.m. The president, Miss Marx, will be in the chair.

whole matter dealt with as if the practice had ceased on June 31st, 1931, and started afresh the following day. This might involve altering the assessment for 1930–31 as well as for 1931–32, and, presumably, has not been desired by some, or all, of the individuals affected. Assuming that the gross assessment for 1931–32 is not to be adjusted in this manner, it will hold good as an assessment on the income of the practice for 1931–32, although, in fact, that income has been measured by the amount of the net profits of the practice for 1930–31. The only adjustments arising out of the change will be those necessary because (*a*) Dr. S. will be liable on three-twelfths only of what would otherwise have been his share of the assessment, "X Z" being liable for the remaining nine-twelfths, and (*b*) this may necessitate some change in the personal allowances to be deducted in calculating the tax payable. We suggest that "X Z" writes to the inspector of taxes stating the date of change, and asking him to send a statement setting out the adjustments made and the tax to be paid by each individual in the new circumstances. This statement should then be forwarded to Dr. S. to agree to his share of the 1931–32 tax.

Assistant: Reduction in Earnings

"H. L." was employed up to May 16th, 1931, at £452 per annum, of which £52 was in respect of the expense of using his own car. Since then his gross remuneration has been reduced to £430. What is his liability?

*** The basis of liability is the income of the previous year—that is, 1930–31. But if "H. L." was then employed elsewhere at a rate of remuneration different from that in his subsequent post we consider he would be entitled to depart from the previous year's basis, and be charged for the first year of his new employment on the basis of his earnings for that actual year. Neither the cost of removal nor the expense of his wife's operation would be deductible for income tax purposes. With regard to the amount included in the gross remuneration for professional expenses which he incurs, either "H. L." should be allowed a deduction for his actual expenses, or the "expense" element in the gross remuneration should be ignored. The latter is the correct procedure if the arrangement was in fact to pay £400 as salary and £52 (or £30) towards his expenses of working as an assistant.

Fees for D.P.H.

"P. H." has spent various sums in class and examination fees to obtain the Diploma of Public Health, as he intends to enter the Public Health Service. Can he claim any deduction for the amounts so expended?

*** No. From the fiscal point of view these expenses represent capital outlay to obtain further qualifications, and not expenses incurred in carrying out the duties by which he has been earning his income.

LETTERS, NOTES, ETC.

Phimosis and Circumcision

Dr. J. B. Jessiman (Malvern Link) writes: Truly the path of those who favour, and are courageous enough to advocate, prophylaxis is a difficult and uphill one. The darkness of destructive criticism all but engulfs us, whilst constructive criticism, like Shakespeare's little candle, throws its beams far and wide. The opponents of circumcision seek to confuse a clearly cut issue with their selfish sentimentality, with their empty catch-phrases, such as "barbarous mutilation," and with their loose statements unsupported by proved facts. Dr. E. Sutherland Rawlings has very ably refuted most of the statements which have appeared concerning the undesirability of circumcision during the past month. A few points remain to be cleared up. In over 50 per cent. of cases the prepuce simply cannot be retracted. Repeated interference with a child's genital organs, such as stretching, be it by mother, nurse, or doctor, is very strongly to be deprecated as a potent cause of masturbation. The fact that we *do not* operate on the clitoris is not synonymous with *should not*. Phimosis undoubtedly does occur in a small proportion of females. The lips or labia oris are covered with mucous membrane, and apparently get on quite well without protection—all the more reason why the glans should manage without it. Yes, convulsions and enuresis are less common in Jewish communities. It was never suggested that phimosis is the cause of all cases of enuresis. The family statistics offered are really rather limited; not only so, but the deductions accompanying them are wholly contradictory. The prepuce has no nerves of special sense, the bulb and glans only being supplied with Krause's end-bulbs.

Rheumatoid Arthritis

Dr. C. H. Foley (Athenry, co. Galway) writes: For some time my treatment of chronic rheumatoid arthritis has been limited to the injection, every seven days, of an ampoule of camphor in oil (1 c.cm.—3 grains), using a long serum needle, where necessary, to get as close as possible (as in the hip) to the external joint ligaments on the flexure side of the joint. The invariable result is comparative freedom from symptoms for a period of about one week to a fortnight in many cases. During these intervals the patient finds courage to move the joint. Cardiac conditions or cardio-vascular disease do not contraindicate this treatment; these cases actually improve under it. I commend this treatment to general practitioners who have felt, no doubt, as often I have felt, a positive repugnance to visiting the rheumatoid patient, finding, when we do, he or she has received no benefit from any of the immense list of drugs or treatment recommended. I have also occasionally given the injection this way. To 5 c.cm. of boiled milk I add one ampoule of camphor in oil, shake up well in the syringe barrel, and slowly inject. This is to obtain a wider dissemination of the camphor, but I have found no actual difference in the result, except a lengthening of the freedom interval.

Mammary Tuberculosis

Dr. Charles Wilcocks (medical officer in charge, Tuberculosis Investigation, Tanganyika Territory) writes: With reference to a recent letter from Dr. G. Jessel on the subject of tuberculosis of the female breast, the following case may be of interest. On June 6th, 1931, I saw a native woman here, aged about 50, with an enormously swollen left breast, freely movable over the ribs, containing large palpable nodules of different sizes, and a fluid swelling on the outer side. In the lower outer quadrant there was a sinus discharging thin pus. No swelling of the axillary or other lymph glands could be detected, nor were there any signs in the chest or ribs. A definite history of at least one year was given by a European who knew the woman. Material was withdrawn from one of the nodules by aspiration with a 5 c.cm. syringe, though there was no actual cascation clinically, and this proved to contain acid-fast rods morphologically identical with tubercle bacilli. No such bacilli could be found in the serous fluid withdrawn from the fluid swelling, which may have been cystic rather than inflammatory. The patient would not, unfortunately, consent to removal of the breast, but even without section I think the diagnosis may be regarded as proved.

Driving in Fog

At the recent International Illumination Congress the fallacy of using a yellow light to improve penetration during fog was effectively exposed by the representative of the Automobile Association. Fog contains minute droplets of water, which act as lenses, and, therefore, the more powerful the illumination, the greater is the reflection. Coloured glass merely reduces the intensity of the light. The following recommendations are made by the Automobile Association to assist motorists driving in fog: Direct a fairly intense concentrated beam to the near side of the road, either from a fog lamp on the near side dumbiron, or a spot-light attached to the near side pillar of the windscreen. Thus the driver is able to look either over or under the beam. Where special fog-directing lights are not available, extinguish the off-side headlamp and direct the other headlamp beam on the near side of the road. This method necessitates driving close to the near-side kerb. Again, tissue paper of one or more thicknesses attached to the outside of the headlamp glasses, or whitening mixed with water, will be found helpful. If the driver has a preference for any colour which suits his sight, tinted tissue paper, or dry colour mixed with the whitening will produce the desired effect.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 51, 54, and 55 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 287.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

Dermato-myositis

470 G. MARINESCO, S. DRAGANESCO, and E. FAÇON (*Ann. de Méd.*, July, 1931, p. 145) discuss, especially from its anatomical and pathological aspects, a case of dermato-myositis, a muscular affection first described by Wagner in 1863. The essential characteristics of this disease, which were evidenced in the present case, are fever with muscular troubles (atrophies and pareses), cutaneous signs, changes in the osteo-tendinous reflexes and muscle electrical reactions, and, histologically, infiltrative and degenerative lesions of the muscles with inflammatory processes in the skin. Among the muscles with inflammatory marked interstitial and parenchymatous changes were those of the abdominal wall, the crural triceps, and the brachial biceps. Examination of the nerves showed the presence of degenerative changes due to inflammatory lesions. Marked inflammatory processes were also found in the derma, and especially in the connective tissue of the skin. The differential diagnosis of dermato-myositis is briefly outlined. Various micro-organisms have been suspected as infective causes, and the authors advance the hypothesis of an ultra-virus as being concerned. Though absent in sections of the skin and muscles in the present case, streptococci were isolated from the tonsil. It is suggested that the tonsillar lesions caused by these allowed access of the ultra-virus into the organism. Goodpasture has noted that bacteria may act as carriers of neurotropic viruses, and the same hypothesis has been advanced concerning scarlet fever. Probably, previous diseases such as rheumatism and tuberculosis are predisposing etiological factors.

Tuberculosis Simulating Acute Leukaemia

471 E. R. MARZULLO and J. A. DEVEER (*Amer. Journ. Med. Sci.*, September, 1931, p. 372) consider that the haemopoietic tissues may occasionally respond to any infection in such a way as to produce a leukaemic blood picture, and that tuberculosis affords an illustration of such an infection. Two cases of tuberculous infection, one pulmonary, the other generalized, which presented myelo-leukaemoid blood findings and a clinical course simulating acute myeloid leukaemia, are reported. The presence of tuberculosis was the outstanding post-mortem finding, and tubercle bacilli were detected in the tissues. Characteristic leukaemic infiltrations in the tissues were absent, and the spleen and bone marrow showed only a moderate myeloid hyperplasia. Despite the blood findings, the usual haemorrhagic manifestations of leukaemia were absent before death, and both patients showed the physical signs of pulmonary tuberculosis.

The Mechanism of Alternation of the Pulse

472 N. KISTHINIOS and D. M. GOMEZ (*Arch. des Mal. du Cœur*, July, 1931, p. 410) consider that neither the theory of Wenckebach nor that of Gaskell and Hering is adequate to explain the production of alternation of the pulse. Their hypothesis, which in a measure embodies those quoted, is based on the fluctuating energy requirement of the isometric phase of ventricular contraction when exhaustion of the myocardium is accompanied by a high peripheral resistance. The high diastolic pressure in the aorta must be overcome by so large an output of energy that the heart is thereafter not able to empty itself adequately. Thus arises the small pulsation in the periphery. Since less blood has been put into the arteries, the diastolic pressure is not now so high, with the result that at the following contraction less energy is expended in the isometric phase, more being subsequently available for the production of a larger pulse wave. Hence the alternation of small and large pulsations. The authors cite animal experimentation to show that myocardial exhaustion and high peripheral resistance are important factors in the production of alternation. Clinical evidence in support of their view is found in the frequency of alternation in hyperpietics, and it is held that excessive exhaustion may account for the occurrence of alternation in some patients whose diastolic pressures are not much elevated. The clinical fact that the diastolic arterial tension falls after the weak and rises after the strong pulsation is also in support of their theory. The objection that alternation is not necessarily present when myocardial exhaustion and high peripheral resistance co-exist is met by the argument that the myocardium must be capable at least of a certain minimal energy output for alternation to appear.

Diphtheral Blepharitis

473 FRIEDMANN (*Deut. med. Woch.*, September 4th, 1931, p. 1542), who records two illustrative cases, remarks that diphtheria of the skin, which is generally regarded as a rare affection, occurs more frequently than is supposed. Cases presenting the appearance of a harmless eczema without any membrane may be encountered, and may prove refractory to all treatment until a bacteriological examination reveals the presence of diphtheria bacilli; rapid recovery follows the injection of antitoxin. Friedmann reports two cases of blepharitis; one in a child of 21 years, and the other in a servant girl, in whom the condition had been regarded as due to scrofula, and which had lasted two months in the former case and one year in the latter. Diphtheria bacilli were found on examination. The blepharitis cleared up in eight days in the case of the child, and in a fortnight in that of the servant.

Surgery

Aspiration of Joint Effusions

474 D. H. KLING (*Ann. of Surg.*, September, 1931, p. 3[illegible] emphasizes the importance of aspiration of joint fluid in both of traumatic and of inflammatory origin, and gives the following reasons for this procedure. The accumulation of fluid expands the capsule, stretches the ligaments of the joint, interferes with the circulation, and irritates the nerve apparatus, causing spasm of the muscles. The blood, being absorbed slowly from the joint, produces inflammatory changes of the synovial membrane. Fibrin is also precipitated and organized, and may form a nucleus for the development of loose bodies. The cartilages undergo degeneration, and the immobilization of the joints may give rise to atrophy of the muscles and bone. Aspiration under aseptic conditions is harmless, no cases of infection having been reported, and a repeated aspiration is necessary in only a few cases. Aspiration should be carried out twenty-four hours after injury in cases of traumatic effusion, the fluid being examined to determine the severity and type of the injury. Cases of simple traumatic synovitis are mobilized immediately, and walking is permitted after a few days. In 160 cases of injury with haemarthrosis complete recovery ensued within ten days. Injuries to the cartilages, and inter-articular fractures, need further surgical treatment after the evacuation of the effusion. The examination of the traumatic effusions permits the differentiation of slight from severe injuries and intra-articular fractures by the finding of fat and bone-marrow elements. An objective differential diagnosis between inflammatory and traumatic effusions is made possible by the estimation of the uterus index or van den Bergh reaction of the synovial fluid. The *p*H estimation is of some value for prognosis in cases of purulent arthritis, severe cases give an acid reaction.

475 Latent Haemorrhage in the Thyroid Gland

P. Bertrand and F. Carcassonne (*Lyon Chirurgical*, September–October, 1931, p. 548) point out that, of the various complications of goitre, latent haemorrhage has received insufficient attention; they record particulars of twenty such cases which were found in a series of seventy operations for non-cancerous goitre. The majority of these cases are found in patients between the ages of 40 and 50, frequently about the time of the menopause in women. Of the twenty cases quoted only one occurred in a man. This condition is generally attributed to the extreme fragility of the capillaries of the thyroid tumour; they have very thin walls, and form a rich capillary network. Moreover, the difference in tension at menstruation between the contents of these capillaries and of the goitre, accounts for the escape of a considerable quantity of blood into the interior of the hypertrophied thyroid gland. There are three different varieties of latent haemorrhage, the first of which occurs in a cystic goitre, when the blood found is more or less modified, being sometimes fluid and sometimes in the form of clots. Another form appears in a parenchymatous goitre, and is often a precursor of malignant changes. The third variety is interstitial and less abundant, being rarely verified until some time after its production. The most common symptom is an increase in the size of the goitre, noticed either during pregnancy or after the menopause, but a correct diagnosis is rarely made except at operation. In other cases the symptoms are very similar to those found in malignant degeneration of the thyroid, with increase in size, dyspnoea, and hoarseness of voice; the operation is usually undertaken on a diagnosis of malignant disease. It is in cases of this nature that operation alone is able to verify the true nature of the condition, and relieve the patient. In the twenty cases under review, removal of the goitre was effected with good results. There was only one death; the remaining patients made a good recovery and left the hospital completely cured.

476 Reflex Tenderness in Gall-bladder Disease

G. Levene (*New Eng. Journ. Med.*, August 20th, 1931, p. 403) calls attention to the reflex tenderness which is evoked by slight pressure over the right costo-vertebral angle as being a consistently more reliable sign of gall-bladder disease than anterior subcostal tenderness. Though previously described by Boas in 1895 as being diagnostic of cholelithiasis, lesser degrees of gall-bladder disease can be detected thereby. With the patient lying prone, and the arms by the sides, the examiner places the middle finger and thumb over the costo-vertebral angles; he makes gentle pressure first on the left side and then on the right, afterwards exploring the area from the tenth to the twelfth ribs in a zone one or two inches from the spine. The left side should be palpated first in order to ascertain the patient's general reaction. Any tenderness due to gall-bladder disease is invariably higher than that produced by disease of the right kidney, but its location may vary by as much as one or two ribs, according to the position of the gall-bladder. In an analysis of 100 unselected cases the sign was present in 92.3 per cent. of patients with definite evidence of gall-bladder disease; it was absent in 95.7 per cent. of normal cases. Of thirteen cases operated upon, in whom the diagnosis was confirmed histologically, the sign was present in 92.3 per cent.

477 Lumbo-sacral Spina Bifida Occulta

Emphasizing the clinical importance of spina bifida occulta, R. J. Dittrich (*Surg., Gynecol. and Obstet.*, September, 1931, p. 378) records a study of this condition with short notes on three cases. The disease is a congenital defect, found usually in the lumbo-sacral region, and frequently associated with other abnormalities which cause the symptoms. The abnormalities generally consist of masses of fibrous and muscle tissues and fat, which are found in or near the bony defect, and by extension interfere with the function of the nervous structures underneath the cleft. Developmentally, the most probable process of malformation is one which affects the bony structures, the alteration in the soft tissues being caused by transposition. Such a mechanism of formation is most nearly in agreement with the pathological changes seen at necropsy and at operation, and must be distinguished from the process of primary malformation in the cord itself. Clinical observations indicate that a large number of syndromes can be definitely traced to such anomalies of the spine. The importance of spinal clefts is illustrated by the investigations of Lampar, who found among forty cases of spina bifida occulta only one which did not present neurological symptoms. Treatment must depend largely on the gravity of the symptoms. Laminectomy and the removal of injurious influences have yielded a relatively high percentage of beneficial results.

Therapeutics

478 Specific Prophylaxis of Meningitis

J. A. Kolmer and K. W. Amano (*Arch. of Oto-Laryngol.*, August, 1931, p. 125) point out that the present methods of treatment of pneumococcal and streptococcal meningitis are so unsatisfactory that the mortality rate is excessively high; they have endeavoured to devise methods of specific prophylaxis by means of serums for these infections. Experiments on monkeys, dogs, and rabbits indicated that it might be possible to prevent post-operative pneumococcal meningitis by the administration of anti-pneumococcal serum with or without ethyl-hydrocupreine hydrochloride. The outlook in streptococcal infections is not so good, but the following technique is advised in cases of these infections. Bacteriological examinations should be made of the pus from infected sinuses before they are opened up, and of mastoid pus at the operation. In adult infections with Type I pneumococcus, 10 c.cm. of Felton's concentrated anti-pneumococcal serum should be injected just before or immediately after the operation. A second dose should be given on the following day, and a third one four days later. In Type II and IV infections, the same dosage, or 15 c.cm., should be used, and in Type III cases 20 c.cm. The same doses should be given to children over 10 years of age; half-doses to younger children. Ethyl-hydrocupreine hydro-chloride in 5-grain doses should be administered with milk every five hours for three days after the operation; children require less, according to weight. In streptococcal infections a scarlet fever antitoxin, or a concentrated polyvalent anti-streptococcal serum, should be injected in the doses here prescribed.

479 Immuno-transfusion in Streptococcal Septicaemia

P. Abrami and A. Tzanck (*Paris Méd.*, August 1st, 1931, p. 104) report on the treatment of 43 cases of severe streptococcal septicaemia, of which 22 were cured. Of 21 patients who gave positive blood cultures, 12 were cured and 9 died, among whom 3 treated by immuno-transfusion showed marked improvement though death supervened from broncho-pneumonia (2 cases) and peritonitis (1 case). In the 19 cases in which the blood cultures were negative, 9 patients were cured and 10 died; 4 of the latter showed marked improvement after blood transfusion, death being delayed, and due to local complications. Owing to the varying type of case and the employment of different therapeutic measures—immuno-transfusion, simple transfusion of blood, and no transfusion—it was not possible to attribute the results to any particular vaccine method, since very favourable results followed independently of any such treatment, and simple blood transfusion gave results similar to those obtained by immuno-transfusion. Since the object of immuno-transfusion is to confer on the patient the benefit of an artificial immunity, it is first desirable to show whether in the healthy donor there is evidence of the production of immunity by vaccine injections, and secondly, whether the transfused blood is the true cause of the favourable symptoms which ensue in the patient. The indication for true immuno-transfusion is found in those diseases capable of producing immunity.

Independently of any specific immunity activity, a blood transfusion carries a number of non-specific properties which can help the cure of the disease without any question of immunity production; to these properties the authors have given the name of "biophylaxie."

480 Artificial and Natural Heliotherapy

As the result of a detailed study of heliotherapy in the treatment of tuberculosis, E. S. MARIETTE (*Minnesota Med.*, September, 1931, p. 793) concludes that light therapy is a potent agent which, unless carefully supervised, will do great harm; where a general radiation of the whole body is indicated, the best results will be obtained from natural sunlight. However, indications for artificial or natural light will depend on the season, the condition of the atmosphere, the sources of light available, the type of lesion to be treated, and the patient's condition, these points are fully discussed. Various sources of artificial light are enumerated; since the spectrum of the carbon arc lamp with the core-D filter and the white flame carbon most closely resembles that of natural sunlight, it is concluded that it supplies the artificial light of choice. Cases of tuberculosis for heliotherapy are divided into two groups, the extrapulmonary and the pulmonary, and these again are subdivided into five classes. Classes 1 and 2 include extrapulmonary forms, the former without, the latter with pulmonary complications. Class 3 comprises juvenile cases, Class 4 includes the "productive," proliferative, or fibroid cases, and Class 5 is made up of exudative cases in adults. Heliotherapy is indicated in all cases of the first three classes, but only in selected cases that do not improve under sanatorium treatment in Class 4; it is contraindicated in all cases of Class 5. The technique of the sun bath and the dosage of light are described.

Neurology and Psychology

481 Lesions of the Sympathetic Centres of the Diencephalon

According to G. GUILLAIN, R. GARCIN, and J. MOGE (*C. R. Soc. de Biologie*, July 21st, 1931, p. 1274), topographical knowledge of the sympathetic centres in the upper neuraxis is still vague and fragmentary, they consider that the simultaneous appearance (as the result of thalamic softening) of a hemialgic syndrome of one side and a syndrome of Claude Bernard-Horner (enophthalmia, narrowing of the palpebral fissure, and myosis) of the other side is noteworthy. Such a case is recorded in which the essential symptoms were hemialgic sensory troubles of the right side without pyramidal signs, and a typical Claude Bernard-Horner syndrome of the left. Both appeared concurrently, following probable cerebral softening in the left thalamic region. The pupillary reflexes were normal, and ocular paralysis was absent. The limbs of the right side showed marked cyanosis with oedema of the calf and a slightly increased cutaneous temperature. The left side was normal. Thus the patient had a right vaso-paralysis with a left oculo-sympathetic paralysis; that is, a true alternate syndrome of sympathetic paralysis. The work of other investigators, here cited, proves that the symptoms in the present case were not merely coincidental.

482 Cerebral Development and Behaviour

F. TILNEY and L. S. KUBIE (*Bull. Neurol. Inst. of New York*, June, 1931, p. 229) report investigations designed to establish, if possible, a basis for defining behaviour in terms of cerebral structure. The structural side of the research comprised organogenetic studies by means of the Born method of reconstruction, together with histogenetic and myelinogenetic studies. A review of the developmental processes in the endbrain of the cat suggests that this structure passes successively through the stages which recapitulate ichthyopsid and reptilian conditions before the ultimate mammalian cortex is attained. The earliest tract-beds to appear are the lateral olfactory and thalamo-cortical. The optic tract-bed, although recognizable at an early period, maintains for a long time its ancient relations with the midbrain and interbrain, and is independent of the endbrain, to which it extends relatively late in development. The authors conclude that the functional evolution of that part of the brain which represents the highest specialization in behaviour depends in the cat primarily on the projection of the senses upon specialized cortical areas, in which process a general body sense precedes the special senses. It depends, secondly, on the bilateral association of these senses in the two hemispheres, in this again the general body sense takes precedence over the special senses. This feature of development involves all the important considerations of right or left cerebral dominance. Thirdly, this functional evolution is based on intimate associations and elaborations within each type of sense as well as interassociations between all the senses. The efferent projection of sensory associations into the somatic activities is the fourth fundamental of the animal's behaviour. The authors add that this formula for the functional evolution in the last developed part of the cortex applies probably, as a general rule, to all mammals, with certain modifications for different species.

483 Psychotic Manifestations in Thyroidism

In view of the problematical relationship of thyrotoxicosis to the psychoses, S. D. INGHAM and J. M. NIELSEN (*Journ. of Nerv. and Ment. Dis.*, September, 1931, p. 271) discuss the diagnostic difficulties in psychosis of thyroid origin, and report four cases with a view to showing that toxic thyroidism may be the primary cause of an associated psychosis. They point out that estimation of the basal metabolic rate is an unreliable way of determining the presence or absence of a toxic thyroid condition and add that the type of psychosis may vary markedly in different cases, and even in the same case from time to time. If there are no physical contraindications surgical treatment may be undertaken, regardless of the presence of psychosis. In their four cases the usual treatment for the manifest psychosis was tried in vain, but recovery promptly ensued when specific thyroid therapy was instituted. In cases of thyrogenous psychosis there may be a normal metabolic rate, this has to be borne in mind when attempting to reach a diagnosis. Psychosis of essential thyroid origin may simulate either of the two phases of manic-depressive psychosis, it may also resemble dementia praecox, delirium, or any toxic psychosis. Even in an undoubted case the clinical signs of loss of weight, fatigue, eye changes, and thyroid enlargement may be entirely absent. The authors urge extreme caution in ascribing any psychosis to psychogenic factors without a most thorough search for some toxaemic source. They doubt whether a frank psychosis ever occurs without at least a chemical disturbance of the cerebral function.

Obstetrics and Gynaecology

484 Radium Treatment of Menorrhagia

Control by radium of excessive menstrual and intermenstrual bleeding, especially in cases where the only alternative is subtotal hysterectomy, is now recognized as the treatment of election. C. C. ANDERSON (*New Zealand Med. Journ.*, August, 1931, p. 202) records a case to illustrate the fact that pregnancy may occur after this procedure, but that complications may ensue. A woman became pregnant about three years subsequent to beneficial radium treatment for severe menorrhagia. At labour a firm, almost cartilaginous, undilatable band was found at the internal os. The foetus was dead and Cæsarean section was performed. The patient is now well and without pelvic trouble, but has not menstruated since the operation. This case illustrates that, in women within the child bearing period, excessive menstruation can be controlled and normal menstruation restored, and that

the endometrium, despite the changes induced by radium, can still provide a nidus for the normal development of the ovum. Changes may, however, be produced in the uterine muscle which may prevent completion of the normal period of gestation, and an intense cervical fibrosis may prohibit the necessary dilatation. Anderson emphasizes the point that radium treatment should only be undertaken after other measures have been tried and have failed, and the only remaining therapeutic possibility is hysterectomy.

485 Perforating Chorion-Epithelioma of the Uterus

Chorion-epithelioma is due to the continuous and abnormal proliferation of the chorion epithelium, and consists of masses of syncytial and Langhans's cells interspersed with remnants of the invaded tissues and blood from the corroded vessels. B. M. Anspach and J. Hoffman (*Amer. Journ. Obstet. and Gynecol.*, August, 1931, p. 239) record a personal case, and comment on six others culled from the literature relating to a perforating type of these tumours in which the growth had penetrated through the serous uterine coat into the peritoneal cavity, causing free, unlimited, and grave intraperitoneal haemorrhage. The clinical course of most of these cases so closely resembled a ruptured ectopic gestation that the latter diagnosis was made in five instances. A distinct, differential symptom is the absence of profuse external haemorrhage, since the tumours are often situated within the uterine wall, and do not communicate with the uterine cavity. The immediate cause of perforation may be some form of traumatism, such as a vigorous bimanual examination; therefore, such examinations should be made with care in suspected cases. The diagnosis cannot be determined decisively until the parts are exposed; the perforation is at the site of a localized enlargement of the uterus. In these cases the uterus, with the adnexa, must be removed well below the growth, and subsequent irradiation be applied. The acute, profound anaemia prohibits a complete hysterectomy. In two cases symptoms of cerebral involvement occurred, and in another instance haemoptysis was a precursor of perforation. As the urine of women with chorion-epithelioma or hydatid mole gives a pregnancy reaction twelve times as strong as a two months gestation, the Aschheim-Zondek test is of value, and should be performed in all suspicious cases.

486 Diabetes Mellitus and Pregnancy

C. H. Peckham (*Bull. Johns Hopkins Hosp.*, September, 1931, p. 184) presents a study of eighteen pregnancies in twelve diabetic patients. Insulin has rendered the prognosis much more favourable. The general opinion is that the mild or moderately severe case, under supervision, will pass through pregnancy and labour fairly safely, but in severe cases induction of labour may be necessary, for ketonuria occurs more readily. Several cases of diabetic coma are reported, some being fatal. Insulin requirement decreases usually during the puerperium, but increases subsequently. The percentages of abortions and stillbirths remain high, but infantile nutrition is good. Many diabetic women conceive after insulin treatment. Ten of Peckham's twelve patients have survived; in four the diabetes probably developed during pregnancy, but the other eight had been known diabetics for from one to fifteen years, the average duration being approximately six years. One was diabetic in 1919; she passed through two pregnancies and died from pneumonia in 1929, three years after her last confinement. The other fatal case was that of a woman admitted for the first time when eight months pregnant, and having been comatose for two days. In spite of the administration of insulin and fluids she died in a few hours. This is the only death of an actually pregnant patient in the series. The author concludes that pregnancy causes little if any disturbance of the carbohydrate metabolism, although in ten cases the diabetes was aggravated during the first four months; the considerable glycosuria necessitated increased insulin dosage and stricter dieting. As term approached, these patients improved greatly. One secundipara required an insulin increase of 20 to 40 units, but at the eighth month, 20 units daily sufficed, and the urine was sugar-free. Nephritis necessitated the induction of labour three weeks before term. The mother suckled the child for one month, and lactation appears to be beneficial. Acidosis occurred occasionally, but was controlled by an increase in the carbohydrate intake.

Pathology

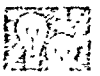
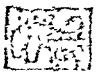
487 Histological Changes in the Diseased Thyroid

W. F. Rienhoff, jun. (*Medicine*, September, 1931, p. 257) discusses the pathogenesis of some morbid changes encountered in diseases of the thyroid, basing his observations on experimental studies of the normal gland, and of the alterations it undergoes in exophthalmic goitre. The characteristic enlargement in this disease, both in the follicles and in the gland, which is concomitant with hypertrophy and hyperplasia and in the involution, is due in the active phase to an increase in the parenchyma, and in the inactive stage of involution to the deposition of colloid. This enlargement may occur in localized regions, or throughout the whole gland, and must be distinguished from actual structural growth as observed in neoplasms. By the interaction of the two processes (hypertrophy and hyperplasia with involution), a normal gland may be transformed into a nodular goitre following a localized or diffuse involvement of the gland in the morbid process. If involution occurs in a normal gland, not preceded by hypertrophy and hyperplasia, there has been a uniform increase in the size of the follicles with a flattening of the epithelial cells, and an increase in the follicular colloid. This process may also be localized or diffuse. If diffuse, a condition similar to simple colloid goitre is produced, whereas areas indistinguishable from colloid adenomata will evolve from regional involution of a normal gland in which only certain areas are invaded by the regressive process. The fundamental causes of hypertrophy and hyperplasia and of involution are yet unknown, hence many alterations in the structure and function of the thyroid remain unexplained.

488 Effect of Diuretics on the Excretion of Sugar

H. Bix and L. Wechsler (*Wien. Arch. f. Innere Med.*, July 15th, 1931, p. 427) state that in most cases of diabetes mellitus an increase in the amount of urine passed is associated with an increase in the amount of sugar excreted. Several diabetic patients, whose glycosuria on insulin and a standard diet was practically constant, were given injections of a powerful diuretic, salyrgan, in order to ascertain whether the increased output of urine "washed out" additional sugar from the tissues. It was found, however, that in all but 5 per cent. of the cases the total amount of sugar excreted was diminished as long as the diuresis lasted, and only returned to its original value when the diuresis subsided. This was frequently followed by a rise in sugar excretion one or two days later. In order to ascertain how salyrgan produced this diminution in glycosuria the blood sugar curves with and without salyrgan were compared. It was found that within an hour of the administration of salyrgan the blood sugar began to rise, reaching a maximum in three hours and falling to its original fasting level at the end of twenty-four hours, while without salyrgan the blood sugar remained fairly constant throughout the twenty-four hours. Salyrgan thus apparently raises the renal threshold for sugar, and produces a retention of sugar in diabetics. It is therefore generally inadvisable to administer the drug to diabetics, though apparently in a few cases increased sugar tolerance followed injections of salyrgan in patients on insulin. In a number of animals in which renal glycosuria had been induced by phloridzin the glycosuria was similarly diminished, thus confirming the hypothesis that the glycosuria-inhibiting action of salyrgan takes place in men and animals in the kidneys.

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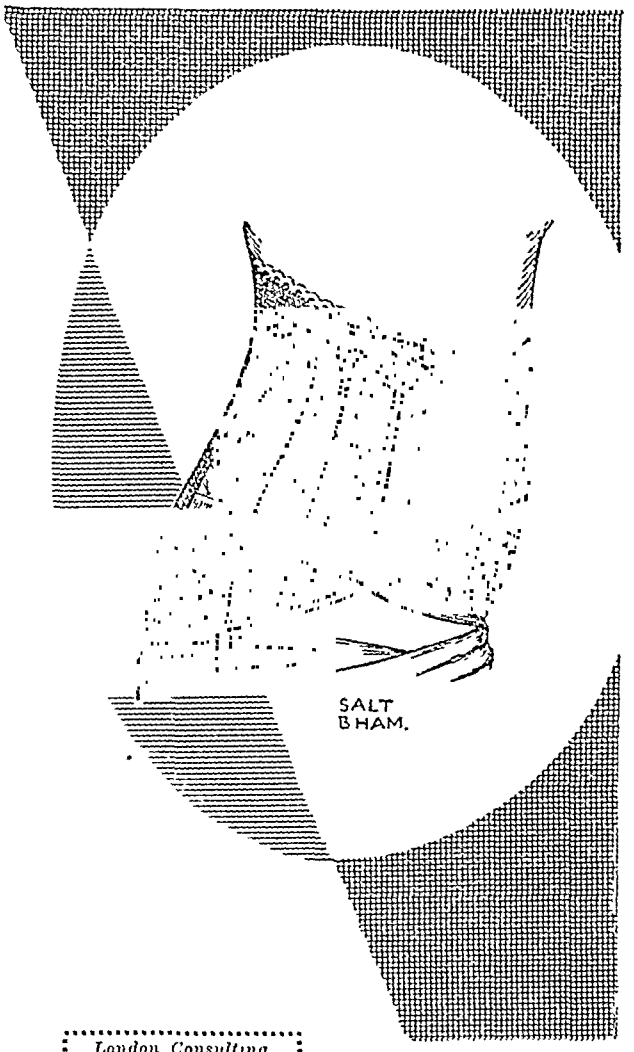
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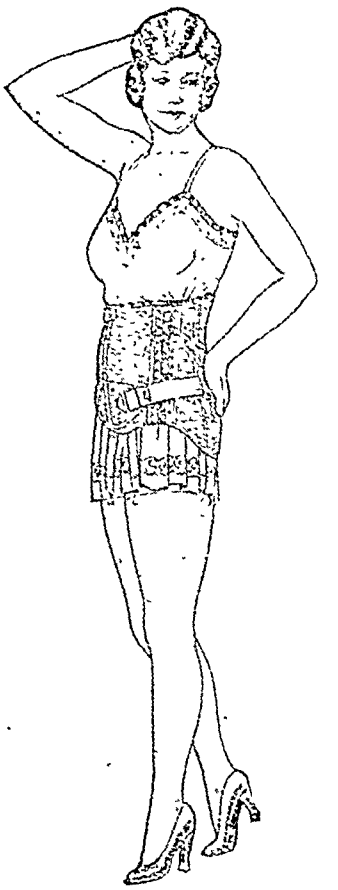


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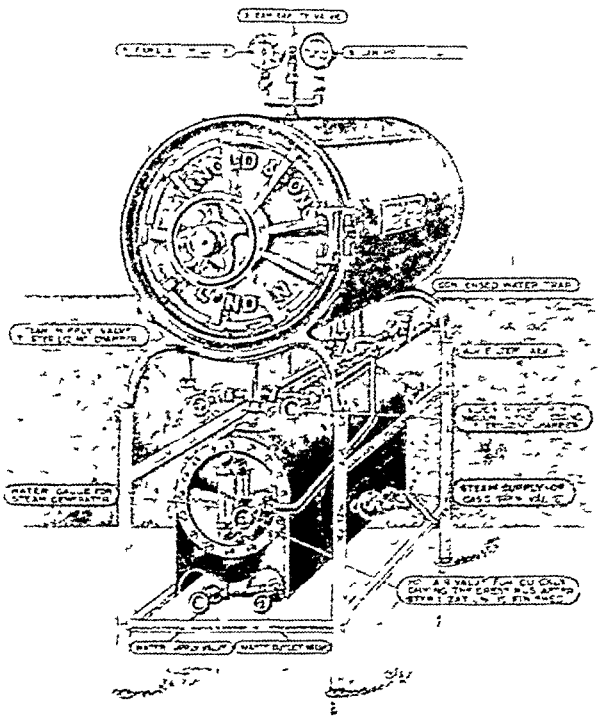
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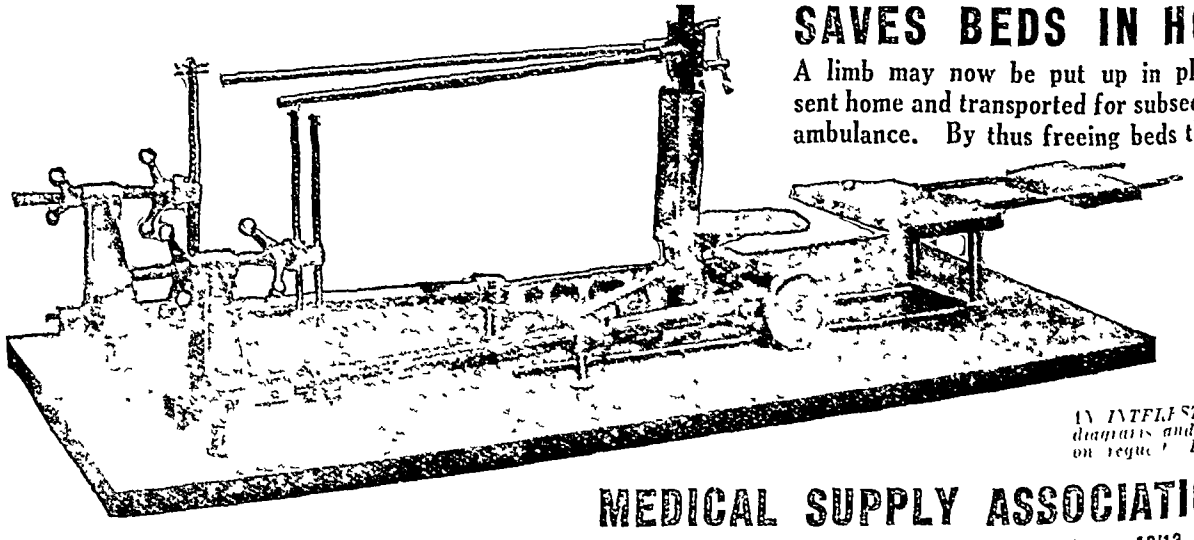
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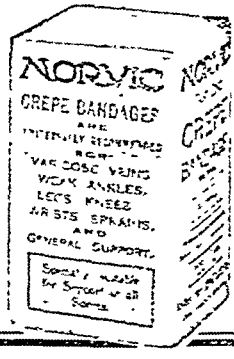
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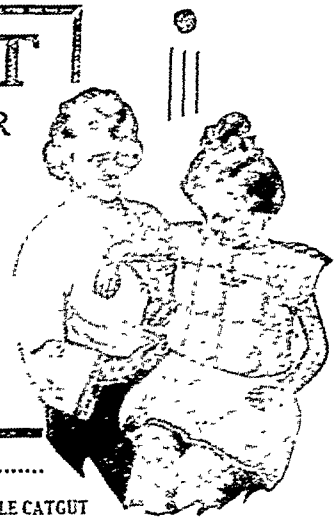
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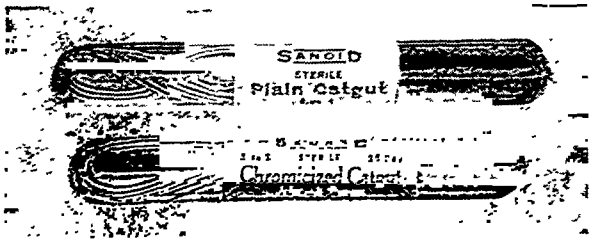
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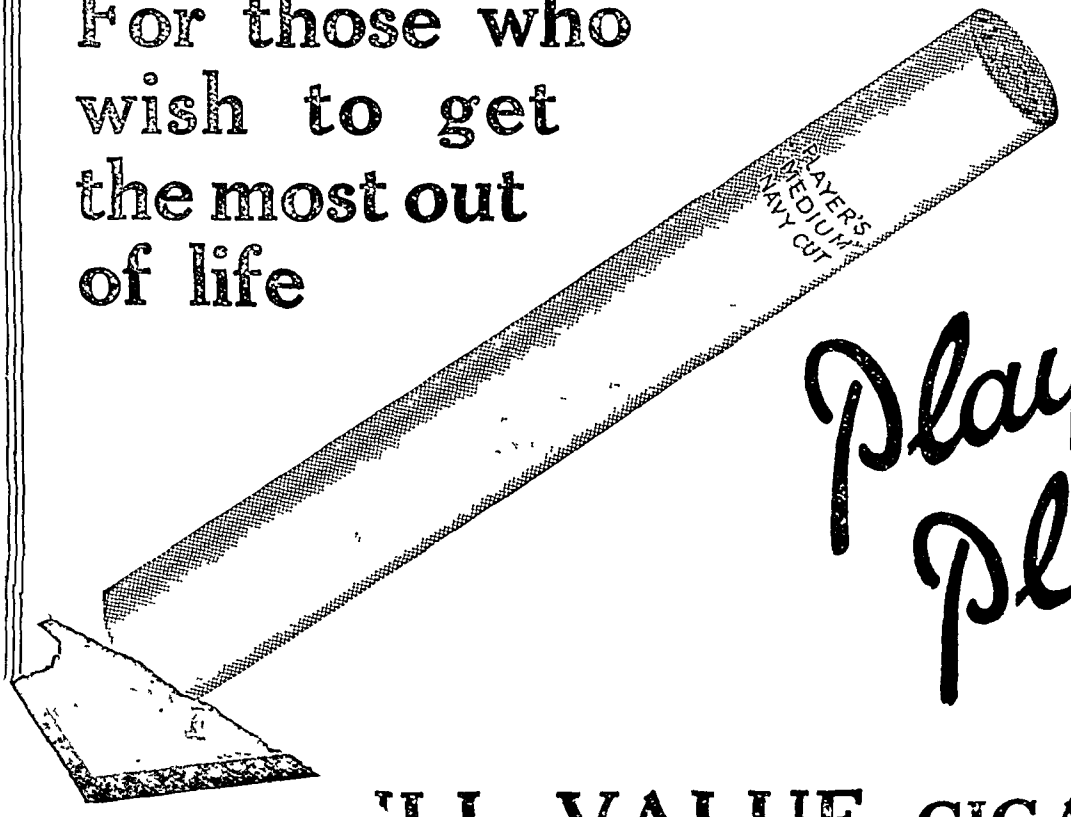
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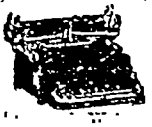
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The MUNDESLEY SANATORIUM

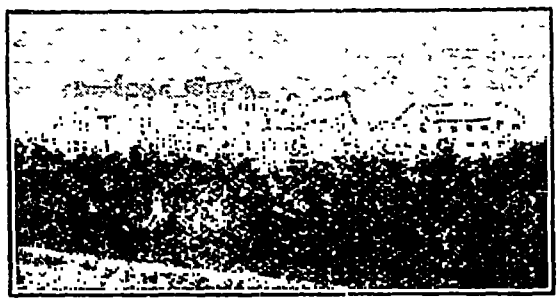
The newly opened central building makes the Mundesley Sanatorium the best equipped building in England for the cure of Tuberculosis. All the bedrooms have hot and cold running water, electric light, and wireless headphones. The new public rooms are spacious and comfortable.

Resident Physicians:
S. VERE PEARSON,
M.D.(Cantab.), M.R.C.P.(Lond.).
ANDREW MORLAND,
M.D., M.R.C.P.(Lond.).
E. C. WYNNE-EDWARDS,
M.B.(Cantab.).

For all information apply:
THE SANATORIUM, MUNDESLEY, NORFOLK.
(Telephone: Mundesley 4.)

The buildings face S.S.W. and are sheltered from the sea by a pine-clad ridge. The sunshine record and dry air complete a perfect site. The medical equipment is of the latest kind, and there is a day and night nursing staff.

TOR-NA-DEE SANATORIUM
MURTLE DEESIDE ABERDEENSHIRE



Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent. J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

PENDYFFRYN HALL SANATORIUM
PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Special milk supply from tuberculin-tested herd. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), J. A. Hennesey, M.B., Ch.B.; Matron: Miss S. A. Eddy, S.R.N., Late Sister-in-Charge, Royal Hospital Annexe, Sheffield.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)



KINGUSSIE, N.B.
THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax and Ultra-Violet Rays for surgical cases of Tuberculosis. Terms: £4 7s. 6d. to £6 6s. per week inclusive. No extras.

MEDICAL SUPT.: FELIX SAVY, M.D. For particulars apply to the Secretary.

SMEDLEY'S

Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, and Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

'Grams: "Smedley's Matlock."
'Phone: No. 17.
For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

Resident Physicians:
G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.).
R. MACLELLAND, M.D., C.M. (Edin.).

MATLOCK

PEEBLES

In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Dan[illegible] winter garden, swimming bath, tennis, [illegible] minton, golf, fishing. Fully licensed. Modern baths installation. Physiotherapeutic, massage, electrical treatment, ultra-violet radiation. Physician in attendance. Write for prospectus.

Among the Pine-clad Border Hills.
PEEBLES HYDRO, PEEBLES, SCOTLAND.

BOURNEMOUTH HYDRO,

with Vita glass Sun-lounge and Marine Balcony on the South Coast.

Every kind of Bath. Plombière Lounge.
Every kind of Massage. Ultra violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
High Frequency. Electric Lift. Tel. 341.
Prospectus from Secretary.
Resident Physicians: W. JOHNSTON SMITH, M.D. L. T. ROSE HUTCHINSON, M.D.

SHAFTESBURY HOUSE, FORMBY-BY-THE-SEA, Nr. LIVERPOOL.

Specially built and licensed for the care and treatment of a limited number of Ladies and Gentlemen suffering from Nervous and Mental breakdown. Voluntary and certified patients received. Ladies also admitted as "Temporary Patients" without certification. Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.



TORQUAY

ENGLAND'S MARINE SPA

STRONGLY RECOMMENDED BY THE MEDICAL PROFESSION
FOR WINTER RESIDENCE OR HOLIDAYS.

Extract from the Health Resorts Section, "Medical Directory" for 1931 —

"WINTER CLIMATE—Very sunny, extremely mild, frost and snow practically unknown."

TORQUAY offers every facility for a Winter Cure. Modern Spa Establishment, where all the best treatments are available as at famous resorts abroad, including "Vita" Sun Glass Lounge for ultra-violet radiation.

Torquay natural mineral water—of same type as Evian and Vittel.

Travel by the "Torbay Limited, leaving Paddington at 12 noon week days—the epitome of speed and luxurious comfort. Enquire at Railway Stations and Offices for details of train services fares, etc., from all parts.

OFFICIAL GUIDE and all information free from PUBLICITY DEPARTMENT, 2, Baths Offices, TORQUAY.

ITALIAN HEALTH RESORTS

IN WINTER AND EARLY SPRING there are, in Italy, more SUNNY and WARM RESORTS and SPAS than in any other country in Europe. Many of them have the best all-round climatic conditions to be found in Europe.

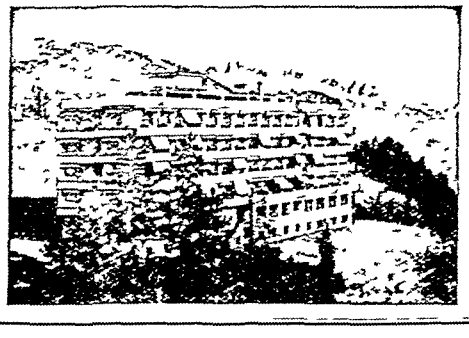
IN SUMMER AND AUTUMN. The greater part of Italy is more pleasant in Summer than at any other Season of the year. There are HUNDREDS of DELIGHTFUL ALPINE, DOLOMITE, LAKE and SEA-SIDE RESORTS.

THE SPAS OF ITALY are world famous for their 'cures,' and besides those having seasons in the Spring, Summer, and Autumn there are many that have a pleasant Winter climate.

ENIT ALL THE YEAR ROUND ENIT

MONTANA HALL, MONTANA, Switzerland. *For BRITISH Patients Only.*

Built 1929 1930 Opened, October, 1930. *(No connection with any other Sanatorium in Montana)*



For the treatment of Tuberculosis Diseases of the Chest, Asthma, for persons requiring rest in the Alps under strict medical supervision and for medical conditions in which sun and air bathing are indicated.

THE ONLY SANATORIUM IN SWITZEPLAND UNDER BPITISH OWNERSHIP AND CONTROL, AND WITH A FULL DAY AND NIGHT STAFF OF BRITISH TPAINED NURSING SISTEPS

Large roof Solarium Private balconies All rooms have running water central heating wireless (headphones) and light signals (instead of bells) A number of rooms with Private Bathrooms Spacious public rooms The cooking is adapted to English requirements

MONTANA (5 000 feet above sea level) is the sunniest health resort in the Swiss Alps Many miles of level walking Twenty hours by train from London

Inclusive terms—from 24.40 Swiss francs per day, according to season. Telegrams Montall Montana Vermala

For further particulars kindly apply to the Resident Medical Superintendent HILARY ROCHE, MD (Melb) MRCP (London) Tuberculous Diseases Diploma (Wales)

HELOUAN (Egypt)

The Principal Health Resort in Egypt

SULPHUR-SALINE SPRINGS.

THERMAL BATH ESTABLISHMENT. SULPHUR BATHS. MASSAGE.
ELECTRO-THERAPEUTICS, Etc.

The best winter health resort. Warm, dry, equable climate. Average eight hours daily sunshine in winter. Situated in the desert, 16 miles South of Cairo. Baths are suitable for treatment of Rheumatism, Gout, Rheumatoid Arthritis, etc., Albuminuria, Chronic Skin Diseases.

Golf, Tennis, Excursions to Pyramids and other places of interest.

GRAND HOTEL, HELOUAN. First-class Hotel. Special arrangements for visitors taking the cure. Under the same management as the Baths. Open November to April.

For particulars apply to the MANAGER, GRAND HOTEL, HELOUAN.

THE RIVIERA SCHOOL

CHATEAU DE MOUANS,
MOUANS-SARTOUX (ALPES-MARITIMES),
FRANCE.

FOR SMALL BOYS AND GIRLS.

Mr. & Mrs. E. W. Huckel, Principals.

On a pine-clad hill near Cannes. Special health supervision and outdoor classes.

A comfortable London Hotel, convenient for Harley Street and Nursing Homes.

THE CLIFTON HOTEL,

WELBECK STREET, LONDON, W.1,

gives comfort, service, and cuisine equal to larger Hotels at less cost. A visit will prove this Bedrooms with hot and cold water and telephones Centrally situated, *close to Harley Street and Nursing Homes.*

Telegrams: Cliftinton. *Tel.:* Welbeck 6881.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES Ten only received Apply, Medical Officer or Mrs PRYER *Telephone:* 2708

F.R.C.S.(Edin.).

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly Correspondence work at any time. Particulars from CHAS WHITAKER, F.R.C.S., Surgeons' Hall, Edinburgh

MARLBOROUGH COLLEGE,

Near MACCLESFIELD, CHESHIRE,

Specialises in CAREERS FOR GIRLS General Education to Matric., etc Special Terms to Medical Men Apply *LADY WARDEN.*

Sole Paying Guest or Delicate

Child invited by Doctor and wife. Healthy situation on outskirts of Cathedral City. Warm, comfortable house Large, sunny garden. Child could, if desired, attend excellent day school with own children. Terms moderate, according to requirements — Address, No 7110, B.M.A. House, Tavistock Square, W.C.1.

Doctor, practising in a Shropshire

Country Town, noted for its climate and beautiful surroundings, will take in one or two PAYING GUESTS, Invalids or Convalescents —Address, No 7117, B.M.A. House, Tavistock Square, W.C.1

Grove House, All Stretton,

Church Stretton, Shropshire.

A Private Home for the care of and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.

Medical Superintendent: Dr. MCCLINTOCK.

Convalescents needing rest, sun,

air, and good food, taken in by woman Doctor in Chiltern country village (Oxon.). Terms 5—6 guineas per week—Address, No. 7034, B.M.A. House, Tavistock Square, W.C.1.

Refraction and the Ordering of

GLASSES taught by Practising Ophthalmic Surgeon in London. £8 8s. for 10 lessons—Address, No 123, B.M.A. House, Tavistock Square, W.C.1.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D.T.H. must possess the D.T.M. of this University)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool

DEFECTIVE SPEECH.

Remedial Tuition on modern lines for Stammer, Aphonia, Cleft Palate, Tracheotomy, and Disturbed Co-ordination, by ERIC MIALL, A.L.C.M., Speech Instructor at Middlesex Hospital.

Short courses in elocution, accent, clarity, and public speaking.

17, CAVENDISH SQ., LONDON, W.1.

Telephone: Langham 1830.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD Estab 1882 Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns

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STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9
of Miss BEHNKE, 39, Earl's Court Sq., S.W.5

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5** for practical fortnightly Courses in Midwifery These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

Medical and Dental Students.

Special Classes for Pre Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

F.R.C.S.(Edin.).

Full PREP. COURSE with Anatomical (Cadaver and Living Model) and Surg. Path. Demonstrations, for next Exam., will commence shortly. POSTAL TUITION at any time—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The Second Term of the WINTER SESSION will begin on Tuesday, January 5th, 1932.

The Medical School provides courses in Preliminary, Intermediate, and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research

NEARLY 1,000 beds available for teaching additional clinical material being provided by affiliation to an Infirmary and other Institutions

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually.

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification

For further particulars and illustrated prospectus, apply to the School Secretary.

C. M. WILSON (*M.C.*), M.D., F.R.C.P., *Dean*

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

[illegible] to Hospital
MED[illegible] and Obst.
practic[illegible] Fortnightly
rical
Courses

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients

MATERNITY NURSES sent out to private cases.

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1929

Prospectus from Head Master.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15

The Practice of the Hospital is limited to Medical Practitioners Particulars from J. BROWNING ALEXANDER, M.D., Dean.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the whole-time post of SURGICAL REGISTRAR from fully qualified and registered men or women. Preference will be given to candidates who are Fellows of the Royal College of Surgeons (England). Salary £200 per annum. Applications, stating age, and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th. Duties to commence January 1st, 1932.
Present holder being eligible, is a candidate for re-appointment.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the half-time post of GYNAECOLOGICAL REGISTRAR from fully qualified and registered Medical Women. This post is reserved for former Students of the London (Royal Free Hospital) School of Medicine for Women.
Salary £100 per annum.
Applications, stating age, and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th. Duties to commence January 1st, 1932. The present holder being eligible, is a candidate for re-appointment.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Men for the following resident post:
HOUSE SURGEON to the Senior Surgeon and the Surgeon in Charge of the Ear, Nose and Throat beds.
Duties to commence January 1st, 1932.
Candidates for the above post must submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Men for the following resident post:
CASUALTY OFFICER.
Duties to commence February 1st, 1932.
Salary £150 per annum.
Candidates for the above post must submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the half-time post of MEDICAL REGISTRAR from fully qualified and registered Medical Women. Salary £100 per annum. Applications, stating age, and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th.
Duties to commence January 1st, 1932.
REGINALD R. GARRATT, Secretary.

Royal Alexandra Hospital for
SICK CHILDREN, BRIGHTON.
(100 Beds.)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-ray Treatment. No canvassing.
To commence duty on January 1st, 1932.
Applications in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

Yorkshire Children's Orthopaedic
HOSPITAL, KIRBYMOORSIDE, YORK.
(106 Beds.)

Required, a HOUSE SURGEON, to begin duties on January 1st, 1932. Salary £150 per annum, with board, residence, and laundry.
Applications, with copies of recent testimonials, should be sent to the Medical Superintendent on or before December 4th.

Taunton and Somerset Hospital,
TAUNTON.

JUNIOR HOUSE MEDICAL OFFICER (lady) as House Physician, required end of November. Two other residents. Period of appointment not exceeding six months in the first instance. Salary at the rate of £100 per annum.
Applications, with testimonials, to F. J. J. STACEY, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:
SECOND HOUSE SURGEON, with Care of Orthopaedic beds.
THIRD HOUSE SURGEON.
FIRST HOUSE PHYSICIAN.
HOUSE PHYSICIAN to the Children's Department.
GYNAECOLOGICAL HOUSE SURGEON.
OBSTETRIC HOUSE SURGEON.
Duties of the above six posts to commence January 1st, 1932.
RESIDENT ANAESTHETIST.
SECOND HOUSE PHYSICIAN.
DISTRICT OBSTETRIC ASSISTANT. Salary £100 per annum.
Duties of the above three posts to commence February 1st, 1932.
Preference is given to applications from former Students of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be duly qualified registered medical women, and must submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

Croydon General Hospital.

Applications are invited from qualified and registered Medical Men for the post of RESIDENT MEDICAL OFFICER. Salary £200 per annum, with board, residence, etc., and the term will be for one year commencing on January 1st, 1932, with the option of reappointment for a second year at the discretion of the Board.
Applications, stating age, qualifications, and experience, together with copies of not more than three testimonials (which will not be returned), to reach the undersigned not later than Saturday, December 5th.
GEORGE H. DAMS,
Nov. 16th, 1931. House Gov. & Sec.

Elizabeth Garrett Anderson
HOSPITAL, Euston Road.

Wanted, fully qualified Medical Women for the following posts:
HOUSE PHYSICIAN, OBSTETRIC ASSISTANT, TWO HOUSE SURGEONS. Appointments for six months from January 1st next. Salary at the rate of £50 per annum, with board, residence, and laundry.
CLINICAL ASSISTANTS (Senior for two years—Junior for one year) are also wanted in the Out-patient and Special Departments.
Applications, with copies of three testimonials, should be sent to the Secretary before Monday, December 7th.
JEAN R. MURRAY, Secretary.

Hospital for Epilepsy and
PARALYSIS, Maida Vale, W.9.

EAR, NOSE, AND THROAT DEPARTMENT.

A CLINICAL ASSISTANT is required in this department, for one attendance per week on Wednesday mornings to assist Mr. DOUGLAS ROBERTSON, F.R.C.S.
Candidates must hold the F.R.C.S.Eng. Applications, accompanied by copies of not more than three testimonials, should reach me by Saturday, November 28th.
There is an honorarium attached to the appointment.
H. W. BURLEIGH,
Secretary & Gen. Supt.

Royal Sussex County Hospital,
BRIGHTON.
(Stephen Ralli Memorial Department, Brighton.)

JUNIOR ASSISTANT PATHOLOGIST (male or female) required. Salary £300 for the first year; non-resident.
Candidates (who must possess some knowledge of Clinical Laboratory work) must apply, submitting particulars of medical qualifications and copies of not more than three recent testimonials, by November 28th, to the undersigned, from whom further information regarding the duties of the office may be obtained.
L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

Doncaster Royal Infirmary.
(185 Beds.)

HOUSE SURGEON (male) required immediately for Casualty Department.
Salary at the rate of £175 per annum, with residence, board, and laundry.
The appointment is for six months and renewable.
Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.
WALTER R. SMITH,
Secretary-Superintendent.

The Royal Liverpool Children's
HOSPITAL.

APPOINTMENT OF HONORARY SURGEON.

The Council invites applications for the position of Honorary Surgeon to the Hospital, vacant on January 1st, 1932. Applications (with copies of testimonials) must be in writing, and addressed to the Chairman, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, by Saturday, December 5th.
A candidate may send copies of his application and testimonials to members of the Election Committee, but personal canvassing of any member will be a disqualification.
R. A. CAMENISCH, Chairman.

Willesden General Hospital,
N.W.10.

OUT-PATIENT DEPARTMENT.

CLINICAL ASSISTANTS.

Applications are invited for appointment to the following sessions:
Surgical—Monday afternoons.
Ear, Nose, and Throat—Wednesday afternoons.
Gynaecological—Thursday mornings.
Applications must be received not later than first post on Monday, December 14th, and should be addressed to the Secretary of the Hospital, from whom further details of the appointments may be obtained.
November 12th, 1931.

York County Hospital.
(200 Beds.)

The post of HOUSE SURGEON in the Ear, Eye, Nose, and Throat Department will become vacant on January 1st, 1932. Woman preferred.
Salary £150 per annum, with board, residence, and laundry.
Duties include attendance on Casualties.
Appointment for not less than 12 months.
Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the undersigned not later than November 30th.
H. E. RYAN, Manager.

The Children's Hospital,
SUNDERLAND. (70 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female). Candidates must possess double qualifications (registered). Salary £140 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.
S. C. FRYERS,
House Governor & Secretary.

Darlington General Hospital.

The Committee of the above Hospital (129 beds) invite applications for the post of SENIOR HOUSE SURGEON, male, British. Salary £155 per annum, with board, residence, and laundry.
Duties to commence mid-December.
Special Departments—Maternity, Eye, Ear, Nose, and Throat, Orthopaedic, etc.
Applications, giving age, experience, accompanied with copies of two recent testimonials, to be addressed to the undersigned.
ARTHUR RIDDLE, Secretary.

Eastern Dispensary, Leman St.,
E.1.

Applications are invited for the post of PHYSICIAN to this Institution, to attend on Wednesday and Friday evenings at 5.30 p.m.
Candidates must be members of a Royal College of Physicians in the United Kingdom or Graduates in Medicine of a recognized British University. There is an honorarium attached to the post.
GEORGE W. ILSLEY,
November 14th, 1931. Secretary.

General Infirmary, Salisbury.
(General Hospital—161 Beds.)

TWO HOUSE SURGEONS (male) required to commence duties on January 3rd, 1932.
Candidates must be unmarried, fully qualified and registered. Salary £150 per annum, with board, etc.
Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

Cheshire Joint Sanatorium,
MARKET DRAYTON, SALOP.

HOUSE PHYSICIAN required (male).
The appointment will be for twelve months. Inclusive salary £250 p.a., with board, residence, and laundry. Applications to be made on forms obtainable from the Medical Supt.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.

(A General Hospital with 350 Beds.)

ORTHOPAEDIC SURGEON.

The General Committee invite applications for the appointment of Orthopaedic Surgeon to this Infirmary, the Orthopaedic Department of which is being reorganised. Applicants must possess the degree of Master in Surgery (obtained by Special Examination) of a British or Irish University, or the degree of Master in Surgery (Orthopaedic) of Liverpool University, or the diploma of Fellow of one of the Royal Colleges of Surgeons of Great Britain or Ireland.

The Orthopaedic Surgeon must devote the whole of his time to the specialty.

He will be permitted to practise in the district—so long as he confines himself to the practice of Orthopaedic Surgery, and does not engage in General practice.

Until such time as he has been able to establish himself as a consulting Orthopaedic Surgeon, the salary will be at the rate of £500 per annum, non-resident.

The position will be reviewed by the Committee at the end of three years.

Applications, with copies of three testimonials, to be sent to the undersigned immediately.

Any further information may also be obtained on request.

By Order of the General Committee,
W. STEVENSON,
November 16th, 1931. Sec. & House Gov.

North Staffordshire Royal INFIRMARY, STOKE-ON-TRENT.

(350 Beds.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for the post of Assistant House Physician.

Salary at the rate of £125 per annum, with board, residence, and laundry.

The appointment will be made for twelve months, if possible.

Applications, with copies of two recent testimonials, to be sent to the undersigned immediately.

By Order,
W. STEVENSON,
November 16th, 1931. Sec. & House Gov.

Seamen's Hospital Society, Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from January 1st, 1932. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by Dec. 2nd to the undersigned.

Greenwich. R. E. V. BAX,
November 13th, 1931. Secretary.

Seamen's Hospital Society, Greenwich.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E 16, for six months from January 1st, 1932. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by Dec. 2nd to the undersigned.

Greenwich. R. E. V. BAX,
November 13th, 1931. Secretary.

Royal National Orthopaedic HOSPITAL.

MEDICAL REGISTRAR.

The Committee proposes to appoint a Medical Registrar, whose duties will include a daily visit to the Hospital to see Medical cases in the Wards. Honorarium at the rate of £150 a year. Applications from Fellows or Members of the Royal College of Physicians, and accompanied by three recent testimonials, should reach the Secretary, 234, Gt. Portland Street, W.1, on or before December 2nd.

Royal National Orthopaedic HOSPITAL.

Applications are invited for the post of HONORARY ANAESTHETIST, and should reach the Secretary, 234, Great Portland Street, W.1, not later than the 26th inst. Applications should be accompanied by copies of three recent testimonials.

The Sheffield Royal Hospital.

The Election Committee will elect on December 9th, an HONORARY PHYSICIAN for Skin Diseases. Applications should reach the undersigned not later than November 28th. There is a local candidate for the office.

W. H. BOOTH,
Nov. 16th, 1931. Supt. & Secretary.

London Homoeopathic Hospital

(Incorporated by Royal Charter),
Great Ormond Street and Queen Square,
Bloomsbury, W.C.1.
(A General Hospital—172 Beds.)

RESIDENT MEDICAL OFFICER required (one of three), *male or female, the appointment* being for twelve months. Four months as Medical and Casualty Officer, four months as House Surgeon, and four months as Medical and Gynaecological Officer, with salary at the rate of £100 per annum, and board, apartments, and laundry.

Candidates must be legally qualified and registered.

Candidates will be required to attend a meeting of the Medical Committee.

Applications, stating age, with thirty-five copies of application and thirty-five copies of testimonials, may be sent to the Secretary as soon as possible.

Successful candidates are required to take the Hospital course of instruction in the principles and practice of Homoeopathy.

EDWARD A. ATTWOOD, Secretary.

Manchester Royal Infirmary.

ASSISTANT RESIDENT SURGICAL OFFICER.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on January 1st, 1932.

Applicants must hold a Medical and Surgical qualification and be registered.

The appointment is for six months, renewable for a further period of six months, subject to the provisions of the by-laws as to notice.

Salary is at the rate of £150 per annum, with allowance for laundry.

Applicants must state age and send twelve copies of their application and testimonials to the undersigned on or before 9 a.m., Thursday, December 3rd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Manchester Royal Infirmary,

CENTRAL BRANCH, ROBY STREET, MANCHESTER

HOUSE SURGEON (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment. Applicants must be registered, and hold a Medical and Surgical qualification.

The appointment is tenable for nine months, commencing January 1st, three months as Junior at £100 per annum, three months as Assistant at £100 per annum, and three months as Senior at £200 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials, to the undersigned by 9 a.m. on Thursday, November 26th, 1931.

By Order,
FRANK G. HAZELL,
General Supt. and Secretary.

Westminster Hospital,

Broad Sanctuary, S.W.1.

A vacancy has been declared in the office of PHYSICIAN to the Hospital. Candidates must be Fellows or Members of the Royal College of Physicians, and they are required to transmit a certificate of age, 30 copies of their applications, with 30 copies each of three testimonials, to the undersigned not later than Friday, December 4th.

Candidates will be required to attend the House Committee on Tuesday, December 8th, at 4 p.m.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Westminster Hospital,

Broad Sanctuary, S.W.1.

There is an immediate vacancy for a HOUSE SURGEON to the Eye, and Ear, Nose, and Throat Departments. The appointment is for six months (non-resident) and the salary is at the rate of £102 per annum. Meals are provided at the Hospital. Applications should be submitted to the undersigned not later than Monday, November 30th.

CHARLES M. POWER, Secretary.

Central Hospital, Plymouth.

Wanted, a fully qualified RESIDENT HOUSE SURGEON, to commence duty December 12th. Salary £150 per annum, with board, residence, ar[illegible] months, or tw[illegible] r with not m[illegible] to be sent to the undersigned not later than Nov. 30th.

WM. W. URELL, Secretary.

Royal Albert Edward Infirmary AND DISPENSARY, WIGAN.

(180 Beds.)

RESIDENT MEDICAL & SURGICAL OFFICER AND REGISTRAR.

Wanted, January 1st, a Resident Medical and Surgical Officer and Registrar. Candidates must have held previous resident appointments at a Hospital. Preference will be given to those possessing the F.R.C.S. or M.S. Degree. The salary is at the rate of £250 per annum, with board, residence, and laundry. The appointment is tenable for one year and the officer is eligible for re-election for a second year. Applications, *giving proof of registration* and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
Nov. 12th, 1931. Gen. Supt. & Sec.

Hampstead General and North-West LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY MEDICAL OFFICER.

Applications are invited from unmarried registered Medical Women for the position of Casualty Medical Officer, vacant on January 1st next, at the Out-patient Department of the Hospital, Bayham Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on December 5th next.

Hampstead General and North-West LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF HOUSE SURGEON.

Applications are invited from unmarried Medical Men for the appointment of House Surgeon, vacant on January 1st next. The salary will be at the rate of £100 per annum, together with board, residence, *etc., and the* term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on December 5th next.

Bolton Infirmary & Dispensary.

(301 Beds, including Two Auxiliary Hospitals.)

Applications are invited from gentlemen for the appointment of ASSISTANT RESIDENT SURGICAL OFFICER, who will be in charge of the Casualty Department and beds, and will deputise for the R.S.O. Salary £200 per annum, with board, residence, and attendance. This appointment offers exceptional opportunities for surgery.

Applications for the post, stating age, nationality and previous experience, together with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday, November 30th.

ALBERT E BRISCOE,
Secretary.

Liverpool Maternity Hospital.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management of the above Hospital intimate that a vacancy has occurred for an Honorary Assistant Surgeon.

Candidates for the vacancy are requested to send in their applications, with testimonials in support, together with twenty-five complete copies thereof, to supply the members of Board of Management, to the Secretary of the Hospital, Oxford Street, on or before November 25th next.

All other canvassing disqualifies.

A copy of the last annual report and rules of the Hospital may be had from the Secretary on application.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male). Duties to commence on January 1st next.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months, and is renewable.

The Resident Staff consists of a Resident Surgical Officer and Two House Surgeons.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of October, 1931.

ARTHUR H LIMB, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE (Assistant Medical Officer—Woman)	**CONTRACT PRACTICE** (contd)	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN (Workmen's Medical Scheme)	DEVON COUNTY COUNCIL (School Medical Inspector—Male)
FFRW VALE MON (Workmen's Medical Society)	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE (Workmen's Medical Scheme)	LOWESTOFT BOROUGH (Assistant Medical Officer—Woman)
GILFACH GOCH GLAMORGAN (Workmen's Medical Scheme)	NEATH AND DISTRICT (Medical Aid Association)	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE (Assistant School Medical Officer)
LOWESTOFT MEDICAL INSTITUTE (Medical Officer)	OAKDALE, MON (Medical Officer for Medical Aid Association)	
LLWYNYPIA CLYDACH VALE, PENYGRAIG GLAMORGAN (Workmen's Medical Scheme)	OGMORE VALLEY GLAMORGAN (Pyndham Colliery Medical Aid Society) (Workmen's Medical Scheme)	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES (All Friendly Society Appointments)	Dr J G HUNTER (Medical Secretar New South Wales Branch) 135, Macquarie St, Sydney, N S W	SOUTH AUSTRALIA. (Lodge Appointments)	Secretary, South Australian Branch, B M A House, 206, North Terrace, Adelaide	WELLINGTON, NEW ZEALAND. (Contract Practice Appointments)	Dr G F V ANSON (Hon Sec, New Zealand Branch) British Medical Association, P O Box 156, Wellington New Zealand
QUEENSLAND. (Brisbane Associated Friendly Societies Institute) (Toowoomba Associated Friendly Societies Medical Institute Toowoomba)	The Hon Sec, Queensland Branch, British Medical Association B M A Building Adelaide St, Brisbane	VICTORIA. (All Institute or Medical Dispensaries)	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association, Medical Society Hall, East Melbourne, Victoria	WESTERN AUSTRALIA. (Contract and Lodge Practices)	Hon Sec, Western Australian Branch, British Medical Association No 6 Bank of N S W Chambers St Georges Terr Perth, Western Australia

November 18th, 1931 By Order of the Council ALFRED COX Medical Secretary

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The Hospital for Sick Children,
Great Ormond Street, London, W C 1

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on January 1st 1932

Gentlemen are invited to send in their applications addressed to the Secretary, before 12 o'clock on Monday November 30th with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment

The appointments are made for six months Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital

Candidates must be unmarried and possess a legal qualification to practice

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, December 2nd, at 5 p m precisely

Forms of application and copies of the Rules, may be obtained from the Secretary

By Order of the Board of Management,
JAMES McKAY,
November, 1931 Secretary

National Hospital, Queen Sq., W C 1

The Board [illegible] applications from qualified [illegible] post of HONORARY

Applicants should possess a diploma in Medical Radiology and Electrology, preferably the Cambridge Diploma Applications should be sent to the undersigned together with copies of recent testimonials on or before Dec 1st

GODFREY H HAMILTON,
Secretary

King Edward Memorial Hospital, EALING

Applications are invited for the appointment of HONORARY DENTAL SURGEON Applications should be sent to the undersigned, from whom details of the appointment may be obtained

R A MICKELWRIGHT,
Secretary Superintendent

The Cancer Hospital (Free)
(Incorporated under Royal Charter),
Fulham Road, London, S W 3

The Committee are prepared to receive applications for the post of HOUSE SURGEON Salary at the rate of £100 per annum

The appointment is for six months, and subject to rules

Candidates must call upon each member of the Medical Committee not later than Monday, December 7th

A copy of the Rules and the names and addresses of the Medical Committee may be obtained from the Secretary

Previous experience as a House Surgeon is indispensable

Applications with three (copies only) of testimonials, to be sent to the undersigned not later than the first post on Saturday Nov 28th

T COURTNEY BUCHANAN Secretary

Chelsea Hospital for Women,
Arthur Street, S W 3

There will be a vacancy for a JUNIOR HOUSE SURGEON (male) on January 1st, 1932 Appointment for six months Salary £100 p a He will be expected to proceed to the Senior post (six months, salary £120 p a) at the end of his term of office. Candidates must be duly registered and preferably unmarried Applications accompanied by copies of three testimonials, should be sent not later than Friday November 27th, to the Secretary, HERBERT H JENNINGS

The Mount Vernon Hospital,
NORTHWOOD, MIDDLESEX
(The National Centre for the Study and Treatment of Cancer)

There is a vacancy for a RESIDENT MEDICAL OFFICER

Candidates must be fully qualified and registered Salary at the rate of £250 per annum, with board lodging etc

Applications with copies of three testimonials to be sent to the undersigned not later than November 28th

W J MORTON Secretary

Offices 32 Fitzroy Square W 1

Radcliffe Infirmary and County
HOSPITAL, OXFORD

Applications are invited for the following posts on the Honorary Medical Staff of the above Hospital

(1) HONORARY PHYSICIAN
(2) HONORARY ASSISTANT PHYSICIAN in the event of one of the existing Assistant Physicians being elected Honorary Physician (Candidates may apply for (2) as an alternative to (1))
(3) HONORARY ASSISTANT RADIOLOGIST

Twenty five copies of applications and testimonials which will be forwarded to members of the Electing Committee, must be sent to the [illegible]

[illegible]

[illegible]
L & N E Railway)

Applications (with copies of three testimonials) are invited to be sent to the undersigned not later Before Friday, December 11th for the following posts subject to the rules and by laws of the Hospital

RESIDENT MEDICAL OFFICER (male) for one year from January 1st 1932. Salary £200 per annum
HOUSE PHYSICIAN (male) for six months from January 1st 1932 Salary at the rate of £160 per annum
Board residence and laundry [illegible]

GEORGE WATTS Secretary

Bedford County Hospital
[illegible] Beds)

FIRST HOUSE SURGEON (male) [illegible] qualified unmarried required for a term of not less than six nor more than twelve months Salary £160 with board lodging and laundry

Applications stating age [illegible] qualifications together with three recent testimonials to be sent to the Hon Secretary Hon Medical Staff Committee, as soon as possible

(Appointments continued on p 54.)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
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ASSISTANCIES.

Wanted.—Assistantship, preferably view early Partnership from income. Belfast Graduate (1922); 34, married, no family, used sole charge. Keen, capable, experienced Hospital and G.P. Anæsthetist; Surgery. Good recommends. Good health Abstainer. Free shortly. Prefer (not essential) London or Liverpool. — Address, No. 7216, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Well - qualified married ASSISTANT, *rural and industrial Practice*, panel and private only. Work steady to heavy. Good health and appearance essential. Small detached unfurnished house free. Commencing salary £450. Prospects good. Usual bond. State particulars.—Address, No 7116, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship (outdoor preferred) in or near London, by M.B., B.Ch., male, single, aged 30, ex H.S. and H.P., five years' experience of G.P. Abstainer, keen, well recommended. Interview.—Address, No. 7111, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, outdoor, by Scottish Graduate, aged 35, married. Hospital ex Resident. Conscientious and reliable. Available almost at once, and could arrange prior interview.—Address, No 7122, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B.Lond., ASSISTANTSHIP *in or near London*, 26, experience in Practice, H.P. and H.S. Very well received. Excellent testimonials. Can drive. Free now. 'Phone: Park 8417.—Address, No 7134, B.M.A. House, Tavistock Square, W.C.1.

Wanted *end of Dec., indoor* ASSISTANT, Scot or English, for mixed Practice, Midlands. Some experience essential. Interview. Salary £300. Age, reference, and full particulars. — Address, No 7114, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, Dec.—May, Yorkshire district. Work light. Suit recent Graduate wanting experience. Able drive car preferred. Send usual particulars. — Address, No 7106, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for panel and private Practice in Manchester *for few months*. Work light. Suit Post Graduate Student. State essential particulars.—Address, No 7207, B.M.A. House, Tavistock *Square*, W.C.1.

Wanted, Male Assistant, Tuesday and Thursday mornings, and other times. London, N.E. *suburb*. Suit man reading. If wanting full-time post do not apply.—Address, No. 7131, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, unmarried, for panel and private Practice in Midland City. Cyclist. English or Scotch. Salary £400, furnished rooms and attendance. Petrol allowance if own car.—Add., No 7015, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Woman M.B., ex H.S., two years' experience general practice. Can drive car.—Address, No 7202, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, for Colliery Practice. £400 p.a., outdoor. Work light. Anæsthetics and Midwifery. — No. 7211, B.M.A. House, Tav[istock Square].

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with or without view; good salaries; state full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistantship, Partnership, or moderate PRACTICE by L.R.C.P. & S. Edinburgh, British, married, age 30, two years' G.P. experience. Own car. Well recommended and received. Now free.—Address, No. 7113, B.M.A. House, Tavistock Square, W.C.1.

Assistant, indoor, male, required for London mixed Practice. Salary £300 per annum. Usual bond. State age, experience, references.—Address, No. 7205, B.M.A. House, Tavistock Square, W.C.1.

Assistantship required for winter months by Doctor (Jewish). Several years' experience in G.P.—Address, No. 7212, B.M.A. House, Tavistock Square, W.C.1.

Male Assistant, Scot preferred, definite view early Partnership in Practice (£4,200 per annum) in Yorkshire City. Panel 2,400. Capital desirable, but ability, energy, and personality essential. Replies should give fullest personal and professional details (if possible photograph) and date free.—No 7017, B.M.A. House, Tavistock Sq., W.C.1.

Ophthalmic Surgeon, Industrial area, requires young ASSISTANT, possible Partnership later.—Address, No. 7132, B.M.A. House, Tavistock Square, W.C.1.

Outdoor, male Assistant wanted, mixed Practice near Birmingham. House at Branch available if married. State age, experience, nationality, when free. Photo.—Address, No 7138, B.M.A. House, Tavistock Square, W.C.1.

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Experienced G.P. desires Locum ENGAGEMENTS, *Country or Industrial*; good walker. Fees by arrangement. Own car if necessary. Telephone: Bristol 5434.—"MEDICUS," 17, Royal Park, Clifton, Bristol.

Ex H.S., with experience of general practice, desires LOCUM Testimonials. Home near London.—Address, No. 7136, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenens; Doctor, M.B., B.Ch., D.P.H., experienced, can take SURGERIES, a.m. or p.m., Week-ends or Locums, in areas of Portsmouth, I. of W., Hampshire, and adjoining counties. Excellent references. 'Phone, Portsmouth 6254.—Address, No. 7115, B.M.A. House, Tavistock Square, W.C.1.

Locum required by Indian Doctor, 31, trained Durham, Rotunda, London Hospital. English Conjoint qualifications. Anywhere, but prefer London.—Address, No. 7129, B.M.A. House, Tavistock Sq., W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

As Secretary - Receptionist. — Doctor's Daughter, ex Medical Student, requires POST. £3 weekly. *Typing, bookkeeping, and French.*—MACREADY, 8, Gloucester Rd., Regent's Park, N.W.1.

Doctor recommends young lady, aged 25, as SECRETARY-RECEPTIONIST. Shorthand, typing, bookkeeping, French conversation and cooks. Exp. of Hospital Clinical work. Liverpool—Southport district preferred.—No 7135, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Junior Assistant MEDICAL OFFICER, for December 1st, single. Salary £350 per annum, with rooms, coal, light, and attendance, 10/- extra for midwifery cases. Usual bond. Applications to be made to A. H. JAMES, M.D., The Park, Blaenavon, Mon.

A Lady Dispenser-Bookkeeper supplied immediately *on request*, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part time. Bookkeeper Dispensers, Secretary Dispensers, Nurse Dispensers, and Chauffeuse Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctor's Daughter seeks whole or part time POST in Southern England. Qualified Dispenser and gardener. Experienced Chauffeuse. — E. ORMEROD, 29, Francis Street, Westminster, S.W.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5859. THE DISPENSERS' BUREAU, 15, Lind[sey] House, 171, [illegible], W.C.2.

L[illegible] - Bookkeeper (Hall), 23, requires RE-ENGAGEMENT. Thoroughly experienced (3½ years' private and panel practices). London or district preferred but not essential. Free now. — Address, No 7214, B.M.A. House, Tavistock Square, W.C.1.

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Naval Medical Officer, recently retired, requires EMPLOYMENT.—Address, No. 7219, B.M.A. House, Tavistock Square, W.C.1.

Part-time Post wanted now by [illegible] B.Ch. (woman). Four years experience M.B., [illegible] and private practice; good testimonials. Free in London; charge. Excellent [illegible]38, B.M.A. House, Tavistock Square, W.C.1.

Reliable Secretary (28), quick stenographer, typist, requires PART TIME EMPLOYMENT. Own Remington. — No 7112, B.M.A. House, Tavistock Square, W.C.1.

Secretary - Receptionist seeks post with West End Doctor. Public School and Univer. education. Speedwriting, Bookkeeping. B.R. Previous exp. Excel refs. Tall, [illegible]. No 7051, B.M.A. House, Tavistock Square, W.C.1.

Specialist, experienced ASSISTANT tioner, willing to do TIME WORK. — Address [illegible] the above B.M.A. House, Tavistock Square, [illegible] has returned [illegible].

The Royal Army [illegible] are required by ASSOCIATION, 8[illegible]th testimonials [illegible] Victoria[illegible] five [illegible] bers of P[illegible] the Hon[illegible] ber 25th next.

charge to prospective employers [illegible] and [illegible] Secretary

Typewriting and Duplicating. Testimonials, Theses, etc. accurately copied. Scientific work.—WODBURN BUREAU, 3, Upper Wo[illegible] London, W.C.1 (adjoining B.M.A.). 'Phone: Museum 4475.

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Male Partner wanted in good-
[illegible]

Near Manchester — Wanted
[illegible]

Partner wanted, with view to
[illegible]

Partnership wanted in middle-
[illegible]

Radiological Practice — Wanted
[illegible]

Shropshire — Half Share of well-
[illegible]

South Coast — Half Share or One-
[illegible]

Urgently required — Partnership,
[illegible]

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Radiologists. — To Let, in professional house, an excellent ground floor self contained FLAT; to be finished to requirements of tenant Local appointments and support. Rapidly growing town and district of 30,000. Communications privately — Address, No. 7217, B M A House, Tavistock Sq, W.C.1.

Proprietor of large West End Nursing Home, 18 beds, wishes to meet Physicians and Surgeons desiring interest in same Capital not essential — Address, No 7109, B M A House, Tavistock Square, W C 1.

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to MEMBERS of the MEDICAL PROFESSION

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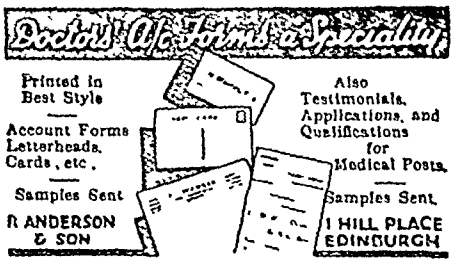
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APPOINTMENTS.—Contd.

West London Hospital,
Hammersmith Road, W 6 (234 Beds)

Required, ONE HOUSE PHYSICIAN (General and Skin), and ONE HOUSE SURGEON (General and Genito Urinary), for six months from January 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than Thursday, December 10th. Selected candidates will be required to call upon such members of the Medical Staff *as directed, to be in attendance* at a Meeting of the Medical Council on Friday, December 18th, at 4 p.m. and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Weymouth and District
HOSPITAL, WEYMOUTH.

Wanted, early December, HOUSE SURGEON, male, European Salary £180 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and copies of testimonials, to be sent to the undersigned not later than *November* 23rd

MORRIS LODGE, Hon Secretary.

The Royal Gwent Hospital,
NEWPORT, MON. (160 Beds)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Outpatients, and as House Physician.

Salary £135, with board, lodgings, and laundry. Resident Medical Staff (five) Eligible for promotion.

Large Out patients Department.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned

Applications from ladies not entertained.

J. K MILLWARD,
November 17th, 1931 Secretary-Supt

Radcliffe Infirmary and County
HOSPITAL, OXFORD.

Applications are invited for the post of HOUSE PHYSICIAN, which will become vacant on January 1st, 1932

The appointment will be for six months, with salary at the rate of £120 per annum, with board, etc

Candidates must be male and qualified

Applications, with four copies of three testimonials, must be sent to the undersigned on or before December 5th

A. G. E. SANCTUARY,
Administrator

The Dewsbury and District
GENERAL INFIRMARY. (100 Beds)

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £200 per annum, with board, residence, and laundry.

Applications, stating age and hospital experience, together with copies of recent testimonials, to be sent to the undersigned before November 30th The appointment commences as from January 1st, 1932

H G. PRICE.
Nov. 16th, 1931. Secretary Supt.

Leicester Public Medical Service.

OPHTHALMIC DEPARTMENT.

The Board of Management will shortly proceed to the appointment of an OPHTHALMIC SURGEON to fill the vacancy caused by the death of Dr. R. Wallace Henry

Dr. Henry's Partner is a candidate for the appointment.

Applications should reach the undersigned, from whom particulars may be obtained, by not later than November 28th.

T. W. LAWRENCE,
38a, East Bond Street, Manager.
Leicester.

City of Aberdeen.

CITY (FEVER) HOSPITAL

JUNIOR RESIDENT MEDICAL OFFICER

Applications are invited for the post of Junior Resident Medical Officer (male) at the City (Fever) Hospital, Aberdeen

Salary £100 per annum, with apartments, board, and laundry free

The appointment is limited to one year, and is not renewable

Facilities will be given for the successful candidate studying for the Diploma in Public Health at Aberdeen University.

Applications, with copies of recent testimonials, should be forwarded to the undersigned on or before Saturday, 28th instant The successful candidate will be required to take up duty as soon as possible

4, Albyn Place, HARRY J RAE
Aberdeen Medical Officer of Health

Jersey General Hospital and Poor Law Infirmary.

RESIDENT MEDICAL OFFICER

Applications are invited for the above post (male). Applicants must be duly qualified Practitioners in Medicine and Surgery. Salary £200 per annum, with board, residence in the Hospital, and laundry

The appointment is for one year, and is renewable Applications, with testimonials, must be sent in on or before *Saturday, December 5th* addressed to the undersigned, from whom further particulars may be obtained

P. BEUZEVAL, Secretary

Kent and Canterbury Hospital,
CANTERBURY.
(Recognised by the University of London for the purpose of M S Examination)

Two HOUSE SURGEONS required, to commence duties on January 8th, 1932 Six months' appointments Salaries payable at the rate of £125 per annum, plus board, residence, and laundry

Applications, stating age and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned.

W. T. SOUTHWOOD,
Superintendent & Secretary

City of London Maternity
HOSPITAL, City Road, E C

Applications invited from fully qualified candidates for post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant January 1st next Three months' appointment at £80 p.a. If satisfactory, appointee fills Senior post for three months at £100 p.a. Twenty copies of application and of testimonials should reach the undersigned by December 5th

RALPH B CANNINGS,
Secretary

Hospital for Consumption and DISEASES OF THE CHEST,
Brompton, S W 3

The Committee of Management give notice of a vacancy in the office of SURGEON to the Throat, Nose and Ear Department Mr I C ORMEROD, F R C S, the Assistant Surgeon is a candidate for the post

Brompton, FREDERICK WOOD
November 1931 Secretary

St. Mary's Hospitals, Manchester.

HOUSE SURGEON for the WHITWORTH PARK [illegible] for a period [illegible] Salary at the rate of £[illegible] per annum, with board and residence

Applications, with copies of three testimonials, to be sent to the undersigned on or before the 25th instant

R. RATCLIFFE, Secretary

Newark General Hospital
(50 Beds)

Wanted, a fully qualified RESIDENT HOUSE SURGEON, unmarried Salary £175 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, with copy testimonials, to be sent to W T CRAMPTON (Secretary), 27, Kirk Gate, Newark, Notts

King George Hospital, Ilford,
near London

Applications are invited for the appointment of HALF-TIME PATHOLOGIST Salary £[illegible] per annum. Particulars of qualifications together with copies of testimonials, should reach the undersigned not later than December 5th

G AUSTIN HEPWORTH, Secretary.

Queen's Hospital for Children, Hackney Road, London, E.2.

HOUSE PHYSICIAN required January 1st, 1932. CASUALTY OFFICER required January 6th, 1932. Some Dermatology additional. Six months' appointments. Salary at the rate of £100 per year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before December 5th.

CHARLES H. BESSELL, Secretary.

Nov. 9th, 1931

Royal Albert Hospital and Eye INFIRMARY, DEVONPORT.

Applications are invited from duly registered and unmarried Practitioners for the following resident appointments:

HOUSE SURGEON.
ASSISTANT HOUSE SURGEON.

Salary: House Surgeon £150 per annum; Assistant House Surgeon £100 per annum. Apartments, board, and laundry free.

Applications, stating age, together with copies of not more than three testimonials, should be forwarded to the undersigned without delay.

By Order of the Committee, FRANK ROWE, Secretary.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Resident, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Superintendent.

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London, W. — £1,650. Panel 650, scope to double. Scope mdy. Visits 2/- to 5/-. Small house to rent.—No. 8939.

South Midlands.—Country.—Share worth £1,000 net and free of tax. Fees 5/- to 10/6. Good panel and appointments. Choice of residence. Premium only £2,500 —No. 8938.

Devon.—Over £2,200 p.a. Half Visits Share. Panel 930. Mdy. from £2 2s. —No. 8936. House, with 4 bed., etc.—

Surrey Hills. — Over £600, some scope. Panel about 400. Fees 3/6— 10/6. Detached house in 1 acre, 6/7 bed., etc.—No. 8930.

Scotland.—Nr. Glasgow. — Over £850 p.a. Panel 1,300 Appt. £75; Fees 3 - to 7/6. 5 bed., 3 recep., etc. 14 yrs. purchase.—No. 8929.

Death Vacancy.—Devon Resort. £600 p.a. incg. Panel 500. Fees 2/6 —10/6. Leasehold house, 7 bed., 2 recep., etc., and half acre.—No. 8916.

Eastern County. — £1,900 p.a. Panel 1,250. Fees 3/6 to 21/-. Ample scope. Good house, 5 bed., 3 recep., and large garden. Would suit 2 men.—No. 8914.

London, N.E. — Old-established Panel about 2,000. family PRACTICE. Over £4,000 p.a. Fees 2/6 to 6/-.—No. 8912. 1/3 share. House to rent.

Middlesex Suburb.—Share worth about £900. Good panel. Appts. £40. Fees 3/6 to 10/6. Good house and garden for sale.—No. 8907.

Kent. — Country, unopposed, about £900 p.a. Panel 330. Fees 3/6 to 12/6. Appointments £125 p.a. Premium £1,500.—No. 8900.

Lancs Town. — Over £600 p.a. Panel 270. Fees 3/6 up. Good house to buy or rent. Premium £800 or offer.—No. 8898.

London, S.W.—Central. — Over £800. Fees 7/6 to 21/-. No panel or dispensing. Premium £800, or 1/2 share 1½ years' purchase.—No. 8895.

Liverpool area.—About £600 p.a. Panel 900. Fees 3/6 to 5/6. Small house. Ample scope.—No. 8894.

Lancs.—Over £1,100 p.a. Panel 1,450. Visit and med. 5/6 to 6/-. 3 recep. 5 bed. Surgery, etc. Garage. For sale £1,200.—No. 8849.

Home County.—Within 30 miles. —£1,500 p.a. Panel and appts. over £700. Unopposed. Freehold £1,600. Goodwill 1½ years' purchase. Personally known to Mr. Needes.—No. 8935.

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HOME COUNTIES.—PARTNERSHIP in good class Practice situated in well known country town. Receipts approx £6,000. Select easily run panel. Medium sized house to rent. Premium for 1/4 share 2 years' purchase. This Practice has been known to the Agency for many years, *and is highly recommended. It is essential that the incoming* Partner shall hold the F.R.C.S., and be aged about 30. Appointment to Hospital Staff.

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Y[illegible] rural PRACTICE. Suitable house ion. £1,000. Panel 620. Fees 3/6 1½ years' purchase.

YORKS.—PARTNERSHIP in busy *rapidly* increasing town Practice. Receipts £2,300. Panel 1,500. Suitable house available 1/3 share, with view to succession, 2 years' purchase.

ESSEX.—NUCLEUS PRACTICE in residential locality. Excellent scope for young and energetic man. Suitable house available. Receipts £325. Panel 225. Premium £450.

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8. CORNWALL.—Unopposed Country PRACTICE, near North Coast *Health Resort*. Over £900 p.a. Good scope. Price £1,400 or near offer.
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LIVERPOOL.—Old established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 960. Excellent house, 2 reception, 7 bedrooms, garage, and garden to rent.—No. 276.

MANCHESTER.—RESIDENTIAL SUBURB.—Middle-class PRACTICE. Cash receipts in Partnership for 1931 £4,058. Panel 1,400. Two cars kept. Practice with ample accommodation. Premium 1½ years' purchase. Part by arrangement.—No. [illegible].

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MANCHESTER.—PARTNERSHIP in Practice of about £1,600. Panel 1,550. House available, to rent. Premium—half share—2½ years' purchase.—No. 303.

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CHESHIRE TOWN.—Old established PRACTICE. Average cash receipts £1,400 p.a. Panel 2,000. Good scope. Nice house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice £2,200.—No. 295.

WESTMORLAND.—UNOPPOSED COUNTRY PRACTICE. Cash receipts last year £1,075. Panel [illegible]. Good house, 2 reception, 4 bedrooms. Garage and garden. Rent £57 p.a. Premium by offer over £500.—No. 300.

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MANCHESTER.—PLEASANT RESIDENTIAL SUBURB.—Old established PRACTICE. Average cash receipts £685 p.a. Panel 600. Modern semi-detached house, 2 reception, 4 bedrooms, bathroom, and good garden. To let on lease at £65 p.a. Premium £250 or may be purchased.—No. 445.

LIVERPOOL.—Small PRACTICE. Cash receipts £300 p.a. Panel [illegible]. Excellent house, 3 reception, 5 bedrooms. Garage and garden. Rent £52 p.a. Premium 1½ years' purchase.—No. 302.

BIRKENHEAD.—PRACTICE with cash receipts £90 p.a. Panel 900. Good house, 5 bedrooms, garden. Premium—Practice—£600, or near offer.—No. 225.

MANCHESTER.—Old established PRACTICE. Cash receipts £[illegible]. Panel 500. Two reception rooms, 3 bedrooms, garden. Premium—Practice—2½ years' purchase.—No. 294.

NORTH-WEST COAST.—SEASIDE RESORT.—Small semi-detached house, 2 reception, 5 bedrooms. Garage and garden.—No. 266.

NEAR LIVERPOOL.—PRACTICE offered at [illegible]. Panel 550. Good house, 2 reception, 5 bedrooms. Garage and garden. Rent £70 p.a. Premium by offer.—No. 287.

NEAR PRESTON.—PRACTICE offered at [illegible]. Panel 250. Good house, 2 reception, 5 bedrooms. Garage and garden. Rent £26 p.a. Premium £800, or near offer.—No. 220.

BIRMINGHAM SUBURB.—[illegible]. Premium—Practice—[illegible].—No. 220.

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NORTHERN IRELAND.
72, High Street, Belfast.
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All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33 CROSS ST., MANCHESTER.

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(FOUNDED 1880.)

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Practices and Partnerships for Disposal. **Full particulars sent free.**

1 MIDLANDS. — Partnership in Practice of £7,000 p.a. in important County Town. Panel 3,500. House to rent. One fifth or one-fourth share at 2 years' purchase, and further share later.

2 SUSSEX. — Country Practice averaging £900 p.a. in beautiful part, easy distance of coast. Panel 640. Large detached house, with three-quarters of an acre of garden, for sale. Premium 1½ years' purchase.

3 W. OF ENGLAND.—Practice about £800 p.a. in first rate City. Panel 1,324. Well-built house (4 bed and dressing rooms) to let. Excellent scope. Premium £1,450.

4 S.E. COAST. — Easily worked Practice in exclusive part of seaside town. Receipts last year £1,050, including appointments over £200, fees from resident patients, and small panel. Large modern house, with beautiful garden, to rent. Ample scope. Premium £1,150.

5 WESTMINSTER DISTRICT.—Good-class non dispensing PRACTICE of about £800 p.a. No panel. Flat (11 rooms), many years a doctor's residence, with over 9 years of lease to run. No premium for lease and only nominal premium for Practice.

6 CARMARTHENSHIRE.—Increasing PRACTICE of £900 p.a. in pleasant Market Town. Panel 150. Well-situated house (non basement), with 3 bedrooms, for sale. Cottage Hospital. Premium one year's purchase.

7 S. COAST.—Partnership in old-established Practice of nearly £2,200 p.a. in popular health resort. Panel 2,800. Applicant must be well qualified and have held House appointments. One half share for disposal after short preliminary Assistantship.

8 DEATH VACANCY.—SOUTH COAST.—PRACTICE nearly £900 p.a. in seaside resort. Panel 800. House (3 bedrooms) for sale. Separate Surgery at a rental of £60 p.a.

9 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE doing about £450 p.a., capable of increase. House (5 bed and dressing rooms, 3 attics) in own grounds in residential quarter, to rent.

10 LONDON, S.E.—Practice averaging about £1,400 p.a. in populous suburban district. Panel about 1,000. House, with 5 bedrooms, to rent. Premium £2,500.

11 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase. Cottage Hospital. One fifth share for disposal.

12 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main thoroughfare. Panel 125. Shop-fronted house to rent on lease. Good scope for increase. Premium £300.

13 N. LONDON. — Partnership in Practice, averaging over £4,350 p.a., in thickly populated suburban district. Vendor only recently joined the panel. Accommodation consists of 3 bedrooms, etc., to rent. Premium one-half share 2 years' purchase, with succession to whole Practice in 12 months if desired.

14 S. OF ENGLAND. — Partnership in good middle-class Town Practice, over £5,300 p.a. No panel. Suitable house to purchase. Premium, one-fourth share, £2,000. Preliminary Assistantship.

15 OPHTHALMIC Practice, doing about £500 p.a., in the West End of London. Premium £500.

16 MIDLANDS. — Partnership in Practice nearly £3,800 p.a. in beautiful suburb of Manufacturing Town. Panel 2,200. House, with 5 bed and dressing rooms, in good residential part, for sale or rent. Unlimited scope. Excellent Hospitals. One-third share at first at 2 years' purchase.

17 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock-up" Surgery. Panel about 500. Well-situated corner residence (3 bedrooms) to rent. Premium £900.

18 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 785. Share up to one half 2 years' purchase. Up to date Cottage Hospital.

19 E. COAST.—Partnership in lucrative PRACTICE of over £5,250 p.a. in large seaport town. Panel over 3,800. Prem., one-fourth share, £2,500. Good scope for increase.

20 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Select panel about 417, with scope. Corner house, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

21 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town. Panel 1,100. Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

22 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 bedrooms. Garage and garden. Rent £150 p.a. Scope for increase. Premium 1½ years' purchase.

23 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £700 p.a. and a panel of 650. Good house (6 bedrooms), with garage, and one acre of garden, for sale. Premium 1½ years' purchase.

24 ESSEX.—Country Practice of £700, including panel and appointments worth about £650 p.a. Premium £1,100.

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Practices and Partnerships for Disposal (continued).

25 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 360. Substantially built 9 roomed house for sale. Scope for increase. Premium £725.

26 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

27 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bedrooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

28 DEATH VACANCY.—DEVON.—Practice in small Seaside Resort. Receipts past year £625. Panel 500. House (7 bedrooms), garage, and half acre of garden, for sale.

29 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE, about £1,200 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,250.

30 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and very little midwifery. Well situated house (6 bedrooms), good garden and garage, for sale. Good scope. Premium 1½ years' purchase.

31 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round. Receipts about £150. No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

32 YORKSHIRE (W.R.).—Partnership (after Preliminary Assistantship) in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. House available. Applicant with surgical experience preferred. Premium one-third or one-fourth share 1½ years' purchase.

33 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Beautiful modern House to purchase or lease. Premium one-half share 2 years' purchase. Partner should be young and hold F.R.C.S. Or whole Practice would be sold.

34 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. Panel 3,000. Nice detached house (7 bedrooms), garage etc., garden and grounds of 10 acres, for sale. Sport of most kinds. Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

35 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district. Seven roomed house, with electric light, garage, etc., for sale or rent. Ideal climate. Sport. Hospital. Premium £600.

36 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. One-third share for disposal.

37 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well-situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

38 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

39 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight-roomed house for sale or rent. Excellent educational facilities. Sea-fishing, etc. Premium £1,500.

40 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

41 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,300 p.a. in small but delightful resort. Considerable scope to one able to operate. Premium one half share 1½ years' purchase.

42 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

43 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £4,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent. Partner must hold the F.R.C.S., and be aged about 30. Appointment on Hospital Staff. Premium for one sixth to one-fourth share 2 years' purchase. Preliminary Assistantship.

44 S. AFRICA.—CAPE PROVINCE.—PRACTICE of about £1,200 p.a. in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built House (2 bedrooms) to rent. Premium £500.

45 BORDERS OF ENGLAND AND WALES. —PARTNERSHIP in non-dispensing Practice of £1,800 p.a. (in beautifully situated Country Town. Panel about 650. House (5 bedrooms) to rent. Good schools. Excellent sport. First-class Hospital. One-third to one-half share at 1½ years' purchase. Welsh not necessary.

46 W. MIDLANDS.—Practice £800 p.a. in market town. Panel 170. House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase.

47 GLAMORGAN.—Partnership in unopposed contract and panel Practice of £2,400 p.a. Panel 1,600. Nice house (4 bedrooms) to rent. Premium for one-half share 1½ years' purchase.

48 YORKSHIRE (N.R.).—Partnership in old-established Practice of £5,000 p.a. in an important town. Panel 4,000. Premium for one-fifth share 2 years' purchase.

49 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. Prem. £1,100.

50 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

51 LONDON, N.W.—Partnership in Practice of £2,200 p.a. in suburban district. Panel 2,525. Scope for increase. Premium one-half share 2 years' purchase.

52 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district. Panel 250. Convenient new detached house (4 bedrooms), with good garage and wooded garden, for sale or rent. Great scope. Premium 1½ years' pur.

53 CO. DURHAM. — Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale. Premium for one-half share only £1,000.

54 SOMERSET. — Practice averaging £870 p.a. in country town. Panel under 220. House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,300.

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1. SOUTH WALES.—Residential district, close to coast.—Old-established good middle-class PRACTICE, averaging over £2,000 p.a. Panel of 1,100. Fees 3/6 to 10/6. Mid. from 3 gns. House contains 3 reception, 5 bedrooms, etc. Can be rented or purchased. Sport of all kinds, and good schools. Premium 1½ years' purchase.

2. NORTH WALES.—Very old-established good mixed-class PRACTICE, averaging £880 p.a., including panel of 433. Fees 2/6 to 10/6, medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Can be rented on lease at £50 p.a. Good sport. Premium £1,200, part down and balance by instalments. Ill health reason for sale.

3. WEST OF ENGLAND.—LARGE TOWN.—Well-established PRACTICE, producing nearly £900 p.a., including panel of over 1,300. Suitable house, in excellent position. Price £700, or can be rented at £60 p.a. Premium £1,450. Good scope for increase.

4. SOUTH-WEST OF ENGLAND.—FAVOURITE COAST TOWN.—Old-established good middle class non-dispensing PRACTICE, averaging £2,100 p.a. Selected panel of 700. Very good appointments worth about £400 p.a. Fees 5/- to 21/-. Midwifery from 5 gns. About 10 cases yearly. House contains 2 reception, 4 bedrooms, etc., waiting, and consulting rooms. Freehold can be bought, or other suitable houses available. Good hospital in the town, and excellent scope for surgery, particularly if successor holds a Fellowship. Premium 2 years' purchase.

5. ESSEX.—COAST TOWN.—Increasing PRACTICE, situated in good residential district, and producing over £1,000 p.a. including selected panel of 100, and good appts. worth about £210 p.a. Large modern house, with beautiful garden; can be rented or bought. Premium £1,150.

6. LONDON, S.W.—Good middle class PRACTICE, offering considerable scope, and producing for the past 12 months over £670, including panel of nearly 400. Fees from 2/6. Midwifery 3 gns. (about 30 cases yearly). Suitable house, with dining room, consulting room, and dispensary, 3 bedrooms, sitting room, etc. Price for leasehold (94 years to run) £1,200, part on mortgage. Premium £1,050.

7. MIDLANDS.—PARTNERSHIP.—A one-third share is offered in a very sound middle and working-class Practice, held by the senior partner for 35 years. Average gross cash receipts for the past three years nearly £3,000. Panel of over 1,600. Fees 3/6 to 21/-. Midwifery from 3 gns. (about 60 cases). Suitable house available on rental, with 2 reception, 3 bedrooms, etc. Small garden. Garage. Sport of all kinds, and very good schools within reach. Prem. 2 years' pur.

8. NORTH OF ENGLAND.—FAVOURITE COAST TOWN.—Old-established middle and upper class non-panel PRACTICE, averaging for the past three years nearly £5,000. Fees from 5/- to 21/-. Very suitable for two friends in partnership, one holding the F.R.C.S., as there is excellent surgical scope. Two good houses available, with ample accommodation, either on rental, or by purchase.

9. MID-WALES.—Agricultural District.—Mixed class PRACTICE, producing about £880 p.a., including small panel of 130. Fees 3/6 to 21/-. Small house, with 2 reception, 3 bedrooms, etc. Price £550. Fishing, shooting, and other sport. Premium 1 year's purchase.

10. WEST OF ENGLAND.—Old-established general PRACTICE, situated in exceptionally nice neighbourhood, with good sporting and social facilities. Income averages about £1,000 p.a., with small panel of 400. Fees from 3/6 to 1½ gns. Particularly good house, with beautiful garden, and containing 2 reception, 7 bedrooms, etc. Price for freehold £2,000, part on mortgage. Excellent surgical prospects. Premium 1½ years' purchase.

11. WOMAN DOCTOR'S PRACTICE.—YORKS.—LARGE TOWN.—Established eight years, easily worked, and producing nearly £700 p.a. Panel of 500. Fees 5/- to 7/6. Midwifery 3 to 5 gns. Compact house, with 2 sitting, 2 bedrooms, 4 attics, etc. Garden. Garage. Rent on lease £42 10s. p.a. Prem. 1½ years' purchase, or near offer.

12. SOUTH OF ENGLAND.—Favourite Coast Town.—NURSING HOME, with small private Practice combined, the latter offering very good scope for development. Total receipts last year about £600. Very nice detached house, with excellent accommodation, very well appointed. Price for leasehold (87 years to run) £2,100, or can be rented at £140 p.a. Premium for goodwill, to include handsome furniture, fittings, etc., £1,250.

13. MIDLANDS.—COUNTRY TOWN.—PARTNERSHIP.—A one-fourth share is offered in an exceptionally sound good mixed-class Practice, averaging over £6,000 p.a., including panel of 3400. Lowest fee 4/-. Very little midwifery. If single, purchaser can live in comfortable rooms, otherwise choice of houses for sale or on rental. Premium 2 years' purchase.

14. NORTH OF ENGLAND.—GOOD TOWN.—A one-third share is offered in a very sound Practice, averaging about £5,000 p.a. Ingoing Partner must be well qualified and not over 35, and interested in medicine. Suitable house available. Premium 2 years' purchase.

15. CHESHIRE.—NEAR COAST.—Old-established middle and working class PRACTICE, averaging for the past three years over £1,300. Panel of 550. Fees from 3/6. Good house, with 3 reception, 7 bed rooms, etc. Price for freehold £1,200, part on mortgage. Premium 2 years' purchase.

16. WITHIN TEN MILES OF LONDON. — PARTNERSHIP. — The third share of an old-established good middle and working class Practice is for disposal, offering excellent future prospects. Cash receipts last year amounted to nearly £2,700, including panel of nearly 1,500. Suitable house available at moderate price. Premium £1,800.

17. WITHIN FOUR MILES OF THE BANK.—Old established working-class PRACTICE, producing for the last 12 months £2,300, including panel of over 2,800. Appts. worth about £160. Visits from 2 d. Low expenses. Suitable house can be rented or bought. Surgery premises on rental. Premium £4,000 cash.

18. NORTH-WEST COAST.—SURGICAL PARTNERSHIP.—In a popular residential seaside resort the half share of middle and upper-class Practice is offered to a suitable gentleman possessing the F.R.C.S., as the retiring partner does the surgical work, the remaining partner the medical side. Receipts average nearly £5,000 p.a. Very good modern house, recently built, with ample accommodation, good garden, tennis court, etc. Rent on lease £240, or can be purchased. Premium 2 years' purchase.

19. SOUTH AFRICA.—Within 100 miles of East London.—Increasing PRACTICE, in very pretty Township near sea coast, producing last financial year £1,066. Practically all fees cash. Climate excellent. No night work and little or no visiting. Living cheap. Buraalow residence in 3/4 acre of productive garden. Premium for Practice and house £1,155. Sport of all kinds.

20. BORDERS OF BERKS AND HANTS.—In a delightful sporting agricultural district, within reach of market town, an old established mixed-class PRACTICE averaging about £850 p.a., including panel over 400. Visits 5/- to 10/6, medicine extra. House containing 2 sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. Let £50 p.a. on lease. Premium £1,100.

21. DEVON.—PARTNERSHIP.—Half share of very old-established and well-disposed Country Practice, offering scope, and situated in pretty village within reach of large town. Cash receipts last year £2,2... including appts. and panel of 880. Visits 5/6 to 21/-, medicine extra. House contains 2 reception, 4 bedrooms, bathroom, etc. Large garden. Garage. Rent £30 p.a. Premium £2,000. Hunting, shooting, fishing, etc.

22. NORTH DEVON & CORNWALL BORDERS.—Very old established well-opposed Country PRACTICE, in beautiful district near coast. Cash receipts average just over £1,100 p.a., including appt. and panel of 330. Suitable house available. Premium £1,600, to include drugs, etc. Hunting, golf, fishing, etc.

23. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Very old established middle and upper-class PRACTICE. Cash receipts average nearly £1,750 p.a., including panel of 500. Visits 5/6 to 21/-. Very little midwifery. House, including consulting room, waiting room, and dispensary, in well-situated part of town. Price, freehold, £1,500.

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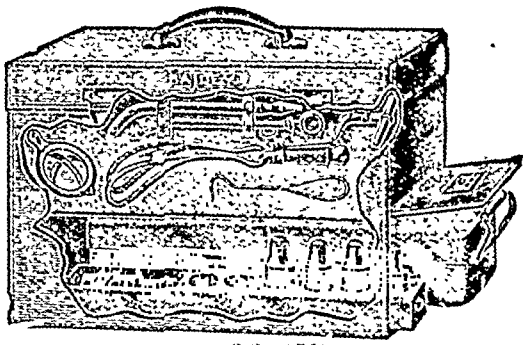
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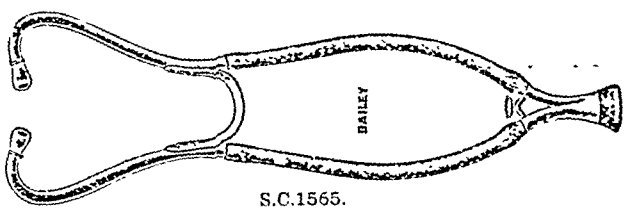
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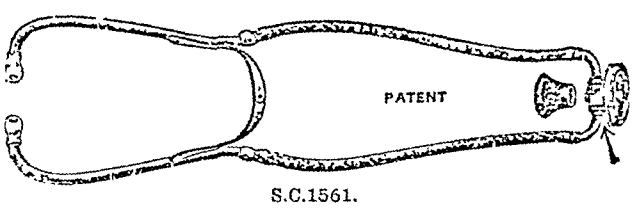
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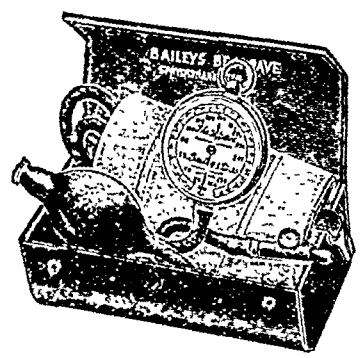
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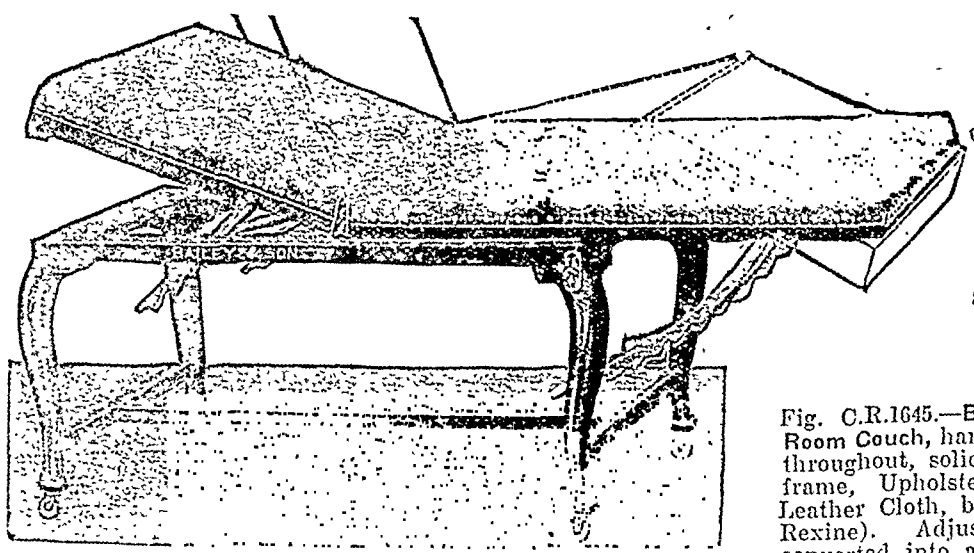
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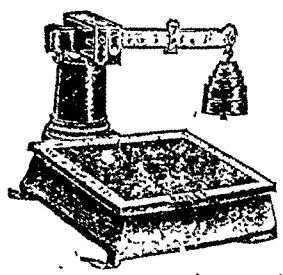
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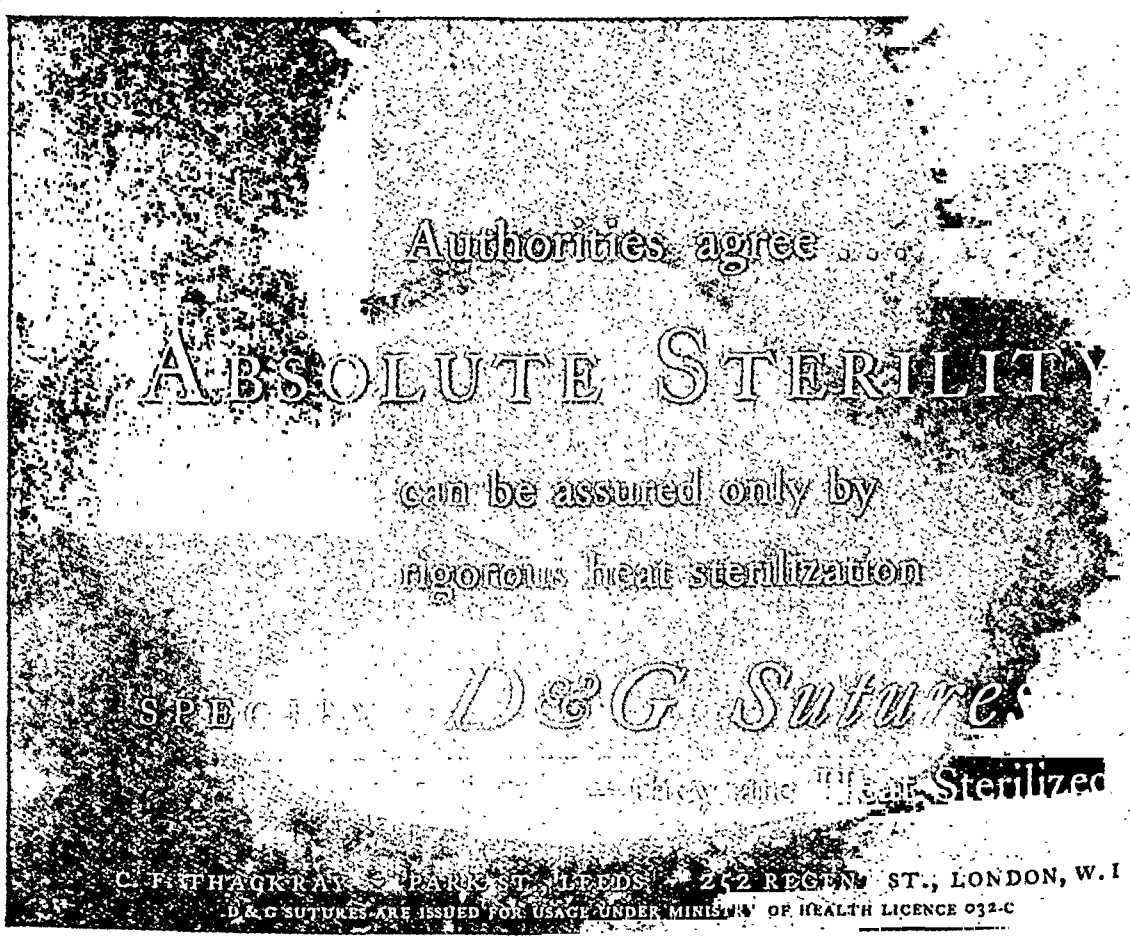
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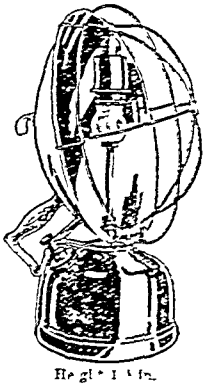
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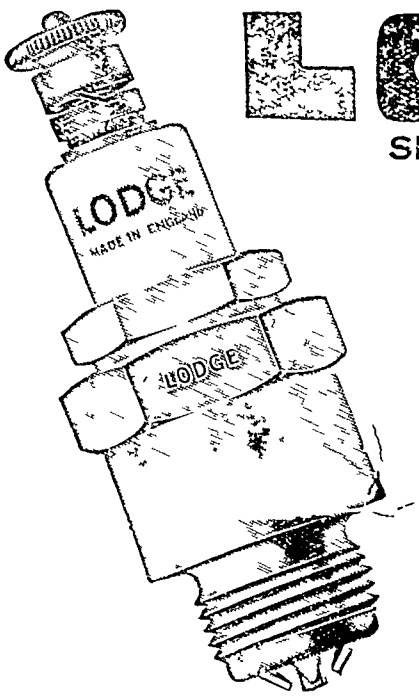
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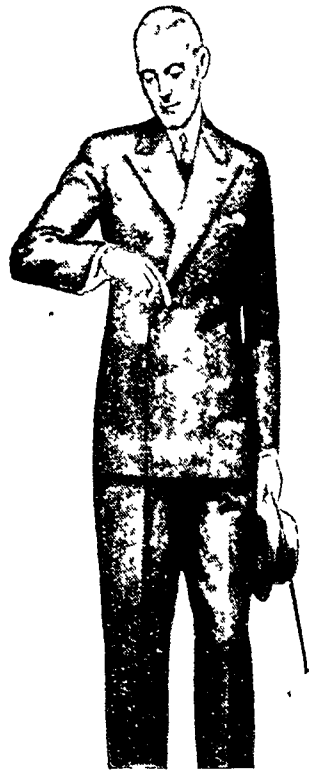


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THE issue of the *British Medical Journal*, dated December 5th, 1931, will be the half-yearly Special Number. Its contents will include the full text of the Mitchell Banks Memorial Lecture on the "Problem of the Stiff Joint"; articles on the forthcoming Centenary Meeting of the British Medical Association; and the first of a series of historical notes on the work and progress of the Association from its foundation in 1832 up to the present time. The illustrations accompanying four of the original articles in that issue will be reproduced on a special photogravure supplement.

Many firms offering products or services for the professional and personal needs of medical men and women in all branches of practice will co-operate on this occasion by the insertion of special announcements in the advertisement pages. It is perhaps unnecessary to remind the majority of readers that the advertisement pages of the *British Medical Journal* constitute a forum where information regarding the latest and best accessories to medical practice may always be found, and that careful study of these announcements is profitable as well as instructive.

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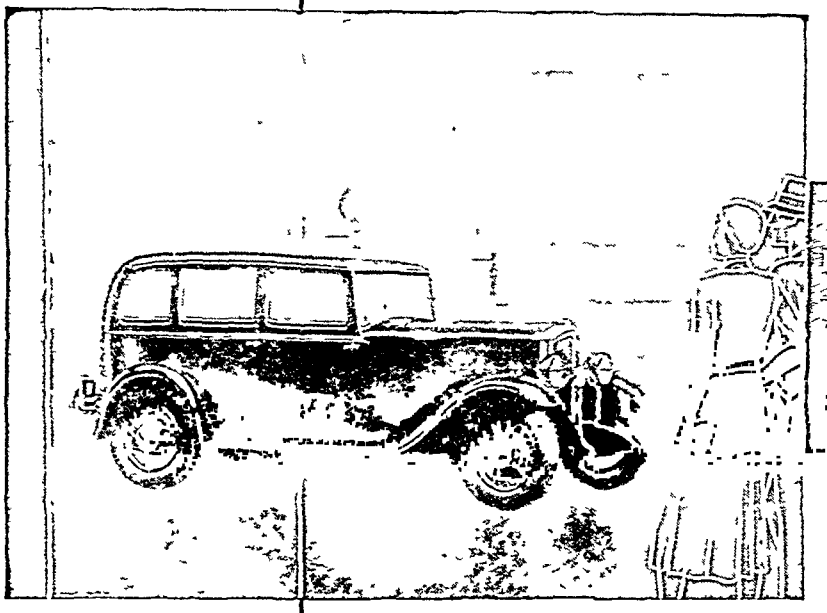
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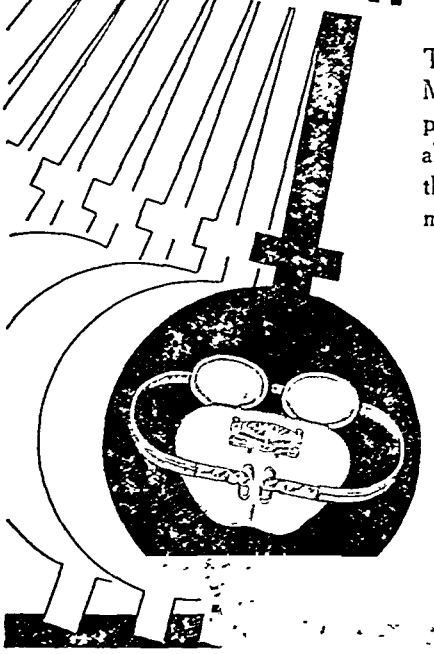
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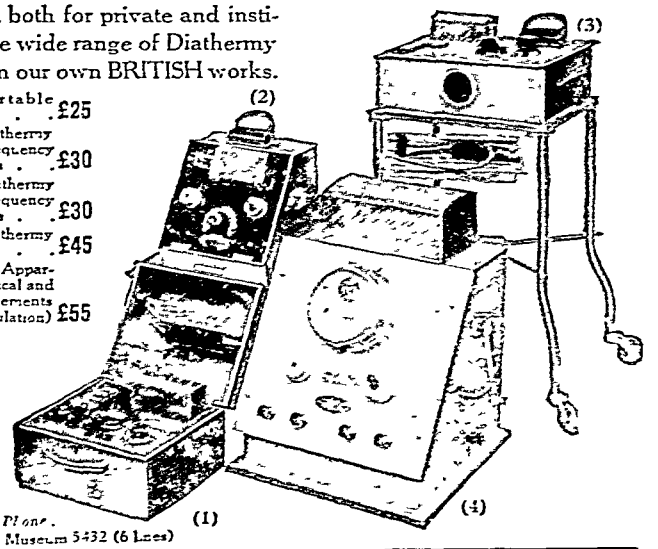
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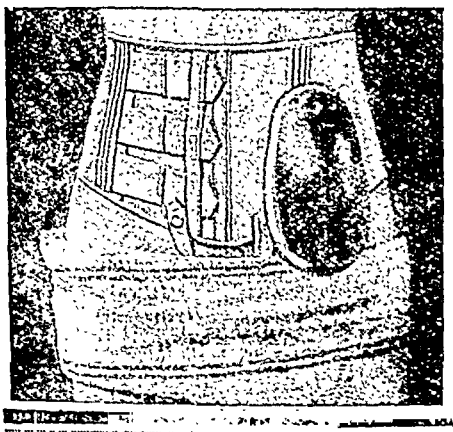
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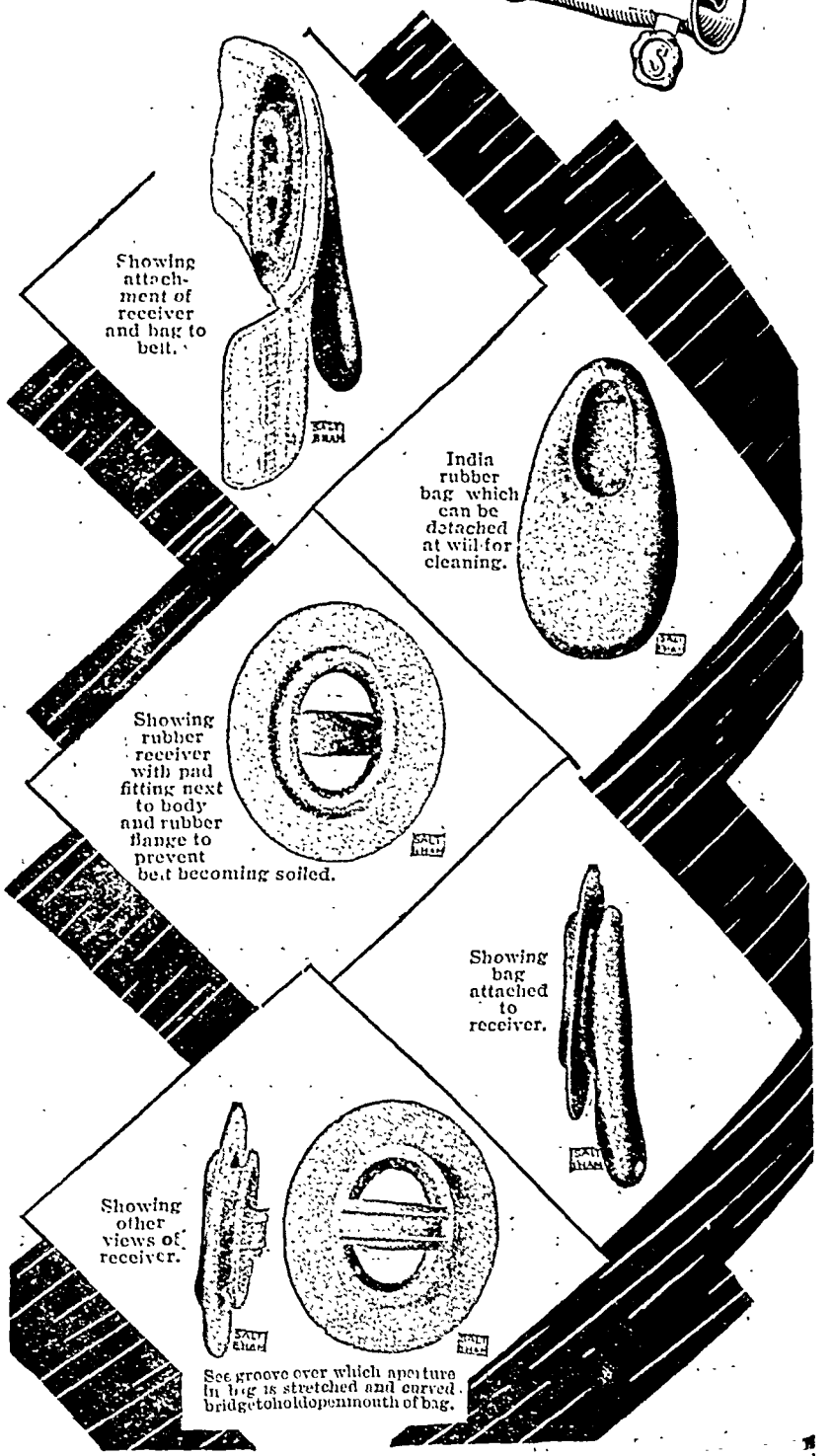
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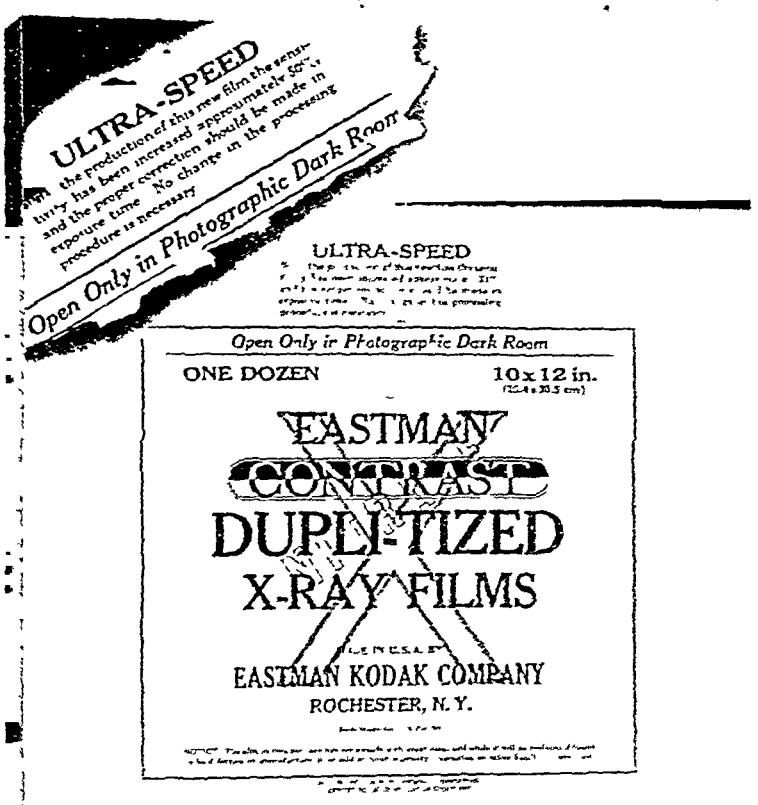


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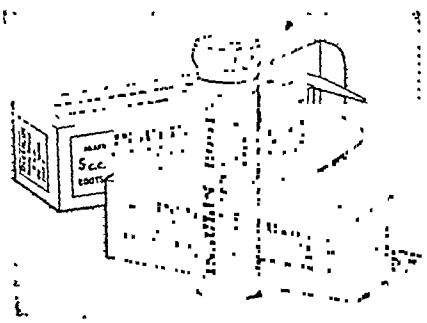
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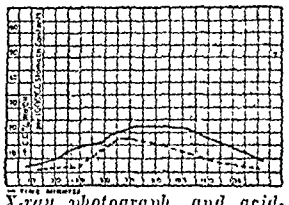
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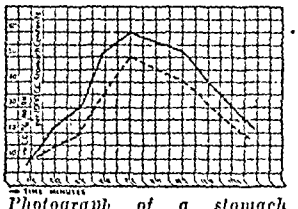
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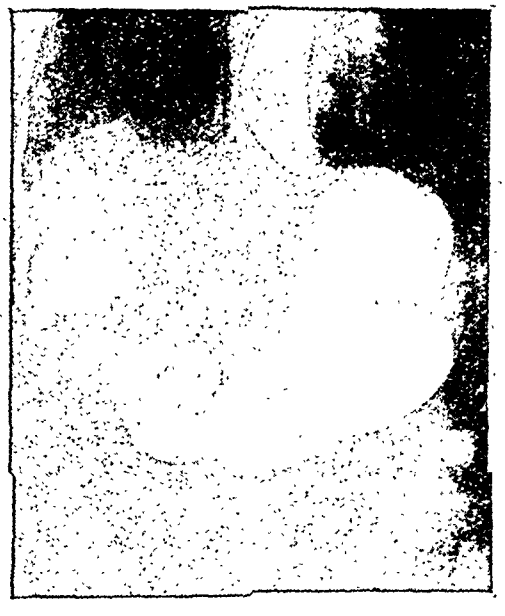
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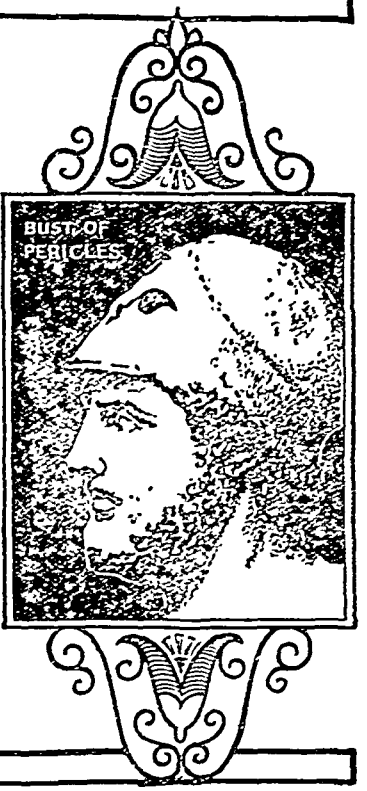
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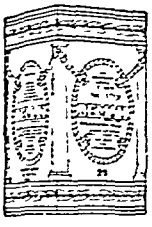
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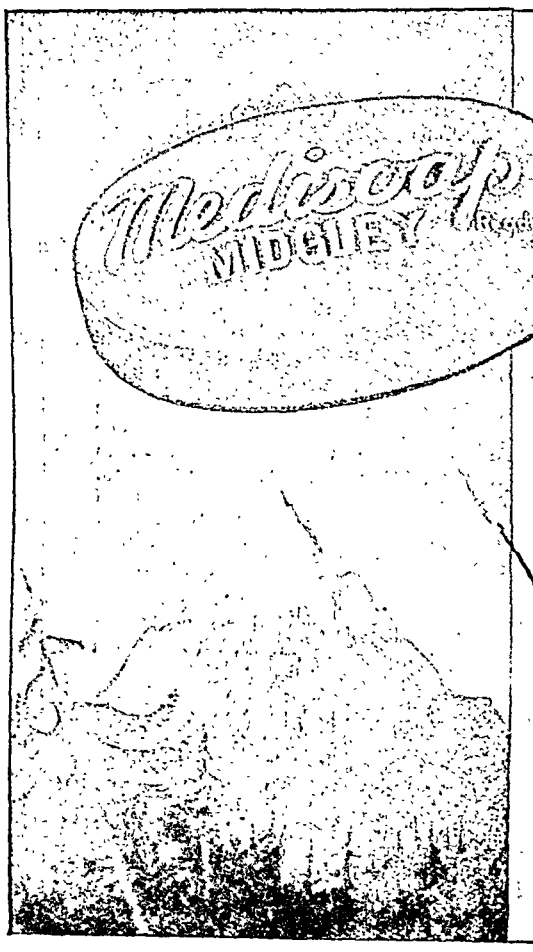


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JB 94



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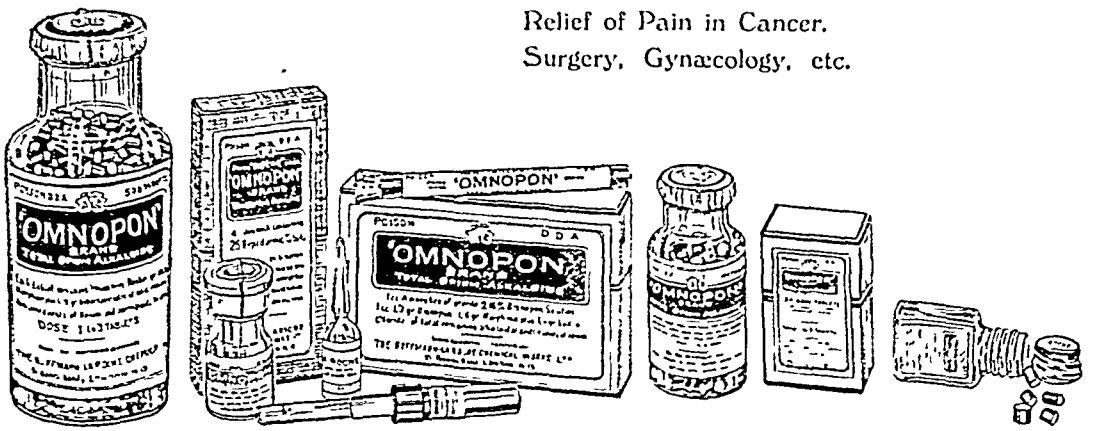
For further particulars see 'Prescriber's Index,' sent on request.

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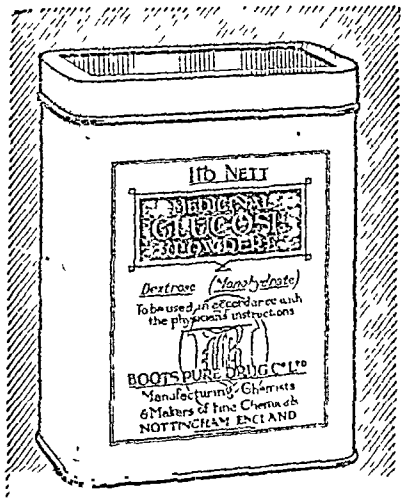
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Typical Case.

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VITAMINS A, B, C & D.

is a trustworthy supplementary source of vitamin C

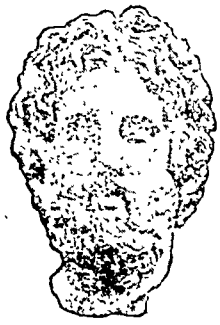
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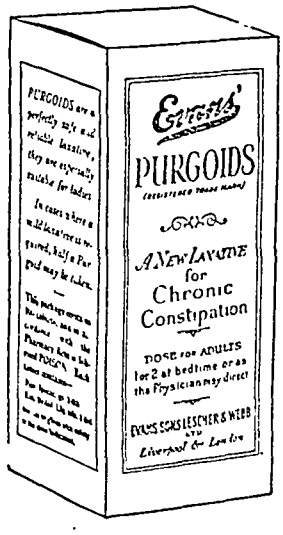


(*Æsculapius*).

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PURGOIDS owe their unique laxative action to the correct balance of the formula which consists of Aloin, Phenolphthalein, Ipecacuanha, Belladonna, etc.

They promote peristalsis without causing griping or depression and they exert a distinct cathartic effect by increasing intestinal secretion.



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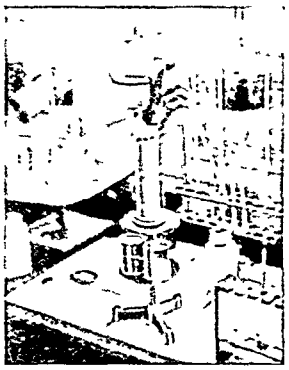
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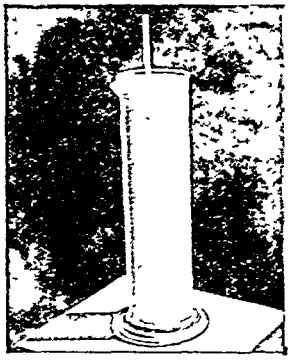
A general survey of milk testing done in the laboratory at Slough. Every batch of milk is tested for purity and richness before it leaves the producer, and then re-tested more strictly than ever by the Horlick experts. Three of the tests as shown below, are carried out, not once, but 3 or 4 times after arrival.

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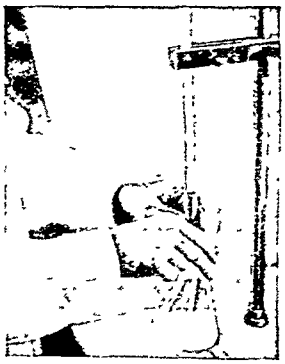
Determining the amount of fat present in the milk. The fat content of milk used in Horlick's Malted Milk is well above Government standards

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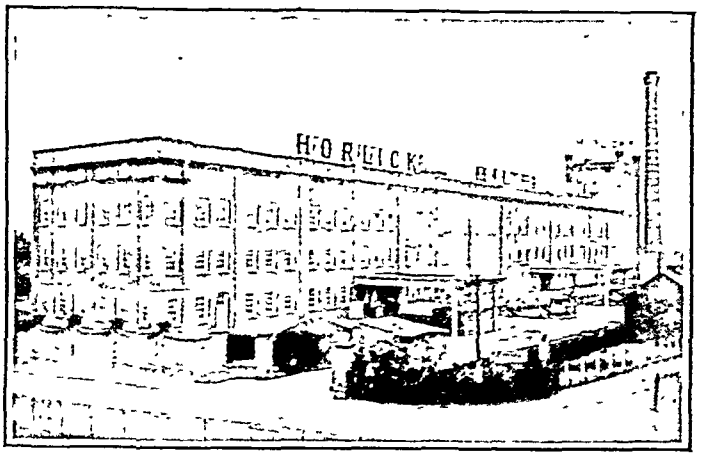
A lactometer floating in a sample of milk. On it is registered specific gravity, from which can be calculated the amount of solids present

★



Testing for acidity. A measured quantity of milk is put into a glass vessel and neutralized with a standard chemical solution. This indicates the freshness of the milk and its suitability for use. If milk is too acid it cannot be heated or used for Horlick's

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HORLICK'S was originated half a century ago by an Englishman, Sir James Horlick, Bart., and year by year it has won ever-increasing popularity, until to-day it is confidently recommended by the medical profession all over the world.

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Cows fed on the richest pasture lands of England produce the fresh full-cream milk from which Horlick's is made. Barley from the eastern counties—malted at Horlick's own Maltings in Norfolk—and home-milled British wheat only are used in its manufacture.

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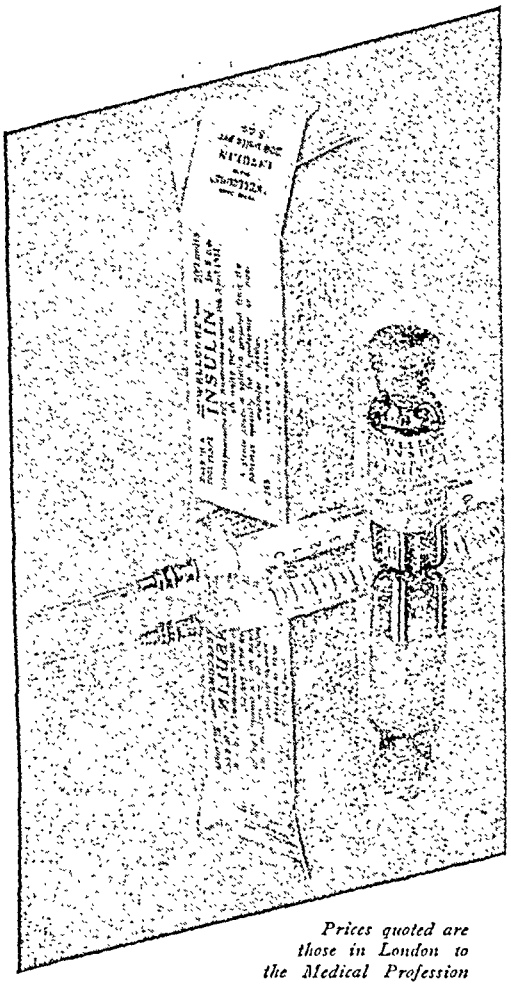
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INSULIN

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5 *c.c. phials*, 2/- *each*
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80 UNITS PER C.C.
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Date: A.D. c. 650–c. 750

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Observations
ON
OPHTHALMIA NEONATORUM*
BY
M S MAYOU, F R C S
SENIOR SURGEON CENTRAL LONDON OPHTHALMIC HOSPITAL

In this subject my experience has been gained entirely within the London area I shall therefore confine my remarks to my observations there and to the work carried out at St Margaret's Hospital, a special institution set apart by the London County Council for the treatment of ophthalmia neonatorum

LONDON COUNTY COUNCIL

Year	Notifications of Ophthalmia Neonatorum for London	Numbers Admitted to St Margaret's Hospital	Children Discharged Blind from Poor Law Institutions Maternity Hospitals	Blindness Due to Ophthalmia Neonatorum	
				Year of Birth	Children Admitted to L C C Blind Schools
1914	750	—	—	1914	1
1915	773	—	—	1915	5
1916	641	—	—	1916	6
1917	613	—	—	1917	6
1918		98 (from Sept)	—	1918	4
1919	870	241	4	1919	6
1920	1 183	223	4	1920	5
1921	1 076	213	4	1921	6*
1922	817	213	0	1922	3
1923	796	225	0	1923	2
1924	724	179	1	1924	1
1925	760	187	0	1925	2*
1926	705	193	0		
1927	819	211	0		
1928	733	204	0		
1929	723	224	1		
1930	617	156	1		

* Included by Error

The number of cases notified in London has not diminished during the last fifteen years There was a considerable increase after the war, with a corresponding increase of patients seeking admission to St Margaret's Hospital The number of admissions of recent years has become a fairly constant factor The most striking point in the statistics is the amount of blindness, which has decreased by more than half as St Margaret's Hospital has become known and utilized

There are at present 218 children under 18 years of age on the roll of the L C C blind schools, of these, 45, a percentage of 20 6, are blind from ophthalmia neonatorum Although this is an enormous improvement on old statistics of blind institutions, it is probably still unduly high I believe that further improvement is possible by the proper teaching and training of midwives and medical students At the present time midwives receive a far better education on the subject than the medical student Classes are given at St Margaret's to midwives from Queen Charlotte's Hospital, the L C C, and other bodies The medical student receives no education in the subject, and probably never sees a case during his training I hope that this meeting will pass some sort of resolution which can be sent to the General Medical Council, drawing its attention to this fact as was done some years ago by the Council of British Ophthalmologists

The Eyes at Birth

When a child is born the eyelids are tightly closed, the skin being thrown into numerous wrinkles and covered with a fatty material The margins of the lids are usually in contact with each other, but occasionally the upper lid is found overlapping the lower As compared with the adult, the length of the palpebral aperture is small in comparison with the size of the conjunctival sac The lining membrane is thrown into numerous folds in the fornices and over the surface of the globe The margins of the lids are covered with fatty secretion from the Meibomian glands and with epithelial debris I have often found the Meibomian secretion containing the xerosis bacillus on the third day, and it is almost constantly present soon after birth It is probably derived from the vagina, and is almost certainly identical with the pseudo-diphtheritic bacillus found there No doubt the greasy secretion of the lid margins helps to prevent the infected vaginal discharge getting into the conjunctival sac, but probably more important is the rapid passage of the foetus through the vagina In one instance, in a case of twins, the first child was infected, whereas the second child escaped It is also possible that in this case the stretching of the perineum by the first child may have saved the second one

The epithelium of the ocular conjunctiva is not so thick as that of the adult but next to the epithelium covering the tarsus it is the thickest part of the epithelium of the conjunctiva at birth In the fornices at the bottom of the folds, the cells show signs of mucoid change to such an extent that the basement membrane is completely bare in places, and it would allow a ready entrance of organisms to the sub-conjunctival tissues The corneal epithelium is only about three cells in thickness, but to compensate for this there is a greater thickness of the substantia propria, in comparison both with the thickness of the sclera and with that of the adult cornea, this no doubt allows a freer circulation of lymph between the lamellae The conjunctiva and the corneal epithelium in the infant, therefore, do not offer the same resistance to infection as in the adult

At birth there is no lymphoid tissue in the conjunctiva After the first few days the lymphoid cells begin to appear generally around the vessels of the superficial layers in the superior fornices These cells gradually increase up to the fourth week of life, when the lymphoid layer seems to be fully formed The rapidity with which it forms depends on the amount of irritation the conjunctiva receives, thus, if nitrate of silver be applied at birth, the lymphoid cells appear in large numbers in forty eight hours

Histology of the Conjunctiva in Ophthalmia Neonatorum

The following observations were made on three cases of ophthalmia neonatorum They were all extremely severe cases, one had ended in complete destruction of both eyes, and the other two of one eye each The tissue was removed from the lower fornix in two of the cases, and from the upper fornix in one during the third week of the disease.

The epithelium on the surface is somewhat irregular in thickness, and is desquamating, some of the superficial cells containing the gonococcus The conjunctiva becomes papillated in consequence of the swelling beneath This is best seen in sections cut parallel to the surface, when papillae containing numerous blood vessels, and completely surrounded by epithelium, are observed The epithelial cells show evidence of mitosis, and are much separated from each other, chiefly, no doubt, by the passage through them of enormous numbers of polynuclear leucocytes, since the conjunctival sac often becomes filled with pus in less than five minutes after cleansing Between the epithelial cells are found numbers of mononuclear and polynuclear leucocytes The gonococci are found adherent to the cells With regard to the sub-epithelial tissue, there is an extensive exudation into the superficial layer of the connective tissue, the vessels in the deeper layer of connective tissue are dilated, and in and around the papillae there are quantities of small vessels of new formation with proliferating endothelium, these vessels contain large numbers of poly-

* Made in opening a discussion in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, July 1931

nuclear leucocytes, and show many beautiful examples of diapedesis. The connective-tissue cells of the superficial layer are found to be proliferating, but not to any marked extent. The cells in the deeper layer of connective tissue show practically no changes.

The cells of the exudation (polynuclear leucocytes), although they are found in large numbers in the sub-epithelial tissue, are not nearly so numerous as the mononuclear cells; their relative proportion becomes increased in the epithelium; in the discharge they make up about 94 per cent. of the cells. Hence it is seen that, although they constitute the greater proportion of the cells of the discharge, they are not seen in such enormous numbers in the sub-epithelial tissue as compared with the mononuclear cells—a fact which can easily be accounted for by their more active amoeboid movements. Mononuclear leucocytes, both large and small, are found in great numbers scattered throughout the exudation, and are seen best in the papillae, which contain little else but these cells, many of which are degenerating. Of great interest is the distribution of the plasma-cells in this disease. They are found in great numbers in the connective tissue beneath the papillae, but where they approach the epithelium they become rapidly broken up, the cells staining more faintly and losing their protoplasm; hence they are practically absent from the papillae, no doubt owing to the presence of the toxin produced by the gonococcus growing in the epithelium.

Bacteriology and Immunity

In St. Margaret's Hospital there have been no unusual organisms to record nor any variation in the usual percentage already described. The gonococcus occurs in between 60 and 65 per cent. of the cases. In the non-gonorrhoeal cases, the streptococcus is the only one of serious importance, in that it causes more severe inflammation than the gonococcus and frequently leads to perforation and panophthalmitis. Staphylococci, the Morax-Axenfeld bacillus, pneumococci, the Koch-Weeks bacillus, the Klebs-Loeffler bacillus, *Bacillus coli*, *Bacillus pyocyaneus*, have all been found. In about 10 per cent. of the cases no organism can be found in the discharge except, perhaps, the xerosis bacillus or the *Staphylococcus albus*. The former is present fairly constantly in all discharges, and the latter is frequently present, especially in association with the gonorrhoeal form.

The question of immunity to the gonococcus is of great interest and requires considerably more study than has been given to it. There seems little doubt that a general immunity to the gonococcus is extremely difficult to produce either clinically as the result of an attack of gonorrhoea, or artificially by vaccines. Patients who have an attack of gonorrhoea are by no means rendered immune to a second attack, or to local infection elsewhere in the body. For instance, a patient who has a gleet can infect his conjunctiva and produce a severe gonorrhoeal ophthalmia. Further, vaccines given in large doses seem to have no effect on ophthalmia neonatorum, although, perhaps, if continued over a long period they produce improvement in some chronic lesions such as iritis. At the same time, ophthalmia neonatorum clears up fairly rapidly and completely under local treatment except in a few instances. I do not think that this is entirely due to the application of antiseptics to the conjunctiva killing the organism, since it is found in large quantities even in the slight sticky discharge at the end of an attack. It may be that these organisms are of much lower virulence than the original organism found in the acute stage of the disease and hence gradually die out, but I think it is more probable that the disease clears up as the result of the local immunity which is produced in the conjunctiva. This question of local immunity has been very little investigated. Personally I think it is intimately bound up with the *monocellular* exudation which takes place after the acute stage of the inflammation begins to subside. The cell with which it is particularly associated is the plasma-cell, which always makes its appearance in enormous numbers as the acute inflammatory symptoms begin to resolve. Plasma-cells are broken up locally by the toxic products which are present at the seat of inflammation. It is possible by the breaking up of these cells that some antibodies may be liberated and so produce the local immunity.

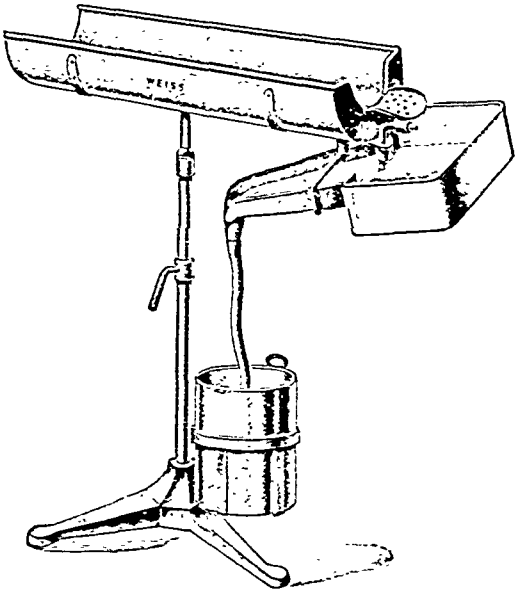
We frequently see very severe attacks of gonorrhoeal ophthalmia in one eye and only a slight discharge in the other eye, yet the organism is found in both. I have also seen an acute recurrence in one eye after an interval of sixteen days, while the other eye was perfectly free from discharge, and yet the epithelial scraping in the sound eye showed the presence of the gonococcus. I suggest that this is due to the local immunity being greater in one eye than in the other. In some cases the local immunity in the conjunctiva is very slow to develop. Although there is nothing which is exactly comparable to gleet in the conjunctiva, we occasionally meet with cases which will not get well in spite of vigorous treatment, there being a little discharge which is full of organisms. We have had several cases in the hospital from three to five months; if sent out too soon these patients are very apt to relapse.

Institutional Treatment

In September, 1918, the Metropolitan Asylums Board opened St. Margaret's Hospital, Leighton Road, Kentish Town, consisting of 60 beds for women and infants, for the treatment of ophthalmia neonatorum. A theatre for the treatment of infants is provided; also a sterilizing room for disinfecting bowls, dressings, and feeding-bottles. There is a room and table for the treatment of mothers with vaginal discharge. A small bacteriological laboratory is attached, as every patient is bacteriologically examined immediately on admission. A day-room is provided where sewing can be done by the mothers when they get up; there are open-air wards for the babies whose mothers are not in hospital. A courtyard and a small garden, which are also very necessary adjuncts, are provided. In an institution of this kind it is essential to have separate lavatory accommodation for the gonorrhoeal and non-gonorrhoeal cases. A relatively large nursing staff is necessary, as the infants constantly want attention, and in addition to having their eyes washed out, they have to be washed, fed, kept clean, weighed, etc. The presence of the mother in the hospital is not such a great help in this respect, as they themselves require treatment; the infant is kept away from the mother in a separate cot except when it is actually being fed, therefore it requires almost the same amount of attention. Roughly, one nurse is needed for every two patients. Cots or cradles are provided for the infants. On the whole, perhaps, cradles are the most satisfactory, as plenty of fresh air is desirable to prevent the spread of infectious disease, and the high sides of the cots are apt to offer too much protection. The infant is always wrapped in a blanket so that it is not exposed when it is moved from its bed to the treatment-room to be irrigated. Hot bottles are usually kept in the cot in the winter time or when the child is ill. Fly-nets to cover the cots are very necessary in the summer. Tapes with the names of the children are fixed round their ankles so as to prevent any possibility of a mistake being made as to their identity.

Only gonorrhoeal cases receive treatment in the treatment-room. Non-gonorrhoeal patients are provided with sets of bowls and undines, and the treatment of these cases is carried out separately. They are as far as possible

nfined to one ward, but frequently this is not prac-
able, and isolation can be carried out in the wards as
ove described without risk of infection. For the irriga-
on and treatment of the infants' eyes a table has been
ade for me by Messrs. Weiss (see Fig.). It is of metal,
d it consists of a solid base with a central rod which can
raised or lowered by hand. The top consists of a trough,
t of which the baby cannot fall, and in one end of the
ough a half-moon-shaped piece is cut out so as to receive
e neck of the infant and prevent the soiling of the
othes from the lotion. Outside this is a curved adjust-
le head-piece on which the baby's head rests during
igation. Beneath the head-piece is a tray to catch the



ion, which is let off into a bucket of lysol fixed to the
nd. These are all easily removed for cleaning pur-
ses. The top of the table is slightly tilted towards the
ad.

Irrigation is carried out from an adjustable stand irriga-
r. Around the jar containing the lotion is a metal jacket,
nich in summer-time is packed with ice for cooling the
tion. A tap is provided to drain off the water from the
cket as the ice melts. A glass nozzle is attached to the
bber tubing from the irrigator. The nozzle is provided
th a ball stopcock, which can be adjusted with one
nd. When the nozzle is not in use it is kept in a solu-
on in a small jar attached to the stand. For the examina-
on of the cornea a focus lamp is adjusted over the face.
rotargol and other solutions are applied by wool mops and
ass rods. Only solutions are kept in undines.

Admission of Patients

The greatest difficulty we have to contend with is in get-
ng the patients into hospital early enough. The com-
onest time at which corneal ulceration occurs is during
e first stage of the disease. Although the law has drawn
e attention of the practitioners and midwives to its im-
ortance, there is often delay in the notification of the
sease to the medical officers of health. When the hospital
as first opened the average age at which the infant was
dmitted was three weeks, but this has since considerably
nproved as the attention of the health department has
en drawn to it, and now midwives are allowed to send
ses direct to the hospital without a medical certificate;
ut there is still too large a proportion of cases admitted
ith corneal ulceration. It is very difficult to make
octors and midwives realize that the mother and infant
can be moved safely by means of an ambulance on the
third or fourth day after the birth of the child; they do not
yet seem to grasp the importance of immediate and efficient
treatment.

Local Treatment

As soon as the patient is admitted to the hospital a
smear preparation is made from the conjunctival dis-
charge and stained with pyronin and methyl green or
thionin blue, and by Gram's method if necessary. It is
usually possible to make a diagnosis therefrom sufficient,
at any rate, to separate the gonorrhoeal from the non-
gonorrhoeal cases. If the gonococcus is found, the patient
is placed in the gonorrhoeal ward. The percentage of
gonorrhoeal cases admitted is a little higher than the general
average of 60 per cent.

In cases of doubt the patient is put in the isolation ward
and a smear preparation is taken on three or four succes-
sive days; cultures are also made, but as a rule the
latter do not afford much assistance in the diagnosis. If
the gonococcus is not found in three smear preparations
made on successive days, the patient is put in the "nega-
tive" ward. In the case of infants without their mothers
it is sometimes impossible to isolate the negative cases,
but the treatment of them can be quite safely carried out
in the ward without fear of infection. I may say here that
the word "gonorrhoea" is never mentioned in the hos-
pital, as it is apt to get the hospital the name of a
"venereal hospital" (which is extremely undesirable, as
it may lead to domestic trouble among the patients); to
get over this difficulty we therefore speak of the cases
as being positive and negative.

There is a special case paper showing the amount of
discharge present, which is recorded daily.

By comparative methods we have come to the conclusion
that eusol (1 in 10) is the best lotion to use, but it must
stand 24 hours after being made. The next best lotion is
one of boric acid and sodium bicarbonate. The lotion
is used every hour when the discharge is large in amount,
every two hours when less, and every three hours when
slight. After a wash out with the lotion the conjunctival
sac is filled with acriflavine (1 in 1,500 of castor oil). We
have found the use of this oil extremely beneficial. It
prevents the sticking of the eyelid margins, and it acts
as a harmless antiseptic constantly present in the conjunc-
tival sac. Our experience of silver applications is that
they seem to be of little value in the early stages of the
disease and inclined to accentuate the symptoms rather
than to improve them, so that they are not used, as a rule,
until the swelling of the eyelids begins to subside. They
are of the greatest value in clearing up the later stages
of the disease. All preparations are rubbed into the con-
junctiva with wool mops. The rubbing assists the removal
of the surface epithelium in which the organism is growing.
Nitrate of silver (10 grains to the ounce), subsequently
neutralized by a salt solution, is most efficient in skilful
hands. Where it is at all doubtful that the solution will
be properly applied, it is far safer to use 10 per cent.
protargol.

I think the use of silver nitrate for prophylactic treat-
ment is strongly to be deprecated, likewise the use of
mercury perchloride lotion. Every year there are ad-
mitted to St. Margaret's Hospital cases in which the cornea
has been damaged by the improper use of these drugs, and
personally I advise the use of acriflavine oil or protargol,
both of which, I think, are efficacious.

External canthotomy is done in the early stages of the
disease when the lids are greatly swollen, or when the
palpebral aperture is so small that the conjunctiva cannot
be properly cleansed. It prevents the retention of the pus
in the conjunctival sac under the pressure of the eyelids
and relieves the tissue tension by a local blood-letting.

Effect of Vaccine on the Disease

We have used ordinary and detoxicated vaccines extensively, and also serum, but I do not think that they have any influence in shortening the ordinary period of the disease. Treatment by milk injection has no effect, and is very dangerous, as the rise of temperature lowers the resistance, and is often associated with the onset of corneal ulceration.

Discharging of Patients

It is very difficult to know when a baby should be discharged from the hospital. Bacteriological examination has shown that the gonococcus can be found in the conjunctiva twenty-eight days after cessation of all the discharge. In our hospital we have had a relapse of the disease twenty-one days after cessation of all discharge, the eyelids during that time being not even sticky (the gonococcus was found in the recurrent discharge). It is obvious from a practical point of view that a child cannot be retained in the hospital for three weeks after the disease has apparently ceased, and it is the usual practice to discharge the patient after he has been totally free from any sign of discharge for a week. As a practical method this works fairly well. Strict injunction is given to the mothers to return if there is any sign of recurrence of the discharge. About 10 per cent. of the patients do so, and in most instances they are re-admitted. The gonococcus can always be found in considerable numbers even if the discharge is slight in amount. The relapse is hardly ever severe, and usually amounts only to stickiness of the lids. Every now and then a case may exhibit symptoms almost as acute as those of the early stages of the primary disease, but differing from it in that it only lasts for a very short time—usually about a week. I have never seen any corneal trouble as the result of recurrent attacks.

General Treatment

The general health of the infants is of the utmost importance, and one cannot emphasize too strongly the great care that is necessary in the feeding and management of them. There is an enormous contrast between the infants who are breast-fed and those who are admitted without their mothers. The infants who are admitted with their mothers, as a rule, do extremely well, and in spite of the constant disturbances due to treatment put on weight steadily. Infants admitted without mothers in most instances do not do nearly so well. This does not seem to be due to any variety of artificial feeding, as all the various dried milks, fresh milk direct from the country, and pep[illegible]ed milk have been tried without result. It is probable attack[illegible] the case of the infants who are nursed by their [illegible]to a sec[illegible]ome protection is afforded them through the breast-[illegible]at in[illegible]. Fo[illegible]here is little doubt that the infants do far better [illegible]others s[illegible]junc[illegible]r than in the summer, and the ophthalmia is [illegible]eeding. [illegible] Fu[illegible]hen. The infants who are admitted without [illegible] the wint[illegible] effect. [illegible]ot so severe [illegible] continue very largely drawn from the lowest class [illegible]heir mothers are [illegible]n som[illegible] frequently illegitimate, or the mothers [illegible]f patients, and are [illegible]ophth[illegible]me into the hospital because they [illegible]ay be unable to c[illegible]letely have a number of other children. [illegible]re obliged to work or [illegible] do not naturely born, and therefore the [illegible], large number are pre[illegible]antiseptic high amongst this class of case. [illegible]eath rate is always very [illegible]is found infants, if present, usually [illegible]ongenital syphilis in your[illegible]ge at may be very detrimental to [illegible]ows no signs, although it [illegible]ms are[illegible]nt, and is, I think, thereby [illegible]e general nutrition of the infa[illegible]found [illegible]tion. Congenital syphilis [illegible] frequent cause of corneal ulcera[illegible]y die these infants. In a series [illegible]oes not seem very prevalent in t[illegible]e clea[illegible]he blood was examined [illegible] twelve successive cases in which t[illegible]oduce Wassermann reaction. [illegible] case was found to have a positi[illegible]ty. [illegible]patients who developed [illegible] the [illegible]

corneal ulceration in the hospital, from clear corne[illegible], h[illegible] had a positive Wassermann. Many of the other cas[illegible] corneal ulceration have also shown a positive reaction.

Affections of the Cornea

The cornea is affected either by becoming hazy o[illegible] ulcerated.

In the early stages corneal haze is probably only d[illegible] to oedema in the corneal epithelium, but when the co[illegible] is very "hazy," especially when it is localized, it is p[illegible]ably the early stages of true infection of the cornea. Th[illegible] cases very frequently break down into corneal ulcers.

Corneal ulcers are of three types:

(a) Those which I call puncture ulcers, in which th[illegible] is a tiny perforation straight through the substance [illegible] the cornea with very little infiltration, which will deve[illegible] and run its course to perforation in twenty-four to forty-eight hours, subsequently leading to a very slight n.b.[illegible] possibly with an anterior polar cataract or adherent iri[illegible] The infection is always gonorrhoeal and the child in g[illegible] health.

(b) A fairly large ulcer with considerable infiltration [illegible] the cornea. In the early stages these may present them[illegible]selves as accumulations of pus beneath the epithelium or [illegible] a breaking-down hazy cornea. They frequently perforate, leading to dense nebulae with an adherent iris.

(c) Sloughing of the whole of the cornea. This ty[illegible] of ulcer is usually associated with marasmic or premat[illegible] children, and generally starts with very dense infiltrat[illegible] of the whole of the cornea, a central portion of wh[illegible] becomes necrotic and breaks down. Extrusion of the l[illegible] through the opening is frequent. It is these cases wh[illegible] lead to a staphylomatous cornea. Extrusion of the l[illegible] can only occur when the ulcer is very large an[illegible] involves the central portion of the cornea. I h[illegible] watched the extrusion in these cases. The umbo of t[illegible] lens presents in the base of the ulcer as the result of t[illegible] child's crying or straining, the lens is delivered thro[illegible] the ulcer, and generally remains attached by a few fib[illegible] of the suspensory ligament, which are then torn thro[illegible] by the closure of the eyelids, and the vitreous can b[illegible] clearly seen presenting in the wound.

In every case I have examined the lens is delivered [illegible] the capsule. In all cases in which the lens has been e[illegible] truded it has been followed by buphthalmos. Thi[illegible] probably due to the vitreous and iris being incorpora[illegible] in the wound and causing complete obliteration of t[illegible] anterior chamber. When there is streptococcal infect[illegible] this type of ulcer frequently leads to panophthalmitis, b[illegible] I have never seen a case of gonorrhoeal perforation go [illegible] to panophthalmitis, even where the lens is extruded a[illegible] the vitreous is presenting in the wound.

After-treatment of Corneal Ulceration

After the patients leave the hospital they are direct[illegible] to attend an ophthalmic hospital. Corneal nebulae, e[illegible] when they are quite dense, often clear very considera[illegible] and I do not advise any operation in the way of an op[illegible] iridectomy until the child is at least six months old, [illegible] it is impossible to say to what extent the corneal re[illegible] will clear. The chief indication for operation is nystagm[illegible] This develops directly the child is able to open his e[illegible] and look round for the light, and it is in these cases th[illegible] early operation is advisable. It is sometimes clear[illegible] in one eye affected by severe nebula when the other [illegible] is clear. My own experience of optical iridectomy, ex[illegible] in a few cases, is that the vision is not very greatly [illegible] proved thereby. On the other hand, in cases of ant[illegible] polar cataract where the cataract practically fills the [illegible]

its contracted condition, or in a small centrally situated bulk, the vision is often improved by a small optical lectomy, and in some instances this may be combined th the division of an adhesion of the iris to the posterior rface of the cornea I do not as a rule advise the iple division of anterior synechiae, as from my own exrience I do not think that they often give rise to much ouble For staphylomatous cornea and buphthalmic es which are protruding between the lid or which are ry unsightly, a Mule's operation is advisable, using a all glass ball, and stitching the sclera together with a rse string suture of silk, a separate stitch being made the conjunctiva If this method is followed, extrusion the ball is extremely rare.

Other Complications

Gonorrhoeal arthritis, although not uncommon in the others, is rare in the babies We have had only one h case in 350 children This child had both ankles l knee joints severely affected and subsequently died of art failure

Rhinitis is a frequent accompaniment of ophthalmia onatorum The gonococcus can be found in the nose en there is a large quantity of discharge, or when there practically none If there is much discharge there are ays immense quantities of other organisms, and I think t the rhinitis is attributable far more to these organ is than to the gonococcus

Purulent mucocele is often mistaken for ophthalmia onatorum In some of these cases the gonococcus has n found in the discharge, although the pneumococcus nore frequent

ME OBSERVATIONS ON THE CONTROL OF MEASLES EPIDEMICS

BY

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e opinion is often expressed that measles epidemics not be controlled The basis for this view seems to that isolation is generally useless because the harm is ually done before the diagnosis is made, and that ool closure is neither practicable nor effective in pressing an epidemic Dr. Forbes, medical officer of lth for Brighton, has recently suggested that the exsion of home contacts attending infected schools might o be abandoned In view of advances which have been de in our knowledge of the epidemiology of measles seems worth while to ask ourselves how far epidemics 'd be modified, if it were so desired, by applying the owledge we now have

n an article[1] entitled "The mechanism of a measles demic," published in April of last year, I expressed the w that "the only hope of really preventing these demics altogether is through the immunity factor," and it "we must hope for either a simple method of culation which will produce a more or less permanent munity, or else a simple method of rendering an attack ortive and harmless, such as the proposed method of culating contacts with their parent's blood, whilst at same time allowing it to produce a permanent immunity." Considerable research has been done recently the experimental production of passive immunity in ldren by the use of human convalescent serum, and this s well summarized in the recent Report of the Medical icer of Health and School Medical Officer on the asles Epidemic of 1929-30 (London County Council, 31), and amplified by Dr. D. N. Nabarro and A. G. Signy in their paper in the *Journal*[2] In their series of 625 children treated with human serum before the fifth day after exposure to measles infection, only twelve developed measles, as compared with an expectation of several hundreds, and all the cases were mild in form The passive immunity produced in this way lasts, we are told, two to four weeks If the serum is injected on the sixth to the ninth day after exposure to infection partial protection is afforded, an attenuated attack resulting, which produces permanent active immunity.

Serum Protection in Relation to Epidemics

Provided that the serum is available, we now have a means, therefore, of protecting all home contacts to measles cases for upwards of a month, or, better still, of rendering them permanently immune by allowing them to have an attenuated attack Moreover, we could, if so desired, suppress an epidemic in any school by treating all unprotected children with convalescent serum, but in this case scarcely any of the treated children would receive anything but a temporary passive immunity, and since an epidemic lasts several months the school would probably be again invaded by measles when this immunity had waned and before the infectiousness had declined to the normal level There are, of course, practical difficulties in the way of any such operations on a large scale—in particular, the difficulty of obtaining sufficient serum and of overcoming prejudice against such a procedure—but it is by no means unlikely that these difficulties may be removed It is not, therefore, merely a matter of academic interest to estimate what effect could be produced on a measles epidemic by giving certain groups of children a passive immunity at a certain phase of the epidemic

The first question to ask is What groups of children should be immunized in order to produce the maximal salutary effect? Some light is thrown upon this by the figures in Table I, which were obtained from an analysis of the card records of measles notifications in the metropolitan borough of Battersea during 1925-28 (This was made possible by the courtesy of the medical officer of health, Dr. G. Quin Lennane.) The table shows the ages of 486 children under 9 years of age who contracted measles from another child in the same house, developing the rash ten to thirteen days later than the first child These I have termed "secondary cases," and the age of the child from whom the disease was contracted, termed the "primary case," is also shown in each instance It is readily seen from the table that the secondary cases are, on the whole, much younger than the primary cases, actually the mean age of the primaries is 5·3 years, and 60 per cent are aged 5 or over, compared with 3·2 years and 17 per cent for the secondaries.

TABLE I

Age of primary case	Ages of secondary Case									Total
	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
0-1	—	—	2	3	1	2	—	—	—	8
1-2	—	2	3	3	3	1	—	—	—	12
2-3	8	9	—	3	6	3	1	—	—	30
3-4	9	17	14	1	4	6	3	1	—	55
4-5	3	26	30	12	2	5	4	3	5	90
5-6	20	37	33	34	23	5	7	3	4	176
6-7	5	15	9	11	15	8	2	1	5	82
7-8	2	4	—	5	1	1	2	—	3	19
8-9	1	1	2	4	—	3	2	—	2	15
Total ...	48	111	93	85	61	34	21	8	19	486

In Fig. 1 the contrast is shown more clearly, and it is evident that the chief culprits in taking home infection to their brothers and sisters are the 5-year-olds. At the foot of the diagram is shown the age distribution of the 176 children who contracted measles at home from these

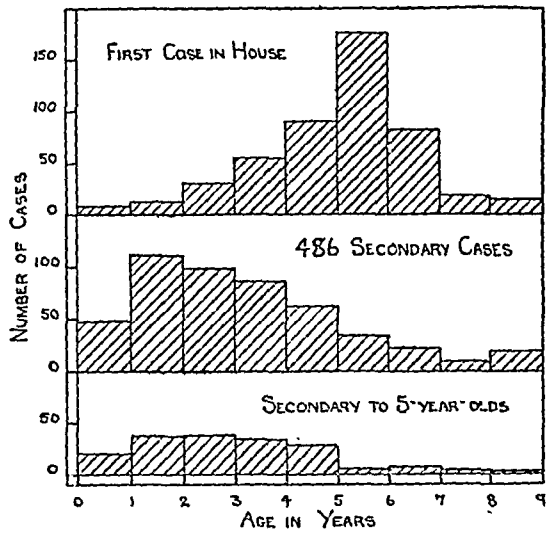


Fig. 1.—Age distribution of primary and secondary measles cases in households in Battersea, 1925-28.

5-year-olds; 137 of them, or more than three-quarters, were of ages 1, 2, 3, or 4 years. In the present paper I shall only attempt to estimate the effect of producing temporary passive immunity by means of convalescent serum or parent's serum, in two groups of children who have never had measles—(1) all home contacts to measles cases, (2) all 5-year-old children—these being the most obvious groups to deal with in any attempt to modify an epidemic.

Effect of Immunizing Home Contacts

In Fig. 2 is shown the mean curve of measles incidence in Battersea, obtained by tabulating the numbers of notified cases in successive periods of ten days in each

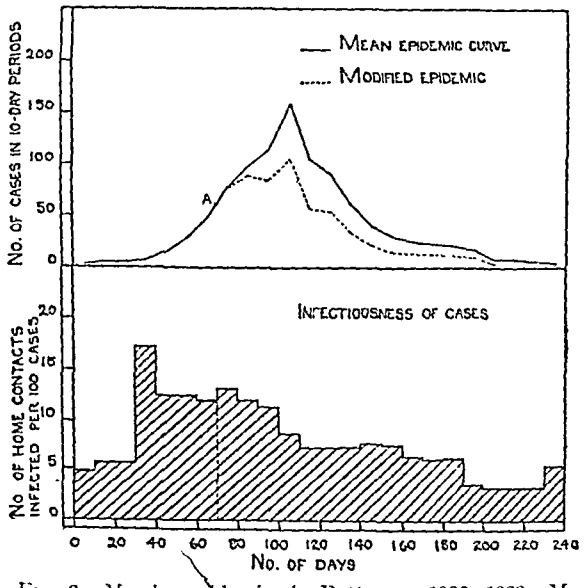


Fig. 2.—Measles epidemics in Battersea, 1926, 1928. Mean trend of incidence and infectiousness in nine districts.

of the nine wards of the borough and in two epidemics of 1926 and 1928. The eighteen small epidemics, averaging about 500 cases in each, were then made synchronous by bringing all the "peaks" of the curves, or periods of ten days having the maximum incidence, together, and then summing the cases in corresponding periods as measured forwards and backwards from the peak period. As I have shown from St. Pancras data,[3] measles epidemics move across the map, each district producing its epidemic curve of similar form and duration, but starting at different times as determined by a sudden upset in the balance between infectiousness and immunity factors; hence to obtain a typical curve it is necessary to proceed in this way. The curve in Fig. 2 is compiled from 8,649 cases, and the frequencies reduced to a total of 1,000 cases in 240 days—(namely, the peak period of ten days, ten periods preceding and thirteen periods succeeding it). In the lower portion is shown the ratio of the number of secondary cases which follow ten to thirteen days later in the same houses to the total incidence of cases, this being a measure of the "apparent infectiousness"[4] of the disease at the time of infection. This shows that a sudden rise in apparent infectiousness takes place at the very start of the epidemic, and it then gradually falls to a low value by the end of the epidemic. The details of total incidence and secondary cases are given in the first few columns of Table II, and in the fifth column is shown the incidence reduced to a total of 1,000.

Supposing that in a district where a measles epidemic of 1,000 cases is to be expected from previous experience,

Table II

Periods of Ten Days		Total Incidence	No. of Secondary Cases to these	Ratio per cent.	Incidence in Epidemic of 1,000	No. Aged 5	Expected Result of Immunizing all 5-years-old		
							No. Suppressed		Persons Infected
							Aged 5	Others	
Before peak period	10	19	—	—	2	—	—	—	2
	9	45	4	5.6	5	1	—	—	5
	8	44	1		5	1	—	—	5
	7	58	10	17.3	7	2	—	—	7
	6	142	31	12.5	16	4	—	—	16
	5	249	18		29	6	—	—	29
	4	410	49	12.0	48	11	—	—	48
	3	663	87	13.1	77	17	—	—	77
	2	828	99	12.0	95	21	7	—	89
	1	977	111	11.4	113	25	25	5	83
Maximum		1,337	119	8.7	158	35	33	52	135
After peak period	1	900	79	7.2	104	23	12	35	57
	2	777	42		90	20	1	36	53
	3	520	38	7.3	60	13	—	26	34
	4	349	27	7.7	40	9	—	18	22
	5	262	20	7.6	30	7	—	14	16
	6	223	14	6.3	26	6	—	12	14
	7	202	12	6.0	24	5	—	11	13
	8	196	12	6.1	22	5	—	10	12
	9	166	6	3.6	19	4	—	9	10
	10	78	1	3.3	9	2	—	5	4
	11	76	4		9	2	—	5	4
	12	55	2		6	1	—	4	2
	13	43	—		5	1	—	3	2
Totals...		8,649	785	9.1	1,000	221	78	215	727

as soon as the incidence has risen to 50 cases in ten days that is at point A, about the seventieth day on the time scale in Fig. 2, every home contact who has never had measles is immunized within five days from appearance of the rash in the primary case, and that this is continued until the epidemic is over, what would be the effect? Every secondary case below the dotted line in Table II would be suppressed, a total of 673 cases in 3

total epidemic of 8,649, or 78 cases in a total epidemic of 1,000. The "secondary" cases as here defined would be accompanied by about half as many others with incubation periods of fourteen to eighteen days[4] who would also escape, making 117 in all. Owing to the practice of keeping contacts at home during the infective period it may be assumed that they would not have infected other children outside their own houses, and hence the total effect would be limited to reducing the epidemic from 1,000 to 883. A few of the 117 children might contract measles from outside sources before the epidemic was over, owing to the rapid loss of their temporary passive immunity, but the vast majority of them would escape for another two years (in London), and would have the advantage of being then subject to less danger of mortality owing to their greater age. Thus the fatality rate in St. Pancras was shown to fall from 7 at age 1 year to 1.2 at 3 years, and from 2.9 at 2 years to 0.6 at 4 years of age. If the immunization were carried out on the seventh day after the rash appeared in the primary case instead of earlier, these 117 children would have attenuated attacks and become permanently immune, a much more satisfactory result under ordinary circumstances. We may roughly estimate how many home contacts would have to be immunized by serum in order to produce this salutary result on 117 children as follows. From St. Pancras data of the 1926 epidemic 80 per cent. of children under 7 who had not previously had measles, and who were living in houses where at least one case occurred, were attacked, including both the primary and the secondary cases. In an epidemic totalling 1,000 cases, from Table II, 91 × 1.5, or 136, would be secondary cases after ten to eighteen days' interval, and 864 would be first cases in houses. The number of children under 7 at risk before the epidemic, assuming the St. Pancras figures to apply to Battersea, would be 950/.8 = 1,188, and deducting those of the 864 primary cases who were under 7, estimated at 821, there would be 367 home contacts under 7 years of age who had not had measles, of whom 129 would be expected to contract the disease immediately. In our district producing an epidemic of 1,000 cases the number of home contacts to be immunized after the point A in Fig. 2 would be therefore about 350, and the total result of this work would be either to delay or to attenuate the attack in one-third of them.

Effect of Immunizing All 5-year-old Children

Let us now suppose that at point A on the curve in Fig. 2, that is when the incidence in ten days has exceeded 5 per cent. of the total size of the epidemic expected from previous experience, all the 5-year-old children who have not had measles are immunized. It is known that the passive immunity produced falls to a level which is ineffective in stopping an attack after two to four weeks—that is to say, in some children it will have fallen to this level in two weeks and in others not until four weeks have elapsed. The rate of fall of artificially produced immunity to various organisms has been experimentally studied in a few instances, and it seems reasonable to infer that the fall in passive immunity begins at once, and takes place at a uniform rate.

Herrman[5] found that after the second month of age the percentages of children (of mothers who had at some time had measles) who exhibited immunity to measles infection were in successive months of age as follows: 95, 90, 75, 55, 34, 12, 5. These figures indicate, it is believed, the loss of passive immunity derived in the first instance by the infant through the placental circulation, and it is to be expected that passive immunity artificially produced by serum injections will be lost in a similar manner—that is to say, by almost equal decrements in equal units of time, as in the diagram (Fig. 3).

In this diagram the amount of passive immunity is represented on a vertical scale, being zero at O, sufficient at B to render an attack mild, and at C just sufficient to suppress it altogether. Under normal conditions there can be few, if any, children with sufficient inherent passive immunity to suppress an attack of measles completely, but since many mild attacks occur, it is no doubt present in some children to an extent exceeding OB, though not to an extent approaching OC, as represented in the left-hand side of the diagram. Injection of convalescent serum at point A must raise the level in all the children well above the C level, but not to the same height in all, and it may be assumed that the subsequent behaviour of

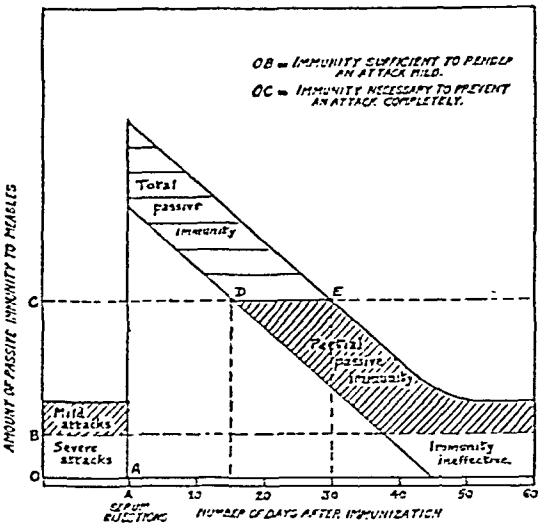


Fig. 3.—Diagrammatic representation of the probable effect of treating a group of children with measles convalescent serum.

a large group of children simultaneously immunized at A will be represented by the shaded band. During the first fifteen days all will be totally immune to infection; between fifteen and thirty days an increasing number will lose their total immunity and have only a partial immunity leading to attenuated or mild attacks if infected during this period; from thirty to about forty days all of them will have this partial immunity, but after about fifty days they will have returned to the original distribution.

The effect of immunizing the 5-year-olds at A on the epidemic curve of Fig. 2 can now be estimated, and is shown in Table II and by the dotted line in Fig. 2. The assumptions made for simplicity are that the incubation period is ten to fifteen days; that infections received more than nine days before serum treatment at A would be unaffected by it; that infections received six to nine days before A would result in mild attacks, and those received in the period from five days before A to fifteen days after A would all be suppressed; that infections received at any point after fifteen days would be suppressed or attenuated in the proportions indicated on a vertical line erected in Fig. 3 at that point of time. Thus infections received between fifteen and twenty days on the time scale would result in complete suppression in about 80 per cent., and attenuation in 20 per cent., and these deductions must be made from the cases which would have arisen in the undisturbed epidemic ten to fifteen days later—namely, between twenty-five and thirty-five days after serum treatment. Proceeding

in this way, the numbers of 5-year-olds saved from measles attack would, as shown in Table II, amount to 78 out of a total of 221. In addition, about 35 would have mild attacks instead of severe attacks.

Assuming that all the "primary" cases really arise by infection from some other primary case ten to fifteen days before, it is an easy matter to calculate the number of children who would subsequently be saved from measles by the suppression of the 78 5-year-old sources of infection, by multiplying the number suppressed in a given period by the ratio of new cases arising in a period ten to fifteen days later to those arising in the period in question according to the epidemic curve. Thus the 7 cases suppressed ten to twenty days after the point A would have been expected to give rise to 135/96 times 7 fresh cases developing in the period twenty-five to thirty-five days after A, or 5 cases in the period twenty to thirty and 5 in the period thirty to forty. These 10 cases would again be expected to have given rise to others further on, which can be calculated in the same way. Thus the chain of 215 children who would be indirectly saved from measles attack is arrived at, giving a total of 293 cases suppressed out of 1,000. The modification of the epidemic curve thus produced is shown by the dotted line in Fig. 2.

In this calculation it is of course assumed that the children thus saved from measles would not contract infections from other sources than those which have been removed, and also takes no account of the fact that the epidemic might by such interference be merely prolonged until almost the full 1,000 children had been attacked. This last event is not an unlikely one if the theory of the natural termination of epidemics of measles through temporary latent active immunization of the bulk of the child population is correct. Nevertheless, the calculation serves to show the utmost possible effect which might be produced through treating all the 5-year-olds who had not had measles with serum in the early stages of an epidemic. The number who would have to be so treated may be estimated thus. From St. Pancras data[1] it appears that the number of 5-year-old children at risk at the start of an epidemic is approximately equal to the total children of all ages who are subsequently attacked in the epidemic, and on this basis there would be about 900 requiring immunization at point A, the utmost result of this being to delay the attack of measles, by two years perhaps, in about 300 children.

Conclusions

The immunization of all home contacts with convalescent or parent's serum is therefore the more practical procedure, and the more certain in its results, but the total volume of an epidemic could not be reduced by more than about 13 per cent. by this means, and only about one-third of the injections would have any useful effect at all.

The second method, the immunization of all children of certain ages who have not had measles, is more problematical in its results, but presents the theoretical possibility at least of reducing an epidemic temporarily to any proportions desired, though probably only thus making inevitable a larger epidemic at a later date.

There remains another possible method of procedure which may provide the solution—namely, artificially to expose children of certain ages to measles infection, and also give them a partial immunity. Herrman advocated and carried out the inoculation of infants before they had lost their maternally derived immunity by applying the nasal discharge from a measles case to the nasal mucous membrane of children in the fifth month of age. This has the disadvantage that they may infect their older brothers and sisters in the mild attack which follows, though if adopted as a routine practice this would soon cease to occur, since they would all have been previously immunized. A better method, suggested I think by Zingher, is to apply the virus to the nasal mucous membrane of rather older children, and several days later inject convalescent serum subcutaneously so as to ensure a mild attack and permanent active immunization.

Such inoculation from child to child is of course open to serious objections, but more natural though less certain methods of exposure could be substituted. For instance, we have heard of "measles tea parties" and frowned upon them, but when coupled with subsequent artificial immunization they would cease to be barbarous, and become humane. Perhaps 50 per cent. would respond to such exposure in the way desired; the remainder would escape infection for a year or two by the combined protection of active latent immunity and artificially produced passive immunity, and would have to be either left to their own devices, or given another chance some two years later. There is no theoretical reason why by applying some variety of this method systematically measles epidemics could not be completely controlled or done away with as we know them, and the mortality and harmful sequels reduced to a negligible quantity.

Towards the expenses of research on the Battersea records, of which use has been made in this paper, a grant was made by the British Medical Association.

References

[1] *Lancet*, 1930, i, 802.
[2] *British Medical Journal*, 1931, ii, 602.
[3] *Lancet*, 1930, i, 801 (Fig. 5).
[4] *Annals of Eugenics*, 1928, iii, 3-4, 361.
[5] Herrman, C.: *New York State Journ. Med.*, October, 1923.
[6] *British Medical Journal*, 1931, i, 157.

A NOTE ON SEPTICAEMIA*

BY

SIR W. I. DE C. WHEELER

The largest contribution which surgery has made towards the treatment of septicaemia is in the field of prophylaxis. A discussion on prophylaxis would revolve naturally round Listerism, but it is too wide a sphere for a meeting such as this.

A few weak links in the prophylactic chain are worthy of consideration. We know, for example, that if there is a discoverable focus of infection which can be adequately dealt with, the infected blood stream usually takes care of itself and the prognosis becomes good. The search for this microbic fountain may tax all our resources; it may be found in the gall-bladder or in the root of a tooth. The onset of septicaemia is often traceable to the injudicious management of a primary focus—for example, early incision or milking of an abscess near the lips is attended by real danger. I have known of four deaths from such interference. I have also seen a fatal case of acute septicaemia following injury by a razor to a septic pimple on the face. Rowlands mentioned a case of septicaemia following the too free incision of a furuncle in the external ear. By too early incision of a facial focus a rich plexus of veins may be wounded; the organisms enter the opened venous radicles and are carried via the facial vein to the cavernous sinus, with fatal results. Again, death from general sepsis may follow prostatectomy in cases which have been treated beforehand by radiation. It seems probable that the epithelium of the rectum occasionally is so injured by

* Introductory remarks in a joint discussion in the Sections of Medicine and Surgery at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

radiation of the prostate that organisms permeate from its interior into the space from which the gland has been removed The raw prostatic bed is a suitable incubator, and violent sepsis may result I have had experience of two such cases Thus we learn the necessity of caution in dealing with a primary focus After the onset of general infection, abscesses may form in any situation, their discovery and evacuation is often the signal of recovery

As pre technique in the operating theatre may be of a high order, but the best efforts may be nullified if nurses and assistants in charge of, or in contact with, septic cases are part of the team I have had a case of *Streptococcus haemolyticus* septicaemia after a simple appendicectomy which was traceable to a nurse who, when not in the theatre, was in charge of a septic gynaecological case in an adjoining room Again, epidemics of septicaemia have been traced to the throats of asymptomatic carriers when there was laxity about masking all those within the reach of operative work We cannot yet claim that prophylactic measures in surgery have reached perfection

Remarks on Treatment

Surgeons physicians, and biochemists see many cases of septicaemia without discoverable cause, and the treatment of this group is in consequence not satisfactory What is the best line of treatment in a case with a positive blood culture? Assuming that there is no accessible primary focus, and that the organism is the streptococcus, serum should be employed Fifty cubic centimetres of the unvalent form given intravenously on three consecutive days has been suggested by Horder The results of serum therapy justify immediate and adequate dosage Should we employ intravenous injections of such substances as mercurochrome and gentian violet? The literature in favour of these and allied remedies is interesting There are strong advocates for this line of treatment My own practice has been to use mercurochrome, 20 c cm of a 1 per cent solution intravenously on two or three consecutive days when everything else had been tried without success, but I am not convinced that intravenous injections of any antiseptic are useful Horder recommends arsenic as the most useful drug Colebrook states that in the treatment of syphilis by the salvarsan group the blood serum becomes a destructor of streptococci and that the leucocytes remain unaffected There is therefore a prima facie case for the more extended use of arsenic in septicaemic conditions Blood transfusions have little or no direct effect in the control of sepsis, indirect benefit may be derived in the more chronic cases

Large quantities of fluid given intravenously and by the rectal and subcutaneous routes are always beneficial, and 3,000 to 4,000 c cm daily of 10 per cent dextrose solution in normal saline may be given continuously by the drip method through a cannula in the internal saphenous vein without disturbance to the patient, or in divided doses through a needle into the veins of the arm The patient is thus fed, the glycogen reserve of the liver is raised, the heart is stimulated, and diuresis is increased Tap water can be administered simultaneously by the drip method into the rectum, or saline into the subcutaneous tissues of the breast Such methods assist in the dilution and elimination of toxins Murphy's arguments in favour of ample fluids were not confined to cases of septic peritonitis

Finally, treatment of septicaemic cases in the open air when practicable should be employed There is no comparison between the results of treatment of local sepsis in an open air hospital and in a city hospital In like manner, patients suffering from infection of the blood stream respond to treatment better in the open air

OCULAR COMPLICATIONS OF CHRONIC EPIDEMIC ENCEPHALITIS*

BY

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During the last six years I have been examining cases at the post encephalitis lethargica unit of the London County Council, at the Northern Hospital, Winchmore Hill It was felt, therefore, that some remarks on the ocular conditions met with, based on notes of 174 cases of the later stages of the disease in children, might be of interest, and that it might be well to review the subject briefly from the ophthalmological standpoint in the light of more recent knowledge and longer experience

Ophthalmologists are interested in epidemic encephalitis (or encephalitis lethargica, so called) for many reasons, which can be summarized thus (1) As regards the diagnosis of the disease, the ocular phenomena being of great importance in this respect, both in the acute and chronic stages (2) On account of the peculiarity of these ocular signs, some of the most extraordinary of which occur only in this disease (3) Because the correlation of these ocular phenomena with the known pathology of the disease helps to throw further light on the neurology of some of the ocular movements, and is closely related to the subject we have been discussing† in this Section—namely, ocular palsies (4) Lastly, because the great benefit obtained in chronic encephalitic Parkinsonism by the use of the belladonna group of drugs is now well recognized As a result, the ophthalmologist is called on to counteract the visual disabilities which may be produced by this treatment

Ocular Signs in the Acute Stage

You scarcely need to be reminded of the importance of the ocular signs and symptoms of the acute stage which result principally from varied kinds of ophthalmoplegia There are the transient nerve root paralyses giving rise to transient diplopia, and, as I shall suggest, to the ptosis There are the irregular ophthalmoplegias due to deeper lesions, resulting in altered movements of the eyeballs, defects in the movements of the pupils, and peculiarities in the movements of the lids In the Ministry of Health Report No 11,[1] 78 per cent of the patients, in a series of 1,152 case reports, had the external ocular muscles affected in some way or another Thus, ptosis occurred in nearly 50 per cent, squint in 34 per cent, diplopia without obvious squint in 18 per cent, and nystagmus in 18 per cent

In the acute stage epidemic encephalitis presents multitudinous symptoms, and may, and does, simulate many diseases of the brain I would suggest, however that there are two common types with which particularly, the ophthalmologist may meet The first is a type showing ocular disturbances occurring in a febrile disease with marked disorder of sleep The second is that of a so called "influenza" with diplopia—a milder type often missed, but equally liable to sequels

It should also be added that the presence of papilloedema or of optic neuritis is decidedly against the diagnosis of encephalitis

Ocular Signs in the Chronic Stage

One can contrast these ocular complications of the acute stage with those seen in the chronic stage It has been

* Paper read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Edinburgh, 1931.
† See report *British Medical Journal*, August 8, 1931, p. 250.

said that, in proportion to the comparatively small number attacked, there is probably no infection or contagious disease in this country which produces so much consequent ill-health and disablement as does encephalitis lethargica. My experience has been mostly with children suffering from the sequels of behaviour disorder and post-encephalitic Parkinsonism. Generally speaking, the impression one has received is that the ocular signs and symptoms so commonly present at the onset and during the acute stages of the disease are comparatively rare in the post-encephalitic stage.[2] Statistics may be summarized as follows:

Number examined: 174 (boys 113, girls 61).

Average age when first examined: 11 years.

Average date of onset of disease: 3 years previously (6 months to 9 years).

Number of cases with ptosis (one or both sides): 11 (6 per cent.).

Number of cases with weak convergence or tendency to divergence: 25 (13 per cent. plus).

Number of cases with concomitant external strabismus: 26 (about 15 per cent.).

Number of cases with concomitant vertical strabismus: 2.

Number of cases with paralysis of internal rectus muscle: 1.

*Pupils: Very slight or absent reaction to accommodation, 47 (27 per cent.); direct light reflex very slight or absent, 23.

Cases having oculogyric crises: 6.

The points to be noted in these statistics are: (1) the infrequency of ptosis; (2) the number of cases with diminished or absent pupil reactions; (3) the absence of paralytic squint, but the remarkable number with concomitant external strabismus or some form of divergence (28 per cent.); and (4) the onset of oculogyric crises.

Ptosis

Ptosis would appear, therefore, to be the result of lymphocytic inflammation in the acute stage, affecting the third nerve as it passes out from the surface of the crus. This explains why the ptosis disappears as the acute stage dies down. We know, too, that when some only of the third nerve branches are affected by lesions in this situation, the branch to the levator palpebrae is the one most frequently affected. This explanation is supported by the fact that I have never seen an example of Benedikt's syndrome in the numerous chronic encephalitics in whom the red nucleus appears to be affected.

Abnormalities of the Pupil

The pupil abnormalities are due to active disease of the third nerve nucleus or of its connexions. Some patients developed abnormal pupils two or three years after I had noted them as normal. Arising in the occipital cortex, there are some fibres in the optic radiations which take an opposite course to the majority, and become detached from the optic tract to pass through the crus to the third nerve nucleus. These may be considered as afferent branches to the sphincter pupillae and ciliary muscle. As the substantia nigra and the tegmentum are areas particularly affected in chronic encephalitis,[3] these fibres may well be affected in this part of their course. We have to remember, also, that the size of the pupil is the resultant of opposing forces actuated by the sympathetic and third nerve, and that in chronic epidemic encephalitis the sympathetic system is in an irritable and partially uncontrolled state as the result of lesions in the corpus striatum and optic thalamus. Lastly, convergence is largely a voluntary act and a late development in the history of the human eyes, and the higher control of the lower centres in the mid-brain is markedly affected in this disease.

Herein to some extent may lie the explanation of the form of squint common in these children. Binocular vision is not firmly established until childhood is well advanced, and in the presence of weak convergence these children tend to get concomitant external strabismus.

Oculogyric Crisis

The oculogyric crises are peculiar to the Parkinsonian form of this disease. In all the cases I have seen there has been spasmodic conjugate movement of the eyes upwards, commonly slightly to one or other side, lasting from a minute to many hours. The patient is conscious of the condition and finds it distressing. He may tell you that his eyes go up and he cannot get them down, or that they won't stay down, as sometimes by an effort he can bring them down for a moment. In a bad Parkinsonian case which I have observed in an adult, the eyes were completely rolled up, the jaw was fixed, with the mouth open, the head remained firmly set in the Parkinsonian forward position, and there was a respiratory crisis, making the patient cyanosed. In some patients the eyes do not go right up, but get fixed only slightly above the horizontal, or complaint is made of staring and that the eyes get fixed on an object. It is important for these mild cases to be recognized, and for their symptoms to be remembered by ophthalmologists and not considered hysterical or "functional," especially as these patients tend to be emotional. These crises come on from one to eight years after the original acute illness, and may occur in persons leading more or less normal lives,[4] and so be the first clue to the onset of the post-encephalitic state.[5] Hence their extreme importance in diagnosis and prognosis, as sooner or later definite Parkinsonism develops. In two adult cases which I examined, the fixing of the eyes was the chief symptom in the early stages. Periodic outbursts of uncontrolled behaviour, either of excitement or grief, may be associated with the crises in adolescents.[6] Such cases can usually be much controlled by hyoscine or stramonium, whereas this is not so in the acute behaviour disorders not associated with the ocular crises. The onset of the crises points to an activity of the disease, and would appear to indicate danger of psychotic symptoms. In a series of 136 cases which eventually had to be certified, 17 per cent. had oculogyric crises.[7]

It is impossible in a short time to discuss fully the site of the lesions causing these weird attacks. We can see, however, how they fit in with the general conception that many of the appearances of the post-encephalitic state are largely "release" phenomena. Professor Elliot Smith, in his address on the evolution of the instruments of vision at Oxford,[11] showed a photograph of an anthropoid ape. The semi-erect stance, with the head and shoulders bent forwards, with the arms hanging extended so that the hands were level with the knees, the expressionless face with the dropped lower jaw, together vividly reminded me of the general appearance of many adolescents with severe Parkinsonism. In this disease the mid-brain[8] (particularly the substantia nigra and the corpus striatum, closely connected by the strio-nigral tract[9]) shows most signs of the disease, and so the connecting links for central control over the extra-pyramidal system are affected. Also, irritative lesions of the more primitive centres[10] in the basal nuclei may occur at the same time as the more recently developed neo-striatum is deficient in controlling them. Dr. Edwin Bramwell[11] recently said

* Note: None of these patients were having drugs producing mydriasis. Only one case showed definite signs of previous congestion of an optic disk, an observation which supports the statement already made as to the rarity of disk changes in the disease. Six patients had oculogyric crises.

that he knows of no case where a fit characterized by upward or downward movement of the eyes was associated with disease of the cerebral hemispheres. There appears to be an innate co-ordinated upward movement of the eyes associated with the emotions, and related to a centre of a lower level. The eyes roll upward in sleep, and I have noted how in infancy, at an age when the vegetative centres are apt to take control, the eyes roll up in convulsions caused by gastro-intestinal irritation.

Other Ocular Symptoms

Other ocular symptoms noted among my patients are excessive blinking, fluttering of the eyelids, and difficulty in moving the eyes in a vertical direction when told to do so. I do not consider these typical of chronic encephalitis, but rather characteristic of the over-emotional state of the patients who show them. We have all observed them in emotional or nervous subjects—the act of blinking being closely related to the mental tension of the subject at the time.[12] Bradykinesis of Parkinsonism is often seen in slow carrying out of the normal voluntary movements of the eyes, and sometimes adds to the difficulties of reading.

Effects of Hyoscine and Stramonium

I now come to the last part of my subject—namely, the visual disabilities caused by hyoscine or stramonium in the treatment of Parkinsonism. Often ten times the pharmacopœial dose of stramonium is given, resulting in very marked improvement in the Parkinsonian rigidity.[13] Many of the patients, however, complain greatly of their inability to read, and of being worried by bright light, due to paresis of accommodation and dilatation of the pupils. Roughly speaking, the stramonium effect as regards accommodation for reading distance is counteracted by a + 1·50 to 1·75 lens, and eserine and pilocarpine applied to the conjunctival sac seems to counteract the effect to the extent of ¼ dioptres. Thus children and young adults with normal refraction, who do not want to read much, can have their visual disabilities removed by myotics. Presbyopes and hypermetropes need glasses, the latter for constant wear. In the case of children, or of adolescents who are myopes or whose mentality is such that they do not wish to read, or who have disorders of behaviour in which the use of glasses is inadvisable, the use of myotics to prevent dazzle is found the best procedure. I have had a group of twenty patients of all these varieties under various myotics; three have wished to continue with the use of pilocarpine drops rather than have glasses. The problem is a definite one, as it would appear that these Parkinsonian patients have to continue with stramonium for the rest of their lives.

These are but a few of the interesting points which have appealed to me as an ophthalmologist in dealing with these patients.

I should like to thank Dr Borthwick, the medical superintendent of the Northern Hospital, and Dr T. R. Hill, for facilities to examine these patients.

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VESICAL SCHISTOSOMIASIS COMPLICATED BY CARCINOMA

BY

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Vesical schistosomiasis is a disease with an unenviable history, for parasitic schistosomes may survive for long periods in the portal system, depositing ova from time to time in the pelvic viscera with cumulative effects. Accurate information on the longevity of the worms is limited, but Christopherson[1] (1924) recorded some important cases where viable ova were passed eighteen to twenty-eight years after patients had contracted their malady. The case recorded below is of special interest, as the duration of the disease was approximately thirty years, during the last twenty-nine of which the patient resided permanently in England.

A man, aged 50, first came to the out-patient department of the Hospital for Tropical Diseases, London, in October 1930, complaining of intermittent haematuria of approximately thirty years' duration which had developed during the South African war. Bilharzial infestation had been suspected.

The patient, who went to the South African war in 1900, was invalided to England in 1902 on account of debility and haematuria, which continued for about two years. Since that time the appearance of blood in the urine and vesical discomfort had been essentially intermittent; he only remembered three severe attacks of haematuria throughout the period, and he was often without symptoms for years. Two months before admission a severe relapse occurred, and then the haematuria had been persistent, but not to as great an extent as his thumb being passed in the urine. Onset of haematuria was terminal in onset, but later the bleeding continued throughout micturition. The urine on the first examination contained albumin and many red blood corpuscles, but no ova. The bilharzial skin test proved to be strongly positive, a wheal of 2·5 cm. diameter developing in a few minutes with the characteristic pseudopodial pale outrunners and surrounding erythema. The complement-fixation test was also strongly positive (++++), quantitative titrations showing a fixation of 12 minimal haemolytic doses of complement. Subsequent urinary examination revealed a few dead terminal spined ova of *Schistosoma haematobium*. The serological diagnosis of vesical schistosomiasis was thus confirmed.

At this time the patient was not prepared to come into hospital, though the possibilities of superadded renal disease and vesical carcinoma were pointed out. On November 6th, 1930, he returned for admission, complaining of fever, persistent haematuria with the passage of blood clots, strangury, penile irritation, aching pains across the hypogastrium and in the right groin. Loss of weight had recently been rapid, and during the previous fortnight he had suffered from profuse sweats. On admission the temperature was 103° F., the pulse 110, and the respirations 22 per minute. Asthma was also present; it originated during the South African war and had since been an annual occurrence.

On examination the patient was found to have distressed breathing and an asthmatic facies. Multiple telangiectases covered the cheeks. Ten round or oval-shaped nodules varying in size from 0·5 to 1·5 cm. in diameter, hard in consistency and somewhat bluish in colour, were noted in the subcutaneous tissues over the abdomen and chest. Under local anæsthesia one was removed for microscopical examination.

The tongue was furred, the teeth were carious and pyorrhœa was marked. The chest moved equally in the two sides, but the air entry was poor. A pleuritic rub was heard over the lower part of the right side of the chest anteriorly and to a lesser degree behind. The heart sounds were rapid and regular, but the peripheral blood vessels were not visibly affected.

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The blood pressure was 140/84. The liver was somewhat tender, and palpable one fingerbreadth below the costal margin. Tenderness was present in both iliac fossae, as well as in the loins.

The patient was too ill for cystoscopy, but a diagnosis of vesical carcinoma, with generalized carcinomatosis secondary to vesical schistosomiasis, was made. The following notes epitomize the progress of the case.

November 9th, 1930.—The patient was very ill, with a greyish-coloured facies and rapid pulse. Sibilant rhonchi were heard all over the lungs, and at the right base there was impaired resonance, with moist sounds behind and coarse friction sounds in front. The sputum was rusty, and contained pus and epithelial cells; examinations failed to reveal schistosome ova. The Wassermann reaction was negative, and the stools showed no ova or protozoa. The blood urea figure was 40 mg. per 100 c.cm.

November 14th.—Dyspnoea and cyanosis were present. There was a marked tricuspid systolic bruit associated with epigastric pulsation; tubular breathing, increased vocal resonance, and crepitations were noted at the right base.

November 15th.—Haematological investigations showed: erythrocytes, 4,700,000 per c.mm.; leucocytes, 13,000 per c.mm.; and haemoglobin, 80 per cent. The differential count was: neutrophils, 75 per cent.; lymphocytes, 14 per cent.; mononuclears, 5 per cent.; and eosinophils, 6 per cent.

November 16th.—There was progressive increase in the dyspnoea and cyanosis, and at times the former was paroxysmal. The right side of the heart was obviously engorged, and venesection was performed with temporary benefit. Oxygen, digitaline, and pituitrin were also administered. The blood pressure was 102/62, and the blood urea figure 64 mg. per 100 c.cm. The patient was semi-comatose and still cyanosed. The urine contained much albumin, with many erythrocytes, and fatty and hyaline casts; sugar and ketone bodies were absent. Glucose was given intravenously, and sodium bicarbonate and glucose by the rectum.

November 17th.—The patient appeared more comfortable. Moist rales were present over the right base, and tenderness was marked in both loins. The optic disks were normal. The blood urea was now 92 mg. per 100 c.cm., and the plasma CO_2 figure was 78.5 volumes per 100 c.cm. Lumbar puncture released clear cerebro-spinal fluid under increased pressure—250 mm. water pressure.

November 18th.—The patient was semi-comatose and cyanosed, with a dry mouth and rambling speech. Normal quantities of blood-stained urine were passed. At 1.30 a.m. the pulse rapidly weakened, and he died. The terminal picture rather resembled uraemia, but the urinary findings and blood chemistry did not support this diagnosis, and at the necropsy abundant functioning renal tissue was found.

Morbid Anatomy

The necropsy was performed nine hours after death. The patient was emaciated, and showed multiple subcutaneous carcinomatous nodules, while post-mortem staining was marked in the tissues of the back and buttocks.

Thorax.—The subpleural tissues were studded with carcinomatous nodules, some of which were umbilicated. The right lung showed extensive adhesions anteriorly and laterally; via these, direct cancerous infiltration of the intercostal muscles and of a pectoral lymph gland had occurred. The lower portion of the right lung was extensively consolidated. The heart presented little abnormality; no secondaries were found.

Abdomen.—The liver was slightly enlarged, and showed some increase of fibrous tissue around the periportal zones, as well as scanty carcinomatous nodules, ranging in size from 0.3 to 1.8 cm. in diameter. The gall-bladder was distended with bile, and there were carcinomatous glands in the portal fissure. The tail of the pancreas also contained carcinomatous deposits. A few squat circular nodules of secondary carcinoma were noted in the submucosa in the cardiac end of the stomach, as well as in the first part of the duodenum. No deposits were seen in the enterocolon, but carcinomatous involvement of some of the mesenteric and colonic lymph glands had occurred. The appendix was abnormally large, and a number of small subperitoneal nodules, the size of a pin's head, were present. The kidneys presented little evidence of fibrosis; the pelves were not dilated, and the ureters in their abdominal course showed no abnormality. Small white carcinomatous nodules were seen under the capsule. The cortex was narrow, but the capsule was smooth, and stripped readily. The suprarenals were enlarged and very hard, and showed extensive carcinomatous involvement.

The bladder was hard, contracted, and of small size. It was removed by an *en bloc* dissection, with the prostate, seminal vesicles, and terminal portion of the pelvic colon and rectum. On opening the bladder, carcinomatous ulcers, with extensive infiltration of the base and neck of the bladder, were demonstrated. The ulcers, on section, cut in a gritty fashion, suggesting that they originated in the sandy patches so characteristic of chronic vesical schistosomiasis. The mucous membrane also presented some squat papillomatous outgrowths, carcinomatous in nature. The seminal vesicles were thickened and hard, as were also the bases of the ureters where they passed through the vesical wall; this thickening extended for at least one inch of the extra-vesical portion of their course. The prostate was also involved, but the urethra was not obstructed.

Brain.—No haemorrhages or carcinomatous deposits were noted in the brain, but there was a marked excess of cerebro-spinal fluid in the pia-arachnoid space, and some degree of cerebral oedema.

Ova and Worms

Unfortunately the examination of the pelvic venous plexuses for schistosomes was postponed until after the pelvic viscera had been removed, and it was then found impossible to make satisfactory observations. Examination of the mesenteric veins, however, revealed a living male schistosome; other worms would undoubtedly have been demonstrated had the examination been made at the beginning instead of at the end of the necropsy.

Tissues from different organs were digested in 4 per cent. caustic soda solution for 20 hours at 55° C. Large quantities of ova were demonstrated in the sediment of the digest from the bladder and seminal vesicles; they were also found in smaller numbers in the large intestine, liver, and lung, but not in the pancreas and small intestine.

Microscopical Pathology

Microscopical sections showed epithelioma of the bladder, and a heavy deposit of schistosome ova confined to the mucosal and submucosal layers; the carcinomatous infiltration extended beyond these zones, deeply invading the muscular layers of the bladder. Some of the schistosome eggs contained normal miracidia, while others were dead and calcified. Ova were also noted in the muscular coats of the ureters, and there were heavy deposits in the seminal vesicles, where they were surrounded by whorls of fibrous tissue. Sections of the liver contained scanty ova, but there was a consistent increase in the fibrous tissue of Glisson's capsules, which sometimes showed small-celled infiltration. Considerable hepatic congestion was present, and nodules of secondary carcinoma were encountered. Secondary carcinomatous deposits were also studded in sections of the pancreas, suprarenals, and lungs.

Commentary

Vesical epithelioma is the common cancer of Egypt, and Ferguson[2] (1911) first recognized its essential relationship to deposits of bilharzial eggs in the bladder wall. It is generally regarded as supervening only in chronic cases which have been repeatedly exposed to infection over long periods of time, but the present case shows that continuous re-infection is unnecessary for its development. The experimental findings in *Rhesus* monkeys also support this view, for Fairley[3] (1920) described extensive bilharzial papillomatosis of the bladder some three months after heavy cercarial infection; even at this early date in certain of the sections the transition to malignancy was debatable.

Though cases of *S. haematobium* may undergo spontaneous cure with the passage of time, others in which the haematuria is mild or completely absent for years may develop vesical carcinoma and renal complications, owing to the steady deposit of ova in the bladder and

lower third of the ureters respectively. Further, secondary bacterial infection may complicate the picture at any time. For these reasons it cannot be too strongly emphasized that, in Europeans at least, bilharzial infestation should be diagnosed as early as possible and thoroughly treated. It is equally important to remember that cystoscopy, the complement-fixation test, and the intradermal skin test for schistosomiasis, may reveal infestation at a time when ova are not demonstrable in the urine or faeces.

Since 1900 this patient had passed through the hands of a number of practitioners; it is particularly unfortunate that his condition remained undiagnosed until carcinoma had supervened, for at an earlier date the intravenous administration of tartar emetic would have been curative.

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SOME FACTORS IN THE REDUCTION OF ABSENTEEISM DUE TO CATARRHAL CONDITIONS

BY

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The impairment of efficiency and earning capacity of the worker which is caused by mild ailments, especially catarrhal illnesses, is of such magnitude that no apology is needed for this brief report on some measures that have resulted in approximately a 50 per cent. reduction of absenteeism in the head offices of a large industrial undertaking.

In estimating the significance of the accompanying comparative table it should be remembered that the figures relating to the approved society do not include any absences from work of less than three days, while those relating to the industrial undertaking include absences of one day only.

There are several factors which contribute to the striking differences—for example, the healthy position of the building and its design, a system by which a good midday meal is available for the employees at a reasonable cost, and the encouragement of exercise by the provision of a well-equipped gymnasium and facilities for outdoor games. Also of great importance is the medical supervision of every member of the staff. The essence of this supervision is that every employee has easy access to the resident medical officer at certain hours of the day. Appointments are fixed beforehand by the matron, so that time spent in the doctor's waiting room is reduced to a minimum. All new employees are medically examined before they are engaged; so, too, are all employees who have been away from work on account of ill-health. Thus many minor defects are discovered, and advice given for their remedy before they have assumed such proportions as will lead to illness and its consequent wastefulness both to the patient and to the employer. Other important factors in the reduction of sickness have been: (1) ultra-violet ray medication; (2) remedial exercises prescribed by the medical officer, and taught by the gymnasium instructor after office hours; and (3) inoculation, both prophylactic and curative.

The high figure in Column B is accounted for by the fact that any employee reporting sick, with a slight rise of temperature, increased pulse rate, or other early symptoms of illness, is immediately sent home to bed and told to call in a private practitioner. A day or two in bed is more economical than the lengthy absence which may result from neglecting illness in its initial stages.

It is disturbing to note the very high absenteeism due to catarrhal conditions. The total percentage of employees

Sick Absence in the Offices of an Industrial Undertaking for the Year ended December 31st, 1930, compared with Figures supplied by a Similar Undertaking, and by an Approved Society consisting largely of Office Workers.

	Average Number Employed A	Percentage of Sick Absentees B	Average Amount of Sick Absence in Days per Person Employed C
Head office staff of the industrial undertaking	1,443	75.2	4.70
Staff of a similar large London office	2,256	63.5	9.15
Members of an approved society	2,401	No figure available	9.16

absent some time during the year suffering from all forms of sickness was 75.2, while the corresponding figure from catarrhal conditions was 51.625. Attempts to control the absenteeism due to this cause have met with some degree of success.

PROPHYLACTIC INOCULATION

This was offered to every member of the staff, and was an experiment in mass autogenous vaccine. During the preceding winter, cultures were taken from the throats and noses of a large number of workers suffering from sore throats and coryza. This was done under the supervision of Dr. M. R. Brady, and cultures were made in his laboratories. The cultures were taken on to warmed fresh blood agar slopes, and the tubes were carefully kept warm until they were actually placed in the incubator. By this method a greater variety of organisms was found in the cultures than in controls which were allowed to cool, or which were taken on other culture media.

In the manufacture of the mass autogenous vaccine, scrupulous attention was paid to the smallest bacteriological details and technique. If a luxuriant growth of the micro-organisms was not obtained on a twelve-hour culture, fresh cultures were taken so as to avoid repeated subculturing, which would have tended to attenuate the organisms, and therefore to lessen the potency of the vaccine. In sterilizing the vaccine the minimum amount of heat was used, all suspensions being killed in thirty minutes at 60° C. The total amount of antiseptic in the vaccine was 0.5 per cent. phenol in 0.9 per cent. sodium chloride: thus the possibility of extensively damaging the structure of the micro-organisms was reduced to a minimum. It was essential to give accurate doses in so potent a vaccine, so the strength of every micro-organism contained in the vaccine was estimated by counting on a Thoma-Zeiss haemocytometer.

It is interesting to note that the influenza bacillus was found in a large number of cases where these precautions were observed, but was not found in cultures taken from the same patients in tubes which had been allowed to cool between the taking of the culture and the placing of the tube in the incubator. The organisms found were:

Staphylococcus (mixed), *Streptococcus haemolyticus*, streptococcus, *Micrococcus flavus*, pneumococcus, *Micrococcus tetragenus*, Friedländer's bacillus, *Bacillus influenzae*.

and from these the vaccine was made up. The first dose consisted of 50 millions of the mixed staphylococcus and 5 millions of each of the other organisms in 1 c.cm. The second dose was four times the first, and the third dose was ten times the first. It has to be admitted that the increase in dosage was somewhat steep, but this was

done in order to enable a large final dose to be given and at the same time to avoid the inconvenience which would have been caused to the patients had it been decided to work up to the maximum dose by an increased number of injections. Very few of those inoculated developed a general reaction ; in such cases intermediate doses were administered with only a 50 per cent. increase over the previous dose. A very small percentage required the full number of five doses. In the few cases in which a reaction occurred, there was already existing some degree of mild, acute, or chronic catarrh. By paying careful attention to the importance of already existing catarrh, it should be possible to avoid general reactions.

Persons subject to "colds" and influenza are to a large extent the "carriers" of the coryza epidemics. The micro-organisms which they pass on have often an increased virulence. They are the most susceptible to infection, and have the lowest resistance. In our efforts to reduce epidemics, these cases must be immunized against their own micro-organisms, and, for a few years, should be prophylactically immunized against the prevailing coryzal infection.

The result of this inoculation on absenteeism for catarrhal conditions was as follows. The percentage of inoculated persons who lost time owing to catarrhal affections was 35.294 ; while the corresponding percentage of uninoculated persons was 51.625. There is little doubt that the beneficial effect of inoculation would be much more obvious were it not for the efficacy of the treatment applied to the uninoculated who subsequently became infected.

Treatment of Catarrhal Conditions

Patients reporting sick were divided roughly into two classes:

1. Those in whom severe symptoms had developed. These cases were subdivided into: (*a*) those where the onset of symptoms occurred less than thirty-six hours before the patient reported sick ; (*b*) those where the onset of symptoms occurred more than thirty-six hours before the patient reported sick, and where he had neglected to seek medical advice in the early stages of the infection.
2. Those presenting only mild symptoms.

The cases classified as severe were those with a temperature of over 100°, pulse over 120, headache and severe coryza, or physical signs of involvement of the lungs or bronchi. The mild cases were given simple symptomatic treatment—for example, quinine, aspirin, expectorants, etc.

The treatment for cases classified as severe was determined by the duration of the symptoms. Patients who gave a history of thirty-six hours or less were given 1 c.cm. of S.U.P. 36 intramuscularly. Injections were made at first into the upper border of the trapezius muscle, but later into the deltoid, as injections at this site produced less discomfort.

Cases which were of more than thirty-six hours' duration were given 2 c.cm. hypodermically of a polyvalent antibody. The preparation which gave the most satisfactory results is that sold under the name of "antibacsyn." This injection was repeated daily in a number of patients who were able to continue at work, but who still presented some symptoms.

It is to be noted that the patients treated with S.U.P. and antibacsyn were such as, in the ordinary course of events, might be expected to be disabled from one to three or more weeks. In a few instances in which the patient "did not believe in injections," the refusal of treatment was followed by absence from work of from two to six weeks, and many of these cases were certified as acute bronchitis, lobular and lobar pneumonia.

The absenteeism among the severe cases so treated was 8.958 days, while the absenteeism among the mild cases amounted to 3.536 days. In other words, the severe cases so treated lost less than half a day more than the very mild cases which were given simple symptomatic treatment. One may conclude, therefore, that in S.U.P. 36 for early cases, and in antibacsyn for later cases, two valuable agents are available for combating the enormous loss of efficiency which catarrhal conditions impose on the community.

Conclusions

Prophylactic inoculation showed a definite reduction in the incidence and severity of catarrhal illnesses. This reduction is to some degree obscured by the successful use of S.U.P. 36 and antibacsyn in the treatment of the uninoculated—S.U.P. administered within thirty-six hours of the onset of the symptoms and antibacsyn administered after this period—which very substantially reduced the absenteeism from acute catarrhal conditions.

I must express my thanks to Dr. Brady for his invaluable advice and for his assistance in the preparation of the vaccines.

THE PHARMACOLOGY OF PERCAINE

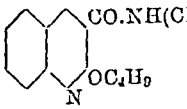
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While considerable clinical experience of percaine has been reported in this country, in the *British Medical Journal* and elsewhere, both as a local anaesthetic (Lake and Marshall,[1] Walker,[2] Popper[3]) and for spinal anaesthesia (Howard Jones[4]), no report of the pharmacology of this drug has, to our knowledge, appeared from a British laboratory. In view of the discrepant findings of Continental workers (Uhlmann,[5] Lipschitz and Laubender[6 7]), and of the increasing use of local and regional anaesthesia in surgery, a further investigation of percaine, and a comparison of it with the more established members of the group, seemed desirable.

Percaine is a quinoline derivation—the hydrochloride of the diethylethylenediamide of α-butyloxycinchoninic acid.



It is manufactured at Basle, and the first publication of its properties was made in June, 1929, by Uhlmann.[5] It is available in crystalline form, and is colourless, odourless, and easily soluble in water or normal saline, but is readily precipitated by alkali. The makers' claims—that it can be heat-sterilized without loss of strength, and that it can be combined with adrenaline—have been confirmed. Sterile solutions are stable, retaining full activity for several months at least. We have had some evidence that solutions which have not been kept under aseptic conditions lose their activity in a relatively short time.

The following experimental investigations have been carried out, in the hope that the value of the new drug might be fairly assessed.

Intradermal Wheal Test on the Human Subject

Solutions of various strengths in 0.9 per cent. NaCl were injected intradermally, always using 0.5 c.cm. for a test. The sensation of pain was tested by the application to the skin of a pin-point suitably mounted. Tests were directed to determine (*a*) the minimal concentration required for anaesthesia as compared with novocain, and (*b*) the duration of the anaesthesia afforded by any given

concentration The results are given in tabular form, showing (1) the drugs used by themselves, and (2) with adrenaline as an adjuvant. It will be seen (1) that the minimal effective concentration of percaine is about one-fortieth of that of novocain, (2) that 0 05 per cent percaine produces anaesthesia for longer than 1 per cent.

TABLE I

Drug	Concentration (per cent)	Duration of Anaesthesia in Minutes	
		(1) Without adrenaline	(2) With addition of adrenaline, 0 002 per cent
Percaine	0 003	0	(60)
	0 012	0	130
	0 06	0	240
	0 025	35	240
	0 05	70	420
Novocain	0 12	0	(?)
	0 25	0	150
	0 50	6	220
	1 00	25	270

Note—Adrenaline alone is probably responsible for the anaesthesia in parentheses

novocain, (3) that when both are mixed with adrenaline 0 002 per cent, 0 05 per cent percaine and 1 per cent. novocain produce anaesthesia of equal duration in the skin—nearly five hours.

Blocking of the Nervous Impulse in the Frog's Nerve-Muscle Preparation

This test is mainly of academic interest, being valuable for the comparison of the ability of anaesthetics to block impulses in motor nerve fibres About 1 cm of the nerve of the ordinary sciatic-gastrocnemius preparation is immersed in a solution of the anaesthetic, and the duration of immersion in which conduction is just suspended is determined The two hind limbs of the frog yield two similar preparations, so that two drugs can be fairly accurately compared for their activity By this test percaine is about seven times as efficacious as cocaine

Anaesthesia of the Rabbit's Cornea

This test is of importance for its application to ophthalmological practice in particular, and the anaesthesia of mucous membranes in general. The method prescribed by Sollman[3] was used The conjunctival sac

TABLE II—*Anaesthesia of the Rabbit's Cornea*

Percaine

Dilution (per cent)	0 0.2	0 0.5	0 010	0 017	0 025	0 05
Duration (minutes)	0	0	10–15	45–60	90–120	over 120

Cocaine

Dilution (per cent)	0.2	0.5	1 0	2 0
Duration (minutes)	0	7–10	15–20	30 45

is flooded with the solution under test for one minute, and the corneal reflex is stimulated at intervals until it returns The durations of anaesthesia thus obtained for various concentrations of percaine and cocaine are given in Table II

It will be evident that percaine is efficacious in about one-fiftieth of the concentration of cocaine which abolishes the reflex No adrenaline was added to the solutions in any of these experiments.

Experimental Spinal Block in the Cat

In two of three experiments in which novocain and percaine were alternately introduced by lumbar puncture into the spinal theca of a chloralosed cat, it was found that percaine abolished active reflexes, such as the knee-jerk, in a dosage of about one fortieth of that of novocain, and the anaesthesia, as tested by the abolition of these reflexes, lasted three or four times as long—for example, two hours with 0 5 mg of percaine, as against half an hour with 20 mg novocain. This is quite in accordance with the claims made for percaine by Howard Jones [4]

Toxicity of Percaine

This is obviously a matter of great importance, for percaine, like other local anaesthetics, falls short of the ideal in being a distinctly toxic drug. We have carried out estimates of relative toxicities by the lethal dose following (1) subcutaneous injection into guinea-pigs, and (2) intravenous injection into cats, using paralysis of respiration as an end-point. The details of this second method, which we have elaborated in order to get a more accurate measurement of relative toxicity—two drugs being compared on a single animal—will be published elsewhere [5]

The results of the guinea-pig method indicate that percaine is about twenty-five times as toxic as novocain and three times as toxic as cocaine, by the cat method the corresponding figures are fifteen and two respectively, and in the authors' opinion the latter figures are the more reliable. Taking these figures we can form, as in Table III, an estimate of the relative efficiencies of the three drugs.

TABLE III—*Relative Efficiencies*

Relative Efficiencies	Percaine	Cocaine	Novocain
(a) In intradermal wheal	10	1	6
(b) In rabbit's cornea	25	1	useless
(c) As spinal anaesthetic	3	—	1

The efficiency of a local anaesthetic for any purpose is determined by the ratio of the active or adequate dose to the toxic dose

Discussion

The figures of Table III suggest that percaine and novocain are of the same order of efficiency when used for subcutaneous anaesthesia, and the difference in favour of percaine for spinal anaesthesia is probably not as great as it appears to be, for the action of novocain intrathecally can be limited and intensified and prolonged by giving it in a viscous solution. On the other hand, for local application to mucous membranes percaine is quite the most efficient local anaesthetic we have so far investigated. As far as can be seen, no injurious results follow from continued application of the drug to mucous membranes—even to a membrane as delicate as the conjunctiva. Thus 0 05 per cent percaine was applied once a day for fourteen days to the eye of a rabbit without any noticeable ill effects The fact, noted by Uhlmann,[5] that much higher concentrations may cause corneal opacities is of toxicological rather than of ordinary practical interest

From these experiments we conclude that for infiltration anaesthesia, in view of its considerably greater toxicity, no great advantage can be claimed for percaine as a substitute for the novocain-adrenaline combination to which the surgeon is well accustomed Occasionally, where adrenaline action is to be avoided, percaine would supply an adequate duration of anaesthesia without interfering significantly with the local circulation and percaine is a cheap substitute for novocain, especially since it is

effective in considerable dilution. For mucous membranes, on the other hand, we agree with Popper[3] that percaine is a most promising addition to the surgeon's pharmacopoeia, and may well pave the way to the abandonment of cocaine.

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THE MECHANISM OF CEPHALIC PRESENTATIONS

BY

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The main features of the mechanism which the head goes through, when in the pelvis, in cephalic presentations are easily understood; but the rotations which occur after the head is born are usually ill described. This is probably because these rotations are not very important in practice. A clear conception of them is nevertheless desirable, especially for the student. Two phases of mechanism of the head may be considered:

1. In the pelvis—consisting of engagement, descent with internal rotation,* and extension at the outlet, causing disengagement or birth of the head.
2. Outside the pelvis—consisting of restitution and external rotation.

These two movements of the head after it is born are commonly ascribed to untwisting of the neck and rotation of the shoulders respectively. Their exact extent is not usually described, and is, in fact, hard to determine. Observation is difficult, since the movements may occur rapidly. The exact extent of these rotations is not of great importance in practical midwifery, since the head is already born when they occur, and subsequent difficulty is relatively uncommon. Nevertheless, an accurate mechanical conception of the movements is of assistance, since it tends to a clear understanding of the whole mechanism of cephalic presentations, provided that the limitations of such mathematical conceptions are realized.

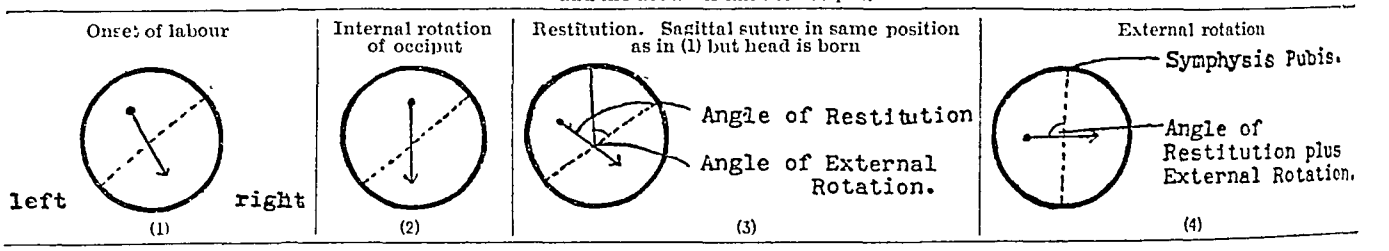
The following generalizations are helpful in a consideration of the exact nature of the movements of the head after disengagement.

1. Restitution is equal in degree but opposite in direction to internal rotation.
2. Restitution plus external rotation together make a right angle.

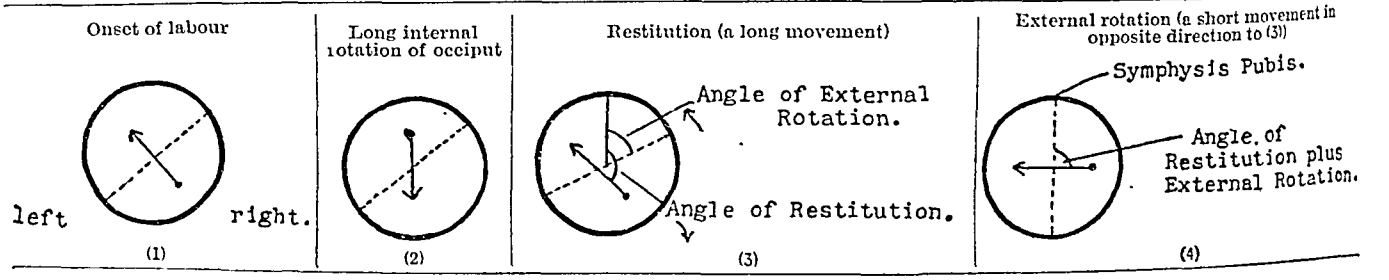
When rotation of the head occurs in the pelvis, the shoulders as a rule do not undergo much rotation, and for the present purpose we shall consider that, apart from descending, they remain fixed and do not rotate. As soon as the head is born the twist on the neck is undone, and the head slips back to the position it occupied when engagement occurred. This movement is called restitution, since the head is restored to its normal position in relation to the shoulders. In anterior positions restitution is slight, occurs through one-eighth of a circle, and is difficult to observe. In posterior positions internal rotation of the occiput occupies three-eighths of a circle; according to our rules restitution ought to be a movement of corresponding extent, though of opposite direction; and external rotation, a small movement through one-eighth of a circle in the reverse direction to restitution, so as to bring the bisacromial diameter and the sagittal suture at right angles.

MECHANISM OF L.O.A. (Face Looks to Right).

The circle represents the pelvis seen from above. The dotted line is the bisacromial diameter. The arrow is the sagittal suture, and the dot at its tail the occiput.



MECHANISM OF R.O.P. (Face Looks to Left).



Internal and external rotations are sometimes described as being in opposite directions in all cases. While it is true that the rotations of the head occurring in the pelvis and outside the pelvis are in opposite directions, it will be seen from the diagrams that in posterior positions it is the part of rotation outside the pelvis called restitution which is opposite in direction to internal rotation; and that the true external rotation—that is, that due to rotation of the shoulders—is actually in the same direction as internal rotation of the head, though only of small degree. The foetal neck is capable of considerable torsion, but the head and shoulders cannot, in posterior positions, be considered as independent of each other. Internal rotation of the head takes place when the foetus is low in the pelvis, by which time some rotation of the shoulders will also have begun. For the sake of clearness this need not upset our mechanical conception, and for teaching purposes it is simpler to

* The term "internal rotation" means rotation in the pelvis and does not refer to the direction of rotation.

remember the above rules and to modify them in any given case as necessary. The fundamental idea of this mechanical conception is based on the fact that the bisacromial diameter and the sagittal suture are at right angles, both at engagement and after delivery of the head. Any rotations of the head and shoulders, whether considered together or separately, must result in these two diameters being at right angles again; and the rotation of the head which occurs after it has undergone restitution is really due to the rotation of the shoulders still in the pelvis. These two rules are illustrated in the diagrams. In posterior positions of the occiput rotation of the shoulders and head may occur together, though it is simpler to consider them as occurring separately. In face presentations the submentobregmatic diameter should be considered instead of the sagittal suture.

In conclusion, it should be remembered that in this description the foetal head and pelvis have been regarded as fitting each other accurately. Careful observation in cases in which the head is small shows that the movement called restitution may not occur, and sometimes the occiput, when the head is born, turns in a direction opposite to that which purely theoretical considerations would lead one to expect.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

MÉNIÈRE'S DISEASE WITH MYELOGENOUS LEUKAEMIA

The following case would seem worthy of record as an example of Ménière's disease associated with myelogenous leukaemia, and in view of the remarkable response to x ray treatment.

CASE HISTORY

The patient, a married woman aged 37, first attended the out patient department of King's College Hospital on May 14th 1930, complaining of an attack of giddiness three weeks previously, accompanied by deafness and tinnitus on the left side, which had persisted. She also complained of headaches for about six months, and of menorrhagia and epistaxis.

On examination the spleen was found to be enlarged and firm extending one inch beyond the mid-line and below the left iliac crest. The liver was enlarged two inches below the right costal margin.

The blood picture on May 29th, 1930, showed red blood corpuscles 2,125,000 per c.mm., haemoglobin, 42 per cent., colour index, 1·0, leucocytes, 655,000 per c.mm.—polymorphonuclears 37·2 per cent., eosinophils 5·2 per cent., basophils 0·8 per cent., lymphocytes 2·8 per cent., large mononuclears 0·4 per cent., myelocytes 53·6 per cent.

The retinae showed a typical leukaemic retinitis, the disk margins being very indefinite and the whole fundus pale and oedematous. The veins were much increased in calibre and were extremely tortuous. There were a few haemorrhages in both fundi. Aural examination revealed Bárámy box to right ear—shout not heard in left. Weber: fork → right. Rinne: right—air conduction greater than bone conduction; left—no air conduction, bone conduction just heard in right ear, very slight loss of air and bone conduction in right ear. Caloric test: left, negative.

Treatment by means of arsenic by mouth and x rays to the spleen and long bones was commenced on June 4th, 1930, and the blood picture rapidly improved. After three months' treatment the patient was very much better, the spleen considerably smaller and softer, and the retinae greatly improved.

Blood count September 2nd, 1930: red blood corpuscles 4,860,000 per c.mm., haemoglobin, 66 per cent., colour index, 0·67, leucocytes, 11,200 per c.mm.—polymorphonuclears 72·4 per cent., eosinophils 4·4 per cent., basophils, 1·6 per cent., lymphocytes 14·8 per cent., large mononuclears 1·6 per cent., myelocytes 5·2 per cent.

Shortly after this the patient went away for some six months, and had no x-ray treatment. When seen again in April, 1931, she was still fairly well, but the leucocyte count had increased to 96,800. Throughout the year that this patient has been under observation the condition of the left ear has remained unchanged.

I beg to acknowledge my thanks to Dr. A. C. D. Firth for his permission to publish this case.

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"IDIOPATHIC" SPONTANEOUS PNEUMOTHORAX

Examples of the above condition are still frequently described as great rarities and of obscure pathogeny. I have seen, and have collected records of, a number of such cases, and should like to have an opportunity of repeating concisely my view of their probable pathogeny. Nearly all of them get better rapidly without any special treatment, exceptionally, two or more attacks may occur in the same individual. The cause is, I believe, mostly the rupture of a minute superficial emphysema-bulla (just below the visceral pleura) adherent to the parietal pleura—resulting from a healed miliary tubercle. On the other hand, the tuberculous process may be still more or less active (still containing living tubercle bacilli); and naturally, therefore, there are exceptional cases intermediate between "idiopathic" spontaneous pneumothorax and tuberculous spontaneous pneumothorax. The only difference (according to my view) between the tuberculous and the "idiopathic" cases is that the former are connected with still more or less virulent tuberculous foci (containing living bacilli), whereas the latter are connected with healed (non-virulent, sterile) lesions, but lesions of both kinds may exist side by side in the same individual. I have given a bibliographical appendix on the subject at the end of the first Mitchell Lecture before the Royal College of Physicians (that is to say, as it was published by Lewis and Co., 1921). It is clear that, if my view be correct, any apparently (and, in fact, really) healthy individual may, for all one can tell, develop suddenly an "idiopathic" spontaneous pneumothorax, because anyone may have an adherent emphysema-bulla (resulting from a healed miliary tubercle) ready to rupture on any unusually sudden respiratory movement.

The same explanation applies to extremely rare cases of "idiopathic" spontaneous haemopneumothorax.

London, W.1. F. PARKES WEBER.

SURVIVAL AFTER PROSTATECTOMY

In the *Journal* of October 17th Mr. W. S. Dickie reported the case of a patient who lived twenty-three years after the operation of prostatectomy and died at the age of 93.

The expectation of life after this operation is a point of considerable importance. Prostatectomy as applied to simple enlargements of the gland has only been in use in this country for some thirty years, and, so far as I know, no figures have been published recently to show what effect it has on the normal duration of life. It may therefore be of interest to recall some of the operative results obtained by Sir Peter Freyer, whose first cases were performed in 1901, and whose successes really established it as a sound surgical procedure.

The data have been obtained from the careful notes made by Freyer on 129 of his cases, preserved along with his collection of prostatic tumours in the pathological museum of St. Peter's Hospital for Stone. Of these 129 cases there are "follow-up" histories in 82 instances.

Out of these 82, the patients who lived for ten years or longer have been selected, numbering 26 in all, but, as many others were noted by the surgeon as being in good health at periods shorter than ten years, the number coming into this category was probably much higher.

The fact remains that at least 31 per cent. of the 82 patients lived for ten years or longer. Their respective ages and duration of life are shown in the accompanying tables. It will be noted that 7 patients attained the

A.—*Patients Reported as Alive and Well 10 Years or more after Prostatectomy*

	Age at Operation	Reported Well				Age at Operation	Reported Well			
1	53 years	13 years later (aged 66)			9	66 years	17 years later (aged 83)			
2	61 „	17 „	„	(aged 78)	10	66 „	12 „	„	(aged 78)	
3	62 „	17 „	„	(aged 79)	11	66 „	10 „	„	(aged 76)	
4	62 „	14 „	„	(aged 76)	12	71 „	14 „	„	(aged 85)	
5	62 „	11 „	„	(aged 73)	13	71 „	18 „	„	(aged 89)	
6	62 „	11 „	„	(aged 73)	14	76 „	12 „	„	(aged 88)	
7	63 „	13 „	„	(aged 76)	15	76 „	14 „	„	(aged 90)	
8	65 „	17 „	„	(aged 82)						

B.—*Patients who Died 10 Years or more after Prostatectomy*

	Age at Operation	Died				Age at Operation	Died			
1	68 years	10 years later (aged 78)			7	80 years	10 years later (aged 90)			
2	69 „	14 „	„	(aged 83)	8	80 „	10 „	„	(aged 90)	
3	69 „	10 „	„	(aged 79)	9	81 „	14 „	„	(aged 95)	
4	71 „	15 „	„	(aged 86)	10	82 „	11 „	„	(aged 93)	
5	71 „	14 „	„	(aged 85)	11	84 „	12 „	„	(aged 96)	
6	75 „	17 „	„	(aged 92)						

age of 90, and 5 of these were over 80 years old when they underwent the operation.

CHARLES R. McCASH, Ch.M., F.R.C.S.Ed.

London, N 18.

Reports of Societies

X-RAY DIAGNOSIS OF DISEASES OF THE CHEST

The first scientific meeting of the newly constituted Section of Radiology of the Royal Society of Medicine was held on November 20th, under the presidency of Professor J. WOODBURN MORISON, when *x*-ray diagnosis of diseases of the chest was taken as the subject for discussion.

Dr. STANLEY MELVILLE, in opening, said that he regarded all intra-thoracic disease as an essentially clinical study from start to finish. Radiology afforded the most certain and unmistakable evidence of all the ancillary aids to diagnosis, and was the eye of the clinician in internal medicine. He believed that in the early diagnosis of pulmonary tuberculosis definite infiltration could be demonstrated on the *x*-ray film as soon as there was any clinical evidence, that when physical signs were present it might be assumed that the initial stage was passed, the film usually showing far more evidence of disease than was obtainable by means of physical examination, and that finally, if it were a matter only of radiographic examination versus physical signs, the former would be the surer guide, although, fortunately for the patient, the skilled clinician had many more tests at his disposal than percussion and auscultation. In pulmonary tuberculosis the vast majority of infections were by inhalation, and in the adult most investigators regarded all further invasion of the lung as a reinfection. There was much in favour of the theory of reinfection. This view took note of the acquired reaction of the previously infected person—the allergic state, so to speak. In the infant the usual course, depending naturally upon dosage and resistance, was either an acute caseating broncho-pneumonia or a localized broncho-pneumonia in any part of the lung—most commonly in the lower lobe. The clinical evidence might be slight; the local area in the lung might entirely clear up, and at the same time the tracheo-bronchial glands might react, and the story come to an end. On the other hand, the glands might remain in a state of caseation and the second stage be reached where the glands became the principal factor. The future depended upon whether the glands opened into the bronchus, the blood vessels, or the lymphatics. There was another very interesting condition in association with inflamed glands—namely, lymphatic gland tuberculosis, in which, in addition to the definitely outlined glandular opacities, a condition of involved parenchymata might be found. An inflamed tuberculous gland in the hilum gave rise to a local perifocal inflammation. This condition had been studied by many observers, and was known under many names. Such appearances might be very evanescent, persistent, or recurrent; clinical symptoms might be slight or absent, but the infant responded positively to tuberculin. This was evidence of infection, though not of an active lesion. So-called "peribronchial phthisis" the speaker regarded as a most sad heresy, but it was a heresy for which, he feared, radiologists were responsible, because in early days they allowed themselves to be overwhelmed by the massive shadows to which they ascribed pathological significance. On such a diagnosis many hundreds of able-bodied men, chiefly Russians and Poles living in the East End of London, had escaped military service. The fact that linear striation in the lung was composed, not only of bronchi, but of blood vessels, lymphatics, connective tissue, and so forth, seemed to have been entirely overlooked. A simple chronic bronchitis might result in thickening or fibrosis of the bronchial wall with enlargement of the hilar glands, and, if there had been ulceration in the bronchus, streaky sputum and peribronchial fibrosis. It was true that in the case of chronic tuberculous infection of the lung thickening of every tissue, including the bronchi, was found, but because thickening of the bronchi was seen and there might be a little haemoptysis, there was no justification for such a term as "peribronchial tuberculosis." Passing on to consider lung abscess, Dr. Melville discussed the common causes, and said that the picture was well known. He emphasized the value of lipiodol appearances. As to benign neoplasms, it had to be remembered that they were benign only in the pathological sense. In course of time, however benign a neoplasm might be, it would kill by pressure. He had seen several fibromata, weighing as much as 6 lb., which pushed everything in front of them, causing very great distress and eventually death. All benign neoplasms were extra-pulmonary, and as they grew the lung was pushed in front of them. This in itself was an aid to diagnosis. The commonest benign tumour was the fibroma, which grew almost invariably from the posterior thoracic wall, and very often from the head of a rib. It reached quite a large size without causing symptoms, the appearance being that of a well-rounded opacity, showing up in marked contrast to the surrounding lung. Of the other neoplasms he referred only to teratomata. These were anterior in position, not so readily made out as fibromata, more irritant, often irregular in shape, and causing adhesions to the lung tissue, from which they were not readily separated. The diagnosis was made by the perfectly straightforward evidence of a picture in the lateral

plane, in which the growth was seen to have its origin from the mediastinum in the anterior part

Dr. PETER KERLEY said that the commonest malignant condition of the lungs was primary bronchial carcinoma, which was apparently increasing. This apparent increase was due to improved methods of diagnosis, and particularly to improved radiographic technique One of the difficulties which beset all workers on lung malignancy was the means of finding a classification acceptable to everyone He proposed, therefore, to make use of the simplest radiological classification—namely, the two forms in which the disease was most often seen. the lobar or pneumonic form, and the hilar form. The former was due to a combination of growth and collapse ; in the hilar form there was growth without collapse, and this might be readily converted into the lobar or pneumonic form In the lobar form the contraction of the lobe, as evidenced by displacement of the fissure upwards, was first noted by radiologists, and led to a revision of the pre-radiological idea that neoplasms of the lung increased the thoracic contents The thoracic contents were always diminished by primary lung cancer On closer study of a radiograph of lobar carcinoma it would be observed that the opacity was most dense near the root, and diminished in intensity towards the periphery There was no doubt that carcinoma of the lung was the commonest cause of bronchial stenosis and of phrenic paralysis The nerve was at first compressed, and later infiltrated, by the glands A less well-known disturbance associated with carcinoma of the lung was compression or invasion of the vagus The resulting effect was disturbance of the cardiac rhythm, not to be distinguished ante mortem from malignant invasion of the heart muscle Much more often, abdominal symptoms resulted from vagal irritation in the thorax, the commonest being complete or partial gastrospasm, while in rarer cases there might be spasm of the lower end of the oesophagus Very rarely a lung cancer compressed the oesophagus directly and gave rise to vomiting Pleural effusion as a complication of lobar pneumonia was the bugbear of the radiologist, for it masked nearly everything Circumstantial evidence must be looked for, and fortunately this was forthcoming in most cases The weakest point in the mediastinum was at the level of the third thoracic vertebra, and it was here that one looked for evidence of excessive pressure when, for example, a pneumothorax was being carried out The possible association of pleural effusion with phrenic paralysis must be mentioned The diaphragm, when paralysed, completely lost its tone An effusion of any size loading an atonic diaphragm quickly depressed it The visualization of large bronchial or mediastinal glands was a most valuable diagnostic point, and one of considerable significance, as it contraindicated surgical intervention The chief conditions simulating lobar carcinoma were tuberculous pneumonia, syphilis, and aneurysm, but it should not be forgotten that a combination of aneurysm and growth was possible Secondary infection of pneumonic carcinoma by pus-forming organisms was frequent, but it was exceptional for such infection to obscure the other radiographic signs of neoplasm Occasionally the signs of abscess might obscure those of carcinoma In the absence of obvious pointers to malignancy, one sign which might be relied upon was that simple lung abscess was invariably surrounded symmetrically by an area of congested lung tissue. With regard to the so-called hilar form of the disease, this was seen as a dense opacity around the root of the lung. It was easier to diagnose than the lobar or pneumonic type, because there were few other lung conditions causing similar appearances Pleurisy seldom complicated this type of disease until the patient was moribund A sudden transition from the hilar type to the pneumonic type was not uncommon In this type of disease, obstruction of the superior vena cava took place earlier than with the pneumonic type Lymphadenoma invading the lung and an unusual form of pulmonary syphilis were the only conditions simulating the one under discussion If pulmonary syphilis manifested itself as a hilar opacity, there was always gross interstitial emphysema in the neighbouring lung tissue. That emphysema in itself was against carcinoma

Dr F. G CHANDLER said that the value of *x* rays in the diagnosis of thoracic disease could not be exaggerated, but in early tuberculosis he doubted whether it was the quickest method, though it would certainly show the extent of the disease as nothing else would. He had understood Dr. Melville to say that infiltration appeared as soon as the clinical manifestations He agreed that it would appear before the physical signs, but the first few tuberculous nodules, while they would not cast a shadow, might, he believed, produce tubercle bacilli in the sputum, and in his opinion that was the earliest method of diagnosing tuberculosis with certainty. With regard to the apparent increase of malignant disease, his view was that this was the result of improved methods of diagnosis If the increase was a real one, it was the most terrible menace experienced in this generation There were many possibilities of error in diagnosing malignant disease , he had seen malignant disease described as phthisis, abscess, fibrosis, bronchitis, syphilis of the lung, fungus infection (because not infrequently there was a superadded saprophytic infection), empyema, bronchiectasis, aneurysm, and cancer of some other part of the body. Dr. Kerley had mentioned the difficulties that might be caused by fluid These might sometimes be overcome, not by ordinary methods of aspiration, but by the substitution of air or oxygen for the fluid, which would give a good *x* ray picture Taken in conjunction with other signs, negative findings were of just as much value in radiography as positive findings He doubted whether to-day any abdominal operation for malignant growth was justifiable before an *x*-ray picture of the chest had been taken It was of no use to operate on a malignant mass in the stomach when there was a carcinomatous growth in the chest

The PRESIDENT, taking up the question about the recorded increase of cancer, referred to the figures lately given by Dr Dunlop, Registrar-General for Scotland, in which he showed that there was no real increase of cancer at the present day Practically the cancer incidence was stationary, with the one exception of cancer of the breast. He attributed the statistical increase in the lung, prostate, and other cases definitely to radiological and improved pathological methods of examination.

Dr MAURICE DAVIDSON made a few generalizations as a pure clinician. In non-malignant conditions one of the great difficulties in radiological diagnosis lay in the comparative absence of anything like a recognized standard of normality. He had always regretted that there was not a sufficient recognition of the need for a standard of control by normal radiology of the chest The term "normal" must necessarily be an arbitrary one, but the difficulty of a normal standard in radiology lay in the wide variation which existed between the different radiological appearances compatible with the condition described as health He wished a series of chest radiographs could be taken of persons of different ages, occupations, and sexes, who could be described as being in good health He also stressed the insufficient amount of correlation between the clinical and radiological aspects of disease Out of ten people who insisted in theory upon the need for co-operation between the clinician and the radiologist only one insisted upon it in practice Over the term "lung abscess," which included a variety of

conditions differing considerably in their pathology and morbid histology, there was still a good deal of confusion. Lung abscess might be diagnosed clinically and radiologically in cases where it was merely the outward and visible expression of some other underlying condition—for example, new growth. He believed that there was a real increase in primary carcinoma of the lung, and cited certain post-mortem records from German and Swiss clinics which showed that since 1910 the proportion of lung cancer to total cancer had gone up from 2 or 3 per cent. to 13 per cent.

Dr. R. E. ROBERTS discussed the subject from the point of view of the professional radiologist. He agreed with Dr. Melville that *x* rays gave probably the earliest, and undoubtedly the most certain, diagnosis of tuberculosis, but in respect of malignant disease he felt that there was still much to be desired. At the hospital to which he was radiologist it was the custom of surgeons before operating on a carcinoma of the breast to send for a radiograph of the chest for exclusion of malignant disease, and it was rather disappointing, three or four months after a negative examination had been made and the patient had been operated on, to find that there was extensive malignant disease of the lung. It seemed to him that cases which were sent down to the *x*-ray department for a pre-operative opinion involved too great a responsibility for the radiologist, because, as a rule, these cases were not examined carefully by a clinician before operation. He also spoke of the difficulty of distinguishing between silicosis, silicosis plus tuberculosis, and silicosis plus malignant disease.

Mr. J. B. HUNTER, speaking as a surgeon, said that the surgeon's province was not, of course, in the finer diagnosis of tuberculosis of the lung; he had to deal, so to speak, with the darker shadows in the chest. But he felt that radiology could help enormously in the screening of tuberculous cases with a view to showing whether a phrenic evulsion should be done or not. It was surprising to find on doing a thoracotomy for malignant disease, where it was intended to introduce radon seeds, how shrunken was the lung, bearing out the well-known point that there was a tremendous amount of collapse surrounding the tumour, and that very often the radiograph in no way assisted in estimating the tumour size. With regard to abscess of the lung and the assistance given by lipiodol, the number of cases in which lipiodol was found to run into a lung abscess was almost negligible. Either the abscess itself, if it opened into the bronchus, opened posteriorly or lower down, or there was some kind of valvular arrangement which prevented lipiodol gaining entrance. Very often, with a diagnosis of tumour—fibroma or cartilaginous tumour—in the upper lobe, when one went into the question one found that there was a retrosternal goitre. It was quite a simple method of clearing up the diagnosis in such cases to screen the patient and ask him to swallow. Retrosternal goitres would always move when the patient swallowed, whereas no other tumour of the chest wall would do so.

Dr. R. A. YOUNG, after speaking of the value of *x*-ray assistance and the need for team work, supported strongly the protest Dr. Chandler had made against the statement that *x* rays might give the earliest indications of tuberculous disease. He was emphatic that the earliest indications were clinical, either symptomatic or from the presence of tubercle bacilli. The very earliest lesions were microscopic, but might be sufficiently definite to produce bacilli in the sputum. Radiologists should be careful how they put down miliary tubercle as an explanation of the shadows they saw, at any rate in the absence of some statement as to the clinical condition. He had had several cases in which a great deal of anxiety had been caused by an *x*-ray report in which the statement was made that there was extensive miliary disease in one or more lobes, when the patient was quite afebrile, and there was some other explanation of the shadows. He supported Dr. Davidson in his plea for more definite statements as to the standard "normal." He also wished that radiologists would produce a standard (not stereotyped) form of report. He pointed out the great value of *x* rays in demonstrating interlobar conditions, particularly interlobar empyema, and sometimes interlobar serous pleurisy. The strictly lateral *x* ray was of great value; often in localization it seemed almost more valuable than the stereoscopic *x* ray. With regard to malignant disease, he was an unrepentant believer in the idea that this condition in recent years had been greatly on the increase. In former days, although clinicians might have missed the malignant character of the disease, pathologists and morbid anatomists, who were extraordinarily able people, and under whom the great majority of suspicious conditions in the lung were sectioned, must have noticed such disease had it been present. He added a word about teratomata. These seemed commoner than might be expected. One hesitated sometimes to put the patient to the risk of an operation when they were found, but he was convinced that it was the right thing to do, both because the teratoma acted as a marked irritant to the lung tissue and other structures, and, moreover, because it could become malignant. He had recently seen a case in which a teratoma which was apparent in the *x*-ray picture taken ten years ago was allowed to remain, and recently, on operation, was found to have become malignant.

Dr. STANLEY MELVILLE, in replying, said the discussion had brought out the vital necessity for team work. With regard to the increase in the incidence of lung cancer, for twenty years he had never missed the opportunity of seeing every result of post-mortem examination at the Brompton Hospital, and he was quite certain that the morbid anatomist of twenty years ago would not have passed over the cases which were now being seen once or twice every week had they been present then. With regard to Mr. Hunter's remark about lipiodol, he had always regarded the non-entrance of lipiodol into the lung abscess as the greatest confirmatory evidence available. He had very rarely seen lipiodol enter a lung abscess. As to Dr. Young's remarks about the radiologist's reports, it had to be remembered that the radiologist had the most difficult task in medicine—namely, to talk intelligently in terms of shadows.

FILARIA BANCROFTI

A meeting of the Royal Society of Tropical Medicine and Hygiene, with the president, Dr. CARMICHALL LOW, in the chair, was held at the Tropical Diseases Hospital on November 19th.

Dr. HAMILTON FAIRLEY demonstrated the new filarial intradermal test on cases of *Filaria bancrofti* with elephantiasis, non-filarial elephantiasis, and Calabar swelling due to *Loa loa* infestation. The importance of this reaction in differentiating between the two forms of elephantiasis was shown. The new complement-fixation reaction for the diagnosis of the filarial group of diseases in man was also demonstrated, an alcoholic extract of the dog filaria (*Dirofilaria immitis*) being used as antigen. The group nature of the reactions was stressed, and it was pointed out that by means of these two tests it was now possible to detect filarial antibody in the circulating blood as well as in the cutaneous vascular endothelium.

Colonel CLAYTON LANE presented an important series of slides and photomicrographs dealing with the destruction of adult and embryo *Filaria bancrofti* in man, sent by Professor F. W. O'Connor from New York. The microscopical exhibit completely supported Manson's belief

in hyperfilariation, as many as fifty worms being found in a small group of temoral glands in one case.

Dr MANSON BAHR exhibited slides showing the uncoiling of the embryo of *Filaria bancrofti* within the egg capsule, and also specimens of adult *Filaria bancrofti* sent by Dr C Rowin of British Guiana An entomological exhibit from the School of Hygiene and Tropical Medicine included methods of study in atmospheric humidity in small places, by Dr P. A. BUXTON; methods of rearing blowfly larvae aseptically, by Dr. P P. HOBSON, and a survey of the climatic conditions lethal to insects of medical importance, by Dr. MELLANBY. Dr C AYRES showed two new laboratory instruments—the scopometer and the spectro-haemoglobinometer; while Dr ALDO CASTELLANI demonstrated an amoeba test as an additional method of differentiating certain bacteria. A third case of coenurus in man was reported by Dr. H A BAYLIS, and Dr TERTIUS CLARKE showed slides from a case of rheumatic carditis with Rickettsia-like bodies Dr CARMICHAEL LOW and Dr HAMILTON FAIRLEY presented pathological specimens from a case of gastro jejuno-colic fistula with megalocytic anaemia, while Sir LEONARD ROGERS showed a case of refractory sprue which had responded dramatically to hepatex P A F intravenously An exhibition of radiographs on liver abscess was shown by Dr MATHER CORDINER and Dr MANSON BAHR.

CONGENITAL DISLOCATION OF THE HIP

At a meeting of the Liverpool Medical Institution held on November 12th, with the president, Professor W. BLAIR BELL, in the chair, Mr BRYAN MCFARLAND read a paper on the problems of congenital dislocation of the hip

Mr McFarland said that in this disease the most difficult differential diagnosis was from late cases of suppurative arthritis of the hip in infancy (Smith's) *X*-rays, however, settled the question For cases of congenital dislocation over the age when closed reduction is advisable, there was a choice of two operative procedures osteotomy (Lorenz), or formation of a bony "shelf" above the false acetabulum Transient stiffness following closed manipulative reduction and plaster was, if anything, a good feature, and disappeared in about six to nine months Discussing young children in whom the dislocation was so severe that closed reduction was out of the question, the speaker suggested that the "arthritis" which often follows the alternative, open operation was not a real arthritis, but an atrophy due to pressure exerted on the femoral head by the pre-existing shortness of the soft tissues The "shelf" operation was described and discussed in connexion with cases having a very poor acetabulum with no roof In these patients reduction of the dislocation was easy, but retention impossible. Finally, Mr. McFarland demonstrated the principal feature of an ordinary manipulative reduction, and, to dispel any suggestion that the open operation was routine, showed a series of complete cures by the closed method. The communication consisted almost entirely of a cinematograph record of cases and operations, and was profusely illustrated with *x*-ray photographs

Mr T P MCMURRAY said that in his opinion the treatment of congenital hips depended upon one factor, and that was regeneration (or not) of the upper border of the acetabulum All cases of congenital hip should, if possible, be treated by closed manipulation, and if a recurrence of the dislocation took place the upper lip of the acetabulum should be re formed by means of a wedge-shaped lip which increased the depth of the socket and so prevented dislocation. As a result of this the lordosis disappeared and the pain and aching which usually came on in adult or old untreated cases of congenital dislocation was avoided The pain in an old case resulted from stretching of the ligaments of the hip-joint with the gluteal muscles over the acetabular head, and was not, as usually described, due to the formation of an arthritis If an opening was made near this tender area the head of the bone would be found quite free from any trace of arthritis.

BEGINNINGS OF URINARY DISEASE

Mr. ROBERT KENNON, in a paper on the beginnings of urinary disease, described how the commonest urinary symptoms of frequency, scalding, and dribbling may have very simple origins An overloaded bladder with subsequent atony could result from modesty, neglect, or excess of fluid intake, while renal symptoms might follow shortage of fluid intake, faulty dietary, excess of fruit, purgatives, and the hexamine compounds The atonic bladder required rest, and the development of cystitis could be prevented by two-stage micturition and bladder drill. In pyelitis arising from the usual stagnation or from blood-borne infection, alkaline diuresis might fail, unless the customary spasm was treated by large bougies and gradual vesical distension Two-stage micturition should be a routine for all patients in bed or attending ante natal clinics

Mr. C A WELLS asked the speaker what investigations had been made on his cases with a view to confirming the hypothesis on which the paper was based and excluding other conditions productive of stasis Such conditions were not uncommon, and would frequently be disclosed only by appropriate urological methods It seemed to him that the importance of these underlying anatomical or anatomico-physiological abnormalities was considerable in infections of the urinary tract. He instanced the well-known dilatation of the ureters in pregnancy, prostatic enlargement, and congenital and other dilatations of the ureters and renal pelves He found it stimulating and refreshing to have the subject approached from the aspect Mr Kennon had presented—one which seemed to have been neglected more on account of its very obviousness and direct simplicity than for any other reason

Dr HUGH SMITH drew attention to an apparent change in the bacteriology of urines from that of pre-war days. He considered that atypical coliform bacilli, non-lactose-fermenting in type, were much more in evidence now, and when present were difficult to treat by the drugs usually employed He pointed out the disadvantage of using alkalis only in the treatment of mixed urinary infections, and quoted, as an example, the mixed infection of *B coli* and *B. proteus*, which occasionally arises. When the urine was rendered alkaline *B. proteus* predominated, when it was brought back to an acid reaction by acid sodium phosphate, *B. coli* returned. He did not agree that vaccines were of no help in urinary infections Autogenous vaccines had a definite place in the treatment of such conditions, and good results were obtained with them. This was especially the case where there was no obstructive lesion, calculus, or new growth In differing from the view that *B. coli* were frequent in the urine of normal people, he remarked upon the large number of urines examined after being collected by catheterization Sterile cultures, or at the most a feeble growth of *Staphylococcus albus* of skin origin, were obtained, and this, coupled with the rare finding of *B coli* in numerous blood cultures examined, made it very unlikely that in health *B coli* found admittance to the kidneys by the blood stream and were excreted in the urine Further reference was made to the rarity of true staphylococcal infections of the urinary tract Coliform bacilli of various types were still the greatest offenders

Reviews

MENTAL DEFICIENCY

The book on *The Mental Defective*,[1] by Professor R. J. A. Berry and Dr. R. G. Gordon, was, so the preface states, written at the request of representatives of both the lay and medical publics, presumably with the object of instructing them in the subject of mental deficiency. If it be true, as the authors assure us, that not only does the number of people now called upon to handle defective children and various other forms of mental abnormality appear to be "in inverse proportion to their actual knowledge of mental deficiency itself," but also that, as regards brain physiology, even the medical man must be included in the category of the untrained, the urgent need for such instruction is indeed obvious.

How have the authors succeeded in their task? Parts of the book are good. For instance, the chapters on the evolution of brain and the making of mind afford useful short sketches of these subjects. The description of the chief psychological and physical defects of aments, if too incomplete to be of much value to the medical man, is nevertheless a short readable account, which may be of use to the lay public. The chapter on the social consequences of mental deficiency emphasizes the great importance of the subject to the community. Unfortunately, however, the book has grave faults. It contains too many dogmatic utterances and extravagant assertions, and some actual inaccuracies; there are also many important omissions, which seriously impair its educational value. For instance, it is not correct to say that prior to 1899 idiots and imbeciles were dealt with, if at all, under the Lunacy Acts. As a matter of fact, a special Idiots Act was passed in 1886, which enabled these persons to be dealt with under a different procedure and in special institutions, and many were so dealt with. It is erroneous to infer that there are places in which "drab time" is wasted "in inculcating the Saxon kings of England" upon low-grade defectives. Again, J. S. Bolton did not introduce the word "amentia" in 1912; nor does he apply it with "exactly the same meaning as the legal and popular 'mental deficiency.'" Bolton uses the term with a much wider connotation. It is incorrect to say that "it is the English tendency, especially of those working under the Education Act, to refer to higher grades of aments as 'backward' or 'retarded' children." The Education Act especially defines the mentally defective child as one who is *not* "merely dull or backward." The authors' dictum that the number of mental defectives in any English and American community "may not improbably be 15 or 20 *per cent.*" is unsupported by a shred of evidence. The authors define primary and secondary amentia in terms which are not only at variance with those generally recognized, but which are self-contradictory. They say, for instance, that primary amentia is due to causes operative on the *fertilized* ovum, and then they immediately say that most of these cases are due to defective germ plasm and are *hereditary* in origin. Indeed, there appears to be a similar confusion of thought as to the meaning of the term "mental deficiency" itself, for, whilst in some places the authors use this with the connotation recognized by the Mental Deficiency Acts, in others they use it to include a class of persons entirely outside the legal definition, but whom they do not define. Lastly, it is now well known that mental deficiency is no single clinical entity, but a state of mental incompleteness which may result from many different conditions. It follows that the recognition of the different clinical varieties is not only a matter of convenience, but one of necessity to a proper understanding of the subject. This book gives no account of these varieties; it does not even describe such a prevalent and distinctive type as mongolism.

A. F. Tredgold.

[1] *The Mental Defective.* By Richard J. A. Berry, M.D., F.R.C.S., F.R.S.E., and R. G. Gordon, M.D., D.Sc., F.R.C.P.E. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1931. (Pp. xi + 196; 10 figures, 8 plates. 8s. 6d. net.)

MICROBES AND ULTRA-MICROBES

The little book with this title[2] has as its object the introduction of the student of biology to the subject of filterable viruses and the related phenomenon of bacteriophagy. It is divided into three parts, the first of which is concerned with the bacteria and their variation. This is a clear and essentially orthodox account, which serves as a background to the main theme—the ultra-microbes and the Twort-d'Herelle phenomenon—which is dealt with in Parts II and III. The account of the filterable viruses is not so well done as that of the bacteria. It is marred by inaccuracies, such as the statement that the three antigenic types of foot-and-mouth disease virus become the same after passage through the guinea-pig, and that mouse sarcoma is due to a filterable virus. And in the list of virus diseases (p. 67) it is surely misleading to place psittacosis and rabies as virus diseases of man when they are essentially diseases of lower animals, human infection occurring as a pure accident. Further, we disagree with the inclusion of *Les Ultravirus et Formes Filtrantes des Microbes* in the list of books recommended for further study; its author has little first-hand knowledge of filterable viruses, and has made some gross errors in his account of them. The rest of the book is devoted to the bacteriophage, and the description of this phenomenon is clear, concise, and well balanced. In an appendix by G. R. de Beer the analogy between the bacteriophage and the gene is discussed, and there is a glossary of technical terms and an adequate index.

CLINICAL DIETETICS

Clinical Dietetics,[3] by Dr. Gauss, is distinguished from the very many other books which deal with the same subject, and which conform to much the same general type, by a certain vigour of style and clearness of expression, and by the fact that the author has enlivened it by the introduction of some interesting matter dealing with the historical aspects of his subject. The first chapter, for example, deals with the history of dietetics. Dr. Gauss admits, at the outset, that we have no information about the diet of *Pithecanthropus erectus*, the "primitive man" of Java, and very little about that of later types that lived during the Palaeolithic Age; his statements, therefore, are speculative—perhaps fanciful would be a better description. But they are entertaining to read. His discussion of the early history of deficiency diseases is distinctly interesting, and his brief sketch of Anson's (surely not Lord, but Sir John) ill-fated expedition is terse and picturesque. He might, perhaps, have mentioned that Sir John Hawkins is reputed to have known, at least two hundred years earlier, that lemons were good for scurvy. Equally interesting, and still more to the point, is the discussion of "kosher" food. The section might be read with profit by anyone interested in institutional dietetics.

A description of the principles of nutrition, and of the aspects of biochemistry which are most important to their

[2] *Microbes and Ultramicrobes.* By A. D. Gardner, D.M., F.R.C.S. With an appendix by G. R. de Beer, B.Sc. Methuen's Monographs on Biological Subjects. London: Methuen and Co., Ltd. 1931. (Pp. viii + 120; 21 figures. 3s. 6d. net.)

[3] *Clinical Dietetics.* By Harry Gauss, M.S., M.D., F.A.C.P., assisted by E. V. Gauss, B.A. London: H. Kimpton. 1931. (Pp. 490; 59 figures. 36s. net.)

understanding, is followed by a more detailed discussion of the dietetic requirements in various pathological conditions, with specific suggestions for menus. There are the usual tables of caloric values of foodstuffs, and of the details of the composition of different foods. Besides some common etymological inexactitudes there are one or two rather gross mistakes. The classification of vitamins seems almost wholly wrong—"water-soluble A" is written for "water-soluble B," and vitamin E is described as the "haematopoietic" vitamin. Apart from the fact that vitamin E appears to be associated with reproduction, it seems, at present, to be quite unjustifiable to classify pernicious anaemia as a "deficiency disease" in the ordinary sense. So far as our information goes—which is not very far—it would probably be just as suitably classified along with diabetes or cretinism. These errors are the more to be regretted in view of the great confusion in which the vitamin question at present stands. It seems a pity to classify insulin as a polysaccharide, as is done on page 66. Presumably "inulin" is intended.

PSYCHOPATHOLOGY

Motives and Mechanisms of the Mind[4] by Dr. E. GRAHAM HOWE, is intended to provide the medical practitioner with an introduction to psychopathology and applied psychology. The twelve chapters which comprise this book were originally presented as a series of post-graduate lectures under the auspices of the Tavistock Clinic, and have appeared in serial form in the *Lancet*.

The considerable incidence of psychoneuroses in the community makes it clearly impossible to relegate all such cases to the psychopathologist. The practitioner is the first person consulted, and the treatment of this class of patient is a responsibility that must rest in a considerable measure with him. It is sometimes said, Dr. Howe observes, that all general practitioners employ psychotherapy in the treatment of their patients, but, he adds, it is difficult to understand the word being aptly applied to any treatment which does not involve a knowledge of the pathology of the disorder and the reason for the method which is used. It is perhaps regrettable that psychopathology cannot yet be presented as a compact and uniform body of knowledge, but at the same time there are now generally admitted to be certain unconscious mechanisms that are responsible for the development of psychoneurotic symptoms, a knowledge of which enables the practitioner to employ psychotherapy with understanding, and often with success. This book by Dr. Howe would appear to be a very useful introduction to the study of the psychoneuroses. It requires and merits careful study, and will meet the needs of both the general practitioner and also those who are proposing to specialize and those who are preparing for a diploma in psychological medicine. The frequent references to concrete cases do much to assist the reader in grasping the general principles which it is the aim of the author to outline.

Dr. Howe has devoted the greater part of this work to a description of the underlying processes which are held to be responsible for the development of psychoneurotic symptoms, and he does not describe in detail the various forms of psychotherapy. This is no doubt the best method of approach to his subject, since it is only when the pathology of morbid mental states is appreciated that treatment can be said to have that precision and direction which is essential. The author does not overemphasize the possibilities of mental treatment. He regards it as inevitable that the practice of psychotherapy should always fall short of the preaching of psychopathology, but considers that the next few years may see a great advance upon our present methods of healing. This book may be recommended to the medical practitioner, who can scarcely fail to find it both interesting and helpful.

[4] *Motives and Mechanisms of the Mind.* By E. Graham Howe, M.B., B.S., D.P.M. London: The Lancet Limited. 1931. (Pp. xiii + 260; 8 diagrams. 10s. 6d. net.)

PROBLEMS OF MEDICAL PATHOLOGY

Professor CLERC and his eleven collaborators have provided their listeners, and now their readers, with twelve excellent discourses on problems of medical pathology.[5] This series of lectures, it should be explained, is a complementary course given to young graduates and others in Paris at the end of the summer session. The volume under review contains the lectures given in June, 1930, by such well-known teachers as Aubertin, Brulé, Chabrol, Laroche, and Pasteur Vallery-Radot. Each has lectured on a subject in which he is an acknowledged authority, and all the subjects are topical and essentially practical. Professor Clerc, the editor, opens with a critical review of the whole pathology and clinical results of thrombosis of the coronary arteries, with full references to American and British writers. The second lecture, by Aubertin on agranulocytosis (absence of granular leucocytes), is of particular interest. The introduction of this term is comparatively recent it was first used by Schultz (W.) in 1922, to describe a peculiar clinical syndrome occurring in women of middle age. The main symptoms and signs of this peculiar disease are severe ulceration of the throat and pharynx, high fever, frequently jaundice, and asthenia. Death not uncommonly ensues. Pathologically, leucopenia with an almost complete disappearance of the granular cells in the entire bone marrow is the characteristic feature. The erythroblastic tisues are undamaged, and there is neither anaemia nor reduction in the number of circulating red corpuscles. This is the pure Schultz type of agranulocytosis, but, as Aubertin and R. Levy showed in their well-known monograph (1928), there are other varieties of the same disease associated either with severe anaemia of the red cells or with the haemorrhagic diathesis. This peculiar syndrome has scarcely been recognized in this country, so that Aubertin's chapter is well worthy of notice. Other lectures are on such topical subjects as the alkali reserve of the body, coeliac disease, infective jaundice, basal metabolism; a striking article is contributed by Pasteur Vallery-Radot, on anaphylaxis as a problem in practical medicine.

GUY'S HOSPITAL REPORTS

The third quarterly instalment of the *Guy's Hospital Reports*[6] contains six articles: the first is the continuation of Sir William Hale-White's analysis of the past volumes, and deals with the period 1896 to 1908, during which a considerable amount of laboratory research was a prominent feature in the articles. Dr. J. A. Ryle writes in an attractively thoughtful vein on "The physician as naturalist," a title borrowed from the late Sir William Gairdner's Presidential address to the British Medical Association at Glasgow in 1888. Of the other four articles, which deal with special morbid conditions, two stand out in well-deserved prominence. The account by Dr J. R. B. Hern of ulcerative colitis is on the lines of a monograph, and should long serve as a source of reference on a disease the recognition of which, since 1875, is so largely due to

[5] *Problèmes Actuels de Pathologie Médicale.* Par A. Clerc et al. Paris: Masson et Cie. 1931. (Pp. 332; illustrated; 40 fr.)

[6] *Guy's Hospital Reports*, vol. 81 [vol. II, fourth series], No. 3, July, 1931. Edited by Arthur F. Hurst, M.D. London: The Lancet Limited. (Pp. 253-378. 36 figures. Annual subscription £2 2s.; single numbers 12s. 6d.)

Sir Samuel Wilks, Sir W. Hale-White, and Dr. Arthur Hurst, leading physicians to the hospital in successive generations. In an equally well-illustrated contribution Dr. C. F. Cosin reports in detail a case of osteitis fibrosa cystica with a cystic adenoma of a parathyroid, and analyses twenty-three other cases of hyperparathyroidism in association with multiple cysts in the bones, hypercalcaemia, a low plasma phosphorus, and an increased excretion of calcium. He points out that the study of active extracts of the endocrine glands has led to the recognition of new morbid conditions; for, just as the use of insulin and the production, by its inappropriate administration, of hypoglycaemia has been followed by the recognition of spontaneous hypoglycaemia due to hyperinsulinism caused by an adenoma of the islands of Langerhans in the pancreas, so has the use of Collip's parathormone been followed by realization of the association of parathyroid adenoma with the excessive mobilization of calcium and cystic changes in the bony skeleton. In both instances removal of the adenoma causes a dramatic return to normal, which usually progresses to a state of diminished glandular activity. In a short note on the condition of the teeth in a case of parathyroid tumour, Mr. Rushton shows that the teeth are not affected in the same way as the bones. Dr. R. L. Waterfield records a case of lead poisoning with symptoms delayed for twenty-four years.

NOTES ON BOOKS

The fine monograph on cholera[7] by Professor G. SANARELLI, director of the Institute of Hygiene of the University of Rome, deals, as its subtitle indicates, with the epidemiology, pathology, bacteriology, prophylaxis, and treatment of the disease. The appearance of the book is opportune, as no recent work on the subject has appeared either in Italy or in any other country. It is divided into three parts. The first contains seven chapters, devoted respectively to the geography and history of the disease, the clinical aspects, morbid anatomy, bacteriology, experimental action of the cholera vibrio, researches on the supposed toxin of cholera, and the pathogenesis of the disease. In the second part the epidemiology of cholera is fully discussed in all its bearings, including the predisposing and exciting causes, bacteriological diagnosis, the carrier question, specific prophylaxis, and treatment. The third part deals with the modes in which cholera is spread by pilgrims, and the various methods, internal and international, of control. A bibliography of the author's articles on cholera contributed to French and Italian journals is appended.

In our review of the eleventh edition of Howell's *Text-Book of Physiology* (November 14th, p. 903) it was said that the appearance of new editions of this useful book was an annual event. The publishers, Messrs. W. B. Saunders Company, remind us that, as a matter of fact, an interval of three years has elapsed between the appearance of each new edition since 1915.

Dairy practice is daily becoming more and more scientific, and the increasing use of milk and milk products as foods must also increase the interest of the medical profession in the subject. Accordingly the appearance of a new edition of *Dairy Bacteriology*[8] by Professor ORLA-JENSEN is opportune. This is a textbook—not a treatise—which deals with the bacteriology of milk from the point of view of the dairyman. It does not attempt the consideration of diseases which may be carried by milk, apart from a brief review of such organisms as may be excreted by the cow herself. Nevertheless, it contains much of interest and importance for the medical bacteriologist and the public health official, dealing as it does with cleaning and production of milk, normal and abnormal flora, preservation and treatment for direct consumption, grading of milk, and so on. It is admirably translated by Paul Arup, and should be in the hands of all interested in milk and milk production.

The transactions of the seventeenth annual conference of the National Association for the Prevention of Tuberculosis,[9] which was held at Margate in June, have now been published. The volume contains the full text of the opening speeches on various aspects of the prevention and treatment of tuberculosis in the child, and a summary of each discussion. Sir Robert Philip, in his introductory address, emphasized the importance of detecting tuberculosis in the early years of life, before the health was undermined; subsequent speakers, including Dr. Opie of Philadelphia, described the lines on which investigation should proceed and preventive treatment be adopted. The volume affords a handy summary of present-day activities in an important branch of clinical medicine.

A further volume of ten brochures, Nos. 250 to 259, has been issued by the International Labour Office in connexion with its encyclopaedia, *Occupation and Health*. These brochures relate respectively to ironing and ivory; kapok; lithopone; mental hygiene in industry; occupational diseases (historical review); occupational poisonings; naphthylamine; wool (disinfection); medical inspection of factories; metallization by pulverization; and methyl acetate. The volume is obtainable from the London office of this organization, 12, Victoria Street, S.W.1.

[7] *Il Colera*. Por Prof. G. Sanarelli. Milan: Soc. An. Istituto Editoriale Scientifico. 1931. (Pp. xix + 561; 96 figures. 90 lire.)

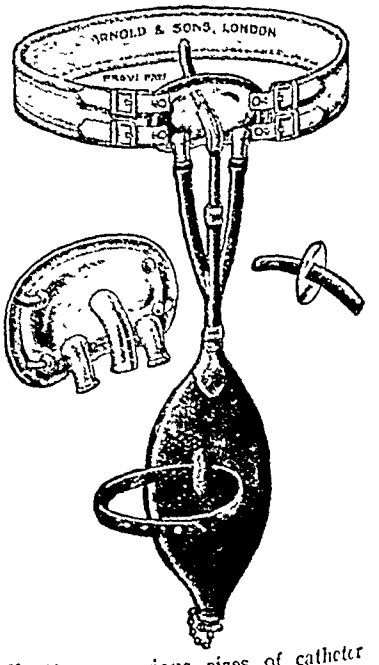
[8] *Dairy Bacteriology*. By Professor Orla-Jensen, Dr.Phil., D.Sc. Translated from the Danish by P. S. Arup, M.Sc., F.I.C. Second English edition. London: J. and A. Churchill. 1931. (Pp. x + 198; 67 figures. 18s.)

[9] London: Adlard and Son, Ltd. 1931. (Pp. xx + 165.)

PREPARATIONS AND APPLIANCES

A TRIPLE-FLOW SUPRAPUBIC URINAL

Messrs. JOHN BELL AND CROYDEN have incorporated several features in the appliance illustrated herewith, to which they give the name "Arnold triple-flow suprapubic urinal." A kidney-shaped celluloid cap contains three outlets, so arranged that, no matter in what position the patient may be reposing, complete drainage is effected. Provision is made not only for drainage by catheter, but also for the removal of any urine which may pass between the catheter and the abdominal walls. All three outlets are connected with a rubber bag fitted with a non-return valve, which obviates any back flow. A special disk fitting holds the catheter in any desired position.



With this apparatus it is claimed that all urine is immediately passed into the rubber bag; the patient may lie in various positions without fear of urine collecting; various sizes of catheter may be used; all parts can be removed and sterilized. An easily detached adjustable belt is fitted.

PSEUDO-EPHEDRINE

For the benefit of readers of the annotation headed "Ephedrine and pseudo-ephedrine" in the *British Medical Journal* of November 14th (p. 906), Messrs. Burroughs Wellcome and Co. (Snow Hill Buildings, E.C.1) announce that they issue pseudo-ephedrine "Wellcome" brand as well as ephedrine "Wellcome" brand.

British Medical Journal

SATURDAY, NOVEMBER 28th, 1931

THE FUTURE OF PAEDIATRICS

It may seem strange to us in England that Dr. C. Anderson Aldrich, chairman of the Children's Section of the American Medical Association, should have thought it worth while to devote his address at the annual meeting of that association to the question whether paediatrics ought to survive as a specialty or disappear as having fulfilled its purpose. Unless we altogether misread the signs of the times, the medical profession of our country is not in any doubt as to the value of the special study of the diseases of children. Of recent years this branch of medicine has certainly increased its professional standing. Professorships have been established in it, more recognition in qualifying examinations has been accorded to it, a new journal dealing solely with research work in it has reached its sixth year of publication, and, whereas there used to be few physicians who limited their practice entirely to children, there are now a good many. To all appearances the subject of paediatrics with us is well established, flourishing, and full of promise. Nevertheless, Dr. Aldrich's question may well lead us to review the position. Does the development in paediatrics which we are now witnessing proceed from the pressure of the growth and expansion of medical science, or does it result merely from economic pressure in the strictly honourable business of earning a living?

Dr. Aldrich, we are glad to say, seems to have no doubt that paediatrics has won for itself a position which in the public interest should be maintained, and he defends his view largely by delineating problems still waiting solution in connexion with the health of children. Much may be said on this score; and, were this all, the future of paediatrics would still be in a strong position, for we feel persuaded that some of the questions propounded by Dr. Aldrich will persist to vex the profession so long as children continue to grace this world. But there is also another side to the picture, which is recognized by Dr. Aldrich—namely, the benefit that has accrued to general medicine by the special study of disease in children. Paediatric research has not only been of value in the study of diseases peculiar to children, but it has often thrown light on diseases of adults by exhibiting in their purest forms the same morbid processes as these occur in early life. Examples of this fact readily occur to the mind. To quote only one, we may put forward the aid given to Sir Archibald Garrod in the differentiation of rheumatoid arthritis and osteo-arthritis by the description of the former disease in children by Dr. G. F. Still. Sometimes, too, it has seemed as though progress in adult medicine has been retarded by insufficient attention to the same problems met with in paediatric practice. Acute rheumatism may be cited as an instance of this. How many years of patient endeavour has it required on the part of Dr. F. J. Poynton and others to get the profession away from the old conception of this disease as a form of arthritis, and to view it as a systemic infection whose worst efforts are concentrated in its attack on the heart? It is surely true to say that the special study of diseases of children forms one of the most interesting branches of medicine, because of the light it throws on the diseases of adult life, and not seldom on the personalities of adult patients; and if this is so, paediatrics could hardly put forward a more acceptable defence of its popularity.

Perhaps the problem of the necessity for the separation of paediatrics from general medicine is not quite the same in America as with us. With them there are many who not only study children's diseases exclusively, but confine their medical practice to child patients. In England, until after the war, such an arrangement was quite exceptional, and most of those who were specially interested and trained in children's diseases practised as general physicians; they by no means divorced themselves from general medicine, in which, indeed, they often were recognized leaders. Of recent years, for various reasons, more men and women have followed the other plan, and have become, in the strict sense of the word, "specialists" in children's diseases; and we have to consider if such an alteration in custom is good for paediatrics and of benefit to general medicine. It seems to have both advantages and disadvantages. Two advantages, at least, are very clear. In the first place, it leads to an increase in the amount of research undertaken in the diseases of children, and the support given by paediatric authors to the *Archives of Disease in Childhood*, established by the British Medical Association six years ago, is clear proof of the immense activity now prevailing in this field of medicine. Secondly, it probably stimulates work on the diseases and feeding problems of infancy, for this is a natural specialty, quite unavoidably separate from the medicine of older children and adults. Its disadvantages are, perhaps, more open to question. It might be said, for instance, that disease in childhood supplies rather a restricted field for the interests of a first-class intelligence, and that, with the exception of diseases of infants, the separation of paediatrics from general medicine is too artificial to be altogether good. But the real danger of such a cleavage seems to lie in the fact that it may lead to the loss by each subject of the illumination obtained from the other.

At the present time in this country the influence of fashion, the actions of the teaching hospitals, and the conveniences of medical education, all seem to favour the further development of paediatrics along the lines of a pure specialty. How far, should it persist, such a development will work out to the ultimate good of medical science probably depends on the degree of attraction which such a specialty may possess for physicians of the best type.

THE CLAIM OF MEDICAL CHARITY

Scarcely a month passes without some reference in these columns to the work of one or other of the two great medical charities—the Royal Medical Benevolent Fund, and the Epsom College Foundation. Christmas is drawing near, and we have before us a timely leaflet headed "The Royal Medical Benevolent Fund: What it is, and why it needs your support." This puts the case so well that we take the liberty of quoting from it at discretion, in the hope that greater publicity will both widen and strengthen the appeal.

The Fund exists to relieve suffering, poverty, and distress resulting from accident, ill-health, misfortune, or other calamity affecting medical practitioners, their widows, and dependants. How many members of our profession realize the number and urgency of the appeals that are made to the Fund? A prolonged and disabling illness, permanent incapacity, a premature death leaving a widow and young children with little or no provision, may be named among the more common experiences which bring applications for help. Even if it be allowed that in some instances provision for such contingencies might have been made by a policy of insurance, it must be remembered that the payment of one or more annual premiums in early medical practice may be an excessive burden. It is easy to be wise after the event, and the actual sufferer is not usually open to economic reproach. Pure misfortune compels an appeal for help. The widow or daughter of a medical practitioner, hitherto in an apparently secure position, is unexpectedly thrown alone on the world, and is quite without special capacity or skill. It is a hard experience, and, if health fails, disaster follows. The Fund has repeatedly to consider cases where from old age or illness the applicant, after some years' service as a housekeeper, companion, or teacher, is practically destitute but for the old age pension of £26 a year. At present the Fund cannot do more than add to this an annual grant of an equal amount. But it ought to be able to do more, and this is one of the reasons why it needs support.

While the provision of financial assistance is as a rule the main necessity, the Fund can at times help in other directions. It gives the sympathetic consideration which misfortune must always command. Further, it may, in particular instances, secure the co-operation and help of other philanthropic societies. Or again, it may help to complete the education of a fatherless child or the training of a youth. The Fund, in short, endeavours to act, not in a mere precise and formal philanthropic as [illegible] profession[illegible] of a new edition of *Dairy* Orla-Jensen is opportune. [illegible] treatise—which deals with the [illegible] the point of view of the dairyman [illegible] sideration of diseases which may be c[illegible] a brief review of such organisms [illegible] e cow herself. Nevertheless, [illegible] was estab-

[illegible]f. G. Sanarelli. Milan: Soc. [illegible] has always [illegible]. (Pp. xix + 561; 96 figures. [illegible] Professor Orla-Jensen, Dr.Phil [illegible] leading [illegible] P. S. Arup, M.Sc., F.I.C. [illegible]en to [illegible] A. Churchill. 1931. (Pp.

The procedure is as follows. Applications for grants from those in difficulties are received by the secretary, and investigation is made privately into the circumstances of the case. Every application must be supported by a subscriber and bear his signature, and be accompanied by letters of recommendation, of which one at least must be from a doctor. Whenever possible all applicants are personally interviewed. The application, together with a full report on the investigation of the case, is submitted to the Case Committee for its consideration and decision. No canvassing for votes is required, and thus the applicant is spared the publication of details of a private or painful character. Grants are voted to all deserving cases, and are for the period of one year, usually paid quarterly. Requests for the renewal of a grant are reviewed from year to year, and where the circumstances are unchanged the grant is renewed and sometimes increased. From the most urgent and most needy of those grantees who have reached the age of 60, the committee selects annuitants, to whom a fixed yearly sum is paid for life. Unfortunately, the lack of a sufficient income has hitherto compelled the Fund to fix the maximum annuity at £40, which is often quite inadequate. The grants are paid out of the income from subscriptions and donations; annuities are paid out of the income from invested capital.

Such, in brief, is the way in which the Royal Medical Benevolent Fund administers the limited sums at its disposal. These are difficult times, in which claims for assistance increase rather than diminish. The professional classes are heavily taxed, and the standard of life expected of them narrows the margin between economic comfort and discomfort perhaps to a greater extent than in any other section of the community. Yet we feel confident that practitioners of medicine, when they are fully aware of the urgent and just claims of medical charity, will not hesitate to support this good cause to the utmost of their ability.

STERILITY IN WOMEN

At the eighteenth meeting of the Scandinavian Surgical Association (Nordisk Kirurgisk Forening), held this year in Helsingfors, an address was given by the Norwegian gynaecologist, Dr. Harald Natvig, on the causes of sterility in women (also published as a supplement to *Norsk Magasin for Laegevidenskapen* for August). His material consists of 735 cases in which attempts were made to find the cause, or causes, of sterility. In a certain proportion of these a "probability diagnosis" was unavoidable, but in only 19 cases was it necessary to admit complete ignorance of the cause. A hypertrophic hymen and vaginismus were diagnosed in 15 cases, genital infantilism in 72, dysfunction of the ovaries in 119, genital infantilism *and* dysfunction of the ovaries in 56, cervicitis and endometritis in 33, retroversion of the uterus in 31, myoma of the uterus in 26, tumour of the ovaries in 11, and chronic pelvic peritonitis in 289. In this last group there were 89 cases of gonorrhoea, 74 of appendicitis, 61 of tuberculosis, and 35 of puerperal infection, as well as a certain

number of obscure infections. There were only 3 cases of impotentia coeundi in the male partner, but there were 22 cases of azoospermia, and 7 of oligospermia and necrospermia. These figures may well tend to underestimate the masculine factor in the problem of female sterility, for Dr. Natvig failed to examine the male partner in all but a fraction of his cases. He is convinced, however, that as far as Norway is concerned it would not be justifiable to accept a recent German estimate which attributes one-third of all sterile marriages to the husband's impotentia generandi (usually gonorrhoeal) or impotentia coeundi. According to the same German authority, if to this third another third be added in which sterility in the wife is due to gonorrhoea derived from her husband, there remains only one-third of all the cases of sterility for which woman alone is responsible. It will be seen from Dr. Natvig's material that gonorrhoeal pelvic peritonitis was diagnosed only in 89 cases, or 12.1 per cent. of the total, whereas in as many as 74 cases he associated the sterility with a previous attack of appendicitis. The observation that appendicitis should be responsible for 10 per cent. of all the cases is the more striking as in this material it numerically outweighed such well-known causes of sterility as tuberculosis and puerperal infection. The high proportion of cases in which the sterility yielded to treatment, and the high proportion of childless marriages in Norway (according to the census of 1920, from 10.95 to 15.56 per cent. of wedlocks in the towns are sterile), have led Dr. Natvig to conclude that some improvement in the quality of future generations may be effected by systematic, skilled, and selective handling of this problem in such a way that the sterility is cured only in otherwise normal persons.

THE HISTORY OF RECTAL SURGERY

Although it is to be supposed that genito-urinary specialists might claim pride of place for the antiquity of their branch of the art of surgery, having regard to the early records of the operation of circumcision, yet second place must assuredly be given to proctology, for it would appear that the history of surgery abounds with references to the operative treatment of fistula-in-ano throughout the ages. At the annual meeting of the proctological subsection of the Royal Society of Medicine on November 11th, Mr. W. S. Perrin delivered his presidential address on the history of rectal surgery, and traced the development of this branch of surgery from the fifth century B.C. Hippocrates was especially fluent on fistulae, and gave the first historical account of the method of curing fistula-in-ano by encircling it with a linen thread, which was daily tightened up ; in due course the track was laid open and a cure effected. Mr. Perrin pointed out that this long-forgotten method had been restored to virtue in a recent paper by Mr. Ernest Miles, who advocates it for the treatment of the submucous tracts in certain complicated fistulae. Four hundred years were to pass before Celsus wrote authoritatively on fistula, but it is doubtful how far Celsus himself was in fact an authority on the methods he described, as it seems more probable that he acted as a sort of Boswell to the numerous surgical Johnsons of the first century B.C. It is a far cry from Celsus to the fourteenth century, but John Arderne is the next notable landmark in this history. He was clearly a man of great intelligence and character, who not only described the treatment of fistula with much particularity, but also ventured to lay down in minutest detail the fees that should be charged, the amount varying according to the wealth of the patient. In the case of a rich man he insisted on a hundred marks, and made no suggestion of any reduction in amount in times of economic stress. Even in those days patients appear to have wandered from one specialist to another, although their wanderings took them further afield than the more limited peregrination of Harley Street and Wimpole Street usual in the twentieth century. Mr. Perrin gave an amusing account of how Arderne cured Sir Adam de Everyngham of a fistula which had resisted the efforts of "all the leeches and chirurgeons of Bordeaux, Toulouse, Narbonne, and many other places," for which cure he received "much honour and loving thought all over England." He was indeed a prophet in his own country, and for many years to come there was no surgeon in England who made so great a mark upon his age, or contributed so much to the art of surgery. Mediaeval England, however, relapsed into surgical obscurity, and much of the ordinary surgical work of the time fell into the hands of "journeyman specialists," who were generally well on their way before the end-results of their treatment had been established. Mr. Perrin did not refer to the itinerant quacks who existed by treating ruptures and fistulas and cutting for the stone. They must have been very numerous, and we know that the secrets of the methods they used were sometimes handed on from father to son for many generations. The lithotomists would appear to have been the aristocrats of this offshoot of the medical profession, and there is much interesting material to be found in the old records of their successes and far more frequent failures. Further pursuit of this sideline of the history of surgery would be of absorbing interest, and it is to be hoped that Mr. Perrin will find time to follow up so fascinating a subject. In the meantime, it is good for all of us to be reminded of the profound clinical knowledge and expert dexterity of the pioneers of our art at the dawn of surgical history, and to ask ourselves whether we should have managed half as well with the primitive appliances that they made shift to work with.

SPALLANZANI

Lazzaro Spallanzani (1729–99) is perhaps best known as a physiologist, but his favourite study was natural history, and in his own country he is honoured as a great naturalist. It was, more especially, his ambition to write a natural history of the sea in its physical and biological aspects, but his unceasing discoveries and the interminable accumulation of material left no time even for the commencement of the work. His friend Bonnet has stated that Spallanzani discovered more truths in five years than all the scientific academies did in half a century. His activities in this sphere are described by Giacomo Pighini[1] in an interesting and readable book, which gives an account of his travels on the shores of the Mediterranean, the Grecian Archipelago, the Bosphorus, the Black Sea, and in a large part of the inland regions of Europe. They were made

[1] Viaggi ed Esperienze marittime di Lazzaro Spallanzani. Di Giacomo Pighini. Prefazione di Guglielmo Bilancioni. Bologna: L. Cappelli. (L.40.)

with the object of collecting material for the study of marine fauna, and of making geological and mineralogical investigations on the spot. His collected specimens are preserved in the museum of the University of Pavia and have rendered that museum as celebrated as the Hunterian collection in this country. But, while describing Spallanzani's travels and discoveries, Signor Pighini has incidentally drawn a vivid portrait of the man himself, who appears, not merely as a distinguished scientist, but also as a student of philosophy, and an orator and writer of great distinction and wide culture. Above all, he gives the impression of being possessed of a singularly sound and acute judgement. We are apt to give Lyell the credit of familiarizing us with the habit of interpreting natural facts by natural means, but this appears to have been Spallanzani's habitual mode of regarding nature. This power of penetrating to the truth of natural phenomena, without the intervention of fanciful theories, is well exemplified in his physiological observations. Thus, when Needham propounded the theory of spontaneous generation on the ground that bacteria made their appearance in putrefying infusions, even after these had been boiled and confined in well-stoppered bottles, Spallanzani perceived that the theory was purely gratuitous. By the simple expedient of boiling the infusion in a hermetically sealed vessel he showed that no bacterial proliferation whatever occurred. Nevertheless, when once started, the theory held its ground almost to our own day, and it remained for Tyndall to dislodge it by a repetition of Spallanzani's experiment. Similarly with the theory that the spermatozoon was a diminutive human being, a homunculus, Spallanzani perceived that the ovum contained within it all the possibilities of development, given a suitable stimulus; but, his countrymen being shocked at his experimenting in this mysterious subject, he was forced to give up his researches. No less interesting, as illustrating his penetration, is his recognition of the existence of tissue-respiration and of the independence of the processes of oxygen-absorption and carbonic acid excretion, of which he furnished the proofs. Spallanzani was assuredly a man of whom Italy has reason to be proud.

N.S.P.C.C.

The annual report of the National Society for the Prevention of Cruelty to Children for 1930–31 confutes the notion that the recognized social services have cancelled the necessity for the society's vigilance. Cases of brutality have indeed increased, though the larger number reported may possibly be due to the fact that more have been brought to light. While there is evidence that the public is gradually realizing its responsibility in preventive work, cases of amazing callousness still occur, which reveal a reluctance on the part of observers to give early information. Last year, in England, Wales, and Ireland, 41,800 cases were reported in which the society's intervention was found to be justified. These involved the investigation of the circumstances of 105,800 children, or an average of 338 children every working day. Yet the society (founded in 1884) is still confronted by widespread ignorance of its activities. According to this report, there are tens of thousands of people who have never heard of its existence, and thousands more who do not know where to find an inspector. During the year the number of these officials has been increased to 259. Eleven women inspectors are responsible for sick and ailing children treated at hospitals in several of the large provincial towns. In reviewing the nature of the cases dealt with, the society comments on the prevalence of burns and scalds, mostly due to the accidents of children left unattended by thoughtless guardians. One branch reported that no fewer than fifteen cases of serious injury occurred in a single month. It has been found that this form of negligence can generally be dealt with by the exercise of some tact, and occasionally by assistance in providing safeguards. Under the heading of "public wrongs" it is pointed out that private schools without supervision can still mask the suffering of children; and the opinion is expressed that the major provisions of the Adoption Act should be made entirely compulsory. The society notes with satisfaction that the section of the Local Government Act, 1929, which places registration and visitation, under Part I of the Children Act, in the hands of the medical officers of counties and county boroughs, is working uniformly well. On the other hand, it regrets that as yet so little has been done to modify the isolation of canal boat children, though the abortive attempt to introduce legislation on the subject last year has not discouraged its supporters. Of evident value has been the unspectacular work carried on in the observation and assistance of ailing, convalescent, congenitally unfit, and abnormal children. In the London medical branch 516 new cases have been dealt with in the period under review, and many anxious but uninformed parents have been directed towards the treatment of their infants. It is clear from this modestly expressed report that a great deal of meritorious work has been done by the N.S.P.C.C. during the past year to release and secure the freedom of many innocent and helpless victims from their intolerable circumstances.

CATALYSIS AND MINERAL WATERS

The mode of action of the various mineral waters is still very obscure, and any attempt at explanation is welcome. At last week's meeting of the newly created Section of Physical Medicine of the Royal Society of Medicine Mr. A. Woodmansey described some experiments carried out at Harrogate on the catalytic action of the local waters. While the mass effect of mineral waters was being closely studied one particular aspect had been selected for certain *in vitro* experiments—namely, the catalytic action of the waters upon hydrogen peroxide. Expressing the equivalent of hydrogen peroxide decomposed in cubic centimetres of decinormal potassium permanganate, Mr. Woodmansey showed that the effect of iron water varied from 16.5 at the end of thirty minutes to 88 at the end of four hours. Control experiments with distilled water showed no such effect. On plotting a curve of the action of mineral water it was possible to arrive at an average hourly rate of decomposition. This figure was used as a "catalytic index" for any particular water. For iron water this index was 22. Exposure to air or boiling largely destroyed the catalytic action. "Crescent water" gave the highest index (29), and pure chalybeate water the lowest (4.9). Since iron and manganese are known to influence catalytic action it was decided to see if

any relation existed between the amount of these substances present in the mineral waters and the catalytic index. Preliminary investigations of the hydrogen ion concentration of mineral waters showed that such variations as are found had no relation to the catalytic index, nor did the iron content of the waters alone explain its variation index. Sulphur waters containing only a trace of iron gave indices varying from 7·5 to 17·6. Manganese, on the other hand, seemed to have some relation to catalytic action with one or two exceptions, such as Harlow water, where a minute quantity of manganese was associated with quite a moderate index (17·3). A further experiment tested the effect of adding a standard solution of catalase to mineral waters to see if any co-enzyme effect was produced. Definite inhibition was found in all but two instances, probably owing to a salt effect, but in the case of "crescent water" and "magnesia water" the combined effect was greater than the sum of the two separate effects—that is, suggestive of a co-enzyme action. Mr. Woodmansey put forward an attractive hypothesis to explain how the catalytic action of mineral water could produce effects in the human subject. He suggested that the metabolism of purin substances was definitely helped by such catalysts as were present, possibly by a co-enzyme action upon xanthine oxidase in the liver.

THE PRESIDENCY OF THE GENERAL MEDICAL COUNCIL

Since its formation in 1858, under the first Medical Act, the General Medical Council has had nine presidents—Sir Benjamin Brodie, Joseph Henry Green, Sir George Burrows, Sir George Paget, Sir Henry Acland, John Marshall, Sir Richard Quain, Sir William Turner, and Sir Donald MacAlister. The Council began its one hundred and thirty-fourth session on Tuesday, November 24th, and a full report of the address from the chair appears in the *Supplement* to our present issue. From this it will be seen that Sir Donald MacAlister, acting on medical advice, has resigned the high position to which he was appointed twenty-seven years ago, and which he has held with the greatest distinction. Sir Donald was first appointed to the Council as representative of the University of Cambridge on November 13th, 1889, and in 1908 he became the representative of the University of Glasgow. His whole period of service thus amounts to more than forty-two years. He succeeded Sir William Turner as President on November 29th, 1904. At the conclusion of public business on Tuesday the Council's regret at the relinquishment of office by one who has occupied a commanding position for so long was voiced by Sir John Moore. Later in the day, Sir Norman Walker, who has served continuously as Direct Representative for Scotland since January 1st, 1907, was elected to succeed Sir Donald MacAlister in the presidential chair. Sir Norman Walker has been President of the Royal College of Physicians of Edinburgh since 1929, he is consulting physician for diseases of the skin at the Edinburgh Royal Infirmary, inspector of anatomy for Scotland, and chairman of the Consultative Council for Medical and Allied Services, appointed by the Scottish Board of Health. During the war he was chairman and convener of the Scottish Medical Service Emergency Committee, and in 1905–7 he was chairman of the Science Committee of the British Medical Association. For many years he has sat on the dais by the side of the President, at meetings of the General Medical Council, and as Chairman of Business, as well as of the Examinations Committee, he has had much to do with the direction of the Council's affairs. He has visited the Indian universities on behalf of the Council, and his reports on his return influenced the Council greatly in dealing with the delicate situation regarding India which has arisen in recent times. The proposal to elect Sir Norman Walker President for the ensuing five years was made by Sir John Moore, and seconded by Sir Holburt Waring. After it had been carried, Sir Norman was congratulated by Sir Donald MacAlister and placed in the chair by him. Sir Norman Walker thanked the Council, and accepted the duty with which he had been entrusted.

PREVENTION OF BLINDNESS

On November 14th the general assembly of the International Association for the Prevention of Blindness was held in Paris under the chairmanship of Professor de Lapersonne. Representatives of the French Ministry of Health, the League of Nations, Great Britain, the United States, Belgium, Holland, Hungary, Italy, Poland, Spain, Switzerland and the Argentine were present. After the chairman had outlined the association's work for the past year and its plans for the future, a report on industrial eye accidents was read. The lack of provision for immediate treatment in these cases was commented upon, and a premium for workers seeking immediate attention was one of the proposed solutions of the problem. Mr. Bernard Cridland (whose article on the work of the International Association appeared in our issue of March 14th) suggested that before starting a propaganda campaign it would be as well to obtain uniform statistics on the causes of blindness in the different countries. The proposal was accepted after a speech by the Spanish representative, Dr. Marquez.

We regret to announce the sudden death, on November 20th, of Mr. A. W. Nuthall, F.R.C.S., surgeon to Queen's Hospital, Birmingham, and consulting surgeon to the Birmingham Children's Hospital, and of Dr. Frank Hawthorn, D.S.O., senior surgeon to the Newcastle upon Tyne Hospital for Sick Children.

The michaelmas meeting of the Society of British Neurological Surgeons is being held at the house of the Medical Society of London at the end of this week under the presidency of Mr. Donald Armour. On Friday, November 27th, at 10 a.m., Mr. Wilfred Trotter opens a discussion on spinal tumours; at noon Mr. Lambert Rogers exhibits a cinematograph film entitled "The skull plough"; in the afternoon there is a discussion on the pathology of the gliomas, and in the evening members dine at the Lansdowne Hotel. Saturday morning is devoted to operations at the London Hospital and a demonstration of cases.

The Buckston Browne prize and medal of the Harveian Society of London have been awarded to Mr. Cecil P. G. Wakeley, F.R.C.S., and Mr. Laurence O'Shaughnessy, F.R.C.S., whose essays on "The treatment of shock by intravenous therapy" were deemed by the president and assessors to be of equal merit.

THE BEGINNINGS OF THE CRIMINAL

LECTURE BY DR. LETITIA FAIRFIELD

At a meeting of the National Council for Mental Hygiene on November 12th, Dr. Letitia Fairfield delivered a lecture on the general subject of mental hygiene and the prevention of crime, especially from the standpoint of juvenile criminality. The presence of a lawyer in the chair, Mr. Herbert du Parcq, K.C., led her to remark on the parallel approach of the law and of mental hygiene to modern investigation of the criminal, both from the standpoint of those who had studied him in prison and from that of the psychological clinic.

Both legal experts in criminology and mental hygienists, Dr. Fairfield said, had laid emphasis on the same main factor—namely, the importance of early beginnings. A large percentage of prisoners began their criminal practices before the age of 21, and often as children. Juvenile courts in many places, notably in Chicago, showed that some of the gravest crimes amongst juveniles were linked with minor character defects which revealed themselves in the schoolroom. If crime was to be prevented, therefore, a start must be made, not with juvenile misdemeanour, but in the schoolroom, and even beyond the schoolroom, in the nursery. Modern hygienists and criminologists had also found themselves in agreement concerning the normality of the material with which they were dealing. When one tried to arouse interest in child guidance clinics one was confronted with the remark, "Ah, you are interested in the abnormal." This, of course, showed a total misunderstanding of the position. As the head of one child guidance clinic said, "The naughty child is as normal as the good child, probably more so.". The majority of behaviour and conduct difficulties, large or small, were superimposed by bad training or by external environment, or both, upon a perfectly normal mentality. Professor Cyril Burt, psychologist to the London County Council, had found this in studying juvenile criminals—namely, that they could be grouped, not as moral imbeciles so-called, nor as monsters of depravity, but around the normal instincts which everyone possessed. Various criminologists who had studied the adult criminal had come more and more to the same conclusion. Lombroso's discovery of an alleged innate criminal type, supposed to be condemned to a criminal career by the shape of their noses, their palates, or their fingers, had been discredited. Over-emphasis had been placed by others on the heredity of the child, but there was nothing in heredity which compelled the individual to develop in a certain direction, or placed a limit on what he did with the characters with which he was born. It had also been said that very large numbers of juvenile criminals were mentally deficient. Now that accurate tests were available, it was known that mental deficiency only obtained in a small proportion of criminals. Except for this small percentage, the defective did not become criminal, given reasonable education and training. Therefore it was important, both from the angle of mental hygiene and that of criminology, to bear in mind that there was an original basis of normality upon which to work.

What contribution, then, could mental hygiene make to the study and prevention of crime? To this question Dr. Fairfield replied that the main contribution lay in the formation of good citizens out of the average individual type. Crime came from failure to control both self and environment. The aim of mental hygiene was to teach man how to live at peace with himself and society, without conflict in his own mind or with his neighbours, and in command of the environment in which he was placed. Dr. Fairfield then entered upon a consideration of some of the requisites in the training of the child, which, if they were neglected or misunderstood, might cause the criminal habit to develop. The normal development of the child's love-life—its *libido*—might, for example, be interfered with at a very early stage owing to jealousy on the birth of another child. It was too often assumed that the child would accept a new rival in its parents' affections with perfect calm, sweetness, and unselfishness. If the situation were not carefully handled by the parent, the most violent conduct disturbances might ensue, issuing even occasionally in murder, and often in symbolic acts of destruction and retrogression to an infantile state. That was one way in which good habit formation might be interfered with and the child flung back for many years. Another emotional disturbance which had some effect, but which was not always recognized, was the disappearance of one or other beloved parent—by no means necessarily a worthy parent—as a result of death, divorce, or desertion. Very strange reactions sometimes ensued, taking the form, perhaps, of stealing or destruction, the child desiring to revenge itself for the outrage upon it and the loss of a parent who had been endeared. Again, real or imaginary harshness and repression had the same psychological effect on the child, leading to grudge-formations and emotional disturbance. The same was true of anything that encouraged an inferiority complex. For example, any irregularity of birth, which in cruder circles might lead to taunts or gibes, any physical peculiarity, especially a speech defect, might cause external training in habits, self-control, and moral ideas to fail, because the tormented child was unable to assimilate them. All these reactions showed first as mild misbehaviour, with nursery misdeeds, failure in control of simple reactions such as those connected with excretion, the destruction of other children's toys and clothes, and temper "tantrums." If the cause was not removed, or was aggravated, they might become fixed habit patterns, and continue, for other reasons perhaps, long after the original cause had been removed or forgotten. The cause might often appear grotesque, small, or absurd to the adult, but the child was arguing quite correctly from his own limited experience. Further, the child might be quite incapable of explaining what was the real and original cause which so upset his emotional development. It might be repressed or diverted, or associated with some covering incident. Dream interpretation of the simple overt dreams of the child was one method towards understanding, and another, introduced at clinics in London, was to watch the play activities of the child, especially with dolls and puppets. When children were left free from the guidance of their elders to work out situations with the material under their own hands, it was extraordinary how they would explain what was really worrying them, and very often the child would release its own complex, and find a solution for its own difficulties in sympathetic hands.

The annual report of the Victorian Bush Nursing Association records a marked increase in the number of obstetrical cases undertaken during the period ended June 30th, 1931. Closer co-operation with the medical profession has been a recent tendency, and during the year only 6 per cent. of the confinements were conducted without the help of a practitioner. The maternal mortality rate was 2.1 per 1,000 live births (State average, 5.4); stillbirth rate, 16.55 per 1,000 (State average, 31); neo-natal death rate, 13.91 per 1,000 (State average, 30.7). Sixty-five nursing centres are now in effective operation. They are all run on a co-operative basis, the householder paying an annual subscription of 30s. for nursing for himself and family. In Bush nursing hospitals weekly fees vary from £2 to £5.

Scotland

Hospital Organization in Scotland

The annual report of Dr. A. S. M. Macgregor, medical officer of health for Glasgow, for the year 1930, discusses the question of the reorganization of hospital facilities in reference to the Local Government (Scotland) Act, 1929. The report points out that the operation of the Local Government Act has revealed unexpected problems, which would require careful inquiry and consideration, and that among these the foremost was the question of hospital provision. It is stated that in Glasgow there are some 6,200 hospital beds for all types of infectious and non-infectious diseases, and that the question of interchangeability between the different institutions has become a matter of great importance. It had become evident that a good deal of hospital provision—about 25 per cent.—was devoted to the care of the aged infirm and those who were chronically ill with various permanent ailments, while, at the same time, the demand in winter for the treatment of acute cases was leading to overcrowding of hospital wards. Many of the aged and infirm could be accommodated in institutions other than up-to-date hospitals; with chronic infirmities classification was more difficult. An abrupt separation as between acute and chronic ailments was to be avoided. The adequacy of hospital accommodation was also closely bound up with the possibilities of home treatment for the sick poor; too free use of hospital accommodation, for minor ailments and for affections which could be nursed at home, tended to restrict the usefulness of hospitals. It was evident that an improved outdoor medical service, associated with a domiciliary nursing scheme, would materially conserve hospital accommodation, and would in time become an essential auxiliary to hospital treatment. Co-operation between council hospitals and voluntary hospitals was already close in many respects, and would undoubtedly become closer. The function of the out-patient clinic as a diagnostic centre in association with hospital work was also an outstanding matter for consideration. According to the report, the general death rate in Glasgow during the year was 14.2 per 1,000 as compared with 16.3 for the preceding year. It is satisfactory to note that the number of cases of pulmonary tuberculosis notified during the year was only 1,687, or about two-thirds of that notified as recently as ten to fifteen years ago. With regard to new housing accommodation, the report states that half of the new houses provided were three-apartment dwellings, and that this type of house is the most popular and the most serviceable for the relief of overcrowding.

Royal Infirmary of Edinburgh

An account of the work of the Royal Infirmary of Edinburgh was given by Mr. Russell Paton, organizing secretary of the League of Subscribers, at a meeting in Edinburgh on November 19th. Referring to the present need for extension of the institution, he said that every citizen must ask how far it would be possible to maintain the voluntary principle intact, or whether there would be a commingling of voluntary, municipal, and State-aided hospitals in the system of the future. The lecturer gave a brief sketch of the origin and history of the Royal Infirmary, and indicated the development that had taken place in recent years; in the past year, he said, some 5,000 cases had been treated on the medical side as compared with 4,300 twenty years ago, while the number of surgical cases had been 14,600 as compared with half that number at the beginning of the same period. Another important factor was that twenty years ago the cases in the Infirmary were fairly evenly divided between the town and the country, whereas in the past year 8,700 cases had come from the city, and 10,400 from the country districts of Scotland. The waiting list was another pressing consideration; in the present month it included some 2,000 cases, the majority of which were surgical. Important extensions were in contemplation at the present time, and when these were completed an additional £90,000 per annum would be required to carry on the institution. The speaker was convinced that the voluntary system was not exhausted, and that both in management and in finance it produced an atmosphere peculiarly helpful to hospital service.

Child Welfare in Edinburgh

A toddlers' playground was opened by Lady Findlay, D.B.E., at Portobello, Edinburgh, on November 14th. Councillor Mrs. Somerville, who presided, said there were now fifteen of these open-air playgrounds in Edinburgh, each taking care of some thirty or forty young children. There were also nine nursery schools in Edinburgh, which took in children for the whole day, and provided them with something in the nature of education. Lady Findlay, in declaring the playground open, said that those who had considered the problem of child welfare in a crowded city must realize the importance of centres such as this, where small children between 2 and 5 years old could be safely kept in ideal conditions of health for some hours while the mother was busy. There was also an advantage to the children themselves in the inculcation at an early age of elementary habits of order by taking part in organized games; this sowed the seeds of good citizenship. Dr. Findlay of the corporation child welfare department spoke with appreciation of the work which was done by voluntary helpers to make these centres a success. It was announced that the new playground and the hut attached to it were opened free of debt. The sum of £25 had been received from the corporation, £50 from the Voluntary Health Workers' Association, £40 from the Day Nursery Association, and the rest of the money had been collected by voluntary workers, while the children themselves had contributed £4 in halfpennies and pennies. The hut, with its equipment, had cost about £280, and between £70 and £80 a year would be required to carry on the work.

Buckie Typhoid Epidemic

An epidemic of typhoid fever has prevailed in Buckie, Banffshire, for the past ten weeks. Thirty-four cases in all were notified, but the epidemic is now regarded as over because no fresh cases have been notified since October 5th. Most of the cases have been treated in the Campbell Hospital; 21 have been discharged during the past six weeks, leaving 13 cases still under treatment. There have been no deaths. The outbreak was traced to a "carrier" who was temporarily resident near one of the sources of the town's water supply. This source was, in consequence, cut off, and, since the discovery of the "carrier," water from it has not been allowed to enter the supply of the town.

Central Midwives Board

The examinations of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, have just concluded with the following results. Out of 155 candidates 142 passed. Of the successful candidates, 62 were trained at the Royal Maternity Hospital, Glasgow, 27 at the Royal Maternity Hospital, Edinburgh, 18 at the Elsie Inglis Memorial Hospital, Edinburgh, 1 at the Maternity Hospital, Aberdeen, 12 at the Royal Infirmary, Dundee, 3 at Stobhill Hospital, 7 at Govan Maternity Hospital, 5 at Bellshill Hospital, 4 at the Royal Infirmary, Perth, and 3 at Barshaw Hospital, Paisley.

Ireland

Medical Certification under National Health Insurance

In a letter issued by the assistant secretary (Mr. J. A. Duffy) of the National Health Insurance Committee to medical certifiers under the National Health Commission, attention is directed to the fact that the number of medical certificates issued in the Irish Free State under the medical certification scheme has increased by 77 per cent.—from 709,262 in 1923 to 1,253,224 in 1930—and that during the same period the amount expended by approved societies on sickness and disablement benefits has risen from £354,828 to £617,699, an increase of 74 per cent. Having considered the report of the subcommittee, consisting of representatives of the medical profession and of approved societies, appointed to investigate the causes of this increase in certification, the Commission desires to impress on medical certifiers the following points: (*a*) A medical certificate of incapacity issued to a person who is not incapable of work places a burden on the national health insurance fund for which no financial provision has been made. This practice, if continued, must lead to financial instability. (*b*) Before receiving a medical certificate of incapacity every applicant should be conscientiously examined, if necessary at his own home. (*c*) If the certifier is satisfied that the applicant is incapable of work, owing to some specific disease, or to bodily or mental disablement, he should issue a certificate. (*d*) A certificate of incapacity should be based solely on the certifier's honest opinion as to the state of the applicant's health as disclosed by examination. No certificate should be issued on sympathetic grounds—for example, unemployment or poverty. (*e*) If the certifier is satisfied that the applicant is not incapable of work he should without hesitation refuse to issue a certificate and notify the Commission on the appropriate form. (*f*) If the certifier is in doubt he should apply immediately for a second opinion under the District Medical Referee Scheme. (*g*) When an applicant to whom a certificate has been issued is found fit for work at once or within not more than three days, he should receive a final certificate to that effect without delay. (*h*) A certifier must not issue a certificate to any other than the insured person to whom it applies. The letter also states that in accordance with the recommendations made by the subcommittee it has been decided that the maximum monetary penalty to which certifiers are liable for breaches of the agreement shall be raised from £5 to £20 as from the date of the letter referred to, and that cases of serious irregularity shall be reported to the Medical Registration Council. The Commissioners express the hope that they will have the co-operation of every medical certifier in dealing with the serious position which has arisen, and that an immediate improvement in certification will ensue.

Belfast Maternity Hospital

At the half-yearly meeting of the Maternity Hospital it was announced that the joint building fund of the Maternity and Royal Victoria Hospitals in Belfast amounted to £88,204. The report showed that the number of women admitted to the wards was 671, as compared with 774 during the same period last year. Of these, 449 were admitted for confinement, 222 for treatment, and 454 babies were born, including ten sets of twins. In the district there were also fewer patients—158 as compared with 201—and 161 babies were born. At the baby clinic 195 births were recorded, and 1,018 second visits. The ante-natal department was stated to be of the greatest benefit to mothers and infants. There had been 892 new patients and 2,303 re-attendances. Of the nine nurses who entered for the Central Midwives Board examination, eight had passed. In regard to the financial statement receipts amounted to £2,528, and expenditure to £2,612, leaving an adverse balance of £84, but as collectors were only beginning to make their returns the committee was not apprehensive of any appreciable debit at the end of the financial year. The annual grant of £1,000 from the Belfast Corporation enabled the committee to carry on the very important ante-natal department. It is confidently expected that in the course of the coming year the Royal Victoria Hospital will be in a position to take over this hospital, with its assests and responsibilities.

Belfast Children's Hospital

In order to stimulate interest in the work of this hospital, the splendid new building outside the city's industrial belt on the Falls Road was utilized recently for the annual "Pound Day" in connexion with this institution. Many visitors took advantage of the opportunity to show in a practical manner their interest in one of the greatest philanthropic works in the city. Three years have already been spent in preparing the new home for the Children's Hospital, and though it is difficult at present to say definitely when the activities of the hospital will be transferred from Queen Street, the constructional work is expected to be finished next year.

England and Wales

Vital Statistics for 1930

The Registrar-General's Statistical Review of England and Wales for 1930, Tables, Part II, Civil, may be obtained from H.M. Stationery Office (2s.). As previously the volume contains statistics of population, births, marriages, and divorces, registers of electors, and vital statistics of the British Dominions. A table is given showing the populations of England and Wales, Scotland, and Ireland as enumerated at each Census from 1821 to 1921, and so estimated for each year 1891 to 1930 inclusive. The number of marriages solemnized in England and Wales during the year 1930 was 315,109, against 313,316 in the previous year. The rate in both years was 15.8 persons married per 1,000 persons living. This rate is the highest recorded since 1921, notwithstanding the present economic depression. Of the total marriages 31 per cent. were solemnized during the third quarter, or more than double the number during the March quarter. This preference for the third quarter has been constant since the beginning of the present century, prior to which the fourth quarter had been the favourite quarter for marriage. It is interesting to observe that 22 males and 699 females married at 16 years of age, the lowest legal age at which marriages may be solemnized, and that while the 22 males married females up to 23 years of age, the 699 females married males of varying ages between 16 and 49 years of age; in only five cases were the bride and bridegroom of the same age. The number of decrees nisi made absolute in respect of dissolution or annulment of marriage was 3,563, an increase of 167 over the figure for the preceding year. The births registered during the year totalled 648,811, an increase of 5,138, though the rate of 16.3 per 1,000 of the population remained the same. This increase in the number of births is probably in consequence of the high marriage rates recorded during the last two years. The proportion of the sexes in the births registered during the year was 1,044 males to 1,000 females, thus continuing the approximate proportion of recent years. It is interesting to note that there was at the end of the year 1930 a total of 157,948,940 names in

the Registrar General's index available to the general public for searches in the registers of births, marriages and deaths. The statistics relating to parliamentary electors give the figures for the 1930 register for England and Wales as 12,101,108 males and 13,629,399 females, making a total of 25,730,507 electors, with increases of 234,314 and 400,400 in the respective sexes over the preceding year.

New Liverpool Radium Institute

The foundation stone of the new Liverpool Radium Institute and Hospital for Cancer and Skin Diseases, in Myrtle Street, was laid on November 23rd by the president, Lord Derby. The chairman of the hospital, Alderman H. M. Miller, said that the time had come when reconstruction, rearrangement, and enlargement had been found to be absolutely necessary. The committee had long contemplated such a step—some might say they had been too long—but nothing had been decided without careful consideration. They had been determined that everything should be of the highest quality, and the plans had been revised several times. Replying to the vote of thanks, Lord Derby said that the value of a hospital lay as much in its research work as in its treatment, and that these two departments together could only be carried on successfully provided there was the fullest confidence and co-operation between them. Cancer was the most dreaded disease. For every person who had it there were 400 to 500 people who imagined at one time or another that they had the disease, or were going to get it. Fear of the disease was about as bad as having it. This hospital dealt with cancer, and was prepared to use not only radium, but every kind of treatment, in cancer cases that the medical profession recommended. The hospital received patients from the whole of West Lancashire, West Cheshire, South Westmorland, North Wales, and the Isle of Man. Even in these troublous times, when rigorous economy was necessary, it was essential that all who had the means should help to alleviate sufferings which that hospital undoubtedly could ameliorate. The new hospital will cost £70,000 and will be on the most up-to-date lines. A deep x ray therapy equipment is already installed.

University of London and National Economy

At the meeting of the London County Council on November 17th, a letter was read from Lord Macmillan, chairman of the Court of London University, stating that the Court had been much concerned with the financial position of the University, in view of the imperative need at the present time for national economy. The University Grants Committee had stated that it would have no longer at its disposal during the current quinquennium any funds for capital grants, but that the annual recurrent grants from the Treasury would be maintained at their present figure, subject to the overriding necessities of national finance. The Grants Committee had added that it was the hope of the Government that the universities and colleges, while maintaining a high standard of economical administration, would find it possible to avoid any serious curtailment of their work as centres of advanced education and research, and would continue to receive in the fullest measure that circumstances allowed, the assistance of all bodies and persons from whom they had learned to look for sympathy and support. Lord Macmillan proceeded to say that the Court had had before it figures showing the effect on the finances of the L.C.C. of the present national emergency, and had been impressed with the seriousness of the situation. Recognizing the generous treatment it had received at the hands of the Council, it now offered to forgo, for the Council's current financial year and for the whole of the financial year 1932-33, 10 per cent. of the annual maintenance grant of £125,000 which the Council had voted to the Court. Any claims on the capital grant promised by the Council (£250,000) for the development of the Bloomsbury site would also be postponed until after March, 1933. Lord Macmillan added: "It is inevitable that this diminution of its resources will necessitate the curtailment and postponement of developments in the activities of the University which in normal times the Court would have regarded itself as in duty bound to foster and encourage. It does not doubt that the Council will bear this fact in mind when the present period of financial strain is over." The Council accorded its thanks to the University Court for its generous action.

King's College Hospital: Service of Remembrance

The annual service of remembrance and thanksgiving for the lives of those commemorated in connexion with the work of the institution was held in the chapel of King's College Hospital, Denmark Hill, on November 19th, and was largely attended by the members of the medical, nursing, and administrative staff, and by other friends of the hospital. The service this year included the dedication of a memorial to the late Dr. David James Graham of Edinburgh, and the address was given by Dr. Graham's brother, the Right Rev. J. A. Graham, D.D., Moderator of the Church of Scotland. This memorial, which is believed to be unique among hospital memorials, is covered by the following by-law: "Every person endowing the hospital with an investment (approved by the committee of management) producing at the time an annual income of not less than £5 5s. may have the name of any person placed and retained as an endowment or memorial governor on the list of governors of the hospital." After evening prayer, the lessons being read by Lord Gorell, chairman of the governing body, alms were received, including the gift intended to create the late Dr. Graham a memorial governor. The Moderator in his address, spoke of the Christ-likeness of the ministry of healing, pointed out the fine symbolism whereby the chapel at King's College Hospital is at the very centre of the great institution, and expressed the hope that the voluntary spirit which evoked such love and service on behalf of the sick would never be suffered to disappear. He also made allusion to the circumstance whereby his late brother, although not connected with King's College—for the whole of his educational and professional career, except for his war service in France, was spent north of the Tweed—should, by virtue of an anonymous gift, be created a perpetual governor of this great London hospital. He spoke of David Graham as an outstanding example of a beloved physician, and said that although it was nearly three years since he passed away, and a much longer time since he gave up active practice in a vain pursuit of health, he (the speaker) was constantly coming upon persons in Edinburgh who spoke of him with gratitude and affection. A brief memorial notice of Dr. Graham appeared in our issue of January 26th, 1929 (p. 181).

Royal Dental Hospital of London

The twenty-second annual clinical at-home took place at the Royal Dental Hospital School of Dental Surgery, Leicester Square, on November 21st. The morning programme included a number of demonstrations both at the hospital and in the operating theatre at Charing Cross, and in the afternoon there was an exhibition of clinical cases. In the large conservation room at the top of the building some thirty general cases and forty orthodontic cases, particularly of children, were exhibited as well as photographs, models, and specimens of pathological interest from the museum. The appliance room, with prosthetic cases, the mechanical laboratory with students' work, the x ray department with an exhibition of skiagrams, and the John Hunter Hall

research department, with an exhibition of photomicrographs and drawings by members of the Research Committee, were also open for inspection. In the evening past and present students, with the staff, numbering altogether 180, gathered at dinner under the chairmanship of Sir Norman Bennett. Among the guests were the president of the British Dental Association (Mr. W. Kittow), the deans of three other schools (Guy's, Royal Free, and London Hospital), and a number of examiners. Sir Norman Bennett described himself as the junior member of the teaching staff, having recently been appointed lecturer on orthodontics and director of the orthodontic department. He remarked that the present hospital owed its existence, not to the benevolent public, but almost entirely to the benevolent profession, because it was the subscriptions of students of the old hospital, also in Leicester Square, which made the new hospital, built thirty years ago, possible. In those earlier days there was very little competition among dental hospitals, but since then schools of dental surgery had been developed at a number of general hospitals, and the Royal Dental had been at some disadvantage because, until lately, it had had no beds. This had been remedied by a provision at Charing Cross Hospital, and now the students had an opportunity of learning the surgical side of dentistry better than they could learn it, he believed, at any other hospital in the kingdom. With regard to orthodontic treatment, Sir Norman Bennett said that there was a growing demand for such treatment, which must be met, not by a number of orthodontic specialists, but by general dental practitioners. The orthodontic treatment required in practice could be taught in hospital on simple lines, and provision was being made for short post-graduate courses in the subject. Mr. H. Stobie, the dean of the school, described the changes which had taken place on the staff during the year, and mentioned that the teaching of chemistry and physics at the hospital as pre-dental subjects had been abandoned, because it was forcibly borne in upon the management of the school that the teaching of these subjects was being done outside, at public schools and other institutions, and the entry of students for these particular purposes did not justify the upkeep of the department. He also reported that the curriculum for the degree of London University (B.D.S.) had been amended so that it would be possible for a student who had been studying for that degree, should any accident befall him and prevent the completion of his studies, to go on for the L.D.S. The school had slightly improved on its numbers this year, but it felt the competition, not only of its friendly rivals in the metropolis, but of provincial schools, which were now so excellent that students did not come up to London as formerly. Mr. N. J. Ainsworth proposed the toast of "The Guests," to which a response was made by Professor T. B. Johnston, dean of Guy's Hospital Medical School, who referred to the friendly helpfulness existing between the two schools; and the proceedings came to an end with the toast of "The Chairman," proposed by Mr. W. H. Dolamore.

Ambulance Service

The Home [illegible] Ambulance Committee pays a warm tribute in its report for the quarter ending September 30th, to the zeal and efficiency of the members of its roadside organization. We have frequently commented on the public spirit of these voluntary workers who devote their leisure time to the care of victims of traffic accidents, and to the establishment of first-aid stations at dangerous points on the highway. During the past few months a considerable increase has been made in the number of first-aid huts and boxes, several of the huts being so constructed that they can readily be moved from one site to the another. In this department of its activities, as well as in its ambulance work, the committee acknowledges the generous help of the Royal Automobile Club and the Automobile Association, and reminds its members that their efforts should be directed to the care of the sick and injured and not to the regulation of traffic and other matters which are properly dealt with by the police and by motoring organizations. The committee also refers to the high standard of work carried out by its mobile *x*-ray unit, and attributes the growing popularity of this service to the new equipment (described in a previous notice) and to the co-operation of members of the medical profession. During the quarter, 28,354 patients were carried by the committee's ambulances, bringing the total number carried (at September 30th) up to over a million. At that date the ambulances numbered 319, including 120 affiliated stations. The customary table of work done in various counties is given at the end of the report.

Correspondence

RHEUMATOID ARTHRITIS

SIR,—May I ask your courtesy for one more short letter upon this subject. I have read with great interest the remarkable correspondence. Among other things, I have learned that such cases should *not* be treated with vaccines and also that every early and uncomplicated case can be *cured* by vaccines. I have also learnt that the advanced morbid changes that may occur in the joints can be produced by vasomotor disturbances apart from any microbial infection. I have been told that if I do not treat a case with vaccines other methods are too drastic, and I have wandered into romantic scenes of warfare and profiteering by streptococci. This correspondence, so far as I am concerned, has served its purpose and confirms me in my creed, which is this: that to be dogmatic in the present state of our knowledge of rheumatoid arthritis is an insult to my own intelligence, is an insult to the intelligence of others who are thinking and working along different lines, and an insult to the science of medicine.—I am, etc.,

London, W.1, Nov. 20th. F. JOHN POYNTON.

PHYSICAL MEDICINE AND MEDICAL HYDROLOGY

SIR,—The formation of a group within the British Medical Association of practitioners interested in physical medicine is a reminder that there is at present no definition of this vast subject. I suppose it means the study of the medical uses of the physical energies, or the many forms of the one energy by which we live. If that is so, a distinction might reasonably be drawn between physical remedies as they are in nature and those which require apparatus to produce them. The first are ever present, elemental, profound, essential for life; the second, like artificial heat and light, are undoubtedly essential in civilized life, and most valuable in the work of healing. Their elaboration in recent years has been phenomenal, and is daily becoming more complicated and costly. Witness the varied apparatus and technique of artificial radiation alone, and the place it is taking even in the installations of natural health resorts.

A few months ago the Royal Society of Medicine put an end to its Section of Balneology and Climatology, of which I had been a member for thirty-six years, and founded a new Section of Physical Medicine. I was a little reassured when at the same time the British Medical Association created a Section of Hydrology and Climatology at its Annual Meeting at Eastbourne. Surely it

would be a pity to obliterate the only medical organization which directly represents so great a field of medical practice as the waters, coasts, and climates of the British Empire.

Physical medicine is a great name, but we must recollect that up till the present time, in the societies and congresses and literature of Europe and the United States, physiotherapy, or physical treatment, has signified almost entirely the use of energies artificially produced. Their development has been most important, ingenious, and spectacular. But they cannot cover more than half the field. To take, for example, the use of physical remedies in medical hydrology. In opening the Section at Eastbourne I reminded the members that the science and practice of hydrology was threefold: first, in relation to medicinal or mineral springs (crenotherapy); secondly, in relation to simple water (hydrotherapy), in which a new development was taking place in England by the provision of bath clinics in the towns; thirdly, in relation to the sea, the great mineral water in which life originated (thalassotherapy). The number and variety of marine health resorts in the British Islands was unsurpassed in any country, and, since all hydrological methods of treatment were affected by atmospheric conditions, it was necessary for hydrologists to be acquainted with the good and bad effects of climate in the evolution of disease.

A great work has yet to be done by students of hydrology in Great Britain. The uses of waters and of the various forms of baths require precise and experimental study. The same applies to the effect of sea bathing and marine climates on the vast numbers of delicate children referred to the coast, and to the prevention and arrest of disease in later life at the winter marine resorts. How is this work to be carried out? Surely not by depriving British hydrology of medical representation. A science can only flourish in a country where it has a local habitation and a name. Let us in England beware lest, in trying to erect a whole, we destroy an essential part.—I am, etc.,

London, W.1, Nov. 21st. R. FORTESCUE FOX.

VITAMINS AND BONE GROWTH

SIR,—In the annotation in your issue of November 21st on vitamins and bone growth a statement was made which caused a clinician of some age like myself to rub my eyes and wonder at the ease and assurance of comparative youth. The statement is: "Most writers at that period [the early years of this century] emphasized the disadvantages of cod-liver oil" in the treatment of rickets. I turned to my bookshelves, which contain more pre-war than post-war textbooks, and pulling down one after the other I failed to find any support for your assertion. The first three books which I consulted, 1909, 1911, and 1913, said respectively: "Treatment resolves itself into" alterations in the diet "and the administration of cod-liver oil"; "cod-liver oil takes the first place"; and "ol. morrhuae is the only drug of any real value." In fact, Sir, my recollection of that remote period was accurate, and not only did every respectable authority on the diseases of children recommend the use of the oil, but in oral teaching its great benefits were emphatically stressed by every teacher with whom I came in contact. In short, the statement is thoroughly misleading.

But you go on to stress the great advance which the experimental work on rickets has made in the treatment of that disease. I do not wish to decry the value of experimental work, least of all the brilliant researches on deficiency diseases, but the clinical facts are against your assumption. Rickets, as we workers knew it in the 1890-1900 period, began to disappear in the 1900-10 period, and after 1910 severe rickets was becoming as rare a disease as it is to-day. The change was due, in my opinion—and this, of course, is merely an opinion—to the alteration in the methods of feeding the babies, and, above all, to the beneficent influence of the infant welfare movement. Before 1900 the long-tube feeder was almost universal, and breast-feeding was almost a lost art. Between 1900 and 1910 breast-feeding again became recognized as the best method of feeding, and the long-tube feeder was relegated to the shelves from which it never should have come. To these two causes, together with the abundant use of cod-liver oil, is due the great fall in the incidence of severe rickets, a fall which occurred for the most part before the experimental work on vitamins had been published.

I would add that it is a mistake to suppose that the disease has disappeared: at intervals, which I hope are becoming less frequent, we still see rickety deformities just as bad as in the dark days of the benighted Victorian period.—I am, etc.,

London, W., Nov. 22nd. HUGH THURSFIELD.

MICROCYTIC ANAEMIA

SIR,—May I raise a respectful protest against the adoption of the term "microcytic anaemia" as used by Dr. L. J. Witts in your issue of November 14th.

He adopts the term to describe a definite group of cases of chronic idiopathic anaemia (normoblastic, mostly achlorhydric and in women of middle age) "in which the mean diameter of the red cells is usually diminished and never raised." He, however, gives no measurements in this very valuable paper. Judging from my own experience, I strongly suspect that the size of the red cells will be within limits of normal, whereas the term "microcytic" surely implies cells smaller than normal. My only claim to speak is that I have measured with the halo-meter (*British Medical Journal*, July 13th, 1929) the red cells of hundreds of patients with and without anaemia. This little instrument—which I find clinically reliable, provided the film is thin and the largest diffraction halo is selected for measurement—picks out pernicious anaemia by its macrocytes (averaging about 8 microns), and distinguishes acholuric jaundice anaemia by its microcytes (about 6.4 microns). Normal people, and other anaemias, have red cells whose average size ranges from 7.6 to 7.9 microns (I cannot detail the few exceptions here). In this way bloods can be arranged by their average cell diameters into three groups—macrocytic, microcytic, and "normocytic." It will be highly confusing to find, on measuring the red cells in an anaemia defined as microcytic, that their size is within limits of normal, even though small in comparison with pernicious anaemia. If this be the case, would "non-macrocytic" convey the intended meaning, and would "non-macrocytic idiopathic anaemia" embrace Dr. Witts's cases?

The essential feature to be emphasized in a name for this group of anaemias appears to be that, although they are idiopathic and resemble pernicious anaemia in many ways, yet their red cells are *not enlarged*—that is, non-macrocytic. This distinguishing feature would be revealed by the halo-meter in a few seconds.

I know of only one anaemia which merits the name "microcytic," and that is acholuric jaundice. The name "microcytic anaemia" for Dr. Witts's cases originated, I believe, only recently in North America. There may yet be time to find a less confusing name. It would be interesting to hear Dr. Witts's views (and measurements).

As regards the suspicion that this may be a new type of anaemia, I remember that Sir Byrom Bramwell published a striking series of anaemias curable by Blaud's pills, but only if given in massive doses. This was about twenty-five years ago, but I cannot find the reference.—I am, etc.,

Hull, Nov. 16th. F. C. EVE, M.D., F.R.C.P.

HOG'S STOMACH IN PERNICIOUS ANAEMIA

SIR,—In a note on the treatment of a case of pernicious anaemia with beef predigested with normal gastric juice, Dr. Astley Clarke (*Journal*, November 14th) remarks that some cases of pernicious anaemia relapse when treated with liver and hog's stomach, and " are not then benefited to the same extent—possibly not at all— " the second time. " Why is it so? "

The answer is that, assuming the diagnosis to be correct, the treatment has been incorrect or inadequate in one of the following ways: (1) inadequate dosage; (2) the use of an inactive preparation of hog's stomach; (3) the inactivation by heat of an adequate dose of an active preparation. All these points I have repeatedly stressed in the English medical literature. In two and a half years' observation of upwards of 240 cases of true pernicious anaemia I have never found a relapse after the institution of active and adequate hog's stomach therapy. The average maintenance dose is usually half an ounce of desiccated hog's stomach per day; in some cases the full ounce is required, and this should be insisted upon where postero-lateral sclerosis is present. I have already drawn attention to the risk of employing inactive preparations of hog's stomach (*British Medical Journal*, 1931, ii, 76), and have referred to the use of normal gastric juice, which is active when not predigested with beef, provided it is given at meal times (*British Medical Journal*, 1930, i, 236). This has been confirmed, as Dr. Clarke has observed, in the American press. In all the research work so far published (both from Manchester and abroad) on this aspect of the problem, doses of eight ounces or more of gastric juice have been used, and the two ounces given by Dr. Clarke would not be sufficient to produce a prolonged remission, if at all, in pernicious anaemia. There are many difficulties besetting the unwary: (1) incubation for more than two to three hours; (2) too high or too prolonged an acidity destroys the activity; and (3) the supply of unsuitable gastric juice—even a normal secretion may vary very considerably. The fresh gastric mucosa of a pig may be substituted for normal human gastric juice.

It is a common observation that a blood transfusion, small doses of liver, stomach, and at times even iron and arsenic, will initiate remissions in pernicious anaemia; these will sometimes proceed until nearly normal blood pictures are obtained before relapse. It appears possible that the " remission " in Dr. Clarke's case was due to the blood transfusion rather than to the two ounces each of beef and normal gastric juice—no blood investigations are reported.

Beef predigested with normal gastric juice is much less palatable than an active hog's stomach preparation given in milk, with sardines or tomato, etc.—I am, etc.,

Royal Infirmary, Manchester, Nov. 18th. JOHN F. WILKINSON.

THE CARDIAC CYCLE

SIR,—In the first place, I would beg the hospitality of your columns to thank the reviewer for his courteous and sympathetic criticism of my venture along lines of investigation unfrequented and leading to conclusions here and there certainly " unorthodox " (that is, not sanctioned by current teaching); however, he credits me with " sincerity, enthusiasm, and lucidity," and I wish for no more generous words to express my desire, motives, and endeavour. In the next place, I wish to meet as far as I am able certain comments, which seem to indicate that I have not quite succeeded in making myself clear.

Thus, dealing with the genesis of the pulse-wave, as the result of an impact upon the closed aortic valve by the ventricular blood, during the isometric phase of the ventricular systole—in consequence of which a wave is " sent coursing through the aorta and its branchings down to the arterioles "—the case is admirably and succinctly stated But now, immediately upon the above, there comes a sentence which puzzled me much—namely, " The stretching of the arterial wall is regarded as the expression of ' momentum ' carried by the pulse-wave "—(I could recall no such isolated sentence). At this point, in direct sequence, came the definition of " momentum," as " the product of mass and rate of movement of the mass " (which had my full assent). This conceded, the sentence proceeds: " it is difficult to see how a vibration without any expulsion of blood into the arterial tree can add any momentum to that already possessed by the moving stream of blood before the impact strikes on the closed aortic valves." The comment ends here, and the puzzlement also, for at once it becomes clear that one form only of momentum is recognized within the circuit of the vessels—namely, that of the blood moving *en masse*. Is this so?

In my argument, from the beginning, I have laid stress on the fact that the circulation of the blood exhibits two forms of dynamism (the word should be justified since " dynamist " is recognized). The one, a movement of translation, which conveys the blood bodily to and from the heart; we shall all be agreed upon the fact and nature of this momentum. The other, a movement of vibration or undulation, which is confined to the branches of the arterial tree, and ceases in the arterioles. Clinically, it figures as the pulse-wave; what is its real nature? And has it momentum?

To answer these questions let us put the finger on the artery; it is lifted as the wave passes; substitute a lever, the lever is lifted in like manner; in either case the wave imparts *motion* to *mass*, and in so doing " does work " in the terms of the physicists. The lifted finger and lever are examples of momentum possessed and imparted by the pulse-wave. Can we put the Q.E.D. of the geometer here? No, because it has yet to be proved whether, if the impact of the isometric phase, as the rapidly rising tension of the intra-ventricular blood is brought to bear upon the aortic valve, is really the cause of the wave—whether, in this act some blood does or does not escape through the valve in spite of the adverse tension of the intra-aortic pressure, still in excess of that in the ventricle, for *ex hypothesi* we are still below the point o in the diagram.

At this stage we may ask: is it a canon in physics that an impact, which produces an undulation in a given liquid, must carry along with it a certain quantity of liquid, if the resultant wave is to possess momentum? *Fiat experimentum*. Let a stone be cast on to the surface of a river flowing smoothly; the immediate consequence is an undulation, starting from the point of impact and spreading in a series of widening circles to either bank. The actual form of the liquid movement constituting the wave is complicated, but it is *not* a movement of bodily translation, and it is wholly independent of the current of the river, to which it contributes nothing. Does this wave possess momentum? Let us see what happens as it meets with some floating object—for example, a child's sailing boat—and observe how the little craft is tossed about, up and down. Have we not here the manifestation of momentum? Yet the bare impact of the stone had no liquid accompaniment. All that happened as the stone sank was displacement, and perhaps in this movement we may find all that we need to account for the presence of momentum in the pulse-wave; for without doubt, as the tension-shock impinges upon the aortic valve there will be a bodily forward movement of the *unforced* valve, a displacement which carries with it a certain quantity of blood, this movement being permitted by the elasticity

the walls of the bulbus aortae. Upon this *action* will ow the kick of the elastic recoil as the *reaction*, equal l opposite, according to Newton's third law, and the ve will then speed on its way.—I am, etc.,

ondon, N W , Nov. 18th HARRINGTON SAINSBURY.

" FAILED FORCEPS " CASES

SIR,—The paper which I read on the obstetric forceps l its use was designed to remind my audience that uccessful attempts to deliver by forceps are still fre- ntly made, and to give an accurate account of the ults of misapplication of this instrument. For this pose I investigated the last 100 cases admitted to the erpool Maternity Hospital after forceps had been plied without success. These cases have been spread, im thankful to say, over no less than seven years. eir number, however, appears to be increasing. Twenty- o of them were admitted during the year 1930. I ght have mentioned the period involved, and would tainly have done so had it occurred to me that anyone uld think such a series of cases had been admitted hin a month or a year. The figure is of no statistical lue, because there are four other hospitals in this city h large obstetrical departments.

I therefore concentrated upon analysis of the causes of lure and its results. I can assure your correspondent ovember 21st, p 966) that my figures are of fact and t of fantasy It is perhaps as well that we are not all ted with his vivid imagination! If your correspondent d to deal with these cases, as I have to deal with many them, I think he would be less ready to accept them thout protest.—I am, etc.,

iverpool, No. 23rd M. A. DOBBIN CRAWFORD.

ETHER CONVULSIONS

SIR,—On Friday last, during my usual work at . Bartholomew's Hospital, I met my first case of ether nvulsions, and as it presents certain points that may be interest to other anaesthetists, I should like to record it

The patient was a boy, aged about 9, who had been dly smashed in a motor accident some time ago, and had d several operations for the grafting of skin to parts of the dy He had been under the care of Sir Harold Gillies, and ien I saw him it was to anaesthetize him for an appendicec- my for Mr Girling Ball. The position was this—his right rearm and right thigh were connected by a pedicle graft, d his lower abdomen was devoid of skin, which had been ed for the graft. Sir Harold divided the pedicle and Mr. ill then had to remove the appendix through an incision rallel to Poupart's ligament, and about half an inch above it. I gave the boy gas, oxygen, and ether endotracheally , the duction was normal, but after he had been under for about n minutes, I noticed a slight twitching about the outer side the left eye I at once shut off the ether and continued ith gas and oxygen, but the twitching continued and got vere, spreading to the face—in fact, it looked as though the cial nerve was being violently stimulated The twitching ntinued, and now it appeared as though his diaphragm was a state of spasm The left arm was twitching, but the right m and legs were not affected These spasms increased to i alarming extent I tried oxygen plus CO_2, but this did ot seem to have any effect. Next, as I thought that I must op the convulsions, I disconnected the endotracheal tube and ve him about 8 to 10 drops of chloroform on lint. He then came slightly cyanosed, so I discontinued the chloroform, id resumed with endotracheal oxygen alone; he now began breathe more regularly, and, after a few more minutes, breathe automatically. His pupils, which had been three- uarters dilated during his spasms, now became quite small, ot pin-point, but just a shade larger Throughout the whole ing, with the exception of the few seconds when he had ie chloroform, his colour was bright pink. As he was now breathing automatically and well, the appendicectomy was proceeded with, and for this he was given endotracheal gas and oxygen, which was occasionally passed over the surface of the ether On removal, the appendix was found to be dilated at its end and contained pus. At the conclusion of the operation his condition was fairly good, and he looked quite normal.

On considering the case, I think that in the early stage, just after induction, the patient may have had just a little too much ether, and this is the opinion that I have held with regard to some of the other cases that have been reported. I think that, in all probability, the reason why this boy recovered was that I started my efforts at remedy on the very first twitch, and did not wait for it to get pronounced. As it was, the twitches became very severe, and the patient's appearance was dreadful From the twitchings it appeared as though the facial and phrenic nerves were both violently stimulated

It will be noted that in this case the factor of sepsis is again present, as it has been in several other cases I have never met with one of these cases before amongst my own administrations, and sincerely hope that I may never meet with another —I am, etc ,

London, W 1, Nov 23rd H. EDMUND G BOYLE.

DEATHS ASSOCIATED WITH ANAESTHESIA

SIR,—Permit me to direct the attention of your readers to the following interesting statistics of deaths under or associated with anaesthesia in England and Wales, and in the United States For England and Wales I have derived the figures from the annual reports of the medical superintendent of the Registrar-General's office which give the data back to 1901. The results are as follows

Statistics of Deaths Under or Associated with Anaesthesia in England and Wales, 1901–29

Year	Total Deaths	Rate per 100,000
1901–1905	749	0 44
1906–1910	1 010	0 [illegible]
1911–1915	1 415	0 [illegible]
1916–1920	1,525	0 87
1921–1925	1 [illegible]0	1 04
1926	556	1 42
1927	[illegible]6	1 52
1928	656	1 68
1929	730	1 84

The rate of frequency of deaths under or associated with anaesthesia has therefore persistently increased from a minimum of 0 44 in 1901–5 to 1.84 during 1929, the highest rate thus far recorded. These rates may be compared with the corresponding rates for the United States Registration Area, 1922–29, as follows.

Statistics of Deaths Under or Associated with Anaesthesia in United States Registration Area, 1922–29

Year	Total Deaths.	Rate per 100,000
1922	513	0 55
1923	474	0 [illegible]
1924	558	0 [illegible]
1925	677	0 [illegible]
1926	654	0 [illegible]
1927	6[illegible]5	0 61
1928	5[illegible]9	0 48
1929	6[illegible]1	0 [illegible]
1922–1929	4 870	0 57

According to these comparative data the frequency rate of deaths under or associated with anaesthesia in England and Wales is three times the corresponding rate prevailing at the present time in the United States Unquestionably there is some reason for this enormous difference but no satisfactory explanation has been forthcoming —I am etc ,

FREDERICK L HOFFMAN.

Wellesley Hills, Mass , No. 11th

CARDIOSPASM

SIR,—Will you allow me space in which to comment on the criticisms of Dr. Geoffrey W. Rake (in the *Journal* of November 14th) upon my letter published on October 10th? Brevity is necessary in a letter, and renders impossible a full exposition of the subject, such as is contained in Chapter XVII of my book, *Chronic Intestinal Stasis*.

Dr. Rake denies my statement that in cardiospasm the stomach is always large, so that, in the erect posture, it drags upon the lower end of the oesophagus; if so, his experience differs from mine, and there is nothing to gain from discussion of a concrete matter of fact. But Dr. Rake's observations of the size of the stomach in his cases seem to have been a side issue of some histological examinations of the pylorus. I am curious to know how he came to be in a position to cut sections of the pylorus in all his cardiospasm cases; were they post-mortems, or does he operate in every case of cardiospasm, and remove a fragment of the pylorus for the microscope? This mystery must be cleared up. Dr. Rake's second point, again, is one of observed facts; he states that intestinal stasis is not a constant, even if it be a frequent, complication of cardiospasm. For my part, I adhere absolutely to my statement that chronic intestinal stasis is a pronounced feature of every case of cardiospasm, and I am certain that Dr. Rake's inability to confirm this will turn out to be because he has not taken the only certain means of proving or disproving it—namely, a complete *x*-ray investigation of the alimentary tract by a bismuth meal and a barium enema—as I have in all my cases of cardiospasm.

Dr. Rake asks me what tissues I mean by "those concerned"; obviously, those of the lower end of the oesophagus. But his last charge against me, that I invoke an idiosyncrasy to explain what I am unable to, is a just charge; my desire for brevity must again be my (admittedly inadequate) excuse. What I hoped to convey was that of many subjects of stasis with general toxaemia and a heavy stomach dragging upon the lower end of the (toxic) oesophagus, only a few become subjects of cardiospasm; if my explanation were a complete one, it would apply equally to all cases of the kind, and the degree of cardiospasm would be more or less proportional to the degree of toxaemia and to the force of the drag upon the oesophagus by the stomach. This, I am aware, is not so, and therefore I welcome the further investigations that Dr. Rake and others are carrying out.—I am, etc.,

London, W.1, Nov. 16th. ALFRED C. JORDAN.

THE GROWING AND MOVING BOY

SIR,—Those of us who are interested in the health of the growing child have noticed with satisfaction Lord Dawson's reference to the desirability of developing the positive side of school medical work as against the day-to-day work of remedying defects in which we are apt to become engrossed, and we cannot fail to be gratified that you have laid emphasis on this aspect of our work in your leading article published on November 14th. It is hardly correct, however, to say that it is "a new conception" or that it is "original." I cannot speak for the medical officers of public schools, but I would draw your attention to the fact that Dr. J. G. Woolham of Manchester has been publishing the results of his very valuable work on day-school children in the annual reports of the school medical officer of Manchester since 1923, and that Dr. J. V. A. Simpson has carried on similar investigations and reported upon them in the annual reports of the school medical officer of Torquay for the years 1925, 1927, and 1929. These reports will repay careful study, but it should be noted that physical efficiency tests of the type used in the Royal Air Force cannot be assumed to be generally or easily applicable to all sorts of school children. This aspect of the question is dealt with in a very brief note by Dr. Nancy K. Gibbs and Dr. C. W. Anderson in the annual report of the medical officer of health for Cardiff for 1930.—I am, etc.,

Cardiff, Nov. 17th. RALPH M. F. PICKEN.

CHILD GUIDANCE CLINICS

SIR,—In Sir George Newman's report on the health of the school child, epitomized in your issue of November 14th, stress is laid on three points of fundamental importance. It is pointed out that the medical inspection of the school child should be much more than a mere routine physical examination, and (1) that the question "Is this child developing according to the plan Nature has mapped out for him" should be kept in mind; (2) that the question should be answered only in the light of "an estimate of the whole individual"; and (3) that "it is of equal importance . . . to estimate the attitude of the mother. Is this parent to become an ally or not?" These three points are the basic principles of child guidance.

Child guidance clinics endeavour to develop the child to the utmost of his potentialities, with the help of the parent, utilizing in the process the knowledge obtained from an estimate of the whole individual, and of his environment. The report suggests that the investigation can be carried out by the school medical officer. This is not practicable, since the process is naturally a lengthy one, and, moreover, it is highly unlikely that the necessary experience of general and psychological medicine, educational psychology and teaching method, sociology, and economics would be possessed by any one individual. For this reason child guidance clinics employ a psychiatrist, an educational psychologist, and a social worker, each trained in the application of his or her specialty to children.

It has been found by experience that only in this way can satisfactory data be collected about each of the aspects of the child and his environment, and the employment of such a team method, though apparently so cumbersome, has been fully justified by the results obtained.—I am, etc.,

WILLIAM MOODIE, M.D., M.R.C.P.,
General Secretary, Child Guidance Council.
7, Buckingham Palace Gardens, S.W.1, Nov. 17th.

TEMPORARY TREATMENT WITHOUT CERTIFICATION

SIR,—It should surprise no one to find that Clause 5 of the Mental Treatment Act, 1930, has failed to function; but cannot this be attributed to the fact that there was no real need for its conception? This clause was an expression of the mighty efforts that are being made to find a way to avoid the "stigma of certification," and Dr. Robertson would insist on the need for psychiatrists and others to educate the public when a possible academic method of avoiding this "stigma" is evolved.

Would we not be better employed in educating the public away from this barbaric stigma which has attached itself to certification? If it is infamous to become of unsound mind, surely the infamy is perpetrated by the disease itself. Certification, resulting in detention in a mental hospital, can only help to conceal this infamy from friends, neighbours, business acquaintances, and the like. Usually against his will, if he retains the power of volition, the patient is removed to a sphere where his abnormality is humanely regarded in the same light as a cardiac or

pulmonary disorder. A legalized medical certificate is a necessary preliminary to placing a person of unsound mind under the control which is so essential for him and others, and frantic efforts to avoid it by subterfuge seem to show a lack of courage and a pandering to an archaic type of criticism.—I am, etc.,

London, N22, Nov. 22nd. E. JEFFREY SAMUEL.

SIR,—In connexion with this correspondence it may be of interest to recall that in 1835 a certain Dr. Unwin (sometime physician to Peckham House) wrote a pamphlet which concluded with the following summary:

1. Mental and nervous disorders are too much separated.
2. That a layman (magistrate) should have the decision in mental cases is a violation of every principle and every dictate of sense and reason.
3. The lunatic asylums, under some more sensible and less terrifying nomenclature, may be made of essential service to the community as in institutions for physical disease.

The first subject is still being discussed (without decision) by a committee in New York (see symposium in the *Journal of Nervous and Mental Disease*, 1931), the second received much attention, but was turned down by a recent Royal Commission; and the third has been only partially translated into practice by recent legislation—*ex uberibus sapientiæ*.—I am, etc.,

JAMES R. WHITWELL, M.B.

Royal Medico-Psychological Library, No. 23rd.

ASTHMA RESEARCH

SIR,—I believe that the claims made last week in your annotation on asthma, concerning Dr. Oriel's proteose cannot be justified. They are made, I feel sure, on the authority of the Asthma Research Council's "Report of progress from June 1st, 1930, to October 31st, 1931" I am on the Council's medical advisory committee, but the reports are not submitted to us.

The crux of the matter lies in the alleged *specific* dermal reaction of Dr. Oriel's proteose. With this his work is of the greatest possible importance to immunology, but without it the work loses all significance. During the past year I have done the following.

1. I first tried to make this proteose in my own laboratory. I had to guide me Dr. Oriel's original paper and his typewritten supplementary instructions. These seemed to be as much "proteose" from my own and from my assistants' urine as from that of asthmatic patients, so I got Dr. Oriel to come to give criticism and help. He said these previous directions were inadequate, and very kindly gave me additional advice. Even so, I still got the same heterodox results, and was unable to produce a substance from an asthmatic's urine which gave a specific dermal reaction on that patient.

2. I got Dr. Roche Lynch at St. Mary's Hospital to try to prepare proteose with the help of Dr. Oriel's supplementary instructions but nothing was produced which showed a specific reaction on the patients in question.

3. I sent urine from one of my out-patients at St. Mary's to Dr. Oriel's laboratory, he prepared and sent back the proteose but it gave no specific reaction.

4. Dr. Oriel said that possibly a patient's urine yielded the proteose at one time and not at another, so I arranged with him that I would take into our research wards at St. Mary's first one bad case of asthma and eczema, and then, a month later a second case of the same type, both cases were seen by Dr. Oriel and pronounced most suitable. I sent down daily specimens of urine to his laboratory covering periods of exacerbation and remission of the symptoms. Dr. Oriel sent me one specimen of proteose from the first case and two specimens (at about a week's interval) from the second. None of them gave a specific reaction. I offered to go on sending any amount of daily specimens from these cases but I understood Dr. Oriel to say that it was not worth trying any more.

5. This is most convincing of all to me. Dr. Oriel gave me proteose he had isolated from hay fever urine, this was said to give specific dermal reactions in 80 per cent. of all true hay fever cases. I found it quite non-specific on all cases tested.

6. I suggested several times that his proteose should be the topic of debate in the Asthma Research Club but Dr. Oriel haughtily cried off. In consequence of this I was brought that the specific action claim had been given up.

It is clear from the above that Dr. Oriel has given every help in his power to the setting of my doubts, but it will be clear, also, why I think the statement quoted in your annotation is unproven.—I am, etc.,

London, W.1, Nov. 22nd. JOHN FREEMAN.

ARTIFICIAL PNEUMOTHORAX

SIR,—While lecturing to the final-year medical students of Bristol, who were paying us one of their sporadic visits for a clinical demonstration, I told them that artificial pneumothorax had definitely come to stay in the treatment of pulmonary tuberculosis and certain other chest conditions, because it was based on the common-sense and world-old principle of rest. As one of the fifty members of the Tuberculosis Study Group who visited Canada and the United States at the time of the B.M.A. Winnipeg Meeting, I noticed that some of the sanatoriums in America had as large a percentage of cases on artificial pneumothorax and its sisters, phrenic evulsion and thoracoplasty, as 75 per cent., and the same percentage is common on the continent of Europe. Here we are proud if we have 25 per cent. Considering that any part of the body (except, then, say, the parotid gland) can be attacked by tuberculosis, and contemplating the still enormous death rate, the tubercle bacillus remains a terrifying organism. It seems pertinent, therefore, to ask if we are teaching tuberculosis properly in this country, so as to train the future tuberculosis officers in doing artificial pneumothorax, phrenic evulsion, thoracoplasty, and x-ray work. Until we do this the "consultant expert" and the "pseudo-sanatorium" will still flourish, and the general practitioner will still look on them with suspicion and refuse to acknowledge them (and naturally so) as proper specialists. I wonder if the link between the large London and provincial hospitals and the public tuberculosis departments is nearly as strong as it should be. Until it becomes so the anti-tuberculosis chain will never remain intact, and no proper result will accrue from the millions of pounds we are spending on this tuberculosis campaign.—I am, etc.,

Winsley Sanatorium, near Bath, November 18th. J. D. MACFIE.

NEO-HIPPOCRATISM

SIR,—The mantle of our elder statesmen—Sir William Gairdner, Sir Clifford Allbutt, and Sir William Osler—seems to have fallen on Dr. Robert Hutchison's shoulders, and his Harveian Oration stamps him as one of our masters of medicine. The culture, the erudition, the style, the good sense, and the saving humour are all there. Most striking, perhaps, is the Orator's personal recognition of the trend to-day towards the outlook of the sages of antiquity, a trend which he terms "neo-Hippocratism," and which he finds more hopeful than the feeling of therapeutic impotence engendered by the doctrines of the morbid anatomy school.

Does Dr. Hutchison in sufficient stress on [illegible] a return to the use of the same [illegible] supplied by Nature as the principal therapeutic [illegible] Hippocrates, and, for example of [illegible] to the [illegible] modern instance, Sydenham, whose [illegible] he quotes "an effort of Nature stirring within her [illegible] might to restore the part to [illegible] of the morbific matter")? As a result the [illegible] up his errors of [illegible] of [illegible]

sense should have led him to live. Writing to such a friend, Seneca, after chaffing him for no longer being able to drink his iced wine, to eat his oysters opened on the table before him, no longer to dine with officious waiters all around, heating to the desired point the various courses, tells him, with unsympathetic humour, that he will positively, by a return to nature, owe his health to his illness!

"Vitalists" the modern followers of these ancients certainly are. They believe in the power of natural immunity, and they have recourse to the simple agents of Nature—diet, exercise, bathing, sun- and air-baths, psychotherapy—rather than to the endless remedies of materia medica, of vaccines and serums. But naturism, and its logical corollary, nudism, if they had their origin and foundation in medical science, have now passed into the public domain in many countries in Europe, more especially in Germany, where for hundreds of thousands it has become an ordered system and rule of life. Freiluftbunds, or open-air clubs, exist in almost every German city, the whole movement being known as the Freikörperkultur. It is based on three sources, of greatly increasing strength since the war: the physical culture movement, the youth movement, and, most important, the Naturheilbewegung, or natural health movement. Six "Koch" schools in Berlin, recognized and encouraged by the Government, are more like colleges than schools, and give diplomas to teachers of the method after three or four years' study. Naturism, or rather nudism, its adherents believe to be the best means of rendering simple and easy the sexual education of the young, while keeping them from the morbid curiosities, the fevers of the imagination, and the errors that are at the origin of all perversion. Perhaps even Sartor Resartus does not probe the full depth of the philosophy of clothes!

Towards the end of his oration Dr. Hutchison hints at new methods of treatment, but those he speaks of are far from the province of naturism or what neo-Hippocratism should surely be. Protein shock is, of all procedures, one of the most uncertain in its effects, difficult of correct application, and not altogether free from danger. *Primum non nocere*! Blood-letting can be effectively and more pleasantly replaced by fasting and purgation. Is blood transfusion much more effective than our old friend intravenous injection of physiological salt solution? Is it because our civilization and its accompanying ailments have become so complicated that our therapeutics are so confused? "Plurimae leges corruptissima republica," said Tacitus, and the incisive phrase seems applicable to our [illegible] the rest for diseases and their remedies. Simplify life and

More than [illegible]ows!

Gairdner, whe[illegible] a generation ago, in 1888, Sir William [illegible]ion, at its meet[illegible] President of the British Medical Associa[illegible]his address, "Th[illegible]ing in Glasgow, chose as the subject of [illegible]word as "a humb[illegible]physician as naturalist," defining that [illegible]student of Nature," reverent, and exact follower and

I am, etc., [illegible]istory surely repeats itself.—

Cannes, Nov. 2nd. A. A. WARDEN.

NEO-HIPPOCRATISM AND [illegible]—OF MEDICINE [illegible]ATE CONTROL

SIR,—Perhaps the fact that in a small w[illegible]
[illegible]o popularize Greek medicine in this cou[illegible]ay I have helped [illegible]ating it into English, may be deemed suf[illegible]try, by trans[illegible]or my offering a few words here, where th[illegible]icient excuse [illegible]Hippocrates has been invoked. Dr. Robert [illegible]e name of [illegible]n his recent Harveian Oration, has voiced a do[illegible]ar Hutchison, [illegible]s now becoming somewhat general—a doubt in [illegible]inubt which [illegible]nedical methods, and particularly in those of [illegible]our present [illegible]*outrance*. He dreads the coming of crowd-ps[illegible]e research [illegible]nto medicine. "What we have to fear," he sa[illegible]sychology [illegible]"is the influence of the mass mind . . . the exploitation of discovery for commercial ends . . . the pull of the politician, the philanthropist, and the press." Owing to our myopic views, he sees a danger "that science may become suffocated in its own secretions." We are accumulating knowledge without digesting it, and a remedy for this is "one of the most pressing needs of our generation." Dr. Hutchison even goes so far as to propose a close time of five years, to enable us to assimilate what is of use in our accumulated material.

I think another prominent tendency might be added to the counts of Dr. Hutchison's indictment against our present system. This is the growth of what may be called a neo-scholasticism, a sophistical tendency to speak of "entities" or even mere words as if they were real things. This subject has been well handled by Dr. F. G. Crookshank in his Bradshaw Lecture of 1926 on "The theory of diagnosis," an address which should be in the hands of everyone who is really concerned about this serious matter. And apart from the enormous growth of uncontrolled specialism in our time, what about the growth of medical bureaucracy? Have we not here the possible beginnings of a new sacerdotalism in our profession? We are admittedly coming more and more under the State. Dr. Hutchison has perhaps not fully realized how much the system of unbridled specialism to which he objects is bound up with this subjection of medicine; possibly he hints at the danger when he mentions "the pull of the politician." Under a State system the actual practitioners (who are in touch with the patients) are necessarily subordinated to overseers and specialists (who, *ex hypothesi*, are *not* in touch with the patients). Moreover, the further the officials are from the patients, and the greater the number of these with whom they have to deal, the more do the "patients" as such tend to fade away and to become at best "diseases," and at worst entire abstractions, ciphers, Greek names, etc. So we see that neo-scholasticism, like unco-ordinated specialism, is a natural accompaniment of the subordination of medicine to the State.

Dr. Hutchison lays stress on the mental factor in disease. He should realize that treatment of the sick mind calls more than any other branch of medicine for close personal contact between doctor and patient, and that therefore the intervention of the exogenous bureaucratic machine is fraught with more peril here than elsewhere. And, further, it must never be forgotten that the official himself has a psychology, and that, however well he may begin, and however high his original qualifications may be, the further he gets away from real patients of flesh and blood, the more does his own psychological state tend to partake of the pathological. An excessive devotion to "entities" is among the milder symptoms of this neurosis, which, in its best-known forms, has been christened "departmentality."

Dr. Hutchison asks us not to expect too much from our laboratories, but to return to the observational and clinical method, which is incarnated for him in Hippocrates. He sees the organism as an essentially unified or integrated whole, and life as a constant effort of this organism to adapt itself to its environment. And, further, the environment itself is also unified; it is not a single agent, but "a constellation of conditions." Dr. Hutchison stresses the selective or critical qualities of the organism at work, picking and choosing, eliminating irrelevant matter (the Greek *perittomata*, be it said). To the extent that the organism fails to maintain its integrity or to adapt itself to its surroundings, we have disease. Thus Dr. Hutchison wants the clinician restored to his place of pre-eminence; he rightly considers that the man who only sees the detail should be subordinated to the man who has the general view. And he asks, also, for

" bridge-makers who will mediate between the laboratory and the bedside "

It will at once be seen that Dr. Hutchison's biological views are essentially the same as those expressed by Professor J. S. Haldane and Dr. A. P. Cawadias in their letters in your issues of October 24th and November 7th. Moreover, they are undoubtedly the principles of Greek medicine at its best. For there the organism (*φύσις*, physis) is the central figure of every biological operation, and its work is to adapt itself to its environment, to select therefrom what is appropriate to its own growth (*το οἰκεῖον*), while eliminating constantly what is inappropriate (*το ἀλλότριον, τα περιττωματα*). Hippocrates also extended these biological principles into sociology—for example, in his *Airs, Waters, and Places* (man and his environment, customs, etc.). Galen has carried them further in both fields, and it is probable that at the health temples or asclepieia—the sanatoriums of classical times—the same principles were applied to psychotherapy.

Greek medicine, like Greek thought generally, laid great stress on balance, on proportion (*logos*), and it is no mere verbal coincidence that a sense of humour or proportion should characterize the exponents of a humoral doctrine (*χυμοι*, humos, humor). Is not Dr. Hutchison's complaint against the " medical organism " in effect just this, that from a defective sense of humour it has failed to digest its material, to assimilate what is good in it, and to reject the irrelevant *peritomata*, with the result that these latter are now menacing its further advance?

But let me venture on a word of criticism to Dr. Hutchison himself here. He asks for bridge-builders between clinicians and laboratory workers. Is he not thereby merely demanding another class of officials? Surely the link which he desiderates is already existent in the mental constitution of the average general practitioner. Some people will assure me that State control is nothing more than " popular control," and that, therefore, the more of it we have the better. Of those others who speak from experience rather than theory some will affirm that State control, although objectionable, is inevitable, while a third and very prominent party will say " Yes, but we can counter it by trade unionism Let all us doctors combine and form a solid *bloc* against the Government, and we will force it to do our bidding " Personally I do not believe that medical trade unionism can ever get at the root of the matter. It may be necessary for some immediate adjustments—as in the panel system ; but any method whatever—be it State or counter-State—which tends to drive doctors into crowds, and does not make its primary appeal to the individual faculties of each separate practitioner, is, in my opinion, at best but a palliative, and, like other palliatives, if given too much attention, it actually retards or prevents cure by diverting men's minds from the insidious progress of the real disease

Following Dr. Hutchison's appeal, then, for a " close time " in research, I would make bold to suggest also a close time in the creation of medical officials Let us see what we can do with the material we already have in both these departments. And above all, let our slogan be " Back to the individual patient and the individual practitioner "—I am, etc.,

ARTHUR J. BROCK, M.D.

North Queensferry, Fife, Nov 15th

RICKETTSIA-LIKE BODIES IN RHEUMATIC CARDITIS

SIR,—We have examined microscopically sections of hearts from cases of rheumatic fever, and have found the Rickettsia like bodies described by J. Tertius Clarke and Mackenzie Douglas in the *Journal* of August 8th, 1931 We have also found similar bodies in hearts and other organs from non-rheumatic cases. Some of these cases have been in children of 3 and 8 weeks old, while others have been in senile hearts of patients over 70 ; in all these cases previous history of rheumatism could be excluded. We consider the cells described by Clarke and Douglas to be tissue cells of the plasma-cell type, and the Rickettsia bodies to be the granules of these plasma cells The granules stain selectively with Pappenheim's *resorcin-methyl-green-pyronin stain.*

The point we wish to emphasize is that the cells and bodies described by Clarke and Douglas, and regarded by them as Rickettsia bodies, are just as often found in non-rheumatic as in rheumatic cases, and cannot be regarded in any way as etiologically related to acute rheumatism — We are, etc.,

J E MCCARTNEY,
Southern Group Laboratory, Park Hospital, L C C

W. R F COLLIS,
Research Department, Hospital for Sick Children, Great Ormond Street

Park Hospital, Hither Green, Nov 19th

Obituary

JAMES THOMAS CHARLES NASH, M D

Dr. J. T. C. Nash, who died on October 8th, rendered notable service to the public health during his tenure successively of the medical officership of health of Southend-on-Sea and the county of Norfolk Born in Southern India in 1865, he commenced his medical studies at the University of Madras, but graduated M D in Edinburgh in 1899, and took the D P H Cambridge the same year Bacteriology early attracted him and he lectured on that subject and on hygiene at King's College, London He was appointed resident physician to the Brighton Fever Hospital, thence he proceeded to Southend, where he acted as medical officer of health, bacteriologist, and medical superintendent to the Borough Fever and Small Pox Hospital Dr Nash was among the first to direct attention to the peril of typhoid infection from sewage-polluted shellfish, and his insistence on the measures required to obviate such peril brought him into conflict with the local authorities In 1908 he found a more congenial environment as medical officer, tuberculosis officer, and school medical officer to the county of Norfolk. He pressed for early notification by teachers of infectious diseases in school children, the proper treatment of ringworm, and stressed the association of infantile diarrhoea with the contamination of food by the house-fly

In 1913 Dr. Nash delivered the Chadwick Lectures on " Evolution in disease," in which he illustrated from his wide practical experience what was little acknowledged at that time—namely, the mutability of bacteria and the acquisition of specificity by saprophytic organisms Dr. Nash was a captain in the R A M C Territorial Sanitary Service, and had been president of the Eastern Counties branch of the Society of Medical Officers of Health He was characterized by breadth of view steadfast adherence to principle even under obloquy and opposition coupled with much tenderness and charm, as well as a rare capacity for friendship.

Our readers will regret to learn of the death of Lady Bruce, O B E , R R C , which took place in London on November 23rd As the wife of Major-General Sir David Bruce, K C B , F R S , A M S , she was for many years very actively engaged with him in his scientific research work.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Annual Meeting of Fellows and Members

The annual meeting of Fellows and Members of the Royal College of Surgeons was held on November 19th, under the presidency of LORD MOYNIHAN.

The PRESIDENT presented the annual report of the Council, and made a few comments upon it. Referring to the Buckston Browne benefaction, he said that Mr. Buckston Browne had since added a sum of £2,900. There was a reference in the report to the petition by osteopaths for a Royal Charter, which the Council of the College, on behalf of the College and of all the examining bodies in the United Kingdom, had taken steps to oppose, and the question was still undecided.

Dr. REDMOND ROCHE, referring to the petition by osteopaths, said that on many occasions at the annual meetings of the College he had prophesied that in the near future the Government or the Privy Council might ask the College for its opinion on some matter of great interest to the profession, and now this prophecy had been fulfilled. He suggested that, in its discussions with the Privy Council on the subject, the Council of the College should state very strongly its opinion as to the harm which might be done if such a charter were granted.

Sir E. GRAHAM-LITTLE, M.P., remarked that the first occasion on which he had spoken in the House of Commons was on an effort made by osteopaths to obtain a charter, and he believed the motion he then brought before the House was the indirect means of preventing the charter being granted. At that time the Minister of Health made a very important pronouncement to the effect that the granting of a charter to such a body as the osteopaths would not be considered at all until they received an education of the same quality as that given to medical students, and set up their own colleges, which would be supervised by proper authorities, as were other colleges. It was a mistake to suppose that the agitation was a negligible one. One of the signatories to the osteopaths' petition was the Under-Secretary for Education in the last Conservative Government, and personally he had been astonished to discover that there was a very large committee in the House of Commons formed for the express purpose of forwarding the interests of the osteopaths. The question was of greater urgency and importance than had been generally realized by the profession.

The PRESIDENT said that during the last few months the College had been more alive than any of the other licensing bodies in the kingdom in regard to the charter requested by the osteopaths. A conference of representatives of all the licensing bodies in England—except the University of London—had been held at the College on November 13th, and had agreed to send a letter to the General Medical Council urging that Council to advise the Privy Council not to recommend His Majesty to grant the petition. The Council of the College agreed with the view expressed by Sir E. Graham-Little, and would continue to take an active interest in the question.

On the motion of Dr. WARE, seconded by Dr. RICKARD LLOYD, the hearty and sincere thanks of the meeting were conveyed to Mr. Buckston Browne for his munificent gift to the College.

Sir E. GRAHAM-LITTLE then moved:

> That this forty-third annual meeting of Fellows and Members of the Royal College of Surgeons reaffirms that it is essential that Members, who constitute nine-tenths of the College, should be admitted to direct representation on the Council, especially having regard to the striking result of the poll of Members taken last year.

He said that it seemed a little anomalous that the Council should have been devoid for so long of any representatives of the Members, since they numbered 18,000 and the Fellows only 2,000. It would be agreed that the views of the practising physician and surgeon who took the conjoint diploma ought to be represented on the Council, especially when the question of the kind of training to be given to those entering the profession came forward for discussion. In the case of his own University (London) the rank and file of the graduates were given a representation of one-third on the governing body, and the result had been highly satisfactory. It was time the Council revised its attitude towards the question, for it would be in its own interests, as well as the interests of the College, if Members were represented, and would greatly increase the prestige of the College in public estimation. There could be no doubt as to the desire of Members to have such representation.

Dr. H. H. SANGUINETTI, in seconding the resolution, said that in the present democratic age the oligarchic ruling of the College was distinctly out of date. It was not suggested that the work of the Council was not in every way exemplary, but he felt that, with reference, for instance, to education, the opinions of general practitioners were worth having.

Dr. BLACKBURN, as one of the Members of the College who were not desirous of having representation on the Council, said that practically the only criticism of the policy of the College which he had heard was in regard to its examinations. He had been interested in that subject for many years, and he knew of only one educational authority which was as nearly perfect as it could be—namely, the Royal College of Surgeons.

Dr. T. WILSON PARRY said that the Members were asking for nothing revolutionary, exceptional, or extraordinary, but merely that there might be called into existence a connecting link between the Council on the one hand, and the huge army of general practitioners, embracing some 18,000 Members of the College, on the other. Some members of the Council, with every honourable and loyal feeling for the traditions of the College, had instinctive fears that if they permitted their ship to be embarked on these uncharted seas there was danger of wreck on some concealed rock. He believed that such fear was unwarranted, but as a measure of reassurance against any such contingency he suggested that, to begin with, the Members of the College should be permitted to elect one Fellow who was a bona-fide general practitioner, together with one Member, also in general practice, to represent them on the Council, and that the Fellow so elected should be in addition to, and not replace, any of the twenty-four members of the present Council. If this was found to work satisfactorily, as it certainly would, at a subsequent election, after a specified number of years, the Members should be represented by two of their own number, which, after all, was the only ideal and practical method of dealing with the case. Dr. Parry went on to point out that the College was now undertaking research work in surgery, owing to the munificence of one who, all his professional days, was a Member of the College (Mr. Buckston Browne). It was not by pathological research and experiment alone that a great success in such an undertaking could be assured. Careful and patient observation in clinical practice was as essential as work in the laboratory, and among the Members in general practice were many who, because of their ability and opportunity, could render undeniable assistance in supplementing this great work. Co-operation between these two sections would be a magnificent means of furthering this great research project.

Mr. W. MCADAM ECCLES said that he had been a member of the Council for sixteen years, and he had never heard a word from any member of the Council against a Member of the College, unless that Member had been doing what both Fellows and Members knew to be derogatory to the profession. Members had spoken that afternoon as if the College did not belong to them, and as if the Council did not belong to them, whereas the Council was really a part of the College, of which Members were also a part. It was much to be regretted that statements should be made and reiterated which implied that the Council had not the interests of the Members at heart.

Dr. MILNER said that Members must feel that the Council did not represent them. They had a sense of grievance and injustice from the lack of such representation.

The PRESIDENT said that it was true at the present moment there was no representative of general practitioners on the Council, but in recent years there had been such representatives, especially among the provincial Members. Moreover, members of Council represented general practitioners even more than they represented surgeons, for of the 2,000 Fellows of the College, only some 250 were engaged in the special practice of surgery, the remainder being in general practice, so that the bulk of the electors were general practitioners. The Council had statutory duties to perform, its obligations were officially laid down, and only by an alteration of the charter could they be altered. No matter had been so seriously or fully discussed by the Council as the representation

of Members. At the present moment there were differences of opinion in the Council, but no difference that was not perfectly honest. No man voted against such a resolution as this who did not feel that it was in the very best interests of the College that the governing body should continue in office unchanged. He begged Members not to think that the Council had the slightest disregard for them, collectively or individually, or for the position which they held as Members of the College. The Council had given the fairest possible consideration to the arguments put forward, and had come quite deliberately to the conclusion that the weight of argument was against such representation, and that it was in the best interests of the College that the charter should not be altered. He could hold out no hope to Members that that opinion would be changed in the near future, but he would lay before the Council the representations that had been made.

The resolution was then put to the meeting, and carried by 32 votes against 3.

Vicary Lecture

The Thomas Vicary Lecture on "The surgeon and old-time plague" will be delivered by Colonel W. P. Macarthur, D.S.O., M.D., at the College, Lincoln's Inn Fields, W.C., on Thursday December 10th, at 5 p.m. Fellows and Members of the College are invited to attend. Students and others who are not Fellows or Members will be admitted on presenting their visiting cards.

UNIVERSITY OF OXFORD

By decree of Convocation the degree of M.A. is to be conferred upon Richard Hartley Rose-Innes, M.B., Ch.B., F.R.C.S.Ed.

At a congregation held on November 21st the following medical degrees were conferred:

D.M.—C. R. Young, J. R. B. Hern.
B.M.—J. F. Brock, W. D. W. Brooks.

UNIVERSITY OF CAMBRIDGE

At a congregation held on November 19th the following medical degrees were conferred:

M.B., B.Ch.—R. W. McConnel, J. H. Cyriax, E. S. Stern.
M.B.—J. W. Summerhayes.

UNIVERSITY OF LONDON

It is officially announced that as the result of a consensus of opinion among representative graduates of the University the Earl of Athlone has consented to be nominated Chancellor of the University. Other nominations have been withdrawn.

The title of Professor has been conferred upon the following: *Bacteriology*: Mr. F. W. Twort, F.R.S. (Brown Animal Sanatory Institution); *Clinical Anatomy*: Dr. H. A. Harris (University College and University College Hospital).

University College Hospital

Three lectures on the history of medicine will be delivered by Dr. James Prendergast at University College Hospital Medical School on Mondays, November 30th, December 7th, and 14th, at 4.15 p.m. The subjects to be dealt with are the history of (*a*) scarlet fever, (*b*) diphtheria, and (*c*) typhoid fever. The lectures are open to all medical students of the University of London.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

Kirk Duncanson Fellowship

The award of the Kirk Duncanson Fellowship for medical research will take place in January, 1932. It is awarded annually for one year, but may be renewed to the same beneficiary for two additional periods for one year each. The emoluments will be upwards of £150 for the first year, and about £250 and £350 for the second and third years respectively. Some preference will be given to the claims of candidates who propose to devote themselves to research in diseases of the ear, nose, and throat. Further particulars will be found in the advertisement pages of this week's issue.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

Surgery.—S. J. Bellgard, C. J. Blewett, J. Britanischski, R. N. Gillespie, L. B. Reeves, D. N. Ryalls, H. W. Toussaint.
Medicine.—R. N. Gillespie, G. Handelsman, L. B. Reeves, V. M. White.
Forensic Medicine.—R. Frankling, R. N. Gillespie, G. S. N. Hughes, A. A. Khan, J. L. King, J. T. Mozhalaparackel, C. E. Nicholson, C. A. Saugoo, F. A. Trowbridge, V. M. White, K. G. Wrigley.
Midwifery.—J. H. Beale, M. Davies, G. S. N. Hughes, J. W. V. Sheldon.

The diploma of the Society has been granted to Messrs. S. J. Bellgard, J. Britanischski, G. Handelsman, D. N. Ryalls, J. W. V. Sheldon, H. W. Toussaint, V. M. White.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

The House of Commons this week passed the Statute of Westminster Bill through committee. Debates arose on the application of the means test for the unemployed. The Expiring Laws Bill passed through committee and third reading after a debate on rent restriction and factory inspection.

On November 28th the Parliamentary Medical Committee elected Dr. F. E. Fremantle chairman, Dr. A. Salter vice-chairman, Dr. Morris-Jones honorary treasurer, and Dr. A. B. Howitt honorary secretary. Dr. Salter was chairman of the committee during the last Parliament. The committee includes all the medical members of Parliament, together with Lord Dawson and Lord Moynihan. Sir George Newman addressed it on November 26th.

The National Health Insurance (Prolongation of Insurance) Bill, and the Indian Pay (Temporary Abatements) Bill, were down for second reading on November 25th. The latter proposes to authorize compulsory reductions in the pay of British members of the Indian Services.

The Abnormal Importations (Customs Duties) Act received the Royal assent on November 20th.

Ministry of Pensions

The Annual Report of the Minister of Pensions just published as a White Paper, states that at March 31st 1931, the medical staff of the Ministry numbered 122 full-time salaried medical officers. This was 23 less than in the preceding year, the decrease being accounted for by decline in the number of medical examinations and in the number of patients under treatment. Medical men employed locally as required during the year numbered 788. The Ministry has continued the practice of sending its own mental specialist to report on the condition of Service patients in mental hospitals. Contracts for medical and surgical stores continued to be made by the War Office with contractors who supplied hospitals, clinics, and medical boards direct as required.

Pensions Hospitals

Major Tryon, replying to Dr. Fremantle on November 23rd, said that the use to which the premises would be put when the Highbury Hospital, Birmingham, was vacated by the Ministry of Pensions rested with the trustees. Much of the equipment belonged to the Birmingham Pensions Hospital Committee, but such of it as belonged to the State would be taken over by the Office of Works. Alternative employment had been provided or offered to as many as possible of the members of the staff who were in the direct employment of the Ministry, including the medical superintendent. The majority of the staff, however, were employees of the Hospital Committee.

undertake to do that. Mr. HANNON asked if the Minister was aware of the valuable services rendered by these non-official servants. Major TRYON: I am well aware that their services were valuable, and I have no doubt that the committee will do its best for them.

National Health Insurance

In reply to Mr. Logan, on November 19th, Sir E. HILTON YOUNG said the cost to the Exchequer under the National Health Insurance (Prolongation of Insurance) Act, 1930, was between £80,000 and £130,000. No payments under the Act could be made until returns of the number of persons affected were received from approved societies after the end of the current year. Sir E. HILTON YOUNG told Mr. Hicks, on the same day, that a sum of £500,000 had been distributed to approved societies for the year 1930 towards the cost of excusal of arrears due to unemployment.

Replying to Mr. Rhys Davies on November 19th, Sir E. HILTON YOUNG said regulations making minor amendments in the medical benefit regulations would shortly be published and laid before Parliament. He did not think it would be found that the regulations materially affected existing relations between insurance doctors and their patients. Mr. DAVIES asked why the Minister of Health had not consulted the Consultative Committee on National Health Insurance about these regulations. Sir E. HILTON YOUNG asked Mr. Davies to see the regulations before assuming that such a consultation was required.

The B.C.G. Tragedy at Lübeck

Sir E. HILTON YOUNG, in reply to Mr. Groves on November 23rd, said that the report made to the Medical Research Council by their two representatives who visited Germany to inquire into the deaths of seventy-six infants in Lübeck, following the administration of the Calmette prophylactic tuberculosis vaccine, was a confidential one. It dealt with technical matters, which were of interest only to research workers. It was therefore not proposed to make the report public. The report did not traverse the ground of the official German inquiry, which was made by the Imperial Board of Health. The substance of the report on that inquiry was given in reply to a question on February 17th.

Leprosy in India

On November 23rd Sir SAMUEL HOARE, replying to Major Milner, said that the number of persons classified as lepers in India at the census of 1921—the latest official figure available—was 102,513, but it was probable that the number was considerably in excess of that returned. Exact figures to show progress were not available, but great advances had been made through the training of medical men, the survey of infected areas, and the opening of dispensaries. Last year the cases under treatment in the dispensaries of one province alone were more than three times as many as were being cared for in the whole of the leper institutions of India ten years ago.

Miners' Nystagmus

On November 24th Mr. ISAAC FOOT, replying to Mr. Soper, said that statistics were available for the past few years of the number of cases of miners' nystagmus in Yorkshire reported to the certifying surgeons under the Workmen's Compensation Act. Those figures showed a decrease since 1925, but with some fluctuation. The principal measures in hand for the prevention and cure of nystagmus were those to secure improved lighting in mines, and an investigation under the auspices of the Medical Research Council.

The figures furnished to Mr. Soper showed that, in 1930, 232 cases of nystagmus were reported in South Yorkshire, and 119 in West Yorkshire, being 1.09 and 1.33 respectively per 100,000 shifts worked underground. The rate for Great Britain as a whole in the same year was 1.81, compared with 1.41 in 1929 and 1.40 in 1928.

Housing in Manchester.—Sir E. HILTON YOUNG told Sir J. Nall, on November 19th, that the corporation of Manchester had recently submitted proposals for the building of over 2,000 houses, many of which were of a larger size than he thought was required. The corporation had been asked to revise its proposals so that the bulk of the houses provided could be let at a lower rent. He assured Sir J. Nall that he would inquire into an alleged discrepancy between the figures supplied by the medical officer of Manchester and those in his Department.

Rent Restriction.—Replying to Mr. Kirkwood, on November 19th, Sir E. HILTON YOUNG stated that questions relating to the future of the Rent Restrictions Acts, and the possibility of amendments to those Acts, would be considered by the Government as early as possible in the light of the recently issued report of the Departmental Committee.

Patent Medicines.—On November 24th Sir A. BEIT asked the Secretary to the Treasury if he was aware that many proprietors of patent medicines were evading the patent medicine duty by ceding their proprietary rights, at the same time retaining the protection and good will of their registered trade names. Dr. ELLIOT replied that the law provided for exemption from medicine stamp duty in favour of known, admitted, and approved remedies, when sold under certain conditions by duly qualified chemists and druggists. He was aware that certain manufacturers had taken steps, one of which was a disclaimer of proprietary rights, to bring their preparations within the scope of that exemption, but provided this was within the terms of the statute he could not interfere.

The Services

ROYAL ARMY MEDICAL COLLEGE

The following is the list of prize winners in the junior class of instruction for officers in the R.A.M.C. and I.M.S. at the Royal Army Medical College at the termination of the session on October 30th:

Lieutenant F. K. Bush, M.B., B.S., R.A.M.C., Herbert Prize (highest aggregate), Montefiore Prize (Military Surgery), Ranald Martin Prize (Tropical Medicine), De Chaumont Prize (Hygiene). Lieutenant W. R. M. Drew, M.B., B.S., B.Sc., R.A.M.C., Marshall Webb Prize (Military Medical Administration). Lieutenant J. B George, M.B., B.S., R.A.M.C., Tulloch Memorial Prize (Pathology) Lieutenant H. J. R. Thorne, M.B., B.S., I.M.S., 2nd Montefiore Prize (Military Surgery). Lieutenant M. H. Shah, M.B, B.S. (University College Hospital), I.M.S., Parkes Memorial Prize (Hygiene), Fayrer Memorial Prize (Pathology).

Lieutenant J. M. Gibbon, R.A.M.C., who died on October 26th, had qualified for the second Marshall Webb prize in military medical administration.

DEATHS IN THE SERVICES

Colonel Robert John Shaw Simpson, C.B., C.M.G., late R.A.M.C., died at Blackheath on October 28th, aged 73. He was born at Dundee on February 22nd, 1858, the eldest son of the late Mr. George Buchan Simpson of Broughty Ferry, and was educated at Edinburgh University, where he graduated as M.A. in 1878, and as M.B. and C.M. in 1882. He entered the Army as surgeon on February 3rd, 1883, passing in second, the late Major-General Sir William MacPherson heading the list. He became lieutenant-colonel after twenty years' service, colonel on September 11th, 1912, and retired on February 5th, 1913. From 1891 to 1896 he was assistant medical officer of the Royal Arsenal, Woolwich. He served in the South African war throughout 1899 to 1902, when he was staff officer to the principal medical officer, took part in operations in the Transvaal, Orange River Colony, and Cape Colony, was mentioned in dispatches in the *London Gazette* of April 16th, 1901, and received the Queen's medal with three clasps, the King's medal with two clasps, and the C.M.G. From 1905 to 1909 he was professor of tropical medicine at the R.A.M.C. College at Millbank. After his retirement he was recalled to duty in August, 1914, and throughout the war of 1914–18 served as A.D.M.S. of the Woolwich district, receiving the C.B. for his services in 1917. Since the war he had devoted much time and trouble to the Royal Lying-in Hospital in York Road, where he was chairman of the board of governors. He compiled the medical history of the South African war, for which he received the thanks of the Government. In 1895 he married Jean Mary, daughter of the late George Halley, Esq., of Broughty Ferry.

Lieutenant John Monk Gibbon, R.A.M.C., died suddenly at Queen Alexandra's Military Hospital, Millbank, on October 26th, aged 24. He was educated in Dublin, where he graduated as M.B., B.Ch., and B.A.O. in 1930, joined the R.A.M.C. as a lieutenant on probation on May 26th last, and was stationed at the R.A.M.C. College, Millbank, where he was going through the course for newly appointed officers.

Medical News

The annual dinner of the Yorkshire Association of Graduates of Glasgow University will be held in the Great Northern Hotel, Leeds, on Friday, December 4th, at 7.30 p.m. Professor Robert Muir, M.D., F.R.S., will be the chief guest of the evening. Tickets may be obtained from the honorary secretary, Dr. William MacAdam, 40, Park Square, Leeds. All graduates of the university resident in Yorkshire and adjacent districts are invited.

The twelfth annual dinner of the medical officers of No. 14 Stationary Hospital, B.E.F., will be held at the Trocadero Restaurant, Piccadilly, on Friday, December 11th. Colonel C. R. Evans, D.S.O., will be in the chair. Any member of the mess wishing to attend who has not received a notice should apply to the secretaries, Lieut.-Colonel H. M. Perry and Dr. H. L. Tidy, 39, Devonshire Place, W.1.

The twelfth of a series of dances, in aid of the Royal Medical Benevolent Fund Guild, will be organized by St. Bartholomew's Hospital and held on Friday, *December 11th, 8.30 p.m. to 12.30 a.m., in the Great* Hall of the British Medical Association, Tavistock Square, W.C. Tickets (*single 6s., double 11s.*) may be obtained from Miss Mead, the dean's office, St. Bartholomew's Hospital, *E.C.1.*

The sixty-ninth annual meeting of the Royal Surgical Aid Society will be held at the Mansion House on Tuesday next, December 1st, at 4 p.m., under the presidency of the Lord Mayor of London.

A series of lectures on "Recent advances in physiology applicable to medicine" is being arranged by the University of Durham College of Medicine at Newcastle-upon-Tyne. The first of such lectures, entitled "Some investigations in relation to medicine," will be given at the College on Friday, December 4th, at 4 p.m., by Professor Edward Mellanby, M.D., F.R.S., of the University of Sheffield. All medical practitioners in the neighbourhood are invited to attend.

A two weeks' course in infants' diseases, with special reference to nutritional disorders and dietetics, for medical officers of welfare centres and others, will be given at the Infants Hospital, Vincent Square, Westminster, S.W., *from November 30th to December 13th.* The fee for the course is £3 3s.

The Fellowship of Medicine and Post-Graduate Medical Association announces two afternoon courses from November 30th to December 12th, one at the Infants Hospital in diseases of infants (fee £3 3s.), the other at the Hospital for Diseases of the Skin, Blackfriars, in dermatology (fee £1 1s.). A free lecture will be given by Mr. Tudor Edwards on "Surgical chest diseases," at 4 p.m., on December 2nd, at the Medical Society of London, 11, Chandos Street, the last of the series being given on December 9th, by Mr. Cecil Joll, on "Goitre, with special reference to thyrotoxicosis." Free post-graduate demonstrations will be given as follows: December 1st, City of London Hospital, Victoria Park, by Mr. W. H. C. Romanis, 9.15 a.m.; December 3rd, National Hospital for Diseases of the Heart, by Dr. F. W. Price, at 3 p.m. (admission by ticket only, obtainable from the Fellowship); December 7th, at St. John's Hospital, by Dr. S. E. Dore, 6 p.m.; December 8th, Royal Northern Hospital, by Mr. Hamilton Bailey, *3.30* p.m.; *December 15th*, Royal Waterloo Hospital, by Dr. Bernard Myers, 2 p.m.; December 17th, Miller General Hospital, by Mr. Reginald Ledlie, 11 a.m. Demonstrations will be given at the Children's Heart Hospital, West Wickham, on the first Saturday of each month by Dr. Bernard Schlesinger (fee 7s. 6d. per demonstration), the Fellowship to be notified by the previous Monday morning. Copies of syllabuses from 1, Wimpole Street, W.1.

This year's Nobel Prize for chemistry has been awarded to Dr. F. Bergius and Professor C. Bosch of Heidelberg.

Major and Brevet Lieut.-Colonel A. Butler Harris, T.D., M.B., has been appointed Deputy Lieutenant for the county of Essex.

Lord Dawson of Penn has been elected a life member of the council of Cheltenham College.

The Congress of the German Society for Urology, which was to have been held this year, has been postponed to next April, when it will take place in Vienna.

The executive committee of the International Congress of Tropical Medicine has supplied the following particulars of the second congress, to be held in Amsterdam in 1932. After the regretted death of Professor C. Eijkman, Professor G. Grijns assumed the presidency of the congress. The committee, in order to meet the majority of wishes, definitely fixed the dates of the Congress as September 12th to 17th. The subjects for discussion will be as follows: (1) avitaminoses, with special reference to beri-beri; (2) leptospira and yellow fever; (3) helminths, with special reference to ankylostoma; (4) malaria, blackwater fever, protozoan blood diseases, and kala-azar. Two reporters will be invited to read papers on each subject. The inscription fee has been fixed at £1 (Dutch guilders 12.50). The general secretary is Professor Dr. E. P. Snijders, Institute of Tropical Hygiene, Amsterdam.

The October and November issue of *Acción Médica*, the new monthly organ of the medical staff of the Pirovano Hospital, Buenos Ayres, of which only two previous issues have appeared, is devoted to tuberculosis.

Dr. August Bier, professor of surgery at Berlin University, celebrated his seventieth birthday on November 24th.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 8861, 8862, 8863, and 8864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Attiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh.*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Nausea and Vomiting of Pregnancy

Dr. LAWSON L. STEELE (Blyth) writes: *Could any of your readers tell me of any effective treatment of the above-named condition?* My patient has tried the usual remedies in previous pregnancies, with no benefit. The following have proved of no avail: tablets of *corpus luteum* ; ingluvin and belladonna; bismuth preparations; carminative mixtures; saline draughts; dimol. Vomiting occurs three or four times daily, but the perpetual nausea and distaste for erstwhile favourite foods are most trying.

Anal Neuralgia

Mr. F. C. PYBUS (Newcastle-on-Tyne) writes: I have been very interested in the correspondence on anal neuralgia. Some twenty years ago *I offered a paper on this subject under the* name of "nocturnal rectalgia," which was not accepted. I am still interested in the subject, and should be glad to have some further information about it, and would welcome any case histories. I have found the duplicate copy of my original paper and propose publishing it with additional details, if some of my colleagues would be good enough to write me.

Cobalt

Dr. William C. Hoffman (Glasgow) writes in reply to the query by "J. A. R. T." (November 21st, p. 971): Cobalt has frequently been used internally, especially in combination with other metals, such as copper, iron, and zinc, for various forms of anaemia. Endomin, a haematopoietic, manufactured by Messrs. Reed and Carnrick, contains 0.03 mg. of cobalt per tablet. I cannot vouch for the efficacy of cobalt as a remedy in anaemia, but it is possible that it functions as a catalytic agent in the process of enriching the blood.

Naevus

Dr. H. F. Parker (Guildford) writes: In reply to "Inquirer's" letter (November 14th, p. 927) with reference to the treatment of a V-shaped naevus on the forehead of a baby, the painless application for about twenty seconds of a moulded stick of carbon dioxide snow should cure it, leaving practically no mark. Should the naevus be of too irregular a shape for this treatment, the best alternative would be electrolysis. Naevi may enlarge rapidly, so there should be no unnecessary delay in treatment.

Income Tax

Replacement of Car

"H. G. S." bought a car in 1927 for £850, and sold it in March, 1931, for £130, when he bought a new car for £493. At that date a car similar to the one replaced would have cost £750.

*** The replacement allowance cannot exceed the actual out-of-pocket expenditure—that is, £493 − £130 = £363, and where the new car costs less than the old one this results in a loss of allowance. If the contrary is the case the increase in cost represents an addition of capital sunk in the practice, whereas in "H. G. S.'s" case a certain amount of capital has been lost; the Income Tax Acts do not allow increases in or losses of capital to be taken into account. In the case of the car which was sold without being replaced no allowance at all is due, the cost of replacement being *nil*. This case is a forcible illustration of a point we have often made in these columns—namely, that failure to claim the annual allowance for depreciation usually involves loss in the long run, especially during periods of falling prices.

Change of Employment

"A. B." was working as locumtenent or assistant from June, 1929, to April 31st, 1931, earning approximately £400 per annum. As from June 1st, 1931, he has been acting as house-physician at a hospital, his monetary remuneration being at the rate of £100 per annum. How should he be assessed for 1931–32?

*** In our opinion there was such a definite change in the nature of the employment and the basis of remuneration in June, 1931, that "A. B." is entitled to regard himself as having ceased one employment and commenced another. In that case he appears to be entitled to be assessed on the basis of his earnings for that year—that is, one-twelfth of £400 + ten-twelfths of £100—and we see no reason why he should be put to the trouble of paying on £400 and claiming repayment at the end of the financial year.

LETTERS, NOTES, ETC.

The "Medical Register"

The Registrar of the General Medical Council (44, Hallam Street, W.1) writes: I desire to remind those who find it essential to know whether a practitioner is legally qualified or not, that in order to facilitate their work the Council publishes an office edition of the *Medical Register*, printed on inexpensive paper, and bound in boards. This edition contains precisely the same names and lists as the official edition. It is issued from this office at a special charge of 10s., post free, but no copies can be issued unless they are ordered and paid for prior to December 31st. I shall be happy to send an order form upon application. The *Medical Register* is the official publication, issued under the Medical Acts, and contains the names of all legally qualified practitioners: there is no other publication which takes its place. The Council also issues each month a list of additions to, and deletions from, the *Register*. The charge for these will be furnished upon application.

Treatment of Severe Asthma

Dr. N. Garber (Schweizer Reneke, Transvaal) writes: The rarity of cases of asthma of the type mentioned below prompts me to bring it to the notice of the profession. The patient, a married woman, is 44 years of age, and has suffered from asthma for twenty years. She has had most of the known treatments: adrenaline, ephedrine, and pituitrin, tuberculin, autohaemotherapy, theocin sodium acetate, morphine, asthma powder for smoking, atropine, vaccines, etc. Following tonsillectomy (tonsils were septic) and autohaemotherapy, she improved considerably (tonsils removed at midsummer). With the advent of the cold weather she again became subject to bad attacks, lasting thirty-six to forty-eight hours. During the last twenty-four hours she has received: (1) 1 ounce of adrenaline hydrochlor. sol., 1/1,000 subcutaneously; (2) 3/4 grain morphine hydrochloride. Yet she felt no relief. To alleviate the spasm I injected 3 grains of luminal solution intramuscularly, but no relaxation occurred until ten minutes afterwards, when I chloroformed her. The luminal then commenced to take effect, and she had a fitful sleep, with slight relaxation of the bronchial spasm, for a few hours. I wonder whether this amount of treatment does not constitute a record, even if only as far as the use of the adrenaline was concerned, 1 ounce in twenty-four hours.

Age Limits

"Juvenis" writes: Can nothing be done in the matter of age limits? Recently in a short list sent to a committee there was a medical man whom I particularly wanted—older than myself, but I consider that does not matter. His age was 51. This doctor was the very one to fill the post by his experience, manner, qualifications, and appearance. Yet the committee (whose average age was far above 51) turned him down at once as being "too old." Surely there are very good admirals, generals, judges, archbishops, prime ministers, and what-not at ages of 60, 70, or 80. In a political career a man of 45 is a baby, and yet in the medical world 45 is the usual age limit for an appointment, an age when one could still be playing Rugby football. In the Services, I believe, 90 per cent. of doctors are dispensed with at 50—the prime of life of a healthy man.

Medical Art Calendar, 1932

We have received a copy of the Medical Art Calendar for 1932 from the publishing house of J. Philip Kruseman, Nassauplein 18, The Hague, Holland. Calendars are too often dull things, evil and necessary reminders of how quickly the days pass, witnesses of wasted time. The Medical Art Calendar, with its attractive reproductions in sepia of prints and paintings by Dutch artists, illustrate the length of the art of medicine in terms of the ancient art of painting, reducing to insignificance the shortness of life. The alchemist with his flasks, retorts, and learned books, and the physician with his bleeding-bowl and urine basket, are portrayed with the rich dignity that oils alone can give to a painting. A satirical print by C. Kramm (who shows marked affinities to Hogarth and Rowlandson), in which doctors and undertakers are seen leaving a wine shop and doffing their hats to two skeletons, suggests that for these life was indeed too short. The first use of liver in medicine would seem to be of ancient origin, for the Angel Gabriel "turned heart and liver of a haddock to beat the Devil," so that Tobit might marry his bride. This calendar is very good value for 6s.

Developmental Defects

Dr. A. M. Watt (house-physician, Peterborough and District Memorial Hospital) writes: In the *British Medical Journal* for October 3rd, under "Memoranda," you have published a case of transposition of viscera. In October we had, in this hospital, a child with partial transposition of viscera, and, in addition, two other developmental defects. Heart, with apex to left, but a deficient interventricular septum, and patent ductus arteriosus. Right and left lungs each had three lobes. Stomach passed to the left; duodenum passed from left to right; caecum and appendix in left iliac fossa; sigmoid colon in right iliac fossa. Spleen in right hypochondrium; gall-bladder and most of liver in left hypochondrium; left kidney lower than right. Owing to deficient interventricular septum the child was a "blue baby," and died at the age of 13 weeks.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 45, 46, 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 298.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

489 Primary Hypochromic Anaemia

Having noted recently patients with an anaemia symptomatic of *pernicious anaemia, but in whom the blood* findings were of the secondary type, W. DAMESHEK (*Amer. Journ. Med. Sci.*, October, 1931, p. 520) reports 7 such cases (6 females). Most of these gave a history of remissions and relapses of anaemia, sore tongue, gastro-intestinal symptoms, and paraesthesias. Objectively, they showed pallor without icterus, atrophied tongue, " spoon " nails, and signs of " combined system disease "; achlorhydria was also present. *Etiological factors* were absent. The blood picture was characterized by a low colour index, hypochromia, low average erythrocyte diameter, leucopenia, relative lymphocytosis, and thrombocytopenia. The sternal bone marrow revealed a marked hyperplasia despite the anaemia. A striking feature of the disease is the prompt response to large doses of iron. Dameshek terms this condition hypochromic or erythro-normoblastic anaemia ; he discusses its relation to the pernicious type, and rejects the idea that these are cases of chlorosis. He believes that this anaemia is primary or essential ; that it is related to, and may be an unusual form of, the pernicious type ; and that it is probably dependent upon inadequate gastric digestion of iron, which may cause faulty haemoglobin synthesis, and improper maturation of erythro- and normo-blasts in the bone marrow. E. S. MILLS (ibid., p. 554) also reviews this condition, and reports 23 cases. He states that the disease is confined to females, and runs a chronic course with symptoms of moderately severe anaemia. The patients showed achlorhydria, absence of etiological factors, a hypochromic blood picture, and a resistance to ordinary anaemia treatments. Iron and copper therapy was successful in 21 cases, most patients proving refractory to iron alone.

490 Bistethoscopic Binaural Auscultation

H. FABRITIUS (*Nordisk Medicinsk Tidskrift*, October 10th, 1931, p. 649) of Helsingfors explains the advantages of a stethoscope which has two chest-pieces as well as two ear-pieces. This arrangement enables the auscultator to listen at the same moment to sounds coming from more or less widely separated parts of the body. The author's investigations with this device were prompted by the collision at the end of 1930 between the passenger steamers *Arcturus* and *Oberon*. This catastrophe was largely due to the inability of the human ear to localize accurately sounds in the dark and in fog. With the help of the binaural stethoscope with two chest-pieces, one placed over the neck and the other over the stomach, it is possible, in a case of stricture of the oesophagus, to observe the time taken by swallowed fluid to reach the stomach. This device, which was independently described by Dr. F. SIMON (*Deut. med. Woch.*, February 27th, 1931), may, moreover, be employed in the auscultation of the heart in conjunction with percussion, and also in mapping out the position of the liver.

491 Acute Pulmonary Oedema in Diseases of the Circulatory System

Enumerating the various factors ascribed as causes of acute pulmonary oedema, especially left ventricular insufficiency, C. PEZZI (*Ann. de Méd.*, October, 1931, p. 249) points out that the anatomy of the pulmonary vessels has never been considered, though it is through these that the condition arises ; they can only be studied by radioscopical examinations. The radiology of the pulmonary vessels in the acute oedema occurring in mitral diseases and arterial hypertension is described. Four cases illustrative of the former, and one of the latter, are recorded. Pezzi believes that sclerosis of the pulmonary vessels, manifested by a radioscopical syndrome of pulmonary hypertension, is the anatomical condition favouring the onset of acute pulmonary oedema in the diseases mentioned. The cardiac characters of this syndrome are *dilatation of the pulmonary artery*, accentuation of its shadow, and more or less evident pulsations. The pulmonary characteristics are markedly increased volume of the hilar shadows with clear, regular contours, numerous vascular lines radiating from the hilum, and pulsations of the hilar shadows and their ramifications. Hypertension of the greater circulation showing these signs is of grave prognosis, since they indicate a predisposition to acute oedema, pulmonary apoplexy, thromboses of the pulmonary vessels, and pulmonary infarcts.

492 Immunization of Infants against Diphtheria

J. GREENGARD (*Journ. Amer. Med. Assoc.*, July 25th, 1931, p. 228) states that immunization against diphtheria, as measured by the Schick test, can be produced rapidly and safely in a high proportion of infants by the use of two 1 c.cm. injections of Ramon's diphtheria anatoxine. Complete immunity was thus rapidly obtained in 98 per cent. of 117 infants, ranging in age from 4 days to 2 years ; a large proportion of this series were found to have a negative Schick reaction two weeks after the second injection. Of 145 infants receiving the toxoid, only two older ones (aged 19 and 10 months) showed any reaction ; this was slight and lasted only 24 hours. Ramon and Helie believe that these reactions are due to a sensitivity to certain specific proteins in the toxin. In a small group in whom the persistence of immunity was tested, one case occurred in which the Schick test became positive six months after vaccination. Three cases of clinical diphtheria were encountered during the investigation ; one occurred in a vaccinated child with a succeeding negative Schick reaction. Greengard concludes that the most favourable period at which diphtheria immunization may be performed is toward the end of the first year of life ; since diphtheria toxoid gives practically no reaction at this age, he considers it to be the ideal method of immunization.

Surgery

493 Cutaneous Lymphoblastoma

W. H. GOECKERMAN and H. MONTGOMERY (*Arch. Derm. and Syph.*, September, 1931, p. 383) record two cases of cutaneous lymphoblastoma with markedly varied clinical manifestations. The first resembled mycosis fungoides in appearance, but histologically it suggested lymphosarcoma, there being malignant and destructive infiltration of the epidermis by immature cells of the lymphocytic series. The authors remark that this case would be explainable on the assumption that mycosis fungoides can develop into lymphosarcoma, but that at any rate it may be classified as a lymphoblastoma, occurring primarily in the skin ; in lymphosarcoma the epidermis is not invaded as a rule, and there is more destruction of the elastic fibres than was observable in this case. The absence of myelocytes, and the presence of a negative oxydase reaction contraindicated myelogenous leukaemia. In the second case lymphoblastoma was at once suggested, but the differential diagnosis from Hodgkin's disease, mycosis fungoides, lymphosarcoma, and the various forms of leukaemia was not possible. There was no superficial adenopathy, except nodal enlargements which might have been inflammatory and secondary to the infected ulcers. There was no splenomegaly, but the blood changes were suggestive of Hodgkin's disease, and some confirmatory evidence was obtained at the necropsy. The authors

remark that these two cases illustrate the difficulty of diagnosing many cases according to the accepted classification, and emphasize the probably close genetic relationship of the whole group. They suggest that the term lymphoblastoma is convenient until a more correct, and possibly more generally accepted term, has been devised.

494 Intra-cortical Bolting of Fractured Bones

The chief objection to the insertion of an intra-medullary bolt or peg in the treatment of fracture of a long bone is its interference with the marrow and with the formation of endosteal callus. E. JUST (*Zentrlbl. f. Chir.*, October 3rd, 1931, p. 2499) has therefore introduced a method of intra-cortical bolting. The bones are first placed in apposition, and a mark is then made in the periosteum above and below the fracture to denote the correct position of the fragments. A hole is bored in the cortical bone of each fragment, in the direction of the long axis of the bone, and about 1 cm. deep. A stout rustless wire is inserted into the hole in the less movable fragment, and the other fragment, already bored, is fitted on to the other end of the wire. It is normally advisable to use two such pegs, with two holes in each fragment. After the operation, a plaster bandage is applied to prevent undue movement. The skull can be treated in the same way after osteoplastic operations. The advantages claimed for the method are simplicity, and the small size of the foreign body used, as well as freedom from the disadvantages of the intra-medullary pegs generally employed.

495 Differential Diagnosis of Cerebral Softening and Tumour

Despite the progress that has been made in cerebral diagnosis, the differentiation between cerebral softening and tumour is difficult in some cases. Though these conditions can present identical signs, J. A. BARRÉ, O. METZGER, and J. MASSON (*Paris Méd.*, October 3rd, 1931, p. 273) believe that additional, though slight, manifestations may be caused by neoplasms. Two cases, out of a group of 6 occurring in the last two years, are recorded in support of this view. In these, post-mortem examinations revealed the presence of tumours which had been diagnosed during life as softening. In the initial period, persistent headache, Jacksonian crises or irritative symptoms, and a slight hypertension of the cerebro-spinal fluid, point to the existence of a tumour. During the stage of evolution, the persistence and increased severity of the symptoms are indicative of tumour. When the condition has fully developed, continual agitation of the limbs and whole body, and objective changes in the side which is not involved till then (exaggerated tendon and diminished or abolished abdominal reflexes, bilateral Babinski sign), occur in cases of neoplasm. Symptoms of cranial hypertension, especially papillary stasis, and hypertension of the cerebro-spinal fluid, are usually present in tumour cases. By these signs the authors have frequently avoided diagnostic errors ; should, however, doubt still exist, they believe that ventriculography should be performed.

496 Intestinal Syphilis

J. DE LA GUARDIA (*Surg., Gynecol. and Obstet.*, August, 1931, p. 221), who records an illustrative case, states that syphilis of the intestine was first described by Monteggia of Milan in 1794 and later by Cullerier in 1854. Its rarity is shown by the fact that Fraenkel found only three cases of syphilis of the small intestine in 19,000 necropsies, and Chiari only eight cases of gastro-intestinal syphilis in 243 syphilitic corpses. The lesions may be situated in any part of the small intestine, but are especially frequent in the jejunum. They may be multiple or in separate groups, and tend to encircle the lumen of the bowel, causing stenosis. They have a uniform consistency. The lesions have nothing to do with the primary ulceration, but are a new tissue formation which attacks all the intestinal layers and is localized at an early stage round the blood vessels. The cases may be classified clinically into the following four groups: (1) those with nausea, vomiting, and diarrhoea ; (2) those with definite digestive disturbances associated with pain and distress ; (3) those indicating ulcer or stenosis ; and (4) those simulating carcinoma, with palpable tumour. The author's case occurred in a man, aged 38, in whom a syphilitic ulcer of the duodenum and first part of the jejunum was found on laparotomy, in addition to a cyst of the pancreas and cholelithiasis. Complete recovery followed.

Therapeutics

497 The Toxicity of Atophan Compounds

Twenty-five fatal cases of atophan poisoning have been recorded, but it is not generally known that this drug is present in other proprietary analgesics. F. HÖGLER (*Wien. klin. Woch.*, October 2nd, 1931, p. 1246) reports four cases of poisoning by an atophan compound ; one terminated fatally. Atophan increases the uric acid excretion, but it also promotes calculus formation ; sodium bicarbonate should therefore be administered concurrently in doses of 60 to 75 grains daily. Dyspepsia, erythema, pernicious anaemia, and jaundice have followed its administration. Some writers advise that atophan should be given for three or four days, and then be discontinued for a week or ten days. Högler states the symptoms of atophan poisoning as headache, anorexia, and diarrhoea, loss of weight, jaundice, and increase of the splenic dullness, with sugar, acetone, bile pigment, cholic acids, albumin, casts, and leucocytes in the urine. The patient who died was found to have subacute yellow atrophy. Högler found that goitrous and diabetic patients did badly under atophan treatment, which is very dangerous as a prophylactic.

498 Thyroid Therapy in Thrombo-angiitis Obliterans

Since both Thompson and Wislicki have reported that thyroid administration restored the blood volume to normal in myxoedema, S. SILBERT and MAE FRIEDLANDER (*Journ. Amer. Med. Assoc.*, July 4th, 1931, p. 17) determined to try the effects of this substance in thrombo-angiitis obliterans. Thyroid extract was accordingly given in 14 typical cases of this disease, 5 of which are here recorded. A striking increase in blood volume was noted. The blood volume increased from 20 to 25 per cent. below normal to normal. On continuing the drug, a tendency to diminution in the blood volume began to appear after about eight weeks. This tendency became gradually definite, and, on withdrawal of the thyroid, a prompt fall occurred to the original blood volume figures. With the increase in blood volume, the total proteins, calcium, and cholesterol values diminished to normal, and again increased when the thyroid was stopped.

499 Treatment of Psoriasis

W. H. GOECKERMAN (*Arch. Derm. and Syph.*, September, 1931, p. 446) describes the results of his treatment of psoriasis since his previous publication in 1925. His technique consists of the application to the patches of an ointment (1 to 5 per cent.) of crude coal tar. After about 24 hours, this is almost completely washed off with olive oil, and the patches are then subjected to short doses of ultra-violet rays from a quartz lamp. The doses are given daily, beginning with one of one minute at 30 inches ; each succeeding dose is increased by half a minute on the following four or five days. Most of the patients entered hospital, but some were treated as out-patients, with minor modifications in the technique, which, however, remained the same in its essential features. In 181 cases, only three failed to respond, and of these two were exceptional in type. Forty patients suffered also from arthritis, and in about half the arthritis improved as the skin cleared up. The author stresses the general systemic nature of the disease, and puts forward no claim to cure it by the successful treatment of its skin manifestations. He does not recommend his

method, therefore, for cases with only a few patches, since other methods are probably equally effective, but he has found it to be markedly and uniformly successful in nineteen cases of exfoliative dermatitis secondary to psoriasis.

500 Treatment of Hay Fever with Pollen Vaccines

K. H. Bagge (*Ugeskrift for Laeger*, September 17th, 1931, p. 937) has treated 18 cases of hay fever between 1923 and 1929, using vaccines made from the pollen of three kinds of grass. During the first two years he used an American vaccine, but since then he has used only a Danish vaccine prepared on the lines of Coca's prescription. The strengths used were a 1 per cent., a 0.1 per cent., and a 0.01 per cent. solution, 1 c.cm. of a 0.01 per cent. solution containing 100 units; the unit was an extract of one millionth part of a gram of pollen. Before treatment was instituted, cutaneous tests were made with all three strengths, and the strongest solution almost invariably gave a positive reaction. The 0.1 solution gave a positive reaction in about every other case, and the weakest solution very seldom provoked a positive reaction. Each course included on the average fifteen injections, given subcutaneously twice a week from about April 20th till the flowering of the grasses in question began. The initial dose was, as a rule, 10 to 20 units; the final dose was 1,000 units. The amount by which the dose was increased each time depended on the reaction provoked by the last injection. The injections were often followed in a few minutes by local redness and swelling, which usually passed off in a couple of hours. A few patients developed an urticarial rash, and a slight attack of hay fever or of mild asthma. These generalized reactions began fifteen to thirty minutes after an injection, and lasted a couple of hours. Not one of the patients was rendered completely symptom-free by this treatment, but as many as 13 considered that they had derived some benefit from it. The author concludes that his prophylactic injections effected an appreciable reduction in the severity of the symptoms of hay fever in the ensuing hay fever season, but he admits that in Denmark, between 1923 and 1929, the temperature was lower and the rainfall greater in the summer than is usually the case.

501 Haemoplastin in Henoch's Purpura

S. S. Hoffmann (*Journ. Med. Assoc. of South Africa*, September 26th, 1931, p. 600) reports a case of an Indian girl, aged 10, with an infected throat, much-hypertrophied tonsils, a temperature of 101°, pulse rate 120, and multiple joint pains. The condition was taken to be an acute rheumatic polyarthritis, and she was put on salicylates. During the night the girl was seized with acute attacks of abdominal pain, accompanied by vomiting and the passage of blood in the stools. Next day, purpuric patches appeared on her face, abdomen, and limbs, indicating the correct diagnosis; 2 c.cm. of haemoplastin were injected subcutaneously, and small doses of calcium chloride given. The haemoplastin was repeated on the two following days. Recovery was uneventful except for a rather profound secondary anaemia.

Disease in Childhood

502 Cutaneous Diphtheria in the Infant

H. Stux (*Le Nourrisson*, July, 1931, p. 228) states that cutaneous diphtheria in the infant is not so rare as might be supposed, since in the course of the last five years he has seen twenty-four cases, sixteen of which were primary and eight secondary to diphtherial rhinitis. In three instances there were relapses. Cutaneous diphtheria shows a predilection for infancy and is most likely to be found in infants' homes, affecting occupants between the ages of 4 and 7 months; those with the exudative diathesis, which creates a local and possibly general predisposition, are most liable to be attacked. In eight of the author's cases there had been a recent acute infection such as influenza, dyspepsia, or some form of suppuration. Cutaneous diphtheria in the infant is quite a mild affection, being rarely accompanied by rise of temperature or complications. Its site of election is the retro-auricular groove or the fold of the neck. In the author's experience it most frequently assumed an interrriginous or ulcerative form. Bacteriological examination is necessary for the diagnosis in spite of the clinical appearance of membrane formation. Determination of the virulence of the bacilli is also very desirable. In 14 out of 15 cases examined by Stux the bacilli were virulent for guinea-pigs. The Schick test is of no diagnostic value, owing to the frequent absence of reaction peculiar to the infant's skin. On the other hand, determination of the antitoxic content of the blood may be of some assistance in the diagnosis. Serum treatment always proved very successful, the deposit usually disappearing two to five days after the injection. As regards prophylaxis, in addition to the active immunization and isolation of carriers, it is important to keep children with the exudative diathesis and intertrigo away from sources of infection.

503 Electrocardiography of School Children

C. Bruce Perry (*Arch. Dis. in Child.*, October, 1931, p. 259) reports a series of electrocardiographic investigations of normal school children, which were undertaken to serve as a control to cases of heart disease in school children. Sinus arrhythmia (following the Krumbhaar and Jenks standard) was considered present when the difference in the longest and shortest pulse periods was 0.1 second, or over. This occurred in 72 per cent. of the cases, and was very largely a factor of the pulse rate, which was high on the whole, probably due to nervousness induced by the strangeness of the instrument used. Other types of arrhythmia were rare. The P-R interval tended to be shorter than in adults; the QRS complex, it was found, might be notched or splintered in Lead III, with no clinical significance, and it was so frequently associated with an inversion of T in this lead as to be almost the normal finding. Splintering of QRS and inversion of the T wave does not occur normally in children, except in this lead. No significant age change or sex difference was recognizable in the electrocardiograms of children between the ages of 5 and 14. C. Bruce Perry (ibid., p. 265) employed clinical, radiographic, and electrocardiographic investigations in a group of cases presenting various constant physical signs, strongly suggestive of a cardiac lesion, but of a congenital rather than an acquired type, with a view to determining whether they would thus be distinguished from acquired heart disease. He concluded that there was no electrocardiogram which could be classed as characteristic of congenital morbus cordis, and that this line of examination was of little value in the diagnosis and differentiation of minor congenital cardiac abnormalities.

504 Treatment of the Broncho-pneumonia of Childhood

E. Lenstrup (*Ugeskrift for Laeger*, August 27th, 1931, p. 867) discusses the treatment of broncho-pneumonia in children in the Dronning Louises Börnehospital in Denmark, where between October, 1919, and October, 1929, he dealt with 261 cases. There were 37 deaths, or a mortality of 14 per cent. The mortality in the first year of life was barely 20 per cent., and for the first two years 16 per cent. A comparison of these results and of the treatment given with those of other hospitals was sufficiently favourable to the [illegible] hospital to make him decide to continue on the [illegible] as before. The patients were isolated as [illegible], and the nurses were trained to secure a *Special Quiet* and quiet as possible for the children, who [illegible] not awakened in order to be given medicines or [illegible] have their clothing changed. Every examination, notably the stethoscopic, was avoided unless it was absolutely necessary. A steam kettle was supplemented by oxygen inhalation when the patients were cyanosed and air-hungry. Bronchitic symptoms were treated with ipecacuanha, and in severe cases stimulants were injected four to six times in the twenty-four hours. When sedatives were indicated, chloral was given as a

gruel enema. Codeine was administered for a constant irritating cough to children over the age of 1 year. The supply of fluids was liberal, but the patients were not forced to eat much. Great care was taken to maintain the action of the bowels, laxatives being employed when necessary. The procedures which the author did not prescribe included the open-air regime, which he considered unsuitable in Copenhagen at those times of the year when broncho-pneumonia was most common in children. He also dispensed with every sort of hydropathic treatment, the quinine group of drugs, febrifuge drugs, blood-letting, blood transfusion, and every form of serotherapy.

Obstetrics and Gynaecology

505 Physical Exercises During the Puerperium

M. MERENITSCHEWSKAJA (*Zentralbl. f. Gynäk.*, October, 17th, 1931, p. 3071) illustrates the physical exercises which at a Moscow hospital the patients are taught to use from the second or third day of the puerperium. He is satisfied that they promote involution of the uterus, improve the action of the bowels and the tone of the tissues, and have a favourable effect on the cardio-vascular and haemato-poietic systems. Physical exercises are contraindicated after an operative delivery or by tears of the peritoneum, pyrexia, cardiopathy, nephropathy, or pulmonary tuberculosis. Recumbency of the trunk is maintained, but movements of the shoulders and limbs are prescribed, and the patient is allowed to lie face downwards (doing arm or leg movements) from the sixth day. The exercises are practised rhythmically and with deliberation twice daily as a rule.

506 Cancer in Women and the Climacteric

F. G. GADE (*Norsk Mag f. Laegevid.*, June, 1931, p. 593) states that a study of the Norwegian cancer statistics for the period 1919–23 shows that the mortality from cancer of the ovary, uterus, and breast is greatest about the age of 50 years—that is to say, 15 to 20 years earlier than the maximum mortality from cancer of other organs. The great majority of deaths from cancer in these situations thus closely coincides with the period of the climacteric. Comparison with the statistics of England and Wales for the period 1911 to 1926 shows that the figures from the two countries closely resemble each other. This coincidence between the climacteric and cancer of the female organs seems to suggest a biological law, and to indicate a local senility involving a predisposition for cancer, just as senility of the whole body involves a general predisposition for cancer.

507 Recurring Pre-eclamptic Toxaemia

R. D. MUSSEY (*Minnesota Med.*, October, 1931, p. 889) discusses the etiology of pre-eclamptic toxaemia, and mentions that this occurs as a primary condition in about 3 or 4 per cent. of pregnant women. It seems to cause some impairment of the patient's resistance, and is therefore liable to recur. Such recurrence may be due to lowering of the physiological defence, to sensitization of the tissues, to certain foreign proteins (perhaps elaborated in the placenta or foetus, or in both), or to actual injury of the tissues by the toxin. The kidneys appear to be specially affected, and recurrence may result from undetected renal or arterial impairment. [illegible] necruent on the first attack. In a series of cases [illegible]testinal syph the author none of the patients with eclampsia may be situated had had ante-natal care, and most of the especially pre-eclamptic toxaemia had either had no such [illegible]e or it had been inadequate. Ante-natal supervision would lower the incidence of this condition. Mussey emphasizes the importance also of post-natal care, and adds that a woman who has had pre-eclamptic toxaemia should not become pregnant again until a year or more has elapsed, and then only after estimation of the functional ability of the kidneys has revealed that they can stand the strain of pregnancy.

Pathology

508 The Value of Fixation Abscesses

R. F. LE GUYON (*C. R. Soc. de Biologie*, October 12th, 1931, p. 43) has carried out a number of experiments on laboratory animals to ascertain the value of the fixation abscess in infections with various organisms. Guinea-pigs were inoculated with 2 c.cm. of an aqueous suspension of anthrax bacilli from a 24-hour agar culture. Half of the animals served as controls; the remainder received directly after the injection 0.4 c.cm. of essence of turpentine subcutaneously. All the animals died in the same time with the same lesions. In another experiment one batch of guinea-pigs inoculated with 0.01 c.cm. of diphtheria toxin were injected with turpentine; they died in the same time as the controls in which no fixation abscess had been produced. Two batches of mice were injected with a virulent streptococcal strain, and two further batches with a virulent pneumococcus strain; some in each batch immediately afterwards received 0.2 c.cm. of turpentine. The animals in which a fixation abscess had been produced behaved similarly to those in the control group, the turpentine abscess not modifying in any way the progress of the infection. Ten guinea-pigs were injected under the skin of the thigh with 1 c.cm. of turpentine. During the formation of the abscess, the animals were given 1/100 mg. of virulent bovine tubercle bacilli subcutaneously in the abdominal region. These animals lived no longer than the control animals with no fixation abscess. Similarly rabbits with a subcutaneous fixation abscess showed no advantage over control animals when both were inoculated with 10 mg. of bovine tubercle bacilli intravenously. In none of these experiments did the fixation abscess modify the fatal evolution of the infection; the author therefore gravely doubts the therapeutic value of this method of treatment in human disease.

509 The Gastric Function of Ulcer Cases

O. B. MAKAREWIC (*Deut. med. Woch.*, October 2nd, 1931, p. 1703) states that the usual test meal is not satisfactory as a measure of gastric function, especially since the amount of acidity depends on so many factors, including the emptying time and amount of neutralization from duodenal regurgitation. He has therefore employed Lewin's method, in order to investigate separately the various functions of the stomach in 39 cases of gastric and duodenal ulcer. He finds that the amount of secretion in one hour (using Ehrmann's test-drink) is usually increased (100–300 c.cm.), and that the secretion is protracted and not sudden, as described by some authors. As a rule the amount of secretion is inversely proportional to the acidity, so that even in cases of hypochlorhydria, the total acid secreted may be excessive. The total amount of hydrochloric acid secreted is, in fact, nearly always high, and over 1 gram. The emptying time varies widely with the position and stage of ulceration. This greatly influences the acidity of the contents, as determined by the ordinary titration methods, high acidity being found usually in cases in which emptying is rapid, and vice versa. The author adds that he has not yet assessed the diagnostic value of his conclusions.

510 Endocarditis and B. coli Infection

G. BORRUSO (*Il Policlinico*, Sez. Med., October 1st, 1931, p. 511) records a fatal case in a man, aged 40, the necropsy on whom showed a streptococcal endocarditis and no other septic focus, although *B. coli* was found in blood cultures several times during life. This organism may therefore act as a secondary invader in the course of another infection, even for a considerable time before death. In the present case it was found sixteen days before death. A critical study of the literature of *B. coli* septicaemia showed that in many cases the condition was not really a septicaemia, but a bacteriaemia. Cases on record of supposed *B. coli* endocarditis are open to criticisms of various kinds, so that up to the present time the existence of this type of endocarditis cannot be admitted.

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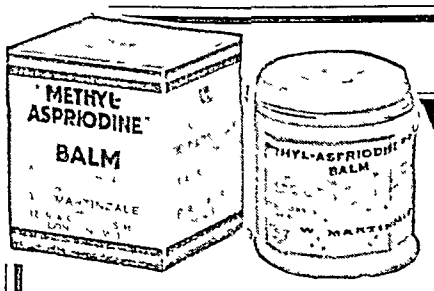
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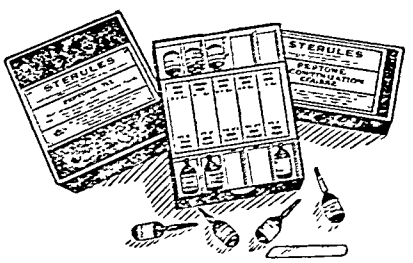
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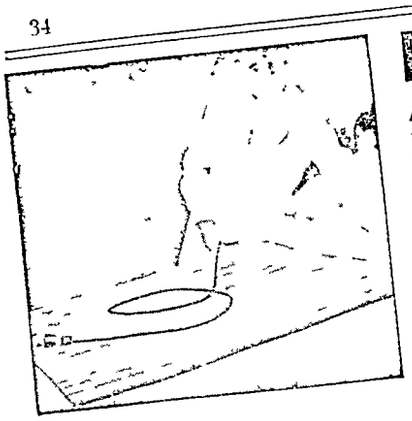
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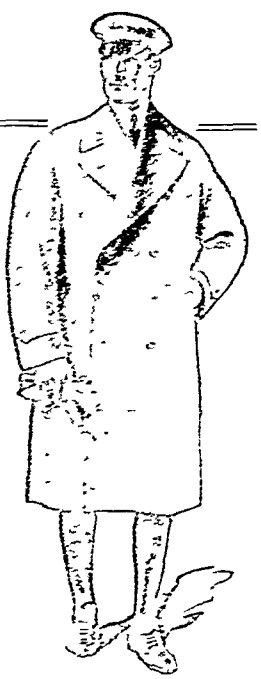
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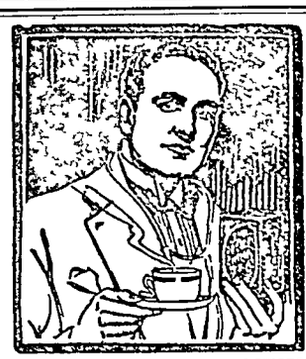
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RENDLESHAM HALL

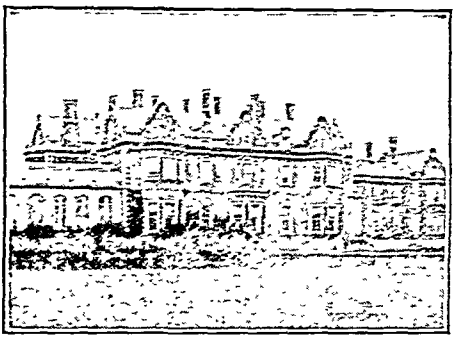
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Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

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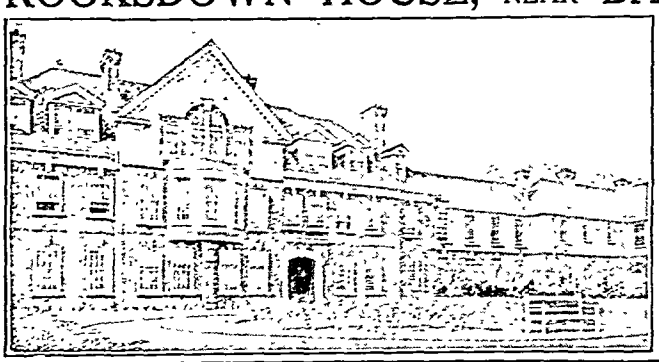
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as carried on for the last twenty years, is available. Booklets and particulars from the Resident Medical Superintendent.

Telephone: BECKENHAM 1648. *Telegrams:* NOROTORIUM, BECKENHAM.

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FOR THE RECEPTION AND TREATMENT OF

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A Superior, Modern, and Attractive Building, situated in a charming and bracing locality, 400 ft. above sea level.

Extensive pleasure grounds, with croquet, tennis, bowling, and putting greens.

Occupational, Light, and Hydro Therapy.

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No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

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Reg. Tel. Address: Bethlem, Beckenham. *Telephone*: Springpark 1180—1181.

Station: Eden Park (Southern Railway).

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Treasurer: Sir Lionel Faudel-Phillips, Bart.
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This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
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Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the *X*-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
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CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

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Chairman: THE RIGHT HON. LORD BLANESBURGH, G.B.E. Opened November 8th, 1930.

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The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
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Grove House, All Stretton,

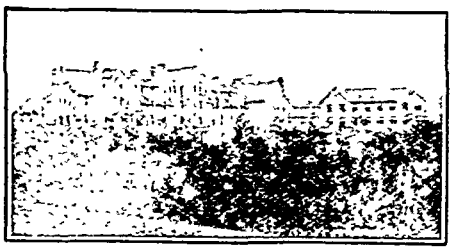
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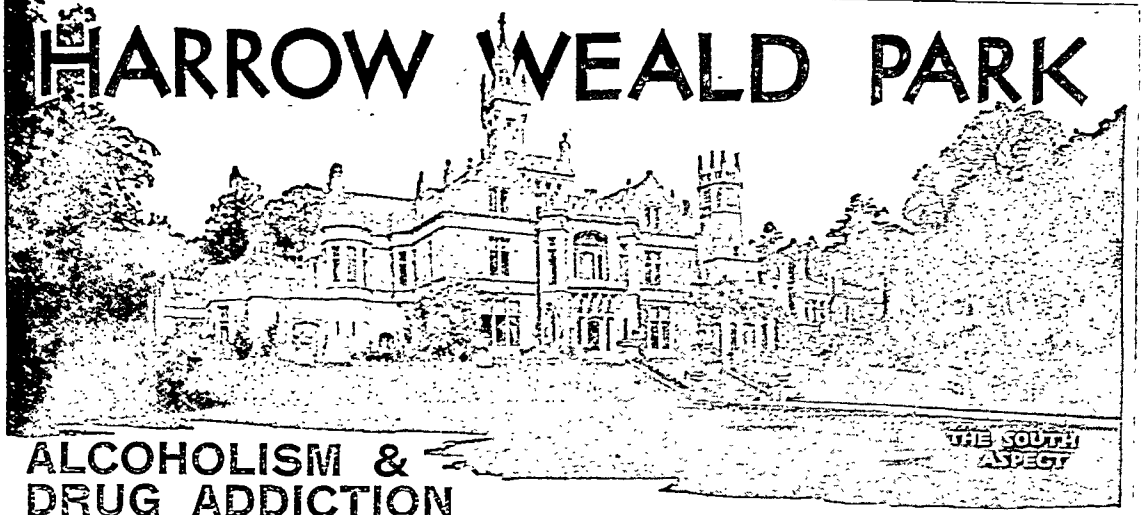
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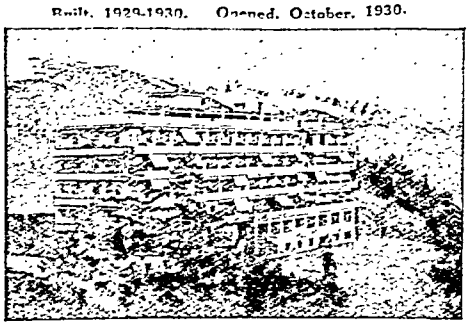
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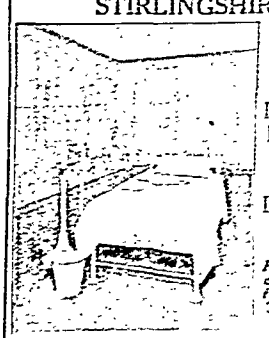
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M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Second and Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out to private cases.

POST GRADUATE STUDY

The Medical Correspondence College provides ample facilities, under highly qualified tutors, for oral, practical, and clinical instruction in preparation for the various higher qualifications, and for Post-Graduate Study irrespective of any examination.

Diploma in Psychological Medicine.
Diploma in Ophthalmology.
Diploma in Radiology.
Diploma in Laryngology, Otology, and Rhinology.
Diploma in Public Health.
Diploma in Tropical Medicine.
F.R.C.S.Eng., and all higher Surgical Examinations.
M.R.C.P.Lond., and all higher Medical Examinations.
M.D. Thesis of all Universities.

You can qualify for any of the above by our Courses of Combined Postal and Practical Courses.

Write at once stating your requirements to the Secretary, MEDICAL CORRESPONDENCE COLLEGE, 19, Welbeck Street, W.1.

WE SPECIALIZE IN POST-GRADUATE COACHING FOR ALL EXAMINATIONS.

GUY'S HOSPITAL MEDICAL SCHOOL.

BEANEY SCHOLARSHIP IN MATERIA MEDICA

The Beaney Scholarship in Materia Medica (including under that term Pharmacy, Pharmacology, and Therapeutics) is now vacant.

The Scholarship, which is open to candidates who have received part, at least, of their medical education at Guy's Hospital, is of the annual value of £60, and is tenable for three years.

Further particulars may be obtained from the Dean, to whom applications must be addressed at Guy's Hospital Medical School, London Bridge, S.E.1, not later than Monday, Dec. 7th.

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology. *New Science Buildings*, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

SCHOOLS for BOYS and GIRLS

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D.T.H. must possess the D.T.M. of the University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

THE RIVIERA SCHOOL

CHATEAU DE MOUANS,

MOUANS-SARTOUX (ALPES-MARITIMES),

FRANCE.

FOR SMALL BOYS AND GIRLS.

Mr. & Mrs. E. W. Huckel, Principals.

On a pine-clad hill near Cannes. Special health supervision and outdoor classes.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the 'Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL MEDICAL SCHOOL.

(FOUNDED 1816.)

Telephone: TEMPLE BAR 1457. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station)

The Hospital has been rebuilt and contains 86 beds, including fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination Part I and II commence in May, 1932.

Out patients are seen daily at 1.30 o'clock. Operations are performed at 3 p.m.

The Pathological and Bacteriological departments will be pleased to report on specimens sent in by Ophthalmic Surgeons or Hospitals.

Qualified medical practitioners and registered students may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

Royal College of Physicians of EDINBURGH.

KIRK DUNCANSON FELLOWSHIP FOR MEDICAL RESEARCH.

In accordance with the Bequest of Mrs Isabella Kirk Duncanson to commemorate the late Dr. J. J. Kirk Duncanson, the Council of the Royal College of Physicians will make an award of a Kirk Duncanson Fellowship in January, 1932. The Fellowship will be awarded annually for a period of one year. It may be renewed to the same beneficiary for two additional periods of one year each. The emoluments will be upwards of £150 for the first year, about £250 for the second year, and about £350 for the third year. In recognition of Dr Kirk Duncanson's interest in the Diseases of the Ear, Nose, and Throat, some preference will be given to the claims of candidates who propose to devote themselves to research in that branch of Medicine.

Applications and recommendations, with particulars of the special line of research contemplated and of the place where the investigations are to be conducted, should be in the hands of the Secretary of the College, 9, Queen Street, Edinburgh, by January 15th, 1932.

University of London.

A Course of Five Lectures on "*The Future of Bacteriological Research*" will be given by Mr F. W. Twort, M.R.C.S., L.R.C.P., F.R.S. (Superintendent of the Brown Institution) in the Theatre of the ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C. (by kind permission of the Council of the College) on DECEMBER 2nd, 4th, 7th, 9th, and 11th, at 4 p.m.

Admission free, without ticket.

S. J. WORSLEY,
Academic Registrar.

London County Council.

A Course of Lectures and Practical Instruction for the DIPLOMA IN PSYCHOLOGICAL MEDICINE will be held at the MAUDSLEY HOSPITAL, Denmark Hill, S.E.5 (University of London)

The Course will begin on January 4th, 1932.

Applications should be made to the Director of the Central Pathological Laboratory, Maudsley Hospital

Connaught Hospital, Waltham-tow, E.17.

(100 Beds, with three Resident Medical Officers)

RESIDENT CASUALTY OFFICER (male) required. Salary £100 per annum. Appointment for six months, from January 1st, 1932, with board, residence, and laundry. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be sent to the Secretary, KENELM S. ELLISON.

Royal College of Physicians of LONDON.

The next ordinary PROFESSIONAL EXAMINATION for MEMBERSHIP will commence on Friday, January 15th, 1932.

Candidates are required to give twenty-one days' notice, in writing, to the Registrar of the College, to whom all certificates and testimonials required by the By-laws must be sent at the same time.

Candidates who propose to submit published work under the regulations now in force, should apply in writing to the Registrar, without delay, for detailed instructions as to the procedure they should follow.

RAYMOND CRAWFURD, M.D.,
Pall Mall East, S.W.1. Registrar

The Hospital for Sick Children, Great Ormond Street, W.C.1.

A WEEK-END COURSE on "*Common Disorders of Childhood and their Treatment*," will be given at this Hospital, on Saturday and Sunday, December 12th and 13th.

The Course will be FREE TO MEDICAL PRACTITIONERS, and those intending to be present should notify the Dean, Medical School, Hospital for Sick Children, Great Ormond Street, W.C.1, as soon as possible.

NOTE.—The Course will be especially suitable for those in general practice.

Huddersfield Royal Infirmary. (210 Beds.)

Two male HOUSE SURGEONS required, to commence duty on December 19th, and January 1st, 1932, respectively.

Salary £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal for further three or six months. The Hospital is officially recognised for the surgical practice required of non-members before admission to the Final Fellowship Examination of the Royal College of Surgeons of England.

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately.

H. E. G. HALL, *Secretary*.

Miller General Hospital, Greenwich Road, S.E.10.

Applications are invited for the following posts:

HOUSE PHYSICIAN. HOUSE SURGEONS (2).

Salary in each case at the rate of £125 per annum, with board, residence, and laundry. Candidates (male) must be unmarried.

The appointments are for six months from January 1st next. Applications, stating age, nationality, qualifications, and experience accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

November 24th, 1931.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM.

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay £E 660 or £E 720 per annum (according to age and qualifications) with five or seven annual increases to £E1,080 and thereafter three years to £E1,200. These rates of pay are subject as the conditions of service are subject to *Government rules and regulations now in force, or from time to time in force* (£E1 = £1 0s. 6d.).

Applicants must be unmarried and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience (with special reference to Parasitology) and copies of testimonials, should be sent to the Director, Wellcome Tropical Research Laboratories, Khartoum, Sudan.

Further particulars regarding this post may be obtained on application to the Controller, Sudan Government, London Office, Wellington House, Buckingham Gate, London, S.W.1.

(AMENDED ADVERTISEMENT).

City of Birmingham.

PUBLIC HEALTH COMMITTEE.

LITTLE BROMWICH ISOLATION HOSPITAL. WITTON SMALL POX HOSPITAL.

MEDICAL SUPERINTENDENT OF INFECTIOUS DISEASES HOSPITALS.

Applications are invited from fully qualified registered Medical Practitioners for the above whole-time appointment.

The Little Bromwich Hospital has accommodation for 456 patients, mainly scarlet fever and diphtheria cases, while the Witton Small pox Hospital can accommodate 100 patients.

The salary will commence at £1,100 per annum, including emoluments a house (decorations, and rates) valued at £120 per annum, and will rise by two annual increments of £50 to a maximum of £1,200 per annum. The salary will be subject to any special temporary reduction approved by the Council in respect of its officers. The officer appointed will be required to refund to the Council any sums received by him as compensation under the Superannuation Acts and emoluments (other than those arising out of war service) received by him.

The appointment will be subject to the Birmingham Corporation (Superannuation) Act, 1922, and to the candidate passing a medical examination, and will be subject to three months' notice on either side. Forms of application and further particulars may be obtained from the Medical Officer of Health, the Council House, Birmingham, to whom applications, stating whether married, experience and qualifications, and accompanied by copies of three recent testimonials, should be addressed not later than Wednesday, December 9th.

The Council House, P. H. C. WILTSHIRE,
Birmingham. Town Clerk.
November 20th, 1931.

Sussex Eye Hospital, Brighton.

HONORARY CLINICAL ASSISTANT REQUIRED.

The Committee of Management hereby give notice that a meeting of the Committee will be held on December 17th, for the purpose of appointing an Honorary Clinical Assistant to help in the Out patients' Department only, on Mondays and Thursdays at 1 30 p m

The appointment to be for two years The successful candidate to be eligible for re appointment at the end of that period.

Applications, in writing, for the vacancy, with testimonials, must be sent to the Hospital addressed to the Assistant Secretary, on or before Wednesday, December 9th Candidates must be registered under the Medical Acts

No candidate can hold the appointment unless he resides in Brighton or Hove

Board Room, P. F. SPOONER,
Queen's Road, Assistant Secretary.
Brighton November 23rd, 1931.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of SURGEON at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W.C 1.

Candidates must be Fellows of the Royal College of Surgeons of England.

The appointment carries with it a seat upon the Medical Council

The elected candidate will be appointed for twelve months, but will be eligible for re-election

Applications, with copies of not more than three testimonials, which should be printed or typewritten to be sent in on or before December 22nd to the undersigned, from whom further particulars can be obtained

By Order,
R. E. V. BAX,
Seamen's Hospital Society, Secretary.
Greenwich November 20th, 1931.

Seamen's Hospital Society,

Greenwich

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from January 1st, 1932 Salary £110 per annum, and a proportion of fees, with board, residence, and washing Candidates must be male. Applications, with copies of three testimonials, to be sent in by Dec 2nd to the undersigned.

Greenwich
November 13th, 1931. R. E. V. BAX, Secretary.

Seamen's Hospital Society,

Greenwich.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E 16, for six months from January 1st, 1932. Salary £110 per annum, and a proportion of fees, with board, residence, and washing Candidates must be male. Applications, with copies of three testimonials, to be sent in by Dec 2nd to the undersigned.

Greenwich
November 13th, 1931 R. E. V. BAX, Secretary.

Elsie Inglis Memorial Maternity

HOSPITAL, Spring Gardens,
EDINBURGH. (60 Beds)

Applications are invited from fully qualified Medical Women for the post of DISTRICT MEDICAL OFFICER, rising to SENIOR HOUSE SURGEON at the end of three months

Appointment is for six months from January 1st, 1932 Honorarium at rate of £50 per annum, with board, residence, and laundry

Applications, with copies of testimonials, to be sent to the Secretary of the Hospital on or before December 12th

King Edward VII Hospital,

WINDSOR (181 Beds)

TWO HOUSE SURGEONS required for six months from January 1st, 1932 Applicants must be fully qualified, registered, and have had a year at appointment

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than December 7th

ARTHUR E. CHURCHER,
Secretary.

King Edward Memorial Hospital,

EALING.

Applications are invited for the appointment of HONORARY DENTAL SURGEON Applications should be sent to the undersigned, from whom details of the appointment may be obtained

R. A. MICKELWRIGHT,
Secretary Superintendent.

London Jewish Hospital,

Stepney Green, E 1.
(General Hospital—108 Beds.)

The Council of Management invite applications for the following posts:

HONORARY ASSISTANT GYNÆCOLOGIST. Candidates must be Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or Masters of Surgery of London, Oxford, or Cambridge University. Candidates must send twenty copies of their application, with copies of three recent testimonials, to the Secretary before Friday, December 18th

ANÆSTHETIST. Candidates must possess a registered qualification. Honorarium at the rate of One Guinea per attendance Applications, accompanied by copies of three testimonials, especially obtained for the appointment, to reach the Secretary before Friday, December 18th.

Charing Cross Hospital.

RESIDENT CASUALTY OFFICER.

Applications are invited for the post of Resident Casualty Officer.

Salary £200 per annum, with board, laundry, etc

Candidates (male and unmarried) must be fully qualified

Copies of the rules relating to the office can be obtained from the undersigned, to whom applications, together with copies of three recent testimonials, should be submitted not later than first post on Tuesday, December 1st

PHILIP INMAN, House Governor.
Charing Cross Hospital,
Strand, London, W.C 2

West Riding Mental Hospital,

WAKEFIELD.

Vacancy for JUNIOR ASSISTANT MEDICAL OFFICER (male) Post graduate, Medical, or Surgical experience essential. Experience of Mental work not necessary. Junior Officers who decide to specialise in Mental Diseases receive complete training for the Diploma in Psychological Medicine of the University of Leeds, and on gaining this are eligible for promotion to senior rank (with married men's privileges).

Salary £400, rising by £25 per annum to £500 (and on promotion to £800), together with apartments, board, washing, and attendance, valued for superannuation purposes at £120. Applications to be sent immediately to the Medical Director.

The Radcliffe Infirmary and

COUNTY HOSPITAL, OXFORD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Female) at the TUBERCULOSIS BRANCH of the RADCLIFFE INFIRMARY, the Osler Pavilion, Headington, Oxford, as from January 1st next.

The appointment will be for six months in the first instance. Salary at the rate of £120 per annum.

Applications, with copies of testimonials, should be forwarded to the undersigned at the Radcliffe Infirmary not later than Saturday, December 12th.

A. G. E. SANCTUARY,
Nov. 18th, 1931. Administrator.

Ancoats Hospital, Manchester.

APPOINTMENTS VACANT.

Pathological Dept :—PART TIME ASSISTANT (lady or gentleman) required. Salary £200 per annum.

Ear, Nose, and Throat Dept :—CLINICAL ASSISTANT required to attend the Out-Patient Clinic once per week. A fee of 10/6 per attendance is allowed.

Applications for the above appointments to be forwarded to the undersigned, together with copies of three recent testimonials, on or before December 7th next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen Supt. & Secretary.

Croydon General Hospital.

Applications are invited from qualified and registered Medical Men for the post of RESIDENT MEDICAL OFFICER. Salary £200 per annum, with board, residence, etc, and the term will be for one year commencing on January 1st, 1932, with the option of reappointment for a second year at the discretion of the Board.

Applications, stating age, qualifications, and experience, together with copies of not more than three testimonials (which will not be returned), to reach the undersigned not later than Saturday, December 5th

GEORGE H. DAMS,
Nov. 16th, 1931. House Gov. & Sec.

The Liverpool and Samaritan

HOSPITAL FOR WOMEN.

The Committee of Management invite applications for the appointment of HONORARY ASSISTANT SURGEON to the Liverpool and Samaritan Hospital for Women Candidates must hold the Fellowship of the Royal College of Surgeons of England, Edinburgh, or Ireland, or a Master in Surgery Degree of a recognised University of the United Kingdom

Applications, with copies of testimonials, must be forwarded to the Hon Secretary of the Liverpool & Samaritan Hospital for Women, 21, Water Street, Liverpool, not later than December 15th.

Salford Royal Hospital.

(263 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (male), which will become vacant on December 31st next

Salary £125 per annum

The appointment is for a period of six months, with board and residence

Candidates must be registered under the Medical Acts

Forms of application, which may be obtained from the undersigned, must be delivered on or before December 9th

By Order of the Board,
Salford Royal Hospital GEORGE RUDDLE,
Nov. 23rd, 1931 Gen Supt & Sec.

Jersey General Hospital and Poor

LAW INFIRMARY.

RESIDENT MEDICAL OFFICER

Applications are invited for the above post (male) Applicants must be duly qualified Practitioners in Medicine and Surgery Salary £200 per annum, with board, residence in the Hospital, and laundry.

The appointment is for one year, and is renewable. Applications, with testimonials, must be sent in on or before Saturday, December 5th addressed to the undersigned, from whom further particulars may be obtained

P. BEUZEVAL, Secretary

East Ham Memorial Hospital,

Shrewsbury Road, E 7 (100 Beds)

Applications are invited for the post of PHYSICIAN in charge of the SKIN DEPARTMENT which is about to be formed

Candidates must hold a University degree in Medicine and Surgery, and be Fellows or Members of the Royal College of Physicians of London, and engaged solely in Dermatological practice

Applications should reach the undersigned on or before December 7th

REGINALD PERRY, Secretary

Burslem Haywood and Tunstall

WAR MEMORIAL HOSPITAL.

Wanted, SECOND RESIDENT MEDICAL OFFICER (male) Salary £150, with board and residence. Must be fully qualified Experience in Ear, Nose, Throat, and Eyes preferred Applications, stating age and experience, together with copies of three recent testimonials, to be sent to me—

F. C POWELL, F C I S, Secretary
Public Offices, Price Street, Burslem

East London Hospital for

CHILDREN, Shadwell, E 1

Applications are invited for the post of RESIDENT CASUALTY OFFICER The appointment is for six months Salary at the rate of £125 per annum, with board, residence and laundry provided Vacant January 1st, 1932

Applications, together with testimonials, should be sent to the undersigned not later than December 12th

W. M. WILCOX, Secretary

Argyll & Bute Mental Hospital,

LOCHGILPHEAD, ARGYLL

JUNIOR ASSISTANT MEDICAL OFFICER wanted Salary £300 per annum, with board, lodging, and laundry.

The appointment is subject to the provisions and privileges of the Asylums' Officers Superannuation Act, 1909

Applications, with copies of recent testimonials, to be addressed to the Medical Superintendent

Central Hospital, Plymouth.

Wanted, a fully qualified RESIDENT HOUSE SURGEON, to commence duty December 12th Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired

Applications, stating age, together with not more than three recent testimonials to be sent to the undersigned not later than Nov 30th

WM. W. UREL, Secretary.

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine)

VACANCIES ON THE HONORARY MEDICAL AND SURGICAL STAFF

Applications are invited for vacancies arising as follows

1 HONORARY ASSISTANT PHYSICIAN
2 HONORARY ASSISTANT GYNAECOLOGIST
3 HONORARY DENTAL SURGEON

The qualifications governing the qualifications, etc. of the candidates are as follows

HONORARY ASSISTANT PHYSICIAN—
Each Honorary Physician and Honorary Assistant Physician shall be a Graduate in Medicine of a University of the United Kingdom and he shall not practise Surgery or Midwifery. He shall also be or within a year of his appointment shall become a Fellow or Member of the Royal College of Physicians of London, or a Fellow of one of the other Royal Colleges of Physicians in the United Kingdom.

HONORARY ASSISTANT GYNAECOLOGIST—
Each Honorary Assistant Gynaecologist Obstetrician and Honorary Assistant Gynaecologist Physician shall be a Master of Surgery of one of the Universities of the United Kingdom or a Fellow of one of the Royal Colleges of Surgeons of the United Kingdom and he shall confine himself in his practice to Obstetrics and Gynaecology.

HONORARY DENTAL SURGEON—
Each Honorary Dental Surgeon shall hold a registrable qualification entitling him to practise Dental Surgery and his name shall be entered in the Dental Register

GENERAL REGULATIONS—
No member of the Honorary Medical Staff shall hold office after attaining the age of 65 years

Each candidate is required to send 50 copies of his application and testimonials (for circulation amongst the members of the Election Committee and Medical Board), stating age, qualifications etc. and endorsed with the title of the particular position for which he is applying, to reach the undersigned on or before Saturday, December 12th

LEONARD D. PEA, Secretary.

Bolton Infirmary & Dispensary

(301 Beds including Two Auxiliary Hospitals)

Applications are invited from gentlemen for the appointment of ASSISTANT RESIDENT SURGICAL OFFICER who will be in charge of the Casualty Department and beds and will deputise for the R.S.O. Salary £200 per annum with board residence and attendance. This appointment offers exceptional opportunities for surgery.

Applications for the post stating age nationality and previous experience, together with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday November 30th

ALBERT E. BRISCOE
Secretary

Addenbrooke's Hospital,

CAMBRIDGE

Applications are invited for the post of RESIDENT ANAESTHETIST and EMERGENCY OFFICER (male) which will become vacant on January 1st 1932. Salary at the rate of £150 per annum with board residence and laundry. Candidates who must be unmarried and duly registered are requested to forward their applications stating age, qualifications etc. together with copies of not more than four recent testimonials to the undersigned on or before Wednesday December 9th.

W. H. HEAD
Secretary Superintendent

North Riding Infirmary,

MIDDLESBROUGH

(General Hospital—150 Beds)

Applications are invited for the post of THIRD HOUSE SURGEON (lady or gentleman) to commence duties middle of December

The appointment will be for a period of six months. Salary at the rate of £125 per annum, with board residence and laundry.

Applications stating age and nationality, with copies of recent testimonial, should be sent forthwith to the undersigned

CHARLES POSTGATE
Secretary Superintendent

Newark General Hospital

(50 Beds)

Wanted a fully qualified RESIDENT HOUSE SURGEON unmarried. Salary £175 per annum with board residence and laundry.

Applications stating age and qualifications, with copy testimonials to be sent to W. T. CRAMPTON (Secretary) 27, Bird Gate, Newark, Notts.

Manchester Royal Infirmary.

RESIDENT MEDICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on February 1st, 1932.

Applicants must not be less than twenty-five years of age. They must be registered, and hold a Medical and Surgical qualification.

The appointment is for twelve months renewable for a period of one year.

Salary £200 per annum with board, residence and laundry allowance.

Full information is obtainable from the undersigned, to whom applicants must send twelve copies of their application and testimonials on or before 9 a.m. on Thursday, December 10th.

By Order
FRANK G. HAZELL,
General Supt. and Secretary.

Manchester Royal Infirmary

ASSISTANT RESIDENT SURGICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on January 1st, 1932.

Applicants must hold a Medical and Surgical qualification and be registered.

The appointment is for six months renewable for a further period of six months subject to the provisions of the bye-laws as to service.

Salary is at the rate of £150 per annum with allowance for laundry.

Applicants must state age and send twelve copies of their application and testimonials to the undersigned on or before 9 a.m., Thursday Dec. 3rd.

By Order
FRANK G. HAZELL
Gen. Supt. & Secretary.

Edinburgh Hospital for Women

AND CHILDREN
(Whitehouse Loan, Edinburgh)
(56 Beds, including Pallium Ward)

Applications are invited from fully qualified Medical Women for the following posts, also for Hospital: (1) HOUSE PHYSICIAN, honorarium at the rate of £50 per annum, (2) JUNIOR HOUSE SURGEON, rising to Senior House Surgeon at the end of three months. Honorarium at the end of three months. Honorarium at the rate of £25 per annum for first three months, £50 per annum for second three months.

The appointments are for six months from January 1st 1932. Board residence and laundry provided. Applications with copies of testimonials to be sent to the Secretary of the Hospital on or before December 12th.

General Lying-in Hospital,

York Road, Lambeth, S.E.1

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER AND ANAESTHETIST. Salary at the rate of £100 per annum with board, residence, and laundry.

Appointment for three months commencing January 1st, 1932. The successful candidate will, subject to satisfactory service, be required to succeed to the Senior Medical Officer's post for a further three months.

Applications stating age and qualifications with copies of three recent testimonials to be sent to the undersigned not later than December 10th next.

LILY HEARN, Secretary.

Queen's Hospital for Children,

Hackney Road, London, E.2

HOUSE PHYSICIAN required January 1st, 1932.

CASUALTY OFFICER required January 6th, 1932. Some Dermatology additional. Six months' appointments. Salary at the rate of £100 per year, with board, lodging, and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before December 5th.

CHARLES H. BESSELL,
Nov. 9th 1931. Secretary.

National Hospital, Queen Sq., W.C.1

The Board of Management invite applications from qualified Medical Men for the post of HONORARY ASSISTANT RADIOLOGIST.

Applicants should possess a diploma in Medical Radiology and Electrology, preferably the Cambridge Diploma. Applications should be sent to the undersigned together with copies of recent testimonials on or before December 1st.

GODFREY H. HAMILTON,
Secretary.

Royal Victoria Infirmary,

NEWCASTLE-UPON-TYNE. (675 Beds)

NORTH OF ENGLAND RADIUM INSTITUTE

Applications are invited for the post of RADIUM OFFICER (whole time) a fully qualified and registered Medical Practitioner.

Applicants must have had experience in the keeping of records, and the technique approved by the National Radium Commission.

Salary at the rate of £800 rising by yearly increments of £25 to £1,000 per annum.

Application stating age, qualifications and experience, accompanied by three recent testimonials, should be addressed to the Finance Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained not later than December 7th.

S. DUNSTAN
House Governor & Secretary.

November 23rd 1931.

Royal London Ophthalmic

HOSPITAL, MOORFIELDS, E.C.2
EYE HOSPITAL, City Road, E.C.1

OUT-PATIENT OFFICER.

Applications are invited for the post of Out-patient Officer to the Eye Hospitals and Saturday each week.

Candidates must be registered Medical Practitioners. Salary at the rate of £150 per annum. The Out-patient Officer will be appointed for a period of one year and will be eligible for reappointment.

Copies of testimonials concerning the appointment can be obtained on application.

Applications with testimonials, stating age and qualifications, must be received not later than December 7th by

ARTHUR J. W. TAFFENT,
Secretary.

Princess Louise Kensington

HOSPITAL FOR CHILDREN
St. Quintin Avenue, North Kensington, W.10
(50 Beds)

HOUSE SURGEON (male or female) required for six months from January 1st 1932. Salary for first month is at the rate of £100 a year after which it would be increased to £120 a year with board residence and laundry in each case. It is desirable that applicants should have had some hospital post.

Applications with copies of three testimonials, must be submitted on a form to be obtained from the Secretary and must reach the Secretary not later than first post on Friday Dec. 11th.

Victoria Hospital, Burnley.

(120 Beds)

TWO HOUSE SURGEONS (M.R.)

Applications are invited for the above two posts. The appointments are for six months from January 1st next, and each carries a salary of £150 per annum together with board, residence etc. This Hospital is approved by the London University for the purposes of the M.B. and M.S. examinations.

Applications, giving full particulars of qualifications, age, nationality etc., together with copies of recent testimonials should be addressed to the undersigned forthwith.

GEO. W. COOLING
Superintendent and Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite application for the post of HOUSE SURGEON (male). Duties to commence on January 1st next.

Salary at the rate of £150 per annum with residence, board and laundry.

The appointment is for six months and is renewable.

The President, Surgeons and Vice-Presidents of the Hospital are eligible for appointment as Surgical Officers and Vice-Presidents.

Applications, accompanied by not more than three recent testimonials to be sent to the undersigned.

Duties to commence on January 2nd or as soon thereafter as possible.

ARTHUR J. LIVE, Secretary.

Royal Sussex County Hospital,

BRIGHTON. (256 Beds)

CASUALTY HOUSE SURGEON required on or about January 1st. Salary £[illegible] per annum. Applications, stating age, qualifications, experience and copies of not more than three recent testimonials, must be sent to the Medical Superintendent, from whom further particulars may be obtained. The appointment is for six months, and is renewable under the by-laws of the Hospital.

Applications will be received up to [illegible] and should be addressed under the by-laws of the Hospital.

L. L. V. LANCASTER GIVE,
Secretary-Superintendent.

The Rural Districts of Buntingford, Hadham, Hertford, and Ware, the Urban Districts of Bishops Stortford, Hoddesdon, and Ware; and the Borough of Hertford.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Joint Committee of the Borough of Hertford and the above Rural and Urban Districts in the County of Hertford invite applications for the appointment of a Medical Officer of Health for an area representing approximately the districts of the several Authorities above mentioned, which at the present time contain an area of about 128,436 acres and a population of about 60,012

The salary will be £800 per annum (plus an allowance of £100 per annum towards office accommodation and travelling expenses), and the appointment will be made subject to the approval of the Minister of Health and on the terms of the Sanitary Officers Order, 1926, and the Public Health Officers Act, 1921

The person appointed will be required to perform all the duties of a Medical Officer of Health, as defined by the Orders from time to time made by the Minister of Health, to devote his whole time to the duties of his office, not to engage in private practice as a Medical Practitioner, and to reside within the district at some place convenient of access to all the combined districts He must also possess the qualifications specified by section 18 of the Local Government Act, 1888, and the Sanitary Officers Order, 1926, or any amendment thereof for the time being in force, and all other necessary qualifications

The officer will be required, as part of his duties, to act as Assistant County Medical Officer of Health

Preference will be given to candidates who have had practical experience of the duties of the office

Applications, stating age, which must not be less than 30 or more than 45 years, and enclosing copy testimonials, not exceeding four in number, as to qualifications and experience, which will not be returned, must be delivered to me, the undersigned, not later than 10 o'clock a m, on December 5th

8, West Street, H M GISBY.
Ware, Herts Clerk to the Joint
November 16th, 1931. Committee.

County Borough of Southend-on-Sea.

SOUTHEND MUNICIPAL HOSPITAL.

SENIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified Medical Men for the appointment of Senior Assistant Medical Officer at the Southend Municipal Hospital, Rochford, Essex

Salary £350 per annum, rising by annual increments of £25 to £450, with residential emoluments valued at £200 per annum.

The salary and value of emoluments are subject to deductions under the Local Government Officers Superannuation Act, 1922.

Further information relating to the appointment may be obtained from the Medical Superintendent, Southend Municipal Hospital, Rochford, Essex, to whom applications, with full particulars and copies of three recent testimonials, should be sent not later than Saturday, December 5th

Town Clerk's Office, H. J. WORWOOD,
Southend on Sea. Town Clerk.
November 21st, 1931.

City and County of Newcastle-upon-Tyne.

NEWCASTLE GENERAL HOSPITAL.

Applications are invited from duly qualified and registered Medical Practitioners for the following non-resident posts

MEDICAL REGISTRAR (Part time). £250 per annum The duties will include those usually undertaken by Medical Registrars, and also, as a temporary measure, the conduction of post-mortem examinations

SURGICAL REGISTRAR (Part time) £250 per annum The appointment will afford opportunity for acquiring operative experience, particularly with regard to emergencies

Further particulars may be obtained from the Medical Officer of Health, Health Department, Town Hall Newcastle upon Tyne, to whom applications, accompanied by not more than three recent testimonials, should be delivered on or before December 1st

November 17th, 1931.

Wanted, Resident Medical Officer

for MAIDENHEAD HOSPITAL, BERKSHIRE (50 Beds) Duties commencing on appointment for six months or over Salary £150, with board, lodging, and laundry allowance Apply, Secretary, Maidenhead Hospital, stating copies of testimonials

Liverpool County Borough.

LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for a Junior Assistant School Medical Officer, at a salary of £300 per annum, rising by annual increments of £25 to £700 per annum.

Applicants must be registered Medical Practitioners, and must have had at least three years' experience It is desirable that they should have had some special experience in Diseases of Children.

The officer appointed will be required to devote whole time service to the Education Authority under the direction of the Medical Officer to the Education Authority, and will be required to contribute to the Local Government and Superannuation Act, 1922 (Substituted Scheme) as required by the Standing Orders of the City Council. Private practice will not be allowed.

Form of application, which may be had by forwarding a stamped addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than December 9th, and endorsed "Junior Assistant School Medical Officer."

The canvassing of members of the Education Committee or the City Council is strictly prohibited, and will be considered a disqualification.

WALTER MOON,
Town Clerk, and Clerk to the Local Education Authority.
Municipal Buildings, Dale Street, Liverpool.
November 27th, 1931.

City of Sheffield.

KING EDWARD VII HOSPITAL, RIVELIN VALLEY.

RESIDENT HOUSE SURGEON required immediately for above Hospital, which is for the treatment of surgical forms of Tuberculosis and Rickets (130 beds)

The officer appointed may be required to attend the Out-patient Department for Surgical Tuberculosis cases, and the Rickets Clinic of the Maternity and Child Welfare Centre.

Salary at the rate of £150 per annum, with board and laundry. Appointment for six months, with possible extension for further six months.

Applications, with testimonials, should be sent to the Medical Superintendent.

University of Liverpool AND LIVERPOOL MATERNITY HOSPITAL.

Applications are invited for the resident post of OBSTETRIC ASSISTANT (male) The salary offered is £500 per annum, with board and lodging Candidates must have had experience in the teaching of Obstetrics, and preference will be given to one holding a higher Surgical qualification.

Applications, accompanied by testimonials, should be forwarded on or before December 12th to the Secretary, Liverpool Maternity Hospital, Oxford Street, from whom further particulars may be obtained.

Coventry and Warwickshire HOSPITAL. (307 Beds)

RESIDENT HOUSE and ASSISTANT HOUSE SURGEONS (Male) wanted Salaries at the rate of £125 per annum, with board, laundry, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before December 2nd.

(Miss) R. HOOPER,
November 21st, 1931. Secretary.

The Children's Hospital, SUNDERLAND. (70 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (female) Candidates must possess double qualifications (registered) Salary £140 per annum, with board, residence, and laundry. The appointment is for six months. Applications, stating age, with copies of three recent testimonials, to be sent to the undersigned.

S C TRYERS,
House Governor & Secretary.

Royal Berkshire Hospital, READING.

ONE HOUSE SURGEON and ONE HOUSE PHYSICIAN required on January 9th, 1932, for six months

Candidates (male) must be fully qualified and registered. Remuneration at the rate of £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned on or before December 10th.

County Borough of Ipswich.

ASSISTANT RESIDENT MEDICAL OFFICER (Female)

The Public Assistance Committee invite applications from fully qualified Medical Women for the appointment of Assistant Resident Medical Officer at their Poor Law Infirmary, known as the HEATHFIELDS MUNICIPAL HOSPITAL, Ipswich, HEATHFIELD MUNICIPAL HOSPITAL, HOME FOR CHILDREN, and ST JOHN'S HOME FOR CHILDREN. Salary £250 per annum, with board and residence The appointment is subject to termination by six months' notice on either side, and is limited to a period of twelve months.

The accommodation of the Heathfields Municipal Hospital is for about 300 patients, and of Heathfield House about 300 inmates The number of children in St John's Home is about 150.

The candidate appointed will be required to act generally under the direction of the Medical Officer, and to give lectures to the Probationer Nurses

Applications, stating age, qualifications and experience, accompanied by copies of not more than three testimonials, to be sent to me endorsed "Assistant Resident Medical Officer," not later than the first post on Tuesday, Dec 8th.

L W. GREENHALGH, Chief Officer
Public Assistance Department,
19, Tower Street, Ipswich
November 21st, 1931.

Warwickshire and Coventry JOINT COMMITTEE FOR TUBERCULOSIS

KING EDWARD VII MEMORIAL SANATORIUM, HERTFORD HILL, WARWICK

Applications are invited for the post of JUNIOR MEDICAL OFFICER (male) at the above Institution of 195 beds The successful candidate will be appointed for six months and will have special opportunity of gaining experience in treatment by Artificial Pneumothorax, by Ultra-Violet Light, and in X Ray work

The salary will be at the rate of £200 per annum, with board, lodging, and laundry and promotion is probable at the end of six months

Applications, with recent testimonials, should reach the Medical Superintendent by Monday, December 7th

Radcliffe Infirmary and County HOSPITAL, OXFORD.

Applications are invited for the post of HOUSE PHYSICIAN, which will become vacant on January 1st, 1932

The appointment will be for six months with salary at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified

Applications, with four copies of three testimonials, must be sent to the undersigned on or before December 5th.

A. G. E. SANCTUARY,
Administrator

The Prince of Wales's General HOSPITAL, London, N 15

Appointments of HONORARY CLINICAL ASSISTANTS in the various Departments of the Hospital (Surgical, Medical, Gynæcological Ear, Nose, and Throat, Eye, Skin, X ray, and Electrical) for the ensuing year will be made in December.

Applications for appointment to any of the posts should be sent to me on or before Wednesday, December 2nd next.

Nov. 23rd, 1931. J. C BURDETT,
Director

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, EC1

The Committee of Management invite applications for the post of HONORARY ASSISTANT SURGEON Candidates must be a Fellow of the Royal College of Surgeons, England Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital on or before January 1st, 1932

By Order of the Committee
RAYMOND BULL, Secretary

Royal National Orthopaedic HOSPITAL

MEDICAL REGISTRAR

The Committee proposes to appoint a Medical Registrar, whose duties will include a daily visit to the Hospital to see Medical cases in the Wards. Honorarium at the rate of £150 a year. Applications from Fellows or Members of the Royal College of Physicians, and accompanied by three recent testimonials, should reach the Secretary, 234, Gt Portland Street, W.1, on or before December 2nd

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman.)*	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
CONTRACT PRACTICE.	MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LOWESTOFT BOROUGH. *(Assistant Medical Officer—Woman.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	
LLWYNYPIA, CLYDACH VALE, PENTGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch British Medical Association, P.O. Box 155, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)* *(Toowoomba Associated Friendly Societies, Medical Institute, Toowoomba.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR (Hon. Sec., Victorian Branch) British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6 Bank of N.S.W. Chambers, St. Georges Terr., Perth, Western Australia.

November 25th, 1931. By Order of the Council ALFRED COX, Medical Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:
SECOND HOUSE SURGEON, with Care of Orthopaedic Beds.
THIRD HOUSE SURGEON.
FIRST HOUSE PHYSICIAN.
HOUSE PHYSICIAN to the Children's Department.
GYNAECOLOGICAL HOUSE SURGEON.
OBSTETRIC HOUSE SURGEON.
Duties of the above six posts to commence January 1st, 1932.
RESIDENT ANAESTHETIST.
SECOND HOUSE PHYSICIAN.
DISTRICT OBSTETRIC ASSISTANT. Salary £100 per annum.
Duties of the above three posts to commence February 1st, 1932.
Preference is given to applications from former Students of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be duly qualified registered medical women, and must submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, ONE HOUSE PHYSICIAN (General and Skin), and ONE HOUSE SURGEON (General and Genito-Urinary), for six months from January 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance.
Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than Thursday, December 10th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, December 18th, at 4 p.m. and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.
H. A. MADGE, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the whole-time post of SURGICAL REGISTRAR from fully qualified and registered men or women. Preference will be given to candidates who are Fellows of the Royal College of Surgeons (England). Salary £200 per annum. Applications, stating age, and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th. Duties to commence January 1st, 1932.
Present holder being eligible, is a candidate for re-appointment.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the half-time post of GYNAECOLOGICAL REGISTRAR from fully qualified and registered Medical Women. This post is reserved for former Students of the London (Royal Free Hospital) School of Medicine for Women.
Salary £100 per annum.
Applications, stating age, and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th. Duties to commence January 1st, 1932. The present holder being eligible, is a candidate for re-appointment.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Men for the following resident post:
HOUSE SURGEON to the Senior Surgeon and the Surgeon in Charge of the Ear, Nose and Throat Beds.
Duties to commence January 1st, 1932.
Candidates for the above post must submit applications, stating age and accompanied by copies of three recent testimonials to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

St. Bartholomew's Hospital,
ROCHESTER. (126 Beds.)
Rochester, Chatham, Gillingham, and District.

The House and Finance Committee invite applications for the post of RESIDENT SURGICAL OFFICER, which will become vacant on January 1st next.
Candidates must be unmarried, qualified and registered Medical Men, and it is desirable that they shall have previously held a House Surgeon's appointment. The post is partly administrative. The appointment is for six months, renewable for a further six months at the discretion of the Committee. Salary is at the rate of £225 per annum, with board, residence, and laundry.
Applications, stating age, qualifications, experience, etc., accompanied by copies of three recent testimonials, to reach the Secretary not later than December 10th.
Canvassing the Governors, Staff or Committee will disqualify.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Men for the following resident post:
CASUALTY OFFICER.
Duties to commence 1st February, 1932.
Salary £150 per annum.
Candidates for the above post must submit applications, stating age and accompanied by copies of three recent testimonials to the undersigned on or before December 4th.
REGINALD R. GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Men for the following resident posts:
SECOND ASSISTANT MEDICAL REGISTRAR, for six months, at a salary of £150 per annum.
THIRD ASSISTANT MEDICAL REGISTRAR, for six months, at a salary of £100 per annum.
Applications, stating age and accompanied by copies of three recent testimonials, must be sent to the undersigned (from whom all information may be obtained) on or before December 4th.
Duties to commence January 1st, 1932.
REGINALD R. GARRATT, Secretary.

(Appointments continued on p. 52.)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 6 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted.—Assistantship, indoor or outdoor, with or without view, by M.B., Ch.B (Edin.), July, 1930. Indian 26 years; hospital experience; drive car. Free February, 1932. — Address, No. 7302, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship (outdoor preferred) in or near London, by M.B, B.Ch, male, single, aged 30; ex H.S. and H.P.; five years' experience of G.P. Abstainer, keen, well received. Interview.—Address, No 7337, B.M.A House, Tavistock Square, W.C.1.

Wanted, Assistantship, with early view, from income. Scot, M.B., Ch.B., age 32, four years' experience general practice. Single. Own car London or South preferred.—Address, No. 7309, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, M.B., N.U.I., 5 years' experience G.P., private and panel. Single, age 33 years Own car. Excellent references. Used to sole charge. Free now.—Address, No. 7338, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship, by Scots Graduate, aged 32; varied G.P. experience, reliable, good references; motorist No objection colliery practice, provided salary adequate—Address, No 7355, B.M.A. House, Tavistock Square, W.C.1.

Wanted, beginning January, male ASSISTANT, indoor or out. Industrial Practice near Manchester. Protestant. British With or without view. Full particulars—Address, No 7328, B.M.A. House, Tavistock Square, W.C.1.

Wanted, January 1st, indoor ASSISTANT, male, for mixed Practice, South Midland Town. Salary £300 per annum, increase later. Usual bond State age, experience. References—Address, No. 7310, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view to Partnership, in or near London, by M.R.C.S., L.R.C.P., British, unmarried, aged 30, ex H.S., H.P., and R.M.O., 3 years' experience general practice — Address, No. 7359, B.M.A House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, South, Sussex preferred, by Scot, aet 33, married, M.B.Edin., 1924, ex H.P., 6 years' G.P. Keen and well received Used sole charge Own car. Free as required.—Address, No 7357, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Woman M.B., B.S. Experienced in general practice Can drive car. Prefer North of England, but not essential—Address, No. 7317, B.M.A House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUM by Woman M.B; four years' experience hospital and general practice—Address, No 7356, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view; good salaries; state full particulars—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted from December 20th, a TEMPORARY Outdoor ASSISTANT for three months for a Country Practice in Kent. Dispenser kept. — Address, No. 7361, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistant in East London, British, £400. Suit recently qualified man. Interview London essential. — Address, No. 7306, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, a Junior ASSISTANT, male, single, for large Practice, near Manchester.—Address, No. 7313, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, English or Scotch preferred, rural and industrial Practice; cyclist; not afraid of work; £370 per annum and unfurnished house—Address, No 7334, B.M.A. House, Tavistock Sq., W.C.1.

L.R.C.P. & S.Edin. (Lady), desires ASSISTANTSHIP. Temporary or permanent Experienced in G.P. Able to drive car. Moderate salary. Excellent testimonials — Address, No. 7320, B.M.A. House, Tavistock Square, W.C.1.

Ophthalmic Surgeon, Industrial area, requires young ASSISTANT, possible Partnership later.—Address, No 7132, B.M.A. House, Tavistock Square, W.C.1

Outdoor Assistant wanted immediately for Town Practice in Yorkshire; mainly industrial. £450 p.a No Partnership. References and interview.—Address, No. 7314, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO
PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9011.
After Office Hours: Epsom 9142.

Radiologist in Midlands requires LOCUM for months of January, February, and March, 1932, or as soon afterwards as possible. D.M.R.E essential. Private Practice, with daily Hospital visits (Honorary). — For further details, Address, No 7339, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted for the Lady Irwin TUBERCULOSIS MISSION SANATORIUM, near SANAWAR, in the Simla Hills, a Doctor, male or female, who should have some experience of Tuberculosis work and treatment. Applications to be sent to the Secretary, Lady Irwin Tuberculosis Sanatorium, Sanawar, Simla Hills, India.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispenser - Bookkeeper (Hall), lady, requires POST, with doctor or Hospital Excellent testimonials and good experience in private practice, Hospital, and N.H.I—"S," 46, Lupus Street, Westminster, London, S.W.1.

Dispenser - Bookkeeper - Secretary required; willing to assist looking after young children. Small country town near Cardiff State salary. Indoors—Address, No. 7333, B.M.A. House, Tavistock Square, W.C.1.

Dispenser wants situation; Hall Examination; 7 years' experience with Doctor. Accustomed to doing simple dressings, etc. — Miss KIRBY, Vicarage Lane, Duffield, Derby.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5853, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2

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British Institute of Radiology.

The Council of the British Institute of Radiology propose to appoint as from January 1st, 1932, a SUB-EDITOR to the *British Journal of Radiology*. Candidates for the appointment, which will be a full-time one, should have an acquaintance with medical radiology, a proficient knowledge of French and German, and preferably some experience in the duties relevant to the production of a scientific journal. The commencing salary will depend on the qualifications and experience of the candidate appointed, but may be assumed to be of the order of £400—£500. Applications, accompanied by particulars of qualifications, testimonials, etc., should reach the General Secretary, British Institute of Radiology, 32, Welbeck Street, London, W.1, not later than December 8th.

APPOINTMENTS.—Contd.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners for the post of AREA ASSISTANT TUBERCULOSIS PHYSICIAN. Salary £500 per annum, rising by annual increments of £25 to £700 per annum (subject to a scale of temporary deductions, which on £500 will amount to £19), together with travelling and subsistence allowances when away from base.

Preferably candidates should have had at least six months' special training in Tuberculosis, with eighteen months' experience in general clinical work, of which six months should have been spent in a Hospital not confined to the treatment of Tuberculosis. Knowledge of Welsh desirable.

The post is subject to the provisions of the Association's Superannuation Scheme, for which purpose it will be necessary for the successful candidate to pass a medical examination.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than December 3rd.

Memorial Offices, Westgate St., Cardiff. D. A. POWELL, Principal Medical Officer.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS,
Secretary-Superintendent.

The Royal Eye and Ear Hospital, BRADFORD.

Wanted, JUNIOR HOUSE SURGEON (male). Salary £150, with board, residence, and laundry. Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before December 8th.

F. BRIGGS,
Secretary-Superintendent.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, residence, and laundry, to have charge of Out-patients, administer Anaesthetics and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

London County Council.

Applications are invited for appointment to position of RESIDENT MEDICAL SUPERINTENDENT in Public Health Department for duty at BETHNAL GREEN HOSPITAL, Cambridge Road, E.2. Duties include also those of Medical Officer of Waterloo House, Waterloo Road, E.2. Person appointed will be under direction of Medical Officer of Health and must assist at other establishments under control of Council if required. Salary £1,100 a year by £50 a year to £1,350 a year, plus £50 a year for duties at Waterloo House. Unfurnished house or quarters free of rates, etc., will be provided.

Candidates must be duly qualified medical practitioners of at least five years' standing, have held appointment of House Physician or House Surgeon in a Public General Hospital, and have experience of Hospital administration.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, Westminster Bridge, S.E.1, and must be returned by December 4th. Canvassing disqualifies.

London County Council.

The LONDON COUNTY COUNCIL invites applications from Surgeons, duly qualified by experience in Diseases of the Ear, Nose and Throat, for appointment as CONSULTING LARYNGOLOGIST in its Sanatoria and Hospitals for Pulmonary Tuberculosis. The remuneration is at rate of 200 guineas a year to cover visits once a month to each of the four Hospitals, and once every two months to each of two Hospitals. Three of the Institutions are on the outskirts of London, and the other three are near Godalming, Wokingham, and Brentwood, respectively. To suit the convenience of applicants, the Council may divide the work between two Laryngologists and revise the remuneration. Appointment will be for twelve months in the first instance, and rate of remuneration and conditions of service will be subject to review by the Council.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, returnable by December 18th.

Canvassing disqualifies.

London County Council.

The LONDON COUNTY COUNCIL invites applications for appointment as HOUSE PHYSICIAN at LEWISHAM HOSPITAL, High Street, Lewisham, S.E. Salary £80 a year, together with board, lodging, and washing. Appointment is for six months only in the first instance. Candidates must be qualified Medical Practitioners, but need not necessarily have had previous Hospital experience. Person appointed will be required to live in the Hospital, to carry out such duties as may be assigned by Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the Council.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, returnable by December 18th. Canvassing disqualifies.

Further inquiries should be addressed to Medical Superintendent at the Hospital.

Borough of Hyde.

APPOINTMENT OF GYNAECOLOGIST.

Applications are invited for the post of Consultant Gynaecologist to the ASPLAND MATERNITY HOME, Werneth Lodge, Gee Cross, Hyde. Candidates must be on the Honorary Staff attached to one of the Maternity Hospitals connected with the Manchester Medical School.

The fees to be paid will be £5 5s. per case, including operative treatment, except as regards the Caesarean section, for which a special inclusive fee will be up to £10 10s., including a prior consultation.

Applications to be sent to the undersigned not later than Saturday, December 12th next.

Dated this 23rd day of November, 1931.

THOS. BROWNSON, Town Clerk.
Town Hall, Hyde.

Saint Mary's Hospital for WOMEN AND CHILDREN, Plaistow, E.13.

Applications are invited for the post of HONORARY DENTAL SURGEON, attendance one morning a week (at present Thursday). Candidates must be registered L.D.S., R.C.S. Eng., or similar qualification.

Applications, with copies of recent testimonials, to be sent to the undersigned as soon as possible.

A. ERNEST WILKES, Secretary.

Hampstead General and North-West London Hospital, Haverstock Hill, N.W.3

APPOINTMENT OF CASUALTY MEDICAL OFFICER

Applications are invited from unmarried registered Medical Women for the position of Casualty Medical Officer, vacant on January 1st next at the Out-patient Department of the Hospital, Rochester Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on December 5th next.

Hampstead General and North-West London Hospital, Haverstock Hill, N.W.3

APPOINTMENT OF HOUSE SURGEON

Applications are invited from unmarried Medical Men for the appointment of House Surgeon vacant on January 1st next. The salary will be at the rate of £100 per annum, together with board residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on December 5th next.

Westminster Hospital, Broad Sanctuary, S.W.1

There is an immediate vacancy for a HOUSE SURGEON to the Eye and Ear, Nose, and Throat Departments. The appointment is for six months (non-resident) and the salary is at the rate of £102 per annum. Meals are provided at the Hospital. Applications should be submitted to the Undersigned not later than Monday, November 30th.

CHARLES M. POWER, Secretary.

Yorkshire Children's Orthopaedic Hospital, Kirby Moorside, York (105 Beds)

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Applications with copies of recent testimonials should be sent to the Medical Superintendent on or before December 4th.

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LONDON, N.W.—Well established mixed PRACTICE, [illegible] better-class with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 3/6 up. No mid-wifery. One appointment. Part of house sublet if desired. Vendor has developed better class of Practice at good fees. Premium £1,500 cash.

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NEAR MANCHESTER.—PLEASANT TOWN, largely residential.—Old-established PRACTICE. Average cash receipts £995 p.a. Panel 902. Appointments not included £100 p.a. Great scope. Excellent detached house (freehold), 3 reception, 5 bedrooms. Garage and garden and tennis court. Premium—Practice—1½ years' purchase.—No. 234.

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MANCHESTER.—PARTNERSHIP in Practice of about £1,600 p.a. Panel 1,550. House available, to rent. Premium—half share—1½ years' purchase.—No. 303.

NEAR LIVERPOOL.—PRACTICE offering scope. Cash receipts £500 p.a. Panel 550. Good house, 2 reception, 5 bedrooms. Garage and garden. Rent £70 p.a. Premium £650, or near offer.—No. 287.

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(FOUNDED 1880.)

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2 MIDDLESEX. — Old-established non-dispensing PRACTICE of £825 p.a., in rapidly growing residential district. Panel 300. House (6 bedrooms), garage and garden, for sale. Premium £1,200.

3 S. DEVON. — Partnership (after Preliminary Assistantship) in Practice over £2,000 p.a. in small seaside resort. Small panel. Very little midwifery. Nice house (4—5 bedrooms) for sale. Cottage Hospital, scope for surgery. Premium for one-half share at 2 years' purchase.

4 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

5 MIDDLESEX. — Steadily increasing PRACTICE in rapidly growing residential district. Earnings past 13 months £600. Panel 500. Excellently situated house (4 bedrooms, etc.), for sale. Very good scope for increase. Cottage Hospital. Premium £700.

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8 SUSSEX. — Country Practice averaging £900 p.a. in beautiful part, easy distance of coast. Panel 640. Large detached house, with three-quarters of an acre of garden, for sale. Premium 1½ years' purchase.

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11 CARMARTHENSHIRE.—Increasing PRACTICE of £900 p.a. in pleasant Market Town. Panel 150. Well-situated house (non-basement), with 3 bedrooms, for sale. Cottage Hospital. Premium one year's purchase.

12 S. COAST.—Partnership in old-established Practice of nearly £2,200 p.a. in popular health resort. Panel 2,800. Applicant must be well qualified and have held House appointments. One-half share for disposal after short preliminary Assistantship.

13 DEATH VACANCY.—SOUTH COAST.—PRACTICE nearly £900 p.a. in seaside resort. Panel 800. House (3 bedrooms) for sale. Separate Surgery at a rental of £60 p.a.

14 DEATH VACANCY. — CHANNEL ISLANDS.—PRACTICE doing about £450 p.a., capable of increase. House (5 bed and dressing rooms, 3 attics) in own grounds in residential quarter, to rent.

15 LONDON, S.E.—Practice averaging about £1,400 p.a. in populous suburban district. Panel about 1,000. House, with 5 bedrooms, to rent. Premium £2,500.

16 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase. Cottage Hospital. One-fifth share for disposal.

17 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main thoroughfare. Panel 125. Shop-fronted house to rent on lease. Good scope for increase. Premium £300.

18 S. OF ENGLAND. — Partnership in good middle-class Town Practice, over £5,300 p.a. No panel. Suitable house to purchase. Premium, one-fourth share, £2,000. Preliminary Assistantship.

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24 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town. Panel 1,100. Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

25 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 bedrooms. Garage and garden. Rent £150 p.a. Scope for increase. Premium 1½ years' purchase.

26 DORSET. — Country Practice, averaging over £1,100 p.a., including appointments about £700 p.a. and a panel of 650. Good house (6 bedrooms), with garage, and one acre of garden, for sale. Premium 1½ years' purchase.

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29 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

30 LONDON, S.E.—Good middle-class Practice of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bedrooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

31 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE, about £1,800 p.a., in first rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,250.

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35 N.W. COAST. — Partnership in Practice £5,500 p.a. in favourite Watering place. No panel. Beautiful modern house to purchase or lease. Premium one-half share 2 years' purchase. Partner should be young and hold F.R.C.S. Or Whole Practice would be sold.

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38 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London. Panel 1,460. House (5 bedrooms), garage and nice garden for sale. One third share for disposal.

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40 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

41 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight roomed house for sale or rent. Excellent educational facilities. Sea-fishing, etc. Premium £1,500.

42 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400. Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

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50 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. Prem. £1,100.

51 MIDLANDS. — Country Practice of nearly £900 p.a. in beautiful district. Panel over 700. Large house in splendid condition, with central heating and electric light, beautiful garden with greenhouse, for sale. All kinds of sport. Premium £1,350.

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6. SOUTH WALES—Residential district, close to coast.—Old-established good middle class PRACTICE, averaging over £2,000 p a. Panel of 1,100 Fees 3/6 to 10/6. Mid. from 3 gns. House contains 3 reception, 5 bedrooms, etc. Can be rented or purchased. Sport of all kinds, and good schools. Premium 1½ years' purchase.
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C.M.B.





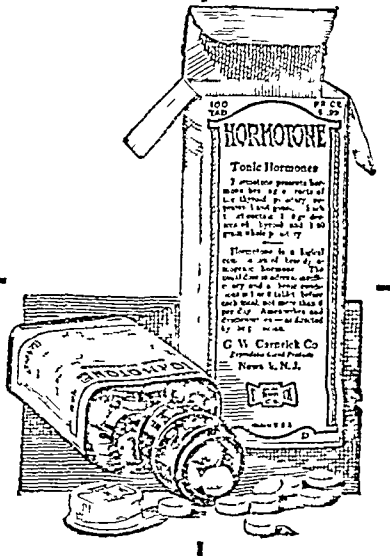
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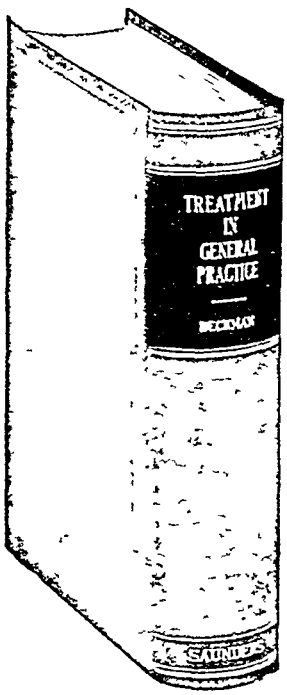
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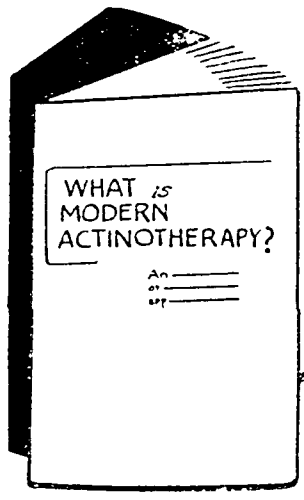
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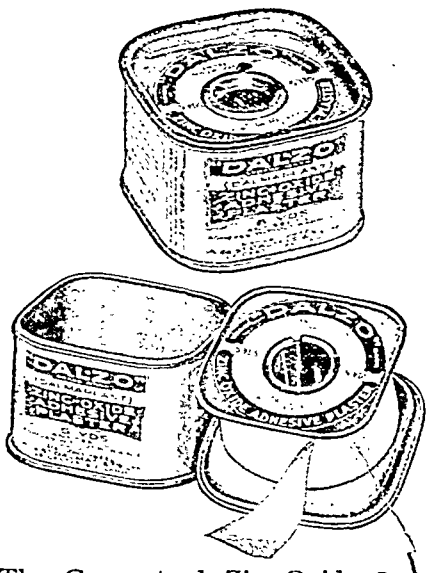
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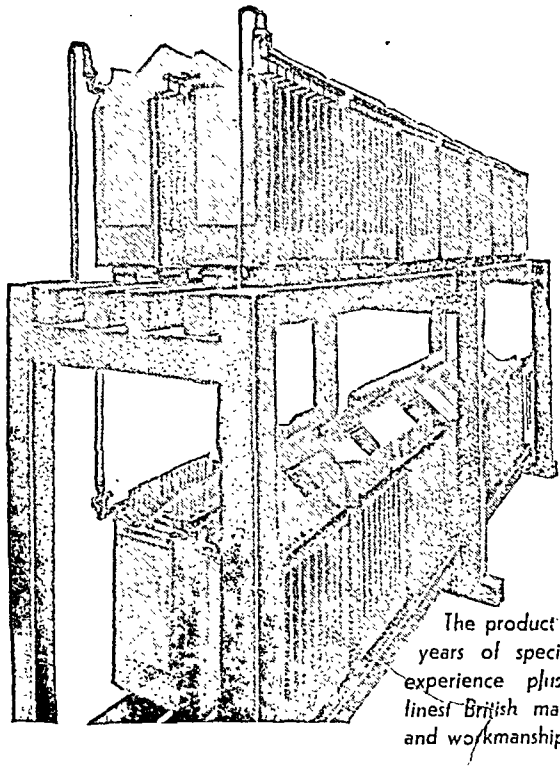
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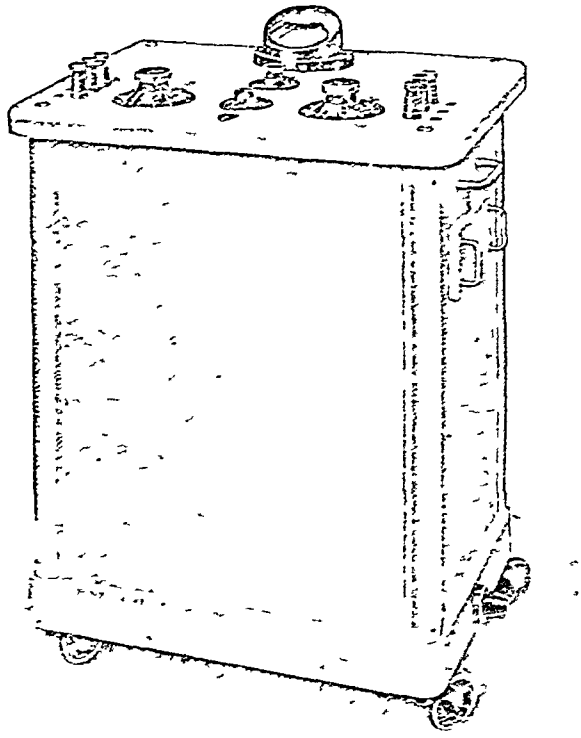
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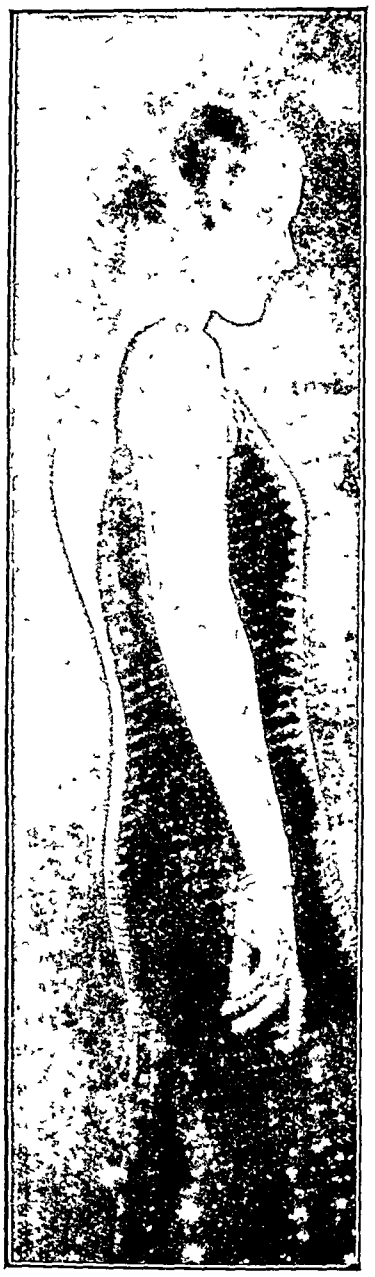
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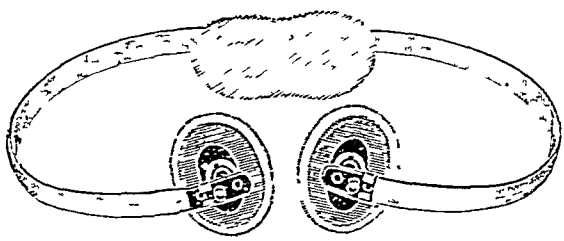
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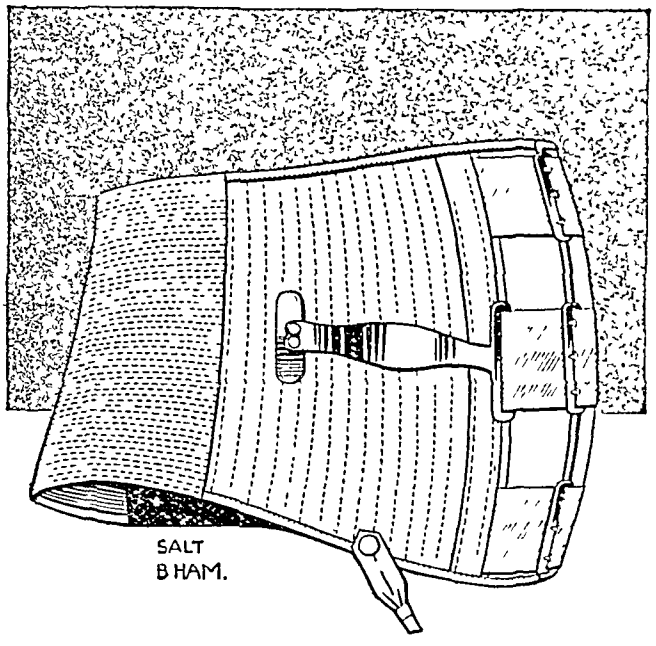
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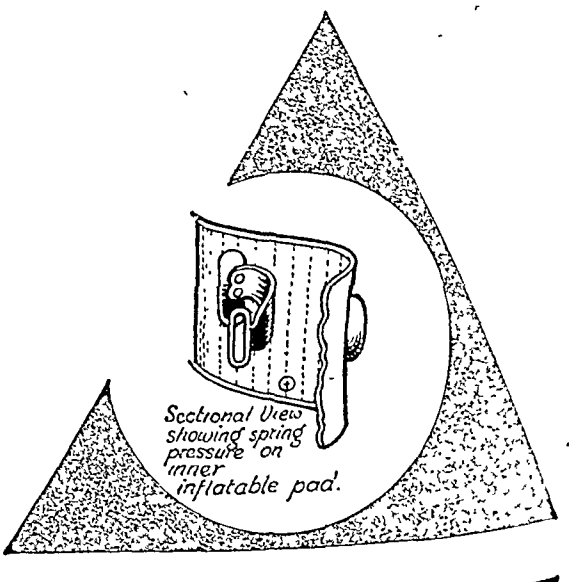
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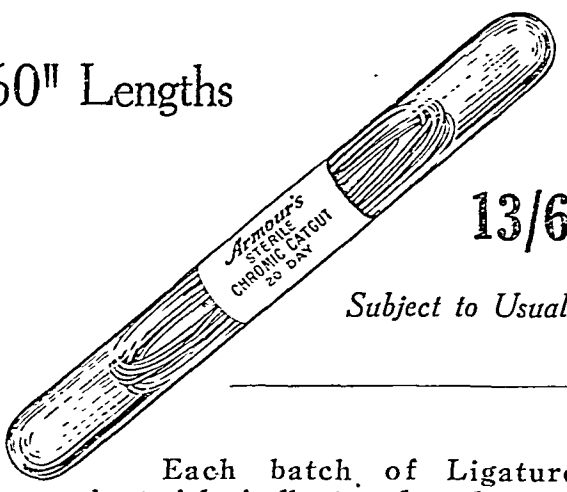
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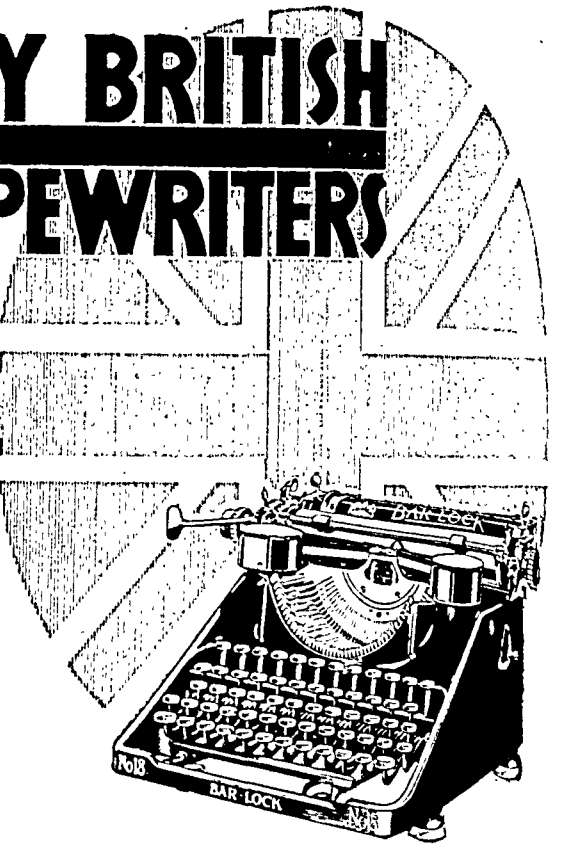
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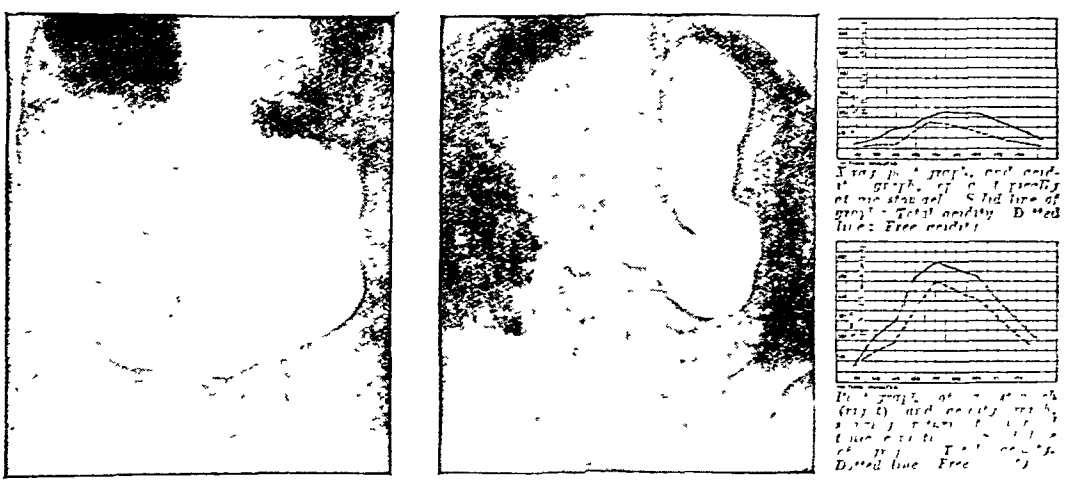
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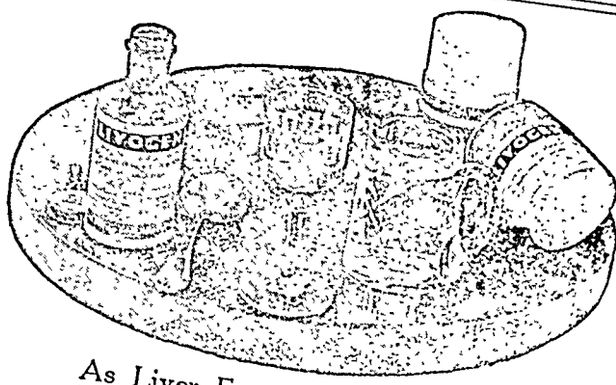


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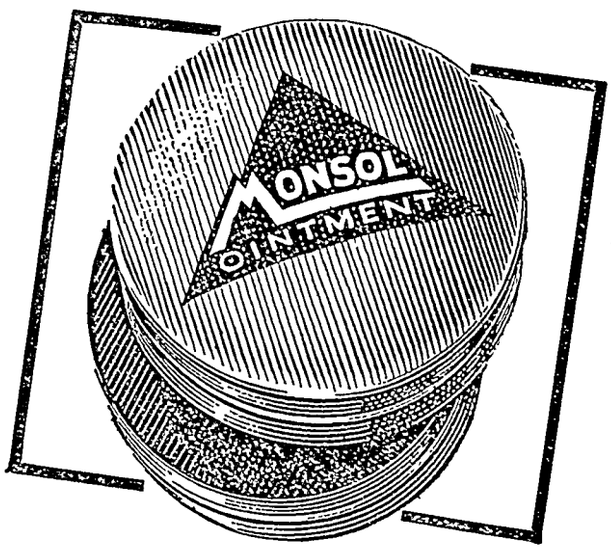
Livogen is available from the principal pharmacists, in bottles of 4 fluid ounces, also in bulk packages for dispensing purposes.

LIVOGEN

Literature and clinical sample on request

THE BRITISH DRUG HOUSES LTD.

LONDON N-1 Lea/1



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MONSOL

BRAND

for the treatment of

LACERATED, CONTUSED or SEPTIC WOUNDS —

Monsol Liquid Germicide owes its efficiency to the fact that its ratio of germicidal power to irritant action on living tissue is higher than for any known antiseptic of its class, and that it has a selective action on gram-positive organisms.

Monsol Ointment contains the active principle of Monsol in a colloidal state in a bland and readily absorbed base, and is therefore an ideal wound dressing. Germicidally potent, penetrating and non-destructive to tissues, it facilitates the rapid formation of healthy granulation surfaces.

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The perfect LOCAL ANAESTHETIC *at last . . .*

SELF-STERILISING. Novutox Local Anaesthetic is autogenously sterile and actually remains sterile for weeks after an ampoule or bottle is opened. Novutox can be stored in and used direct from a bottle, thus eliminating waste and economising both time and money.

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• Read this extract from a letter recently received from a well-known surgeon:—

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1. Is seven times less toxic than cocaine.
2. Promotes quick and clean healing.
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NOVUTOX
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is not classed under the Dangerous Drugs Act, and does not contain cocaine.

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Break the vicious circle

CACHEXIA UNDERNUTRITION ANEMIA
DEMINERALIZATION DEMINERALIZATION

Insufficiency of the essential minerals—sodium, potassium, calcium, iron and manganese—inevitably leads to syndromes of lowered vitality.

In cases of neurasthenia, debility, anemia, cachexia, weak resistance and other run-down conditions, Compound Syrup of Hypophosphites "Fellows" supplies these indispensable minerals in assimilable form, in conjunction with phosphorus, quinine and strychnine.

Dose: 1 teaspoonful t. i. d.

Fellows Medical Manufacturing Co., Inc.
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COMPOUND SYRUP OF HYPOPHOSPHITES
"FELLOWS"
TRADE-MARK

IT SUPPLIES THE ESSENTIAL MINERALS

SAMPLES ON REQUEST

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JOHN BELL & CROYDEN'S

AMPOULES

Hypodermic Solutions in Ampoule Form.

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Ferri Cacodylat. Sod. Glycerophos. Strych. Cacodylat:

1 c.c.

In boxes of 6's 12's.

Contents Guaranteed.

The John Bell & Croyden range of Hypodermic Solutions in Ampoules prepared in their own Laboratories represent the highest standard of Pharmaceutical skill.

These Ampoules maintain their reputation for:—

High Standard of Purity. Sterility of Solutions.
Accuracy of Dosage. Stability of Contents.

Ampoules to Special Formulae prepared at short notice.

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Quin: Bi Hcl. Urethane.

1 c.c. & 2 c.c.

In boxes of 6's 12's.

Accurate Dosage.

Telephone: Welbeck 5555 (12 lines).

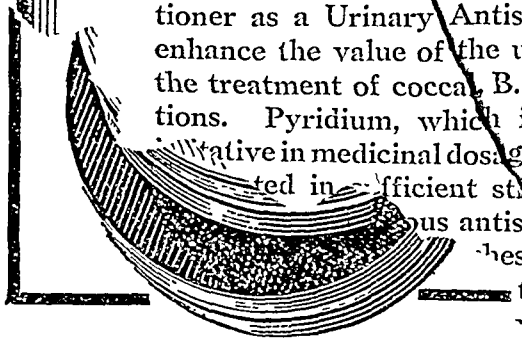
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Pyridium given by mouth in the form of 0.1 gram tablets is of distinct service to the general practitioner as a Urinary Antiseptic and will greatly enhance the value of the usual local measures in the treatment of cocci, B. Coli, and mixed infections. Pyridium, which is non-toxic and non-irritative in medicinal dosage, is early and gradually excreted in sufficient strength in the urine to exert a bactericidal antiseptic effect, and by its selective action upon the submucous area renders it impervious to therapeutic agents. Cystitis, pyelitis, urethritis, vaginitis, cervicitis, Monsol its ratio of germicidal power gonorrhoea. known antiseptic of its class, an

DIUM

Monsol Ointment contains the ac absorbed base, and is therefore -destructive to tissues, it

trade mark of the Pyridium to designate its preparation of a-diamino-pyridine hydrochloride.



Descriptive literature and samples of Pyridium gladly furnished to medical practitioners on request.

MENLEY & JAMES LTD.,
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CRYSTALLINE VITAMIN D
(Calciferol)

Following the recent publication of an announcement that British scientists have succeeded in isolating Vitamin D in a crystalline form (*Nature*, 1931, Vol. 128, p. 758), The British Drug Houses have undertaken the manufacture of this pure crystalline Vitamin D (named Calciferol), and now offer it for the use of research workers.

Calciferol is a white substance of definite crystalline structure and of absolute purity; it possesses an unvarying Vitamin D activity of 40,000 units per mg.

Calciferol is issued in tubes of 0.1 gram which are obtainable from the makers at 12/- each.

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(ETHYL ESTER PARAMETHYL-PHENYLCINCHONINIC ACID)

Manufacturers:
The Calco Chemical Company, Inc.
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A VALUABLE REMEDY ESTABLISHED BY THE EXPERIENCE OF OVER A DECADE

The extensive publications on this compound that have appeared in European and American medical publications are well known.

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Colloidal Hydroxide of Aluminium

THE increasing prevalence of gastric ulcer and hyperchlorhydria has produced an advance in the treatment of these diseases.

"Alocol" (Colloidal Hydroxide of Aluminium) provides an antacid medicament far superior to subnitrate of bismuth, bicarbonate of soda and other alkalis. These merely afford a certain degree of ease, without bringing about a permanent relief of the condition.

"Alocol" absorbs the excess of hydrochloric acid without interfering with the normal antiputrefactive function of the gastric juice or harmfully affecting the processes of nutrition.

"Alocol" has been subject to extensive clinical trial, and literature giving full particulars of the results will be gladly sent to medical men on request.

For Acute or Chronic Cases of Hyperacidity

For Gastric Duodenal or Pyloric Ulcers

A. WANDER, Ltd., Manufacturing Chemists
184, Queen's Gate, London, S.W.7.

Works:
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M.232.

A Distinct Advance Over Preparations of Acetyl-Salicylic Acid

Acetyl-salicylic acid possesses a notable disadvantage. Physicians have proved that it cannot be tolerated by patients suffering with a delicate stomach. Consequently, the value of this medicament in the wide field in which it is indicated is very seriously reduced.

"Alasil" completely overcomes this objection. By combining calcium acetyl-salicylate with "Alocol," unfavourable secondary action upon the stomach is prevented. This beneficial influence is undoubtedly due to the presence of "Alocol" (Colloidol Hydroxide of Aluminium), which preparation has brilliantly stood the test of practice in the treatment of hyperacidity and other ill conditions of the gastric tract. "Alasil" is therefore a triumph over acetyl-salicylic acid. It enables higher doses to be administered and maintains the patient's system under its influence for a greater length of time. Analgesic, Antipyretic, and Sedative. "Alasil" is indicated in all cases where acetyl-salicylic acid has been used heretofore.

A supply for clinical trial with full descriptive literature sent free on request.

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M.235

THYROID

AN EXTRACT FROM NATURAL THYROID GLAND

PREPARED BY SPECIAL PROCESS

STANDARDISED ON WEIGHT-REDUCING PROPERTIES

IODINE EFFECT 10 TIMES HIGHER THAN THAT OF THYROXIN

WELL TOLERATED

GIVING THE FULL GLANDULAR EFFECT

ELITYRAN

TRADE MARK

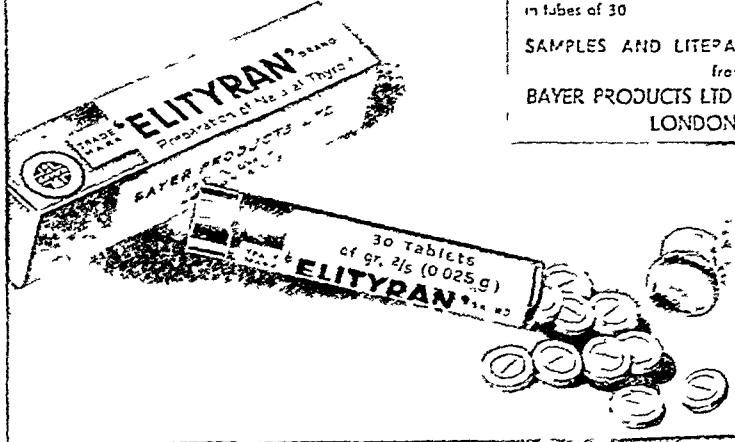
INDICATED IN ALL CASES OF HYPOTHYROIDISM, ESPECIALLY OBESITY STRONG DIURETIC EFFECT IN ŒDEMA

Dose 1-2 Tablets, 3 times a day
may be increased to 3-4 tablets per dose.

"ELITYPAN" is issued in tablets of 0·025 g (gr. 3/8) in tubes of 30

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PHYSIOLOGICAL TREATMENT OF CONSTIPATION



COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS

which strengthens the glandular secretions of the organs.

BILIARY EXTRACT

which regulates the secretion of the bile.

AGAR-AGAR

which rehydrates the contents of the intestines.

LACTIC FERMENTS

which reduce bacterial action of the intestines.

IN TABLET FORM.

ITS USE DOES NOT LEAD TO HABIT

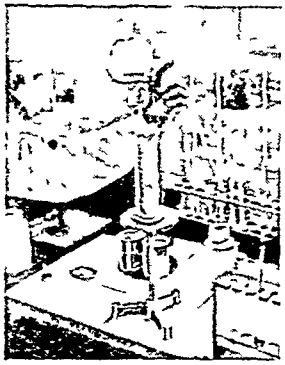
Clinical samples gladly sent on request.

CONTINENTAL LABORATORIES Ltd.,

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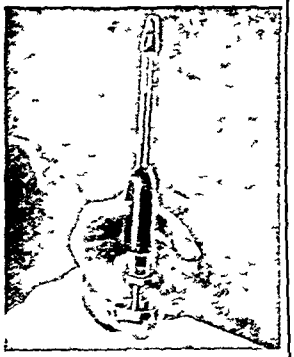
Taxolabs, Sowest, London. Victoria 2041.

STANDARDIZATION OF THE INGREDIENTS OF THIS FAMOUS BRITISH PRODUCT



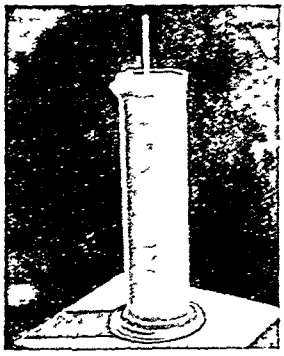
A certificate of milk testing done in the laboratory at Slough. Every churn of milk is tested for purity and richness before it leaves the producer and is even tested more strictly than ever by the Horlick experts. Three of these tests as shown here are carried out at once but 3 or 4 times later on arrival

★



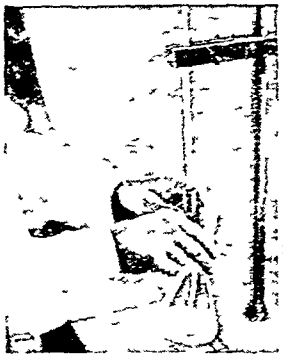
Determining the amount of cream in the milk. The fat content of milk used in Horlick's Malted Milk is always decidedly above Government standards

★



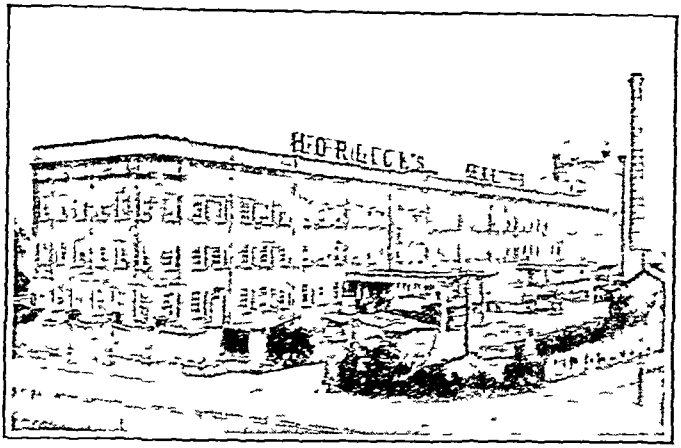
A lactometer floating in a sample of milk registers the specific gravity from which can be calculated the amount of solids present

★



Testing for acidity. A standard quantity of milk is put in a glass vessel and neutralized with a standard chemical solution. This indicates the freshness of the meal and its suitability for use. If milk is too acid it cannot be heated or used for Horlick's

With Horlick's you can be sure you are prescribing an "ALL BRITISH" PRODUCT



HORLICK'S was originated half a century ago by an Englishman, Sir James Horlick, Bart., and year by year it has won ever-increasing popularity, until to-day it is confidently recommended by the medical profession all over the world.

Just now, when patriotic men and women are uniting their efforts to support home industries, it is particularly satisfactory for doctors and nurses to know that Horlick's Malted Milk is an "all British" product.

ENGLISH DAIRY FARMS SUPPLY THE FRESH FULL-CREAM MILK THAT GOES INTO HORLICK'S

Cows fed on the richest pasture lands of England produce the fresh full-cream milk from which Horlick's is made. Barley from the eastern counties—malted at Horlick's own Maltings in Norfolk—and home-milled British wheat only are used in its manufacture.

BRITISH EMPLOYEES

Horlick's Malted Milk Company, Ltd., is wholly English in Directorate and capital. From factory hand to skilled technician in the Laboratories and Test Rooms—**right through the organization British labour is employed.**

EVEN THE BOTTLES ARE BRITISH!

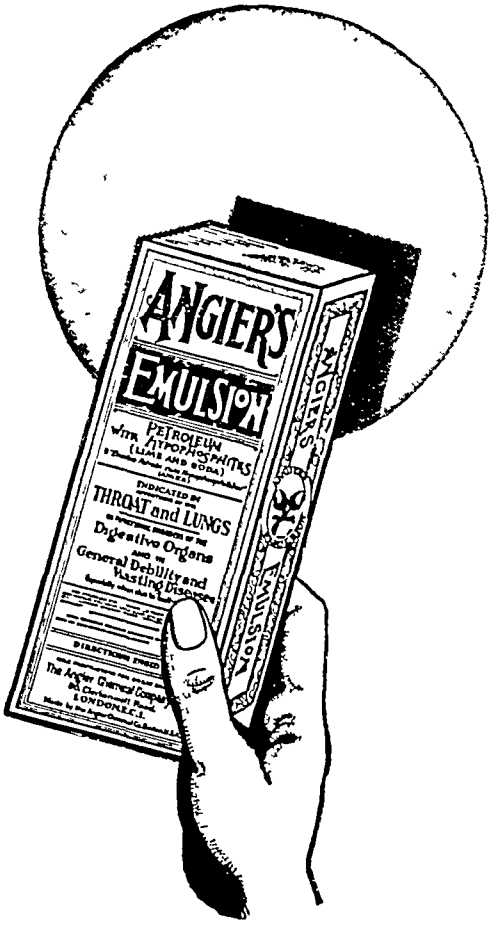
Only British material is used in Horlick's factory, even the bottles in which Horlick's is packed and the paper in which it is wrapped are **made in England.**

Horlick's Malted Milk Company, Ltd., Slough, Bucks.

Bronchitis, Winter Cough,

Influenza and Sequelae.

There is a vast amount of evidence of the most positive character proving the efficacy of Angier's Emulsion in sub-acute and chronic bronchitis. It not only relieves the cough, facilitates expectoration, and allays inflammation, but it likewise improves nutrition and effectually overcomes the constitutional debility so frequently associated with these cases. Bronchial patients are nearly always pleased with Angier's Emulsion, and often comment upon its soothing, "comforting" effects.



The unique soothing properties of Angier's Emulsion, its favourable influence upon assimilation and nutrition, and its general tonic effects, make it eminently useful both during and after influenza. It has a well-established reputation for efficiency in relieving the troublesome laryngeal or tracheal cough, correcting the gastro-intestinal symptoms and combating the nervous depression and debility.

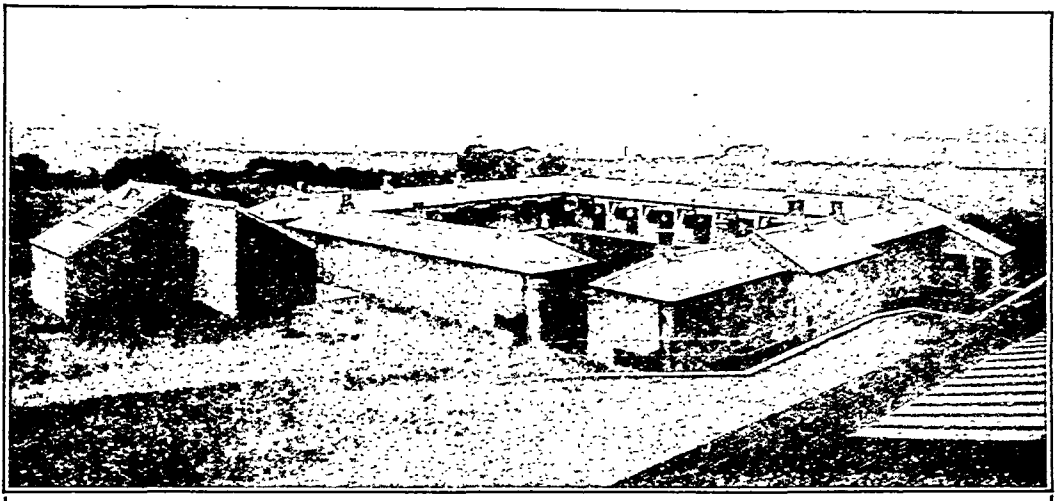
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THE ORIGINAL AND STANDARD EMULSION OF PETROLEUM

Free Samples to the Medical Profession.

ANGIER CHEMICAL COMPANY, LIMITED, 86 CLERKENWELL ROAD, LONDON, E.C.1

An All-British Product.



General view of a block of Stables for Serum Horses at Evans' Biological Institute.

Evans'

DIPHTHERIA ANTITOXIN

SUPPLIED IN TWO GRADES:—

Evans' Concentrated Diphtheria Antitoxin, containing 1,600 units or more per c.c.

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Full particulars and special terms for quantity on application to EVANS' BIOLOGICAL INSTITUTE, RUNCORN.

Evans Sons Lescher & Webb Ltd.

Manufacturers of Fine Chemicals, Pharmaceutical and Biological Products

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Collosol "F.C.V.D."

FOR BLOOD REGENERATION, RECTIFYING CALCIUM DEFICIENCY AND GROWTH PROMOTION



Facsimile of label

In recent years the work of Hart, Steenbock, McHargue, Elvehjem, and others, suggests that the beneficial effect of iron therapy is largely due to the presence of a minute copper content present as an impurity.

Collosol "F.C.V.D." comprises colloidal iron activated by a small quantity of copper. Further, as calcium deficiency is frequently associated with anaemias and debility it has been considered advisable to make use of the well-established function of Vitamin D in calcium absorption. This accessory food factor has been added in the form of irradiated ergosterol combined in the medium of pure malt extract (Vitamin B) with orange juice (Vitamin C).

Other preparations of activated iron are issued as follows:—

Collosol Ferrum et Cuprum	Cuprum 1 part in 20,000	Injection 1 and 2 c.c.s Rubber Capped Bottles 30 c.c.	Oral 4 ozs. 8, 16, 80
Collosol Ferro Arsenic et Cuprum			
Collosol Ferro Manganese et Cuprum			

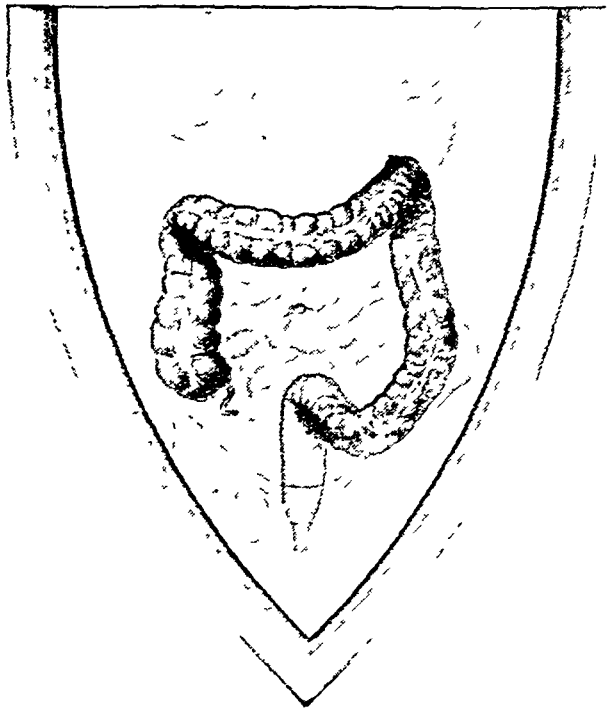
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(BRITISH COLLOIDS, LTD.)

PARK ROYAL, LONDON, N.W.10

ALSO AT NEW YORK AND BOMBAY

Telegrams: COLLOSOLS, HARLES, LONDON. *Telephone (3 lines):* WILLESDEN 6313.



Normal Bowel Motion

'Petrolagar' yields normal bowel motion because:

(1) It lubricates and softens the faecal mass.

(2) It contains no irritant properties and does not harm the bowel mucosa.

(3) It is not habit forming.

'Petrolagar' is 65% pure liquid paraffin emulsified with agar-agar, and may be prescribed with confidence. It is sold under the trade name 'Petrolagar' Brand Paraffin Emulsion.

Interesting literature and specimen sent free on request.

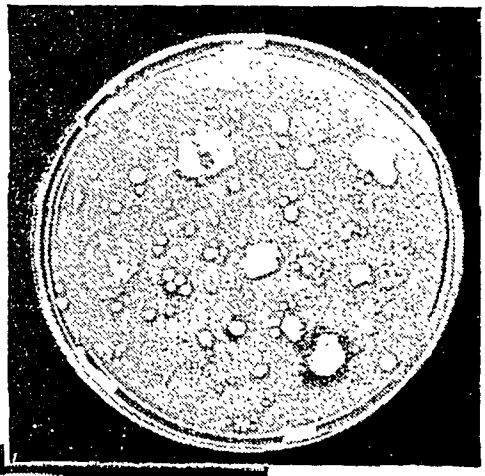
'Petrolagar'

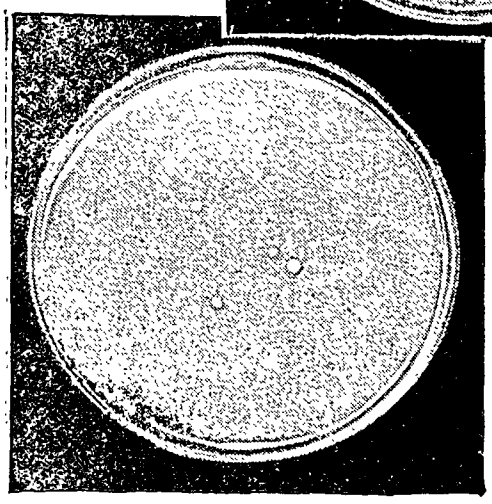
PETROLAGAR LABORATORIES LIMITED,
BRAYDON ROAD. LONDON, N.16.

BETTER MILK FOR BABIES

ORDINARY MILK

1/1,000 c.c. plated—over 200,000 bacteria per c.c.





LACTOGEN
Full strength mixture.

1/10 c.c. plated—less than 100 bacteria per c.c.

FACTS ABOUT LACTOGEN

Purity

Lactogen is under hygienic and scientific control from the time the raw milk is collected until the despatch of the finished product.

The fresh milk used for its preparation is obtained from selected farms, the herds receiving constant supervision from the Company's farm inspector.

A stringent examination is also carried out in the laboratory, and with these precautions a constant degree of purity is maintained.

The modern manufacturing process is carried out under the most strictly hygienic conditions, and the bacterial count of Lactogen, as reconstituted, is less than 100 organisms per c.c.

Lactogen is prepared in England by Nestlé's—famous for more than fifty years for the purity of their milk products—from the pure, fresh milk of specially selected herds, grazing on picked English farms.

Lactogen is neither a new nor untried product. First introduced in Australia, it has for many years enjoyed a large sale in overseas countries.

FREE SAMPLES with detailed descriptive literature will be sent to any Member of the Medical Profession upon request.

Lactogen Bureau (Dept. Z7),
Nestlé... Swiss
C... *Telegrams:* COLLOSOLS, HARLES, LONDON.

LACTOGEN
REGD TRADE MARK

BETTER MILK FOR BABIES

A natural
COD LIVER OIL CONCENTRATE
containing both vitamins
A *and* D
in a pleasant tablet form

The Vitamins A and D in their intimate natural association are the essential and vital principles of Pure Cod Liver Oil. The fats in the oil are of relatively small importance and are, in fact, disadvantageous in the numerous cases of fat intolerance.

White's Cod Liver Oil Concentrate represents 100% of therapeutic efficiency. Each tablet contains not less than 500 vitamin A units when essayed for xerophthalmia and 200 vitamin D units when essayed for rickets by the McCollum Line Test; equal to a teaspoonful of a high-grade Cod Liver Oil.

White's Cod Liver Oil Concentrate is a *natural and not a synthetic product*—a matter of the greatest therapeutical and clinical importance. The potency and stability of each tablet is guaranteed. Its small bulk (only 1½ of the oil), great palatability and very ready digestibility are appreciated by patients of all ages.

Indications—Tuberculosis. Rickets. Anæmia. Malnutrition. Infantile Weakness. Deficiency Diseases. Nervous Diseases. Wasting Diseases. Respiratory Diseases. Adult Weakness.

And, wherever COD-LIVER OIL is indicated.

Unlike emulsions, these tablets contain no gum or objectionable flavouring matter, and they cause no nausea or irritability. White's Concentrate of Cod-Liver Oil Tablets are extremely palatable, and being of small size, they are very easily administered, for instance, one tablet is fully equal to the B.P. dose of Cod-Liver Oil for a child.

Every physician interested in Cod-Liver Oil Medication is invited to send for a full Clinical Sample free of charge.



White's
COD LIVER OIL CONCENTRATE

FEEN-A-MINT PRODUCTS LTD., BUSH HOUSE, LONDON, W.C.2



Peptonised Chicken Jelly
(BENGER)

Peptonised Beef Jelly
(BENGER)

The new all-glass container in which these jellies are packed, ensures that they reach the invalid in perfect condition.

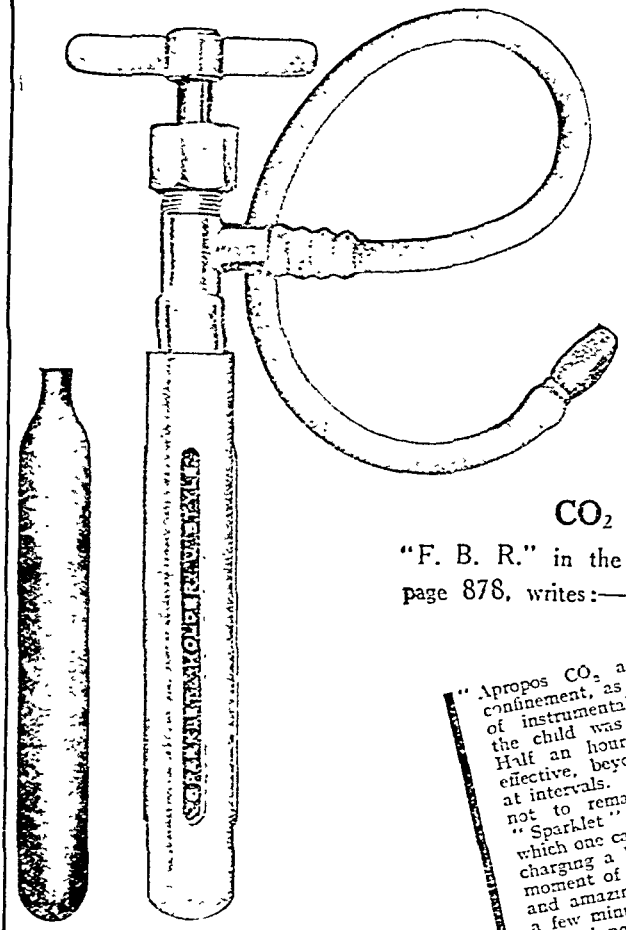
Served in their jelly state with a few biscuits, or dissolved in hot water in "beef tea" form, these preparations make a valuable and easily assimilated restorative for weak digestions.

NOTE:— Peptonised Chicken Jelly and Peptonised Beef Jelly (Benger) are entirely free from preservatives.

BENGER'S Food Reg. Trade Mark

BENGER'S FOOD, LTD., Otter Works, MANCHESTER.
NEW YORK (U.S.A.): 41, Maiden Lane. SYDNEY (N.S.W.): 350, George Street. CAPE TOWN (S.A.): P.O. Box 722

M.276



The BULB

Shewing Apparatus attached to ordinary rubber tubing.

AN ESSENTIAL INCLUSION IN THE MIDWIFERY BAG

CO_2 IN RESUSCITATION.

"F. B. R." in the "British Medical Journal," Nov. 7th, 1931, page 878, writes:—

"Apropos CO_2 as a respiratory stimulant, at a recent confinement, as the result of premedication of the mother, of instrumental delivery, or of some cause unknown, the child was born in a condition of partial asphyxia. Half an hour's effort to restore respiration proved ineffective, beyond producing a spasmodic inspiratory gasp at intervals. The baby appeared to have definitely decided not to remain. It then occurred to me to try the "Sparklet" apparatus, or, I should rather say, contrivance, which one carries in the anaesthetic bag. The result of discharging a little CO_2 in front of the baby's mouth at the moment of its making a rare inspiratory effort was instant and amazingly effective. The rhythm was started, and in a few minutes all anxiety had vanished. Admittedly there is nothing startlingly new in this phenomenon. I feel, however, that I am justified in relating the experience from the conviction that the average practitioner is unaware that he has to his hand a simple inexpensive little CO_2 container, suggested by a Manchester anaesthetist and manufactured by the "Sparklet" people. I now feel it should have a place in every midwifery bag, and that it will save many an infant life."

PRICES.

APPARATUS complete 32/6
6 "J-size" Bulbs - - 10/6
Refilling EMPTY Bulbs, each 9d.

The Apparatus consists of a Fine Adjustment Valve fitted with an attachment for holding a Sparklet "J-size" Bulb containing Carbon Dioxide. The Valve provides a delicate means of regulating the flow of gas, and each Bulb contains sufficient CO_2 to deliver for 6 minutes at rate of 2 litres per minute.

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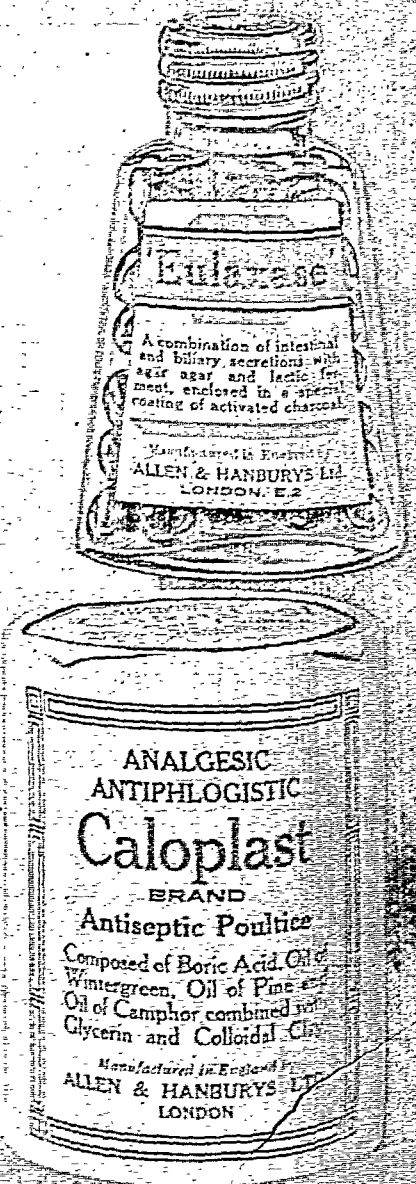
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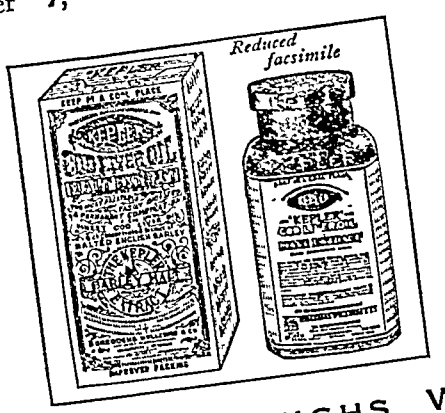
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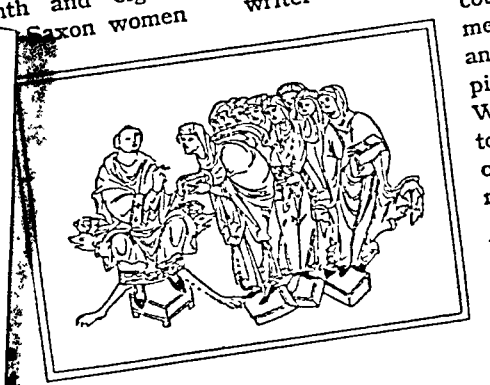
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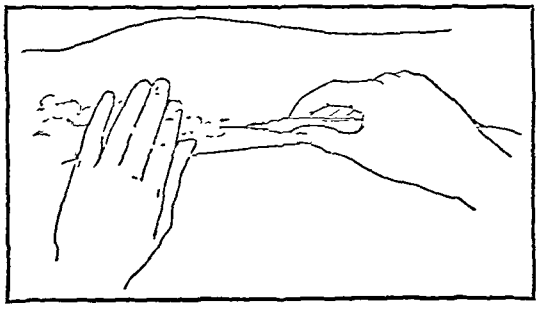
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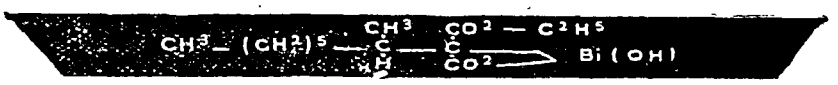
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Etude experimentale du Bismuth lipo-soluble, par M. C. Levaditi en collaboration avec M. V. Sanchis-Bayarri et Mlle. R. Schoen (pour la partie experimentale et histologique), Mlle. Y. Mannin (pour la partie chimico-analytique).

Traitement de la Syphilis par le Bismuth lipo-soluble, par MM. L. Fournier, L. Guenot, Schwartz and Yovanovitch.

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William Mitchell Banks Lecture

ON

THE PROBLEM OF THE STIFF JOINT

DELIVERED AT THE LIVERPOOL MEDICAL INSTITUTION
NOVEMBER 19TH, 1931

BY

SIR ROBERT JONES, BT., K.B.E., C.B., F.R.C.S.

As an old pupil of Sir William Mitchell Banks I have a vivid recollection of his strong and charming personality and of his influence over his colleagues, not only in this city, but throughout the country. He was, without exception, the most interesting and lucid lecturer to whom I have ever listened, and his anatomical demonstrations, enriched by aphorism and an eloquence peculiarly his own, fascinated all who were privileged to attend his classes. His eminence as a surgeon will always be recognized; his contributions to the literature of his art are many and enduring. Medical education was a subject dear to his heart, and we in Liverpool will remember gratefully the important part he played in laying the foundations of our University. Our profession is enriched by the example he set in maintaining its noblest traditions.

In one of the last letters I received from Sir William he deplored the fact that the bone-setters were making inroads on the reputation of our profession, and he asked, "When shall we wake up?" This has influenced me in choosing for the title of my address "The problem of the stiff joint." It is a subject which is of interest to surgeons generally, and has a far-reaching importance to every practitioner of medicine. The field it covers is so extensive that in the brief time at my disposal I can only touch lightly upon points which seem essential and fundamental. The ordinary textbook, if it deals with the question at all, does so in an indefinite way, and invariably leaves us without practical guidance; as a sequel to this we have unqualified practitioners all over the country who render stiff joints mobile with a success sometimes very disconcerting. Later on I shall deal in some detail with so-called "bone-setting" or "manipulative surgery," and formulate rules which may guide us in our endeavour to prevent a joint from becoming stiff, and, if stiffness has occurred, try to indicate whether rest or movement is needed. This will entail a repetition of principles which I have taught for many years, and perhaps I may be excused if my address seems elementary, as my object is to be helpful to all practitioners interested in the problem.

When a joint is stiff it is generally due to the presence of adhesions, which may be found within a joint or around it. Very often they are both extra- and intra-articular. They may be the sole cause of the stiffness, or complicate disease.

WHAT IS AN ADHESION?

An adhesion is a pathological band restricting the normal movement between two adjacent tissues, and it is caused by a serous or haemorrhagic exudate from the blood vessels, either inflammatory or traumatic in origin. At first this exudate is soft and elastic; later, as its structure becomes more definitely fibrous, it loses its elasticity and becomes more dense and less vascular. An adhesion in its latest stage, therefore, is a cicatrix. If an inflamed joint be kept at rest too long after inflammation has abated then the process of healing may lead to the formation of unnecessary bands of fibrous tissue.

To simplify discussion adhesions may be divided into two groups: (*a*) the extra-articular; (*b*) the intra-articular.

The extra-articular type may be connected with the capsule, with the ligaments, or with muscular origins and insertions. They may be due to old organized blood clot and plastic effusion following tears in muscle. They may form between muscles and their sheaths, or be due to the irritation of displaced tendons, or the slipping of muscles or muscular fibres over bony prominences, as so often occurs about the spine. Although stiffness in joints is usually the direct result of adhesions, mobility of a joint may sometimes be interfered with by adaptive shortening of muscles, and other structures due to posture, or strain, or loss of substance. It is met with in myositis ossificans, Volkmann's ischaemic paralysis, and in the form of sclerosing fibrositis, such as we find in Dupuytren's contraction. It is found in an intractable form in many deep scars about joints.

Intra-articular stiffness may be the result of a simple trauma with or without infection. In its simplest form it may consist of an adhesive fixation between adjacent portions of the synovial membrane or capsule. It often follows injuries to the semilunar cartilages, the infrapatellar pad, dislocations, fractures into the joint, or it may result from acute or chronic infection. For purposes of this address I will use the term arthritis as denoting an inflammation involving the cartilage or bone, or both, as distinct from a simple synovitis. It is an artificial distinction, but will simplify the problem with which I deal.

REST OR MOVEMENT

We may lay down as a rule of practice, admitting of few exceptions, that a joint stiffened by simple adhesions, whether intra- or extra-articular, should be moved actively or passively, or even forcibly if necessary. In contradistinction to this, with exceptions which will be stated, a joint stiffened by arthritis should be kept at rest until pain and inflammation have subsided, when movements of a special kind may be allowed. It is essential, therefore, to make a differential diagnosis between the two conditions which will provide a safe and practical guide to treatment.

The rule is a simple one and allows of few exceptions. A joint whose movement is limited in *all* directions is, or has been, subject to arthritis, while a joint which is limited in certain directions *only*, movement being normal in others, is not arthritic. This is more obvious in joints which can be moved in many directions, such as the wrist, hip, shoulder, and spine, than in the knee and elbow, where movement is mainly one of flexion and extension; but, as I will demonstrate, it applies to these also.

This differentiation does not apply to septic infections involving the tissues outside the joint nor to fractures within the joint, nor to joints temporarily stiffened from long fixation.

We can, however, definitely assume that a joint whose movement is not limited in every direction is free from arthritis. Furthermore, if we cannot find any limitation of movement in a joint we may assume it is free from both arthritis and adhesions, but the examination must be very methodical, for adhesions may exist without obvious stiffness, as I will explain when dealing with movements of the knee. In early arthritis rigidity is due to protective muscular action, which disappears under an anaesthetic. Later, this physiological rigidity will become pathological.

I will state a concrete example in order to make my meaning more clear in regard to differential diagnosis, and the spine will afford a good instance. A patient complains of pain in his back and he is asked to flex, extend, rotate, and laterally move his spine throughout its full range. If he can do this freely both arthritis and limiting adhesions can be excluded. If his spine is tender, but he cannot flex it fully or deviate it laterally, yet can, however, hyperextend it normally, we may assume the absence of arthritis. We may affirm, therefore, that a spine with movements limited in all directions is arthritic,

and, further, if one or more of its movements are normal in range we can exclude the presence of arthritis. These facts definitely simplify the solution of our problem as it affects the question of rest or movement.

It will help us still further if we assume that rigidity closely following upon trauma is generally due to adhesions which sometimes form with great rapidity. The stiffness following synovitis, acute or chronic, is due to adhesions formed between different portions of the inflamed synovial membrane. When it accompanies an arthritis it is a slow and continuous process, and is due to bands binding all the tissues entering into the formation of the joint.

Definite localized pain is experienced when adhesions are put on strain, and the tenderness can generally be localized on pressure. It is more diffuse in arthritis. An adhesion is most painful when a joint is moved, and less so when the joint surfaces are pressed together. In arthritis, pain is more pronounced when pressure is brought to bear on the bone surfaces. The temperature of the arthritic joint is usually increased over the whole articulation, while adhesions may produce localized surface temperature, but generally there is none. In arthritis the stiffness is progressive ; in adhesions it is stationary or retrogressive. In arthritis, wasting of the limb is in excess of that due to desuetude—a symptom which does not apply to stiffness due to adhesions. It should be unnecessary to suggest that radiography should be used in all cases of disease and injuries of the joints. None of us, no matter how experienced, can afford to neglect the information to be obtained in this way.

In many types of arthritis we hope to obtain a varying amount of movement after the inflammatory symptoms have subsided. In adult tuberculosis a bony ankylosis—although it only happens exceptionally—gives us least anxiety as to the future. This is especially so in weight-bearing joints, such as the ankle, knee, and hip, which are liable to break down on strain, even after many years of apparent recovery. Tuberculosis in the adult presents a serious problem, for, at the end of treatment, which may last many years, with danger of a dissemination of the bacillus, a bony ankylosis rarely occurs ; but it is a bony ankylosis we want. For these reasons in the present stage of our knowledge an ankylosing operation on the ankle, knee, or hip is justifiable as soon as an accurate diagnosis has been made. It saves time in an adult patient, lessens danger, and secures a firm joint for all time. This, of course, does not apply to children. Movement is anathema to a tuberculous joint during the progress of disease, and we should make ourselves familiar with its clinical manifestations in its early stages, for here radiography may not be convincing. A skin test, though helpful in a doubtful case, is more reliable when negative than positive, while the bacillus is often difficult to find in fluid aspirated from the joint. In spite of our clinical experience there will remain exceptional cases where a diagnosis must ultimately depend upon histological findings or upon animal inoculation.

PREVENTION OF STIFFNESS

In treating joints we aim at obtaining the best functional results, and we should therefore combat all the elements which make for stiffness, the chief of which is adhesions. It is necessary to rest an arthritic joint until pain and inflammation have disappeared. In certain cases of chronic arthritis it is sometimes possible to prevent the formation of firm adhesions. This should only be attempted when the painful active stage is passed. The patient may be allowed to move his joint within a painless area, or even the surgeon may employ a passive movement once a day and then let the joint rest. It is only justifiable to proceed with this when neither persistent pain nor reaction occurs. In the non-arthritic joint, movement is needed before the adhesions have formed, or, failing that, before they have become firm. We must bear in mind that the presence of firm adhesions generally denotes some defect in treatment, and may be used against us as a reproach. Manipulative surgery would be but rarely invoked if we all made a practice of strangling an adhesion at its birth.

When we examine an injured joint we must endeavour to make a precise diagnosis and to appreciate its pathology. If ligaments are torn they should be protected from strain until movements can safely be practised. Massage immediately after the injury, before effusion has taken place, checks haemorrhage into the part, stops effusion of lymph, relieves pain, and leaves the tissues ready to commence immediate union. Massage does not include movement. A masseur who will not massage without moving a joint often disturbs tissues which should be left at rest to undergo repairs. If we understand the anatomy and function of an injured ligament certain movements of the joint can be conducted without straining it ; the joint should not be dealt with as if an active inflammation existed, for movement carefully supervised expedites the restoration of function. Local effusion of blood should be lessened by pressure, for pain is due to mechanical tension, and tension to serous and haemorrhagic exudate, and this exudate is the basis for the development of adhesions. If the joint is sprained, elastic pressure should be firmly applied in order to prevent or minimize effusion and allow of the repair of the injured structures. In the knee, for instance, if the internal lateral ligament is strained, pressure should be applied by pad and bandage, which prevents effusion about the torn ligament and distension of the joint, which so often accompanies this injury. In this early stage no movement should be allowed which gives rise to pain, and, later, when movement is allowed, care should be taken to prevent strain upon the injured ligament. Neglect of this rule is often the cause of lateral yielding of the joint, for the torn ligament, although united, may lengthen under strain. In the lower extremity active movements should be practised in the first place without the incidence of body weight, and when walking is prescribed body weight should be deflected from the injured ligament. For instance, by raising the heel of the boot on the inner border, the internal lateral ligament of the knee and of the ankle are relieved from strain. The same principles apply to strains of tendons, as exemplified in partial or complete rupture of the tendo Achillis, where we first keep the ankle in plantar flexion until healing takes place, and then add to the height of the heel to avoid strain during walking. These rules will prove a useful guide, and, although obvious and elementary, they seem constantly to be neglected.

STIFFNESS FOLLOWING FRACTURES IN AND ABOUT JOINTS

I have often stated that prolonged rest of a healthy joint within the limits of its normal range of movement will not give rise to more than a temporary stiffness, easily overcome by passive movements in the case of the adolescent and the young adult. In the aged this stiffness is more pronounced. Against this it may be urged that a very intractable stiffness sometimes follows fractures of the femur near the knee when this joint has been kept extended for a considerable time. This is perfectly true, but other factors than rest are involved. In such cases considerable (and, at the time, unrecognized) injury may have occurred to the joint, and be responsible for the development of adhesions. In addition to this, reaction

occurs from the stretching of capsule and ligaments. Both these complications must be avoided without imperilling union of the fractured ends. The problem must be worked out in each individual case. When fracture occurs in middle life and in the aged, where there has probably been damage to the joint structures, the joint should be slightly flexed from time to time, and should never be fixed in the fully extended—which so often becomes the hyperextended—position. A joint *stiffens* much more readily if it is rested in the fully extended, rather than in the slightly flexed, position. This is true of all joints, but more especially of the knee, elbow, and fingers. We found this emphasized during the great war, where fractures of the humerus were treated by extension of the elbow, and injuries of the wrist were fixed in dorsiflexion splints with straight handpiece, which involved full extension of the fingers. Where the handpiece was curved, allowing of slight flexion of the joints, these stiff fingers were rarely encountered. Fractures into the elbow-, knee-, and ankle-joints usually unite sufficiently in three or four weeks to permit of gentle passive movements. The stiff joints following compound fractures of the bones come within a different class, and will be referred to later. To avoid adhesions, therefore, we should allay all inflammatory symptoms; prevent or lessen local effusion by pressure; massage injured structures early; practise movements which place no strain on the injured tissues, and so encourage early active function.

TREATMENT OF STIFFNESS DUE TO ARTHRITIS

Radiology is obviously of paramount importance in helping us to decide whether a joint should be moved or not. It has a definite message in tuberculosis of bone, and in every variety of non-tuberculous disease it will help us. If we find extensive destruction of bone and disappearance of cartilage, as shown by diminution of joint space, manipulation will not be indicated, and in those cases of minor changes we must approach the problem of movement with great caution. Movement has no part in the treatment of arthritis during the painful inflammatory stage. It has but a limited scope where recovery from active disease has occurred. It is not easy to fix the moment when disease is no longer active in an arthritic joint, but the absence of pain and radiological evidence of repair are welcome signs.

We may be sure that a joint has recovered from disease when its range of movement is not diminished by use, or, in the case of an ankylosis, when its position does not alter by use. If a joint has a range of movement of 40 degrees, and this range is diminished by 20 or 30 degrees when use has been allowed, we can be sure that disease is still active. Or supposing a joint is fixed at a certain angle by fibrous ankylosis, and, when used, it becomes *fixed* at another angle, we know that recovery has not taken place, and that manipulation would be disastrous. Or, again, if after use it remains at the same angle, we look upon the joint as recovered, with what Thomas termed a fixed, sound ankylosis. Should the patient return with an increasing range of movement we may consider the joint free from active disease. A recognition of these signs of recovery has a close relationship to treatment. When the joint seems to be quiescent, free from pain, with normal temperature, and weight-bearing produces no reaction, while the *x*-ray shows evidence of repair, these tests of recovery should be applied, and, if satisfactory, the question may arise whether surgical assistance is needed to increase the range of movement. If recovery has taken place and the range of movement increases, be it ever so slowly, we should trust to active rather than to passive movements, and these should be practised in the absence of weight-bearing. If the increase in the range of movement ceases and then remains stationary for a period the question of passive assistance may arise, but forcible manipulation is not to be considered. In the lower extremity, if the range of flexion increases when walking is permitted, while extension becomes more limited, the joint requires further protection. In the case of recovered non-tuberculous arthritis we may decide to try to increase the range of movement. We are helped in our decision by the *x*-ray photograph and by the appearance of the joint. If it has stood the strain of exercise without reaction we may increase the range of movement 10 or 20 degrees, and fix it at the new angle for twenty-four or forty-eight hours to avoid reaction; the joint can then be exercised at first without, and later with, the incidence of body weight. If the increased range is maintained the same procedure is repeated. If, on the contrary, reaction occurs and the range of movement is not maintained, or perhaps lessened, passive movements must not be permitted.

PROLONGED IMMOBILIZATION OF A FRACTURED LIMB

As I have already stated, immobilization in an adolescent or young adult need give no anxiety. After six or eight weeks the knee will recover free movement, even though there has been a sufficient pull upon it to maintain full alignment of the fracture. We have rarely experienced any trouble. After a compound suppurating fracture, where one meets with a mild peri-articular infection, or where the joint has been badly strained or forced into hyperextension, the stiffness may be pronounced and very resistant. These conditions should be dealt with by manipulation in stages, and the joint should be fixed for a few days in each new position. Lest the fracture is not firmly consolidated it must be protected from strain during manipulation by the firm application of splints. In the case of the femur the patient should be placed upon his face with his thigh splinted, and the assistant should put firm pressure over the fracture while the knee is flexed.

We are often confronted with an old mal-union or non-union of the femur and a stiff knee-joint. We should always endeavour to secure movement in the knee before operating upon the bone. If the rigidity is allowed to remain during the months necessary to treat the fracture the stiffness of the joint becomes more and more intractable. Before manipulating the knee we must make sure that the patella is mobile and that the quadriceps is not fixed to the femur, otherwise the quadriceps may be ruptured, the patella broken, or the tubercle of the tibia evulsed. It may be necessary to free these structures by open operation.

ACTIVE AND PASSIVE MOVEMENTS

And now a word about active and passive movements, for by this branch of physiotherapy we prevent the formation of adhesions and cure the less resistant types. When a joint has been sprained, and the preliminary treatment (which I have already described) has ended, the question of movement arises. If adhesions have formed movement is indicated, and active movements are to be preferred to passive ones. Active movements, being voluntary, are sure to be gentle, being limited by pain, while the muscle is truly exercised. Passive movements, unless very skilfully performed, are apt to add to cicatricial tissue and interfere with repair. In young children and highly nervous people it may be necessary to prescribe passive movements, but if you have a choice, trust to the active type. When a joint has recovered from a fracture, or mild arthritis, the masseur should be warned not to employ what I have termed the "pump handle" method when passive movements are prescribed. It consists in

putting the joint through each of its movements several times instead of once. This often produces a reaction which will stiffen, not mobilize, a joint. It most often occurs in the elbow, which becomes stiff and painful, and often alarms the practitioner. We first exclude the presence of myositis ossificans, and then assume that the symptoms are the result of excessive movements. They disappear when the joint is rested for a few days, and then active movements may be allowed. It cannot be repeated too often that if passive movement is adopted it should be confined to one single movement in each direction once a day, and in the interval the arm should be slung at right angles. No adhesions can occur in twenty-four hours which cannot easily be overcome.

MYOSITIS OSSIFICANS TRAUMATICA

For a moment we will deal with a serious complication, known as traumatic myositis ossificans. It may occur after any dislocation or fracture in the neighbourhood of a joint, but is most commonly found in the region of the elbow. It requires very careful handling. Its onset is gradual and usually painless, and when established may result in a locking of the joint. It is due to tearing of the muscular and periosteal tissue from bone, accompanied by haemorrhage. Fragments of periosteum and osteogenetic tissue are pulled away, and thus the formation of new bone takes place along the interfibrillary and intermuscular septa. The symptoms are insidious. An elbow which is doing well begins to get stiff in the third or fourth week. The practitioner, omitting to take an *x*-ray photograph, prescribes passive movements—a very dangerous thing to do. The *x*-ray would have shown a cloudiness about the attachment of some muscle—usually the brachialis anticus. In two or three weeks this shadow becomes more dense, and traces of bone structure are present. The elbow in such case should be kept quite still until evidence is obtained that bone deposit has ended. If the elbow has been slung at an acute angle it should be altered and placed in the most useful functional position, lest extra-articular ankylosis occur. When we are sure that no further bone deposit will take place—a fact easily ascertained by successive *x* rays—very gentle movements may be allowed. The deposit may be slowly absorbed or it may remain quiescent. If it causes disability it may be removed, but if it does not materially affect movement it should not be interfered with ; during its developmental stage an operation often results in fresh deposit of bone. These deposits may remain for many months, and ultimately be absorbed, or they may develop all round the joint, producing a permanent ankylosis. I emphasize this in order to restrain you from employing either massage or movements in this condition.

ISCHAEMIC PALSY

Another and more alarming complication in fractures about the elbow is known as Volkmann's ischaemic paralysis. It often produces ankylosis of the elbow-joint, with paralysis and rigidity of the fingers. The condition is due to acute venous obstruction. It may be due to pressure from within, such as haemorrhage into the antecubital fossa, pressure from displaced fragments, or pressure from without due to tight bandaging.

Symptoms usually begin in the space of a few hours after injury ; the hand is painful, the fingers discoloured and numb, and voluntary movements may be lost. Irreparable mischief may take place in forty-eight hours. Treatment should be immediate ; every minute is important. The arm should be released from all restraint likely to produce obstruction. If this is not effective valuable time must not be wasted, and the blood clot should be evacuated by an incision into the ante-cubital space. This prompt action, based as it is on a sound pathological basis, may save a calamity. I have no time to discuss the mechanical treatment of the stiff fingers, but I must warn you when dealing with fractures and dislocations about the elbow, never to flex the elbow-joint fully without first completely reducing the displaced bones. It is a highly dangerous proceeding.

FORCIBLE MANIPULATIONS

I shall now deal in some detail with the subject of forcible manipulation, which is a branch of surgery that from time immemorial has been neglected by our profession, and as a direct consequence much of it has fallen into the hands of the unqualified practitioner. Let there be no mistake ; this has seriously undermined the public confidence, which has on occasions amounted to open hostility. If we honestly face the facts this attitude should cause us no surprise. No excuse will avail us when a stiff joint, which has been treated for many months by various surgeons and practitioners without effect, rapidly regains its mobility and function at the hands of an irregular practitioner. We should be self-critical, and ask why we missed such an opportunity ourselves. The problem is not solved by pointing out mistakes made by the unqualified—the question at issue is their success. Reputations are not made in any walk of life simply by failures. Failures are common to us all, and it is a far wiser and more dignified attitude on our part to improve our armamentarium than dwell upon the mistakes made by others. With few exceptions a stiff joint is based on a clearly defined pathological basis, and a large proportion of cases cured by the manipulator represent a failure on the part of our profession. It is not a pleasant thought, but it is true. We are apt to shrug our shoulders and show contempt when a patient is told that "a vertebra is out ; I will replace it." Such a dramatic statement may have a psychological effect, and be an excellent preparation for treatment, because it inspires hope and compels confidence. Every practitioner knows the value of such a stimulus if he is to control the nervous element so often associated with an organic lesion. In the neuro-mimetic and the neuro-organic it is an essential part of treatment. The success of the manipulator has given rise to a widespread belief that he has been born with a "gift" or "intuition." Of this we have no evidence. It is obvious there is nothing which he does that should not be undertaken more safely by any surgeon or practitioner who possesses a knowledge of the anatomy and pathology of the joints, but—and this is fundamental—he must become familiar with methods of manipulation which are safe and thorough ; he must learn the art, and he must know the right joint to tackle—a mistake on his part is far less excusable than when made by the unqualified. It is often stated of H. O. Thomas that he had an unreasonable objection to moving joints, and that the breaking down of adhesions was anathema to him. His experience of bone-setters was based on their procedure over forty years ago, when not a week passed but he came in contact with tuberculous joints which had been forcibly moved, sometimes with tragic consequence. Radiography was unknown then, and joints were broken down indiscriminately ; in these days an *x*-ray photograph is in the hands of everybody, and *such calamities are proportionately few.*

I have endeavoured to indicate the type of joint which should be moved, and the stage at which this should be done, drawing attention to certain doubtful conditions which should be approached tentatively and even experimentally, and I have laid down rules which should guide us in deciding whether a joint has recovered from an arthritis or not. In rupturing non-arthritic adhesions there are certain points I wish to emphasize. Recent adhesions may be broken down under gas and oxygen

When they are of firm character full anæsthesia is essential, for complete muscular relaxation must be secured before manipulation can be thoroughly performed; they cannot be dealt with satisfactorily if there is the least muscular resistance. An advantage of the lighter anæsthesia is that the patient can be made to move his joint immediately consciousness returns, and this has an excellent moral effect. We should be familiar with the range of movements in the various joints if we are to avoid strain. The range may differ in individuals, and the sound practice is to take the healthy joint as a guide, comparing its movements during the operation with those on the affected side. After the joint has been conducted through its complete range of movement we should be satisfied, it is unnecessary to repeat it.

When adhesions are broken down the manipulation should be completed on one occasion, unless they are exceedingly firm, and the limb should be placed in the position of full correction while the patient is unconscious. If, for instance, the shoulder has been fixed in adduction he should be allowed to awake with the arm in full abduction. If, on the other hand, the manipulation has been very severe, and reaction is feared, the joint should be rested for a day or two, massage being employed instead of movements.

I have emphasized the necessity of putting the joint through its complete range of movements, and to make this clear I will briefly describe the technique which I follow on the three joints most generally associated with adhesions—the knee, shoulder, and elbow.

Technique in Manipulating the Knee

In breaking down adhesions the joint should be fully flexed, and in that position the leg is rotated out and in. This rotation should be continued while the knee is being fully extended, care being taken that the extension is complete. The knee is again flexed over the surgeon's forearm, which is placed across the popliteal space—in this way the tibia is levered slightly forward. If the adhesions are in front of the joint the knee should be flexed while the hip joint is hyperextended, in order that extra tension may be put upon the structures in front of the joint. This is a most important movement and is often neglected.

If, after injury, a patient is unable to extend his knee fully, we may suspect an unreduced semilunar cartilage, sometimes but far more rarely, a fracture or evulsion of the tibial spine clearly seen on an *x*-ray film. A displaced semilunar cartilage may be reduced by manipulation even after several months. The knee should be flexed and rotated inwards then abducted during extension in the case of the *internal* cartilage, in dealing with the *external* cartilage the tibia should be rotated outwards and adducted. In addition, the manipulation which I have described for breaking down adhesions should be practised, for adhesions are often found in connexion with a displaced cartilage. Unless the knee extends fully and easily we may be sure the meniscus is not reduced.

The Shoulder

The shoulder-joint is very commonly bound down by adhesions even after very slight injury. It is apt to occur in the aged, more especially following fractures and dislocations. All fractures about the shoulder where adhesions may be expected should be treated in the abducted position. In the fragile and aged this position may not be tolerated, and the arm will then have to be kept against the side, and gentle passive movements started in the third week.

In breaking down shoulder adhesions, especially in the aged, great care is needed, for it is not difficult to produce a fracture or dislocation. This unpleasant occurrence is apt to be associated with rotation outwards or abduction, and the padded fist should be pushed into the axilla in support of the head and neck when manipulation is practised. In this joint it is especially necessary to check manipulation by comparing the range of movements with those of the sound side. The patient should lie on his back, with the injured shoulder protruding over the edge of the table. The arm should then be rotated inwards and outwards, and while the scapula is fixed the arm should be completely adducted and abducted. In this position it should again be rotated inwards and outwards. The scapula should next be released and allowed to move with the arm, while it is fully elevated. In this position it should again be rotated inwards so that the forearm can easily be placed behind the back, and outwards so that the arm can be placed behind the neck. The arm should then be circumducted, while being brought down to the side. Finally—and this is an important and often neglected movement—the arms are elevated and the hands placed behind the head, and from this position the arm is pushed backwards, the head of the humerus stretching the front part of the capsule. If adhesions are very firm these movements may have to be done in stages, but where possible it is best that they should be completed on one occasion.

The Elbow Joint

In breaking down adhesions about the elbow joint especial care is needed. If the arm recent and not accompanied by fracture the joint should be put through its complete range of movement. If the adhesions are very firm and are associated with a fracture, or follow a dislocation, mobility should be brought about in stages. My practice is first to extend the arm to the point of safety, which I estimate by the degree of resistance it offers, and then I flex it, using only very slight force. The arm is then slung in flexion and kept there for two or three days, when it is extended, and kept in extension for a couple of days. If no reaction has taken place the sling should be removed and active movements allowed. It may be necessary to repeat this routine in a few days. If the range of movement increases with use, no matter how slowly, neither passive nor forced movements should be allowed. We should remember that in children a stiff elbow often becomes mobile with active use when it resents passive movement, and it frequently happens that when massage and passive movements have failed to make any impression, and have been discontinued, the child appears a few months later with a freely movable joint. It is not uncommon to meet with a stiff joint in an adolescent following a fracture through the condyle which has not been accurately reduced. The elbow usually assumes an angle of about 40 degrees from full extension. This ankylosis, if roughly handled, may react and the joint become inflamed, so to avoid that we flex the elbow without using much force, until strong obstruction is met with, and then we keep it slung in its new position for a few days, after which we find it easy to obtain a further flexion of 10 or 20 degrees. This routine is repeated two or three times, and the result is often most encouraging, for we may secure a considerable range of movement at a more useful angle in a joint that otherwise would remain very stiff.

These manipulations are applied to firm peri-articular or intra-articular adhesions, not those accompanied by destruction of joint surfaces.

After-Treatment

The after-treatment of joints following forcible manipulation is important. Active movements should be started as soon as consciousness is restored. It may be necessary to assist these movements passively once a day, active movements should be repeated frequently. If effusion takes place in a joint it is strongly suggestive of the rupture of intra-articular adhesions, but such effusion does not necessarily imply that the manipulation should not have been employed unless it is followed by a progressive diminution of the range of movement. If this occurs rest is called for, the limb being fixed in a position opposed to the contraction. Recovery will be expedited by dealing with the joint persuasively rather than forcibly, but if, even in the presence of considerable pain the range of movement is increased by exercise, rest is contraindicated. Pain which is sharp and of short duration is negligible, but if pain persists when the joint is at rest it means that a reaction, likely to be followed by stiffness, has set in, and is a danger signal calling for pause. If a patient is able to move his joint freely after manipulation he is encouraged to use it freely. Exercise is better for him than any form of physiotherapy.

The stiffness following chronic arthritis, or firm peri-articular adhesions following sepsis, must be approached with considerable caution. It should be a carefully conducted experiment, for we cannot always predict whether or not a reaction will occur.

I will illustrate this by again taking the knee-joint as an example, assuming that there have been no destructive changes in the bone. If it is fixed in extension it should be moved a few degrees in flexion—the range depending on the resistance. The limb is then placed in a splint in order to retain the knee in its new position. It is rested there for a few days. The bandage is then removed, and the surgeon assists the patient to extend his knee. If this is successful the splint and the knee are still further flexed, and the joint is rested in its new position. If the range of movement is maintained we know we can continue on these lines and bring about a more complete mobilization. If it becomes fixed in its fresh position, and in spite of all coaxing remains fixed, we must face failure, and we must let the joint ankylose in the best functional position. It is well to remember that often when no amount of forcible manipulation will move the knee it may gradually yield under continuous pressure by bandage over splint.

ACUTE SUPPURATIVE SYNOVITIS

A very anxious problem is that of the acute suppurative synovitis, which, without treatment, ends in firm fibrous, or more often bony, ankylosis. Can anything be done to modify or prevent this ankylosis? If it occurs, say, in the knee, immediate evacuation of fluid content is indicated. If this is done while the content is serous or mildly sero-purulent, destruction of the joint may be obviated; it should be well washed out with saline, alcohol, or ether. This can conveniently be done by introducing two aspirating needles, one being used as an exit while lotion is driven through the other. This is repeated, if necessary, on several occasions until the discharge is serous; when this has occurred the joint should be fixed for twenty-four hours in extension, and then for the same time in about 50 degrees of flexion to prevent the formation of fixed adhesions, which, in this acute condition, form very rapidly. When the acute symptoms are over, assisted active movements without body weight should be prescribed. If, however, destructive suppuration sets in, the joint should be opened, and movements as initiated by Willems, and developed by Everidge, during the great war, are called for.

Everidge devised a very ingenious apparatus to aid the patient's will power in moving the joint. Two transverse incisions are made into the joint from the inner and outer borders of the patella along the lines of cleavage, each about one inch in length, without involving the lateral ligaments. The cut synovial membrane is stitched to the skin. I had opportunities of examining Everidge's cases during the war, and was very much impressed by what I saw. The joint was treated as if it were an empyema, and 50 per cent. of the cases ended with useful movement. The patients became interested in carrying out the exercises, and several told me that when the joint became painful they evacuated the pus by flexing and extending the joint, and thus obtained relief. By these movements, practised every two hours night and day, the retention of pus was avoided. This treatment is not so successful in suppurative arthritis involving all the elements of the joint, and of no use when osteomyelitis invades the joint from the bones without. Such cases invariably end in ankylosis.

THE RHEUMATOID GROUP OF CASES

The rheumatoid group of cases form a large proportion of the diseases we meet with in joints, and their discussion can be approached from many angles. I will confine myself, and that very briefly, to a few surgical points on their management without reference to the etiological problem they present. For this purpose the groups may be classified as "proliferative" and "degenerative."

The proliferative type, most commonly found in the young, is characteristically polyarticular, the swelling of the joints being firm, dense, and rarely fluctuant. The clinical picture is that of a resistant, long-continued, acute or subacute joint affection, very sensitive and painful, and prone to early malposition and to early ankylosis. The *x*-ray film shows a bone with a diminished line shadow, somewhat mottled and stippled. The joint space is narrowed, and lipping is not present to any extent. Bony ankylosis is frequent and the prognosis is grave.

The degenerative type is characterized by early lipping and late hyperostosis, and the prognosis is much more favourable, for the destruction of the joint is less rapid, the lesion being first confined to the synovial membrane and to the edges of the joint.

The surgical indication in either condition is preventive. We should visualize the deformities found in the neglected case, and prevent them from occurring, so that if ankylosis takes place the functional disability will be at its minimum. This is usually within the power of the surgeon, and treatment should not be delayed while etiological investigations are being made. A visit to any spa will reveal cases in every condition of life with appalling deformities which should never have happened had there been a working association between a physician and a surgeon. In either type the hips and knees should not be allowed to contract, nor the wrists to palmar-flex. With the disappearance of acute symptoms in the proliferative variety very gentle movements should be encouraged under close observation, for considerable judgement is required to estimate the proportion between rest and movement. The exercises should in the main be active rather than passive, and if persistent pain follows without increase of mobility harm is being done. Where many joints are affected it is wise to apply the test to one, and if no reaction follows, the others can be approached. By choosing the right moment and observing the behaviour of the joint we may be enabled to retain some movement, even in the proliferative type.

In the degenerative group systematic movement without an anaesthetic is called for, but we must sail cautiously between Scylla and Charybdis. Persistent pain and swelling without a gain in movement should warn us of excessive exercise. When many joints are affected and ankylosis seems inevitable we should decide in what positions the limbs should be placed to attain the most useful function. For instance, if we have two ankylosed hips and two ankylosed knees they are more useful slightly flexed at angles which will enable the patient to sit. If these joints are ankylosed in the extended position the plight of the patient is hopeless. This is especially important in elderly people, who are unfitted to bear the strain of later operative correction.

Traumatic osteo-arthritis in which there is no evidence of infection may be caused by the faulty incidence of body weight upon a joint, as so often occurs in malunited fractures, or from the irritation of an old fracture within the joint. It is often found in haemophilia from the continued presence of haemorrhage, or from trauma due to recurring displacements of the semilunar cartilage, or it may follow occupational strain. The treatment should be modified to suit each individual case.

We very commonly meet with a hypertrophic osteo-arthritis, generally monarticular, which affects elderly people. It frequently follows injury, and most frequently involves the hip-joint. Limitations in movement occur early, and disability, slight at first, slowly increases. In the later stages an *x*-ray photograph shows a diminution of joint space and progressive lipping. This condition should not be treated in its early stages by fixation of the joint, but movement should be strictly regulated. Exercises should be practised without weight bearing,

ıd should be governed by the character and duration of
ıe pain. A pain which rapidly disappears when the
oint is rested may be ignored; if, however, it persists
or a considerable time we may be certain that the move-
ents of the joint have been excessive and should be
odified. In the later stages, if the disease advances, the
g appears shortened, because of adduction and elevation
the pelvis. Pain may be very severe and surgical in-
rvention is called for. We find that adhesions are
ommonly associated with the bony changes, and often
careful manipulation under anaesthesia gives great relief
nd increases the range of movement. If the joint moves
asily under manipulation no fixation beyond a flannel
pica is needed, but if there be excessive osteophytic out-
rowths, and the joint feels resistant to manipulation,
dduction should be corrected and the joint should be
xed in plaster in the corrected position; subsequently
leather fixation corset should be worn. Operative
easures are needed in the more advanced cases, which
annot otherwise be relieved, and where the physical con-
itions are favourable.

TREATMENT OF FIXED ANKYLOSIS

Before concluding my address I will state very briefly
he principles which should guide us in the management
f fixed or permanent ankylosis. We know the malposi-
ions where joints become ankylosed if left to the unaided
fforts of nature, and I will now indicate the positions
which should be aimed at to secure the most useful
unction.

In the *shoulder* the arm should be abducted to
0 degrees, the elbow resting in front of the coronal plane
o that, when it is at right angles and the forearm supin-
ted, the palm of the hand is towards the face. The angle
at which an *elbow* is placed will depend upon the patient
nd his occupation. Most people find it more useful
when placed a few degrees below a right angle. If
ronation and supination are lost the radius should be
held midway between pronation and supination. The
wrist should be dorsiflexed at an angle of about 25
degrees. The *hip* should be ankylosed with very slight
abduction, very slight flexion—20 to 25 degrees—and
very slight external rotation. The *knee* should be placed
short of complete extension, and the *foot* at right angles
to the *leg*.

OSTEOTOMY

Osteotomy has an important place in the correction of
deformity and the restoration of correct alignment. It
should not be performed in the presence of active disease.
Its uses are mainly in connexion with deformities at the
hip or knee, and it is most effective where the ankylosis
is bony.

In the hip it is employed to correct rotation, flexion,
abduction, and adduction. The position of election is
low transtrochanteric or intertrochanteric, although it is
sometimes advisable to make the section just below the
lesser trochanter. If there is much flexion deformity the
higher section should be made, otherwise when the limb is
extended the upper end will protrude anteriorly and
jeopardize the vessels, or result in a non-union. If the
section is intertrochanteric, or through the lower part of
the great trochanter, the removal of a wedge of bone
may be necessary, especially if the neck is shortened or
the head displaced upwards. In all osteotomies of the
upper femur the adductors should be divided.

Osteotomy is frequently performed to correct adduction
in a tuberculous hip. Adduction is accompanied by
elevation of the pelvis on the diseased side, and this
results in a practical shortening of the leg. It is due to
cicatricial contraction of an unsound ankylosis at the
joint; to contraction and shortening of the adductor
muscles; to elevation of the trochanter following absorp-
tion or displacement of the head and neck; and is
increased when walking, because of faulty deflexion of
body weight. Adduction is not primarily the result of
walking, for it may occur while the patient is lying if
the joint is not efficiently controlled. The main cause is
an unsound ankylosis with absorption of bone and the
formation of strong cicatricial tissue. If the joint is not
controlled the cicatricial contraction proceeds until adduc-
tion is complete, and it is at this stage only that an
osteotomy can be performed without danger of recur-
rence. During and after adolescence an extra-articular
bony fixation may be employed, either with or without
an osteotomy. If the hip has been kept in good position
an extra-articular fixation is all that need be done. In
children, where adduction is often accompanied by move-
ment, and time is not so important a factor, an extra-
articular bony fixation is not indicated. When a bony
ankylosis of the knee is accompanied by a lateral devia-
tion, or a genu recurvatum, osteotomy is needed to
correct the deformity. This can be performed through
the femur or the tibia. If the recurvatum is accompanied
by a backward displacement the osteotomy should take
place through the knee in order to bring the tibia
forward.

ARTHRODESIS, PSEUDARTHROSIS, AND ARTHROPLASTY

We frequently meet with a short fibrous ankylosis
which is painful when subjected to strain. In such a case
it may be necessary to substitute a bony ankylosis for a
fibrous one. This is done by arthrodesis, which is a
modified excision, and is most effective in the knee and
ankle. The procedure is called for most frequently in
adult tubercle, a condition not suitable for a mobilizing
operation such as arthroplasty or pseudarthrosis.

For painful monarticular osteo-arthritis of the hip,
already referred to, which cannot be dealt with conser-
vatively, an operative attack may be needed. An arthro-
desis will transform a weak painful joint which cannot
bear weight to a strong and painless limb. This opera-
tion, if effectively performed, is a serious one, as it
involves a complete disarticulation and a careful appposi-
tion of the denuded bones. It should be reserved, there-
fore, for the comparatively young and healthy, and should
not be performed on the weak or aged. An operation
which is very effective in these cases, and only takes
a few minutes to perform, is the oblique osteotomy intro-
duced by Lorenz for irreducible congenital hips, and
known as the "bifurcation operation." It is as success-
ful in monarticular osteo-arthritis as it is in ununited
fracture of the femur.

Many operations have been devised by which painless
motion may be retained.

INDICATIONS FOR MOBILIZING ANKYLOSED JOINTS

I shall not enter into any details of the various opera-
tions which have been employed in order to render
ankylosed joints mobile. Some consist in a reconstruction
of the joint, others consist of very free removal of bone
about the joint, with or without fascial interposition. In
other cases excision is performed, while in certain hips
where not only has the joint been destroyed, but massive
thickening of the peri-articular structures is present, it
may be advisable to remove an inch of the femur in its
upper third, fat or muscle being placed between the ends,
and so a very useful pseudarthrosis is secured. Details
of these various operations may be found in modern
orthopaedic textbooks. As technique improves the opera-
tive field increases, but even now we can offer suggestions
which will help us to decide whether we should try to
make an ankylosed joint mobile.

All who have had experience of arthroplasty are agreed that the most successful cases are those in which the ankylosis is bony, with comparatively normal-shaped bones. This will include traumatic joints, and those the result of pyaemia. We may exclude tuberculous joints, which so often and for years contain foci of infection.

The operation is contraindicated in the presence of active disease, and should be delayed until at least two years after its complete cessation. It should never be performed in the presence of sinuses, nor where the soft tissues are infiltrated and tense, nor where muscles are atrophied and adherent; nor should it be performed until growth is ended. The joint which responds most favourably to an arthroplasty is the elbow; the knee, although technique has improved, mainly by the excellent work of Putti, is still in the experimental stage. It is an operation which requires the highest judgement and skill on the part of the surgeon, and fortitude on the part of the patient, for the after-treatment is very painful. The elbow is a joint where we can almost promise a satisfactory result—good movement and fair stability; but the ankle-joint, if stiff and painless, should not be mobilized; if painful it should be arthrodesed.

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AVERTIN IN GYNAECOLOGY

A RECORD OF 1,000 CASES

BY

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In a previous paper I[1] have put on record the impressions gained after the employment of avertin in 345 unselected gynaecological operations. Our experience has now extended to over 1,000 cases, and increasing use has gone to confirm the view expressed in 1929 by Blomfield and Shipway[2] in their paper introducing avertin to British surgery that it is "a valuable addition to the drugs at the disposal of the anaesthetist."

The method of administration adopted is similar to that described in the previous communication and to that employed by other surgeons, and it is unnecessary here to enter into a detailed description. The procedure is very easily learned. The evening before the operation the bowel is washed out with an enema. One hour before, one-eighth of a grain of morphine is given hypodermically. Before removal from bed, the patient turns on the side and the drug in solution is slowly instilled into the rectum, the administration taking about fifteen minutes. Before the lapse of this period the patient is usually unconscious, the induction of the anaesthesia being smooth and pleasant. Throughout the induction and the period of unconsciousness the anaesthesia is strongly reminiscent of a deep natural sleep. On two or three occasions only have we found some mental excitement during the induction, while on three occasions the patients failed to pass over into complete unconsciousness. In all cases there is complete amnesia. The maximum anaesthesia is reached about thirty minutes after the commencement of the induction, and we plan that this interval will elapse before the operation is begun, although on many occasions, owing to the exigencies of the operating theatre, we have without disadvantage allowed over an hour to pass.

The drug is quickly absorbed from the rectum, but the dissolving fluid remains in the bowel for a longer time, and in the case of operations carried out in the lithotomy position it is apt to be squeezed out during the examination or the introduction of the speculum with a consequent soiling of the parts. To prevent this, it is our practice in such cases to withdraw the remaining fluid by means of a rubber catheter immediately before the commencement of the operation.

We employ, as a routine, a dosage of 0.1 gram per lb. of body weight. In very obese patients instead of giving the full ratio we employ a diminished dosage of 0.08 or 0.06 gram per kilo. We use the liquid preparation which contains 1 gram of avertin in each cubic centimetre, and by means of the chart supplied by the makers the respective quantities can be determined easily and rapidly. With this dosage the anaesthesia obtained is not profound, and, although sufficient often to allow of a minor procedure, such as curettage and, occasionally, of a plastic operation for vaginal prolapse, we find it an advantage as a routine to amplify it by means of ether given by the open method. The quantity of ether required is usually much less than that necessary for an unaided inhalation anaesthesia. It may now be claimed that the experience of many clinics engaged in all classes of surgical work has established that, when employed as a "basal anaesthetic" in such dosage as I have mentioned, avertin is a safe drug. During the early days fatalities were recorded, but there can be no doubt that these arose almost invariably from pushing the dosage to the stage of inducing a complete and self-sufficient anaesthesia.

ANALYSIS OF CASES

The drug has been used as the routine anaesthetic in my department during the period under review, and, except where on a few occasions a pelvic swelling—for example, fibroid tumour, pelvic abscess—has so encroached upon the rectum as to impose a mechanical obstacle to the instillation of the fluid, there has been no selection of cases. For this reason the experience can be accepted as representing that of an average gynaecological hospital practice in which, although much of the operating is of a minor nature, there is naturally at the same time a large admixture of grave and emergency material. Thus there were over 200 cases necessitating opening of the abdomen for the carrying out of hysterectomy (71), salpingo-oöphorectomy (24), ovariotomy (34) and removal of cysts with twisted pedicles (6), removal of the tube in ruptured tubal pregnancy (16), myomectomy for fibromyoma (10), appendicectomy (25), etc. There were 130 cases of plastic repair for vaginal prolapse. The age of the patients has varied from 5 to 76.

In the series there were five deaths, and in no instance could the fatal issue be attributed either directly or indirectly to the avertin.

The clinical data are briefly as follows:

1. K.117, 8-para, aged 58, was admitted in a collapsed state with complete acute inversion of uterus and vaginal prolapse associated with uterine fibroid. Death occurred twelve hours after hysterectomy.

2. R.156, 4-para, aged 40, with an abdominal swelling of a year's duration, was admitted with a history of vomiting, acute abdominal pain, and fever. Death occurred twenty-eight hours after operation, involving removal of an infected and adherent ovarian tumour.

3. D.762, 1-para, aged 40, was admitted for a marked degree of vaginal prolapse. There was a history of toxic goitre for fourteen years. She developed broncho-pneumonia four days after a modified plastic repair operation, and died ten days later.

4. I.366, 9-para, aged 40, was admitted with a history of breathlessness, menorrhagia, and, recently, of retention of urine. She collapsed four hours after removal of cystic fibroid by total hysterectomy, and died three hours later. The post-mortem revealed chronic toxic changes in the liver, and kidneys.

5. F.289. 1-para, aged 60, was a very obese patient weighing 18 stone, with very advanced and generalized abdominal carcinoma, probably originating in the uterine body. She died from heart failure thirteen days after exploratory curettage.

In addition to these five deaths, there was in hospital during the period under review one death after laparotomy and drainage of an abdominal abscess, which extended deeply into the pelvis, and in which ether anaesthesia was employed.

This mortality rate of 5 in 1,000, or 0.5 per cent., is much below our previous mortality rate of 34 in 1,799 consecutive cases, or 1.9 per cent., with ether, alone or in combination with chloroform, as the routine anaesthetic. We do not claim that in this reduction the sole part has been played by the employment of avertin, for it is possible to cite ways in which the general advance in our knowledge of gynaecological therapeusis within recent years has displaced surgery in favour of conservatism, and has thus contributed towards a saving of lives. During the period under review, for example, over forty cases of acute salpingitis (both gonococcal and streptococcal) were treated palliatively without mortality, and a large number of cases of intractable uterine haemorrhage were treated by non-operative means, such as radium, x rays, etc. By curtailing the necessity for recourse to major surgery these advances have necessarily tended to a general lowering of our mortality figures. Further, the recognition of the common part played by cervical infection in the production of low abdominal and iliac fossa pain, which at times may even assume acute characters, has, by improving our diagnostic weapons, reduced abdominal exploration for suspected appendicitis, tubal and ovarian disease, etc.[3] The greater insistence on a rigid pre-operative investigation and preparation, and in those cases in which post-operative infection is a special risk—for example, in vaginal prolapse—the prophylactic immunization of the patient with a streptococcal and *B. coli* vaccine, have also doubtless helped to reduce the post-operative morbidity and mortality.

After making all these allowances, however, we are convinced that the adoption of avertin as a basal anaesthetic has not only removed much of the distress formerly experienced by the patient, but has in a material way eliminated the risks incidental to all surgical procedures.

Advantages Claimed for Avertin

1. *Comfort of Induction.*—The importance of this factor cannot be overestimated. It is a matter of favourable comment by patients who have on previous occasions experienced other methods of anaesthesia. Apart from this softening of the memories of the operation day, however, we have the advantages accruing from the lessening of the pre-operative emotional stress. The work of Crile[4] and others has emphasized the importance of these questions by directing attention to the profound physical changes induced in the organism by emotion. The sleep induced before the patient leaves her bed implies that with avertin we have a simple and effective method of eliminating a whole series of dread-inspiring preliminaries—the tense expectation of the event, the arrival of the attendant to herald its approach, the agitation accompanying removal to the ante-room, and the administration of the anaesthetic. To many patients these circumstances constitute the most vivid memories of the operation, and it is a fact that the more acute sensibilities of women render them especially prone to such mental suffering.

2. *Reduction of Post-operative Distress and Morbidity.*—In ordinary circumstances the patient sleeps deeply for several hours after the operation, and thereafter for a considerable time the sensations remain dulled, so that the awaking to full consciousness, with its attendant discomfort and pain, is delayed often by many hours. Further, one of the most important of the advantages of avertin is the virtual elimination of the tendency to retching and sickness after the operation. The hospital ward following an operation day is now practically undisturbed in this respect, with the consequent removal of a grave source of distress, not only to the victims themselves, but also to the other patients, and with a consequent lessening of the work of the nursing staff. It cannot be denied that the relief brought in these ways to the patient in the immediate post-operative phase must imply, in addition, a reduction in the risk to life and health. The abolition of the straining incidental to vomiting by leaving the wounds undisturbed diminishes the chance of haemorrhage and sepsis. The importance of these advantages can hardly be overestimated in regard to laparotomy and pelvic floor wounds. Dandy[5] has recently called attention to the same benefits which avertin confers in major brain surgery.

3. *Reduction of Post-operative Pulmonary Complications.*—Post-operative bronchitis and pneumonia, formerly a not infrequent source of anxiety and danger, have been reduced. In a total of 203 cases in which opening of the abdomen was carried out there has been an entire absence of such post-operative pulmonary troubles. Altogether, in the series of 1,000 cases, there have been three instances of mild bronchitis, one of pleurisy, and three of broncho-pneumonia. There was one death from broncho-pneumonia, which developed after a plastic operation for prolapse in a woman with toxic goitre. It is at first sight rather remarkable that, although we employ ether so consistently in conjunction with avertin, we have had only one death from broncho-pneumonia in this large series. The lessened quantity of the inhalation anaesthetic required after avertin plays, of course, an important part. We have come to the conclusion that of equal, if not of greater, moment is the fact that the smoothness of the induction and the elimination of retching, both during the course of the operation and the early post-operative phase, lead to a wholesale reduction in the risk of septic inhalation. Many other observers have referred to the infrequency of pulmonary complications after the employment of avertin. For example, Dandy[5] recently has recorded "250 major cranial operations of every type without mortality from the anaesthetic, no post-operative pneumonia, and no deleterious effect immediate or remote." Dandy believes that with avertin there is a reduction in the risk of aspiration of gross septic material into the lungs. Wülfing,[6] in a recent paper, based on a record of 1,200 cases, refers to the same facts, and states that in his series pulmonary troubles have been fewer and less severe than with ordinary inhalation anaesthesia. The diminished risk of pulmonary irritation makes avertin of special value where anaesthesia is contemplated in patients already suffering from bronchitis, asthma, etc.

It should further be noted that in our series there have been no cases of acute dilatation of the stomach or paralytic ileus. It is possible that the absence of these complications is to be related to the use of avertin, although on this question further data are necessary.

Disadvantages of Avertin

1. *Lowering of Blood Pressure.*—This constitutes one of the most striking effects of avertin. We have found that a systolic drop of 20 to 30 mm. Hg is not uncommon, and in cases of hypertension the fall may be as great as 100 mm. Hg. It commences with induction and usually reaches its maximum within fifteen to twenty minutes. Dr. W. P. Kennedy, working in my department, has subjected the blood pressure during avertin anaesthesia to a close study in 150 cases, and has published the results in the *British Journal of Anaesthesia*.[7] This paper should

be consulted by those interested. In this place it may be stated that our conclusions are that the fall in blood pressure is of no practical significance. Even in the cases showing the maximum drop the general condition has not given rise to any anxiety. In many cases we have noted that the pressure is quickly restored spontaneously or after the administration of the ether is begun. It is quickly readjusted by the hypodermic injection of 1/2 c.cm. of a solution of ephedrine hydrochloride (50 mg. per c.cm.), and this we utilized commonly during our early experience, although, since recognizing that the condition is clinically unimportant, we are now using drugs less and less. Our findings in these respects are paralleled by those of other workers (for example Dandy).

2. *Depression of Respiration.*—Slowing and reduction in the amplitude of respiration are common, and this effect at first gave us some concern. We have, however, seen no harm arise from it. Where severe, it is at once readjusted by administering carbon dioxide. For this purpose we find it advisable that a cylinder of oxygen containing 5 per cent. CO_2 should always be at hand in the theatre.

A minor disadvantage of avertin is the headache of which a considerable proportion of patients complain on waking from the anaesthetic. It is readily controlled by pyramidon 5 grains (repeated after four hours if necessary, although one dose usually suffices).

CONCLUSIONS

1. Employed in a dosage which does not exceed 0.1 gram per kilo of body weight, avertin is a safe drug. In this dosage it may suffice for minor operative work, but a supplementary inhalation anaesthesia is usually required.

2. Its advantages are: (*a*) ease, comfort, and certainty of induction; (*b*) reduction of post-operative discomfort and sickness; (*c*) reduction of post-operative pulmonary complications.

3. In this series of 1,000 unselected cases there have been no deleterious effects, either immediate or remote.

4. There have been five deaths in the series, and in no instance could the fatal issue be attributed to the avertin.

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SOME SIALOGRAMS

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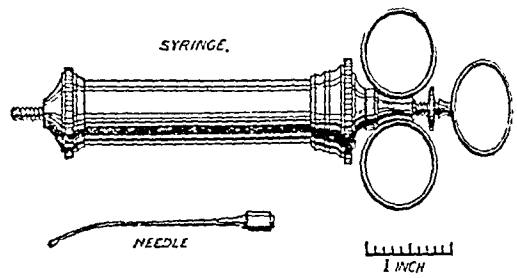
(*With Special Plate*)

Lipiodol radiography has become an extremely useful diagnostic procedure during the last few years. Lipiodol came into its own quite early in the diagnosis of diseases of the chest, tumours of the spinal cord, and sterility. It is an oil containing about 50 per cent. of iodine, and is therefore highly opaque to *x* rays. It is non-toxic, and is only absorbed in small amounts, while the firm nature of its iodine union renders it very unlikely that any patient in whom it is used will develop iodism.

Sialography has been little used because the cases upon which it can throw light are very few; but in a limited number of cases, facts of both diagnostic and pathological interest can be obtained from the study of a sialogram. During the war, sialography was frequently used for the investigation of salivary fistulae. Both parotid and submaxillary glands have easily accessible ducts, so that the technique is not difficult.

TECHNIQUE AND *X*-RAY METHODS

The lipiodol injection is carried out by means of a metal syringe fitted with a plunger, also of metal, as shown in the accompanying sketch. The stem of the plunger is graduated in cubic centimetres, so that the amount of lipiodol injected can be measured. The needle



is a modified lachrymal duct needle made of silver, and has a blunt, slightly bulbous end; it is malleable, so that the curve can be adjusted to suit any given case. The needle is fitted to the body of the syringe by a screw attachment. There is therefore no risk of the patient's mouth being coated with lipiodol from the sudden detachment of the needle during the process of injection. With gentle usage no harm can be done to the lining membrane of the salivary duct. The plunger is fitted with a ring for the surgeon's thumb, and the body of the syringe has two rings for the index and middle fingers. The instrument is thus very easily controlled. The usual precautions of warming the syringe, needle, and lipiodol are taken; there is then no difficulty in driving the lipiodol through the rather fine-bore needle. In our hands the syringe has proved eminently satisfactory. Payne[1] has obtained good results by the use of a simple glass syringe.

Parotid Gland.—The injection is performed with the patient sitting facing the surgeon, in a good light. In injecting the right Stenson's duct, the surgeon retracts the right cheek with his left thumb and forefinger, and looks for the orifice of the duct, which is situated opposite the crown of the second upper molar tooth. The opening in most people is slit-like; in some it is situated on a slight papillary elevation. If there is difficulty in finding the orifice, the gland may be made to secrete by giving the patient a slice of lemon, or simple pressure upon the gland may expel a few drops of saliva and enable the opening to be found. The needle of the loaded syringe is brought up to the orifice of the duct and is steadied by the surgeon resting it upon his left thumb. It is then into the duct for about an inch. The introduction of the needle causes a slight cutting pain, but not sufficiently intense to cause undue discomfort.

The injection is continued gently until the patient experiences a sensation of discomfort in the region of the parotid gland; this indicates that the finer ducts are filled with lipiodol. About 1/2 to 1 c.cm. is used. The needle is quickly but gently withdrawn, and the patient is immediately placed in the recumbent position on the *x*-ray table. One of us (P. R. A.) was able to inject his own Stenson's duct while standing in front of a mirror in a good light. In none of our cases has any untoward complication occurred as a result of injection.

Submaxillary Gland.—The injection is performed in a similar manner. The patient sits with the mouth wide

open and with the tongue pressed firmly upwards against the hard palate behind the upper incisor teeth. The orifices of Wharton's ducts are situated side by side near the fraenum linguae on a well-marked papilla. The needle is introduced as before, but the procedure usually presents more difficulty than in the case of the parotid duct.

X-RAY TECHNIQUE

Parotid Gland.—The patient lies on his side, and the radiographer places the head (as accurately as possible) in the lateral position, so that the two rami of the lower jaw are superimposed. The head is hyperextended so as to open up the space between the jaw and the vertebral column. The mouth is opened and is retained in this position by a cork, which is placed between the incisor teeth. With the patient in this position, the greater part of the shadow of the gland is in front of the shadow of the cervical vertebrae.

Submaxillary Gland.—A lateral radiogram is taken here. The patient's mouth is fully opened and the tongue is pressed upwards to the roof of the mouth. There is usually no shadow of bone overlying that of the gland, but in some cases the hyoid shadow may be superimposed.

USES OF SIALOGRAPHY

1. In some cases of chronic parotitis with subacute exacerbation, sialography reveals that one essential feature in the pathology of the disease is a dilatation of the ducts and of the alveoli.

2. A sialogram is of value in helping to decide whether a tumour in the neighbourhood of a salivary gland is derived from the gland tissue or from adjoining structures. In the former case the gland may be largely destroyed and there may be a considerable filling defect on the sialogram, while in the latter case, even though the gland may be somewhat displaced, it will show normal filling.

3. Injection of lipiodol may be of assistance in the localization of calculi.

4. The precise position and track of a salivary fistula, more especially of the parotid gland, can be traced very easily by means of a sialogram.

NORMAL SIALOGRAMS

Parotid Gland.—By the study of the sialograms of the normal parotid glands which we have so far taken, it would appear that Stenson's duct is formed about the middle of the posterior border of the ramus of the lower jaw by the union of two other ducts of slightly smaller diameter; these pass upwards and downwards respectively, and join Stenson's duct at a right angle. During its course across the face it is joined by five or six very small ductules from the socia parotidis and from the anterior lobules of the gland. At the point where it curves forwards in front of the masseter it is often compressed by the anterior border of that muscle, and the shadow of the lipiodol here is considerably attenuated; the otherwise even course of the duct shows at this point a slight kink. The two intra-glandular ducts run upwards and downwards to the upper and lower poles of the gland respectively, and are joined by numerous smaller collecting ducts. These in turn are formed from an arborization of fine ductules, which are the terminal ducts and alveoli. In a normal sialogram the alveoli show no dilatation, but are represented by the tiny endings of the smallest ducts. The gland reaches below to the angle of the jaw and above to the neck of the mandible.

Submaxillary Gland.—From Fig. 3, it would appear that the intra-glandular portion of Wharton's duct commences at the lowest point of the gland, one and a half inches below the lower border of the body of the mandible and one and a half inches in front of the angle of the jaw. It passes vertically upwards to a point in the submaxillary fossa, about a quarter of an inch above the lower border of the body of the mandible. At this point the duct turns sharply upwards and forwards to the papilla on the floor of the mouth. The figures given will vary to some extent with slight changes in position of the patient's head during radiography. Both sides of the main duct receive smaller ducts, which are themselves made up of a fine arborization of tiny ductules from the lobules. One rather larger tributary passes downwards and forwards from the posterior part of the floor of the mouth to join Wharton's duct at the angle mentioned.

CASE REPORTS

CASE I.—*Bilateral Chronic Parotitis with Subacute Exacerbations*

History.—M. H., female, aged 16. This patient was first seen in 1927, when she came to hospital complaining of a discharge of pus from the left ear. A few months later there appeared a gradual swelling of the left parotid gland, followed a few weeks afterwards by a similar swelling on the right side. At first the swellings were slight and not painful. In July, 1927, the right parotid gland suddenly became painful, red, and hot, and in a few days' time similar changes occurred in the left gland. There was no rise of temperature and of pulse rate, though the girl felt ill and had no appetite. The swellings remained in this condition for several days, but subsided as a result of treatment by fomentation and hot mouth washes. During the following four years the patient has had both glands persistently larger than normal, with occasional bilateral acute exacerbations, precisely as in the first attack. In some of the acute attacks she noticed an excessive discharge of saliva containing some solid debris; in others, the saliva was thick and purulent, and of a disagreeable taste and offensive smell. These changes subsided with the passing of the acute attack. There has been no history of a sore throat or of other illness.

Examination.—During the chronic stage both parotid glands are slightly but definitely enlarged. The surface is lobulated throughout, each lobule being an enlarged single alveolus of the gland. The gland is neither hot nor red, nor is it tender. On pressure, clear saliva can be expressed from the gland. During the acute attack the gland is much more enlarged; it is hot to the touch and tender on pressure, but there is no fluctuation. The surface, which in the chronic stage was lobulated, now becomes quite smooth. On gentle pressure over the gland, saliva containing plugs of pus mixed with epithelial debris can be squeezed out of Stenson's duct in considerable quantity. By this procedure the feeling of tension present in the gland is relieved. At no time has there been any evidence of gross abscess formation, and the condition has resumed its chronic state in from one to three weeks' time. The orifice of Stenson's duct was on some occasions reddened and slightly more prominent than usual, though this was not uniformly the case. The first teeth were healthy, but the second dentition is very unhealthy; the teeth are deficient in enamel, and several have been broken off near the alveolar margins; many of the remainder are carious. The throat and tonsils are healthy. The discharge from the ear has subsided in the last three years. General examination of the patient reveals nothing abnormal. The blood count is normal and the Wassermann reaction is negative. A possibility of parotid calculus led to repeated x-ray examinations, all of which were negative. A probe could be introduced into either duct without encountering any obstruction. A culture from the debris discharged from the right Stenson's duct yielded on one occasion a staphylococcus. The debris was found to consist of desquamated epithelial cells, pus cells, and much mucus.

Sialogram.—The injection of lipiodol was very easily effected. The gland is moderately enlarged. The lumen of Stenson's duct is considerably wider than normal, and each terminal ramification is very much dilated. The picture is very like that obtained after lipiodol injection into the trachea in a well-marked case of bronchiectasis. The sialogram here seems to indicate that the disease is largely an affection of the ducts. Probably the swelling and oedema of the walls of the

smaller ducts cause some obstruction to the outflow of saliva, with consequent dilatation of the alveoli.

Treatment.—The patient has been given dental treatment. She has had a long course of potassium iodide without result. She has received the greatest benefit from regular massage to both glands; this the patient has done for herself after meals for the past few months.

CASE II.—*Chronic Sialadenitis of the Submaxillary Gland*

History.—A. B., female, aged 29 years. The patient was first seen on admission to hospital, under the care of Mr. Flint, in August, 1931. During childhood she had had recurrent lumps immediately below the lower jaw. These used to appear, remain for a few weeks, and then gradually subside, only to recur again after a variable interval. They were hard in consistency and painful to touch; movements of the jaw also caused great discomfort. At the age of 13 her tonsils were removed, and the lumps did not appear again until 1927, twelve years later. In that year the patient noticed a small tumour on the left side of the neck, just below the lower jaw, which varied in size and became swollen and painful after meals. She also complained of a pricking sensation underneath the tongue, and on several occasions had managed to squeeze out from the floor of the mouth stones which were hard, gritty, and the size of a small pea. A fortnight prior to admission the tumour increased in size. It became very tense and tender, and caused considerable pain both in the neck and in the left ear. At no time throughout the illness had there been any suggestion of involvement of the other salivary glands.

Examination.—On admission to hospital the patient had a large swelling below the lower jaw, which extended from the mid-line anteriorly to the angle of the mandible posteriorly. The skin over it looked tense and glossy. There was marked fetor of the breath. The tumour was of a hard, elastic consistency, and was fairly regular in outline; it bulged upwards into the floor of the mouth on the left side of the frenum linguae. During the acute attack it was tender to the touch. Inside the mouth the opening of Wharton's duct was seen to be ragged and inflamed, and a small, white, flake-like calculus was found adhering to the edge of the opening; this was easily removed. About half an inch posterior to the papillary eminence on which the duct opened, there was a fistulous communication between the duct and the mouth, and from this opalescent saliva was ejected at intervals.

Sialogram.—The needle was inserted through the fistula already described, and was passed backwards along the duct without obstruction. About 1/2 c.cm. of lipiodol was injected; of this a small quantity escaped backwards into the mouth. In the sialogram the duct from the gland to the

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(*With Six Figures*)

Lipiodol radiography has become a valuable diagnostic procedure during the last few years, and has now come into its own quite early in the history of the method. of the chest, tumours of the spinal cord, and almost It is an oil containing about 50 per cent. of iodine, and is therefore highly opaque to x rays. It is only slowly absorbed in small amounts from the main duct and almost nature of the tissues with which it comes in contact, any pathological processes which may have corrupted Sialography, however, is a procedure which will develop it is used will develop it. It has been little used because its [illegible] light are very few; but

[illegible] SIALOGRAMS

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[illegible] AND X-RAY METHODS

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[illegible] introduced into [illegible] 1/2 c.cm. of [illegible] and lachrymal sac [illegible] needle [illegible] injection the needle [illegible] squirted into the [illegible] above the [illegible] shadow shows a [illegible] shadow of the [illegible]

[illegible] below the [illegible] made. A [illegible] and removed.

This case illustrates the use of sialography in the diagnosis of a swelling of doubtful nature in the neighbourhood of a salivary gland.

CASE IV.—*Acute Parotid Abscess*

History.—A. H., female, aged 45 years. They [illegible] admitted to hospital in July, 1931, with an [illegible] in the left parotid region, of three days' duration. [illegible] ness began with sharp lancinating pains behind the jaw, and when the patient reached hospital [illegible] ing intense pain. There had been no discharge [illegible] mouth and no history suggesting the passing of [illegible] She also complained of a numbness of the left side of the [illegible] completely obliterated by a large inflammatory [illegible] the parotid region, with much surrounding oedema. [illegible] eyelids were so swollen that the eye was quite invisible. In addition to which there was a paresis of the whole of the left side of the face. Nothing abnormal was noted inside the mouth, but there was a purulent discharge from the left [illegible] which on closer inspection was found to issue from an inflammatory area on the anterior wall of the external auditory meatus. The swelling was hot and extremely tender, and gentle pressure over the parotid caused pus to issue from the external meatus in increasing quantities. There was much oedema and swelling in the neck, and this caused some difficulty in breathing

Treatment.—An incision was made just behind the angle of the jaw on the left side, and a pair of forceps was pushed upwards into the parotid region. A large collection of pus was found and liberated, and a tube was inserted into the abscess cavity. As a result of this treatment the condition rapidly subsided and the facial paresis recovered completely. When seen a month later the swelling had entirely disappeared, although the parotid region was still tender. There was a slight serous discharge from the incision behind the angle of the jaw, and a muco-purulent discharge from the external auditory meatus showed two polypi. Inspection of the external auditory meatus showed two polypi on the anterior wall, and pus was seen to be discharging from this point. The polypi were removed, and histological examination proved them to be composed of simple granulation tissue. A sialogram was taken at this stage.

Sialogram.—Stenson's duct appears normal. There is almost complete absence of the contributory ducts owing to destruction of the gland by the acute inflammatory process.

We wish to thank Mr. J. F. Dobson and Mr. E. R. [illegible] for permission to publish these cases, also Mr. Harrison for drawing of the syringe, and the members of the [illegible] who have given invaluable help and advice.

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open and with the tongue pressed firmly upward the hard palate behind the upper incisor teeth. T OF of Wharton's ducts are situated side by sid fraenum linguae on a well-marked papilla is introduced as before, but the procedure u more difficulty than in the case of the P.S LOND.,

X-RAY TECHNIQUE

Parotid Gland.—The patient lies radiographer places the head (as in the lateral position, so that the jaw are superimposed. The he- ave rise to an acute to open up th space betw eculitis of the colon is com- olumn. The is still rarer for the diagnosis to osition by a any degree of confidence. Such a case eth. With ely on clinical grounds was described by rt of the sha leeler in the *British Medical Journal* of the cervical 30.

maxillar as possible for me to recognize a case of atient's erticulitis with tolerable certainty, as a pwar I had diagnosed diverticulitis with the sha enema, the patient developed an acute e ca

a Norwegian air pilot, aged 40, came to see ar 29th, 1930. He had had some pain in domen for ten days previously. For the first the pain was not bad, but for the last two days severe and kept him awake all night. It came some of them being so severe as to double him him shout. The pain was not related to food, longed to eat lest it came on again. His appetite ar it, and he felt quite comfortable in the intervals from tacks. He had had similar pains about one year form Norway, but was put on a "diet," and had er trouble

ere r attacks he found it painful to urinate. He had m, micturition by day, and at night waked once or nay is also somewhat constipated. His tongue was ere was definite tenderness in the lower abdomen, ject fossae, and in the middle line. The liver and the not palpable. He had large external haemorrhoids h was normal

h ordered an enema, which made him more comfort- The following day he was given a barium enema, which that the pelvic colon was markedly pulled over to the iac fossa, and a number of diverticula were seen. He en given a barium meal, after twenty-four hours, exam- again revealed the presence of multiple diverticula sigmoid flexure pulled over to the right. I therefore the diagnosis of diverticulitis with adhesions of the colon to structures in the right iliac fossa. This was mber 31st, 1930. His pains had greatly diminished, was feeling quite well

m on January 2nd, 1931, his pains came on again, ith much greater severity. He vomited twice, and d to see him at 2 p.m. He had a temperature of his pulse was 100. There was great tenderness and dity of the lower abdomen, particularly on the He looked ill, and there was little doubt that he te abdomen. Armed with the x-rays, I diagnosed ve diverticulitis. Mr Lindsay Sanders was immed- led in. He agreed with the diagnosis, and operated evening. On entering the abdomen a large quantity as immediately seen. A thickened, boggy loop of on was found in the right iliac fossa, with a perfora- diverticulum. A number of other diverticula of the were also readily seen. The perforation was carefully he pelvic colon brought back to the left iliac fossa, abdomen drained. The patient made a complete

is x-rayed again (barium enema) on February 13th, en the loop of the pelvic colon was then seen in the fossa. Numerous diverticula were still visible in the olon. The next barium enema flowed well, showing no tion at the site of perforation, although the loop of on seemed bound down with adhesions.

COMMENTARY

Certain points of interest emerge from a consideration of the above case:

1. The fact that a barium enema examination was performed and a diverticulitis diagnosed a few days before its perforation.

2. The patient was quite well for three days after the barium enema examination, so that it cannot be held responsible for influencing the perforation.

3. Perforation of the sigmoid colon is generally fraught with grave danger, as the contents are notoriously septic. Immediate operation in the above case was followed by a complete recovery.

I wish to record my thanks to Mr Lindsay Sanders for the manner in which he performed an admirable operation with great success.

A CALCULUS IN AN ECTOPIC KIDNEY

BY

J. LLEWELLYN DAVIES, M.B., F.R.C.S.

HONORARY ASSISTANT SURGEON IN CHARGE OF CASUALTY DEPARTMENT, NOTTINGHAM GENERAL HOSPITAL

(*With Special Plate*)

A woman, aged 34, was admitted, in July, 1929, to the Nottingham General Hospital, under the care of Mr F. C. Greig, complaining of abdominal pain and increased frequency of micturition, which had persisted during the past three years. The pain was referred to the lumbar region, to the left iliac fossa, and at times was said to shoot down the inner side of the right thigh. It was usually aching in character, was made worse by exercise, but was relieved by rest. Increased frequency of micturition had recently become very marked, amounting to twelve times during the day and three times at night. For the past eighteen months the act had been painless. About three years ago, for three weeks, haematuria was severe, but since then no blood has been noticed. Seven years ago hysterectomy was done, but no details are available.

On examination the woman appeared to be in fairly good health. There was some tenderness deep to the upper half of the median suprapubic operation scar. The right kidney could not be felt; the lower pole of the left was palpable. The urine was alkaline, and contained pus. An x-ray photograph of the pelvis is reproduced in Fig. 1 (on Plate), and shows an unusual object situated in front of the sacrum.

At Mr Greig's request I carried out a urological investigation. The cystogram reproduced in Fig. 2 proves that the object seen in Fig. 1 is situated above and distinct from the bladder. Cystoscopy revealed a normal bladder and left ureteric orifice, but the right ureteric orifice was red and oedematous, emitting only an occasional sluggish purulent efflux. After intravenous indigo-carmine, there were copious well-coloured efflux from the left side in six minutes, but no dye appeared on the right side after fifteen minutes. A catheter passed up the left ureter easily, but could be introduced only a few centimetres on the right side. The pyelogram of the left kidney is normal. On the right side the catheter has passed inwards towards the promontory of the sacrum, and in one film a little of the pyelographic medium can be seen to have passed down on to the object in the pelvis.

The diagnosis suggested was a dendritic calculus in an ectopic kidney, and nephrectomy was advised.

Mr Greig opened the abdomen through a suprapubic paramedian incision, and found the kidney fixed retroperitoneally in the hollow of the sacrum, with a coil of ileum partly covering it and firmly adherent. The pelvis of the kidney was lying anteriorly with the ureter coming off it and passing down to the right side of the bladder. The renal artery was defined with difficulty owing to the perinephritis, and whether it arose from the right common

iliac artery or from the aorta could not be determined. The kidney was full of phosphatic calculi (Fig. 4).

The woman was considerably shocked by the operation, which was very difficult owing to the firm adhesions, but she made a good recovery, and two years later was reported to be in good health.

COMMENTARY

It is an interesting subject for speculation why the left renal bud developed normally from the Wolffian duct and rose to the lumbar region, whereas the right renal bud, although it grew into a kidney, did not migrate from the site of its origin at the level of the second sacral vertebra.

This case furnishes another example of the common observation that organs congenitally misplaced are more liable to disease.

My grateful thanks are due to Mr. Greig for permission to publish this account, also to Dr. Clayton Rigby and his staff for the *x*-ray films, and to Dr. A. Gordon for the photograph of the specimen.

ENCYSTED EMPYEMA

BY

N. D. PATEL, M.D., M.R.C.P.

(With Special Plate)

Encysted empyemas are not very rare conditions. They are difficult to diagnose without the help of *x* rays, lipiodol, exploratory needle, or artificial pneumothorax. Before the introduction of these special methods of investigation they were often missed during life, the diagnosis being only made at the necropsy. The collection of pus, often pneumococcal, but sometimes tuberculous, may occur in one of the interlobar fissures, between the diaphragm and the under surface of the base of the lung, between the lung and the pericardium, or in the general pleural cavity, in the pockets formed by the adhesions of the parietal and the visceral layers of the pleura.

The following case showed a collection of pus between the lung and the right margin of the heart, and is, I think, sufficiently rare and interesting to be put on record.

R. C., a married woman, aged 28, was suffering from intermittent fever, cough, and progressive loss of weight, for about ten months, when I saw her on June 7th, 1931.

HISTORY

The history was that about a year ago she had pneumonia in the right lung following delivery. For about two months after the attack of pneumonia she remained quite well. Then she had an attack of diarrhoea, which lasted for a few days. Some days later she had a rise of temperature with rigor, and ever since she had an intermittent pyrexia (during the last eight months). For the first month or two, shivering and perspiration were frequently present. For the last four months, she had a slight hacking cough, which was, in her opinion, due to something at the back of her throat rather than in the chest. There was very little sputum. She complained of a nasty taste and stickiness in the mouth. She had lost considerably in weight—36 lb. in the last ten months.

Except for the attack of pneumonia twelve months ago, her previous health had been quite good. She had six children, five of whom had died in infancy; one was alive and well. Her appetite was good, she slept well, and her bowels were regular, though at times loose. She had had amenorrhoea for the last seven months. Her family doctor was treating her for pulmonary tuberculosis, and had sent her to Panchgari, a hill station near Bombay, popular with tuberculous patients. She stayed there for a month under the care of a specialist, but her condition got worse, and she returned to Bombay.

EXAMINATION

On examination she was found to be anaemic, wasted, and obviously in a toxic state. The fingers were tapering, parrot-beak type, and showed early clubbing. Her breath was foul, and there was pyorrhoea alveolaris. Her temperature was 102° and the pulse rate was 100 per minute.

Examination of the lungs revealed nothing abnormal, except a few rhonchi in both lungs. The cardio-vascular, abdominal and nervous systems showed nothing amiss. The liver and the spleen were not palpable.

Blood examinations carried out on several occasions showed no malaria parasites. There was a secondary anaemia, the red blood cells being 3,500,000 per c.mm. and haemoglobin 55 per cent. There was also a moderate leucocytosis, the white cells being 13,500 per c.mm. The Wassermann reaction was negative.

Sputum, though scanty, was repeatedly examined for the presence of tubercle bacilli, but all examinations were negative.

Examination of the urine showed the presence of a pyuria. It was acid in reaction, and contained albumin and pus. A catheter specimen showed pus cells, *B. coli*, and staphylococci. The culture of urine showed these organisms and a pure growth of pneumococcus. No tubercle bacilli were seen and inoculation in a guinea-pig also proved negative. An *x*-ray examination of the urinary tract did not show any abnormality.

X-ray examination of the chest showed that the heart was normal in size and in position. The lungs also showed no lesions but a triangular shadow opposite the right second and third costal cartilages just above the right border of the heart. It was homogeneous, and had clearly defined margins (Fig. 1, on Plate). Three weeks later, an *x*-ray picture was taken after injection of lipiodol. It shows up the round mass clearly, and at the same time gives an excellent picture of the normal bronchial tree (Fig. 2). The shadow suggested an enlarged mediastinal gland, either tuberculous or Hodgkin's disease, a cold abscess, a cyst, a neoplasm, or an encysted empyema.

The patient was treated for pyelitis with large doses of alkalis by the mouth, neotropine, and cylotropine injections in turn. By this treatment fever could be controlled and pus in the urine reduced, but only for a time, presumably because the kidneys were only acting as a filter, the focus of infection being in the lung.

DIAGNOSIS

Pyrexia of long duration, coming on after an attack of pneumonia, the obviously ill and septic look of the patient, clubbing of the fingers, leucocytosis, and the *x*-ray appearances of the chest suggested a collection of pus in the chest, and the diagnosis of an encysted empyema was made. Absence of the local physical signs in the chest was explained by the small size and situation of the empyema. As the patient was not getting any better, surgical intervention was considered, but she refused operation, and discharged herself after a month's stay in the hospital.

As the collection of pus is very small and so near the lung bronchi, it is to be hoped that it will either get absorbed or that it will rupture into the bronchus and be coughed up.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

THE SELVAGE STITCH

One of the most annoying occurrences to the surgeon is the peritoneum which will not hold sutures. This is especially trying when there is some difficulty also with the anaesthetic and the patient is not properly under. The abdominal muscles are rigid, and the peritoneum retracts far under the edge of the wound on either side. Attempts to draw it together result in a series of tears until the edge looks like a fringe. The paramedian incision, with displacement of the rectus outwards, makes it even more troublesome owing to the overlap of the muscle.

One solution is to obtain better anaesthesia; but there still remain those cases in which the patient does not take the anaesthetic well, and the abdominal wall is more or less rigid with retraction of the peritoneum; or the

peritoneum is of gossamer-like texture, and extremely difficult to suture without tearing, even with good relaxation; or, as in the case of large incisional hernia, the peritoneum is sound enough, but there is a wide gap, and considerable force has to be used to get the peritoneal edges together.

The following simple method which I have devised is so effective that I am sure it will be found a "stitch in time" If it has ever been described before, I am not aware of it.

Instead of making any attempt to suture the two edges of the peritoneum, take a long piece of No 2 catgut on a round needle and, commencing at one end of the wound, oversew the edge from one end to the other (Fig. 1). Arriving at the

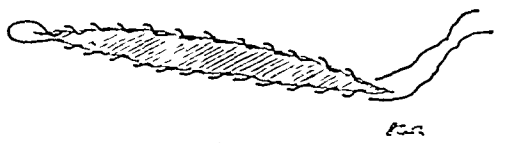


Fig. 1.

other end, a loop is left and held in forceps The suture is continued along the other edge to the point of commencement where the two ends of the suture are grasped in a second pair of forceps (Fig 2) The two pairs of forceps are now



Fig. 2.

pulled upwards and apart by the assistant to make longitudinal traction on the edges of the peritoneum. The selvage stitch obtains a spiral grip of the edge of the peritoneum—the greater the longitudinal traction the firmer the grip.

The usual peritoneal suture is now commenced, and by keeping the needle as close as possible to the outer side of the catgut forming the selvage stitch there is no further splitting, however hard the suture is drawn (Fig 3) There

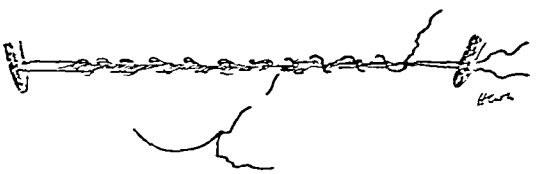


Fig 3.

is no necessity to tie the selvage stitch at the ends of the wound, it has done its work when the peritoneal suture is completed and is, of course, tightly held by it

Liverpool H. C. W. Nuttall, F.R.C.S.

CARCINOMA OF CERVIX WITH TWIN PREGNANCY AND NORMAL DELIVERY

Cases of carcinoma of the cervix and pregnancy with delivery *per vias naturales* have been recorded. Generally these have been diagnosed before delivery, and if not terminated by Caesarean hysterectomy there has been severe post partum haemorrhage. In 1913 Mylvaganam[1] reported a case of advanced carcinoma of the cervix uteri containing twins, treated by vaginal hysterectomy at the fifth month In this case pregnancy was not diagnosed, the foetuses being discovered only at operation. The indication for operation was the severe haemorrhages. In 1918 B. P. Watson[2] reported a case of cancer of the cervix complicating triplet pregnancy, treated by Caesarean Wertheim hysterectomy at the fifth month. Pregnancy was diagnosed, but from the second month haemorrhages and foul vaginal discharge were present. The following case appears to be unique, as I have failed to find a similar one recorded in the literature.

I was called in by a midwife to Mrs. B., aged 38, a 2-para, on account of a prolonged first stage. The history of the pregnancy was uneventful except for a certain amount of low backache. There was no history of offensive discharge or of bleeding The last menstrual period had commenced on September 23rd, 1930, had lasted five days, and labour had begun on April 27th, 1931. There had been a show, but the pains were slight and infrequent

On examination the abdomen was seen to be very pendulous. Twins were easily diagnosed On vaginal examination the os was the size of a half-crown It was noticed that the cervix was hard and irregular in outline. No ulcer was felt, and there was no bleeding on examination

In view of these findings, and the absence of any history pointing to carcinoma, I took the condition of the cervix to be due to the scarring of lacerations at the first confinement. This would also explain the slow dilatation I gave a hypodermic injection of morphine 1/4 grain and hyoscine 1/100 grain. There was very little progress for twenty-four hours At 1 30 a.m. on April 29th a live female child was born (vertex), followed by a live male child (breech) three hours later There was no difficulty in delivery, and there were two independent placentae There was some brisk post-partum haemorrhage, but this was easily controlled by injection of pituitrin 1 c.cm

The infants were premature and tongue-tied. The fraenum linguae was incised, and by the third day they were able to suckle. The mother developed a temperature of 101° F. and a pulse rate of 116 on the third day She also had herpes labialis. The next day the temperature was normal. On the fifth day the male infant developed bullous impetigo (pemphigus neonatorum), and, despite vigorous antiseptic treatment, died on the eighth day The female infant developed pemphigus on the sixth day, and died on the ninth day The mother, whose condition, except for extreme lassitude, was normal, got up on the tenth day Her lochia had been normal. On the thirteenth day she took to her bed again. On the fourteenth day she developed pulmonary oedema, became comatose, and died Post-mortem examination showed carcinoma of the cervix with glandular deposits.

The interesting points in this case are.

1. The absence of any symptoms of carcinoma during the pregnancy—for example, haemorrhages or blood-stained discharges.
2. The absence of severe post-partum haemorrhage, a possible complication, which the textbooks stress as an indication for Caesarean hysterectomy.
3. The viability of the infants.
4. The probable infection of the infants with pemphigus from the carcinomatous area.

Battersea J. L. Blonstein, M.R.C.S., L.R.C.P.

[1] Mylvaganam, H. B: *Lancet*, 1913, ii, 930.
[2] Watson, B P.: *Amer. Journ. Obstet.*, 1918, lxxvii, 247.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

SOUTHERN BRANCH: PORTSMOUTH DIVISION

Indications for Exploration of the Abdomen

The second scientific meeting of the session of the Portsmouth Division was held at Southsea on November 12th, with Dr McAskie in the chair.

Mr. Zachary Cope delivered an address on the indications for exploration of the abdomen He began by remarking that the number of abdominal explorations—opening the abdomen because of unexplained symptoms—was diminishing with the progress of knowledge The pioneer work in the twenty years following 1880, when such exploratory work really began, ushered in a period of clearer definition of many of the clinical pictures, and of more scientific methods of diagnosis It was now

exceptional for the abdomen to be opened without the surgeon having a fairly approximate idea of the condition he was going to find. The introduction of radiology had rendered it habitually possible to see the silhouette of the crater of a gastric ulcer, the shape and size of the renal pelvis; to detect constriction of the gut at the oesophagus, pylorus, or colon; to estimate the degree of obstruction of the cystic duct; and to give an assured and definite opinion as to the presence in the abdomen of calcified glands or an early foetus—not to mention the various forms of stone in the renal and biliary tracts. Radiological exploration constituted a bloodless and almost painless abdominal exploration, though on occasions it was still regrettably neglected. Test meals, blood examinations, biliary drainage, and the biochemical investigation of renal function had greatly helped; but, despite the assistance of various instruments for seeing the interior of cavities, such as the cystoscope and sigmoidoscope, considerable territory was still unexplored.

The indications for exploration in chronic conditions must be carefully distinguished from those in acute disease when certain methods could not be used. Generally speaking, if all the usual diagnostic methods had been unsuccessfully tried in a chronic case with obscure abdominal symptoms giving rise to anxiety, exploration was advisable. There were three groups of such cases. In the first there was obviously some anatomical alteration within the abdomen—for example, a tumour. It was particularly difficult to determine the nature of certain swellings, as in the case of some glandular enlargements, tumours arising in the retroperitoneal tissues, hydatid growths, secondary malignant deposits in the peritoneum, and some tuberculous masses. Moreover, when a chronic septic focus or abscess persisted until such time as the original acute attack had been forgotten, only exploration could differentiate it from a mass due to malignant disease. A chronic septic abscess (as from a perforated appendix) might be unattended by fever or noticeable leucocytosis. Tumours in the abdomen might portend serious trouble, and their nature should never be left in doubt. Diagnosis of ascitic accumulation might be impossible without abdominal exploration. Common causes were hepatic disease, tuberculous peritonitis, and malignant deposits on the peritoneum. All the necessary information could be obtained through a small incision under local anaesthesia. Mr. Cope then described an instrument he had devised for intra-abdominal examination through a one-inch incision. Another group of cases comprised those of serious physiological derangement, which might be due to organic disease amenable to surgical treatment. Jaundice, persisting for some weeks, might necessitate exploration if no tumour could be felt and a cholecystogram provided negative evidence of gall-bladder disease. If persistent and painlessly increasing, carcinoma of the head of the pancreas was indicated, but one could never be absolutely sure that there was no stone in the common duct. Even in the more serious condition considerable benefit followed anastomosis of the gall-bladder with the duodenum or stomach. Recurrent or persistent bleeding from the lower bowel without a sufficiently obvious cause necessitated exploration. Mr. Cope referred to a case which was at first thought to be one of haemorrhagic colitis, but later proved to have a papillomatous growth of the sigmoid. Mucous colitis had also been the first erroneous diagnosis in cases of renal tumour and cancer of the sigmoid. Increasing constipation in a patient whose bowel action had previously been regular was of great significance, even in the absence of other symptoms. If it persisted in spite of treatment, and the general health deteriorated, some stricture of the large bowel was probable. Alternate attacks of constipation and diarrhoea often indicated a growth of the colon. Vomiting could usually be diagnosed radiologically, but in one case of cancer of the upper jejunum, with copious vomiting, the radiogram showed no evidence of stricture. Conditions which sometimes gave no other indication than pain included: early gastric cancer; ulcer of the second part of the duodenum; cancer of the small intestine; tuberculous peritonitis and adenitis of the mesenteric glands; some cases of appendicitis, cancer of the colon, diverticulitis, cholecystitis, and gall-stones. With most organic abdominal conditions the pain was intermittent or periodic, and fairly constant in character. Tending to get worse in periodic attacks, it was associated with general constitutional depreciation, and might be accompanied by vomiting or sweating. In the early stages of the disease visceral pain was poorly localized unless the parietes had been reached. When a patient complained of pain which was constant in duration, had no definite relation to meals, was agonizing in intensity but unaccompanied by vomiting or sweating, and did not affect sleep, a mental origin should be suspected.

With the patient in the throes of an acute attack of abdominal pain there could be no waiting for an extensive series of investigations. By careful attention to minor points most of the causes could be diagnosed. In the more doubtful cases a consultation should be secured at once, so as to divide the responsibilty. Severe abdominal pain lasting more than six hours generally had a surgical significance. In every case the reflexes, pupils, urine, rectum, chest, and hernial openings should be carefully examined. If there was any likelihood of the condition being perforated ulcer, obstruction of the small intestine, appendicitis of the obstructive type, or a severe intraperitoneal haemorrhage from ectopic gestation, abdominal exploration was imperative. In frank peritonitis of doubtful origin it was generally wise to explore and drain, only dealing with the primary lesion if little manipulation was entailed. Cases of peritonitis seen in the late stages were sometimes better treated conservatively for a while, exploration being withheld until the patient's general condition had improved. Cases of severe distension without vomiting, due to dilatation of the large bowel, were sometimes puzzling, but there was usually time to give several enemata to diminish the distension, and so facilitate a more exact diagnosis. Cholecystitis and renal disease might closely simulate obstruction of the large bowel. In the absence of relief from enemata, exploration or a blind caecostomy would be necessary. In abdominal injuries few mistakes could result if exploration was performed in every case where severe pain lasted for several hours, and was accompanied by bilious vomiting, a rising pulse, persisting rigidity, or deep local tenderness with shallow respiration. A steadily rising pulse rate was in itself sufficient to call for exploration. Symptoms which might be due either to thoracic or abdominal disease presented a very difficult problem. If doubt existed after the most thorough clinical examination, a very limited exploration might be advisable. Every acute abdominal condition severe enough to simulate thoracic disease would give rise to an effusion into the peritoneal cavity of clear fluid, pus, or blood. If, under local anaesthesia, a one-inch incision was made into the abdomen, no harm was done to the patient, and the differential diagnosis could be made.

The Anglo-Yugoslav Children's Hospital, Belgrade, celebrates the tenth anniversary in its present building with the publication of a report on the varied and extensive work involved. During the period reviewed over 131,000 out-patients and nearly 7,000 in-patients have been treated. Serbian probationers and nurses have been trained, and the hospital has maintained its British characteristics, a matter of congratulation for the founder, Dr. Katherine Macphail.

Reports of Societies

NERVOUS DYSPEPSIA

At a meeting of the Section of Medicine of the Royal Society of Medicine on November 24th, with Dr. H MORLEY FLETCHER in the chair, a discussion on nervous dyspepsia was opened by Dr ROBERT HUTCHISON

Dr Robert Hutchison said that the expression "nervous dyspepsia" was a question-begging epithet He defined dyspepsia as discomfort during digestion which originated in the stomach, that excluded other intra abdominal conditions, even though the stomach functions were also disordered "Nervous dyspepsia" would exclude all organic disease, on the other hand, it should not be used as synonymous with all forms of functional disorder There were functional disorders due to other than nervous causes—for example, dietetic errors acting upon a stomach of low tone He suggested three groups of conditions which might be spoken of as nervous dyspepsia: (1) those of psycho-neurotic or central origin, due to mental disturbance or the anxiety state, (2) those due to fatigue, apart from mental perturbation, in this class the endocrine system played a part, but he thought the nervous system was also included, (3) the group in which no disorder of function in the stomach could be demonstrated, no loss of tone beyond what a great many people suffered without any trouble at all, those in which perhaps surgical exploration had been carried out without anything being found, and yet the patient habitually complained of symptoms referred to the stomach These might be spoken of as psychogenic, and might be due to a lowering of the threshold of consciousness They were cases very common in the visceroptotic type of woman There were two main groups of functional disorder the hyperasthenic and the asthenic Exaggerated nervous instability tended, through the vagus, to produce the first, fatigue and depressing emotions, the second He thought that every person had a tendency in one or other direction The hyperasthenic type was seen particularly in the sensitive "live wire" type of man, who threw a great deal of energy into everything he did, he tended to end up with duodenal ulcer Such a man, if overworked, might get an accentuation of his high tone and suffer from hyperasthenic dyspepsia On the other hand, in women who were subjected to depressing emotions, a lowering of tone below the normal expressed itself in the asthenic type of nervous dyspepsia Was there a disorder of sensory function? The gastric mucous membrane was normally insensitive, but possibly sensations not felt in health might reach consciousness in the psychogenic group, which comprised so many visceroptotic women It was only in that way that cases could be explained in which the patient complained of constant discomfort or even real pain, and for which the most careful exploration showed no cause The symptoms were rarely severe The presence of real as distinct from imagined pain might almost be said to negative a diagnosis of nervous dyspepsia The symptoms were usually discomfort, flatulence, and nausea, they varied from day to day, and were not much influenced by diet Diagnosis could only be made by exclusion, and must be based on a careful history and a thorough physical examination, supplemented by radiography and test meals if necessary Treatment should aim at removal of the cause. In the psychoneurotic cases this might involve the use of some form of psychotherapy to deal with the patient's anxiety state In the fatigue cases rest was the obvious procedure, rest in bed in the case of the more severe, and rest by way of a holiday in the case of the less severe Just at the present time there were a considerable number of nervous dyspeptics among business men who were worried by the financial situation In such cases symptomatic treatment might be required until the reason for the anxiety disappeared In the hyperasthenic type the treatment should consist of a bland diet, antacids, bromides, and belladonna, in the asthenic type, a dry diet, tonics, and physiotherapy But the real difficulty was the treatment of the psychogenic group, and he knew of no method which was uniformly successful or even reasonably satisfactory

Dr T A Ross said that more than half the patients whom he saw suffering from psychoneurosis also complained of dyspepsia A large number of the psychogenic patients had a fixed idea, which not only could not be removed by psychotherapy, but could not even be approached They would not even begin to discuss their complaint except from the premise that they had something which needed physical attention They were greatly helped for the time being by any form of treatment, provided it was sufficiently painful He had nothing to say which was helpful regarding these people They were very angry if it was suggested to them that their dyspepsia was of psychological origin He was not in complete agreement with Dr Hutchison on the question of fatigue For most people there was not only fatigue but a lowering of nervous energy, to use an electrical simile, amperage had been lost, and consequently there was a lowered potential, but it was equally possible that the full amperage or voltage was there, and the only thing that was wrong was that the patient for some reason or other would not use it Both exhaustion and dyspepsia might be effects of a common cause—namely, anxiety of some kind The treatment of this anxiety might be either radical or palliative It was well worth while to try palliative psychological treatment For most cases it must be the only thing one could do, because any analytical inquiry, at the shortest, meant three or four months with almost daily séances The palliative treatment should consist in discussing the current anxieties which the patient had, and in helping him to overcome them One of the most important of these anxieties was the question of diet The patient had made up his mind that this or that was an indigestible food, and if one could get him to see that practically all foods given in an ordinary household were digestible, he would find no difficulty in digesting them The speaker confessed that he was heretical enough to believe that all diet and drugs had their good effect through psychotherapy, and not through any chemical action they might possess A radical treatment would imply some form of analysis Occasionally one could not decide for many weeks what the patient's anxiety really was; the patient would deny anxiety for a long time, and then the truth would come out The aim of psychotherapy was not so much to relieve this or that symptom, but to get at the reason why the patient was anxious

Dr. H BEDINGFIELD said that nervous dyspepsia was to be regarded as an entity and to be differentiated from the physiological protective dyspepsia This condition had greatly increased since the war In women the symptoms began to get troublesome about the age of 18 to 20, and in men from 25 to 30 They were more common in married men than single, and in single women than married Pain tended to be localized most frequently in the upper abdomen Nearly all the cases fell into two groups those with intermittent symptoms, alternating with long periods of good health, and those in which the symptoms tended to persist, fluctuating in intensity and accompanied by signs and symptoms of nervous and emotional instability Physical examination revealed nothing to account for the symptoms From the physician's point of view, the chief interest of these cases was the explanation of them Although the symptoms appeared comparatively late in

life, in every case that he had investigated so far there had been a history of digestive disturbance of some kind in early infancy. Health might be defined as an adjustment between the individual and the environment. This integration might be upset by inherited, congenital, or acquired defects, and it was legitimate to look to the cortical personality for an explanation. At the dawn of mental life there already existed a mature, ready-made, psycho-physiological mechanism to reflect any disturbance in development. Such disturbance might be brought about by unsuitable alimentation, by some congenital or inherited defect in the primordial protoplasm, or by lack of harmony in the development of cortical personality. This last depended largely on the emotional influences which played around the child. Any disharmony would be reflected physiologically in the gastro-intestinal tract, as being the only site of physiological mechanism available, and later maladjustments would tend to use the same path. Dr. Bedingfield discussed the psychological factors involved, pointing out that severe and prolonged disturbance would lower the threshold until sections of the gastro-intestinal tract rose up into consciousness in the form of pain and discomfort. With regard to the treatment of these individuals, analysis was the only possible method of relief. There was no question that the severe cases were psychotic in nature, but, as Dr. Ross had said, utterly unapproachable.

Dr. J. A. RYLE wished to add to Dr. Hutchison's list dyspepsia due to nervous tricks, such as air swallowing. There were cases of dyspepsia in which air swallowing was the main cause, and others in which it was subsidiary. This trick sometimes started with a simple naso-pharyngitis, and he had seen it started after an anaesthetic, but most of all it was a symptom of an anxious mind. The woman suffering from chronic anxiety practically always had this symptom, sometimes in extreme form, and the important thing was the ease with which it could be recognized clinically. One had only to ascertain from her that it was a form of flatulence and eructation which continued. It was an important symptom to treat, and, when removed, a large part of the dyspepsia, sometimes the whole of it, could be cured. In the mistreatment of anxiety dyspeptics the chief trouble was diet. If one could get it out of their heads that dyspepsias were due to food it would be a good thing. It was only in the minority of cases that it was due to food, but often, he with the advised patients, one article of diet after another was a one-inch incision, consequent loss of weight, so that a those of serious physiology beginning a spare person ended, be due to organic disease and thin, or even emaciated. It Jaundice, persisting for some who was to blame for this exploration if no tumour could be ably a doctor, or various gram provided negative evidence of gen too often cut out If persistent and painlessly increasing, With the female head of the pancreas was indicated, but ing to be under be absolutely sure that there was no stone was encouraged duct. Even in the more serious condition benefit followed anastomosis of the gall-bladder ed what Dr. duodenum or stomach. Recurrent or persistent ation that from the lower bowel without a sufficiently obvious d until necessitated exploration. Mr. Cope referred to only be which was at first thought to be one of character of the colitis, but later proved to have a papillon One patient said of the sigmoid. Mucous colitis had also "Doctor, aren't erroneous diagnosis in cases of renal tumour en tomatoes?" of the sigmoid. Increasing constipation entific sanction. whose bowel action had previously been regadition, great significance, even in the absence of other pinion almost If it persisted in spite of treatment, and pepsia should health deteriorated, some stricture of the large f the normal probable. Alternate attacks of constipation extreme imrhoea often indicated a growth of the colon.

portance for the maintenance of health and the attainment of longevity. To explain what he meant by this class of normal nervous reactions, he would take the case of a physician who, after a strenuous morning's work, unwisely tried to take an ordinary midday meal with his family, but in half the time taken by the other members of the family, before leaving to keep an important early afternoon engagement. He vomited while in his car on the way to his engagement. In his temporary state of mental strain he clearly ought not to have taken an ordinary meal. Those who, in such circumstances, could eat a fairly full meal with apparent benefit were those bodily and mentally robust individuals who, if they habitually did that kind of thing, paid the penalty by unnecessary degenerative disease, and died at 60, whereas those who were "hampered" by the nervous reactions in question, which were really protective in nature, were more likely to remain healthy and live to 90.

Dr. BLACKBURN, as a general practitioner, gave his experience that the commonest condition found in nervous dyspepsia in children was an intolerance of fats; he had found the same thing in adults. Dr. STOLKIND related some cases from his experience illustrating the influence of mind on gastric function, and Dr. MIRVISH said that he thought it was important to consider how far a case was really functional, and how far there was possibly an organic basis.

Dr. HUTCHISON, in reply, said that there had been more agreement shown in the discussion than might have been anticipated. It was a sincere relief to him that these troublesome cases of "abdominal women," in which the physician could find nothing, were really psychotic. With regard to air swallowing, he was always teaching his students that aerophagy was not dyspepsia at all; it was nervous, but it appertained to the oesophagus, not to the stomach. He agreed that there was over-dieting of the nervous dyspeptic, but one must not go too far in the other direction. There were certain common-sense simple rules which it was worth while to impress upon these patients, though finicky menu-writing was quite unnecessary.

ACTIVE IMMUNIZATION IN VIRUS DISEASES

At a meeting of the Section of Comparative Medicine of the Royal Society of Medicine on November 25th, with Dr. J. A. ARKWRIGHT in the chair, a discussion on active immunization in virus diseases was opened by Dr. C. H. ANDREWES.

In attempting active immunization against a virus disease, Dr. Andrewes said, the ideal should be to produce an immunity at least as good as that which follows the naturally contracted disease, an immunity dramatic as regards solidity and duration. At present this ideal seemed to be attainable only by producing a mild attack of the disease. The use of killed or apparently killed virus only conferred immunity of a much lower order than this. Some observers believed that the production of such immunity depended on the persistence of the virus in the animal body, although there was no evidence either in favour of or against this view. Those who believed it could conclude that the living virus was essential to the production of immunity of a high order. A mild attack of the disease might be produced by the inoculation of attenuated virus; sometimes a suitable virus was found ready made, like vaccinia, and sometimes the attenuated virus could be obtained in a stable form by passage through a series of animals—for example, rabies fixed virus. More often it was necessary to produce a mild attack of disease by inoculating fully virulent virus into a partially immune animal. The partial immunity might

be achieved actively by means of formalinized, apparently killed, virus, or passively by means of inoculations of virus and serum into opposite sides of the body (side-to-side method). In a few cases—for example, yellow fever—serum-virus mixtures could be made outside the body and injected at one site. In those cases in which this method failed it was probable that the antibody of the serum acted rapidly on the virus before injection. The mechanism by which these methods produced an attenuated disease was obscure. The virulent virus was believed to multiply in the body, but not quickly enough to overcome the partial immunity induced. It was found that the active immunity produced in rabbits by the side-to-side inoculation of neuro-vaccinia and anti-vaccinal serum was developed very rapidly, within twenty-four hours. There was a danger that the production of immunity, by giving a mild disease, might lead to the spread of disease; animals reacting abnormally to vaccination might infect others. Waldmann, Trautwein, and Pyl had reported that cattle hyper-immunized against foot-and-mouth disease might excrete virus in their urine as long as 246 days after inoculation. Studies on similar lines were needed in other virus diseases.

Professor W. J. TULLOCH gave a brief summary of his work, and that of Dr. James Craigie, on vaccinia. The diagnostic value of the vaccinia flocculation test and its specificity, he said, appeared to be proved, but his findings had been discussed in a recent publication; he therefore proposed to deal with further investigations which broke new ground. It was possible to separate extracts of vaccinia material into two moieties, one of which was markedly flocculable and of low infectivity, while the other was not readily flocculable, but was highly infective. The separation could be achieved by filtering suitably prepared extracts of the material through a Seitz E. K. disk, and then—the disk having been washed to remove any flocculable substance contained within it—by reversing the disk, washing in the reverse direction; the filtrate was flocculable but not infective, and the material obtained by the reverse process was infective but not markedly flocculable. Flocculable substance might be the product of the living virus, a product of the dead virus, a product of the invaded tissue, or a combination of these. Possibly its relation to the virus might be akin to the relation between pneumococci and their specific carbohydrates. He had found that flocculable substance inoculated into normal rabbits failed to stimulate the production of flocculating antibody, but inoculated into rabbits previously vaccinated by dermal vaccination alone it gave rise to a marked development of flocculating antibody. The suggestion that the filtrate contained living virus in quantities sufficient to act as a secondary stimulus, but insufficient to act as a primary stimulus, seemed unlikely in view of the large doses used. Two points emerged from the experiment: first, that a material which failed to act as a primary stimulus might act as a secondary stimulus to the production of antibodies; and secondly, that there was so close an association between flocculable substance and virus that it looked as though flocculable substance was the product of the virus, living or dead. Dr. Craigie had recently shown that flocculable filtrates, proved by testicular inoculation to be free from virus, led to an early and severe response when inoculated into humans who had already been immunized by ordinary vaccination.

Major DUNKIN said that in dog distemper the dog which had recovered from a natural attack usually enjoyed life-long immunity, but there were a few exceptions in which a second or third attack had been said to occur. These, however, might be bacterial infections, with symptoms resembling virus distemper. Immunity to distemper might be established in dogs and ferrets by the use of formalinized virus. Single doses did not confer lasting immunity, but two doses injected at intervals of a week or a fortnight produced an immunity of longer duration. Vaccine followed by living virus produced an active and durable immunity. The method of side-to-side injection of serum and virus was promising, but needed longer study. The injection of mixtures of serum and virus gave disappointing results. Virus undergoing degradation from storage in a moist condition reached a stage at which it would fail to reproduce the disease, but acted as an efficient antigen. Subinfective doses of living and virulent virus did not appear to produce immunity. It was possible that an immunized animal became a perpetual carrier of the disease, though attempts to recover the virus from such animals had failed.

Dr. S. P. BEDSON said that the ideal to be aimed at was the maximum of immunity with the minimum of danger and discomfort. He described some observations on psittacosis virus in which he had found that the immunity conferred by an attack was mild; he had also found that the guinea-pig was insusceptible to the disease, but its serum had little immunizing power. It was often said that a "killed" virus was not really killed, but only apparently dead. He had experimented with herpes virus, and had found that formalinized virus produced better immunity than virus which had been steamed for twenty minutes, or than formalized virus which had been steamed for the same period of time.

Mr. R. E. GLOVER said that so far as animals were concerned the serum and virus methods appeared to give the best results. The difficulties lay in maintaining and distributing a potent strain of virus, and in the danger of infection. In his opinion it was better to run the risk of infection than to use a method which gave only a fleeting immunity. He had carried out experiments with a strain of pigeon-pox of low virulence, from which the severity of the lesions produced by high dilutions had been approximately equal to that produced by low dilutions. Single doses had been found to give a partial immunity of short duration, while two doses gave almost complete immunity, declining after four weeks. By allowing formalin to act on the virus for varying periods of time it was found that a point was reached at which the quantity of living virus was insufficient to set up the disease, but an adequate amount remained to provoke an immunity response; at a further stage the virus was destroyed and became antigenetically inert. He described some experiments designed to procure immunity by the use of vaccines made from virus cultured *in vitro*; pigeons receiving culture vaccine had shown only a trace of immunity.

Dr. M. H. GORDON thought that modern investigations tended to show that virus was composed of very small organisms. Vaccinia virus was apparently held up by an ordinary filter. Did these organisms produce their effects by means of toxins or endotoxins? If some clear conception of the nature of vaccinia virus could be obtained better success might be hoped for in dealing with the obscurer types.

Professor J. C. G. LEDINGHAM believed that the ideal was to produce what immunity was possible by the use of killed virus. It was quite justifiable to use living virus to immunize animals, but with men he thought only killed virus should be used. Major T. DALLING said that quite a high degree of immunity to canine distemper could be procured by the use of even one dose of attenuated or killed virus, and even more by two doses. Although this appeared to have considerable duration in the laboratory, in the field results were more doubtful. Mixtures of serum and vaccine were ineffective in producing immunity

to dog distemper. Dr. WILSON SMITH, working with neuro-vaccine, had found that upon boiling an extract made from inoculated testis for fifteen minutes, no protein reaction was obtained, but there was a precipitin reaction with vaccinia serum, possibly of a carbohydrate nature; the extract would not, however, produce immunity in rabbits.

Professor G. H. WOOLDRIDGE asked how long infectivity might remain after vaccination—for example, with dog distemper. An infective dog might be dangerous if admitted to a veterinary hospital where the patients were temporarily out of reach of the general infection of the street. It had been found in America that animals recovering from swine fever often remained carriers. Was it likely that dogs vaccinated against distemper became carriers? Dr. R. A. O'BRIEN said that it was not easy to say. He had placed recently immunized pups with pups known to be susceptible to distemper, and it was only possible to say that he had never had any proof that the immunized pups were infective to others. Captain S. R. DOUGLAS agreed that he had never had a case of an immunized dog infecting other dogs, but quoted a doubtful case in which an immunized ferret had been suspected of carrying infection. In controlled experiments where the disease was mild, dogs did not appear to be infective, even where there was a definite reaction. With a severe reaction—that was where immunization had failed—the dog was able to pass on the disease. Dr. J. T. EDWARDS said that no infection took place between healthy cattle and cattle immunized against (?) rinderpest. He had immunized 20,000 cattle in Mysore, with the extremely low mortality of 0.6 per cent. Rinderpest did not break out in any of the villages to which the cattle were sent. Such a mortality, though admirable in cattle, would not be tolerated among human patients.

The PRESIDENT said that he was interested to hear that dead vaccines were beginning to look up. He thought it might be worth trying the effect of large quantities of dead vaccines, perhaps given in several different places in the body. The observation that vaccinia virus might be split into two parts, one of which was possibly of a carbohydrate nature, seemed to him to be particularly interesting.

LIVER FUNCTION TESTS

At a meeting of the Medical Society of London, held on November 24th, with the president, Mr. HERBERT TILLEY, in the chair, a discussion took place on the methods of determining liver function and their value.

Sir HUMPHRY ROLLESTON, opening the discussion, first outlined the difficulties of applying functional tests to the liver. The liver, he said, had many functions, and in order to investigate their efficiency corresponding tests had been employed in such profusion that it was impossible to enumerate them. The tests for any one function, though giving that particular information, could not be expected to throw light on the other functional activities of the organ. For example, one of the functions which concerned the liver, but for which it was not exclusively responsible, was the excretion of bile. This might fail, while the glycogenic function might appear to be competent. If there were any evidence that the hepatic functions broke down in a constant sequence, tests for the last function to be disordered would throw light on the condition of the liver as a whole; but, unfortunately, no such sequence was known, and the hoped-for single and comprehensive test for total hepatic efficiency was not available. Sir Humphry next dealt with determination of the total, or so-called "global," functional capacity of the liver in removing dyes from the blood after intravenous injection. He pointed out that, while tests involving the use of phenoltetrachlorphthalein or bromsulphalein have led to the adoption of cholecystography, other investigations with these dyes have been largely abandoned. Many of the functions of the liver were shared in some degree with other organs or tissues of the body, so that tests such as the levulose tolerance test gave information as to the carbohydrate metabolism of the body as a whole, and not of the liver alone. A further difficulty was the great reserve power of the liver. In animals four-fifths of the organ could be removed experimentally without bad effects, while, after damage to the liver, compensatory regeneration rapidly took place, with restoration of functional efficiency. Hence, the speaker continued, it was in acute rather than in chronic lesions of the liver that functional tests were likely to give constant evidence of impaired activity. In acute yellow atrophy the clinical picture usually gave sufficient data for the diagnosis, and the need for further tests might not arise. In the treatment of syphilis by arsenobenzol preparations, evidence of impaired function in the excretion of bile was valuable, as it gave a warning of liver changes and an indication for the cessation of the injections and the administration of glucose. For such a condition Sir Humphry recommended examination for bile acids in the urine (Hay's test), "latent" jaundice being determined by the van den Bergh test. Both methods were simple and rapidly carried out in routine work. In cases of chronic ascites not due to hepatic disease negative results with the Bengal rose test (Barker's) might be useful in diagnosis, but in ordinary portal cirrhosis the functional tests frequently failed to give any help. The value of van den Bergh's reaction in the diagnosis of different forms of jaundice was an established fact, but in the levulose and galactose tolerance tests results might frequently be vitiated by the compensatory power of the liver.

Professor E. C. DODDS said that ten years ago there had been a similar discussion held on this subject, and there was probably little fresh to be added to-day. A study of the literature showed that up to 1920 tests for hepatic function abounded, but in 1921 a change took place, leading gradually to the abandonment of one test after another. This change could be traced to publications of F. C. Mann and others at the Mayo Clinic. Professor Dodds then gave, in some detail, the results of Mann's experiments in removing the liver from animals. The animal quickly recovered from the operation, and for an hour afterwards appeared quite normal. It might remain so for three to eight hours. The following symptoms then developed: muscular weakness, loss of reflexes, complete flaccidity, twitchings, convulsions, and subsequently death, preceded by vomiting. These results, very similar to those of hypoglycaemia produced by overdosage of insulin, represented a grave disturbance of carbohydrate metabolism. Of other supposed functions of the liver there was often very little evidence of upset. Uric acid in the blood was increased, but there was no rise in urea. Jaundice developed about six hours after complete removal of the liver, and the van den Bergh reaction gave an indirect or delayed-direct result. There was no evidence of lack of conjugation of phenol and salicylic acid, and, when these were given to hepatectomized animals, glycuronic acid derivatives appeared in the urine. The plasma proteins remained unchanged, and no alteration could be detected in the haemoglobin or red cell content of the blood. Further experiments, in which Mann removed up to 80 per cent. of liver tissue, showed practically no alteration in the animal when the usual tests were applied. Hence, the chances of using such tests for detecting early stages of liver disorders were small. From

a practical point of view, however, Professor Dodds had personal experience of, and faith in, the galactose tolerance test and the estimation of bile pigments in the blood For example, in a patient of 40, a marked rise in blood sugar after the administration of galactose would favour a hepatitis rather than an obstructive cause for jaundice, and this test would be helpful in prognosis. The van den Bergh method of estimating bile pigments in the blood was valuable, as was the simple clinical method of determining the icteric index In conclusion, Professor Dodds urged the wisdom of accepting Mann's work and dropping all other tests as valueless.

Dr W LANGDON BROWN said that since the discussion of ten years ago the lipase test and the haemoclasic crisis of Widal had been proved of no value, while galactose had replaced levulose for the sugar tolerance test of liver function Since that discussion the introduction of cholecystography had occurred, and also the discovery of insulin, which had led to a better understanding of the symptoms of complete hepatic breakdown He thought the old clinical observation that the antitoxic power of the liver demanded an adequate store of glycogen had been to some extent confirmed, and in this connexion he referred to the importance of giving glucose in cases of cholaemia

Dr A F HURST emphasized that the early stages of liver disease could be, in his opinion, detected by the levulose tolerance test. He thought it possible by this test to recognize the earliest stages of alcoholic poisoning of the liver, a disorder which was becoming more frequent as alcoholic cirrhosis became less. He took as a positive result for this test a rise of over 20 mg. per cent. in the blood sugar in one hour, and a failure to fall to the fasting level in two hours In people who came home from the Tropics and complained of feeling "liverish" the test had given evidence of hepatic insufficiency. After treatment by emetine the test became normal, suggesting that an amoebic hepatitis had been present In gall-bladder disease he had found evidence of an associated hepatitis by this test, and it was important to treat this liver disorder both before and after operation In a fourth group of people who complained of feeling "liverish" evidence of hepatic insufficiency by the test had been present in nine out of ten cases Such patients were benefited by treatment Lastly, Dr Hurst mentioned catarrhal jaundice He believed that there were two types with the same clinical picture one was a true hepatitis, and the other a true obstruction due to gastro-duodenal catarrh The levulose test differentiated between the two

Dr J W MCNEE said that the earlier workers on liver disorders were ignorant of those modern methods of estimating the blood sugar which had done so much to explain symptoms of hepatic insufficiency He had gradually discarded most of the tests for liver function. While the van den Bergh reaction was often disappointing in differentiating clinical varieties of jaundice, it had been of great value in the theoretical unravelling of the problems of this disorder He had not had the same success as Dr Hurst with the levulose tolerance test, and felt that it gave little more information in diseased conditions than could be obtained clinically. The real difficulty was to know the margin in chronic cases between hepatic efficiency and complete insufficiency. The latter was coincident with death in many instances, and a test or this margin of safety did not exist. He thought that reat care should be taken in applying all Mann's animal xperimental work to the human subject

Dr G E BEAUMONT hoped that the realization of odern ignorance on the subject of reliable liver function ts would be widely disseminated among the profession He asked if a localized area of hepatitis adjacent to a diseased gall-bladder could possibly give rise to alterations in the levulose tolerance test. Dr. N. H FAIRLEY pointed out that the bromsulphalein test was still being used at the Mayo Clinic, while the levulose tolerance test had been abandoned In amoebic hepatitis he had been disappointed in the use of this test. Sir LEONARD ROGERS described the use of tests to prove absence of gross disorder of liver function in cases of amoebic abscess treated by simple drainage. They had proved that death from the bigger surgical procedures was due to septicaemia rather than to hepatic failure Dr A CRAWFORD pleaded that the problem was essentially a clinical one, and that all liver function tests ought to be interpreted clinically. There were various tests that could be of use, apart from those accepted by the biochemists The condition of the proteins in the blood, the investigation of sulphur metabolism, and Widal's haemoclasis reaction could all give help if interpreted by the physician Sir WILLIAM WILLCOX said that what clinicians wanted to know was the condition of the liver cells, not as regards jaundice, but as to the general condition of health of these cells. He thought that complete hepatic insufficiency could not be altogether explained by invoking the theory of hypoglycaemia, at any rate as far as human subjects were concerned Death in such cases as icterus gravis was probably caused by some autotoxin in the blood. Attention should be directed towards a delicate test for the presence of this body, which was probably a decomposition product

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At the inaugural meeting of the new session, Mr C. Schelling, retiring president of the Section of Odontology of the Royal Society of Medicine, presented to the Section and endued his successor, Mr E B Dowsett, with a badge in gold and enamels for the use of successive presidents of the Section The design, executed by Mr Harold Stabler, is surrounded by a wreath of laurel leaves in green enamel, and displays in the centre the shield taken from the large badge presented to the Royal Society of Medicine by Sir StClair Thomson It is enamelled in the proper colours, and bears the Tau Cross of Moses with the Serpent in gold entwined, and above that a gold portrait medallion of John Hunter copied from the die which was in use by the Odontological Society prior to its amalgamation with the other societies now constituting the Royal Society of Medicine Inserted in the case is a suitable dedication

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At the half-yearly council meeting of the British Red Cross Society, held in London last week, with the Duke of York in the chair, the annual report was received Satisfaction was expressed at the increase in activities, particularly the enormous strides made in the development of the blood transfusion service There were now 1,800 donors on the books, and, judging by the present rate of progress, the number would be over 2,000 by the end of the year. As many as eighteen calls for blood transfusion had been received in one day The report of the Red Cross Clinic for Rheumatism showed that over 2,000 patients a week were now being treated at the clinic To deal with the increasing numbers consultation clinics had been increased to twelve per week For the convenience of patients at work during the day, several of these were held in the evenings One gratifying feature was that while a number of cases of advanced rheumatism still came in for treatment, the number of early cases was steadily increasing There was now no waiting list either for men or for women

Reviews

RHEUMATIC INFECTION IN CHILDHOOD

Among the various monographs that have been devoted to the important subject of acute rheumatism during the past fifty years, we do not recall one that has approached it from quite the same point of view as that which Dr. LEONARD FINDLAY[1] has chosen. It is therefore all the more fortunate that the task has been undertaken by a physician whose long and wide experience of disease in children has included a close attention to that which he calls "the rheumatic infection in childhood"—the same group of phenomena that has been more briefly designated "juvenile rheumatism" by Dr. Reginald Miller. The author's interest in the subject has been predominantly clinical, and for this reason—doubtless also because of limitations of space—the bacteriological and histological aspects of the disease are scarcely discussed. This is, however, hardly a fault, since it affords the author a better opportunity for expounding his clinical conclusions. These are based on an analysis of over seven hundred cases seen by him at the Royal Hospital for Sick Children, Glasgow, more than half of which have been under his observation for more than five years.

After an introductory chapter, which reviews the history of the subject, there is an interesting summary of the data collected in various localities which bear on the question of incidence. From these Dr. Findlay states that "whatever the conclusions to be drawn from the figures relative to England and Wales, there is absolutely no evidence that in the West of Scotland rheumatic fever and chorea are becoming any less prevalent." His view of the connexion between the rheumatic infection and defective housing conditions is more in accord with the current teaching, and he is also in agreement with other observers in believing that rheumatic manifestations following scarlet fever are for the most part examples of true rheumatic infection. In the chapters which follow, the clinical data which he has amassed are subjected to a close analysis, and if this is at times rather cramped by the statistical method adopted throughout, many observations emerge which otherwise might have remained obscure. There are, for example, numerous facts which bring out, on the one hand, the close relation between chorea and other rheumatic lesions, while demonstrating, on the other hand, the fact that, of all the principal manifestations of rheumatism in childhood, chorea is the one which is most likely to occur without either of the others. There is an admirable survey of the role of rheumatism as a cause of organic heart disease in childhood. His figures show that of 489 cases of non-suppurative endocarditis in childhood, no fewer than 473, or 96.7 per cent., were probably rheumatic in origin. In his survey of the cause of the disease he has supplemented his own figures by adding to them a series drawn from the Western Infirmary, Glasgow, and has thus been able to show that there are two peaks of increased mortality caused by the disease—the one during later childhood (10 to 15 years of age), and the other during the age period 35 to 45 years. He concludes that

"Of those infected during childhood about one-third escape involvement of the heart—this proportion probably will be slightly less in the case of arthritis and slightly greater in the case of chorea. By about ten years after the onset of the infection distinctly more than a third of the patients will have died from the severity of the cardiac implication. One-third of the cases will be more or less incapacitated—it is these cases which accumulate as the older ages of the population are reached, and which, with the onset of arterio-sclerosis, swell the death rate from rheumatic cardiac disease."

Dr. Findlay is a firm believer in prolonged rest as an essential basis of treatment of the rheumatic infection. His general rule is to keep children with chorea or arthritis in bed for three months as a means of preventing or limiting the cardiac injuries. He uses salicylate freely, not only for the arthritis, but also in the treatment of chorea. Here, it is to be noted, he has little faith in the value of arsenic. His experiences do not encourage him to expect much from tonsillectomy as a means of cutting short the infection. Finally, he advocates strongly the development of the "heart hospital" experiment, though he thinks it too soon to attempt an assessment of its value. To everyone who is impressed both by the prevalence and by the pertinacity of this infection, Dr. Findlay's book will be not only a mine of information, but also an encouragement in the pursuit of thorough-observation and prolonged treatment.

DETACHMENT OF THE RETINA

Up to the past year or so retinal detachment has proved a condition in which the surgeon could offer little or no hope of successful treatment, and owing to the gravity of its effects, which almost invariably result in the eventual loss of vision, it has proved to be one of the most dreaded diseases to which man is heir. The number and variety of the methods of treatment which have been proposed from time to time, the short duration of their popularity, and their rapid disappearance from the field of therapeutics, provide ample evidence of their practical inefficiency, and the customary policy which has been adopted of maintaining enforced and absolute rest for a long period, with usually negative results, speaks for itself. During the past year or two, however, the new method of treatment by ignipuncture, suggested and ably practised by Professor Jules Gonin of Lausanne, has to a very large extent altered the outlook in those cases, and has introduced an element of hope into the prognosis of the condition. The technique of the operation itself, its indications and contraindications, and the proportion of successful results which may be anticipated from it, are now widely known; and, although the origin of the new method of treatment was almost entirely empirical, its success has had the further value of stimulating a great deal of fresh investigation into the etiology and pathology of retinal detachments. The literature of the subject is already vast and scattered, and, as can well be imagined, is extremely incoherent and indeterminate. For this reason, now that a definite milestone has been reached and a new start, as it were, is being made, a critical summary of what has been done before is of more than ordinary interest. In his monograph on *Detachment of the Retina*[2] Mr. RINGLAND ANDERSON has accomplished this difficult and laborious task in an excellent manner, and has put into its true perspective all that is of value in the knowledge which has so far accumulated. As a starting point for further and more successfully directed investigations his work is of much importance.

After a survey of the general incidence and diagnosis of detachment of the retina, the author deals in considerable detail with the anatomy and physiology of the tissues which are involved. The pathogenesis of any condition must obviously be based upon physiological principles. Hitherto, the cause of a simple detachment has remained unknown, largely because the physiology of the eye and of the intra-ocular pressure is also unknown, and until the latter subject is much more fully elucidated it

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[1] *The Rheumatic Infection in Childhood.* By Leonard Findlay, M.D., D.Sc., M.R.C.P. London: E. Arnold and Co. 1931. (Pp. vii + 187; 10 figures, 19 charts. 10s. 6d. net.)

[2] *Detachment of the Retina.* By J. Ringland Anderson, M.B., B.S., F.R.C.S.Ed., etc. With a foreword by Sir Herbert Parsons, C.B.E., D.Sc., F.R.C.S., F.R.S. London: [illegible] bridge University Press, 1931. (Pp. xiv + 207; 7 plates [illegible] net.)

is impossible even to commence the study of the former on sound lines with any hope of success. Much progress has been made in the past few years in our knowledge of the physiology of the eye, but until much more is done the cause of derangements in function must remain speculative. The author concludes that among the cases of idiopathic detachment there are two main groups: one is essentially due to degeneration, whether it be in the form of cystoid changes in the retina, liquefaction of the vitreous body, or alterations in both of these tissues after chorio-retinitis; the other is due to chorioidal effusion. In the first group the appearance of a retinal tear is an essential feature, in the second it is incidental. The prognosis in the second group of cases is better than in the first; the outlook in traumatic cases, if operative treatment is undertaken, is generally (relatively) favourable; and the prognosis in myopia, owing to the associated degeneration, is worse than in emmetropia and hypermetropia. The author stresses one important point, too often forgotten—namely, that apart from those cases due directly to trauma, the majority of detachments are secondary to some uveal disease. A lesion of this nature may lead directly to a subretinal effusion and a consequent detachment, or indirectly, by producing degeneration in the vitreous, retina, or ciliary body, may involve a predisposition to detachment. In these circumstances a very slight trauma, or a transient vascular derangement, may be sufficient to precipitate the detachment, whether it be by means of a retinal tear or a chorioidal effusion. Because of the fundamental part played by uveal disease it is necessary to go a step beyond the local ocular condition, for in the great majority of cases uveal disease is due to some general morbid condition. For this reason, apart from local conditions in the eye, much of the pathogenesis of retinal detachment will remain unsolved so long as work in the field of general pathology is obscure; and for the same reason the treatment of the condition should not be limited to the mechanical repair of the local damage, but should include an attempt to elucidate and eliminate the ultimate cause.

The volume, which is published under the auspices of the *British Journal of Ophthalmology*, forms a worthy addition to the series of monographs sponsored by that journal; and the illustrations are of the high order we are accustomed to expect from the Cambridge University Press.

HIGH BLOOD PRESSURE AND RENAL DISEASE

In his large volume on *Hypertension and Nephritis*[2] Dr. ARTHUR M. FISHBERG, who is attached to the Mount Sinai and to the Beth Israel Hospitals of New York, reviews in considerable detail a wide field. The first five chapters, or a quarter of the volume, deal with preliminary though useful subjects—the pathological physiology of renal function, tests of renal efficiency, albuminuria and casts, oedema, and uraemia. This, the second, edition has been thoroughly revised, is fifty pages longer, and its value as a source of reference is greatly increased by the bibliographies appended to the various chapters. That the author has scrupulously kept the text up to date is shown by the additions he has made; for example, in the section on the pathogenesis of arterial hypertension, a clear description is given of Hering's recent investigation on the carotid sinus and its relation to blood pressure. Pressure on the bifurcation of the common carotid (the carotid sinus), long known to cause slowing of the pulse and formerly ascribed to mechanical stimulation of the vagus, is now thought to cause reflex fall of blood pressure and slowing of the heart through the sensory nerves on the carotid sinus, which were formerly called "depressor" and now the "blood pressure restrainers." Section of these nerves causes hypertension, but there is no reason to regard the mechanism of human hypertension as analogous to this experimental form. In a short, but good, discussion on the point, Dr. Fishberg concludes that, in spite of opinions to the contrary, it is improbable, and has not been proved, that syphilis is a cause of high blood pressure. After discussing the perennial problem of the classification of renal disease, he adopts one based on that of Volhard and Fahr. Four forms of nephrosis, the term introduced by F. Müller in 1905, are described: the larval, occurring in the course of fevers, the necrotizing, the chronic, and the amyloid.

Dr. VITAL LASSANCE of Bains-les-Bains divides his remarks on Raised Arterial Blood Pressure[4] into five parts, dealing in turn with its causation, clinical aspects, methods of examination, prognosis, and treatment. Thus he covers a wide field. He describes different sphygmometric types, such as a raised systolic pressure only and a raised diastolic pressure only, which are spoken of as false hypertensive conditions, and true hypertension, in which both the systolic and diastolic pressures are raised, there being subdivisions in the cases with a satisfactory circulatory equilibrium, those with a predominant rise of the systolic pressure, and those with a predominant elevation of the diastolic pressure, as in cardiac failure. High blood pressure after 60 years of age is less likely to progress, and is of better prognosis than at a comparatively early age. There are seven pages of bibliography, all from French-speaking authors.

LECTURES ON PHARMACOLOGY

The *Lane Lectures on Pharmacology*,[5] delivered by Professor W. STRAUB of Munich in 1929, have just been published by the Stanford University Press. Two of the lectures are devoted to the chemistry and biochemistry of digitalis, a subject that the researches of Professor Straub and his pupils have done much to elucidate. The other four lectures deal with pharmacological subjects of special therapeutic interest—namely, drugs of addiction, basal anaesthetics, organic compounds of the heavy metals used as disinfectants, and camphor and the modern analeptics.

The lectures on digitalis are of particular interest, because they summarize in an authoritative manner a large amount of important recent research. The chemistry of the digitalis glucosides has long been notorious for its difficulty and complexity. The chief glucosides have at length been identified with some certainty, and a start has been made on the task of elucidating their structural formula. Knowledge regarding the fate of these glucosides in the body is, however, relatively advanced, for reliable estimates are available for the amounts fixed by the frog and mammalian heart; moreover, estimates have been made both of the rate at which the drugs are fixed and also of the time taken for their action to pass off from the heart. These results show that digitalis glucosides which reach the heart are fixed rapidly, but that their action persists for a remarkably long period, for the effects on the heart of a single intravenous dose still persist after a fortnight.

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[2] *Hypertension and Nephritis.* By Arthur M. Fishberg, M.D. Second edition, thoroughly revised and enlarged. London: Baillière, Tindall and Cox. 1931. (Pp. xvi + 619; 1 coloured plate, 38 engravings. 30s. net.)

[4] *Hypertension artérielle.* Par Dr. V. Lassance. Paris: N. Maloine. 1931. (Pp. 310. 19 figures. 35 fr.)

[5] *Lane Lectures on Pharmacology.* By Walther Straub, M.D., Ph.D. Stanford University, California: Stanford University Press; London: Milford, Oxford University Press. 1931. (Pp. 87; 2 figures. Paper, bound, 1·50 dollars.)

The lecture on intoxicating drugs is extremely interesting, and the lecturer even had the courage to present to California the ideas of Munich on alcohol.

"A certain standard of civilization, a temperate climate, and an organization of life based on a systematic arrangement of work . . . are essential conditions for the enjoyment of alcohol. With the individual, however, these conditions are not absolute; they are modified by that moral standard which is called moderation. For thousands of years, millions of people have voted for alcohol. Meanwhile, science has motivated the instinct which led Noah to his famous discovery."

The other lectures provide a lucid explanation of the outstanding problems in the subjects with which they deal. All the lectures are characterized by a clear and stimulating manner of presentation, a fact that will cause no surprise to those who are aware of Professor Straub's renown as a scientific lecturer.

OTO-RHINO-LARYNGOLOGY

The collection of Précis of Masson is famous, the best known in this country being perhaps the *Précis de Dermatologie* by Darier. Dr. GEORGES LAURENS, with his collaborators AUBRY and LEMARIEY, has added another volume, *Précis d'Oto-Rhino-Laryngologie*,[6] which well maintains the exacting standard. The information supplied lacks nothing in detail and in accuracy, and the even flow makes the book most pleasant to read. A striking feature is the perfect balance which is maintained between the many different sections, no part being dismissed too lightly, while no unnecessary stress is laid upon any other. The wide knowledge, long experience, and deep reading of the principal author is revealed in this achievement. He himself modestly claims that, as no originality is required, he has done his best to make the *Précis* clear and practical. He has succeeded admirably and at the same time has made a notable addition to the literature of oto-laryngology, something far beyond the mere compilation which the bare title implies. The precision and clarity with which the subject is exposed is displayed nowhere more clearly than in the section on the ear. The complications of otitis media and the pathological conditions which affect the labyrinth, subjects which must tax the powers of any writer, are described so fully and yet so simply that it is hardly possible to imagine anything better in this style. A search for instruction on any point provides clear and full teaching, so that the book appears to be complete in every direction, and it is sufficiently but not lavishly illustrated. It is so well adapted to its purpose of a textbook for the practitioner and the student of oto-laryngology that it deserves to circulate far beyond the limits of the country which gave it birth.

NOTES ON BOOKS

Dr. LICKLEY, in *The Nervous System*,[7] has brought his small book thoroughly up to date, although it remains much the same size. To anyone accustomed to the wealth of detail and excellent diagrams of Tilney and Riley's big book on the nervous system it comes as a welcome relief to find a British book which, while very much smaller, can still provide us with the same quality of diagram. For students of psychology it is probably quite large enough, but for students of neurology and of psychological medicine it is too condensed. The chapter dealing with the chief fibre systems of the cerebro-spinal axis is very well done indeed. The diagrams showing the crossing of the systems, and the schemes provided with these diagrams, are alike excellent.

The *Transactions of the Medico-Legal Society*[8] for the session 1929–30 consists of seven papers, the first of which is Lord Riddell's presidential address on ancient laws and modern women. Most of the papers provoked lively and informative discussion. Mr. Llewellyn-Jones surveyed the work of the League of Nations in the international control of dangerous drugs, and Dr. Lionel Weatherly gave some reminiscences from fifty years' experience as a medical witness. Papers were also read by Lieut.-Colonel Henry Smith, Dr. A. Knyvett Gordon, Dr. C. Ainsworth Mitchell, and by Professor John Haldane, who discussed carbon monoxide poisoning, with special reference to its medico-legal aspects. The volume is illustrated by a photograph of the president's badge, which represents Truth being drawn out of the Well of Life by Law and Medicine, combining in the cause of Justice.

The series of six lectures on *The Difficult Child*,[9] which was delivered under the auspices of the Jewish Health Organization of Great Britain, at Toynbee Hall, London, in May and June, 1930, has now been reprinted as a pamphlet, which will be of value to those who are interested in the medical, psychological, and sociological aspects of the problem of maladjusted children.

The appearance of the eighth edition of *The Mothercraft Manual*,[10] by Miss MABEL LIDDIARD, the matron of the Mothercraft Training Society, within eight years of the first publication of the work, is sufficient evidence of the well-merited success of this little book, which is an outline of the principles of Sir Truby King, the founder of the society.

Since the appearance of the original monograph upon *The Anopheline Larvae of India, Ceylon, and Malaya* in 1927, many new species and varieties of anopheline mosquitos have been recorded, and further knowledge has necessitated some emendations in description and classification. The present pamphlet, entitled *The Anopheline Larvae of the Countries from India and the Orient to the Antipodes*,[11] by Professor C. STRICKLAND and Dr. K. L. CHOWDHURY, forms a supplement to the previous work embracing these additions and corrections, and at the same time covers a wider geographical area, to include the Far East and the Antipodes.

In the collection of small, paper-backed "Introductions to Medicine," edited by Sézary and published by Masson, the volume on the pathology of the liver and pancreas[12] has been written by the sure hand of MARCEL BRULÉ. These small volumes are interesting, and have the great merit of being written by recognized authorities on the subjects. They certainly give a far better account than is obtained, for instance, in a chapter of one of the large textbooks of medicine so commonly read by medical students in this country. Brulé covers his subject fully in about 140 short pages, easily read and clearly divided into brief sections and paragraphs. The wording is clear-cut and dogmatic, as is necessary for the introductory function for which the series is meant; but these small, cheap, and easily kept up-to-date volumes are really useful to medical students.

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[6] *Précis d'Oto-Rhino-Laryngologie*. Par Georges Laurens, avec la collaboration de Maurice Aubry et André Lemariey. Paris: Masson et Cie. 1931. (Pp. viii + 1,224; 428 figures, 8 plates. Paper cover, 100 fr.; bound, 120 fr.)

[7] *The Nervous System*. By James Dunlop Lickley, M.D. New edition. London and New York: Longmans, Green and Co. 1931. (Pp. xii + 144; 117 figures. 10s. 6d. net.)

[8] *Transactions of the Medico-Legal Society for the Session 1929–30*. Jointly edited by Gerald M. Slot, M.D., M.R.C.P., D.P.H., and Everard Dickson, Barrister-at-Law. Vol. xxiv. Cambridge: W. Heffer and Sons, Ltd. 1931. (Pp. xxvi + 181; 1 plate. 12s. 6d. net.)

[9] *The Difficult Child*. London: Fleetway Press (1930) Ltd. 1931. (Pp. 32. 1s. net.)

[10] *The Mothercraft Manual, or the Expectant and Nursing Mother and Baby's First Two Years*. By Mabel Liddiard. Introduction by J. S. Fairbairn, B.M., B.Ch., F.R.C.P., F.R.C.S. Eighth edition. London: J. and A. Churchill. 1931. (Pp. xvi + 132; 33 figures. 3s. 6d.)

[11] *The Anopheline Larvae of the Countries from India and the Orient to the Antipodes*. By C. Strickland, M.D., B.Ch., and K. L. Chowdhury, M.B. Calcutta and Simla: Thacker, Spink and Co., Ltd. 1931. (Pp. 36; illustrated. Rs.1.12)

[12] *Pathologie du Foie et du Pancréas*. Par Marcel Brulé. Collection des Initiations Médicales. Paris: Masson et Cie. 1931. (Pp. vi + 145. 20 fr.)

SOVIET MEDICINE AND HYGIENE

Impressions of Medical Tourists in Russia

A meeting under the auspices of the Society for Cultural Relations between the Peoples of the British Common wealth and the Union of Socialist Soviet Republics took place at the London School of Tropical Medicine and Hygiene on November 23rd, when three members of the party of thirty doctors and scientists who recently visited the hospitals and medical institutions of Soviet Russia gave an account of their experiences. The chair was taken by Sir SQUIRE SPRIGGE, Editor of the *Lancet*.

Dr CLIFFORD ELLINGWORTH, medical superintendent of Queen Mary's Hospital, Sidcup, said that he quickly found on entering Russia that it was of no use trying to understand medical conditions in that country to-day without having regard to the conditions under the Tsarist regime. It would be unfair to judge present standards in Russia by those obtaining in England. Compared with English conditions the state of affairs in Russia was not wonderful, but when the dreadful conditions of the past were remembered, the mighty effort which had been made by the Russian people to set their house in order was wonderful indeed. In the past there was no central public health organization; there were odd hospitals run by charity in the larger cities, to which the people dreaded to go on account of the appalling death rate of 27 per cent., and the priests kept the people very much in ignorance of health as well as of other matters. Nowadays the people were learning physiology, hygiene, and the care of their bodies, things entirely new to the peasant class of Russia. A tremendous revolution had been effected by Dr. Semashko, the people's commissariat of public health in Moscow, who worked out a great scheme for the treatment of abortion. During the revolution it was decided that abortion was no longer illegal with the result that quacks immediately sprang up everywhere and the death rate due to improper abortions became very high. The Government thereupon decided to set up a number of abortion clinics. The procedure was for a woman, whether married or single, who found herself pregnant, to go to a local doctor, with whom was a committee of two representatives of the workers, to whom she put her case under the two headings of medical and social or economic. The doctor, if satisfied, gave her a certificate to attend the abortion clinic. The first day there was spent in rest and education. The woman was shown exactly what was proposed to be done to her. Some wax models, in life size, of a sagittal section through the female pelvis were exhibited, and the operation which was to be performed was explained. She was then shown various contraceptive methods, and a very explicit talk was given to her about their use; there was no mock-modesty whatever. A notice over the door stated: "You are welcome this time, but you are not expected to come again." The operation was performed next day, taking about three minutes, without an anæsthetic. As many as 70,000 official abortions took place in Moscow last year without one death; there were also 60,000 births. Another interesting point in the Soviet regime was the rescue of prostitutes, which was now a State procedure. Homes were established to which the women, most of whom were suffering from venereal disease, were received, medical attendance was given, and they were taught a trade. As a result of this movement the maximum number of prostitutes on the streets of Moscow was stated now to be 400, instead of 2,000, as it was two or three years ago. One of the most interesting features of medical life in Russia was the attitude of doctors towards the new system. Some time ago a medical workers' trade union was formed, which included orderlies, porters, ward maids and so forth. The doctors at first did not want to come in, but it was finally agreed that the doctors should join the union, but should be allowed to have a doctors union within the larger organization. In consequence the doctors now got "A" class food tickets, and were described as "worker intelligentsia." So long as they had refused to come in they were called "bourgeoisie," and only got "C" class food tickets, which meant that they did not have enough to eat. Until 1918 there was no such thing in Russia as State health insurance. That had now come into being and a committee was formed to grant allowances to people during protracted illness, which was thought better than continuing a salary because it led to encourage malingering. Of the applicants for sickness benefit in Moscow 50 per cent. were found to be suffering from tuberculosis. Magnificent night sanatoriums, of 45 to 50 beds, attached to blocks of flats and hospitals had been established, in which people threatened with tuberculosis, and living at home under unhygienic conditions, could spend their nights. The patient, after his day's work, was shown into a clean room with a window open, he would not close; he had a hot meal, listened to a lecture on personal hygiene or perhaps was entertained by music or the cinematograph and next morning had a hot breakfast before he went to his work. He might continue at the sanatorium for two or three months without ceasing to be a wage earner. The speaker had been struck with the slovenly condition of the beds in Russian hospitals, but it was not the Russian custom to make the bed every day, so that made it in hospital. There one had to qualify things very much, and not to be too intolerant in one's outlook. The dirty condition of the beds in Russian hospitals was one of the greatest obstacles which the new regime had to overcome. Lenin once said, 'A dirty peasant threatens to conquer Socialism,' and it did. The health department had included alcohol among the scourges to be fought, ranking it with syphilis and tuberculosis. During the last year or so 60,000 illicit stills had been seized. The speaker praised highly the organization of 'prophylactoriums,' as they were called. In one of these places as many as 2,000 out patients were treated daily by appointment, without waiting. Provision was made against any possibility of the out patient attending different hospitals in turn; the district nurse accompanied him to the department heard the instructions given and was able to see that the instructions were carried out when the patient got home. He thought that much was to be learned in this country from the conditions of out-patient work in Russia.

Dr HILDA STOESSIGER said that there were many things which could be criticized in the Russian system, including the lack of free choice of doctor inherent in any public scheme of medicine, but it was evident that Russia had gained a great deal from State control. Medical research was being encouraged. Most specialists appeared to devote a definite period each day to it, usually the afternoon, while the morning was spent in seeing the patients. Every part of Moscow was divided into small districts, each with its doctor and nurse or social worker, and these districts were linked up into larger ones, provided with prophylactoriums. One serious difficulty was that since the revolution Russia had been cut off from centres of medical thought. At most of the hospitals the doctors realized their isolation. A few foreign journals were seen, but not enough for detailed research in any particular subject. Here and there the party saw a survival of antiquated theories and methods of treatment such as the administration of electric shocks for curing hysterical attacks and habit spasms, and rather fantastic ideas for the cure of arthritis. But she was amazed at the amount of modern apparatus in use much of it made in Russia and the rest bought in Germany or Austria. At the Metchnikoff Hospital deep x ray apparatus of the latest pattern had been installed and 400 mg. of radium was in use; but in that hospital all the cases of cancer appeared to be in the advanced stage and one felt that the surgeon did not very often get a chance of doing a really radical operation on an early case. There were said to be about 40,000 doctors in the U.S.S.R. for a population of 160,000,000. The large hospitals in Leningrad and Moscow appeared to be staffed as adequately as our own and many medical men were working in laboratories so that it must be conjectured

that in rural districts there was great scarcity. Of the new medical students 40 per cent. were peasants from the collective farms. There was a shortage of drugs. Quinine was extremely scarce, and was reserved for the malarial districts of the Volga and South Russia. The Government was itself preparing gland extracts, serums, and salvarsan and bismuth preparations. The importation of vaccines was now prohibited. One of the party fell ill at Tiflis, and although he was attended by three Russian and three German doctors the very greatest difficulty was experienced in finding a chemist who could dispense the prescriptions.

Dr. EDWARD MAPOTHER, medical superintendent, Maudsley Hospital, gave some account of the arrangements in Russia for the prevention and treatment of mental disorder. He saw very little in his own line in Russia, and that little did not impress him at all. He heard a good deal more, but did not find all of it convincing. But it was only fair to say that if one took at face value all that one was told about the present aims of Russian psychiatry, it sufficed to explain in great measure the absence of anything in the way of special structure to show the visitor. The programme, which was one of considerable interest, was propounded to him by Professor Rossenstein, director of the Moscow Institute of Nerve Prophylaxis, who was largely responsible for it. It represented a sort of selective synthesis of arrangements in other countries. There were two main schools of Russian psychiatry. The Leningrad school, which for a long time was led by Bechterev, had always been mainly interested in the theoretical aspect. Its aim was towards the identification, as far as possible, of psychiatry with organic neurology. Recently it had been dominated by the influence of the work on conditioned reflexes and their inhibition, carried out by Pavlov and his school. This influence had gone so far as to lead to the proposed abandonment of psychology and the psychological approach in psychiatry, and the replacement of this by a science termed reflexology, which aspired to account for human behaviour without reference to consciousness. The other school, that of Moscow, in which formerly the outstanding figure was Korsakov, claimed to have been always more interested in the practical than in the speculative side of psychiatry. Its tendency was towards maintenance of very close contact with general medicine and other branches of State medicine, and through its influence it had come about that the existence of at least a psychiatric out-patient clinic was almost universal at Russian general hospitals. There was no doubt of the growing influence of psychiatry in Russian life. The whole movement was towards a reduction of the importance ascribed to heredity and towards regarding mental disorder, of whatever kind or degree, as representing rather an interaction between the individual and his environment. In psychiatric practice the tendency was towards what was termed "psycho-hygiene"—that is, the maintenance of psychiatric supervision even over persons reputed healthy, such as factory workers and students. Child psychiatry was handled apart from adults, and all school children and young people employed in industry were under the supervision of a central psychiatric organization, and were subjected by it to annual examination. Nervous and "difficult" children were dealt with by child guidance clinics. Psychiatry played an important part in the administration of the law, the psychiatrist acting at the police courts and also at the adjoining dispensary. With regard to the provision of institutional treatment for mental disorder, arrangements in Russia were grossly defective. Out patient clinics were excellent supplements to residential institutions, but they were not substitutes. At Leningrad he visited the Belinski Hospital, reputed to correspond to the psychiatric clinics of other countries. In structure, decoration, and comfort generally it was deplorable. It was true that a spirit of keenness and good scientific work might exist under such conditions, but from the standpoint of the patients there was little to be said for it. In Russia, with a population of 160,000,000, there were only 40,000 mental hospital beds; in other words, the ratio of beds to the population was about one-twelfth of that which existed in England. He thought it might be taken that there was no corresponding difference in the incidence of insanity. The annual admissions in Russia numbered 58,000. The shortage of beds was met by various devices whereby the insane were returned to live in the community, some to special hostels, some boarding out with sane people, others sent back to their families. For a certain number of cases such a system had merits, but he thought there was little doubt that it was being carried to excess in Russia.

NATIONAL BIRTH CONTROL ASSOCIATION

ADDRESS BY PROFESSOR LASKI

The first annual meeting of the National Birth Control Association was held at Caxton Hall on November 23rd, when Professor H. J. LASKI gave an address. The chair was taken by the president, Sir THOMAS HORDER, Bt., M.D., who, in introducing the lecturer, commented on the affiliation of the association with the Birth Control Investigation Committee, and said that indiscriminate childbearing, while it might be a disease of the human body, was certainly a disease of the body politic.

Professor LASKI inquired into the place of this movement for birth control in the kind of democratic society to which its members belonged, and recalled that the movement in England had begun as a protest against the privileges that belonged to the rich in an aristocratic society. The association ought humbly to remember, he said, the debt it owed to pioneers who had set an example of insight, courage, and determination. To the lecturer birth control seemed essentially part of the general process of civilization. It was inevitable at some period in evolution that intellect should replace blind impulse in the control of sexual relations. It was impossible to limit the range of anything so explosive as knowledge. Society of to-day could allow birth control to percolate to the working classes by accident, but such a course would do illimitable and profound harm. On the other hand, it could extend that knowledge as part of a deliberate effort to plan civilization, as part of the birthright of every civilized man and woman. The control of the problems of population would place in the hands of society a weapon of as great significance as that conferred by the discovery of fire.

THE CASE AGAINST BIRTH CONTROL

The first objection raised by opponents was the religious objection. Professor Laski denied that a society which had become by the nature of its being a secular society, independent of any form of religious organization, could allow the theses of any particular religion to determine the life of the State. He characterized the religious objection as the attempt of a minority to dictate to the majority. The advocates of birth control did not ask that they should be allowed to affect the individual life or practice of any member of a religious body, and equally in return they asked that the religious bodies should refrain from seeking to determine the conduct of the State. The second argument was political: that birth control would challenge the power of the country and, indeed, of Western civilization; that to avert perils to culture, notably from the East, Western civilization must multiply—as it had been put—like the sands of the seashore. In reply to that he declared that, given the weapons now at the disposal of the forces of conflict, those who thought in concepts of power were inviting the perpetuation of a philosophy which would make the whole of civilization a legend. It was essential to think in terms of the end that civilization was seeking. Moreover, civilization depended not on the quantity of the mob, but on the quality of the brains at its disposal. The third argument against birth control was that it endangered the basis of morality. Speaking as a historian, he resented the ignorance of those who argued thus. Morality was no unchanging concept. It had not been the same in Athens as in the present century; it was not the same in Russia to-day as in the United States to-day. He urged his audience to emulate

the British Empire, which could emphasize the unlimited character of its faith in monogamy in Great Britain, and at the same time in the remoter confines of its dominion could proclaim that it would stand by the right of alien faiths to practise polygamy, without a blush upon its noble features. As the environment changed, concepts changed to suit the environment, and the notion that one could arrest social evolution at a moment suitable to one's self was futile. Nothing was more dangerous than to make one's private principles the measure of public conduct.

PRINCIPLES JUSTIFYING BIRTH CONTROL

The mere conflict of private wits would never produce a well ordered commonwealth, and to leave relationships between men and women and their community to blind impulse must mean pain for the individual and disaster for the commonwealth. Birth control was a process of emancipation, particularly for women, but also for children and for men. Professor Laski urged the difference between the average working girl at 19 or 20, and the same woman at 25 or 26, after a few years' experience of her obligations as a married woman. She was an unpaid domestic servant with a right to sit in the best room in the evening, if there was a best room, when the day's work was done, if it ever was done. To give such a woman conscious control of parenthood was one of the most considerable pieces of liberation that had ever come to the human race; it would make her for the first time in history a person able to think—a service of the first order to the quality of national life. If the child of the next generation was to be educated, it was essential to set it free from the situation it occupied in the overcrowded or parentally negligent home. Half his problems as a teacher were the problems of the parent of explaining that the basis of a university was not to train students for anything—particularly for earning anything—but to assist them in the process of learning what thought was. The problem was still more serious in secondary education, and much more so in primary education. Only by arresting the torrent of children in overcrowded homes could education march to the end that education had to serve. It was the business of educationists to persuade men and women into the habit of intelligent doubt. The tragedy of this civilization for men was that they were thought of so predominantly as wage earners. Material value had become the measure of what was meant by manhood. Too many leaders were occupied by the search for economic or political power and did not know that progress in the realm of power rested on a basis of knowledge of civilization and not on the power to dominate in the terms of a narrow conception. In the positive sense, Professor Laski doubted whether anyone had the wisdom or insight to know what type it was eugenically desirable to breed. He sometimes believed it possible that the failure of the academic classes to perpetuate in adequate numbers was going to be one of the sources of refreshment of the national quality in years to come. In the negative sense, however, he could only regard it as a policy of sober sanity to prevent the multiplication of imbeciles, haemophiliacs, and deaf-mutes.

THE OBLIGATIONS OF SOCIETY

The first duty of society, he said, was to make possible medical research in birth control, a function which ought to be assisted just as much as research into cancer or tuberculosis. Secondly, it was the business of the State to make available a full supply of cheap birth control clinics all over the country, above all as an essential and integral part of the normal service of maternity and child welfare. It would be fatal to regard birth control as something unrelated to the general process of safeguarding the quality of the wives, mothers, and children helped at infant welfare centres. Thirdly, it was the business of society to ensure that a proper knowledge of the latest developments in birth control was part of the curriculum of the medical student. Every curriculum was overcrowded, but the doctor here had an obligation of so supreme a character that he was denying the whole basis of his profession if he had not this knowledge. It was futile to think that this movement could possibly be prevented from moving relentlessly to its conclusion, or to deny to men and women knowledge that they had come to realize was essential to the assertion of their personality. The relation of the birth control movement to the philosophy of freedom, and the relation of the philosophy of freedom to the preservation of individuality, made birth control one of the two or three things that were essential to freedom. The road was still long and full of difficulty, but the very complexity of the adventure gave it its character of nobility.

SIR THOMAS HOPDER pointed out that before anything could be done to modify the medical curriculum, it was necessary to convince society, first that it had a disease, and secondly, that it wanted to be cured. He himself viewed indiscriminate child bearing as a disease, and was therefore very anxious that instruction in birth control should be included in the medical curriculum as soon as possible. It was the duty of the medical profession to devise, improve, and teach the remedy; it was for such as Professor Laski to show the extent of the disease and what would happen if it could not be cured or to a large extent palliated.

IMPERIAL CANCER RESEARCH FUND

ANNUAL REPORT

The twenty-ninth annual report of the Imperial Cancer Research Fund was published last week. After mentioning certain changes on the staff and committees it refers briefly to some of the work accomplished during 1930–31. A course of lectures on cytology was delivered by Dr. Ludford at University College, and four advanced lectures were given by the Director, Dr J. A. Murray, and Dr W. Cramer. For one month of the year the laboratories secured the services of Professor Robert Chambers of New York, who will be recalled as a pioneer worker on micro-dissection and micro-injection. A full explanation of the technique of his methods was thus available to members of the scientific staff. Eight papers were published from the laboratories during 1930–31, while the considerable interchange of tumour material with research centres in this country and on the Continent affords evidence of the close contact maintained with other workers on cancer. Scientific details are embodied in the report of the director, which concludes with the following remarks:

"This discussion, taken in its entirety, leads to the conclusion that we are not yet in possession of such knowledge of the properties of the cancer cells as would indicate clearly the direction in which a rational specific therapy of cancer should proceed. It is perhaps not too much to hope that these observations may help the lay and general medical public to appreciate the conservative and cautious attitude which those engaged in cancer research preserve towards the recurring extravagant announcements of new methods of treatment for cancer. In particular we should recommend that the layman should finally discard his attitude towards this medical and biological problem as a gamble, where success is equally likely to fall to the ignorant as to the instructed. This betrays a profoundly mistaken view of the nature of the cancer problem. Thirty years of cancer research have revealed that this problem possesses a complexity which was quite unexpected. The knowledge which has thus been gained justifies the hope that perhaps progress in the direction of an efficient cancer prophylaxis is possible. An advance along such lines is, however, not dramatic or sensational. But whatever the future of the cancer problem will be, it is certain that it will not yield to the sound of a trumpet."

GENERAL COMMITTEE MEETING

At a meeting of the General Committee held on November 25th, with the PRESIDENT the Duke of Bedford in the chair, Sir HUMPHRY PAGESTON, chairman of the

Executive Committee, moved the adoption of the twenty-ninth annual report of the Fund. He first drew attention to the preparation of the tenth Scientific Report, which would deal mainly with the work in progress during the last two years and more, on the mode of action of radium on malignant growths, principally in small laboratory animals. The Executive Committee had been kept informed from time to time of the progress of these investigations, and felt sure that their publication, in detail, in one volume would be a useful contribution to the knowledge of this difficult subject. Passing to a summary of Dr. Murray's report for the year, Sir Humphry Rolleston said:

"The remainder of the Director's report falls into two parts, in the first of which attention is drawn to Dr. Cramer's papers on susceptibility to cancer as applied to the important subject of the incidence of cancer of the stomach in this and several European countries. Although the total incidence of cancer in males is approximately the same in these different communities, only 25 per cent. of male deaths in England and Wales are due to cancer of the stomach, whereas the proportion in the European countries from which accurate statistics are available is as high as 50 per cent. or more. This discrepancy is accentuated when the incidence in different social classes in the same country is compared. In England and Wales, as Dr. Stevenson showed, cancer of the stomach and upper alimentary tract is more common in lower social classes, the incidence of the lower alimentary tract being the same for all classes. In Bavaria, with double the frequency of gastric cancer in the whole male population as compared with England and Wales, the proportion in the working classes is from 60 to 70 per cent. of total cancer deaths. From the analogy which these facts of the incidence of occupational present to the conclusion is drawn that the important factors cancer, the conclusion is drawn that the important factors in producing this remarkable result are external, bound up with the habits of the social levels involved, and avoidable. As these vagaries in organ incidence of cancer do not produce corresponding fluctuations in the total incidence of the disease in the populations under review, the plus for one organ is reflected in a minus for the others. Thus, according to the statistics, cancer of the tongue is nine times more frequent in England than in Bavaria. It is as if the majority of cancer deaths fell on a susceptible fraction of the population (roughly 10 per cent.), the members of which respond relatively easily, by manifesting cancerous growths, to forms of chronic irritation to which the whole population is exposed to much the same extent. Susceptible individuals, fortunate enough to escape the full brunt of these irritations, may escape, and, conversely, excessive irritation may lead to cancer development in a small proportion of individuals constitutionally unsusceptible. The second part of the report deals with the results of Dr. Ludford's investigations into the action of dyestuffs and metallic colloids on cancer. In the twenty-seventh annual report reference was made to the difference between normal connective-tissue cells and the corresponding malignant cells (sarcomata) towards the colloidal dyestuff trypan blue, in that the sarcoma cells remained uncoloured under conditions in which the normal cells were deeply stained. The cellular mechanism involved in this reaction, known as vital staining, was investigated, and evidence has been obtained that the difference noted between normal and malignant cells is not due to failure of the dyes to reach the cancer cells, but to special characteristics, apparently peculiar to cancer cells, which are still the subject of investigation. The possibility that dyestuffs, metallic colloids, and other chemotherapeutic agents may influence the growth of cancer indirectly through an action on the organism of the host, has led Dr. Ludford to investigate the action of these substances on the resistance to transplantable tumours. In effect, it has been found that one of the carcinoma strains, which in untreated animals grows only temporarily and then regresses, can be made to grow progressively by treating the mice bearing it with trypan blue or metallic colloid. The immunity to transplantable growths, which can be induced by preparatory injection of emulsions of embryonic tissues, can be broken down by similar injections of dyestuffs or colloidal metals. The doses necessary to produce this result must be large—approximately the limits tolerated by the animals. These results emphasize the dangers of over-dosage in the treatment of cancer with toxic colloids in that the natural reactions of the body may be so modified as to accelerate the progress of the disease. The converse process of raising instead of lowering the natural resistance to such an extent as to retard or arrest the growth of cancer has so far not been attained in these experiments. It remains a fascinating aspiration. The report concludes with a summary of the evidence, from these and other investigations, of the enhanced defensive mechanisms of the cancer cells. Their relative independence of oxygen supply and indifference to concentrations of poisonous substances, such as carbon dioxide, which are lethal to normal cells, are paralleled by their resistance to such physical agencies as heat and cold. The action of radium probably does not provide an exception, as there are many well-authenticated instances of progressive growth or recurrence of cancer after intense radiation. In fact, though there are many examples of the greater viability of cancer cells as compared with the normal, there is no evidence as yet available of a single property in which they are more vulnerable. This may sound pessimistic, but if it is true there should be no need to insist on the dangers of underestimating the enemy. The knowledge attained during the past thirty years is already indicating the broad lines along which prevention of cancer must proceed. The immediate problem of a rational treatment remains."

In a speech moving a vote of thanks to the chairman and members of the Executive Committee and others who had assisted in carrying on the work of the Fund during the past three years, the PRESIDENT (the Duke of Bedford) referred to the loss of Lord Balfour, who had been a vice-president of the Fund since its inception in 1902. Another loss was that of Sir Anthony Bowlby, formerly President of the Royal College of Surgeons, and up to his death a valued member of the Executive Committee. The financial position was as satisfactory as could be expected under present-day conditions. The president referred to the generosity of Lord Atholstan's grant of £2,000 a year for ten years, which, although it had now come to an end, had made possible the establishment of a second laboratory outside London. Thanks were also due to the executors of Sir Otto Beit for a legacy of £8,000. Though the Fund was still dependent on legacies, donations, and subscriptions, he trusted they might be able to carry on without lessening their work and activities. In conclusion, the President conveyed the best thanks of the Fund to Dr. Murray and his staff for their excellent work. Dr. Murray had a most extensive knowledge of his subject. He was always willing to place his experience and material at the disposal of investigators at home and abroad, and to lend a helping hand to younger men in research work. He was always ready to welcome and explain to visitors from all parts of the world—Europe, America, and the Far East—the work carried on in the laboratories, and in this he was greatly helped by his linguistic attainments. He had an able assistant in Dr. Cramer, and the members of the scientific staff, who were working keenly with the determination that although the quest was long, they would know no end but success.

Sir Alfred Lane Beit was then elected a vice-president of the Fund. Professors A. E. Boycott and W. Bulloch were re-elected members of the Executive Committee, Sir John Rose Bradford being made an additional member. Sir Percy Sargent was appointed joint treasurer of the Fund with Sir George Makins. Lord Dawson of Penn moved a cordial vote of thanks to the Duke of Bedford for presiding at the meeting, and this, seconded by Sir BASIL MAYHEW, was carried with acclamation.

L. N. PYRAH & P. R. ALLISON: SOME SIALOGRAMS



FIG. 1.—Sialogram of normal parotid gland.



FIG. 2.—Sialogram of normal submaxillary gland.



FIG. 3.—Case I. Chronic parotitis. Bronchiectatic like dilatation of terminal ducts and alveoli.



FIG. 4.—Case II. Showing saccular dilatation of the intraglandular part of Wharton's duct with deficient filling of finer ducts.

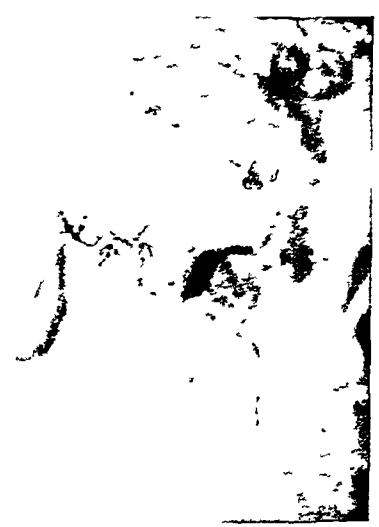


FIG. 5.—Case III. Normal sialogram of right submaxillary gland immediately anterior to which is a faint shadow of a mass of tuberculous lymph glands.



FIG. 6.—Case IV. Parotid abscess with destruction of the gland. Showing obliteration of all but the main parotid duct.





FIGS. 1 AND 2.—Two films of the barium enema examination of December 30, 1930. The loop of the sigmoid colon is shown drawn over to the right iliac fossa. In Fig. 2, the loop is seen in close proximity to coils of the ileum. Two long diverticula are seen attached to the loop on the right side, and numerous diverticula on the left. There is a "defect" shown in the loop on the right. This part of the bowel was very much thickened at operation and the perforation occurred from the diverticulum at that site.



FIG. 3.—Twenty-four hours' barium meal. The outline of the sigmoid can be made out; it is drawn to the right. Numerous diverticula are shown.



FIG. 4.—Barium enema of February 13, 1931. The sigmoid loop is now shown well over to the left. Several long diverticula can easily be seen.

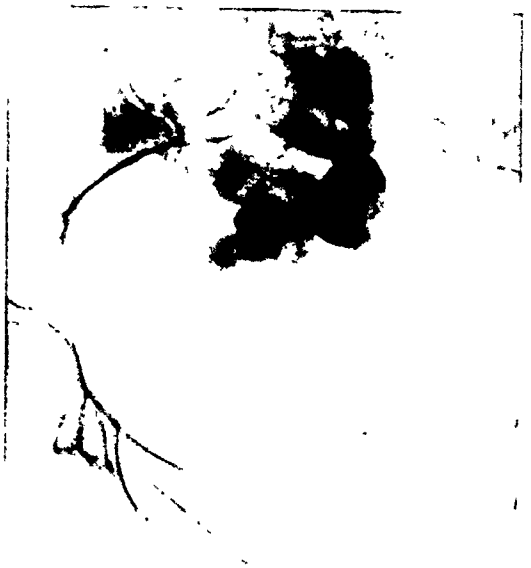


FIG. 1.—Radiogram of the pelvis of a woman aged 34, who suffered from pain in the lumbar region and left iliac fossa, associated with increased frequency of micturition, pyuria, and occasionally haematuria. There is a dense shadow of an object lying in front of the sacrum.



FIG. 2.—A cystogram. The bladder has been filled with a 7 per cent. solution of sodium iodide and the exposure made. The bladder is clearly outlined and is seen to be distinct from the other shadow.



FIG. 3.—Ureteric catheters have been passed and 12·5 per cent. solution of sodium iodide injected up them. The pyelogram of a normal left kidney is seen. On the right side the catheter has passed inwards over the shadow, and a little of the sodium iodide has passed on from the catheter to the object.



FIG. 4.—The ectopic kidney split open and mounted after its removal from in front of the sacrum.

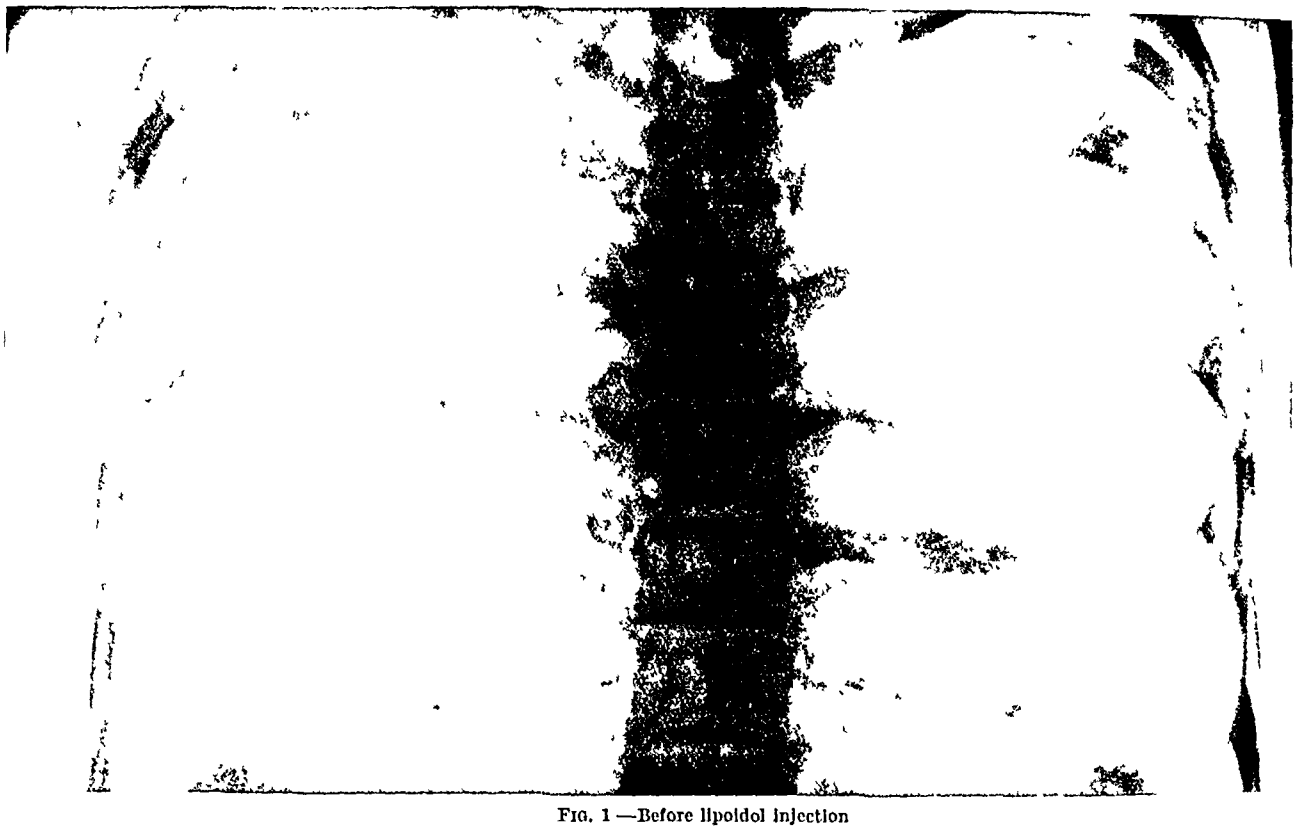


FIG. 1.—Before lipoidol injection

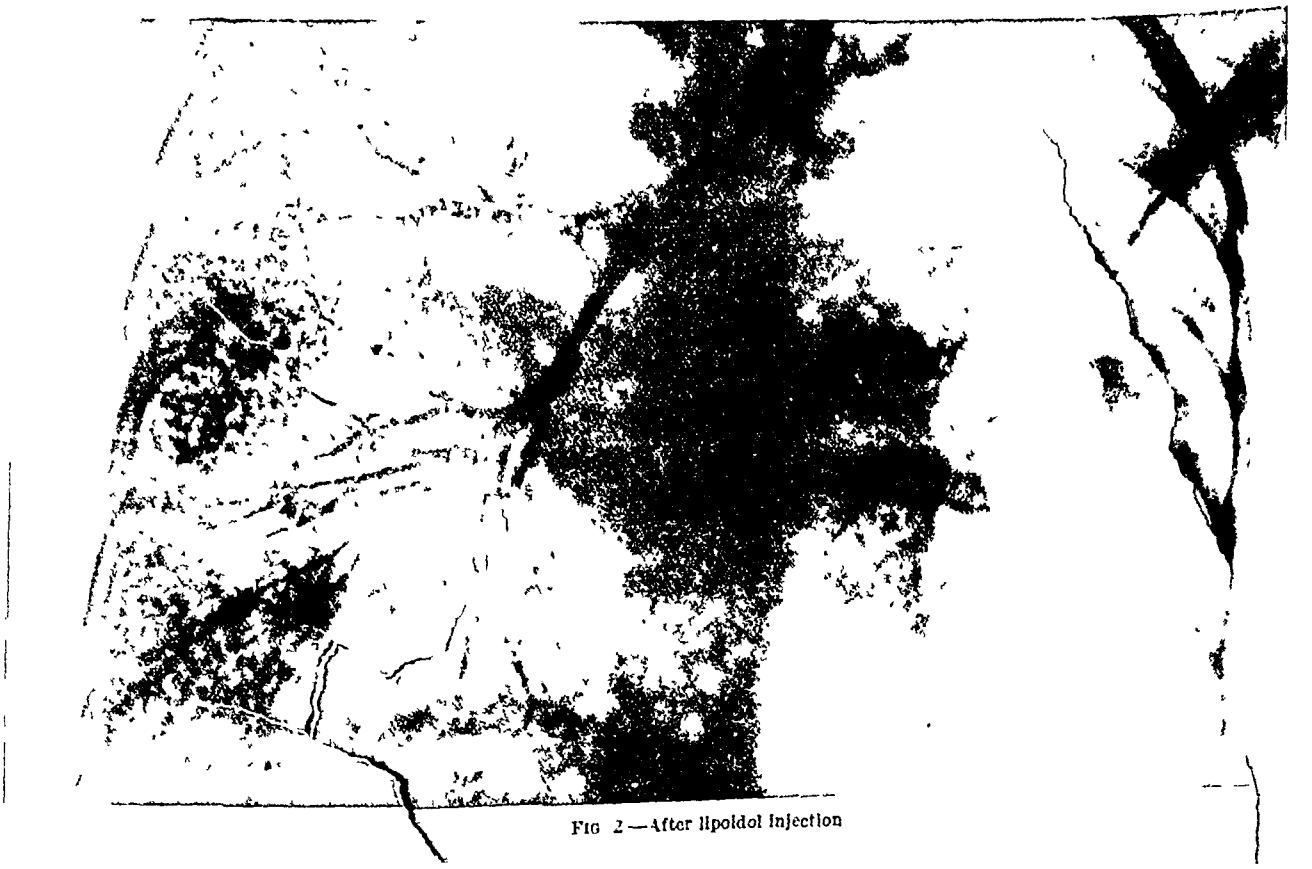


FIG. 2.—After lipoidol injection

British Medical Journal

SATURDAY, DECEMBER 5th, 1931

THE ASSOCIATION'S CENTENARY

The British Medical Association was founded by Sir Charles Hastings at Worcester in the year 1832. The only qualification which this statement requires is that the Association at first existed under another name (the Provincial Medical and Surgical Association), and that at the date in question Charles Hastings had not yet received his knighthood. The centenary of the Association falls due, therefore, next year, and its celebration in July will rank as of great importance both in the history of medicine and among the public events of 1932. To the members of our calling it will commemorate the first practical step taken towards professional unity and towards that formal unification of the profession which was not, in fact, accomplished until the passing, twenty-six years later, of the Medical Act of 1858. From a wider standpoint it will remind professional men and women generally, and other members of the public, that the British Medical Association was a pioneer in that movement towards forming vocational organizations which manifested itself during the middle half of the nineteenth century, and had such a powerful effect, not only upon the evolution of the professions themselves, but upon the development and well-being of our whole social structure. The former aspect may be exemplified by quoting the main object for which the Association was originally formed—namely, "the maintenance of the honour and respectability of the profession generally by promoting friendly intercourse and free communication of its members, and by establishing among them the harmony and good feeling which ought ever to characterize a liberal profession." The second aspect is best illustrated by a reference to the valuable Herbert Spencer Lecture delivered at Oxford in 1928 by Professor Carr-Saunders, and published at the Clarendon Press under the title, "Professions: their organization and place in society." Study of his interesting pamphlet will elucidate and emphasize the importance of the centenary in this respect.

In yet another of its aspects the centenary celebrations will form a noteworthy national and imperial event. The membership of the Association, while large absolutely (some 36,000), includes a very considerable proportion of the medical practitioners in all branches of the profession in Great Britain, Ireland, the Isle of Man, the Channel Islands, and, with the affiliated Canadian Medical Association, an even bigger proportion of those practising in the Dominions, India, the Colonies, Dependencies, and Mandated Territories. There is no doubt that, in spite of adverse economic conditions, a large number of members from over-seas will be present to take an active part in the proceedings in London next July. Moreover, it is confidently expected that foreign medical societies, colleges, and universities will send delegates with greetings to their British colleagues. The ceremonies will thus afford no mean demonstration both of the common interests and feelings of all parts of the British Empire, and of the fact that the fraternity of medicine and the allied sciences contributes much to international understanding and good will.

Active preparations for the meeting on its social, medico-political, and scientific sides are now in progress. The actual hosts on this occasion are the members of the Metropolitan Counties Branch (that is, those members living within the area of the County of London, the county of Middlesex, the county boroughs of West and East Ham, and the adjacent portions of South-West Essex), though the central officers of the Association will participate in larger measure than is usual at an ordinary annual meeting. Members of the Worcester Division are also directly concerned in one part of the programme. The Representative Body of the Association will meet at the headquarters in London on Thursday, July 21st, and its deliberations will probably continue until Monday, July 25th. It is likely that several of the subjects under consideration will be of exceptional interest. The Centenary Meeting proper will begin on Sunday, July 24th, with a pilgrimage to the city of Worcester. By invitation of the dean the official religious service will be held in the cathedral, where, during the few hours to be spent in the city, a stained-glass window to the memory of Charles Hastings will be unveiled. A commemorative plaque on the house where he lived and practised will also be unveiled, and a visit may be paid to his grave. It is perhaps not out of place to remind members and friends of the Association that contributions, of a guinea or less, will be welcomed to the relatively small Sir Charles Hastings Memorial Fund, which is required to provide both window and plaque, and to ensure permanent upkeep of the grave.

Lord Dawson of Penn is the President-Elect of the Association. He will be installed in office and will deliver his Presidential Address on Tuesday, July 26th. The scientific meetings, divided among twenty-four Sections, will begin on the following morning, some of the Sections meeting on one day only, some on two days, and some on three. For each scientific Section a distinguished president has been secured, who will be supported by two able secretaries, and by more than the usual number of eminent vice-presidents. These will be drawn in due proportion from London, from other parts of the British Isles, and from the Oversea Empire. It is anticipated that the scientific results of the work in the Sections will be of great value. The social features of an Annual Meeting—the annual dinner of the Association, Branch and other receptions—will be repeated on an ampler scale than is customary. A large and representative general committee, and a ladies' committee, are already getting to work so as to ensure

that every possible arrangement is made for offers of hospitality and for the reception, entertainment, and comfort of those who take part in this historic meeting. We can confidently ask for the interest and co-operation of all members in reinforcing the efforts of the Metropolitan Counties Branch and the Central Council to make the centenary week a conspicuous success.

TREATMENT OF STIFF JOINTS

In choosing this for the subject of the Mitchell Banks Memorial Lecture at Liverpool on November 19th, Sir Robert Jones was, as he told his audience, influenced not only by the words of Sir William Mitchell Banks, but by his own sense of the importance of the subject, and especially by that aspect of it which concerns unqualified practice. Sir Robert Jones takes a very serious view of the claims made by such practitioners and of the public's belief in their validity, based on cases of stiff joints resulting from a neglect by qualified practitioners of forcible manipulation and rupture of adhesions. He evidently holds that the public has some grounds for the distrust and even for the "open hostility" which he says it has displayed on occasions. We hope his modesty has led him to underestimate the effect of his own life-long teaching and of the spread of sound orthopaedic doctrine by his many disciples, who since the war have been scattered over the provinces engaged in the work of the cripples' hospital scheme, which owes so much to him. His lecture is the more welcome because, as he says, the ordinary surgical textbook deals with the problem of the stiff joint either not at all or at most indefinitely, and we would add that even in the textbooks on orthopaedic surgery it will be hard to find the equivalent of the knowledge and advice given in this address.

The crux of the problem will be found in the question of diagnosis, on which depends the decision whether to treat a stiff joint by rest or by movement. Broadly speaking, arthritis forbids movement, while adhesions require it. It is by studying Sir Robert Jones's lecture with care, and heeding his admonitions, that the reader will be enabled to decide, and, having made his decision, to leave few opportunities for the unqualified to triumph. We say advisedly "few opportunities" rather than none, for there will always be patients who neglect good advice when this is given by a medical man, but will accept it later when offered by an unqualified person. We must all, with Sir Robert Jones, recognize the therapeutic value to a neurotic patient of a positive assurance that the treatment will do good; but we do not think he means to imply that any medical man should say to his patient, "A vertebra is out, I will replace it," when an *x*-ray photograph shows no bony anomaly; although some readers might interpret Sir Robert's words as approving the *suggestio falsi* when he declares that, in the neuro-mimetic and the neurogenic, such a stimulus is an essential part of treatment. It is not so much in the joints of the limbs as in those of the spine, and especially the smaller joints, that even *x* rays may fail to elucidate the condition and leave the diagnosis obscure and the field open to the adventurous "hit or miss" manipulator, whether he be qualified or no. The example of a painful back, which the lecturer chose for the inculcation of sound principles of differential diagnosis, is a happy one, for it makes clear at once some of the essential symptoms of adhesions and arthritis. In rheumatoid arthritis and osteo-arthritis there are conditions in which certain movements are beneficial; but in adult stiff joints, caused by tuberculous infection, corrective movements are excluded, and the sooner an ankylosing operation on the ankle, knee, or hip can be performed the better, if amputation is to be avoided. The rooted objection of H. O. Thomas to the forcible correction of ankylosis had its origin in his experience of the disastrous results following the movement of tuberculous joints by bone-setters in his day. We are glad to learn that in the opinion of the lecturer such accidents, thanks largely to radiography, are now rare; but, in the absence of all statistics of the operations of unqualified persons, some doubt must remain on this point.

Sir Robert Jones has cast his net wide and included in this masterly summary all forms of stiff joint, acute as well as chronic. Perhaps those caused by rheumatic affections are the most disastrous in the disabilities and the sufferings they involve. If, unfortunately, it must at present be admitted that the causation of neither the hypertrophic nor the degenerative form is fully known, and that no method of preventive or curative treatment is generally successful, a good deal can be done to check the course of these diseases and to minimize their evil effects. On this head Sir Robert spoke decisively of the surgeon's duty to foresee that a joint is likely to become stiff, and to recommend measures that will ensure its fixation in the position in which the limb concerned will be most useful and least crippling to the patient. What these positions should be in the various joints he clearly indicates. This aspect of treatment of rheumatic joints has been much neglected, as a visit to any spa frequented by such patients will quickly show.

In the more severe cases of joint trouble, where there is obvious disorganization and loss of function, the bone-setter is generally wise enough to recognize his limitations and not to interfere. Such cases offer opportunities for operations which are planned to correct deformity, or to fix the joint and obviate painful movement, or on the other hand to restore movement by making a new joint in another place or by reconstructing a joint in its original site. Since the days of Gant, osteotomy of the femur has been widely practised with the purpose of correcting flexion and adduction deformity, and nullifying what is called "apparent shortening" of the limb. *Mutatis mutandis*, osteotomies are applicable to the other segments of the lower limb. Pseudarthrosis at or near the hip-joint may substitute a painless for a painful joint, even though the normal range of movement cannot be restored, and arthroplasty in suitable cases has enabled the surgeon

to go further in the same directions. For the latter operation at the elbow Sir Robert Jones claims that "we can almost promise a satisfactory result, good movement, and fair mobility"; but he prudently recognizes that in the case of the knee, arthroplasty is still in an experimental stage and only to be undertaken by the most expert surgeons on patients who are prepared to endure long and suffer greatly. If we have said little of stiff joints in the upper extremity and their treatment, it is not because we do not recognize their frequency and importance, but because we would refer our readers to the lecture itself.

BIOLOGY AND SOCIAL PROGRESS

Dr. H. H. Dale, in his Norman Lockyer Lecture, delivered before the British Science Guild, on "Biology and civilization,"[1] raises two questions of considerable interest at the present time—namely, whether the biological knowledge now available for the service of mankind receives the attention it deserves on the part of the community, and whether it is practically applied in a measure that might reasonably be expected. He thinks this is not so, and that the fact may have untoward consequences in the course of our progress in civilization. He gives illustrations of the evil results that are apt to follow changes in the physical conditions of human life and activity when they are made without thought of their biological implications. Our industrial system inflicted immeasurable misery in the shape of bad teeth and deformed limbs on several generations of those who served it, solely through an industrial development in advance of biological knowledge. In that instance, perhaps, the necessary knowledge was not available, but at the present day it is unnecessary to specify the innumerable directions in which acquired biological knowledge awaits application, or at least more effective application.

The application of the science lags behind general progress, and Dr. Dale indicates what he considers to be the cause of this. He believes that the influence of any movement in science on the general trend of our civilization is probably determined less by the reactions to it of professional men of science than by those of ordinary thinking men. He is of opinion that, in so far as general interest in science is concerned, it is at present unequally concentrated on the physical, to the comparative neglect of the biological aspect; and he regards this as a serious defect which is inevitably reflected in our educational and administrative systems. The inequality begins in our secondary schools; in these, although science is now recognized as a cultural factor, biology, if any provision is made for it at all, is hardly ever a part of the normal curriculum. Similarly with regard to the university career, a man may pass through his academic course to an honours degree in science, and so, perhaps, to a career in industrial research, with no opportunity whatever even for contact with biological ideas. "How," he asks, "shall the demand for biology be created to which education must in the end respond, while education continues to give us an administrative class with so little vision of the need for, and the central significance of, biological knowledge?" With ignorance and indifference on the part of our public men, the evil effects of progress conducted on non-biological lines will inevitably be repeated.

Dr. Dale concludes his lecture with a word of warning. If it is important that the findings of biological science should receive practical application, it is no less important to avoid their application while they are still in the experimental stage. "Nobody," he states, "can suggest that with our present knowledge we can predict even the initial stages of a strictly scientific application of genetic principles to the problem of improving the human species." Moreover, to advance such a suggestion, for example, as the intensive inbreeding of individuals showing favourable factors and the ruthless elimination of the rest—even if supported by complete scientific knowledge—would bring science into shattering conflict with our existing social order. Science has nothing to do with policy, and, moreover, its function is not to shatter, but to provide new and tested material for better building.

[1] Seventh Annual Norman Lockyer Lecture. By H. H. Dale, M.D., F.R.S., F.R.C.P. British Science Guild, 6, John Street, Adelphi, W.C.2. (1s.)

THE TRAFFIC IN NARCOTIC DRUGS

The report of the commission of inquiry into the control of opium smoking in the Far East, which was appointed by the Council of the League of Nations in March, 1929, provides valuable information, not only on the particular question contained in its reference, but also on the problem of opium and the traffic in dangerous drugs generally. It also serves to confirm the attitude which the *British Medical Journal* has consistently taken up during the last decade. The commission found that "the whole problem of poppy cultivation and its control enters very materially into the question of suppression of the opium-smoking habit"; that "as long as poppy cultivation is not under control there will always be illicit traffic in opium"; and that "the limitation and control of poppy cultivation will alone assure the total suppression of opium smoking." It will be remembered that the Hague Opium Convention of 1912 contemplated "the gradual and effective suppression" of opium smoking, and the prohibition of the traffic in prepared opium, either immediately or as soon as possible. The agreement arrived at in 1925 at Geneva pledged the Powers concerned, "on the grounds of humanity and for the purpose of promoting the social and moral welfare of their peoples, to take all possible steps for achieving the suppression of the use of opium for smoking with the least possible delay." Nevertheless, by protocol, the desired "suppression" was postponed to a period of not more than fifteen years from a date when a commission of the League of Nations should decide that the export of raw opium from poppy-growing countries would no longer constitute a serious obstacle to the reduction of consumption of prepared opium. The commission, while satisfied as to the evil effects—physical, mental, and moral—of opium smoking, could find no scientific evidence as to whether the smoking or the eating of opium is more

harmful to the individual addict. The danger of resort to other narcotic drugs, and the illicit traffic in them, came under consideration, and the fact that opium is a considerable source of Government revenue in Far Eastern territories was stressed by the commission. The broad generalization arrived at, as the result of the exhaustive inquiry, was that "the radical method of dealing with illicit traffic in opium is by controlling effectively the cultivation of the poppy, allowing only such quantities to be produced under international control as are required for the world's medical and scientific needs." Some idea of the extent of the subterranean trade in narcotic drugs has been conveyed to the public mind this week by reports of the sentences passed at Basel upon three traffickers in heroine.

DANISH ASTHMA STATISTICS

H. C. Gram has made a statistical study of 625 cases of asthma in a sickness insurance organization in Denmark.[1] The ratio of males to females was as 326 to 299, and a classification of the patients in 10-year groups showed that the disease began only in 78 in the first decade and only in 84 in the second. In the third decade there were 152, in the fourth 147, and in the fifth 105 patients whose symptoms of asthma first appeared at this age. In 515 cases information was obtained as to the hours when the attacks were most frequent; in 301 they occurred mostly at night, in 33 mostly by day, and in 181 as often by night as by day. Cutaneous tests with various extracts of foodstuffs, pollens, etc., were made in 188 cases. No reaction occurred in 97 of these, and a positive reaction was observed in the remaining 91. In 64 of the 91 reactors the reaction was positive to several substances; in the other 27 it was positive to only one substance. In 150 cases an attempt was made to correlate the results of the cutaneous tests with the patients' own experiences and beliefs as to the causes of their attacks, but in as many as 134 of these no positive correlation could be established. In 132 cases eosinophil leucocyte counts were made, and eosinophilia exceeding 4 per cent. was found in 59; in 15 cases it was 4 per cent., and in the remaining 58 it was less than 4 per cent. It would therefore seem that the diagnosis of asthma cannot be excluded because eosinophilia is absent, but when it is over 4 per cent., and when certain skin diseases and helminthiasis can be excluded, eosinophilia is confirmatory of a diagnosis of asthma. Diseases of the nose (polypi, rhinitis, etc.) were found in 45 cases. In none of the 25 cases in which polypi were removed was a permanent cure of the asthma effected. But the author considers operative intervention justifiable in such cases because nasal obstruction hampers the already embarrassed respiration and favours mouth-breathing, with its inhalation of dust into the lower respiratory passages. The degree to which the expectation of life may be reduced by asthma was calculated from the average duration of life, after the first onset of asthma, of 72 patients who had died. Up to the age of 50 the expectation of life was between 40 and 46 per cent. of the normal; after that age, when the patient's powers of compensation were comparatively small, the expectation of life was only between 22 and 29 per cent. of the normal. In 481 cases the occurrence of asthma in other members of the family was inquired into, with negative results in 211. In the remaining 270 cases (56 per cent.) with a family history of asthma there were 119 in which several relatives were asthmatics. The influence of heredity was demonstrated by a study of 71 patients in whose families more than one other case had occurred; in as many as 61 of these all the cases of asthma in the family were in one and the same branch of it. In a group of 504 cases information was sought as to factors which might have provoked the original attack, and in as many as 351 (69.6 per cent.), ailments such as influenza, pneumonia, severe colds, and bronchitis had preceded the first attack of asthma by a short interval.

[1] *Nord. Med. Tidskrift*, September 26th, 1931, p. 616.

HOUSING AND MALARIA

The importance of housing and its relationship to malaria has been recognized for many years since Manson's experiment in the Roman Campagna. The short critical summary entitled *Housing and Malaria*,[1] by Lieut.-Colonel Clayton Lane, which has been prepared for the Health Organization of the League of Nations, is of great interest and importance. After discussing the literature on this subject the matter is summed up by the author, and his conclusion is that the anophelines associated by experience in the transmission of malaria are chiefly house-haunters and night-biters. "Malarious houses" exist in which all the inhabitants suffer one after the other from malaria, and it is pointed out that, in Europe at least, such dwellings are dark, dirty, and often damp. Well-lighted, clean, and efficiently screened houses are of paramount importance in highly malarious areas, and the various lines of investigation collected in this concise review prove conclusively that the house is a factor of primary importance in the acquisition and spread of malaria.

[1] *Housing and Malaria*. By Lieut.-Colonel Clayton Lane, M.R.C.S. League of Nations Publications, III. No. C.H.M.1931. (3s. 6d.) London: G. Allen and Unwin, Ltd. 1931.

COD-LIVER OIL AND RICKETS

A note on vitamins and bone growth which appeared in the *Journal* of November 21st provoked some criticisms on the part of Dr. Hugh Thursfield, whose letter was published in the following week's issue. Dr. Thursfield holds that the gradual disappearance of severe rickets preceded experimental work on vitamins (work to which our reviewer attributed recent advances in the prevention and cure of the disease), and that it was due mainly to improved baby-feeding and to the infant welfare movement. He further disagrees with the view that in the early years of the present century the majority of clinical workers failed to recognize the specific value of cod-liver oil in rickets, and that most writers even emphasized its disadvantages. When, with its characteristic fertility, medical specialization has begotten yet another child—the paediatric statistician—problems of this kind will perhaps be easy of solution. In the meanwhile, it is of interest to consult textbooks of the 1900–10 period as a guide to current professional opinion of the value of cod-liver oil in rickets. At least a few writers preserved, on this question, an attitude neither mainly condemnatory, as our reviewer suggested, nor frankly enthusiastic, as in Dr. Thursfield's view. It seems to us that an examination of the following comments shows authoritative opinion of the time to have been either lukewarm or non-committal or [illegible]

We will, however, leave it to our readers to form their own judgement.

Burney Yeo's well-known textbook on therapeutics (1910 edition, vol. ii, p. 542 et seq.) devotes three and a half pages to the treatment of rickets. Cod-liver oil is dismissed in five lines, raw meat pulp being described as of equal importance. In Allbutt and Rolleston's *System of Medicine* (1907, vol. iii) it is stated:

"Cod-liver oil is useful in some cases, especially when good milk and cream are not obtainable or not well borne, but it is to be regarded rather as a food than as a drug. . . . Drugs play a secondary part. As a rule far too much reliance is placed upon them, and children are drenched with cod-liver oil, iron, 'chemical food,' or lime-water often to the disturbance of digestion and the impairment of natural appetite and consequently of nutrition. Such remedies are useful and have their place; but they are by no means essential or of prime importance in most instances."

Osler and McCrae (1910, vol. i, p. 888) state:

"Cod-liver oil is most commonly used in England, but other oils such as cotton-seed oil and olive oil have been used, and apparently it makes little difference how the fat is supplied, provided it can be digested."

Cushny's *Pharmacology* (first edition, 1900, p. 705) states:

"It would seem, then, that cod-liver oil has not been shown to have any action apart from its being an easily digested food. The older attempts to explain its superiority to the other oils have not been successful."

At the opposite end of the scale may be quoted two other works. Hare's *System of Practical Therapeutics* (second edition, vol. ii, p. 236) states:

"While of little importance as compared to dietetic and hygienic management, medicine may aid in checking the progress of rickets. Cod-liver oil is the most important agent, and should not be omitted when it is tolerated by the stomach."

Fagge and Pye Smith's *Textbook of Medicine* (1901, vol. i), after mentioning that the most important treatment is dietetic, states: "Among medicines the most valuable is cod-liver oil." Other drugs referred to are steel wine, quinine, and tannic acid.

INDUSTRIAL WELFARE

The annual report of the Industrial Welfare Society for the year ended June 30th, 1931, which has just been issued,[1] is a record of steady progress in a number of directions. The main work of the society is to encourage the study among employers and others of questions affecting the welfare of all persons engaged in industry. To this end special conferences are held from time to time in various industrial centres, in addition to the annual conference, which takes place at Oxford. For instance, a conference held in the past year at Manchester discussed the question of health in industry, while another conference discussed the question of mechanization. Again, the advice of the society on matters relating to industrial welfare is in constant request by numerous industrial firms, while members of the staff of the society frequently address meetings at rotary clubs and elsewhere concerning its work. The health of the industrial worker forms a prominent feature of the society's activities, and the Advisory Medical Committee, an honorary body attached to the society, is often called upon to give expert advice on health problems raised by industrial firms. This medical committee meets regularly throughout the year, and its members give lectures on subjects relating to the promotion of health in industry. The Industrial Welfare Society has always taken a deep interest in accident prevention, and we are glad to hear that it is now going to act in close relation with the National Safety First Association, its special role being propagandist work towards reduction of accidents. The only unsatisfactory feature of the report is the financial one, which is almost inevitable under the conditions of economic disturbance now prevailing; but the deficit in the year's working is indirectly balanced by a generous gift to the endowment fund. The Duke of York, who is the president of the society, has shown his continued interest in its work by visiting a number of factories in London, by attending a conference at Nottingham, and by taking the chair at the annual general meeting last week.

[1] 51, Palace Street, Westminster, S.W.1.

THE PHOTOGRAVURE PLATES

At the Annual Representative Meeting of the British Medical Association at Eastbourne last July the Chairman of the Journal Committee, in his review of the year's work, said that the *Journal* was now better printed, better illustrated, and in every way a finer production than before. Sir Robert Bolam's opinion was endorsed by the meeting, and we may perhaps add that many readers have expressed their appreciation of the efforts made to improve the look of our pages. The change in typography was made at the end of 1930, the first issue of the New Year being printed throughout in a more legible and agreeable type than any hitherto used. This improvement in the printing of the letterpress followed hard upon a change in the method of reproducing pictures on special plates. We have had so many complimentary inquiries about these plates that a brief explanation here may be welcomed. Since November 8th, 1930, the process employed for producing special illustrated pages in the *British Medical Journal* has been that known as photogravure. This is a photo-mechanical method, based, like ordinary letterpress blockmaking, on photographic processes, but applied on an entirely different principle. Whereas an ordinary half-tone block to be printed on a letterpress machine is printed from its surface, a photogravure illustration is taken from an intaglio plate, the ink being drawn out of its depths. In a block, the black parts of the illustration are the highest parts of the block, the half-tone portions are lower, and the high lights lower still. In photogravure the printing surface is exactly reversed; here the high lights are the highest parts of the plate, the half-tones are again lower, and the blacks of the picture are still more deeply recessed. Thus in ordinary letterpress printing a sheet of paper takes an impression from an inked block by being brought more or less lightly into contact with it. But with photogravure the plate, after being inked, must have all superfluous ink removed from its highest surface (the high lights in the picture), while the ink is allowed to remain in the lower depths of the plate (the blacks and half-tones of the illustration); and in the actual printing operation very great pressure must be exerted in order to force the paper into the deepest recesses, so as to transfer the ink thence to the paper. From the foregoing it will be seen that not only does photogravure require a different kind of printing surface,

but also a different kind of printing machine. For photogravure plates, as for half-tone blocks, a "screen" is used to produce a broken surface capable of holding the ink; but in the former the screen is much less obvious, and is indeed difficult to detect without the aid of a magnifying lens. Hence minute detail is rendered with much greater accuracy—a point of considerable importance in the reproduction of scientific illustrations such as photomicrographs. Photogravure has this further advantage—that the best results are got by the use of natural-surfaced papers, thus avoiding the distracting reflections from the highly glazed coated "art" papers which are essential for printing from fine-screen half-tone blocks. Readers who have followed this account and wish to judge for themselves should compare the photogravure plate in our present issue with the art paper plate in the *Journal* of October 4th, 1930, or any earlier issue.

IMMUNIZATION AGAINST SNAKE VENOM

Once again the annual report of the Walter and Eliza Hall Institute of Research in Pathology and Medicine[1] deals at considerable length with the investigation of Australian snake venoms. Although financial stringency has compelled the Commonwealth Department of Health to withdraw its grant, rigid economies at the Institute have made it possible to continue the various researches. The cost of venom collection and of the preparation of antiserum at the Commonwealth serum laboratories is still being met, though with difficulty. An attempt was made last year to ascertain whether the serological blood relationships of some Australian snakes could be used to confirm the morphological findings in the differentiation of closely allied venomous species, and the specificity of the precipitin and complement-fixation reactions has been explored. Neither of these methods in its simple form was found to permit the differentiation of species, the precipitin tests in particular proving to be widely non-specific, especially when strong antiserums were used. The complement-fixation test proved to be rather more specific, and the results yielded were in accord with the zoological findings. Haemagglutination does not appear to be much more specific than the two previous tests, but further studies are being undertaken to determine its value more exactly. Earlier experiments upon guinea-pigs immunized with a number of venoms had suggested that active immunity in this species was less specific than the passive immunity conferred by the injection of monovalent antivenene. Groups of rabbits immunized against the venoms of the tiger snake, copperhead, and death adder respectively were found to exhibit a higher degree of non-specificity than could be explained by the action of circulating antibodies. In the attempt to explain this phenomenon it was shown that venoms closely allied to those used for immunization could function as secondary stimuli in these immune animals. It appeared doubtful, however, whether the time needed for this response was enough to account for the observed non-specific protection; it was certainly insufficient when death-adder venom was used for testing. It was finally suggested that an additional factor in immunity might be the accumulation of antibody in the tissue spaces round those cells which were peculiarly liable to attack. Another line of investigation was indicated by the fact that the Australian venomous snakes, and, to a less degree, some non-venomous ones, possess an extremely high immunity to Australian venoms, but are susceptible to the action of cobra venom. This immunity is in striking contrast with the susceptibility of mammals, and cold-bloodedness can be excluded as the prime cause of the difference. Various theories have been put forward to account for this, and it has been suggested that venom, or its constituents, are constantly, or intermittently, present in the circulating blood of these snakes. It has been made clear that they have an immunity to neurotoxin and thrombin, but no evidence of either of these substances could be found experimentally in the plasma. One hypothesis, which has not been presented before, is that the venom gains entry to the blood stream by self-inflicted bites, or by the bites of other snakes, and that a process of survival of the fittest has resulted in the development of immunity. Whatever the mechanism may be, it is clear that the most important factor in developing the immunity of snakes to their own and to allied venoms is a natural immunity of the tissues of the central nervous system, which allows them to withstand even high concentrations of venom for a long time. Since even large doses of venom cannot act as specific secondary stimuli, the antitoxin immunity of snake plasma is unlikely to be of the same nature as that developed in mammals in the course of active immunization.

[1] Melbourne: J. C. Stephens, Ltd.

TESTIMONIAL TO DR. ALFRED COX

A meeting of the executive committee of the Cox Testimonial Fund was held on November 11th. Sir Ewen Maclean presided, and there were sixteen other members present, together with the honorary secretary, Dr. E. R. Fothergill. It was decided to insure the portrait from the date of its completion, to cover all risks during its exhibition at the Royal Academy, 1932, and until it had been finally handed over to the British Medical Association. The presentation, it is hoped, will be made at one of the functions of the Centenary Meeting of the Association, to which all subscribers to the fund will receive an invitation. It was decided to send nominal rolls of subscribers to the fund up to December 1st, 1931, to the secretaries of Branches and Divisions, in order to assist them in their campaign for the success of the fund in their areas. The number of contributions received from members in the British Isles up to November 1st was 1,455, this being the result of only four weeks' appeal; and further sums are still coming in in large numbers. The Oversea Branches are conducting their appeal separately. It was decided that a presentation book should be prepared, giving the names and addresses of subscribers, and presented to Dr. Cox during the Centenary Meeting at the same time that the portrait is presented to the Association. The committee is anxious that as many members as possible should contribute to the fund, sending any sum they like, not exceeding ten shillings.

We much regret to announce the death of Sir T. Eustace Hill, who retired last year from the post of medical officer of health for the county of Durham, and from the professorship of hygiene and public health in the University of Durham College of Medicine

The First Hundred Years

NOTES ON THE HISTORY OF THE ASSOCIATION

THE British Medical Association, founded at Worcester in 1832 by Sir Charles Hastings, celebrates its centenary next July, under the Presidency of Lord Dawson of Penn. In anticipation of this landmark in professional history the Council invited Mr E. Muirhead Little, F.R.C.S., to undertake the task of annalist. We publish below the first of a series of advance extracts from the *History of the Association*, which Mr. Muirhead Little is preparing for publication at the time of the commemorative proceedings in Worcester and London.

THE MEDICAL PROFESSION IN 1832

The year 1832 was an eventful one, for besides the foundation of the Provincial Medical and Surgical Association (renamed later the British Medical Association), it saw the passing of the first Reform Bill, and the first epidemic of Asiatic cholera in Great Britain. The Anatomy Act, which put an end to body-snatching and its scandals, became law in that year; Tennyson's first volume of *Poems*, which included some of his best work, was published, and Charles Darwin, only a few days before the year began, started on that five years' voyage in the *Beagle* which led to such momentous developments in natural science. The whole lustrum 1830 to 1835 was momentous. The country had largely recovered from the economic depression following the long wars with France and her allies, and the people were full of creative and inventive energy, which manifested itself in many ways. In 1830 the first passenger railway of any practical value was opened from Liverpool to Manchester, after the Stockton and Darlington line, which was designed for mineral traffic, had proved successful some years earlier. Successful trials of the first iron steam vessels were carried out on the Thames, and London Bridge, which had stood for more than six centuries, was demolished, and its successor erected upon a different site.

The Reform agitation had not been entirely peaceful. The mob had burned Nottingham Castle and the Bishop's palace at Bristol, these riots being accompanied by loss of life. The cholera epidemic had led to the provision of cholera hospitals, some of which were not popular. In the *Annual Register* for 1832 will be found accounts of attacks on such hospitals by the mob. At Manchester the patients were removed and the contents of the building destroyed by the rioters, while at Paisley the windows of the hospital and those of the surgeons' houses and shops in the town were broken. Some cholera patients were injured by stones, and the hearse used for the dead destroyed. Rumours of resurrectionist activity had, however, something to do with this last riot. Primitive customs still lingered in England. At Carlisle Market, in April, 1832, a small farmer offered his wife for sale, with her own consent, for fifty shillings. Judging from the report of his speech, he and she were by no means uneducated, in the *Annual Register* she is described as a "sprace lively damsel." She was knocked down "for twenty shillings and a Newfoundland dog," and taken away by her purchaser, apparently not ill-pleased. In this same year was founded the first of the modern provincial English universities, that of Durham.

At this time that great octopus, London, or as Cobbett called it, the Wen, had not spread its tentacles over the country as it has done since, and it had not yet sucked much of the life blood out of the provincial towns. Such cities as Worcester, Bristol, Exeter, Norwich, Winchester, and many others had a vigorous local life, and supported consultants in medicine and surgery. Many of the landowners in the neighbourhood had their winter residences in these towns, instead of in London as in later years, and their young folks found entertainment in local assemblies. But the centripetal movement had begun, as is shown by the fact that the town house of the Lechmeres in Worcester became the residence of the founder of the Association.

The medical profession in 1832 found itself face to face with the cholera epidemic, unprepared and unarmed against it. The committee of one of the great London hospitals, with commendable enterprise and foresight, sent one of its physicians with a prosector to study it on its first appearance at, and near, Newcastle-on-Tyne. The physician's report revealed the terrible mortality in certain villages, and put on record the symptoms and post-mortem appearances, but was not able to claim any success in treatment. Indeed, the *Annual Register* was not unduly pessimistic when it stated that "the cholera left medical men as it had found them, confirmed in most opposite opinions, or in total ignorance as to its nature, its cure, and the causes of its origin, if endemic, or the mode of transmission if it were infectious. In Great Britain, as elsewhere, it fixed its residence among the most needy and squalid classes of the community." The sciences of epidemiology and public health did not, and in the absence of statistical information could not, exist. Until the passing of the Registration Act of 1836 there were no national statistics from which trustworthy conclusions could be drawn, although a beginning had been made with the decennial census of population in 1801.

In the medical profession, as in industry and invention generally, the sap was stirring, but there was no means by which it could make its influence felt. The profession was not organized, not even defined, for there was no hard-and-fast line drawn between the qualified and unqualified practitioner, nor was there any simple criterion by which the members of the public might distinguish between the reputable practitioner and the quack. Twenty-six years were to pass before the Medical Act of 1858 in some measure provided a remedy for this state of affairs. But notwithstanding this want of organization and definite status, it is a mistake to assume, as more than one writer has done, that there was no body of opinion and feeling which animated practitioners before the passing of the Medical Act of 1858, or which inspired a large number of practitioners with a consciousness of professional brotherhood. From the moment in 1823, when the *Lancet* constituted itself the voice of the medical profession, it became evident that there was a body of men who felt that they belonged to a great profession. They were split up into groups—some of which mistrusted or were jealous of others—but, ill-defined as its units might be, the profession of medicine existed.

That this conclusion is sound may be inferred from the terms of the address delivered by Charles Hastings on the occasion of the first meeting of the Association in 1832. He and his colleagues used the phrase "medical profession" frequently, and he characterized medical liberal profession. Evidently the creation had

and for twenty-six more years it continued to flourish without any lawful regulation of its members outside the jurisdictions of some of the corporations. Yet it is not to be wondered at that writers, looking back from a period half a century later, should have doubted the existence of a medical profession in the days of their grandfathers. With characteristic British indifference to definition, regulation, and exact order, the nation had allowed a chaotic state of things to exist too long.

MEDICAL CORPORATIONS IN 1832

The first attempt to regulate surgical practice in the London district since the days of Charles I is represented by an Act of George II. The Royal College of Physicians of London had long had a monopoly of the practice of physic in London and seven miles round. In 1815 the London Society of Apothecaries had succeeded in getting an Act of Parliament passed which restricted the practice of pharmacy to its licentiates throughout England, and at the same time entitled it to grant licences to practise physic. In Scotland the Edinburgh College enjoyed privileges which restricted practice in certain counties to its members, and the Glasgow Faculty of Physicians and Surgeons had similar rights in counties adjacent to Glasgow. As Mr. Walter Rivington wrote: "Within these bounds no one was to exercise the art of medicine without a testimonial of a famous university in which medicine was taught, nor could anyone practise as a surgeon unless he was a member of the Glasgow Faculty." In Ireland the King's and Queen's College of Physicians enjoyed privileges, conferred in 1692, restricting the practice of physic to their licensees all over Ireland. The College of Surgeons in Ireland does not appear to have had similar jurisdiction. The ancient English and Scottish universities stood somewhat aloof from the ordinary practice of medicine and surgery. Their graduates had the right to practise throughout their respective kingdoms, but the universities exercised no disciplinary control over them, and had no powers for the suppression of unqualified practice.

Any attempt to estimate the amount of unqualified practice in England before 1832, or even 1858, is attended with great difficulties. Until the *Medical Directory* for England and Wales appeared in 1846 there had been no list of the great body of general practitioners except for an enterprising publication of which only three issues were made. These referred respectively to the years 1779, 1780, and 1783. This publication was called the "Medical Register," but, unlike the present official *Medical Register*, it was published without authority. Copies of it are now very rare. From the issue for 1783 we learn that sixty years before the foundation of the Association there were 778 members of the Corporation of Surgeons, and 301 of the Society of Apothecaries of all ranks—a total of 1,079. At the same time the College of Physicians had only 114 Fellows, Candidates, and Licentiates. The reputed surgeons and apothecaries in England and Wales (excluding London) amounted to 1,573, from which it would appear that only about two general practitioners out of three had any qualifications. At the same time there were 337 physicians in the provinces, of whom very few had any connexion with the London College of Physicians, most of them holding Scottish or Continental doctors' diplomas None of these appear to have held Irish degrees. The Apothecaries Act of 1815 no doubt wrought a great change, so that by 1832 probably the proportion of unqualified practitioners was much reduced. Nevertheless, in 1853 the *Medical Times and Gazette* estimated the number of unqualified practitioners at double that of the qualified. It was stated in the House of Commons in 1841 that out of 1,830 candidates for medical office under the Poor Law, 320 had never been examined in surgery, 323 never examined in medicine, and 233 had not undergone any professional examination whatever. Yet these persons were all eligible for medical office under the Poor Law. The 1841 census gave 33,339 persons as practising one or more branches of medicine. The medical directories of 1853 (the nearest in date available) show that only 11,308 were then qualified.

From this short survey of the powers of the corporations in 1832, it appears that all over England, except in the environs of the capital, no attempt was made to regulate the practice of medicine and surgery, apart from the Apothecaries Act of 1815, which provided for the sufficient examination of candidates for the Licence, and which, in the words quoted by Walter Rivington in 1879, "created a body of qualified general practitioners in England and Wales, who were entirely independent of the College of Physicians and Surgeons, and were entitled to practise medicine not merely by sufferance, but by law."[1] Thus did a City company step into the breach, and take up a duty which might rightfully long before have been assumed by the Royal College of Physicians of London which, unfortunately, had preferred to remain aloof in its academic majesty, and to take no interest in the practice of physic in the metropolitan area was infringed. But even its limited power of regulation practice had fallen into desuetude. The last prosecution undertaken by the College was that of Dr. Edmund Harrison in 1828. The practice was found to be supine and although the faculty of physic includes surgery College was non-suited and had to pay costs.

The best instruction in anatomy, physiology, medicine and surgery had, up to this time, been provided by the so-called private medical schools, unconnected with hospitals. Such were the Great Windmill Street school of the Hunters and Sir Charles Bell, that of Brookes's or Blenheim Street, the Webb Street School, Carpue's or the Dean Street school, and Dermott's, the Gerrard Street, Little Windmill Street school. All these once flourishing if commercial, institutions were gradually squeezed out of existence by the refusal of the College of Surgeons to accept their certificates, and most of them were closed by the year 1832, although one or two lingered on for a good many years later.[2] Their success had in part been due to the better bargains which they were able to make with the "resurrection men" as compared with the official hospital schools. The Anatomy Act of 1832 nullified this advantage.

A hundred years ago the average medical practitioner was a man of little culture or general education. The graduates of Oxford and Cambridge and of the Scottish universities were probably as well educated as the members of the learned professions of the Church and the Law, at least in those cases in which the degrees had not been granted without due academical training, but the rank and file of the profession had received its training through the system of apprenticeship. Whatever the advantages of this system may have been, it is undeniable that it involved at the best the too early termination of the general education of the lads who, in order to get qualified by the time they reached the age of 21, must have left school at the age of 15 or 16. At its worst, if the master neglected his duties, or the pupil was apt and cared little to learn, the period of apprenticeship too often represented so much precious time wasted

Contemporary portraits of the medical students who were "walking the hospitals" after leaving the care of their masters are not flattering to our professional self-respect. *The Pickwick Papers* began to appear in

[1] Carmichael Prize Essay, 1879, p. 24.
[2] *British Medical Journal*, 1895, ii, 1388, The Rise and Fall of the Private Medical Schools in London.

1836, and everybody knows what kind of figures were cut by Bob Sawyer and Benjamin Allen. No doubt these were not meant to be taken as serious portraits, but were painted in a spirit of light-hearted caricature, yet there was a substantial basis of sober truth in their regrettable lineaments. Nor do they stand alone. Thackeray, writing a dozen years later in *Pendennis* in a more serious vein, had made the portrait of Huxter no more attractive than those of Sawyer and Allen. Albert Smith, himself a member of the profession, did nothing in his novels to improve the reputation of the student. In the second volume of *Punch* (February 12th, 1842) one of a set of valentines is addressed to The Medical Student. The drawing was by John Leech and the verses by W. H. Wills, and both confirm the descriptions given by Albert Smith. Even in the pages of a medical journal, which might be expected to avoid fouling its own nest, most unfavourable descriptions are given of the manners and customs of London medical students. These anonymous articles in the *Medical Times* are said to have been written by Albert Smith. The conclusion seems inevitable that there must have been a large basis of fact under these writers' attacks on medical students, but there were doubtless many earnest workers who were neither dissipated nor dirty (Dickens and Thackeray both insisted on the lack of personal cleanliness in their medical students), and who became highly respected members of society; and it needed a good many men of the quality of Sir Charles Hastings, and a good many years of improved behaviour, to live down this scandal.

SHEFFIELD MEDICAL DINNER

PRESENTATION TO PROFESSOR A. J. HALL

The annual medical dinner at Sheffield was held on November 26th at the Royal Victoria Hotel. Professor Arthur J. Hall was the guest of honour, and the unusually large attendance of nearly two hundred gave evidence of the respect and affection in which he is held.

Dr. A. E. BARNES, in proposing the toast of "Our Guest," spoke first of what Hall had done in building up the Medical School. Coming to Sheffield from Bart's in 1889 as assistant demonstrator in physiology in the old medical school in Surrey Street, he became sole lecturer in physiology three years later. It was through his energy that the Favell Physiological Laboratory was established in 1895. Leaving physiology in 1898, Hall took on the department of pathology, housed at that time in some old shops in West Street. Enthusiasm, however, made up for lack of equipment, and here was commenced that pathological service which had been made available for all local practitioners. Hall took an active part in the steps which led to the founding of Sheffield University, which was opened by King Edward in 1905. Here he organized the laboratory for clinical pathology, and was, some years later, appointed to the chair of medicine. It was to Hall that the Sheffield Hospital Staffs Club owed its formation, leading to the almost complete disappearance of the friction and ill feeling between the leading members of the profession which was so marked in those earlier days. In recent years his scientific work on encephalitis was well known, and he had done important work on silicosis for the Home Office. Amid all these activities his intense interest in the welfare of his students has been unaltered.

Dr. HERBERT HALLAM, speaking as an old student of Professor Hall's, and also as a representative of the family practitioners of Sheffield, said that Professor Hall was himself the son of a much-loved family doctor in Sheffield. His organizing ability, his genius for finding common-sense solutions of difficult problems, his tolerance, his delicate humour irradiating many otherwise dull scientific proceedings, his freedom from pomposity and "side"—these were some of the things which had endeared their guest to them, and earned their grateful appreciation.

Dr. ARCHIBALD YOUNG claimed to be Professor Hall's oldest student in Sheffield. He could recall their guest in 1889 coming to a medical school that was almost dying—out of date, with no spirit of progress, and no proper equipment. As students, they found in Hall a born teacher, a man of ideas, who was able to infuse into his students a real interest in work, and a man who was able to get things done. He reorganized their classes, and obtained proper equipment. He rescued that dying medical school, and his "epic fight with circumstances" saved the school at the critical moment. "All through its development he has been the force behind it." In view of all that Hall had done in Sheffield it was felt that the year of his retirement from the official positions of senior physician at the Royal Hospital and professor of medicine in the University ought not to pass without some fitting expression of the appreciation of the members of the profession. It was his pleasant duty to present to Professor Hall a cheque for £573, and a book containing the names of all who had contributed. The presentation was made on behalf of his old students and colleagues at the hospital and university, as well as all the practitioners in Sheffield and district.

Professor ARTHUR J. HALL expressed his deep sense of appreciation of the honour done him as the guest of such a gathering, and also for the presentation made by Dr. Young. In a felicitous speech he contrasted medical life forty years and more ago with present-day conditions. He remembered as a boy having to help to "make or mar" many pills, plasters, and ointments for his father's patients; for in those days doctors not only had to dispense their own medicines, but to make them. Practically the doctor's only piece of apparatus was the stethoscope, and it was used most commonly without removal of the patient's clothes. The clinical thermometer was just coming into use, but was still regarded by most as a new and unnecessary fad. They had to concentrate on what they had—the pulse and the tongue. All the diseases of the abdomen had to be diagnosed from the condition of the tongue. The peritoneum was, in a very real sense, "a closed cavity." Medicine has progressed perhaps more than any other science since those days. Diphtheria was a bugbear at that time; there was so often the horrible question, whether or not to do tracheotomy, and, whatever the decision, it was too often followed by the loss, not only of the patient, but of the family from the practice. In the realm of prevention of disease, the prevention of typhoid fever in the great war, by inoculation, deserved to rank as one of the greatest achievements in medicine. The modern treatment of myxoedema, of diabetes, of pernicious anaemia—these, as well as our knowledge of vitamins, were, every one of them, advances brought about by accurate scientific investigations. The same methods made possible progress just as immense in the future. The manufacturing pharmacist and the mechanization of medicine had both come, and come to stay. Yet in spite of all this, just as the old rudder and the man at the helm were necessary to the modern battleship, so the physician, with his ear and his hand, must always be a primary necessity in medical practice. In conclusion, Professor Hall called attention to the fact that at the present time both the senior physician and the senior surgeon at the senior institution in Sheffield were old students of the Sheffield Medical School, and asked that the profession would extend to his successor, Professor A. E. Naish, the same support that he had received.

Dr. J. MACKINNON, proposing the toast of "The Medical Faculty," referred to the increasing influence exerted by the State in medical affairs, and said the time was coming when the medical faculties of our universities might find it wise to take a larger share in the medico-political work of the profession. Professor GRAHAM SIMPSON, in responding, referred to the loss Sheffield had just sustained by the death of Professor Douglas, the dean of the Medical Faculty. This, the largest medical dinner he had known in Sheffield, was a great occasion for the profession.

Dr. E. F. SKINNER, in proposing the toast of "The Chairman," said that they had every confidence that Professor Naish would maintain the high traditions left

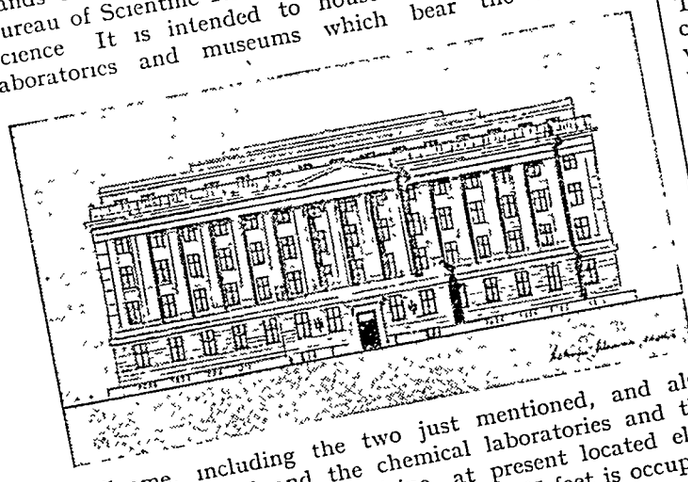
by his predecessor: he was a clinician conversant with all modern methods, and held the position of president this year of the Yorkshire Branch of the British Medical Association. Professor A. E. NAISH acknowledged the honour of presiding at that historic gathering, and said that their best appreciation of what Hall had done for the Sheffield Medical School would be to continue to press forward in the same progressive spirit.

The Medical Dinner Committee is to be congratulated on the way in which this very successful gathering was organized. The heaviest work fell on its secretary, Dr. R. E. Pleasance, Dr. E. F. Paige having also taken a prominent share, as representing the Women's Medical Federation in Sheffield.

WELLCOME RESEARCH INSTITUTION

CORNER-STONE OF NEW BUILDING LAID BY LORD MOYNIHAN

The corner-stone of the Wellcome Research Institution in London was laid on November 25th by Lord Moynihan, President of the Royal College of Surgeons. This handsome building, whose main frontage is to Euston Road, stands on the site previously occupied by the Wellcome Bureau of Scientific Research and the Museum of Medical Science. It is intended to house the various research laboratories and museums which bear the name of



Wellcome, including the two just mentioned, and also the physiological and the chemical laboratories and the Museum of Historical Medicine, at present located elsewhere. A space measuring 225 feet by 135 feet is occupied by the new erection, and the façade, with a colonnade of twelve fluted Ionic columns, masking the second, third, and fourth floors, will be a noteworthy piece of London architecture to greet the visitor on his arrival at Euston station. The building is being furnished and equipped in the most modern fashion, and, with the exception of some Italian marble, the whole of the materials used are Empire products. It was stated that 89,000 tiles are being used for the construction of the floors, and 220 tons of marble, principally for wall linings. One of the features will be a lecture hall with a ceiling treated with sound-absorbing felt.

The stone-laying ceremony took place in the presence of a large company, including representatives of several foreign legations, High Commissioners for the Dominions, representatives of various bodies having imperial interests, of public health authorities, and of London University, and members of the medical profession. A bronze casket, containing historical records of the Wellcome Research Laboratory and museums, was inserted in the corner-stone, and a silver trowel was presented to Lord Moynihan by the architect, Mr Septimus Warwick.

Dr HENRY S WELLCOME said that the building had long been projected by him, and he had been fortunate in finding his ideas realized by Mr. Septimus Warwick, the architect, whose notions of the architectural embodiment had corresponded to his own. He had a strong belief in the inspiring influence of symmetrical and graceful architecture, and he had found that an artistic environment was not incompatible with scientific research, but even stimulated and facilitated the solution of problems. He added that a special tribute should be paid to Mr. Warwick for his success in creating this building, and great credit was also due to the builders, who were completing the work, already well advanced, within twelve months of obtaining possession of the site.

LORD MOYNIHAN'S ADDRESS

LORD MOYNIHAN, after laying the corner-stone, said: "To-day we lay the corner-stone to a life's work." Dr. Wellcome, for nearly forty years, had so directed his most earnest thoughts, and had so bestowed his lavish gifts, as to create a great instrument for medical research and to found a museum illustrating the significant events in medical history. His earlier labours were engaged in many directions. It was in 1894 that he founded laboratories for physiological research, to be followed two years later by those for chemical research. When Kitchener recaptured the Sudan, Dr. Wellcome, one of the first civilians to visit that country, realized by personal contact with misery and illness in many forms that there lay an unequalled opportunity for service. Little was then known of many of the diseases which for long had ravaged the districts brought under British rule. In 1899 Kitchener opened laboratories in Khartum built and endowed by Dr. Wellcome for the investigation of tropical diseases. The late Sir Andrew Balfour was the first director, and continued his work for twelve years. With this institute was associated a floating laboratory, towed to all waterways of the Nile, affording opportunity for the collection of specimens, and for observation and inquiry in an otherwise inaccessible.

Dr. Wellcome's activities continued also in this country. In 1913 he established the Bureau for Scientific Research and the Historical Medical Museum, in the following year the Museum of Medical Science, and in 1920 the Entomological Field Laboratory. All these institutions, or many of them, suffered, however, under one great disadvantage, which all research students would appreciate at once; they were separate from one another, giving no opportunity for that hour-to-hour consultation which was one of the great advantages of having collective research under one roof. But now that was being altered. Under this one roof the following subjects were to be studied: medical zoology, parasitology, entomology, tropical medicine and hygiene; there would be physiological and chemical laboratories, the historical museum, and a museum of modern medicine—a very formidable and impressive list. Dr. Wellcome's activities, however, had not been confined to this country, for the speaker had lately been reading an account of the proceedings whereby he had given great help towards the foundation of the Gorgas Memorial Laboratory, near the Panama Canal.

One of the conspicuous features of Dr. Wellcome's lifework, the speaker proceeded, had been at once its relevance and its opportunism. In all his investigations of tropical diseases he began in an almost virgin country, and the harvest gathered had been such that not only had many lives been spared and much suffering saved, but vast tracts of country had, for the first time, been made fit for human habitation. At home the great need of medicine to-day was in the direction of increasing the opportunities for medical research, and not less in the opportunities for creating those competent to undertake medical research. Physical observation alone, from the time of Hippocrates through Sydenham, Addison, and James Mackenzie, had revealed many secrets which had been long hidden in connexion with diseases that lay within the orbit of pure investigation, and the conquests of mere observation had been innumerable and of a value beyond all reckoning. Upon it a virile and beneficent art had been built, to the infinite advantage of mankind. It was within living memory that this most exquisite art had found its opportunities extended and its methods affected by the encouragement and adoption of researches which were seeking to change a practical art into an

applied science Difficulties, of course, had been found all along the way, but experiment in medicine was for ever inevitable

'As a result of experiment in medicine," Lord Moynihan said in conclusion, "we are happily gradually replacing anatomy by physiology, and if disease is, in many respects, merely altered function, then we are about to create a science new to humans, of comparative function in health and in disease But experiment has done even more for us than that I think it has strengthened the arm of medicine, and it has made the tests more severe for the acceptance of evidence which has been derived by the methods of observation Medicine depends of course, not only for its present stability, but for its future advance, upon a large number of ancillary sciences Those sciences are to be studied in this building The effect, therefore, on medicine will be considerable but I hope something better even than that will come out of the work done in this institution and similar institutions, that is to create in the minds of the leaders of the profession what my friend Sir Walter Fletcher would like to call 'the religion of research' I hope the date is not far distant when those who are to serve upon the teaching staffs of hospitals throughout this country will be permeated by the religion of research, and in time to come, all members of the teaching staffs will themselves have undergone, in institutions similar to this, a discipline of research To-day, in your name I would like to offer our homage to the man who has made this institution possible, and by his constant thought and by his most lavish generosity has done as much, I think as any man has ever done in this country to make it possible for those who work within our profession to advance both the science and the art of medicine"

Following Lord Moynihan's address, Dr WELLCOME added a few further words, saying how much he was honoured in having had associated with him so many brilliant young men who had entered with zest into these enterprises Much of the credit that had been given to him belonged to others, and those not only the directors of the various departments of the institution, but the members of their staffs

England and Wales

Liverpool Medical Institution

A special general meeting of the Liverpool Medical Institution was held on November 19th when honorary membership was conferred by the president, Professor W Blair Bell, on Lord Dawson of Penn Emeritus Professor Archibald Donald, and Sir Robert Jones, who were formally introduced by Professor John Hay, Professor H Leith Murray, and Mr K W Monsarrat respectively Professor Donald replied on behalf of the new honorary members The annual dinner of the institution was held at the Adelphi Hotel the same evening, when the guests included in addition to the new honorary members, the Lord Mayor of Liverpool, Vice Chancellor Dr H J Hetherington, Canon T A E Davey, Professor W Fletcher Shaw, Professor R W Johnstone, and others Lord Dawson, proposing the toast of 'The Institution, spoke of the great advantages of a medical society, and expressed the wish that the influence of such societies were more readily recognized by the public There was no place like a medical society for giving the truth a free road and falsehood the go by In responding to the toast, the president said that they had the settled pride in the institution that was born of ancient tradition They eschewed all that was not directly connected with their art and science, and lived in peace and concord, untouched by medical or national political crises, unruffled by religious differences The institution was one of the greatest post graduate schools in the country, with an average weekly attendance of over seventy members This year the final year students have been invited to attend the meetings, to hear their teachers taught, and the invitation had been greatly appreciated Proposing the toast of "The City and University of Liverpool" Professor Fletcher Shaw said that in the Liverpool Medical Institution they had one of the finest of its kind in the Kingdom, and if the wealthy business men could be persuaded how important was the interchange of ideas between medical men, and how important it was for that interchange to have worthy buildings, he was certain such institutions would be found in every big medical centre The Lord Mayor and Vice Chancellor Hetherington responded Professor R E Kelly proposed the health of the guests, to which toast Sir Robert Jones and Professor R W Johnstone responded

The London Hospital: New Cardiac Department

The new heart department at the London Hospital was opened on November 25th It occupies a set of rooms comprising a spacious and comfortable waiting hall for out patients, rooms for consultation, electrocardiography, and orthodiagraphy as well as laboratories, dark rooms, offices, and dressing rooms The department was constituted in 1911, and was the first complete cardiac department of its kind in any hospital in the world For its endowment Mackenzie, founder and first physician in charge, was able to obtain £10 000 as a gift from the trustees of James Paterson In 1913 the department was reconstituted, but on the outbreak of war the staff dispersed and it was closed It was reopened in 1920, with Dr John Parkinson, who had been Mackenzie's chief assistant, as physician in charge but the inadequate and temporary nature of the accommodation hindered any real progress During a period of two years the East End Tradesmen's Association raised on its behalf a sum of £4,300 With this, £1 430 from the Paterson bequest and a donation of £500 from the Queen, the new department has been housed in premises worthy of its founder The opening ceremony was performed by Mrs C E W Charrington Sir H W Gorchen briefly recounted the department's history In speaking to a vote of thanks, Dr John Parkinson said that the new building was admirably adapted to further the study and treatment of heart affections, and the staff realized its indebtedness to the East End Tradesmen's Association The equipment included the most modern instruments for studying heart affections and estimating the effects of treatment Those who worked in this department were actuated, said Dr Parkinson, first of all by sympathy with the sick, secondly, by a natural desire to teach the members of the profession in the future how best to relieve their patients' ills, and, thirdly, by the feeling of duty to add something to the great tradition of knowledge which had been handed down to them The main consideration of medicine as a progressive science was ever in the mind of the late chairman (Lord Knutsford) who was much in their thoughts that day and it was exceedingly well exemplified in the career of their chief, James Mackenzie

Pathological Research at Leeds

In the annual report of the department of pathology and bacteriology of Leeds University Professor Matthew J Stewart and J W McLeod describe the various lines of investigation which were followed during 1930 The heavy and increasing strain of routine pathological examinations is now threatening to interfere seriously with the educational side of the department, as well as with research It is strongly urged that the time has come for the creation of a new post of resident pathologist,

this will also enable urgent examinations to be conducted at times when the regular staff are not on duty. Research work in progress includes an attempt to define the processes concerned in normal gastric functioning; the effects of asbestos dust on the pulmonary tissues; the precise nature of the pigment involved in the direct van den Bergh reaction; and the etiology of the common cold, with special reference to the mouse-pathogenic bacteria commonly found in the upper respiratory tract. In the bacteriological laboratories there has been a notable increase in the amount of teaching work due to the appearance of candidates for the honours B.Sc. in bacteriology. In an appendix to the report Professor R. D. Passey summarizes the work that has been carried on, under his direction, in connexion with experimental pathology and cancer research.

Scotland

Maternal Mortality in Scotland

At a meeting of the Scottish National Health Visitors Association in Glasgow, on November 21st, Professor J. M. Munro Kerr, in an address on "A national maternity service," said that if the problem of maternal mortality and morbidity was to be solved it required the co-operation of all the agencies concerned with maternal and infant welfare under one centralized scheme. This would include general practitioners, obstetric specialists, medical officers of health, midwives, health visitors, mother helps, local health committees, and the Department of Health. He thought that it would be opportune to promote such a scheme at a time of financial stress, when economy had to be considered. A maternity service did not necessarily involve much immediate capital expenditure, but it should be designed with wisdom and forethought. Efficient schemes were already in operation in the East End of London, in Dublin, Sweden, and Holland. He advocated an increase in hospital accommodation and in nursing homes for maternity cases, with powers to local authorities to remove to them such cases as appeared necessary, and extended training in maternity courses.

Teaching Facilities in Municipal Hospitals

A committee of the Edinburgh Town Council, along with representatives of the University, the Royal Infirmary, and the Royal Colleges, has been considering the question of teaching facilities available at the municipal hospitals of the city, and has drawn up a report on the subject. It is pointed out that one of the effects of the Local Government (Scotland) Act, 1929, was to break down the distinction that formerly existed between preventive and curative medicine, and that the Act authorized public health authorities to establish and maintain general hospitals, where necessary, for the treatment of sick persons. Provision was also made whereby persons who were sick might receive hospital treatment without being characterized as paupers. These provisions, however, were permissive and not mandatory. The Act provided, further, that the town council might submit a scheme to the Department of Health for the extension of hospital facilities, provided that steps were taken to secure full co-operation with every available hospital, university, or medical school within, or serving in, the area of the council. The committee of the town council is of opinion that the adoption of a co-ordinated teaching scheme between the corporation, the medical school, and the voluntary hospitals would be to the advantage of all concerned.

Proposed Edinburgh Health Exhibition

Arrangements are being made for holding a health exhibition in January, 1932, in the Waverley Market, Edinburgh, in aid of the extension appeal fund for the Royal Infirmary of Edinburgh. The honorary organizer of the exhibition is Dr. William Robertson, formerly medical officer of health for Edinburgh, who has been concerned with similar previous exhibitions in that city. It is proposed to show the usual exhibits of hygienic bakery, manufacture of sweets, laundry processes, the use of gas for domestic purposes, etc. It is also intended to have an exhibit illustrating the evolution of the hospital bed, also a collection of surgical relics associated with Lord Lister, and demonstrations of hospital dietetics and ante-natal work. Provision will also be made for talks on health subjects and for displays of physical exercises.

Presentation to Medical Practitioner

At a public meeting, held in the Miners' Welfare Institute, Newcraighall, Midlothian, on November 23rd, a presentation was made to Dr. John H. Balfour in recognition of fifty years' medical service in the district. The chairman, Mr. Robert Ramsay, said that Dr. Balfour had succeeded his father and brother, so that his family had practised medicine in this village and district for seventy-eight years. Dr. Balfour had always interested himself in the social well-being of the community, and Mrs. Balfour had always taken a prominent part in promoting social welfare. Dr. Balfour, in reply, expressed the hope that, although he had conducted medical practice for fifty years in the district, he would be able to continue work for a long time to come.

Ireland

Vital Statistics for Northern Ireland

During the quarter ending September 30th, 6,456 births were registered in Northern Ireland, representing an annual birth rate of 20.7 per 1,000 of the estimated population. This rate is 0.2 below that for the corresponding quarter of last year, and 1.6 below the average rate for the third quarters of the ten years 1921–30. In the Irish Free State the number of births registered during the same period was 14,405, or an annual rate of 19.5, compared with rates of 16.0 and 18.6 for England and Wales and Scotland respectively. Deaths registered during the quarter numbered 3,736, or 12.0 per 1,000. Of this number, 362, or 9.7 per cent., were of infants under 1 year, the infant mortality being equivalent to 56.1 in every 1,000 births registered. As in the previous quarter, deaths from the principal epidemic diseases and from tuberculosis show, on the whole, a noteworthy decrease when compared with the average number of deaths from these causes in the third quarters of the five preceding years, but deaths from cancer continue to increase, 377 cases being reported, or an annual rate of 1.21 per 1,000. According to the returns made by registrars, the number of successful primary vaccinations registered in Northern Ireland during the quarter was 6,173.

Tuberculosis in Belfast

In his annual report for 1930, Dr. Andrew Trimble, chief tuberculosis officer for the city and borough of Belfast, remarks that a study during the last seven years of the relative numbers of women and men found to be tuberculous at their first examination reveals a diminution among the female sex. Thus, for every 100 men found to be suffering from tuberculosis in 1916, there were 135 women, but the comparable figure in 1930 [illegible]

women was only 109. This is in accordance with the almost universal experience that, as living conditions improve, the tuberculosis death rate among women approaches that among men, or is actually less. This stage has not yet been reached in Belfast, where the female deaths from tuberculosis are still higher than the male, contrary to the general experience in Great Britain and the United States. In addition to the quarterly reports of medical practitioners undertaking domiciliary treatment of tuberculosis, a special re-examination of these patients is made at regular intervals by the medical staff of the Belfast tuberculosis institutes. The condition of these patients re-examined during the year under review indicates the highly satisfactory results accomplished despite the disabilities due to overcrowding, inadequate housing, and unemployment. Dr. Trimble adds that much more might be accomplished if the social conditions were what they might be, if the importance of attention to early symptoms was realized, and if the patients were more disposed to rest in the early stages. He believes that spitting in streets and public conveyances is on the increase, and he urges the necessity of dealing more rigorously with this offensive habit. In view of the fact that albumin is rarely absent from sputum containing tubercle bacilli, he suggests that its presence, even when tubercle bacilli cannot be found at first, should be regarded as a significant indication for frequent re-examination of the sputum, in order to avoid the risk of missing the organisms when present intermittently. With regard to the condition of children of tuberculous mothers he remarks that if, instead of considering the percentage death rate over a period of years, the infantile mortality rate—that is, the death rate of children under the age of 12 months—is studied, it is found that in Belfast the children born of tuberculous mothers died at the rate of 93 per 1,000, as compared with an average in the general population of 102 per 1,000. This somewhat unexpected result agrees with the observations of the tuberculosis officers of Lancashire and Leeds, and is attributable probably to the supervision of the visiting nurses in the homes of tuberculous mothers, with the insistence on fresh air, cleanliness, and suitable feeding. While commending the commodious and well-built schools that are now being erected by the education authority, Dr. Trimble suggests that if they were constructed on a plan which would render them easily convertible into schools of the open-air type, generously provided with facilities for personal cleanliness and sanitary accommodation, they would go far to foster and protect the health of the school children. He emphasizes the importance of increasing the number of homes for children suffering from the non-pulmonary forms of tuberculosis, especially of the bones, and also of ensuring the supply of milk which is free from infective organisms.

Queen's Institute of District Nursing

At a meeting presided over by the Rt. Hon. H. M. Pollock, M.P., of the Executive Committee of the Queen's Institute of District Nursing in Northern Ireland, the honorary secretary (Major C. Blakiston-Houston, D.L., M.P.) intimated that Dr. Foster Coates had been appointed by the Ulster Branch of the British Medical Association as representative on the Executive Committee in place of the late Dr. R. W. Leslie. He also announced that through the efforts of the Marchioness of Londonderry, and the kindness of friends, the "Lady Londonderry Nursing Scheme" had been inaugurated to assist in providing Queen's nurses for many poor and scattered areas in Northern Ireland where there was no resident nurse. The scheme will be run on the same lines as the "Lady Dudley Scheme" at present in operation in the West of Ireland. Two new district nursing associations have already been formed under the scheme this winter, and efforts are being made to establish others in necessitous areas. A satisfactory financial statement was submitted. In spite of many difficulties the garden scheme for the nurses' pension fund has met with considerable success in Northern Ireland, and many promises of continued support have been received from owners of private gardens. Five nurses have completed their district training as Queen's nurses at the Home, Botanic Avenue, and have passed the qualifying examination.

Correspondence

WINTERING IN ENGLAND

SIR,—Many persons who have been accustomed to go abroad for reasons of health are at the present time, from obvious causes, unable or unwilling to do so. The limitation of choice has, however, its compensations, for the British Islands are endowed with a large number of natural winter resorts. Their wide extent, variety, and great medical value, particularly on the south and west coasts, are, we think, too little recognized.

More precise and authoritative information on the character and value of the home resorts in the winter months seems therefore desirable, and a medical statement on the winter health resorts of the British Islands is accordingly being prepared.

We cordially invite all members of the medical profession who are interested in this matter to a meeting at the Institute of Hygiene, 28, Portland Place, on Wednesday, December 9th, at 5 p.m., to receive and consider this statement with a view to publication.—We are, etc.,

E. FARQUHAR BUZZARD.
T. WATTS EDEN.
R. H. ELLIOT.
R. FORTESCUE FOX.
THOMAS HORDER.
ROBERT HUTCHISON.
E. P. POULTON.
HUMPHRY ROLLESTON.
STCLAIR THOMSON.
WILLIAM H. WILLCOX.
W. G. WILLOUGHBY.

London, W.1, Nov. 28th. R. A. YOUNG.

MICROCYTIC ANAEMIA

SIR,—I am very glad to give Dr. Eve my reasons for adopting the term "chronic microtic anaemia" for the group of simple achlorhydric and allied anaemias, as space did not permit this in my paper. I shall give them as briefly as possible, as I hope to discuss the classification of anaemia and the variations in the size of the red cells more fully on another occasion.

Simple achlorhydric and allied anaemias are described as *microcytic* anaemia for the simple reason that the cells are smaller than normal. The mean diameter of the red cells (normal value 7.23 microns) was measured from Price-Jones curves in a number of my cases, and the results were 6.6, 6.9, 7.0, 7.02, 7.18, 7.26, and 7.8 microns. The last was an atypical case of a patient, aged 70, diagnosed by Dr. Ryle as a transitional case with features of simple and pernicious achlorhydric anaemia. In six other cases where a Price-Jones curve was done it was described as normal in two, shifted to the left in three, and in the sixth the mean diameter was slightly raised. In a further two cases the mean diameter of the red cells was estimated by halometry as 7.3 and 7.4 microns respectively (normal 7.4 to 7.6). Quite frankly I must state my opinion that the halometer is an ingenious but unreliable toy, which is of no value in the science or the practice of medicine. Dr. Eve must bring more valid evidence to

the discussion than the results of halometry. The only satisfactory way to study the diameter of the red cells is by the Price-Jones curve. This affords an accurate measurement of the mean diameter, and, even more important, it demonstrates the variation in size of the red cells and the presence of abnormal microcytes or megalocytes.

American practice is to measure the volume of the red cells by some modification of the haematocrit technique. If we are to rely on a mean value, the volume is preferable to the diameter, for the volume varies as the cube of the variations in diameter, and any differences are so much more easily appreciated. Moreover, when we speak of the size of an object, we refer to its total bulk and not merely to its diameter. The normal mean corpuscular volume is 75 to 97 cubic microns (M. M. Wintrobe, *Amer. Journ. Clin. Path.*, 1931, i, 147). Dr. Wintrobe, in a personal communication, informs me that a typical value for the mean corpuscular volume in simple achlorhydric anaemia is 59 cubic microns. T. R. Waugh (*Arch. Int. Med.*, 1931, xlvii, 71) says that figures for the average volume of corpuscles from 60 to 70 cubic microns are common. W. P. Murphy and G. Fitzhugh (*Arch. Int. Med.*, 1930, xlvi, 440) give values of 70, 75, 75, and 90 cubic microns in four cases of chronic chlorosis, all of which had 63 per cent. or more of haemoglobin. Experiments I have made confirm this low corpuscular volume.

It is obvious from all these data that in simple achlorhydric anaemia the size of the red cells is normal or diminished. As a general rule, which is not free from exceptions, the deeper the anaemia the smaller the red cell. These anaemias are therefore well named "microcytic," in contrast to pernicious and allied anaemias in which the size of the red cell is increased, and the deeper the anaemia the larger the red cell.

While I am discussing the vexed question of terminology, may I also be permitted to point to the ambiguity which has crept into the use of the word "hypochromic"? It is sometimes used to mean anaemia of low colour index, and at other times hypobilirubinaemia. As we already have the term "hypobilirubinaemia," this latter usage should be dropped, and "hypochromia" should mean a reduction of the haemoglobin concentration of the corpuscle.—I am, etc.,

L. J. WITTS.

Guy's Hospital, Nov. 30th.

DEATHS ASSOCIATED WITH ANAESTHESIA

SIR,—Dr. F. L. Hoffman's letter in your last issue (p. 1009) comes very opportunely. He, in fact, issues a challenge of an international character, asking us to explain why, according to figures which he produces, anaesthesia appears to be three times as dangerous in this country as it is in America.

Britain is a very small, densely populated country, very stringently governed, with a system of death registration so strict that no single instance of a death associated with anaesthesia could possibly escape being recorded; in fact, many deaths so classified have little or no cause in anaesthesia itself. America is a very large country, divided up into a number of States, each with its own laws. Dr. Hoffman must prove to our satisfaction that their system of registration is as stringent throughout the States as it is in this country before any value can be given to his figures. But we are aware that the conditions in America are very superior to those prevailing here. Their splendid hospital system, conducted on business lines, through which rich and poor alike can pass on terms according to their means, finds no parallel in this country, where our best institutions are but the descendants of mediaeval monastic charities, often hampered by lack of funds.

In America anaesthesia is taken very seriously, while in this country it tends to become more and more the perquisite of the general practitioner. But while we admire the keenness of the American anaesthetists, and envy their better equipment, it is sometimes possible to detect in their writings an enthusiasm for results which cannot be supported by known physical laws or exact observation. We do not resent their criticism, but rather invite it, just as on occasions we are willing to offer it freely; and we keep a close look-out on their work with a view to improving our own methods, and theirs. The ignorance of the British public about this branch of surgery is well illustrated by the experience which befell me when called to administer an anaesthetic to a middle-aged lady, who preferred an attempt at induction with chloroform by an attending practitioner in the seventies, because, "You see, he brought me into the world." But Dr. Hoffman's letter comes as a resounding smack on the heads of those who have dominated the practice of anaesthetics in this country, and should cause them to sit up and take notice. These figures should be either disproved or explained.—I am, etc.,

W. HOWARD JONES.

London, W., Nov. 29th.

SIR,—The steady rise in the percentage of deaths from anaesthesia, which compares so unfavourably with the American figures, is very disturbing. To what extent is it due to the complicated apparatus so much in favour at the present day? At an operation I attended lately I particularly noticed how mechanical the whole process had become; how the eyes and hands of the anaesthetist were constantly occupied with his elaborate machinery, while the person most concerned—the patient—seemed left to the mercy of a system of tubes, valves, and bottles.—I am, etc.,

ERNEST H. GRIFFIN.

London, W., Nov. 28th.

ALLERGY AND THE "PROTEOSE"

SIR,—Dr. Freeman's remarks on the "proteose," isolated from the urine by Dr. Oriel in certain morbid conditions, reveal a misapprehension as to its significance, and incidentally to that of what he terms the dermal reaction. I will deal with the latter first.

To begin with, it is essential to distinguish between *epidermal* and *dermal* sensitization. The urticarial wheal is the commonest response when dermal hypersensitiveness exists. It is due, as the researches of Lewis and his colleagues have shown, to the liberation of histamine or some allied substance by the skin in response to injuries of various kinds. In a case of urticaria of internal origin, whether a known primary antigen—for example, fish or egg—is responsible (and this is relatively uncommon) or not, the liberation of histamine is presumably due to the damage resulting from the reaction of the antigenic substance with specific fixed antibodies in the dermal tissues. In a person who develops urticaria on the ingestion of a certain food the application of it to the skin by the scratch or intradermal method will naturally cause a local urticarial reaction.

When epidermal hypersensitiveness, on the other hand, is present, the reaction in the skin is an *eczematous* one, and it is now held that this depends upon sensitiveness of cells in the rete Malpighii. This type of cutaneous reaction is entirely distinct from the "triple response" that produces the urticarial wheal. It is apparently independent of histamine production, for even in eczematous persons I have never succeeded in provoking an eczematous reaction by bandaging histamine on the skin. To histamine the response is always urticarial.

Although an eruption consisting of mixed urticarial and eczematous elements may occur—for example, in some

sickness and fish poisoning, thus indicating simultaneous dermal and epidermal sensitization—it is exceptional, but an eczematous response to one antigen, and an urticarial reaction to another, in the same person, is not very uncommon. It is owing to this difference in cutaneous reaction according to the part of the skin in which the hypersensitiveness is localized, that dermatologists now use, in investigating cases of eczema, the contact or "patch" test, first indicated by Jadassohn, which consists in the application for twenty-four hours to the *uninjured* surface of the skin of suspected substances. As Sulzberger and Wise, MacKee, and others have recently pointed out, positive results—that is, an acute eczematous reaction at the site of application—are often obtained by this method after the scratch and intradermal tests have proved negative.

Two other points of great importance which have been established by the patch test are: (1) that phases of extreme hypersensitiveness, lesser hypersensitiveness, and non-sensitiveness occur, so that a person may give a strongly positive reaction at one time and a negative one at another, the non-sensitive phase is particularly likely to occur after an acute exacerbation of the patient's symptom; and (2) that one area of skin may be hypersensitive to a given irritant and another non-sensitive—for example, the skin of the eyelids may be sensitized and that of the forearm or other parts not so.

It will be clear from what has been said that to depend, as Dr. Freeman appears to do upon dermal reactions, provoked, I presume, by the scratch or intradermal tests, as evidence of hypersensitiveness or allergy towards a given substance is to misconstrue their significance. They indicate dermal sensitization, and no more. As has been seen, they may be negative even when another part of the skin, the epidermis, is sensitized. To expect them necessarily to be positive when other structures, such as the bronchial, intestinal, and uterine musculature or the mucous membranes of the respiratory and alimentary tracts, are sensitized is, to say the least of it, unreasonable.

To come now to the "proteose," the proofs that in certain acute and chronic allergic states it contains what may be justly termed a specific substance may be considered under two headings—experimental and clinical.

A. *Experimental*.—Dr. Freeman does not refer to the careful and laborious experiments carried out by Dr. Orvel upon the guinea-pig uterus according to the Dale technique. Some of them have been published[1] and I need only refer to two. If a guinea-pig be sensitized to milk, a typical contraction will be obtained by applying a solution of proteose prepared from a milk-sensitive person after he has taken milk, and also, of course, with milk itself. The proteose from a non-milk-sensitive person will give a negative result. Conversely, if a guinea-pig be sensitized by injections of the proteose from the milk-sensitive person, a uterine contraction will be obtained, not only with proteose, but also with milk. Dale's method of testing for specific tissue-sensitization is, of course, accepted as being the most reliable, providing the correct technique is employed, and these experiments, which have been repeated again and again, seem to me conclusive. With regard to cutis reactions, I can assure Dr. Freeman that positive dermal reactions from the scratch and intradermal tests can often be obtained with autogenous urinary proteose, the degree of reaction depending upon *the concentration of the solution*. Of much greater interest to me, however, is the fact that in certain cases of eczema of internal origin I have obtained a strongly positive *eczematous* reaction by applying a solution of the patient's own proteose to an area of undamaged skin for twenty-four hours (patch test), whereas proteoses from other patients gave negative reactions. In one patient the experiment was repeated three times upon different areas of skin with success. This seems to me sufficient proof that in these cases the patient's own proteose contained the substance to which the epidermis was sensitized.

B. *Clinical*.—For a long time past I have employed injections of autogenous urinary "proteose" with a view to desensitizing patients suffering from such conditions as chronic urticaria, angioneurotic oedema, eczema of internal origin, certain forms of prurigo, dermatitis herpetiformis, psoriasis arthropathica, and, more recently, uncomplicated psoriasis. In many of these patients other allergic symptoms, such as migraine, paroxysmal rhinitis, gastro-intestinal disturbance, and asthma, were present. As a result of very careful observations on a large number of cases, my conclusion is that it is not only specific, but incredibly and inconveniently so. My difficulty in many cases is to find a dose small enough to cause progressive improvement, and to avoid acute exacerbations of the patient's symptoms, or progressive deterioration in his condition. At first I worked with dilutions of 1 in 1,000,000 and 1 in 100,000, and gave increasing doses, often with very unpleasant results. I now employ minute doses—for example, 0·025 to 0·1 c.cm. of a dilution of 1 in 10,000,000, and, in some cases, for example, of the prurigo of Besnier with asthma (the most sensitive group of all), of a 1 in 100,000,000 dilution—and, having found the dose on which the patient improves progressively, I do not increase, but rather decrease the dose. The amount of proteose present in 0·05 c.cm. of the latter dilution must be infinitesimal, but I have patients who cannot tolerate more without reaction. This would seem incredible, but I can vouch for its truth, and that it is not the result of suggestion is shown by the fact that most of my hypersensitive patients have previously received injections of non-specific desensitizers, such as peptone, entero-vaccine, whole blood, aolan, etc., without any comparable reactions. An interesting point is that with proteose the usual time for a reaction to occur is on the third day after the injection, but this is not constant. Surely a substance which is capable of constantly producing acute exacerbations of a given patient's symptoms in a dose of, say, 0·1 c.cm. of a 1 in 1,000,000 dilution must be considered specific. The observations that Dr. Orvel and I have made on the clinical use of proteose have been amply and independently confirmed by others.

I cannot here discuss the actual nature and significance of the active substance which is contained in urinary proteose excreted in certain morbid states, but I see no reason to alter the opinion expressed in the original paper by Dr. Orvel and myself—namely, that it is a circulating antigen resulting from the action of one or more primary antigens on the person's own tissues (probably in most instances the hepatic cells). If this is so, it would correspond to the secondary antigen, denaturization product or anaphylotoxin of Vanwaring.—I am, etc.,

H. W. Berger

[illegible]

[1] *Proc. Roy. Soc. Med.*, July, 1931, xxiv, 55.

December 20th, 1924) that there is no evidence that an excess of the internal secretion of the pancreas is ever formed naturally. The only case he quotes with any resemblance to ours is, we think, the first case mentioned in the same article; but, from the published data, one would conclude that his case was chronic and not acute, and he attributes the cause to liver insufficiency and not to hyperinsulinism. We mentioned that we were able to collect from the literature twenty-four cases of acute spontaneous hypoglycaemia due to hyperinsulinism, but we were only indirectly concerned with the type of case in relation to which Dr. Cammidge's investigations and writings have given valuable information to the profession. If we have failed in our paper to give due acknowledgement to his work on the general problem of hypoglycaemia we offer him our apologies.—We are, etc.,

HENRY MOORE.
W. R. O'FARRELL.

Dublin, Nov. 23rd.

THE PITUITARY IN THE ETIOLOGY OF CANCER

SIR,—I have just read the interesting article by Dr. William Susman on the relationship between the pituitary and cancer, in the *British Medical Journal* of October 31st. May I call attention to the fact that I published, in 1930, in the *Klinische Wochenschrift* (November 8th and 15th), two articles dealing with the same subject—"Uben Beziehungen des Hypophysenvorderlappens zum uterus-carcinom." I have restricted my studies to the relationship of the anterior pituitary to cancer of the uterus for two reasons. First, I am a gynaecologist; secondly, my experimental work done on the subject reveals definite relations between the anterior pituitary and the stimulation of cervical epithelium, and also uterine epithelium. Articles by me on the latter subject have appeared in the *Proceedings* of the Society of Experimental Medicine and Biology (June, 1930); in *Surgery, Obstetrics and Gynecology* (February, 1931); also in the *Centralblatt für Gynaecol.* (September, 1930, and February, 1931). For many years I have been using radiation of the hypophysis, in conjunction with the local application of radium, in cases of cervical cancer. A report on this treatment is included in the last-mentioned paper. From these references it will be seen that I had already conceived of the relationship between the anterior pituitary and cancer, and also that we have put our ideas into practical effect during the past seven years.—I am, etc.,

I. HOFBAUER, F.A.C.S.

Professor [illegible] AND [illegible]

Baltimore, Nov. 18th.

MALIGNA[illegible]

SIR,—To an onlooker it [illegible] attempt appears to have been [illegible] *p*H in malignant cases [illegible] and production [illegible] (recent work on [illegible] this view), it would [illegible] the effect of neutralizing [illegible] must grow demand an [illegible] to bring the local *p*H to [illegible] What would be the effect [illegible] or a very weak solution [illegible] equilibrium is so easily disturbed [illegible] work with N/100 solutions, or even [illegible] dosage, and the specific effects of [illegible] would have to be studied, apart from [illegible] *p*H. A serious effect of excess of [illegible] deficiency of carbon dioxide, and as [illegible] depends directly upon adsorption of this [illegible] be local subnormal venous pressure and interference with circulation and nutrition. Infiltration in cases of accessible tumour should be a simple matter, and not fraught with danger.—I am, etc.,

RICHARD KERRY.

Montreal, Nov. 12th.

TEMPORARY TREATMENT WITHOUT CERTIFICATION

SIR,—Professor Robertson evidently takes a leisurely view of the therapeutic outlook in mental diseases. Are we asked to be grateful at the thought that forty years after the passing of the Lunacy Act (1890) the best that can be done for mental patients to-day is embodied in Section 5 of the new Act as at present being interpreted? And is it implied that this is the normal rate of progress, and that we are likely to have to wait another forty years for another "epoch-making" Act that will better the conditions of another 5 per cent. of the mentally sick? To suggest that in its limited version it still "marks an epoch from the legal point of view" would seem to indicate a reflection on the intelligence of our learned friends the lawyers, which surely cannot be intended.

Is it historically accurate to say that Section 5 of the new Act is a definitive expression of the intention of our legislators in regard to temporary patients? If so, after the work of the Royal Commission, the Board of Control, the Medico-Psychological Association, and various other committees and societies, verily it is a case of the mountain in labour bringing forth a mouse. But, with great respect, I venture to assert that the section dealing with temporary patients, as it is now being interpreted, does not express the original intention of the promoters of the Act. In support of this I quote from a leading article in the *Times* of January 2nd, 1931. Commenting on the coming into force of the Mental Treatment Act and the changes it was expected to introduce in the treatment of mental sickness, the writer says:

> "Certification has been relegated to its proper place as a measure to be taken only when all other measures have failed. In the future doctors will be as reluctant to adopt this measure, and so to confess their failure, as they are reluctant to-day to abandon the treatment of physical disease."

It was here obviously assumed that the application of Section 5 would have the effect of removing the [illegible]dering certification unnecessary in the great majority of cases, and this, in my opinion, was the view held by most of those connected in the working of the Act. I believe that it is erroneous to suggest that the public stand in no need of [illegible] naturally in the [illegible] that all the [illegible] assumed to exist in the justice [illegible] interpretation on the part of the Board of Control. Is there any valid reason why this cannot be adopted? The Board has exercised a wise discretion in the past in regard to certain sections of the principal Act; but if, as Dr. Percy Smith indicates, an amending Act will be required, I trust that, in view of the difficulties that have developed, no unnecessary delay will elapse before the matter is taken up in the proper quarter.—I am, etc.,

FREDERICK DILLON.

London, W.1, Nov. 23rd.

SIR,—The conjunction of the letters of Dr. Samuel and Dr. Whitwell on the above subject in the *Journal* of November 28th is most interesting. The latter gives [illegible] from a Dr. Unwin, who was a physician in [illegible]

House about a century before Dr. Samuel himself filled a similar post there, but the views of the former seem to be more modern. The medical certificate of insanity, designating a person bluntly a lunatic or an idiot, is a legal document prepared for the magistrate who intervenes, and is as permanent a legal record as is a conviction in the police court. In addition to the hardship of mental disorder, why should the patient have to bear this additional legal stigma of certification and the magistrate's order? Dr. Samuel states it is "a necessary preliminary to placing a person of unsound mind" under control. The law makes it necessary at present, but is this law necessary? Ought it not to be amended? Parliament decided about a year ago that in certain cases neither certificates nor legal intervention was necessary. The principle having been broken, could the practice not be extended?

Dr. Samuel states that "there was no real need for its conception"—namely, that of temporary treatment *without certification*. On the contrary, it has been a blessing to those to whom it applies. It applies, for example, to cases of acute delirious puerperal insanity, which often recover in from three to nine weeks. We have no such law for the poor in Scotland, and I shall not forget the rage of a working man, whose wife had to be removed from the Royal Infirmary to the Royal Hospital at Morningside, when he was told that his wife, a puerperal case, had to be certified a lunatic, and that a magistrate's warrant had to be obtained for her treatment. He could not understand the reason why. In England, at the present time, she would have been admitted under the Temporary Treatment Order, and, after recovery from her illness, could have held up her head without the stigma of unnecessary certification and commitment by a magistrate.

Dr. Samuel also states: "If it is infamous to become of unsound mind, surely the infamy is perpetrated by the disease itself." Disease, if not self-induced, is no infamy. It is not regarded by the patient as such, but a misfortune. It is a visitation from Providence, and must submit to it. It is a totally different thing when man intervenes and designates the unhappy sufferer by an opprobrious name, and places his medical treatment and commitment to an institution in the hands, not of a medical man, but of a magistrate, as if he were delinquent.

If the unsoundness of mind, and not certification, is the famous element, why did a clergyman remove his daughter, a voluntary patient, from an excellent mental hospital in England and bring her to Edinburgh a fortnight ago, when he was simply asked to get her certified? If a legalized medical certificate is necessary, why did Parliament take the extraordinary step—contrary to the advice of the Royal Commission—of abolishing both the certificate and the magistrate's order in certain cases? Why, if medical certificates and magisterial intervention are necessary, have we been able to treat without them, and under detention, if necessary, all recent and recoverable private patients in nursing homes for seventy-four years in Scotland, and that without a single legal action being brought during that time by those so treated?—I am, etc.,

GEORGE M. ROBERTSON.

University of Edinburgh, Nov. 28th.

SIR,—It is very satisfactory to learn on high authority that the Board of Control has correctly interpreted the phrase of the Mental Treatment Act, "incapable of expressing willingness or unwillingness to receive treatment," as defining the condition of one liable to be detained on medical authority in the absence of any judicial sanction. The Board's view coincides with that of a medical M.P., who explained in the columns of the *British Medical Journal* immediately after the passing of the Act that if an individual, on being asked, says that he is unwilling, that settles the question, and he cannot be detained under Clause 5.

In 1926 the British Medical Association presented to the Royal Commission on Lunacy a memorandum in which stress was laid upon the fact that it was the function of the judicial authority to order detention, that doctors were shielded by his intervention, and that it was not their desire to take upon themselves a role which is essentially judicial. During the last five years, however, as noted by Professor Robertson, the province of the mental specialist has so far advanced that the principle of the liberty of the subject has become subordinate to the opinion of the doctor as to what is the proper thing to do to the individual. Dr. Percy Smith looks back regretfully to the time before the enactment of legal safeguards, when a man could be committed on the request of a relative, fortified by the opinion of two doctors, without any of that "red-tape working" which is intended to secure that no one shall be unjustly deprived of liberty.

It remains to be discovered what the public, who hold in dread the very thought of imprisonment in an asylum, will have to say to devious methods of committal such as these; and whether they will not insist upon the repeal of the ill-designed Mental Treatment Act, which is so redolent of detention that every line of it is fraught with peril to the freedom which is our birthright.—I am, etc.,

London, E.12, Nov. 27th. S. E. WHITE, M.B., B.Sc.

SIR,—My limited experience is that the Board of Control is not rigid concerning the volitional status of temporary patients. Let us hope that uniformity of practice, when it comes, will tend in this direction.—I am, etc.,

GILBERT E. MOULD.

Kimberworth, nr. Rotherham, Nov. 24th.

PHYSICAL MEDICINE AND BIOPHYSICAL ASSISTANTS

SIR,—A few days ago I received a circular intimating that an association of registered biophysical assistants had been constituted for the following, among other purposes: "advancing the study and practice of physical medicine and making available to the public greater facilities for physical methods of treatment through the medium of registered workers." May I point out that the *Register of Bio-Physical Assistants* specifies that the competence of those whose names appear in it is limited to the application of direct current, ionization, faradic currents, sinusoidal currents, diathermy, high-frequency currents, light and heat, and ultra-violet light. These subjects embody but a small part of physical medicine, and I venture to submit that the wording of the passage quoted above gravely misrepresents the activities of biophysical assistants.

I am well aware of the fact that over 85 per cent. of the biophysical assistants are actually members of the Chartered Society of Massage and Medical Gymnastics, and I grant that the paragraph in question could apply to those members of the Chartered Society of Massage and Medical Gymnastics whose names appear on the biophysical assistants' register, but as it stands it is likely to be misinterpreted.

As regards "advancing the study of physical medicine," I can only proffer a pious hope that those people who rejoice in the unfortunate name of biophysical assistants will not identify themselves with biophysicists, and rashly carry their activities into realms of experimentation.

All those interested in physical medicine and its practice realize the regrettable state of affairs which results from the fact that no provision is made for tuition in physical methods or their prescription in the medical student's curriculum, with the result that, once qualified, he ignores the indications for physiotherapy, and is therefore unable to give certain cases the benefit of treatment by means of these methods; nor is he able to prescribe the treatment competently for some qualified and registered worker to carry it out.

No state of affairs could be more ludicrous than the existence of well-trained dispensers and the omission of the art of prescribing from the medical student's curriculum; and yet an analogous situation actually exists in regard to the branch of medicine under consideration. A large number of hospitals train students both for diplomas in medicine and diplomas in physical medicine (Chartered Society of Massage and Medical Gymnastics diploma), but they do not teach the former to employ the latter. The result is that the masseur or masseuse is made not only to carry out some specialized technique, but also to prescribe it, and only too often to diagnose the condition as well.

That a Physical Medicine Group should have been formed under the aegis of the British Medical Association is certainly a step in the right direction, and the near future may see the end of this vexatious position if this body directs its energies into the proper channels.—

I am, etc.,

P. BAUWENS.

London, W.1, Nov. 25th.

CHILD GUIDANCE CLINICS

SIR,—In the *Journal* of November 28th (p. 1010) appeared a letter under the above heading. It is not uncommon when reading a well-drafted advertisement of the latest synthetical preparation to conclude that it is just the thing to bring about the desired end; and conversely, when the desired end is named, for the purveyors of a synthetical preparation to say, "This will just touch the spot." Now Sir George Newman has recently outlined, with his usual illuminating insight, the fundamentals for the medical inspection of school children; and at once we are told that a preparation made up of "general and psychological medicine, educational, psychological, and teaching methods, sociology, and economics" as provided at a clinic is just it.

When will medical practitioners—men of science—come to realize that clinics at their best, apart from the home doctor, are poor things and only makeshifts, used to fill temporarily a vacuum; that a mass treatment system is contrary to all the dictates of medicine; that specialists left alone to carry out their respective fancies may be found to have harmed the child; and that the poor little mortal submitted undefended to "a psychiatrist, an educational psychologist, and a social worker," may be irredeemably ruined in its personality whilst yet in the bud?

What is there wrong with the general practitioner—the one scientist alone who goes in and out of the homes of the children; sees the environment of circumstances, the environment of characters there, breathing the atmosphere in which the child lives and develops? He is educated in innumerable medical schools for just this work, and yet constantly he is brushed aside directly something is found to be lacking in a desired complete medical service. If those who are really keen to help the child would get together to form public opinion and so influence legislation to provide an efficient domiciliary medical service for the child, then the home doctor selected by the family would take command and use, when and how he considers fit, these numerous specialists as his assistants, who, it would seem, at present are overwhelming the child with their synthetical preparations all controlled.—I am, etc.,

E. ROWLAND FOTHERGILL.

Hove, Nov. 28th.

ACIDOSIS AND KETOSIS IN CHILDREN

SIR,—There are some points in connexion with the pathology and treatment of acidosis and ketosis in children which are very confusing to the practitioner.

Insulin is being recommended for certain of these conditions. Thus Langdon Brown[1] says that in cyclical vomiting the only treatment of real value is water, dextrose, and insulin, and that insulin must be given for post-anaesthetic vomiting. R. J. Minnit[2] recommends its use in the parallel condition of post-anaesthetic vomiting of adults, without any mention of glucose.

Now it is well recognized that such ketosis has a different etiology from that of diabetes; in the latter the blood sugar is high, but not available to the tissues on account of the absence of insulin, while in the former the liver glycogen and blood sugar are both stated[3] to be low, indicating that the mechanism for dealing with sugar metabolism is in working order, but the sugar is deficient. In these cases the power of the patient to mobilize and produce insulin is not called in question, and this is a power which is much more effective and rapid in the healthy organism than that possessed by the artificially administered secretion.

In the case of post-anaesthetic vomiting several authors refer to the possibility of carbohydrate metabolism being interfered with by the intoxication, and Frew[4] states that glucose in these circumstances is useless, as it cannot be metabolized. I can, however, find no reference to a rise of blood sugar and the occurrence of glycosuria in such cases, and in their absence it is difficult to understand how insulin can help.

Will others give their experiences with insulin in such circumstances, and some biochemist explain why, if it is effective, this should be so?—I am, etc.,

ARNOLD H. SHENNAN, M.D., D.P.H.

Shabani, Southern Rhodesia, Oct. 25th.

RITTER'S DISEASE

SIR,—I saw a case of this rare disease the other day. I attended the mother, a primipara, at her confinement, which occurred on November 3rd. The accouchement was perfectly normal, without any assistance. She was a tinker's wife, robust and healthy, as was her mate, and the venue was a tent on "a blasted heath" on a dark and stormy night. The woman lay on a bed of rushes. The only dope the mother had was a modicum of whisky, administered surreptitiously while my back was turned—a time-honoured custom with these vagrants. The infant, a female, was plump, healthy-looking, and unblemished when born. Ten days later it presented a most astonishing appearance, pretty much like a half-skinned rabbit or moulting lobster. The skin had desquamated in large patches from the brow to the extremities, with the exception of small islands of skin here and there, which stood out in startling contrast to the prevailing red hue. The scalp alone was quite uninvaded. Unfortu-

[1] *Physiological Principles in Treatment*, 1930, 28.
[2] *Clinical Journal*, April 29th, 1931.
[3] Pearson and Wyllie: *Recent Advances in Diseases of Children*, 1929, 548.
[4] Garrod, Batten, etc.: *Diseases of Children*, 452.

ately the infant died of marasmus a week after the onset of this dermatitis exfoliativa neonatorum

The late Sir Malcolm Morris, in his *Diseases of the Skin* (fifth edition), states that he never saw a case answering to this description, nor ever heard of one reported in England. In this instance the exanthemata and congenital syphilis can be entirely put out of court. It would be interesting to know if any similar cases have been recorded in Great Britain. Ritter's mortality in these infants is 50 per cent.—I am, etc.,

D. MACKAY, M.A., M.B., Ch.B.

Central Medical Unit, 17th.

RHEUMATOID ARTHRITIS

SIR,—As Dr. Poynton states, recent correspondence on this subject has been most contradictory. Surely it shows the need for team work in the treatment of such a disease and for the trial of each and every so-called remedy. But, above all, let us apply the principles of orthopædic surgery, and thereby prevent those terrible deformities which are still seen in patients unable to walk or even feed themselves, and who, having failed in the past to get the treatment which the knowledge of these elementary principles should ensure, come to the orthopædic surgeon for the surgical alleviation of their distress.—I am, etc.,

B. WHITCHURCH HOWELL, F.R.C.S.

London, W.1, Nov. 30th.

SPINAL MANIPULATION

SIR,—In your issue of November 14th Dr. Edgar Cyriax takes exception to some of my statements with regard to spinal manipulation. Like Dr. Cyriax, I at one time believed that during joint manipulation I was breaking down adhesions and setting bones, but the fact that similar sounds can be produced in practically every normal joint has altered my conception as to what actually happens. This, however, opens up a large field, and another article dealing more fully with these matters is expected to be published at an early date.—I am, etc.,

THOMAS MARLIN.

London, W.1, Nov. 30th.

SUPPLIES OF CURARE

SIR,—For research purposes we wish to obtain supplies of the South American Indian arrow poison "curare." The quantities of this substance entering the markets are small at the present time. It may be that curare in gourds or small earthenware pots is held as a curiosity by some of your readers, who would be willing to let us have samples for trial.—We are, etc.,

H. HARTRIDGE.
RANYARD WEST.

Physiological Laboratory, St. Bartholomew's Medical College, Nov. 27th.

TESTIMONIAL TO DR. J. R. DREVER

SIR,—The compulsory retiral on account of ill health of the Scottish Medical Secretary, Dr. James R. Drever, is a great loss to the members of the British Medical Association in Scotland, while to him it means not only the loss of a business appointment, but a cessation of that service to his professional brethren which he has made his life work. As the first Scottish Medical Secretary, appointed on November 1st, 1919, he has had the responsibility of organizing the Association in Scotland and has done more than any other to co-ordinate its activities in a difficult territory. The Scottish Committee considers that not only would it be appropriate, but that many members would be glad to have the opportunity of expressing in a tangible way their appreciation of the work he has done for the Association, with their best wishes for his future. The Committee is accordingly issuing this appeal for contributions to a testimonial, which it suggests should, under the circumstances, take the form of a cheque. No figure is being specified, but as it is desired that the list of contributors should be as large as possible, it will be understood that sums of any amount will be gratefully acknowledged. Contributions should be sent to the Acting Scottish Medical Secretary, British Medical Association, 7, Drumsheugh Gardens, Edinburgh, not later than December 31st.—We are, etc.,

D. ELLIOT DICKSON, *Chairman*
JAS. B. MILLER, *Deputy Chairman*
GEO. A. ALLEN, *Past Chairman*
Scottish Committee

November 25th.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons this week carried a resolution authorizing the taxation of imports of non-essential fruit and vegetables. Subsequently the House debated the Government's Indian policy, as declared by the Prime Minister at the close of the Round Table Conference.

In the House of Lords, on December 1st, the Health Insurance (Prolongation of Insurance) Bill was read the first time. The Royal assent was also given to the Expiring Laws Act.

The Health and Housing Committee of Conservative and Liberal National members of Parliament has elected Dr. Fremantle chairman and Sir Cyril Cobb vice-chairman. The committee decided to set up subcommittees on housing and town planning, on national health insurance, on local government and Poor Law, and on public health. Sir E. Hilton Young, Minister of Health, arranged to address the committee.

The Government hopes to introduce a Children Bill during the present session.

Imported Fresh Milk

On November 30th Sir J. GILMOUR informed Major Braithwaite that his attention had been called to the importation of fresh milk from Denmark and Holland. Imported milk was not required to be accompanied by a certificate that it was produced under conditions comparable to those enforced in this country under the Milk and Dairies Order, but the Public Health (Imported Milk) Regulations made by the Ministry of Health in 1926 required the registration of all consignees of milk—other than condensed or dried milk—from abroad. Further, they laid down a standard of hygienic quality to which all such milk must conform. As regarded the danger of introducing the virus of foot and mouth disease he was informed that under the Danish law all liquid milk exported must have been pasteurized, and that although such pasteurization was not absolutely required by the Dutch law it was the practice in Holland to pasteurize milk intended for exportation to this country. He understood that imported fresh milk was again pasteurized in this country before it was distributed. The process of pasteurization was fatal to the virus of foot and mouth disease. No Marking Order applicable to imported milk had been made under the Merchandise Marks Act 1926, but the question of marking was to some extent covered by Section 1 of that Act.

Sweepstakes for Hospitals

Replying to Mr. White on November 30th, Sir HERBERT SAMUEL said no representation had been received by him previous to the present inquiry that the hospital authorities here desired a measure legalizing sweepstakes under proper safeguards as a means of assisting the hospitals of

this country. He understood that in June of this year the British Hospitals Association passed a resolution to the effect that "the association is not in favour of any amendment of the law affecting public sweepstakes which purports to be for the benefit of voluntary hospitals." Mr. WHYTE asked if the Home Secretary was aware that through the agency of legalized sweepstakes all the hospitals in the Irish Free State were in a better position to engage in research work and to give their patients efficient service, while in this country we were in a lamentable position. Viscount EDNAM asked whether any representations had been made to the Irish Free State that English hospitals should participate in the proceeds of the sweepstakes. Sir H. SAMUEL replied in the negative. Sir F. HALL asked whether, in the event of the Hospitals Association changing its attitude, the Home Secretary would consider the introduction of legislation to enable sweepstakes to be held here. No reply was given to this question.

Proprietary Medicines.—Mr. CHAMBERLAIN, replying to Sir Alfred Beit on November 21st, said he noted his suggestion for amending the Medicine Stamp Acts with the object of rendering all medicines protected by registered names or trade marks liable to duty, even if they be of a known, admitted, or proved nature, but the next Budget statement must not be anticipated.

Housing.—Sir E. HILTON YOUNG told Dr. Fremantle, on November 26th, that he would consider his suggestion of amalgamating the returns compiled with regard to houses occupied, erected, or reconditioned, and the houses and populations dealt with in clearance and improvement areas during the year and issuing the result in such a way as to provide a useful guide to progress made and needed. He told Mr. Salt that an estimate made by the larger urban authorities in England and Wales provided for the demolition of 57,000 houses under the slum clearance scheme of the Housing Act, 1930, during the five-year period commencing January, 1931. The number actually demolished up to September 30th last was 201. Replying to Mr. Thorne, Sir E HILTON YOUNG said 53,020 houses had been completed in England and Wales from January to October, 1931, under the Housing Acts of 1924 and 1930. He also told Mr. Robinson that he had no authority to make installation of apparatus for the refrigeration of food in blocks of working-class tenements a condition of the grant of any future subsidy. He doubted whether it would be either justifiable or practicable.

Conveyance from Hospitals.—Replying to Mr. McGovern on November 26th, Sir E. HILTON YOUNG said it was within the discretion of local authorities to arrange for the conveyance of persons to their homes on discharge from hospital, and many authorities already used this power. The problem of discharged children contracting chills, and also the danger of infecting other children in public conveyances, was one for the consideration of the local authorities. He did not think there was any need for his interference with their discretion.

Economy and Health Services.—Sir E. HILTON YOUNG told Mr Bevan, on November 26th, that he had no complete information as to the action which had been taken by local authorities generally after consideration of the circular on the review of local expenditure issued in September last, but information at his disposal did not suggest that local authorities had restricted the provision already made under their existing health services.

Approved Society Funds.—Sir E. HILTON YOUNG told Dr. Fremantle, on November 26th, that the total of the surplus funds of approved societies and branches, as ascertained at the third valuation, and the sum certified for distribution in additional benefits in the ensuing quinquennium, would be included in the report of the Government actuary on the Third Valuation of Approved Societies, which would be published very soon.

Notes in Brief

Mr. R. S. Hudson stated that the Government had not arrived at a decision in respect to the Hours of Labour Convention.

Medico-Legal

CHARGE OF ATTEMPTING TO PROCURE ABORTION

In Glasgow High Court, before Lord Morison and a jury, on November 25th, Rona Wotherspoon, a medical woman of Barrhead, was charged with having attempted to procure an abortion and with culpable homicide. After evidence had been heard, counsel for accused, Mr. J. D. Paton, K.C., tendered a plea of guilty on the charge of having attempted to procure abortion by the use of instruments on two occasions in the case of a woman now dead, and not guilty to that of culpable homicide. The latter charge was thereupon not proceeded with, and the jury formally returned a verdict in accordance with the plea.

In asking the judge to exercise mercy, Mr. Paton said that Dr. Wotherspoon held exceptionally high qualifications, and testimonials had been received from eminent men in her profession to her ability as a physician and surgeon, her devotion to duty, and her humanity. In all the posts she had occupied she had been exceedingly popular, alike with patients and colleagues. Her practice had diminished to a very small one, owing to ill-health, and he believed the offence was committed in a moment of madness due to stress and worry; there was no financial inducement in the case. The Crown had had her under observation, but although not absolutely normal, she was not certifiable.

The judge, in sentencing the accused to nine months' imprisonment, said that the case was one of the most pitiful in his experience. He had in mind the further punishment she might suffer at the hands of a professional tribunal. He thought he was entitled to take into account her high qualifications and reputation in making the sentence as lenient as possible.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*(Part II)* W. Addey, W. Ahern, G. S. Bhargava, H. W. Davies, G. C. Fairchild, C. P. Goswami, J. J. O'Grady, T. Simpson.

UNIVERSITY OF LONDON

The following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE *(with Special Knowledge of Psychiatry)*.—A. Guirdham, W. McC. Harrowes, Hilda M. Webb.

UNIVERSITY OF SHEFFIELD

Dr. Arthur J. Hall has been appointed Emeritus Professor of Medicine.

The Services

DEATHS IN THE SERVICES

Lieutenant Eric Charles George Darke, R.A.M.C., died in the British Military Hospital at Nasirabad, on November 8th, aged 26. He was the eldest son of G. J. Darke, Esq., of Upper Clapton, and was educated at Bart's, taking the M.R.C.S. and L.R.C.P.Lond. in 1927. He entered the R.A.M.C. as lieutenant on May 1st, 1929.

Surgeon Frederick William Collingwood, R.N. (ret.), died in a nursing home in London on November 23rd, aged 60. He was educated at the London Hospital, took the M.R.C.S. and L.R.C.P.Lond. in 1888, and after filling the post of resident medical officer at Charing Cross Hospital, entered the Navy as surgeon on February 22nd, 1888, but retired after a few years' service. As surgeon of H.M.S. *Persian* he accompanied Professor Sola's expedition to the South Seas in 1896. He had since been anaesthetist to the Samaritan Free Hospital for Women, and to the National Dental Hospital. He was a Member of Lincoln's Inn, and a Fellow of the Royal Society of Medicine, and was recently elected a councillor of the Royal Empire Society. During the war he was attached to the medical staff of the Lewisham Military Hospital.

Obituary

SIR DAVID BRUCE, K.C.B., D.Sc., LL.D.

M.B., F.R.C.P., F.R.S.

Major-General A.M.S. (ret.)

Sir David Bruce, who died on November 27th after a long illness, was born at Melbourne on May 29th, 1855, and from Stirling High School went to Edinburgh University, where he graduated as M.B. and C.M. in 1881. Entering the Army as surgeon on August 4th, 1883, he served in Malta and Egypt from 1884 to 1889, and from 1889 to 1894 held the post of assistant professor of pathology in the Army Medical School at Netley. In 1894 he was sent to South Africa, where he remained for seven years, becoming surgeon major in 1895, and went through the South African war. He was present at the actions of Elandslaagte and Laing's Nek, took part in the defence of Ladysmith, and served in operations in the Transvaal and Cape Colony, including the action at Belfast, was mentioned in dispatches in the *London Gazette* of February 8th, 1901, received the Queen's medal with two clasps, and was specially promoted to lieutenant-colonel on November 29th, 1900.



While stationed at Malta, in 1886, Bruce discovered the *Micrococcus melitensis*, the cause of Malta fever, or, as it is now called, Mediterranean fever; and was detailed by the Government of Malta to investigate an epidemic of cholera in 1887. In 1898 he was detailed by the Government of Natal to study horse sickness. In 1900–1 he served as a member of the commission to investigate conditions in South Africa with reference to the origin of dysentery in the field and its relation to enteric fever. Its report was presented to Parliament in 1902. From 1902 to 1911 he was a member of the Army Medical Service Advisory Board, but a great part of these years he spent on special duty as director of successive commissions appointed by the Royal Society for the investigation of various tropical diseases: Uganda, 1903, sleeping sickness; Malta, 1904–6, Mediterranean fever; Uganda again, 1908–10, sleeping sickness; Nyasaland, 1911–14, connexion, if any, between wild animals and diseases of man and of domesticated animals. During these years he became colonel, and was specially promoted surgeon general on April 1st, 1912, for his scientific services. He proved tsetse fly disease to be due to *Trypanosoma brucei*, carried from one animal to another by the fly *Glossina morsitans*, and sleeping sickness to be due to a trypanosome spread by the bite of the fly *Glossina palpalis*.

He was appointed commandant of the Royal Army Medical College on November 1st, 1914, and held this post throughout the war, till he retired on May 1st, 1919. During the war, in addition to his other duties, he served as chairman of the War Office Pathological Committee, and of the committees for the study of tetanus and of trench fever. In 1915 he delivered the Croonian Lectures at the Royal College of Physicians of London. On his retirement from the Army in 1919 he became chairman of the governing body of the Lister Institute.

Bruce served as president of the Physiological Section of the British Association in South Africa in 1905; as president of the Tropical Diseases Section at the International Congress of Medicine in 1913; as president of the Royal Society of Tropical Medicine and Hygiene from 1917 to 1919; and as president of the British Association in Canada in 1924, when he delivered to the meeting at Toronto, on August 6th, 1924, his presidential address on the prevention of disease. Many learned bodies in foreign countries conferred on him their honorary membership, and elected him a foreign correspondent — the Academy of Science of the Institut de France in 1918; the Academy of Medicine, Paris; the Biological Society of Paris, in 1919; the Société de Pathologie Exotique, Paris; and the Sicilian Academy of Science, Letters, and Art. At home he received many honours from the Crown and from academic bodies—F.R.S., 1899; C.B., 1905; D.Sc. Dublin, 1906; knighthood, 1908; LL.D.Glasgow, 1908; F.R.C.P.London, 1911; LL.D.Liverpool, 1918; K.C.B., 1918. In 1906–7 he served on the Council of the British Medical Association, and in 1908 the Stewart Prize was awarded him for his researches on Mediterranean fever.

Bruce was the author of over a hundred contributions to scientific literature, chiefly on Malta fever, tsetse fly disease, sleeping sickness, and trypanosomiasis, published mostly in the *Transactions* of the Royal Society. He also edited the *Journal of the Royal Army Medical Corps* from 1904 to 1908. In 1883 he married Mary Elizabeth Steele, R.R.C., O.B.E., who gave him invaluable assistance in his scientific work, and died only a few days before him.

The story of Bruce's connexion with trypanosomiasis is in effect the history of trypanosomiasis, and both man and his animals have been placed in his debt. In 1880 Evans, in India, showed that a trypanosome was the cause of "surra" in animals. At an even earlier date David Livingstone had described "tsetse fly" disease in Africa. But it was not until 1895 that Bruce was requested by the Governor of Natal to investigate the disease as it occurs in Zululand. He found that "nagana"—as it is called locally—was present in all the domestic

animals, and he was able to show that the tsetse fly —*Glossina morsitans*—did not inject a toxin, as was generally supposed, but was the carrier of a living organism from one animal to another. He sent an infected dog back to England, and this animal furnished the laboratories of Europe with specimens of what Plimmer and Bradford named *Trypanosoma brucei*. It was evident to Bruce that the fly procured the parasite from some definite source, and hunters and natives alike stated that wild game must be present where nagana is found. By means of inoculation experiments he found that the game could harbour the organism without themselves showing any symptoms. This preliminary work in veterinary protozoology opened the path to a more complete understanding of the trypanosomes of animals, and provided the means for the solution of the problem of sleeping sickness. This disease had been known from 1742, but until the beginning of this century it received little scientific attention. In 1902, however, Castellani, one of the first members of the then recently appointed commission of the Royal Society, discovered a trypanosome in the cerebro-spinal fluid of some patients suffering from sleeping sickness. Meanwhile Bruce had been asked to assist in the investigation, and on his arrival in Uganda in 1903 Castellani mentioned to him that he had found the organism in five out of fifteen cases of the disease. Bruce considered this to be of immense importance, and under his encouragement Castellani continued his work. It was ultimately found that the parasite was present in all cases.

Having ascertained with some certainty that the presence of the organism was the cause of sleeping sickness, Bruce proceeded to determine its mode of entrance into the human body. His previous knowledge of the similar tsetse fly disease of animals suggested that some insect might be involved, and he was soon able to show that the distribution of the malady, and of *Glossina palpalis*, a species of fly related to *G. morsitans*, were practically coincident. The evidence in favour of the fly theory was convincing, and by means of animal experiments he found that flies fed on infected patients were capable of infecting monkeys. In August, 1903, Bruce returned home, but the work of the commission still continued. In October, 1908, his work on Mediterranean fever completed, he returned to Uganda to continue his investigations locally. During this period he was able to confirm Klein's work, and show that, while the fly could mechanically transmit the trypanosome for a few hours after biting, it was able to remain infective for a much longer period, only, however, after an interval of time had elapsed. His investigations also showed that *G. palpalis* acts as the carrier of a number of animal trypanosomes of considerable importance, and he published several detailed papers dealing with these species. Bruce returned to England in the spring of 1910.

In April, 1911, the Colonial Office asked the Royal Society to inquire into the relation of the African fauna to the maintenance and spread of human trypanosomiasis, and, secondarily, into other trypanosome diseases of domestic animals. Sir David Bruce was appointed director of this commission, and he proceeded to Nyasaland in November, 1911. He remained there until March, 1914, with the exception of a break during the second half of 1913, when he returned home to give evidence before the Sleeping Sickness Commission. One of the chief conclusions arrived at by Bruce was that wild game constitute the main, if not the sole, reservoir from which the tsetse draws its infectivity. He also found that the human trypanosomiasis of Nyasaland was not caused by *T. gambiense*, the intermediate host of which is absent from that district, but by *T. rhodesiense*, which is carried by *G. morsitans*. He inclined to the opinion that this species was the same as that found by him in 1895 in nagana, and which bears his name. The Nyasaland work was not confined to human trypanosomiasis and measures for its prevention; many animal species were described in detail, and time was found to investigate the diseases caused by them. All of Bruce's conclusions are not accepted nowadays, though the majority are, but the impetus given by him and the commissions under his direction has been very far-reaching, and is still by no means expended.

By the death of David Bruce the world has lost a great scientist. A big man with big ideas, he possessed a special *flair* for getting at the truth, and supplied the driving power which, especially in tropical countries, is so necessary to bring work to a successful conclusion. Though brusque in manner and often hasty in speech, he would always listen to other people's suggestions and ideas, and would act on them if after consideration they seemed useful. He was fond of shooting, but was not much interested in athletic pursuits. In his later years he felt himself rather cut off from his old friends, and used to complain that he had lost most of them.

At the funeral service in London on December 1st the British Medical Association was represented by the Medical Secretary, Dr. Alfred Cox.

We are indebted to Colonel A. E. HAMERTON for the following appreciation of Sir David and Lady Bruce.

The death of both Sir David and Lady Bruce within the same week removes from the field of medical research the rare and happy partnership of a man and his wife who, for nearly forty-eight years, together formed a brilliantly successful unit devoted to pioneer work in the investigation of tropical diseases. By their combination of talent and mutual interest in the work to which they dedicated their careers, they alone initiated and perfected early in their married life—with meagre laboratory facilities, and when bacteriology was in its infancy—a series of masterly experimental investigations that culminated in two outstanding discoveries—namely, in 1887 the isolation of *Micrococcus melitensis* and the proof that it was the cause of undulant fever; and some eight years later the discovery of *Trypanosoma brucei* and the proof that it was the cause of "nagana," the fly disease of domestic animals in Zululand; also that the tsetse fly was the vector and the wild-game animals the definitive hosts of this lethal parasite. These great discoveries laid the foundation of a system of human and veterinary pathology and preventive medicine which they continued to illuminate until near the end of their lives, and which still occupies the minds of a host of investigators throughout the civilized world. Bruce's original reports on these discoveries are masterpieces of scientific reasoning based on experiment. They are as true to-day as when they were written, and—though the edifice of knowledge of which they are the base has grown immense—the original foundations were so well and truly laid that they have required no alteration. Happy is the man of science who can claim this to his credit!

Bruce was great, not because he was a supremely clever man in the common acceptance of the term—of whom it might be said, "He could have risen to the top of any learned profession to which he applied his mind"—but because he was original in thought, and he was no imitator. He had a constructive imagination. His mind, however, worked slowly; he pondered deeply and saw far into those workings of Nature that he investigated. Moreover, he had an indefinable intuition, almost mystical in its working, that enabled him not only to discern amidst a maze of possible courses the right path of investigation, and to plan his experiments accordingly, but to stick to it and avoid futile experimentation that

would lead only to a mare's nest. This faculty was of inestimable value in later life, when he became a director of teams of young workers on the various commissions for the further investigation of undulant fever, trypanosomiasis, and other diseases. He was quick to recognize any promising clue on data that emerged in the process of investigation, and to plan an orderly and conclusive line of experiments thereon. And he was just as quick to stop wasting time over experiments in which he "saw no light," to use his own expression.

But Bruce was not a good technician; he did not appear to have the manual dexterity or the patience to master the finicky details of laboratory technique. Here Lady Bruce was supreme; as a microscopist she had few equals. She had a master mind and hand for laboratory procedure, ingenious in devising apparatus out of all sorts of odds and ends, skilled as a bacteriologist and typist. She was also an artist of no mean merit, and a critic of literary output. She was, moreover, a truly noble woman. She excelled in the practice of all the virtues, which radiated from her nature with most effect in times of trial and difficulty in Central Africa. She was the happy possessor of a rare mental make-up, comprising unusual ability, tact, common sense in dealing with the ordinary affairs of life, and, above all, a real goodness of heart which inspired profound respect and admiration among all her colleagues on the Sleeping Sickness Commission. She had masculine courage and strength of character, with a suave femininity that had the best possible influence in promoting happy relations and harmony among all workers in the camp. She stands side by side with her husband among the immortals. The great work they did together in the service of humanity ranks with the highest, and remains an enduring monument in the Temple of Science.

[The photograph of Sir David Bruce is by Messrs. Elliott and Fry, London.]

ALEX WALTHEN NUTHALL, M.B., CH.M.BIRM. F.R.C.S.

Surgeon, Queen's Hospital, Birmingham; Consulting Surgeon, Children's Hospital, Birmingham

Alex Walthen Nuthall died suddenly at Queen's Hospital on November 20th, just as he was beginning his morning's work. He was born on July 24th, 1873, at Hazareebagh, in the province of Calcutta. His family had been connected with India for three generations, his great-grandfather having been an official in the British East India Company and both his grandfather and father having held high rank in the Indian Army.

He was educated at Westward Ho and the Birmingham Medical School, and qualified at the age of 22 years. His first appointment was at the Queen's Hospital as house-surgeon to the late Mr. Jordan Lloyd. After a year of residence, he went to St. Bartholomew's Hospital to study for the F.R.C.S., for which he qualified before he was old enough to receive the diploma. He then volunteered for active service as a civil surgeon in the South African war, and worked chiefly in Natal under Sir Frederick Treves. On his return to Birmingham he held the post of resident surgical officer at the General Hospital until, in 1902, he was appointed casualty surgeon at the Queen's Hospital. Four years later he became surgeon to out-patients, and in 1919 honorary surgeon. He was an active member of many of the hospital committees, and the high esteem in which he was held is reflected in the following resolution that was passed on the day of his funeral: "That this meeting of the Committee of Management of Queen's Hospital desires to place on record its sense of the great loss the hospital has sustained by the death of Mr. A. W. Nuthall, F.R.C.S., who for thirty years rendered most devoted service as a member of the honorary medical staff, first as a surgeon for out-patients and then as a surgeon on the full staff, which offices he filled with great distinction."

At the Children's Hospital Nuthall served as surgeon the maximum period of twenty-five years, and here, too, he was an active member of the committee of management. He had a great love for children, and it is no figure of speech to say his cheerful presence in the wards created and radiated an atmosphere of happiness. On his retirement on March 4th, 1929, a presentation was made to him by the Lord Mayor in recognition of the work he had done for the hospital. He was greatly interested in the movement to provide accommodation for middle-class patients who could not afford the expenses of an ordinary nursing home, and was one of the founders of St. Chad's Hospital, which was opened to meet this need just before the outbreak of war.

Nuthall was only prevented by colour-blindness from following the family tradition of entering the Army, but he always took the keenest interest in the Territorials. Before the war he held a commission in the 5th Royal Warwickshire Regiment, and a fellow officer writes that he was one of the best shots and one of the most popular officers in the battalion. Soon after mobilization he was transferred to the Royal Army Medical Corps, and proceeded to France with the 48th C.C.S., stationed for some time at Amiens. Later he was appointed officer in charge of the surgical division of the 52nd General Hospital in Salonica, with rank of major. Although this war service involved him in serious financial loss, it was characteristic of the man that no one ever heard a word of complaint from his lips.



He devoted much time to the activities of the British Medical Association, having been chairman of the Central Division of the Birmingham Branch, and, later, president of the Branch, as well as president of its clinical and pathological section. For the last ten years he had been representative on the Central Council. He was one of the honorary secretaries of the Annual Meeting of the Association at Birmingham in 1911, and in recent years had served on a number of committees at headquarters.

He was a keen Mason, and had twice occupied the Master's chair in Warwickshire lodges, once in the Grosvenor and, later, in the Lister Lodge, of which he was also a founder. He was awarded Provincial honours some three years ago, and was also a Royal Arch Mason.

Nuthall always took the greatest interest in cricket and football. He was an active supporter of the Warwickshire County Cricket Club, and in his earlier years a prominent player for the Moseley Rugby Football Club. He was a voracious reader, both of medicine and of fiction, and perhaps because he read so much he wrote but little. He was always greatly interested in pneumococcal infection, and in 1926 delivered the Ingleby Lectures at the University on pneumococcal peritonitis. He was fond of pointing out that pneumococcal empyemata were for the most part empyemata from the onset, and did not arise as complications of pneumonia; further, that in cases of pneumococcal empyemata and of pneumococcal peritonitis, no operative procedure should be undertaken during the acute stage, but that ten to fourteen days should be allowed to elapse after the initial rigor before attempting to drain either the thoracic or abdominal cavities.

We are indebted to colleagues at the Queen's Hospital for the following appreciations.

L. G. J. M. writes: His handsome, kindly face and lovable nature—I never heard that he ever made an enemy in his life, never heard an ill word from him or of him. He was loved by his colleagues, the students, and his patients. I saw him in severe illness, in great pain—patient and courageous. I saw his fortitude and resignation during many years of the fatal illness of his wife, to whom he was devoted. He was a true sportsman through and through, and incapable of doing anything mean or underhand. In committee he was always ready to help with sound judgement, but always insisted on trying to make out some sort of case for a lost cause or a rejected candidate. He had no ambition to be either a great surgeon or a wealthy one, and shunned self-advertisement in every form.

W. B. writes: The outstanding features of Nuthall's character were modesty, absolute rectitude, and ever-ready helpfulness. He was friendly and cheerful to all who came in contact with him, but was very reserved. He never pushed himself or his work prominently forward, and was very tolerant of the opinions of others. Knowing him intimately for more than thirty years, I know that nothing selfish or unkind ever influenced his actions or opinions. He never allowed his own interests or advancement to stand in the way of doing and saying what he thought to be right, and his standard of professional rectitude was a very high one. His readiness to help his colleagues and his patients, at no matter what personal inconvenience, was unvarying. He was a true and loyal friend, and his passing leaves a deep sense of personal loss in the hearts of many. As a surgeon, Nuthall was widely read, skilful, and most conscientious, always putting the interests of the patient in the forefront. He devoted himself whole-heartedly to his hospital work, and gave more time to it than he could really spare. He was a man who quietly, unostentatiously, and consistently gave of his best to rich and poor alike. He was a popular teacher, a first-class all-round general surgeon, and a most loyal and helpful colleague.

[The photograph reproduced is by Percy Wynne, Birmingham.]

FRANK HAWTHORN, D.S.O., M.D.

Consulting Surgeon to the Fleming Memorial Hospital for Sick Children, Newcastle-upon-Tyne

As noted in our last issue, Colonel Frank Hawthorn died on November 20th after a brief illness.

A Newcastle man, he was the son of Dr. John Hawthorn, who was an eminent general practitioner as well as public vaccinator in the city. Hawthorn was educated at the University of Durham College of Medicine, and eventually followed his father as lecturer on vaccination in the College. He carried on a general practice in the centre of the city, but the great interest in his life was his work as surgeon to the Fleming Memorial Hospital for Children, where he worked for thirty years, only retiring on attaining the age limit last year.

He gave voluntary service to many of the auxiliary benevolent institutions in the city, and, in particular, took a keen interest in the Dame Margaret Home for Children at Washington—Dr. Barnardo's Northern Branch—where he worked for twenty-five years, and of which he was joint secretary. He was also a member of the committee of the W. J. Sanderson Home for Crippled Children. He supervised the medical services of the Church Lads' Brigade and the Church Girls' Brigade of the North-Eastern district. He was a member of the Newcastle-upon-Tyne Division of the British Medical Association, and was joint honorary secretary of the Section of Orthopaedics and Diseases of Children at the Annual Meeting of the Association at Newcastle in 1921.

In the midst of his work he found time to take a prominent part in the R.A.M.C.(T.F.). Beginning as surgeon lieutenant to the Newcastle-upon-Tyne R.G.A. in 1906, he became connected with the 1st Northumbrian Field Ambulance (T.F.) in 1908, and in 1913 was lieutenant-colonel in command. He saw active service in France from 1915 to 1917, was three times mentioned in dispatches, and was awarded the D.S.O. He was made brevet colonel in 1923, and retired in 1926.



Throughout a busy and useful life Frank Hawthorn earned, wherever his activities led him, the respect and esteem of professional colleagues and citizens alike. He was honoured by his medical brethren in every position of trust in local affairs, and will always be remembered for his conjunction of a modest and lovable disposition with the highest ideals of firm purpose, and devoted service in the interests of the community in which he lived.

[The photograph reproduced is by James Bacon and Sons, Newcastle-upon-Tyne.]

The death took place at St. Andrews, Fifeshire, on November 27th, of Dr. HENRY WILLIAM LAING. He was born in 1854 at Bridge of Earn, Perthshire, where his father practised medicine. After his medical course at Edinburgh he took the licentiateship of the Royal College of Surgeons there in 1875, and in the same year graduated M.B., C.M. at Edinburgh University. After proceeding M.D. in 1879 he was for a short time assistant to his father, and later went to Kirkcaldy, where he built up a large practice and acted as medical adviser to the Kirkcaldy Hospital. He practised for twenty-seven years in Kirkcaldy, and in 1914 retired and took up residence in St. Andrews. He had been associated with the Territorial Force, and on the outbreak of war served as medical officer to the 7th Battalion of the Black Watch at home, becoming ultimately brevet lieutenant-colonel. After the war Dr. Laing again settled in St. Andrews, and from 1919 acted as honorary medical superintendent of St. Andrews Cottage Hospital. He is survived by a widow and by a son and daughter.

Medical News

The autumn dinner of the Irish Medical Schools' and Graduates' Association was held at the Piccadilly Hotel, London, on November 26th; Mr. Andrew Fullerton, ex-President of the Royal College of Surgeons of Ireland, was in the chair. The principal guests were Sir Thomas Maloney, Lord Chief Justice of Ireland, and Dr. W. G. Willoughby, President of the British Medical Association. Following on the toasts of "The King" and "The Prince of Wales and other members of the Royal Family," Mr. W. J. Corbett, F.R.C.S., proposed the toast of "The Guests," referring to the regretted absence of Mr. J. W. Dulanty, the High Commissioner for the Irish Free State; he welcomed in his place Sir Thomas Maloney. The two chief features of the B.M.A., Mr. Corbett said, were the protection of the general practitioner and the promotion of scientific work. In responding for the guests, Sir Thomas Maloney illustrated the progress of surgery and of public health in Ireland by several amusing anecdotes. Dr. W. G. Willoughby, toasting "The President and Association," paid a gracious tribute to Sir Thomas Maloney. Dr. Willoughby claimed association with Ireland, and said that five or six generations back there

had been an infusion of Irish blood in his own family. The witty speech which followed bore out the truth of this assertion. Referring to the relation between the medical officer of health and the general practitioner, Dr. Willoughby said that he himself was a physician first and a medical officer of health second. Mr. Andrew Fullerton reminded his audience that many of them there were earning their living in a strange country, but he deprecated an excess of patriotism, the evil effects of which were so obvious to-day, and urged that the spirit of international co-operation should prevail.

The winter dinner of the Australian and New Zealand Medical Association in England will be held at the Trocadero Restaurant, Piccadilly, on Friday, December 11th, at 7.45 for 8 p.m., with Mr. T. P. Dunhill in the chair. Sir John Thomson-Walker and Professor William Wright will be the official guests. All medical visitors from Australia and New Zealand, whether already members of the association or not, are cordially invited to be present. The honorary secretaries are Mr. E. T. C. Milligan and Mr. Philip Jory, 26, Queen Anne Street, W.1.

The thirteenth annual reunion dinner of the officers of the 29th General Hospital will be held at the Trocadero Restaurant, London, W., on Saturday, December 12th, *Lieut.-Colonel S. H. Withers presiding. Members desirous* of attending should apply to the honorary secretary, Captain A. Percy Groves, Heronfield, Meadowcourt Road, Leicester.

A meeting of the Court of Governors of the Middlesex Hospital will be held in the large lecture theatre of the Medical School on Wednesday, December 9th, at 11 o'clock. H.R.H. Prince Arthur of Connaught, chairman of the hospital, will give an account of the progress of the reconstruction scheme, and in particular of the work just beginning on the final section of the new east wing and cross-piece.

At a meeting of the Pharmaceutical Society of Great Britain, to be held at 17, Bloomsbury Square, W.C., on Tuesday, December 8th, an address will be given by Mr. M. D. Perrins of the Home Office, upon "The international illicit traffic in drugs." The president will take the chair at 8.30 p.m.

A meeting of the National Baby Week Council was held at 117, Piccadilly, on November 27th, when the chairman, Sir Gomer Berry, gave an address, and the report of the executive committee was presented by its chairman, Dr. Eric Pritchard. A discussion on "Where wise spending is good saving" was opened by Dr. W. G. Booth and Dr. A. S. Hebblethwaite, and an announcement about the campaign for 1932 was made by the joint honorary secretaries, Dr. D. H. Geffen and Dr. Sophia Friel.

At a meeting of the Paddington Medical Society on Tuesday, December 8th, at the Great Western Royal Hotel, at 9 p.m., Mr. W. McAdam Eccles will give an address, entitled "Pitfalls in the anatomy, diagnosis, and treatment of hernia."

The Fellowship of Medicine and Post-Graduate Medical Association announces that the last lecture of the "Prognosis" series (on goitre, with special reference to thyrotoxicosis) will be given by Mr. Cecil Joll at 4 p.m., on December 9th, at 11, Chandos Street. Free clinical demonstrations will be as follows: Monday, December 7th, at 6 p.m., in the St. John's Hospital, Leicester Square, Dr. S. E. Dore. Tuesday, December 8th, at 3.30 p.m., clinical lecture room, Royal Northern Hospital, Mr. Hamilton Bailey. An evening course of lectures on endocrinology will be given by Dr. W. Langdon Brown, at 11, Chandos Street, on Mondays and Fridays (January 11th to 29th) at 8.30 p.m. (fee 2 guineas, or 10s. per lecture). The 1932 list of special courses is now ready. An evening course (lectures and demonstrations) for the April M.R.C.P. examination will be held in February and March, 1932; numbers will be strictly limited to twenty-five. The syllabus will be ready shortly.

A week-end course on common disorders of childhood and their treatment will be given at the Hospital for Sick Children, Great Ormond Street, W.C., on Saturday December 12th, from 9 a.m. till 4 p.m., and on Sunday, December 13th, from 10 a.m. till 12 noon. The course, which is suitable for those in general practice, will be free to medical practitioners; those intending to be present should notify the dean of the Medical School at the Hospital.

The programme of the South-West London Medical Society includes the following papers: December 9th, scarlet fever, Dr. J. D. Rolleston; January 13th, diseases of the hip-joint, Mr. Gordon Pugh; February 10th, complications in pregnancy and labour, Dame Louise McIlroy; March 9th, pruritus, Dr. W. J. O'Donovan; April 13th, common disease of the mouth, Mr. Cecil Rowntree. On May 25th Sir Humphry Rolleston will deliver the Bolingbroke Lecture, entitled, "Advances in medicine during the last fifty years." All meetings are held at the Bolingbroke Hospital, Wandsworth Common, at 8.45 p.m.

A Geneva University Club has been founded to afford students and teachers from Geneva University who are resident in England opportunities for meeting socially at least twice a year. Subscription, 5s. Dinner, Wednesday, December 16th, at 7.45 p.m.; tickets 10s. 6d. Particulars from the secretary, 31, Highbury Place, N.5.

At a meeting of the Optical Society, to be held in the Imperial College of Science and Technology, South Kensington, on *Thursday, December 10th*, at *7.30* p.m., a paper on a new photo-electric spectrophotometer will be presented by Drs. F. Campbell Smith and Ensor R. Holiday of the London Hospital. A device for focusing projectors will be demonstrated by the research staff of the General Electric Company, Ltd., and W. Watson and Sons, Ltd., will show microscopes and a modification of the usual eyepiece camera.

H.R.H. the Duke of Connaught, Grand Prior of the Venerable Order of the Hospital of St. John of Jerusalem, has appointed Colonel C. I. Ellis, M.D., of Torquay, surgeon-in-chief of the St. John Ambulance Brigade as from November 23rd, 1931. The personnel of the St. John Ambulance Brigade in England, Wales, and Ireland is 55,121 men and women, and 7,356 cadets (boys and girls), a total number of 62,477. Besides this number there is the brigade over-seas; in fact, every British Colony or Dominion either has a division of the brigade or a teaching centre of the St. John Ambulance Association.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Britmedia, Dublin*: telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Inhalation Therapy

Dr. C. H. AUTY (Harlesden) wishes to get in touch with other medical men who practise inhalation therapy, with the object of forming a society to advance this section of medicine.

"Cold Back"

"P. M." writes: Could any reader tell me anything of the etiology and treatment of "cold back"? This is, I believe, a fairly common complaint among women, and, although not incapacitating, certainly annoying. My patient is aged 28, stout and otherwise healthy, but complains bitterly of this coldness. Warm clothing does not, so she says, help in any way. The region affected is the lumbar area.

Nausea and Vomiting of Pregnancy

Dr. DOUGLAS ANDREW (Arlesey, Bedfordshire) writes: In reply to Dr. Lawson Steele's query concerning sickness and nausea during pregnancy, the cause of this condition is still not definitely known. The chief among several theories advanced in this connexion are: (1) increased irritability of the nervous system; (2) deficiency of the hormone secreted by the corpus luteum; (3) a mild degree of toxaemia. These points must be remembered when treatment is undertaken. I have found that great benefit usually results from the following regime. (1) During the first three months of pregnancy the patient is advised to adhere to a fruit diet as strictly as possible. In my opinion meat of all kinds and fatty foods should be absolutely avoided. (2) Regular exercise is necessary. (3) Bowels must be kept absolutely regular. I have found phenolphthalein in doses of 1 to 2 grains the most useful drug for this purpose during pregnancy. I usually prescribe a saline draught containing 5 to 10 grains of potassium bromide at night. If sickness still persists 3 minims of tincture of iodine in a tumblerful of water can be tried. The chloretone 5-grain capsules (Parke, Davis and Co.) are very useful in most cases.

Naevus

"V. S. M." writes: In reply to the letter of "Inquirer" about the treatment of a naevus, whilst I am in no way an expert in their treatment, I would like to answer his questions. (1) The prognosis is good if he is satisfied with a flat, white scar. (2) Radium appears to give the best result, though alcohol injections may be used. If, however, the injections are not successful the radium treatment is made more difficult. (3) The earlier the treatment the less will be the scar, as these naevi rapidly increase in size.

Income Tax

Temporary Residence in the United Kingdom

"I.M.S." joined the Indian Medical Service on August 4th, 1931, from which date he has been receiving salary and allowances. He arrived in England from Australia just before taking up the appointment, and will be leaving this country for India about February 12th, 1932. Will he be liable for income tax?

*** If the salary, etc., are paid from British funds he is liable, however short his stay in the United Kingdom. If the source is Indian he would seem to be exempt, unless he spends six months in this country during the year ending April 5th, 1932. In calculating the period of six months temporary periods spent outside the United Kingdom can be ignored.

LETTERS, NOTES, ETC.

Survival after Prostatectomy

Mr. ANDREW FULLERTON (Professor of Surgery, Queen's University, Belfast) writes: I have just received an unsolicited letter from a clergyman upon whom I operated for enlarged prostate in October, 1911—that is to say, over twenty years ago. The patient states that he was born on November 21st, 1842, so that he is now in his ninetieth year. From my experience of these cases I am convinced that a patient who survives the operation is often rejuvenated, and may enjoy much better health than he has for years before.

Climatic Health Resorts of India

Dr. A. P. CAWADIAS (52, Wimpole Street, London, W.1) writes: May I make an appeal through the *Journal* to colleagues practising in India for some recent documents referring to the therapeutical action of the climatic health resorts of India. Professor Piery of Lyons has undertaken the publication of a big treatise of "medical climatology" with the object of collecting the more recent documents of the therapeutical effects of climatic health resorts all over the world. He has done me the honour to ask my collaboration, and in the part that has fallen to my lot are included the Indian climatic health resorts. As I have found very scanty information on this point in the literature, I should be much obliged for any more direct information from physicians who know these resorts personally.

A Surgical Link with the Past

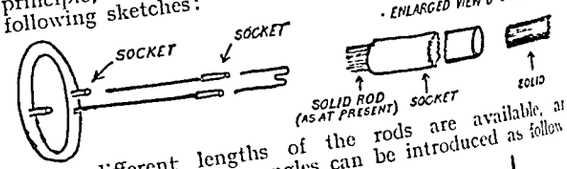
Mr. N. DUGGAN (Worcester) writes: To-day I was able to congratulate a patient on attaining her eightieth birthday. Fifty-five years ago, when she was 25, she was operated on by Sir Spencer Wells in a London nursing home for an ovarian cyst. This would appear to be one of the oldest living cases of laparotomy. She takes pleasure in describing how the great surgeon visited her during her convalescence, presenting her each day with a nosegay concealed in his top-hat. When the time came for her to leave the home she was so affected at parting from her benefactor that she cried a little, and was rewarded by an affectionate kiss. *Tempora mutantur!*

Domestic Refrigerators

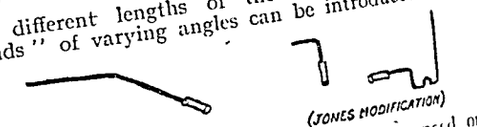
VISCOUNT BURNHAM writes: Whilst we have made remarkable progress in connexion with national and domestic hygiene, it is still surprising that we do not insist upon provision being made in every new house that is built for the installation of a refrigerator. Nothing can be more important than the purity of our food, and yet in hundreds of thousands of homes food has more or less to take its chance with the bacteria which are always attacking it. The number of cases of illness traceable to impure food must be very considerable. Most, if not all of them, might be avoided by wise spending. Will not the Ministry of Health look into this matter?

The Thomas Splint

"WATERFOOT" writes: It has appeared to me that one great drawback to the Thomas splint is the large number of these which have to be kept in stock to ensure possessing one of proper size. I offer the suggestion, for what it is worth, that the iron parts should be made on the pin and socket principle, and thus be interchangeable, as shown in the following sketches:



Thus different lengths of the rods are available, as "bends" of varying angles can be introduced as follow



And so on. The leather-covered ring parts need only be in, say, three sizes for the leg, and perhaps two for the arm

Phimosis and Circumcision

Dr. J. M. MORRIS (M.O.H., Neath) writes: Beginning infant welfare work in 1915, one of the first things I noted was the large number of boys, at least 75 per cent., with adherent prepuce. For some time I freed a good many, a proceeding alleged by writers to be painless, a feature outside my experience. Eventually I got somewhat fed up with this, and thought that it would be well to see what had become of the tight prepuces of those unfortunates born before infant welfare began. I made a survey of all boys in my school area, some 1,900, and these were the facts. Excluding about thirty, who had had circumcision, for reasons unknown to me, but, judging by age groups, seemingly carried out in waves of enthusiasm, I found one very definite narrow preputial opening, for which circumcision or stretching would have been beneficial, and one doubtfully requiring treatment. In all other cases the foreskin was in a most lax condition; to retract was almost like pulling up one's trouser leg. This was found at the age of 5 just as much as at 14.

Sex Equality

A correspondent, who had hitherto shared our belief that the prostate is an organ peculiar to the male sex, sends us an extract from the advertisement columns of the *New York World* of November 22nd. The advertisement is headed boldly: "PROSTATITIS. 30% of Men and Women above Fifty Suffer Needlessly. They Live in Dread of by Day and Their Rest is Disturbed at Night." Is prostatectomy to be included among gynaecological operations?

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 78, 79, 80, 81, 82, 83, 86, and 87 of our advertisement columns, and advertisements of partnerships, assistantships, and locumtenencies at pp. 84 and 85.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 311.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

511 Cardiac Symptoms Simulating Abdominal Conditions

G. R. BURNS (*Canadian Med. Assoc. Journ.*, October, 1931, p. 424) records three cases with a view to calling attention to the fact that at times common cardiac conditions may very closely simulate acute conditions in the abdomen; this may lead to unnecessary operations, and even the death of the patient. The more or less pronounced features in particular cases were pyrexia, leucocytosis, abdominal pain, muscular spasm, shock, and such minor indications as vomiting, diarrhoea, nausea, or eructations. To guard against the erroneous interpretation of such manifestations a very careful history of the case must be secured, and a scrupulous and exhaustive examination of the cardio-vascular system is essential. In fifteen months Burns saw four cases of coronary thrombosis which had been sent into hospital diagnosed as acute abdominal emergency. Of this condition the most puzzling cases are those in which death is delayed, and the anginal pain is not relieved by amyl nitrite, but only by morphine in large doses. The author discusses the way in which the puzzling abdominal symptoms are evoked, and mentions particularly the blood pressure (a fall from a previously high figure) due to infarction, the fever, and the leucocytosis. The fear of impending death may cause the patient to lie quietly in bed, instead of struggling violently as in gall-bladder colic. The electrocardiograph is the final court of appeal, but the character of the heart sounds and the evidence of cardiac failure may suffice to indicate the correct diagnosis. Similarly in angina pectoris there is the fear of impending death, and the onset (after exercise, an emotional outburst, or a heavy meal) demands consideration. The history in such a case will usually bring out evidence of limitation of the cardiac reserve. Paroxysmal tachycardia, with epigastric pain, but not excessive increase of the heart beat, is difficult to recognize at first. Acute fibrinous pericarditis, on the other hand, is usually not a primary condition, and some adjacent focus of disease may be found, usually a tuberculous lesion in the lungs or mediastinum.

512 Vincent's Disease

R. I. RIZER (*Minnesota Med.*, October, 1931, p. 901) urges the need of more co-operation between the physician and the dentist in detecting and treating Vincent's disease, which, he thinks, is becoming more prevalent, possibly owing to the failure to recognize carriers. In 160 persons Miller found Vincent's spirochaete in 77 per cent. Brams discovered its presence in the crypts of 82 per cent. of 100 pairs of tonsils. It has not been found in the mouths of edentulous people, and rarely in normal mouths. The organism is probably saprophytic until some conditions arise, such as erupting third molar teeth, pyorrhoea, unclean mouths, tobacco and mercurial stomatitis. It is often associated with adenoids, diphtheria, measles, syphilis, scarlet fever, purpura, sepsis, diabetes, tuberculosis, malnutrition, scurvy, and malignant growths; in such cases it may multiply and become the dominant symptom of the pathological condition. In patients with red and swollen gums about certain teeth the routine examination of a dried smear, fixed by heat and stained by gentian violet, shows a very high percentage of Vincent's spirochaete as the cause of the condition. The physician should order a liberal general diet; condiments, pickles, and highly seasoned food should be avoided. Smoking, and the use of toothpicks and dental floss are prohibited. Strict instructions about the methods of infection should be given. The dentist should employ a regime of mild instrumentation only, avoiding any trauma that might lower the resistance of the soft tissues. A mouth wash of equal parts of alcohol, hydrogen peroxide, and glycerin is useful; a soapy toothpaste aids in removing the organism. Corrective dentistry should not be begun until the soft parts have a healthy appearance. When the infection is recognized early, and proper treatment is instituted, the prognosis is excellent, provided that the physician and dentist co-operate.

513 Whooping-cough as an Alleged Precursor of Tuberculosis

A. SUNDAL (*Tidsskrift f. d. Norske Laegefor.*, October 15th, 1931, p. 844) records observations from the Ullevaal Hospital in Oslo which give little support to the belief that whooping-cough is often responsible for the development of tuberculosis. Among a series of 24 patients, all of whom were examined radiographically on admission, six were found to be Pirquet-positive once or more often in the course of the illness. In every case in which there was a possibility of tuberculosis, a new skiagram was taken weekly. The negative Pirquet reactors were also repeatedly re-examined with the Pirquet test. In three cases, a positive Pirquet reaction became negative during the illness, again becoming positive between the second and fourth weeks. In all the Pirquet-positive patients the *x*-ray examination showed signs of involvement of the lungs, but only in one case were *x*-ray changes observed which could be interpreted as indicating activation of the pulmonary focus in the course of the whooping-cough. There was, however, a child, born in 1924, who had been treated in a sanatorium for tuberculosis of the bronchial glands some years earlier, and whose tuberculosis was activated by the whooping-cough.

Surgery

514 Osteomyelitis of the Os Calcis

F. J. GAENSLEN (*Journ. of Bone and Joint Surg.*, October, 1931, p. 759) emphasizes the difficulty of successful surgical approach to lesions of the os calcis, especially in cases of extensive destruction of the interior of the bone due to osteomyelitis, and when the adjacent joints or tarsal bones are involved. Medial or lateral approaches give inadequate exposure, and recurrence or persisting sinuses result from the incomplete removal of diseased bone. Eleven cases are reported of osteomyelitis of the os calcis, nine pyogenic and two tuberculous, which were operated upon by the split-heel method. In most of the cases there was a central lesion involving a varying amount of cancellous bone, while the cortical bone was uninvolved or perforated by the sinuses. In some cases the disease had invaded the astragalo-calcaneal joint as well as the mid-tarsal joint. In no case was there any involucrum formation surrounding the os calcis, nor was there extensive periosteal separation with large areas of dead cortical bone. The first case operated on by the split-heel method was a girl, aged 11; a sand burr had penetrated her foot, which was red, swollen, and painful with a discharging sinus over the ankle. Clinical and *x*-ray examinations indicated an extensive and progressive involvement of the os calcis and adjacent tarsal bones. An operation was performed, the mid-plantar incision being chosen, and the Achilles tendon being split in the mid line of the lower three or four centimetres. Sequestra were removed, and granulation tissue was taken from the interior of the os calcis and the lower portion of the astragalus; the wound was packed with glycerin gauze, and the limb was immobilized on an anterior moulded plaster. Final healing ensued about four months after the operation, and the end-results were a slight limp, a painless scar, and limitation of the sub-astragalar

mobility. In most of the other ten cases the results were very satisfactory, and the split-heel method of approach is strongly advocated for the following reasons: periosteal stripping and removal of healthy cortical bone is avoided, good exposure is given; and complete excision is avoided in most cases. No plastic operation has been necessary in any instance, and in only one case of chronic tuberculous abscess has there been recurrence which required further surgical treatment.

515 Traumatic Aneurysm of the Temporal Artery

K. H. ERB and E. HAHN (*Zentralbl. f. Chir.*, October 17th, 1931, p. 2610), who record three personal cases, illustrate the rarity of traumatic aneurysm of the temporal artery by the following statistics. Among 332 aneurysms collected by Sprunner-Merz in 1877, it was found in only 2.5 per cent.; in 982 cases collected by Simon in 1917, including all hitherto published war aneurysms, the percentage was only 0.8, and in 195 war aneurysms collected by O. Hahn in 1921 it was barely 1. In view of the rarity of the occurrence, it was a remarkable fact that the three cases of the present authors occurred in the course of a single term at the Königsberg University Surgical Clinic. The patients were students aged from 21 to 23; the lesion was caused by duelling, and was a typical false aneurysm. The symptoms were slight, the principal trouble being a sensation of throbbing in the aneurysmal sac. The authors add that spontaneous cure is possible, but the simplest operative procedure is extirpation of the sac with ligature of the branch of the artery under local anaesthesia.

516 Carcinoma of the Lip

According to C. B. STEWART (*Surg., Gynecol. and Obstet.*, October, 1931, p. 533) carcinoma of the lip, though seemingly uncommon, accounts for 3 to 5 per cent. of all deaths from cancer. Its etiology is conjectural; in a few cases there is a definite history of trauma or irritation. The lower lip is more commonly affected than the upper, and males than females; in 88 cited cases, only three patients were females, and in only four was the upper lip involved. The age incidence is from 23 to 85 years, the most frequent decade being that between 50 and 60. The pathological condition ranges from sarcoma to adult cell carcinoma; nearly all cases are of the squamous-cell type. The growths may be classified into papillary and infiltrating; the former spread over considerable lip margin but give rise to metastases late. The latter are very resistant, and prone to recur; metastasis occurs early, and is extensive. The chief diagnostic points are enumerated. The disease must be differentiated from simple ulceration, leucoplakia, tuberculosis, and syphilis. Stewart states that labial epithelioma can be destroyed by radium without resulting deformity (74 cases were thus treated), but that treatment should not be restricted to any one agent. Metastases should be surgically removed when possible, and radium emanation be left in questionable areas. Inoperable nodes can be sterilized by radium implants, and advanced cases be relieved by small doses of *x* rays or radium.

517 Surgical Treatment of Pericardial Scar

Two types of operations for the treatment of adhesive pericarditis have been devised—one by Delorme for intrapericardial adhesions, the other by Bauer for the extrapericardial kind. C. S. BECK (*Journ. Amer. Med. Assoc.*, September 19th, 1931, p. 824) believes that the two pathological processes have been too sharply differentiated, and that the Bauer operation is now obsolete. Circulatory failure due to pericardial scar can, however, be wholly relieved by operation; pericardiectomy, performed as completely as is anatomically possible, is advocated as the operation of choice. A case is recorded and the operative technique is described. The operation should be carried out in one stage, since the heart will tolerate only one major intervention; if not then relieved of all mechanical impediments, it may fail to recover. It should also be performed in a negative chamber to prevent "pneumocardiac tamponade"—action of atmospheric pressure on the heart and great vessels at the cardiac base. If this risk can be eliminated by using the negative chamber, exploratory pericardiotomy can be carried out in obscure cases. In view of the relief to be obtained by operation, Beck urges the importance of recognizing circulatory disturbances due to pericardial scar.

Therapeutics

518 Value of Alkali in Salicylate Therapy

N. MORRIS and S. GRAHAM (*Arch. Dis. in Child.*, October, 1931, p. 273) are satisfied that in salicylate poisoning an acidosis is present, as is indicated by the clinical picture, the behaviour of the CO_2 content, and the response to alkali therapeusis. They find that the oral administration of sodium salicylate alone in daily doses of more than 60 grains to children results in the production of a non-gaseous acidosis, which is not due to the presence *per se* of the acid salicyl ion. In these patients there is also evidence of impaired renal function. These pathological sequels can be prevented by the exhibition of sodium bicarbonate, but glucose is ineffective in this respect. One effect of the alkali appears to be the prevention of renal damage, thus permitting the more rapid excretion of the salicylate twofold or fourfold. The failure of glucose to obviate poisoning suggests that the symptoms of salicylate overdosage are not necessarily associated with incomplete fat oxidation. As a result of their investigations the authors emphasize the value of associating the exhibition of alkalis with salicylate therapy, and mention that at the Glasgow Royal Hospital for Sick Children it has been the custom to give four-hourly doses of 15 grains of sodium salicylate (90 grains daily) with twice the amount of sodium bicarbonate. In some cases 20 grains four-hourly (120 grains daily) were given, and, even so, signs of intolerance were seldom observed. Vomiting alone occurred with any frequency, but if the bowels were kept freely open intermission of the treatment was obviated. In cases of idiosyncrasy it is advisable to start with smaller doses, and gradually increase them.

519 Vaccine Therapy in Chronic Arthritis

A. E. VIPOND (*Canadian Med. Assoc. Journ.*, October, 1931, p. 432) believes that, unless focal infection in various structures such as the teeth and tonsils is clearly indicated, surgical intervention in chronic arthritis is not justifiable. This disease, being of slow progression and long duration, should be a suitable field for specific vaccine therapy. In ten out of twelve cases here recorded, seven of which were severe, with marked articular deformity and fixation, the same species of streptococcus was isolated from the enlarged nodes. A vaccine made from this organism produced a cure or marked improvement in the symptoms and the general and local lesions. The vaccine employed contained 500 millions per c.cm. This amount was given twice or three times each week, and the dose was increased to 1.5, and finally to 2 c.cm., at which height it was kept. Reactions were either absent or very slight. Vipond maintains that, if the customary therapeutic measures are supplemented by specific vaccine therapy, the results are remarkably better; in many cases complete cure can be expected.

520 Treatment of Infantile Anaemia

The opinion is gaining ground that iron in large doses is curative in infantile secondary anaemias. H. JOSEPHS (*Bull. Johns Hopkins Hosp.*, October, 1931, p. 246) presents a study of 44 anaemic children, aged from three months to two years, who were successfully treated in three stages with iron, and iron with copper. During the first stage, a period of observation which was [illegible] omitted, no iron was administered. During the second, which also was frequently omitted, 10 per cent. solution of ferric ammonium citrate was given in daily doses of 2 c.cm. per kilo of body weight. In the third, a 0.5 per cent. solution of copper sulphate was added to the iron in half the dosage. The copper, usually divided into

two doses, was always given in milk. No disagreeable results followed, though in older children this dose may cause vomiting and diarrhoea. Blood formation may be divided into two functions—haemopoietic activity (as measured by a reticulocyte rise) and haemoglobin synthesis. Josephs states that iron given in medicinal doses stimulates haemopoietic activity; its effect is first on the reticulocytes, then on the haemoglobin—a latent period usually occurs before the latter rises. Copper appears to accelerate haemoglobin formation, being apparently a needed factor even when the haemopoietic tissue has been well stimulated; it has no effect on the reticulocytes. In the present series, the speed of recovery was unaffected by the diet, and medicinal iron was found to be far superior to iron supplied in the food in causing a rapid recovery.

Ophthalmology

521 Circulation of the Aqueous Fluid

In view of the fact that the source, volume of flow, and mode of reabsorption of the aqueous fluid is the key to the understanding of glaucoma, J. S. FRIEDENWALD and H. F. PIERCE (*Bull. Johns Hopkins Hosp.*, October, 1931, p. 259) report a series of experiments they have been conducting during the last eight years to determine what, if any, is the volume of flow; where, and by what mechanism, is the fluid formed; and where and how is it absorbed. They find that the circulatory dynamic mechanism of Schlemm's canal and its connecting venules is measurably dissociable from that of the intra-ocular capillaries; in fact, it is devised precisely to check any gross change in intra-ocular pressure being produced by alterations in the general arterial or venous pressure. The presence of proteins in the anterior chamber was shown to diminish the rate of outflow of the aqueous, but this rate was increased by congestion and vaso-dilation. The authors state that in many cases of intra-ocular inflammatory disease the intra-ocular pressure may be largely determined by the balance between these two conflicting forces. They add that the conclusions they have drawn as regards the circulation of the aqueous do not conflict in any way with the well-established facts regarding the chemical constitution of this fluid, which approximates a dialysate of the blood plasma, and tends toward thermodynamic equilibrium with the blood; this, however, in no way requires a hydrostatic equilibrium. It was not possible to distinguish chemically between an equilibrium reached by dialysis, and one resulting approximately from combined ultra-filtration and osmotic reabsorption. In the main, the barrier between the blood and the aqueous must behave as an inert semi-permeable membrane, or, when as in the ciliary epithelium the barrier is an active one, its activity must be such as to affect equally all the constituents of the aqueous.

522 Etiology of Optic Neuropathies

A. C. WOODS and W. M. ROWLAND (*Journ. Amer. Med. Assoc.*, August 8th, 1931, p. 375), in the term "neuropathy" include primary and secondary optic atrophy, retrobulbar neuritis, papillo-macular bundle atrophy, optic neuritis, and choked disk. Of 138 neuropathies 27 per cent. were due to intracranial tumour; 5.1 per cent. to pseudo-tumour (mainly arachnoiditis); 16 per cent. to syphilis of the central nervous system; 0.7 per cent. to secondary syphilis; 10.9 per cent. to arterio-sclerosis; 8.1 per cent. to posterior sinus disease; 6.5 per cent. to multiple sclerosis; 2.9 per cent. to focal infection; 4.4 per cent. to toxic amblyopia; 1.5 per cent. to Leber's disease; 1.5 per cent. associated with mental retardation but with no pathological factor; 1.5 per cent. to intracranial aneurysm; 5.1 per cent. to miscellaneous conditions; and 8.1 per cent. undetermined. Of the intracranial group 37 per cent. were pituitary tumours; one of these patients had primary optic atrophy in one eye, and choked disk in the other. One case of cerebral tumour was accompanied by primary optic atrophy. All those with pineal tumours had oculomotor involvement. In view of the recent controversy about the relative etiological importance of multiple sclerosis and posterior sinus disease, it is interesting to note the percentage incidence of these two groups in the above table. The authors believe that the figures given are too high for intracranial tumour, and too low for syphilis.

523 Shortening Operations in Concomitant Squint

L. C. PETER (*Arch. of Ophthalmol.*, September, 1931, p. 380) states that defective fusion faculty forms the predisposing, and errors of refraction or other factors the determining, cause. While central vision can be restored at the age of 6, and fusion at 7, all forms of treatment give the best results before the age of 6. Peter describes tendon-tucking (giving a correction of 10–15 degrees) as being more applicable to heterophoria; 00 ten-day catgut should be used. He advises resection (Reese), and or advancement (Worth), for the best end-results. Resection gives 10–15 degrees, and advancement 15–25 degrees of correction. Pure tenotomy is not advisable, and recession should not reduce convergence beyond the requirements of sustained near work. A convergent squint of 10 degrees calls for resection or tucking; of 15 degrees, resection or possibly advancement; of 20 degrees, advancement with perhaps recession; of 25–30 degrees, double advancement or advancement and recession; and of 30 degrees or more, double advancement with single or double recession. The same procedures are 30–40 per cent. less effective in divergent squint.

524 Treatment of Retinal Detachment

L. COPPEZ (*Le Scalpel*, July 25th, 1931, p. 925) reviews the various ineffectual forms of treatment of idiopathic retinal detachment which preceded the advent of Gonin's technique. Medical treatment included complete rest, compression bandages, induction of sweating of the scalp, insistence on a salt-free diet, and the employment of subconjunctival injections. Surgical treatment comprised simple sclerotic puncture; puncture, with aspiration of the subretinal fluid; trephining; cauterization; incisions of the vitreous; and injections of subretinal or other fluids into the vitreous. Gonin believes that detachment follows the formation of a hole or holes in the retina, which, though always present, and sometimes far removed from the site of the detachment, may require many examinations before being detected. The distance of the tear from the ora serrata in disk-diameters, and its meridian, must be accurately determined before an operation is undertaken. Cases unfavourable for operation are those with a long history, with very large, posterior, or multiple holes, and with large separations at the ora serrata. Favourable cases have a short history, and a single, well-marked, accessible hole. Gonin reported 50 per cent. of cures in favourable, and 10 per cent. in unfavourable cases; Coppez states now that he has had similar results from using Gonin's technique.

Obstetrics and Gynaecology

525 Late Effects of Pregnancy Toxaemias

C. H. PECKHAM and M. L. STOUT (*Bull. Johns Hopkins Hosp.*, October, 1931, p. 225) record a study of the late effects of the toxaemias, excluding vomiting and eclampsia, based on a series of 545 consecutive deliveries of toxaemic patients. Of these, 343 were examined four months to four years after delivery, and definite chronic nephritis was found in 40 per cent. This sequel appeared more frequently in the older age groups, and among multiparae; two-thirds of the cases of non-nephritic toxaemia were in women under the age of 25, and two-thirds were primiparae. Marked hypertension (systolic reading 200 mm. or more, and diastolic 150 mm. or more) was more frequently associated with nephritis, though an occasional case of pre-eclampsia was found with such a reading. Neither albuminuria nor the presence or absence of casts

In the urine had prognostic significance. The blood pressure is higher on discharge in the nephritic type as a rule, but many women who have nephritis leave hospital with a normal blood pressure. Even as late as six weeks after delivery many normal women still have hypertension and albuminuria, while a few nephritic patients appear to be normal in these respects. Almost one-fifth of the women who were ultimately diagnosed as nephritic were known to be normal until after the seventh month ; this would seem to indicate that chronic renal damage may be a result of the toxaemic process. The authors conclude that, excluding vomiting and eclampsia, one out of every three women seen with a toxaemia of pregnancy will be found ultimately to have nephritis. Except in perfectly obvious cases it seems better to defer the final diagnosis until four months after delivery, although a diagnosis intelligently made at the time of discharge from hospital is only incorrect in one case out of nine.

526 Acute Haemorrhage from Myoma of the Cervix

G. FROMMOLT (*Zentralbl. f. Gynäk.*, October 3rd, 1931, p. 2951) describes the case of a 2-para, aged 33, whose menses were somewhat profuse, but in whom a pelvic tumour was believed to be the uterus of six months' pregnancy. Subsequently a large cervical myoma was recognized ; the contemplated hysterectomy had to be performed urgently in consequence of a profuse haemorrhage (the first), which led within twenty-four hours to extreme collapse. The bleeding was found to have come from a ruptured vein on the intrauterine surface of the myoma, not far from the internal os.

527 Treatment of Ureteral Fistula

According to F. MONTUORO (*Riv. d'Ostet. e Ginecol. Prat.*, September, 1931, p. 371) unfavourable opinions which have lately been expressed concerning the utility of uretero-cystostomy in treatment of ureteral fistula are not altogether justified. It is true that such operations, performed a generation ago, were followed by stenosis at the anastomosis, but, as Rinaldi has recently pointed out, the operation demands consideration of the clinical as well as of the hydraulic circumstances. It is useless where the renal function on the affected side is already impaired by infection or otherwise, but, undertaken early (the kidney function having been proved to be still sound), it has led to five to ten years' survival, with persistence of function both of the kidney and of the stoma. These results have been obtained by Italian surgeons ; they adopt the Boari technique—transperitoneal approach, and extraperitoneal uretero-cystostomy in which a metal button is used.

Pathology

528 The Permeability of the Meningeal Barrier

G. RAMON and P. DESCOMBEY (*C. R. Soc. de Biologie*, October 23rd, 1931, p. 358) immunized horses with tetanus or diphtheria anatoxin ; they then tested the antitoxin content of the blood serum and, at the same time, of the cerebro-spinal fluid. Antitoxin was always found in the cerebro-spinal fluid, but as a rule only in about one-hundredth the amount of that in the serum. Experiments in rabbits showed that only about 1/10,000 of the quantity of antitoxin passed into the cerebro-spinal fluid. In the dog, according to Debré and Lemaire, the relation of the serum to the spinal fluid antitoxin is about 1 to 500. Working with horses the authors tested the permeability of the meninges to tetanus toxin itself. By the intravenous route 40 c.cm. of toxin were injected into a horse, and two days later, when the first symptoms of tetanus became evident, the amount of toxin in the blood and in the spinal fluid was tested by guinea-pig inoculation. It was found that 0.1 c.cm. of serum and 10 c.cm. of spinal fluid were fatal. The ratio of toxicity was therefore 100 to 1, the same ratio in fact as was found with antitoxin. The meningeal barrier prevents in large measure the passage of proteins from the blood to the subarachnoid space ; it has very little effect in the opposite direction. Rabbits injected with tetanus toxin or antitoxin into the subarachnoid space were bled a few hours later ; the greater part of the toxin or antitoxin was found in the blood.

529 Methylene Blue as a Test for Bilirubin

According to Franke, methylene blue is a sensitive reagent for the presence of bilirubin ; the test is performed by dropping a 0.2 per cent. watery solution into 5 c.cm. urine. In the presence of bilirubin a green colour is produced, and the number of drops necessary before this turns to blue affords a rough indication of the amount of bilirubin present. J. SEIDE and K. ZINK (*Deut. med. Woch.*, October 9th, 1931, p. 1744) report the results of a series of tests on 100 urines. A result of more than 10 drops is recorded as strongly positive, 2 to 10 drops weakly positive, and 1 drop negative. They found a strongly positive reaction in all liver conditions associated with jaundice, including catarrhal jaundice, syphilis, carcinoma and cirrhosis of the liver, and severe congestion. Weakly positive reactions occurred in pernicious anaemia, lead poisoning, malaria, cholelithiasis, influenza, and slighter cases of congestion. The tests were all controlled by the iodine reaction, which was found to be not nearly so sensitive. The methylene blue test thus appears to be a delicate test for minor degrees of jaundice, and liver disease, and can be used in a roughly quantitative manner to follow the course of the illness. There are fallacies in the case of blood-stained urines, and in patients who have received the anthraquinone group of drugs. A patient with nephrolithiasis, who had been treated with trypaflavine, also gave a weakly positive reaction. The nature of the test is discussed ; it appears to be largely a case of colour mixture, but may depend to some extent on the oxidation of bilirubin.

530 Fat Atrophy following Insulin Injections

J. R. WILLIAMS (*Journ. Lab. and Clin. Med.*, September, 1931, p. 1191) maintains that patients receiving insulin treatment should be frequently examined. When one site (most commonly the thigh) is repeatedly injected, the sense of pain is lost, and untoward effects may be produced. A case is recorded in which marked atrophy of the subcutaneous fat on both thighs ensued after insulin injections. The atrophy disappeared, being replaced by fresh fat, when new areas for each injection were employed. The cause of this atrophy is unknown. Fischer and Rabinowitch suggest that the insulin may injure the covering membrane of the fat cells, thus releasing the fat globules ; these act as foreign bodies, and result in the formation of histocytes which assume lipophagic activity. Possibly, a low-grade inflammation, due to the repeated injections, may cause a disappearance of the soft alveolar tissue, and its subsequent replacement by scar tissue. Nerve injury with consequent atrophy is another possibility. Williams emphasizes the necessity of admonishing patients about constantly changing the injection site. He doubts the wisdom of permitting untrained diabetics to use insulin.

531 Endemic Typhus and the Rat Flea

H. A. KEMP (*Journ. Amer. Med. Assoc.*, September 12th, 1931, p. 775) alludes to the view maintained by Maxcy, Shelmire and Dove, and Dyer, Rumreich, and Badger, that endemic or New World typhus is transmitted by the rat flea, and records the following experiments. Guinea-pigs, inoculated with fleas removed from rats which had been trapped at a typhus focus, developed lesions characteristic of endemic typhus. The animals which had recovered from an attack produced by this virus were found to be immune to a strain of typhus virus, obtained from the blood of a human patient with endemic typhus. Likewise, animals which were immune to blood virus were also immune to the strain of rat flea virus obtained by guinea-pig inoculations.

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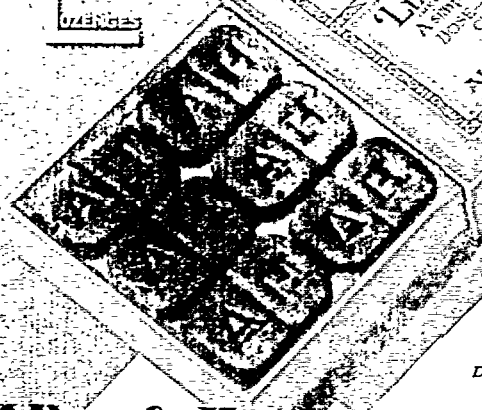
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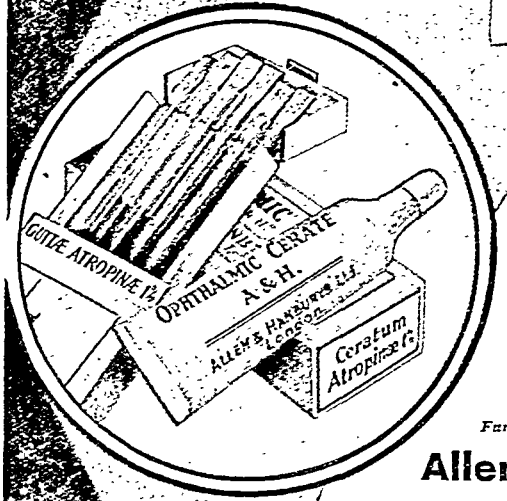
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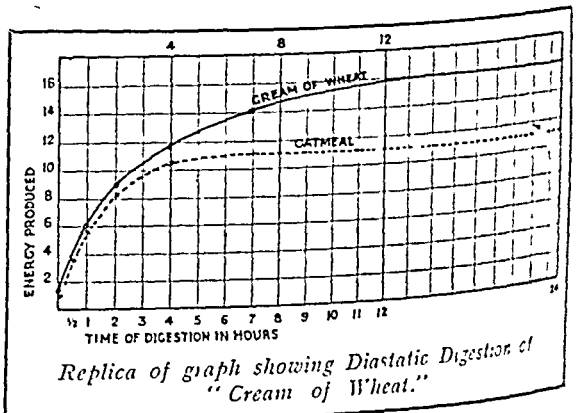
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* Leading paediatrists put "Cream of Wheat" on their diet sheets both as a first solid food for infants and for children suffering from fat intolerance.

It consists entirely of the granulated endosperm of the best hard wheat and contains no harsh parts.

On receipt of a professional card full details of the above tests and a sample of "Cream of Wheat" will be sent. Dept. W13, Fassett & Johnson Limited, 86, Clerkenwell Road, London, E.C.1.



Replica of graph showing Diastatic Digestion of "Cream of Wheat."

1. The starches of "Cream of Wheat" were more rapidly converted into sugar.
2. After 4 hours the digestion of oatmeal was practically at a standstill while digestion of "Cream of Wheat" continued at a scarcely diminished rate for a further 4 hours or so.
3. When digestion was complete the amount of sugar from "Cream of Wheat" was nearly half as much again as that obtained from oatmeal.

"CREAM of WHEAT"

* "*Modern Methods of Feeding in Infancy and Childhood*." DONALD PATERSON, B.A., M.D (Edin.), M.R.C.P.(Lond.), and J. FOREST SMITH, M.R.C.P.(Lond.). Pp. 84, 85, 86, and 111. (Publishers, Constable; 1929.)

* "*Modern Infant-Feeding*." BERNARD MYERS, C.M.G., M.D., M.R.C.P. Pp. 90. (Publishers, Cape; 1930.)

* "*Diseases of Children*." Sir ARCHIBALD E. GARROD, K.C.M.G., D.M., M.A., F.R.C.P., F.R.S., the late FREDERICK E. BATTEN, M.D., M.A., F.R.C.P., and HUGH THURSFIELD, D.M., M.A., F.R.C.P. Pp. 69, 70, and 71. (Publishers, Edward Arnold & Co; 1929.)

And many others.

A safe and simple antacid which is also a gentle laxative must necessarily be of great value to medical practitioners when administering to ladies and children and all who are constitutionally delicate.

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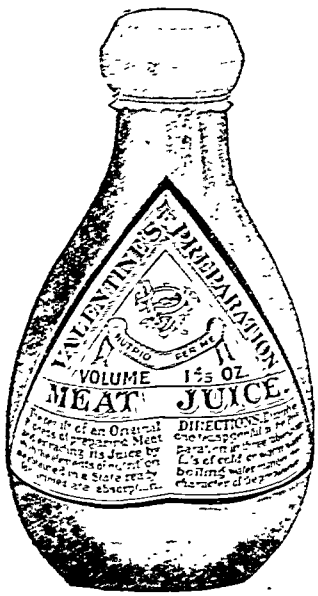
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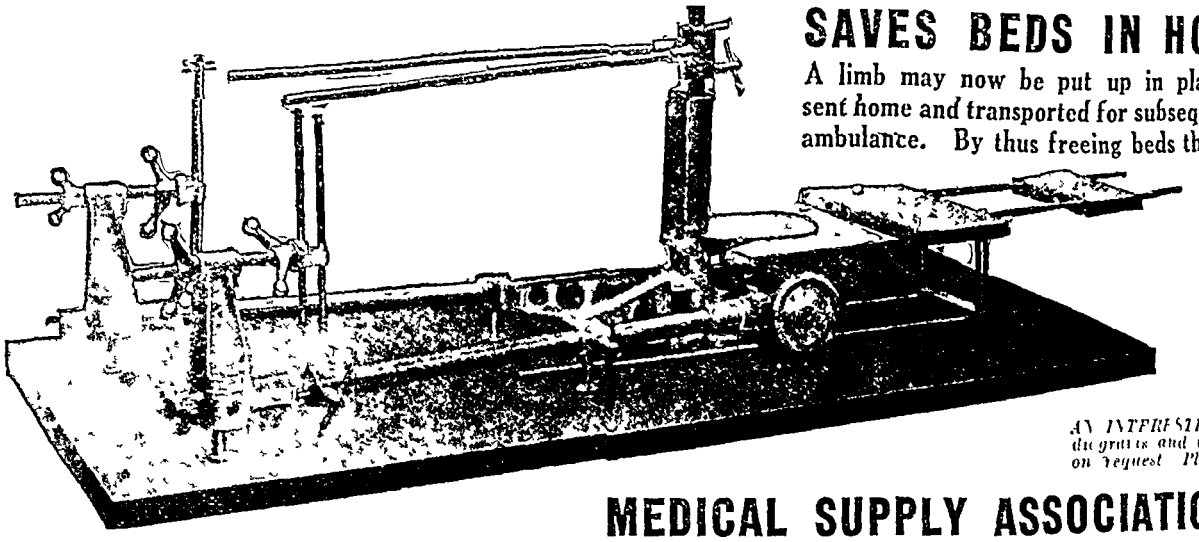
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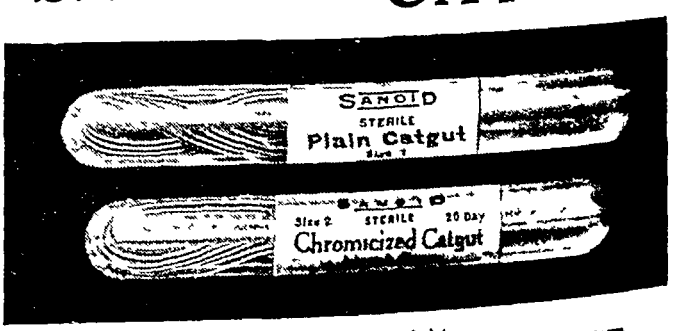
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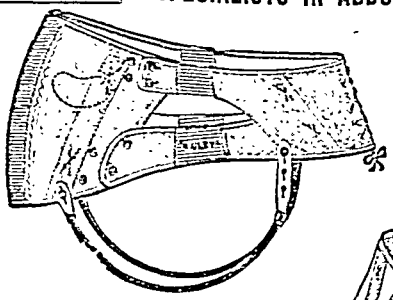
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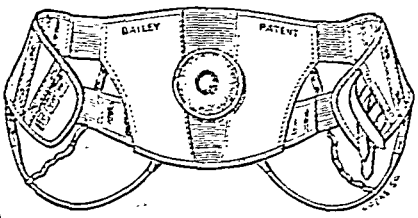
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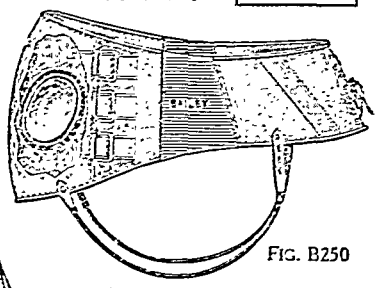


FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.

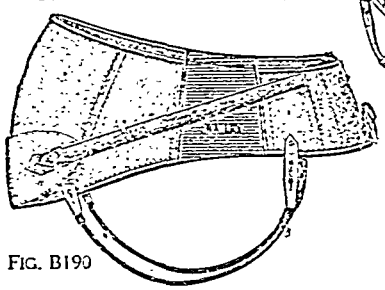
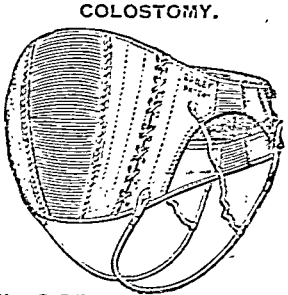


FIG. B190
BELT FOR ENTEROPTOSIS.

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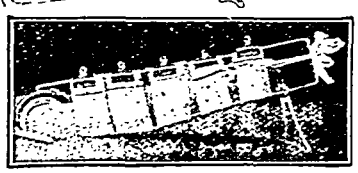
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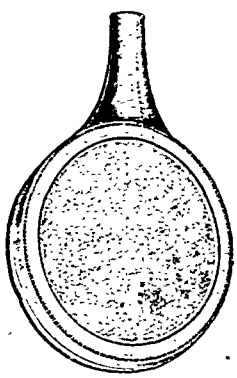




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Invaluable for Hospital, Emergency, and District Surgeons' work. Indispensable for Mines, Ranches, Lumber Camps, Railways, Shipping Co's., and all places remote from surgical aid. Made of Duralumin, untarnishable, light, and of great tensile strength. All parts interchangeable. Complete splints constructed in a few minutes for limbs of any dimensions. Sufficient members to accommodate ten fractures simultaneously. Supplied in strong fitted case.

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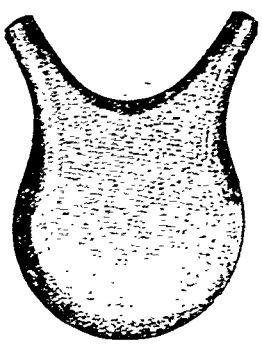


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When you take blood-pressure with the *Tycos* Sphygmomanometer, you know the reading is correct. This instrument has stood the test of time

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Accept No Substitute for *Tycos* Accuracy

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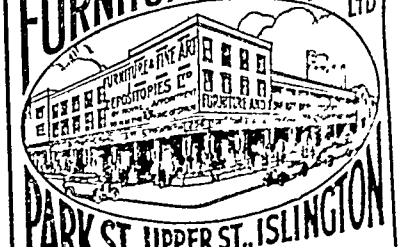
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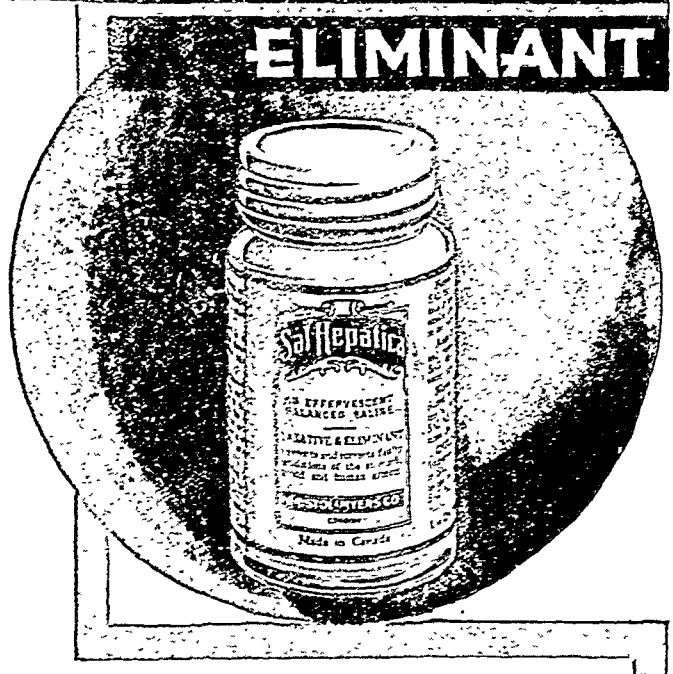
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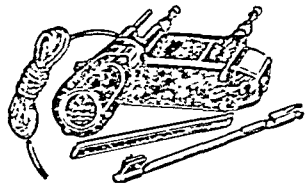
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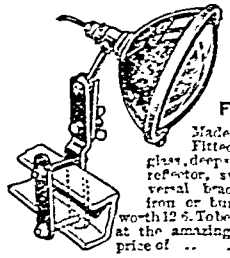
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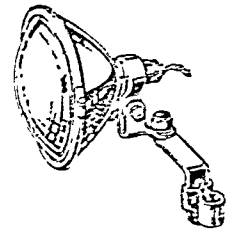


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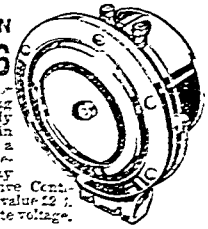
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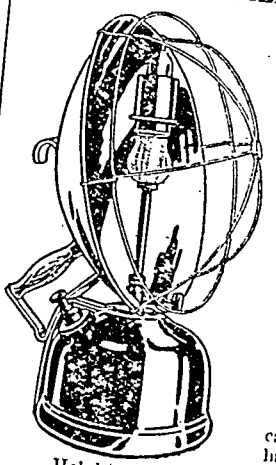
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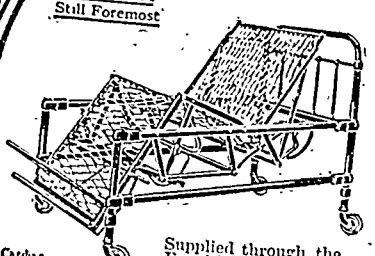
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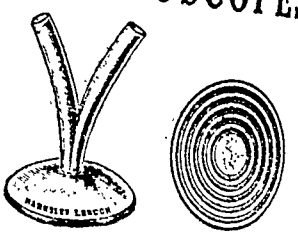




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Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts County Mental Hospital, Hill End. Convalescent and mild cases can be treated in a delightful country mansion, with extensive grounds, known as **"HIGHFIELD HALL,"** situate about a mile away from the Hospital.

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CLAPHAM PARK, LONDON.
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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. PENROSE ROLLINS, Resident Physicians.

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For Mental Disorders, with or without certificates.

Resident Physician: CEDRIC W. BOWER.

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PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone*: 2708.

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In the winter garden of Scotland, facing the sun, 600 feet up. Tonic air, beauty in every landscape from sheltered balconies. Palm winter garden, swimming bath, tennis, badminton, golf, fishing. Fully licensed Modern baths installation. Physiotherapeutic, massage, electrical treatment, ultra violet radiant. Physician in attendance. Write for prospectus.

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Tel. & Telegrams: "Haynes, Brentwood." [illegible]

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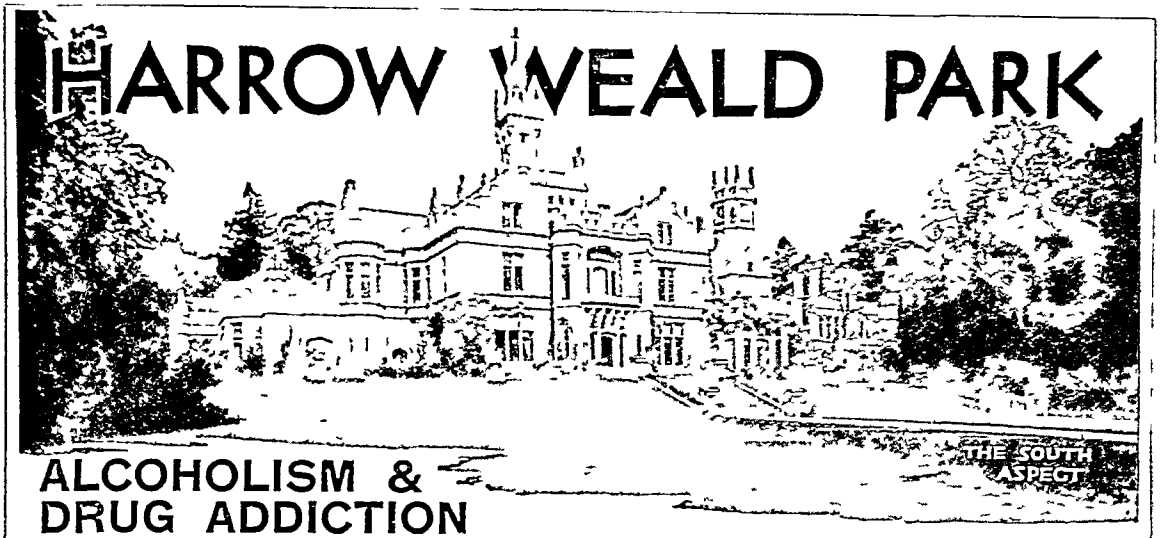
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This intensive treatment, lasting one month, is carried out in a delightful country Mansion; special study is made of the individual case, and provision is made for his after-care when the patient leaves.

A COUNTRY HOUSE, secluded in its own gardens and park, within 30 minutes of Baker Street.

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For the treatment of GENTLEMEN under the Act and privately. Established 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded ground on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—
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This Registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post Encephalitic conditions in adults. Special facilities for Psychotherapy in co-operative cases.
All particulars may be obtained from the Resident Medical Superintendent
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This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.
For terms etc. apply to the Medical Superintendent J. A. CHAPLIN, M.B., who may also be seen in Manchester by appointment.
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As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of the Norwood Sanatorium and author of "Alcoholism" etc., for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders.

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Fees 5—10 guineas. Ample accommodation. 25 bedrooms. Annexe for mild cases. Quiet and pleasant situation.
Ladies and gentlemen admitted for treatment.
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Ladies and Gentlemen suffering from mental disorder can be received for treatment under certificates as VOLUNTARY BOARDERS or as other VOLUNTARY PATIENTS at a weekly charge of £3 3s. 0d. and upwards.

ST. ANDREW'S HOSPITAL

FOR MENTAL DISORDERS,

NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

THE COPPICE, NOTTINGHAM.

HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent.*

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NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and out-door recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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BUCKS.

FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An Approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds, and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Psycho-Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X-Ray, and Ultra-violet Light Diathermy and Foam Baths. Billiards, tennis, etc. Fees from five gns. per week.

Apply Dr D. E. M. DOUGLAS-MORRIS. *Telephone*: Newport, Pagnell 121.

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

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BOX, near BATH.

For the CARE and TREATMENT of NERVOUS and MENTAL DISORDERS in BOTH SEXES.

Separate accommodation for Voluntary Boarders of the Female Sex. Applications received at the above or at 17, Belmont, Bath, by—
Dr. H. C. MACBRYAN or
Medical Superintendents

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BATH.

A PRIVATE HOSPITAL for the care and treatment of persons with mental and nervous disorders.

Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to S. J. GILFILLAN, O.B.E., M.B, C.M.Edin., Resident Physician.
Telephone No.: Bathe aston 8189.

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Voluntary Boarders accepted.

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In view of the present economic position, the inclusive fees at Ruthin Castle, formerly from 17 guineas a week, have been reduced to from 15 guineas a week.

The fees include medical attendance, all scientific investigations that may be needed, such as analyses, bacteriological cultures, the ordinary x-ray examinations, and electrocardiograph readings, all treatment that may be prescribed, such as special diets, insulin, artificial sunlight, electrical treatment, baths, massage, nursing, medicines or vaccines, board and lodging.

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Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 66

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Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg. Tel. Address. Bethlem, Beckenham. *Telephone*. Springpark 1180—1181.

Station. Eden Park (Southern Railway).

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
Physician-Supt.: J. G. PORTER-PHILLIPS, M.D., F.R.C.P.

This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
With a view to early treatment voluntary or uncertified patients are admitted.
Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise. The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free of charge.
Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
Furthermore, provision is made for Electro-Therapy and Hydro-Therapy to be carried out in all their forms.
In addition to the Resident Medical Staff, Consultants in special branches of Medicine and Surgery are available whenever required.
The comfort of sensitive patients is greatly enhanced by the fact that the majority are given single bedrooms.
For forms and further particulars apply to the Physician Superintendent at the Hospital.

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Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

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The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. *Both certified patients and voluntary boarders are received.* Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the **Medical Superintendent.**

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0838.

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Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, *highly* situated, *facing Finsbury Park.*
Private Suites. Voluntary Patients and Temporary Patients received without certification.
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Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

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Master of Orthopaedic Surgery	M Ch Orth	Diploma in Public Health	D P H
Bachelor of Dental Surgery	B D S	Diploma in Tropical Medicine	D T M
Master of Dental Surgery	M D S	Diploma in Tropical Hygiene	D T H
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THE CLINICAL SCHOOL consists of FOUR GENERAL HOSPITALS The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, and the Stanley Hospital, and of FIVE SPECIAL HOSPITALS The Eye and Ear Infirmary, the Hospital for Women (including the Samaritan Hospital), the Royal Liverpool Children's Hospital, the Liverpool Maternity Hospital, and the St Paul's Eye Hospital

These Hospitals contain in all about 1,500 Beds

The organization of these Hospitals to form one teaching Institution provides the Medical Student and Medical Practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom

Infectious Diseases are studied in the Local and District Hospitals, and Mental Diseases at the County Mental Hospital, Rainhill

For information on all matters concerning the curriculum application should be made to the Dean of the Faculty of Medicine, the University of Liverpool.

W J DILLING, D an

THE RIVIERA SCHOOL

CHATEAU DE MOUANS,

MOUANS-SARTOUX (ALPES-MARITIMES).

FRANCE.

FOR SMALL BOYS AND GIRLS.

Mr. & Mrs. E. W. Huckel, Principals.

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Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a m to 4 p m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months —Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses —Clinical Assistantships —Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

FELLOWSHIP OF MEDICINE

1, WIMPOLE STREET, LONDON, W.1

The following Courses will be given in JANUARY. Cardiology (National Heart Hospital) and Dermatology (St. John's Hospital), Evening Lectures, Mondays and Fridays, at 8.30, on Endocrinology (January 11th—[illegible]) Free Lectures on Wednesdays at 4 p m , and free demonstrations will begin again in January

Copies of syllabuses of all courses and lectures may be obtained on application (Langham 4200)

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admissions being primiparous cases) Over 2 400 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 18,000 attendances per annum

Certificates awarded as required by the various Examining Bodies

For rules, fees, etc , apply ARTHUR WATTS, Secretary

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL)

COURSES OF INSTRUCTION (duration about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D T H must possess the D T M of this University)

For particulars apply to the Hon Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool

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Examination in which interested . . . . . .

UNIVERSITY OF OXFORD.

DIPLOMA IN OPHTHALMOLOGY.

The next Examination begins on June 20th 1932 The two months' Course of Instruction starts on April 25th, 1932
For further information apply to—
P. H ADAMS,
6, Holywell, Oxford — Margaret Ogilvie Reader in Ophthalmology.

F.R.C.S.(Edin.).

Full PREP COURSE with Anatomical (Cadaver and Living Model) and Surg Path Demonstrations, for next Exam, will commence shortly. POSTAL TUITION at any time—H. C. ORRIN, F R C S, Surgeons' Hall, Edinburgh

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Special Classes for Pre Medical and Dental Exams, Matric, and Prelims Chemistry, Physics, and Biology Labs MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London)

The Second Term of the WINTER SESSION will begin on Tuesday, January 5th, 1932.

The Medical School provides courses in Preliminary, Intermediate, and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research

NEARLY 1,000 beds available for teaching, additional clinical material being provided by affiliation to an Infirmary and other Institutions

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification.

For further particulars and illustrated prospectus, apply to the School Secretary.

C. M WILSON (*M.C.*), M.D., F.R.C.P., *Dean.*

LONDON SCHOOL OF DERMATOLOGY.

St. John's Hospital for Diseases of the Skin,

Leicester Square, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean

TAUNTON SCHOOL, TAUNTON.

A PUBLIC SCHOOL FOR BOYS

Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925 Prospectus from Head Master

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15

The Practice of the Hospital is limited to Medical Practitioners Particulars from J. BROWNING ALEXANDER, M.D., Dean

Royal College of Surgeons of ENGLAND

LICENCE IN DENTAL SURGERY.

Notice is hereby given that the FIRST PROFESSIONAL EXAMINATION will commence on FRIDAY, FEBRUARY 5th, 1932, and that the SECOND PROFESSIONAL EXAMINATION will commence on FRIDAY, FEBRUARY 26th, 1932

Candidates are required to give not less than twenty one clear days' notice in writing of their desire to present themselves for these examinations to the Director of Examinations, Examination Hall, Queen Square, W.C.1, from whom all particulars relating thereto may be obtained

December 1st, 1931

The Hospital for Sick Children,

Great Ormond Street, W.C.1.

A WEEK-END COURSE on "*Common Disorders of Childhood and their Treatment*," will be given at this Hospital, on Saturday and Sunday, December 12th and 13th

The Course will be FREE TO MEDICAL PRACTITIONERS, and those intending to be present should notify the Dean, Medical School, Hospital for Sick Children, Great Ormond Street, W.C.1, as soon as possible

NOTE.—The Course will be especially suitable for those in general practice

Refraction and the Ordering of GLASSES

taught by Practising Ophthalmic Surgeon in London. £8 8s for 10 lessons—Address, No 123, B.M.A. House, Tavistock Square, W.C.1.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

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Principal: Mr. E. S WEYMOUTH, M.A. (Lond.)

POSTAL OR ORAL PREPARATION FOR ALL MEDICAL EXAMINATIONS

SOME SUCCESSES

M.D.(Lond.),	1901 30 (9 Gold Medallists during 1913 30)	336
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M.B.,B.S.(Lond.),	*Final* 1906 30 (Completed Exam)	269
F.R.C.S.(Eng.),	*Primary* 1906 30	162
	Final	151
M.R.C.P.(Lond.),	1914 30	192
D.P.H.	(Various) 1906 30 (Completed Exam)	300
F.R.C.S.(Edin.),	1918 30	46
M.R.C.S.,L.R.C.P.	Final 1910 30 (Completed Exam)	467
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M.D.	Various By Thesis	Numerous successes

Preparation for the above and also for Medical Preliminary, and for all examinations leading up to M.R.C.S., L.R.C.P., or M.R.C.P. various Universities, also for D.P.M., D.O.M.S., D.T.M. & H., D.L.O., D.G.O., D.M.R.E., M.M.S.A., L.M.S.S.A., etc Numerous successes

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M.R.C.P., M.D., Final F.R.C.S., F.F.R. (Edin.), Second and Final M.B., B.S., M.R.C.S., L.R.C.P. Museum and Ward Work Also Private Tuition

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CONTENTS.—The method and the cost of studying the Medical Profession *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes Suggestions for the higher Medical Examinations Suggestions for the higher Surgical Examinations Suggestions for the Special Diploma Examinations Refresher Courses, etc. Hints for writing theses Hints for Women

Medical Prospectus gratis along with List of Tutors etc, on application to the Principal Mr. E. S WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1 (Telephone HOLBORN 6313)

London County Council

A Course of Lectures and Practical Instruction for the DIPLOMA IN PSYCHOLOGICAL MEDICINE will be held at the MAUDSLEY HOSPITAL, Denmark Hill, S.E.5 (University of London)

The Course will begin on January 4th, 1932

Applications should be made to the Director of the Central Pathological Laboratory, Maudsley Hospital

University of London

Applications are invited from Graduates of the University of London in Medicine and Surgery for the GEOFFREY DUNCAN TEARE TRAVELLING STUDENTSHIP IN OTOLOGY, LARYNGOLOGY, which is of the value of £[illegible] a year and is tenable, in the first instance, for one year

Applications should reach the Registrar on or before December 31st, 1931, and must be made on the prescribed form, which may be obtained, together with further particulars, from the Academic Registrar, University of London, South Kensington, S.W.7

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, E.C.1

The Committee of Management invite applications for the post of HONORARY ASSISTANT SURGEON Candidates must be Fellows of the Royal College of Surgeons of England Applications, accompanied by copies of testimonials, should reach the Secretary at the Hospital or before January 1st 1932

By Order of the Committee
RAYMOND TELLE[illegible]

ROYAL NAVAL MEDICAL SERVICE.

VACANCIES EXIST FOR MEDICAL OFFICERS IN THE ROYAL NAVY.

Candidates will be entered as Short Service Medical Officers and will be considered for transfer to the Permanent Service after 6 months' service. They must be registered under the Medical Acts, and be under 30 years of age on date of entry.

Medical Officers, R.N., are liable to serve in Naval Hospitals or Ships in any part of the world.

Excellent opportunities exist for Clinical professional work, both Medical and Surgical, as well as for study and practice of Hygiene, Pathology, Ophthalmology, and other specialist branches.

Adequate provision is made for Post-Graduate Study.

OUTFIT ALLOWANCE of £50 is paid on joining.

PAY.—Pay from approximately £430 to £2,070 a year, according to length of service.

ALLOWANCES.—When in charge of Hospitals and Sick Quarters, 10s. and 5s. a day.
60 Specialists' Allowances of 5s. a day.
Flag Allowances, 5s. and 2s. 6d. a day.
Provisional Allowance, Lodging Allowance, etc.

PROMOTION.—To Surgeon Lieutenant-Commander after 6 years' service: to Surgeon Commander after a total of 12 years' service. Promotion to Surgeon Captain, Surgeon Rear-Admiral, and Surgeon Vice-Admiral is by selection.

Ante-date of seniority on account of civil hospital appointments and accelerated promotion can be gained.

RETIREMENT.—Gratuities are paid as follows:—

Short Service Officers, after 3 years' service -	£300
Permanent Officers after 4 years' service - -	£500
" " " 8 years' service - -	£1,000
" " " 12 years' service - -	£1,500
" " " 16 years' service - -	£2,250

Rates of Pension range from approximately £535 a year, normally earned after about 25 years' service, to £1,064 a year, the maximum earned by a Surgeon Vice-Admiral.

Copies of the Regulations and Particulars as to Conditions of Service and Emoluments may be obtained on written or personal application to the Medical Director-General of the Navy, Queen Anne's Chambers, Tothill Street, London, S.W.1.

The Royal Gwent Hospital,
NEWPORT, MON (160 Beds)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out patients and as House Physician

Salary £135, with board, lodging and laundry Resident Medical Staff—Five Eligible for promotion.

Large Out patient Department

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned

Applications from ladies not entertained.

J. K MILLWARD,
Dec 1st, 1931. Secretary-Supt.

Royal South Hants and
SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

Applications are invited for the following vacancies.

HOUSE SURGEONS (Two)
CASUALTY OFFICER.

The appointments will be for a period of six months in each case, commencing January 1st, 1932 The salary payable is £150 per annum, with board, lodging, and laundry Applications, accompanied by not more than three testimonials, should be sent to the undersigned as soon as possible

HY. TRUSSON, Secretary.

Hospital for Epilepsy and
PARALYSIS, Maida Vale, W 9.

EAR, NOSE, AND THROAT DEPARTMENT.

A CLINICAL ASSISTANT is required in this department, for one attendance per week on Wednesday mornings to assist Mr. DOUGLAS ROBERTSON, F R C S

Candidates must hold the F R C S Eng Applications, accompanied by copies of not more than three testimonials, should reach me by Saturday, December 12th

There is an honorarium attached to the appointment.

H W. BURLEIGH,
Secretary & Gen Supt

University of Liverpool
AND LIVERPOOL MATERNITY HOSPITAL

Applications are invited for the resident post of OBSTETRIC ASSISTANT (male) The salary offered is £300 per annum, with board and lodging Candidates must have had experience in the teaching of Obstetrics, and preference will be given to one holding a higher Surgical qualification

Applications, accompanied by testimonials, should be forwarded on or before December 12th to the Secretary, Liverpool Maternity Hospital, Oxford Street, from whom further particulars may be obtained

Royal Sussex County Hospital,
BRIGHTON. (246 Beds)

CASUALTY HOUSE SURGEON (male) required Salary £120 per annum, with board, residence, and laundry Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected, under thirty years of age

Applications, with copies of recent testimonials, should be sent immediately to the undersigned

L L W. LANCASTER GAYE,
Secretary Superintendent

Royal Waterloo Hospital for
CHILDREN AND WOMEN,
Waterloo Road, S E 1.

There will be a vacancy on January 1st, 1932, for a HOUSE PHYSICIAN (male) at the above Hospital The appointment is in the first instance for a period of six months Salary at the rate of £100 per annum, with board and residence Applications, with copies of testimonials, should be forwarded not later than Wednesday morning, December 16th, to the Secretary at the above address, from whom further particulars can be obtained.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified Salary £180 p.a., with board, residence, and laundry, to have charge of Out patients, administer Anæsthetics and assist Honorary Physician

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W ROBERTS, 8, Moorgate Street, Rotherham.

Miller General Hospital,
Greenwich Road, S E 10.

Applications are invited for the following posts:

HOUSE PHYSICIAN. HOUSE SURGEONS (2).

Salary in each case at the rate of £125 per annum, with board, residence, and laundry. Candidates (male) must be unmarried.

The appointments are for six months from January 1st next. Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

December 1st, 1931.

Royal East Sussex Hospital,
HASTINGS. (120 Beds)

Applications are invited for the post of JUNIOR HOUSE SURGEON (male), to take up duties on December 18th The appointment is for a period of six months

Salary at the rate of £100 per annum, with board and residence.

Candidates must be duly registered medical practitioners

Applications, with copies of recent testimonials, to be addressed to the Secretary not later than December 12th

WILFRID G KEMSLEY, Secretary.

Royal Sussex Hospital,
BRIGHTON. (Beds 246)

HOUSE SURGEON (male) required end of January, 1932, with charge of beds, part casualties, and anæsthetics Salary £150 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts They must be unmarried and when elected under 30 years of age.

Applications, with copies of testimonials, should be sent immediately to the undersigned.

L L. W. LANCASTER-GAYE,
Secretary Superintendent.

Hospital of St. John and St.
ELIZABETH,
60, Grove End Road, London, N W 8.

There is a vacancy for the post of SURGEON to the Ear, Nose, & Throat Department at the above Hospital Candidates should be Fellows of a Royal College of Surgeons. Duties include charge of beds

Applications, with copies of three testimonials, must reach the Secretary, from whom further particulars may be obtained, not later than Saturday, January 2nd, 1932

F DUDLEY HOBBS, B A., Secretary.

Hospital of St. John and St.
ELIZABETH,
60, Grove End Road, London, N W 8.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (male) The appointment will be for six months from February 1st, 1932 Salary at the rate of £100 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than first post on Thursday, December 31st

F DUDLEY HOBBS, B A, Secretary.

East London Hospital for
CHILDREN, Shadwell, E 1.

Applications are invited for the post of SECOND HOUSE PHYSICIAN. The appointment is for six months Salary at the rate of £125 per annum, with board, residence, and laundry provided Vacant January 1st, 1932.

Applications, together with testimonials, should be sent to the undersigned not later than December 12th

W M. WILCOX, Secretary.

East London Hospital for
CHILDREN, Shadwell, E 1.

Wanted, a RESIDENT MEDICAL REGISTRAR. Salary £150 a year Applications, with testimonials, should reach the undersigned not later than Saturday, December 19th.

W M WILCOX, Secretary.

Weymouth & District Hospital,
WEYMOUTH.

Wanted immediately, HOUSE SURGEON (male, British) Salary £180 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and copies of testimonials, to be sent to the undersigned

MORRIS LODGE, Hon. Secretary.

Mildmay Mission Hospital,
Austin Street, Bethnal Green, E.2

Applications are invited for the post of ASSISTANT CASUALTY OFFICER (female) which becomes vacant on January 1st 1932 The appointment is non resident and for six months Salary £125 per annum, dinner, tea and supper when on duty

Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital

Applications, with copies of recent testimonials, should be sent to the Medical Superintendent immediately.

Oxford County and City Mental
HOSPITAL, LITTLEMORE near Oxford

DEPUTY MEDICAL SUPERINTENDENT required Must have had previous Mental Hospital experience Preference will be given to one who has had experience at a Clinic for Nervous Disorders, also some experience with Mental Defectives Salary £500 per annum rising £25 every two years to £600 (subject to any temporary deduction decided upon) with house, coal, light, and garden produce Applications, with copies of three recent testimonials to be sent to the Medical Superintendent December 11th

Poplar Hospital for Accidents,
East India Dock Road, Poplar, E 14

The Committee invites applications for the appointment of SECOND RESIDENT OFFICER at a salary at the rate of £175 per annum all found Candidates must have held appointments as House Surgeon at a Hospital Applications must be accompanied by a statement of the candidate's qualifications and be forwarded to the Secretary, with three recent testimonials, not later than Thursday, December 17th. The appointment is for a period of six months.

East Suffolk & Ipswich Hospital,
IPSWICH. (265 Beds—7 Resident)

Applications are invited for the post of CASUALTY OFFICER, vacant January 1 1932 Salary at the rate of £120 per annum Board, residence, and laundry. Previous experience essential.

Applications from British (male) candidates stating age, qualifications, and experience and accompanied by three recent testimonials, to be sent to the undersigned

ARTHUR GRIFFITHS
Secretary

The Hospital,
Ipswich

North Ormesby Hospital,
MIDDLESBROUGH

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board residence, and laundry There are three Resident, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any) with copies of three recent testimonials, should be sent to the undersigned at once

GEORGE WATTS,
Secretary Superintendent

Royal Northern Hospital,
Holloway, N 7.

Applications are invited for the post of HOUSE SURGEON. The appointment is for nine months (six months as House Surgeon three months as Casualty Officer) from January 15th, 1932 Salary at the rate of £100 per annum, with board, residence, and laundry

Applications, with copies of testimonials, should be sent by December 11th to the undersigned, from whom forms of application and rules can be obtained

GILBERT G PANTER, Secretary

Royal Free Hospital,
Gray's Inn Road, W C 1

Applications are invited from duly qualified candidates for CLINICAL ASSISTANTSHIPS in the Medical, Surgical, and all Special Departments Intending candidates should send applications, stating age and qualifications, to the undersigned on or before January

REGINALD R GARRATT, Secretary

Junior Assistant Medical Officer
wanted for the MENTAL HOSPITAL, WESTGREEN, DUNDEE Salary at the rate of £300 per year, with apartments Applications to be made to the Medical Superintendent

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland

CAREERS

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant Colonel, and by selection to the ranks of Colonel and Major General. An officer may apply after one year's Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes, to specialist (for example public health and bacteriological) services, to research posts, and to professorships at the Medical Schools.

NOTE.—It is not possible to state at present what, if any, prospects of employment on the civil side will be open to Indian Medical Service Officers under the proposed new constitution for India.

PAY

Owing to the state of financial emergency at present prevailing in India the existing monthly rates of pay which are as follows are being subjected under the authority of the Secretary of State in Council, to a temporary reduction not exceeding 10 per cent.

Rank	Service in Rank	Full Pay	Overseas Pay	Years of Total Service
1	2	£	£	
Lieut.	—	456	1st 1st 2nd	1st and 2nd
Capt.	i. During first 7 years service as Captain	600	1st 1st 1st £15 £1	3rd 4th 5th 6th
	ii. With more than 7 and less than 6 yrs. service as Captain	720	£20 £25	7th 8th
	iii. With more than 6 years service as Captain	840	£30 £40	9th 10th and 11th
Major	i. During first 3 years service as Major	960		
	ii. With more than 7 and less than 9 years service as Major	1140		
	iii. With more than 9 years service as Major	1200		
Lieut.-Col.	i. Until completion of 23 years total service	1440	£50	12th and over
	ii. During 24th and 25th years service	1560		
	iii. After completion of 25 years total service	1680		
	iv. When elected for increased pay	1800		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the number of administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer may be counted as service for increments of pay, promotion retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be accorded in those posts for a period not exceeding one year. The maximum period of antedate, secondment or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE

Officers on appointment will receive an allowance of £50 towards the cost of outfit.

PRIVATE PRACTICE

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special course of study of a post-graduate nature. During such leave, study allowance, at present fixed at the rate of £2 a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10 a day in the United States of America, is granted to an officer in addition to ordinary rate of leave pay.

PENSIONS

The rates of pension are as follows:

	Per annum £
After 17 years' service for pension	400
„ 18 „ „ „	440
„ 19 „ „ „	480
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. With effect from October 1st 1931, a reduction of 8½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES

An officer on appointment is provided with free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION

Officers are required to undergo courses of instruction at the Royal Army Medical College and at other centres, lasting approximately six months, prior to the embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in January next, and the selected candidates will be required to join a course of instruction commencing early in February, 1932, prior to sailing for India in the Autumn of 1932. Applications should be submitted as soon as possible.

All Saints' Hospital (for Genito-Urinary Diseases).

In-patient Dept: 91, Finchley Road, N.W.8.
Out-patient Dept & Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required on January 1st, 1932, for a period of three months as Junior House Surgeon (non-resident), followed (subject to the approval of the Board of Management) by a period of three months as Senior House Surgeon (resident). Salary will be at the rate of £150 per annum, with board and laundry during the resident period. The duties of the non-resident House Surgeon consist of attendance at the Out-patient Department every afternoon and three evenings weekly.

Applications, stating age, experience, qualifications, and enclosing copies of recent testimonials, should be sent to me not later than December 18th.

D. H. EADE, Secretary.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:
OPHTHALMIC HOUSE SURGEON;
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON,
ASSISTANT CASUALTY OFFICER.

The appointments are tenable for six months from January 1st, 1932, with salary at the rate of £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service salary is at the rate of £100 per annum. Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
November 25th, 1931.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of SURGEON at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W.C.1.

Candidates must be Fellows of the Royal College of Surgeons of England.

The appointment carries with it a seat upon the Medical Council.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Applications, with copies of not more than three testimonials, which should be printed or typewritten, to be sent in on or before December 22nd to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX,
Seamen's Hospital Society, Secretary.
Greenwich. November 20th, 1931.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN with charge of Out-patients at the DREADNOUGHT HOSPITAL, Greenwich. The elected candidate will have beds allotted to him, and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before Monday, January 4th, 1932, to the undersigned, from whom further particulars can be obtained.

By Order,
Greenwich. R. E. V. BAX,
November 28th, 1931. Secretary.

Argyll & Bute Mental Hospital,
LOCHGILPHEAD, ARGYLL.

JUNIOR ASSISTANT MEDICAL OFFICER wanted. Salary £300 per annum, with board, lodging, and laundry.

The appointment is subject to the provisions and privileges of the Asylums' Officers Superannuation Act, 1909.

Applications, with copies of recent testimonials, to be addressed to the Medical Superintendent.

Newark General Hospital
(50 Beds)

Wanted, a fully qualified RESIDENT HOUSE SURGEON, unmarried. Salary £175 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, with copy testimonials, to be sent to W. T. CRAMPTON (Secretary), 27, Kirk Gate, Newark, Notts.

Cheltenham General and Eye Hospitals.

APPOINTMENT OF ASSISTANT HONORARY SURGEON.

The Board of Management of the Cheltenham General and Eye Hospitals invite applications for the post of Assistant Honorary Surgeon. Candidates, whose names must appear in the *Medical Register* as Graduates in Surgery of a recognised University of Great Britain or Ireland, or as Fellows or Members of the College of Surgeons of England, Ireland, or Edinburgh, should send their applications in sealed envelopes, endorsed "Assistant Honorary Surgeon," to the undersigned not later than December 19th.

Personal canvass of members of the Board is strictly forbidden.

J. CUMMING SMITH, F.C.I.S., Secretary.
General Hospital, Cheltenham.
November 30th, 1931.

The Royal Infirmary of Edinburgh.

Applications are invited for the post of ANÆSTHETIST to the Royal Infirmary, whose services would be available from 3 p.m. daily. It is not anticipated that he would be called upon after midnight. The salary attached to the post is £200 per annum, together with an allowance of £120 per annum for board and lodging. The individual appointed will be required to reside in the vicinity of the Infirmary and be on the telephone.

Applications, giving particulars of experience and qualifications, should be sent to the undersigned, from whom further particulars may be obtained.

HENRY MAW,
Secretary & Treasurer.

Sussex Eye Hospital, Brighton.

HONORARY CLINICAL ASSISTANT REQUIRED.

The Committee of Management hereby give notice that a meeting of the Committee will be held on December 17th, for the purpose of appointing an Honorary Clinical Assistant to help in the Out-patients' Department only, on Mondays and Thursdays at 1.30 p.m.

The appointment to be for two years. The successful candidate to be eligible for re-appointment at the end of that period.

Applications, in writing, for the vacancy, with testimonials, must be sent to the Hospital addressed to the Assistant Secretary, on or before Wednesday, December 9th. Candidates must be registered under the Medical Acts.

No candidate can hold the appointment unless he resides in Brighton or Hove.

Board Room, Queen's Road, Brighton. P. F. SPOONER, Assistant Secretary. November 23rd, 1931.

Princess Louise Kensington Hospital for Children,
St. Quintin Avenue, North Kensington, W.10.
(60 Beds.)

HOUSE SURGEON (male or female) required for six months from January 1st, 1932. Salary for first three months at the rate of £100 a year, after which should he or she be appointed Senior Resident (of two) the salary would be at the rate of £125 a year, with board, residence, and laundry in each case. It is desirable that applicants should have held a responsible Hospital post.

Applications, with copies of three testimonials, must be submitted on a form to be obtained from the Secretary, and must reach the Secretary not later than first post on Friday, Dec. 11th.

Coventry and Warwickshire Hospital (307 Beds.)

RESIDENT HOUSE and ASSISTANT HOUSE SURGEONS (Male) wanted. Salaries at the rate of £125 per annum, with board, laundry, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before December 2nd.

(Miss) R. HOOPER,
November 21st, 1931. Secretary.

Royal Berkshire Hospital,
READING.

ONE HOUSE SURGEON and ONE HOUSE PHYSICIAN required on January 9th, 1932, for six months.

Candidates (male) must be fully qualified and registered. Remuneration at the rate of £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned on or before December 10th.

City Mental Hospital,
HUMBERSTONE, LEICESTER.

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER. (Single, under 30.)

Applications are invited for the above post. Salary £350 a year, rising by annual increments of £25 to £450, together with board, lodging, washing, and attendance, valued for purposes of superannuation at £100 per annum.

Candidates must have held a resident House appointment for at least six months.

Preference will be given to those having a University degree. Previous Mental Hospital experience not necessary.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, marked "A.M.O.," giving particulars of experience, and copies of not more than three testimonials, to be sent to the Medical Superintendent.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, ONE HOUSE PHYSICIAN (General and Skin), and ONE HOUSE SURGEON (General and Genito-Urinary), for six months from January 1st next, subject to one months notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from the undersigned) to reach me not later than Thursday, December 10th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a Meeting of the Medical Council on Friday, December 18th, at 4 p.m. and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Willesden General Hospital,
N.W.10.

OUT-PATIENT DEPARTMENT.

CLINICAL ASSISTANTS.

Applications are invited for appointments to the following sessions:
Surgical—Monday afternoons.
Ear, Nose, and Throat—Wednesday afternoons.
Gynæcological—Thursday mornings.

Applications must be received not later than first post on Monday, December 14th, and must be addressed to the Secretary of the Hospital, from whom further details of the appointments may be obtained.

November 12th, 1931.

Queen's Hospital, Birmingham.

There is a vacancy for an HONORARY SURGEON.

Surgeons to the Hospital must be Fellows of the Royal College of Surgeons of England.

Candidates are required to send in their applications, stating date of birth, full particulars of qualifications, accompanied by testimonials and certificate of registration to the latter signed, from whom all further information can be obtained, not later than December 16th.

The Senior Honorary Surgeon for Out-patients is a candidate for the post, and if approved a vacancy will occur for an Honorary Surgeon for Out-patients which will be advertised later.

G. HURFORD,
Birmingham. House Governor.
December 4th, 1931.

The Jessop Hospital for Women,
SHEFFIELD. (146 Beds.)
Gynæcological & Maternity Departments.

The Board of Management invite applications for the post of ASSISTANT HOUSE SURGEON (male) for a period of six months from January 1st, 1932.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be addressed to the undersigned immediately.

H. B. SHELSWELL, Secretary.

Saint Mary's Hospital for Women and Children,
Plaistow, E.13.

Applications are invited for the [illegible] HONORARY DENTAL SURGEON. The [illegible] one morning a week (at present [illegible]). Candidates must be registered L.D.S. Eng., or similar qualification.

Applications, with copies of testimonials, to be sent to the undersigned as soon as possible.

A. ERNEST WILKES, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Woman)*	**CONTRACT PRACTICE** *(contd)*	**CONTRACT PRACTICE** *(cont'd)*
CONTRACT PRACTICE.	LLWYNYPIA, CLYDACH VALE, PENYGRAIG GLAMORGAN *(Workmen's Medical Scheme)*	OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*
PETERBOROUGH TRADES AND FRIENDLY SOCIETY INSTITUTE. *(Medical Officer)*	MARDY GLAMORGAN *(Workmen's Medical Scheme)*	**PUBLIC HEALTH.**
EBBW VALE NON *(Workmen's Medical Society)*	MEPHTHP VALE COLLIERY WOREMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	DEVON COUNTY COUNCIL *(School Medical Inspector—Male)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme)*	NEATH AND DISTRICT *(Medical Aid Association)*	LOWESTOFT BOROUGH *(Assistant Medical Officer—Woman)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*	OAKDALE NON *(Medical Officer for Medical Aid Association)*	YORESHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W.C.1.

Town or District.	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch	Town or District.	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary, South Australian Branch, B M A House, 206 North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Secretary New Zealand Branch) British Medical Association P O Box 155 Wellington, New Zealand
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)* *(Toowoomba Associated Friendly Societies Medical Institute Toowoomba)*	The Hon Sec, Queensland Branch British Medical Association B M A Building Adelaide St, Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P M'AJOR (Hon Sec Victorian Branch) British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch, British Medical Association No 6 Bank of N S W Chambers, St George's Terr, Perth, Western Australia.

December 2nd, 1931. By Order of the Council ALFRED COX Medical Secretary

Ancoats Hospital, Manchester.

APPOINTMENTS VACANT

Pathological Dept —PART TIME ASSISTANT (lady or gentleman) required Salary £200 per annum

Ear Nose and Throat Dept —CLINICAL ASSISTANT required to attend the Out Patient Clinic once per week A fee of 10/6 per attendance is allowed

Applications for the above appointments to be forwarded to the undersigned together with copies of three recent testimonials, on or before December 7th next

By Order of the Board
HERBERT J DAFFORNE
Gen Supt & Secretary

Salford Royal Hospital.

(263 Beds)

Applications are invited for the post of HOUSE PHYSICIAN (male) which will become vacant on December 31st next

Salary £125 per annum

The appointment is for a period of six months, with board and residence

Candidates must be registered under the Medical Acts

Forms of application which may be obtained from the undersigned, must be delivered on or before December 9th

By Order of the Board
Salford Royal Hospital GEORGE PUDDLE
Nov 23rd 1931 Gen Supt & Sec

North Riding Infirmary,

MIDDLESBROUGH
(General Hospital—150 Beds)

Applications are invited for the post of THIRD HOUSE SURGEON (lady or gentleman) to commence duties middle of December

The appointment will be for a period of six months Salary at the rate of £120 per annum, with board, residence and laundry

Applications stating age and nationality, with copies of recent testimonials should be sent forthwith to the undersigned

CHARLES POSTGATE
Secretary Superintendent

Manchester Royal Infirmary.

RESIDENT MEDICAL OFFICER

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment which will become vacant on February 1st, 1932

Applicants must not be less than twenty-five years of age They must be registered and hold a Medical and Surgical qualification

The appointment is for twelve months, renewable for a period of one year

Salary £200 per annum with board, residence and laundry allowance

Full information is obtainable from the undersigned to whom applicants must send twelve copies of their application and testimonials on or before 9 a m on Thursday, December 10th

By Order
FRANK G HAZELL
General Supt and Secretary

Addenbrooke's Hospital,

CAMBRIDGE.

Applications are invited for the post of RESIDENT ANAESTHETIST and EMERGENCY OFFICER (male) which will become vacant on January 1st 1932 Salary at the rate of £130 per annum with board residence, and laundry Candidates who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications etc together with copies of not more than four recent testimonials to the undersigned on or before Wednesday, December 9th

W H HEAD
Secretary Superintendent

The Royal Eye and Ear Hospital,

BRADFORD

Wanted JUNIOR HOUSE SURGEON (male) Salary £150 with board residence and laundry Applications stating qualifications age etc with copies of recent testimonials to be forwarded to the undersigned on or before December 8th

F BRIGGS
Secretary Superintendent.

Victoria Hospital, Burnley.

(125 Beds)

TWO HOUSE SURGEONS (Male).

Applications are invited for the above two posts The appointments are for six months from January 1st next and each carries a salary of £150 per annum together with board, residence, etc The Hospital is approved by the Conjoint Board for the purposes of the M B and M S examinations

Applications, giving full particulars of qualifications, age, nationality, etc, together with copies of recent testimonials should be addressed to the undersigned forthwith.

GEO W COOLING,
Superintendent & Secretary

The Radcliffe Infirmary and COUNTY HOSPITAL, OXFORD

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Female) at the TUBERCULOSIS BRANCH of the RADCLIFFE INFIRMARY the Old Parks Headington, Oxford, as from January 1st next

The appointment will be for six months in the first instance Salary at the rate of £120 per annum

Applications with copies of testimonials, should be forwarded to the undersigned at the Radcliffe Infirmary not later than Saturday, December 12th

A G E SAYCE
Nov 18th 1931 Administrator

Elsie Inglis Memorial Maternity

HOSPITAL, Spring Gardens
EDINBURGH (250 Beds)

Applications are invited from fully qualified Medical Women for the post of DISTRICT MEDICAL OFFICER and SENIOR HOUSE SURGEON at the end of each of the APPointments for six months from January 1st 1932 Honorarium at rate of £50 per annum with board residence and laundry Applications with copies of testimonials to be sent to the Secretary of the Hospital on or before December 12th

(Appointments continued on p 86)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A; ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Assistantship, with view to Partnership in an X-Ray Practice. Capital available. Advertiser holds a D.M.R.E. (Cambridge) and can start work in two or three months. London or South preferred. — Address, No. 7404, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship, with definite prospects, by Scots L.R.C.P., L.R.C.S., L.R.F.P.S., abstainer, 4 years' experience hospital and gen. practice. Keen, surgery, midwifery. Well received. Own car. Free now. Interview.—Address, No. 7497, B.M.A. House, Tavistock Square, W.C.1.

Wanted, for about four months, in a general Practice, indoor ASSISTANT, male, British, Protestant, single, pref. Anaesthetics essential. No immediate prospects; slight possibilities for a man who can wait. Full particulars.—Address, No. 7436, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with view to Partnership in a mixed Practice; ex H.S., single, keen, energetic. Scot preferred; abstainer. Further particulars on application. Interview. Usual bond. — Address, No. 7411, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, in or near London preferred, by M.R.C.S., L.R.C.P., male, single, aged 26; experience general practice. References. Free now. — Address, No. 7421, B.M.A. House, Tavistock Square, W.C.1.

Wanted, beginning January, male ASSISTANT, indoor or out. Industrial Practice near Manchester. Protestant. British. With or without view. Full particulars.—Address, No. 7328, B.M.A. House, Tavistock Square, W.C 1.

Wanted, end of December, male indoor ASSISTANT (Graduate), with view; Hospital experience; able to drive. Private and panel Practice, urban district, near London. Abstainer. Salary £300. Refs., etc.—No. 7401, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, qualified male ASSISTANT for panel and private Practice in Belfast, Northern Ireland. Single. Please reply, stating age, religion, experience, and other essential particulars.—Address, No. 7489, B.M.A. House, Tavistock Square, W.C.1.

Wanted, indoor Assistant, end of Dec., male, Scot or English, for mixed Practice, Midlands. Salary £300, with prospect of Partnership. Age, reference, and full particulars.—Address, No. 7431, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Jan. 1st, indoor ASSISTANT, with view. Male, British, with car preferred. Midlands, industrial and rural. £300. Usual bond. State age, experience, references.—Address, No. 7420, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with ultimate view, English or T.C.D. preferred, Busy Midland City. Excellent scope for good man. £300—£350, indoor.—Address, No. 7406, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view; good salaries; state full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—Part-time Assistance, would suit lady with work in London, in return for Two Attractive Rooms in good suburb. — Address, No. 7430, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant in East London Practice. Easy work. Moderate remuneration. — Address, No. 7423, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Reliable Assistants, £300 indoor, £350, rooms and attendance.—GRIFFITHS' MEDICAL AGENCY, Tredegar Chambers, Newport, Mon.

Assistant in mixed Practice (Cornwall). English University Graduate, with degree in Science, preferred. View to Partnership if desired. Owner-driver. £500 p.a. — Address, No. 7415, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with view to Partnership or Succession, S. of England, Hants, Dorset, or Somerset preferred, by M.R.C.S., L.R.C.P., Guy's, married, age 29. Own car. Exp. H.P., H.S., and G.P. Free Jan. —No. 7402, B.M.A. House, Tavistock Sq., W.C.1.

Indoor male Assistant required, for private and panel Practice in London, near West End. No branch surgery. Usual bond. Commencing salary £300 p.a. State age, qualifications, experience, etc.—Address, No. 7417, B.M.A. House, Tavistock Sq., W.C.1.

M.B., Ch.B., offers services as PART-TIME INDOOR ASSISTANT for moderate remuneration whilst attending Post-graduate Courses in London. Scotswoman, 6 years' exper. G.P. Excellent testimonials.—No. 7493, B.M.A. House, Tavistock Sq., W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — One or two Day or EVENING'S WORK weekly in London, by Doctor doing Post-graduate work; ex H.P. and H.S. (Guy's). Good references.—Address, No. 7432, B.M.A. House, Tavistock Sq., W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse-Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Qualified young Lady Optician, who has held Hospital appointment, desires POST with Doctor or Institution.—Miss SMITH, "Point View," Parkside Avenue, Broughton Park, Manchester.

Services offered, part-time, immediate, in London, free three mornings, three evenings, by registered Indian Graduate, L.R.C.P. & S., single, 31, abstainer, energetic, keen, well received. Terms secondary. Interv. —No. 7434, B.M.A. House, Tavistock Sq., W.C.1.

British Institute of Radiology.

The Council of the British Institute of Radiology propose to appoint as from January 1st, 1932, a SUB-EDITOR to the *British Journal of Radiology*. Candidates for the appointment, which will be a full-time one, should have an acquaintance with medical radiology, a proficient knowledge of French and German, and preferably some experience in the duties relevant to the production of a scientific journal. The commencing salary will depend on the qualifications and experience of the candidate appointed, but may be assumed to be of the order of £400—£500. Applications, accompanied by particulars of qualifications, testimonials, etc., should reach the General Secretary, British Institute of Radiology, 32, Welbeck Street, London, W.1, not later than December 8th.

Chartered Masseuses and MASSEURS recently showed their loyalty to the Medical Profession by passing a By-law pledging themselves to work only under medical direction. In return, please employ only Chartered Masseuses or Masseurs. (Membership 8,200.)

Names and addresses can be obtained from the Secretary, C.S.M.M.G., Tavistock House (North), Tavistock Square, W.C.1.

Telephone: Museum 9223-4-5.

Specialist, experienced Practitioner, will be glad to undertake PART-TIME WORK in London.—Address, No. 7419, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

Typewriting and Duplicating.—Testimonials, Theses, etc., neatly and accurately copied. Scientific work a specialty.—WOBURN BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). 'Phone: Museum 4475.

Testimonials Duplicated per return of post. Prices per testimonial—12 copies 1/6; 50, 2/6; 100, 4/-.—Miss NANCY MCFARLANE (B.M.J.), 44, Elderton Road, Westcliffe-on-Sea.

Typewriting and Duplicating undertaken by Expert. Testimonials, Theses, Legal Documents. Numerous letters of appreciation from Doctors.—BEATRICE RADFORD (B), 341, Finchley Road, N.W.3. 'Phone Hampstead 6430 (any hour).

LOCUMS.

FOR LOCUM TENENS APPLY TO PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9011.
After Office Hours: Epsom 9142.

Wanted.—Christmas Locum, by woman, aged 31, M.B., B.Ch., B.A.O., L.M., ex H.S. and H.P. (26 months); exper. G.P. and private (6 years); exper. Sax [illegible] drive car. State terms.—Address, No. 7425, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Locum, Dec. 23—30, Monmouthshire; work [illegible] no evening surgery. One living in [illegible] hood most suitable.—Address, No. 7435, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B.(Glas.), 30, desires LOCUM or TEMP. ASSISTANTSHIP, ex H.S., H.P., H.S., E.N.T., H.P. Senior M.O. Mental Hosp.; ex Asst. M.O. Law. 2 years' exp. G.P., good class. Free charge. Motorist. Abstainer. Free now.—No. 7424, B.M.A. House, Tavistock Sq., W.C.1.

PARTNERSHIPS

Wanted—Partnership or Assistantship with view by young man Energetic conscientious worker Hospital experience Leeds and London 1½ years general practice South preferred town or country, with scope—Address No 7416, B M A House, Tavistock Square W C 1

Wanted.—Partnership or Assistantship, with view Good general experience, age 31 Share £800—£1 000 Must have good scope Within radius of 50—60 miles London — Address No 7429, B M A House Tavistock Square W C 1

Wanted.—Partnership or Assistantship with definite view to M B Ch B, 3 years G P exper, aged 28 Capital London preferred—Address No 7427, B M A House, Tavistock Square, W C 1

Experienced Graduate, aged 32, married C of E, free February wants PARTNERSHIP, town or suburb S Midlands preferred, not essential Share about £1 500 Adequate capital—Address No 7426, B M A House Tavistock Square W C 1

F R C S.(Eng.), many years' Surgeon to large general hospital and teaching school abroad, desires SURGICAL PARTNERSHIP South of England preferred —Address No 7408, B M A House, Tavistock Square, W C 1

Urgently required, Partnership or PRACTICE £1 000—£1 300, in or near London with good panel Is M B T C D, surgical and general experience—Address No 7435 B M A House, Tavistock Square, W C 1

PRACTICES

Wanted, a Practice or Partnership in a residential town or good suburb returning an income of £1 500 to £2 000 a year, by a well qualified experienced man and with ample capital at command—Details will be received in strict confidence by Mr PERCIVAL TURNER, 4 and 5, Adam St, Strand W C 2

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For Sale, an excellent busy PRACTICE in London, E Panel of 4 000 can still be further increased, private income £3 000 p a Large corner house (main road) garage lease 21 years Suitable for two partners Price 2 years purchase cash—No 7494, B M A House, Tavistock Sq, W C 1.

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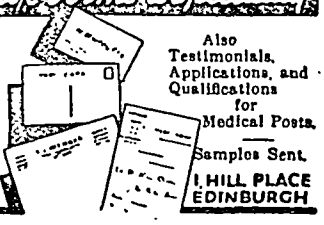
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Remittances must accompany all orders. Apply at the office, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

The Committee of Management invite applications for the office of HONORARY ASSISTANT SURGEON.

Candidates must be Fellows of the Royal College of Surgeons of England, or Masters in Surgery of a University in the United Kingdom.

Applications, accompanied by copies of testimonials, will be received by the undersigned on or before January 4th, 1932.

By Order of the Committee,
BEECHEY ROGERS, Secretary.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM.

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay £E.660 or £E.720 per annum (according to age and qualifications), with five or six biennial increases to £E.1,080, and thence after three years to £E.1,200. These rates of pay as well as the conditions of service are subject to Government rules and regulations from time to time in force. (£E.1 = £1 0s. 6d.)

Applicants must be unmarried, and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience (with special reference to Pathology), and copies of testimonials, should be sent to the Director, Wellcome Tropical Research Laboratories, Khartoum, Sudan.

Further particulars regarding this post may be obtained on application to the Controller, Sudan Government, London Office, Wellington House, Buckingham Gate, London, S.W.1.

Liverpool County Borough.

LOCAL EDUCATION AUTHORITY.

JUNIOR ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for a Junior Assistant School Medical Officer, at a salary of £500 per annum, rising by annual increments of £25 to £700 per annum.

Applicants must be registered Medical Practitioners, and must have had at least three years' experience. It is desirable that they should have had some special experience in Diseases of Children.

The officer appointed will be required to devote whole-time service to the Education Authority under the direction of the Medical Officer to the Education Authority, and will be required to contribute to the Local Government and Other Officers Superannuation Act, 1922 (Substituted Scheme) as required by the Standing Orders of the City Council. Private practice will not be allowed.

Form of application, which may be had by forwarding a stamped addressed foolscap envelope, should be returned, together with copies of three recent testimonials, to the undersigned not later than December 9th, and endorsed "Junior Assistant School Medical Officer."

The canvassing of members of the Education Committee or the City Council is strictly prohibited, and will be considered a disqualification.

WALTER MOON,
Town Clerk, and Clerk to the Local Education Authority.

Municipal Buildings, Dale Street, Liverpool.
November 27th, 1931.

County Borough of Southend-on-SEA.

SOUTHEND MUNICIPAL HOSPITAL.

SENIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified Medical Men for the appointment of Senior Assistant Medical Officer at the Southend Municipal Hospital, Rochford, Essex.

Salary £350 per annum, rising by annual increments of £25 to £450, with residential emoluments valued at £200 per annum.

The salary and value of emoluments are subject to deductions under the Local Government Officers Superannuation Act, 1922.

Further information relating to the appointment may be obtained from the Medical Superintendent, Southend Municipal Hospital, Rochford, Essex, to whom applications, with full particulars and copies of three recent testimonials, should be sent not later than Saturday, December 5th.

Town Clerk's Office, Southend-on-Sea.
November 21st, 1931.

H. J. WORWOOD, Town Clerk.

London County Council.

The LONDON COUNTY COUNCIL invites applications from Surgeons, duly qualified by experience in Diseases of the Ear, Nose and Throat, for appointment as CONSULTING LARYNGOLOGIST in its Sanatoria and Hospitals for Pulmonary Tuberculosis. The remuneration is at rate of 200 guineas a year to cover visits once a month to each of the four Hospitals, and once every two months to each of two Hospitals. Three of the Institutions are on the outskirts of London, and the other three are near Godalming, Wokingham, and Brentwood, respectively. To suit the convenience of applicants, the Council may divide the work between two Laryngologists and revise the remuneration. Appointment will be for twelve months in the first instance, and rate of remuneration and conditions of service will be subject to review by the Council.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, returnable by December 18th.

Canvassing disqualifies.

London County Council.

The LONDON COUNTY COUNCIL invites applications for appointment as HOUSE PHYSICIAN at LEWISHAM HOSPITAL, High Street, Lewisham, S.E. Salary £80 a year, together with board, lodging, and washing. Appointment is for six months only in the first instance. Candidates must be qualified Medical Practitioners, but need not necessarily have had previous Hospital experience. Person appointed will be required to live in the Hospital, to carry out such duties as may be assigned by Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the Council.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, returnable by December 18th. Canvassing disqualifies.

Further inquiries should be addressed to Medical Superintendent at the Hospital.

London County Council.

Applications are invited for appointment to the undermentioned positions. Persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the Council. Successful candidates will be required to live in the Hospital.

NORTH-EASTERN (FEVER) HOSPITAL, St. Anne's Road, Tottenham, N.15.—ASSISTANT MEDICAL OFFICER. Salary £350 a year, rising annually by £25 to £425 a year, together with board, lodging, and washing. Candidates must be qualified Medical Practitioners of at least one year's standing, and it is desirable that they should have held a resident appointment in a General Hospital for at least six months. Person appointed will receive training in radiological work, with a view to acting as deputy to radiologist at the Hospital.

NORTH-WESTERN (FEVER) HOSPITAL, Lawn Road, Hampstead, N.W.3. — HOUSE PHYSICIAN (man only). Salary £80 a year, together with board, lodging, and washing. Appointment is for six months only in the first instance. Candidates must be qualified Medical Practitioners, but need not necessarily have had previous Hospital experience.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, and must be returned by December 30th. Canvassing disqualifies. Further inquiries should be addressed to Medical Superintendent at the Hospital.

City of Sheffield.

KING EDWARD VII HOSPITAL, RIVELIN VALLEY.

RESIDENT HOUSE SURGEON required immediately for above Hospital, which is for the treatment of surgical forms of Tuberculosis and Rickets (130 beds).

The officer appointed may be required to attend the Out-patient Department for Tuberculosis cases, and the Rickets Clinic, the Maternity and Child Welfare Centre, etc.

Salary at the rate of £150 per annum, with board and laundry. Appointment for first six months, with possible extension for further six months.

Applications, with testimonials, should be sent to the Medical Superintendent.

(AMENDED ADVERTISEMENT)

City of Birmingham.

PUBLIC HEALTH COMMITTEE.

LITTLE BROMWICH ISOLATION HOSPITAL. WITTON SMALL POX HOSPITAL.

MEDICAL SUPERINTENDENT OF INFECTIOUS DISEASES HOSPITALS.

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment

The Little Bromwich Hospital has accommodation for 466 patients, mainly scarlet fever and diphtheria cases, while the Witton Small pox Hospital can accommodate 100 patients

The salary will commence at £1,100 per annum, including emoluments (a house, decorations, and rates) valued at £150 per annum, and will rise by two biennial increments of £50 to a maximum of £1,200 per annum The salary will be subject to any special temporary reduction approved by the Council in respect of its officers The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to three months' notice on either side Form of application and further particulars may be obtained from the Medical Officer of Health, the Council House, Birmingham, to whom applications, stating age, whether married, experience, and qualifications, and accompanied by copies of three recent testimonials, should be addressed not later than Wednesday, December 9th

The Council House, F. H. C. WILTSHIRE,
Birmingham Town Clerk.
November 20th, 1931.

County Borough of Ipswich.

ASSISTANT RESIDENT MEDICAL OFFICER (Female)

The Public Assistance Committee invite applications from fully qualified Medical Women for the appointment of Assistant Resident Medical Officer at their Poor Law Infirmary, known as the HEATHFIELDS MUNICIPAL HOSPITAL, Ipswich, HEATHFIELD HOUSE, and ST. JOHN'S HOME FOR CHILDREN Salary £250 per annum, with board and residence The appointment is subject to termination by six weeks' notice on either side, and is limited to a period of twelve months

The accommodation of the Heathfields Municipal Hospital is for about 300 patients, and of Heathfield House about 300 inmates. The number of children in St John's Home is about 150

The candidate appointed will be required to act generally under the direction of the Visiting Medical Officer, and to give lectures to the Probationer Nurses

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three testimonials, to be sent to me endorsed Assistant Resident Medical Officer," not later than the first post on Tuesday, Dec 8th

L W GREENHALGH, Chief Officer.
Public Assistance Department,
19, Tower Street, Ipswich.
November 21st, 1931

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

Applications are invited for appointment as CLINICAL ASSISTANT to the following members of the Honorary Staff, who attend the Out-Patient Department at the times indicated:

Mr. Alban Andrews	Tuesdays 2 to 5 p.m.
Mr. Ogier Ward	Wednesdays 2 to 5 p.m.
Mr. F. J. F. Barrington	Thursdays 3 to 7 p.m.
Mr. Ogier Ward	Fridays 9.30 a.m. to 11.30 a.m. (Women & Children)
Mr. Alban Andrews	Fridays 2 to 5 p.m.
Mr. Harkness	General Dept. on Mondays, Wednesdays, Thursdays, and Saturdays 5 to 7 p.m.

Appointments will be for six months, commencing January, 1932, a fee of Five Guineas being payable to the Hospital

Applications will be received by the undersigned on or before Monday, December 14th

BEECHEY ROGERS, Secretary.

Cardiff City Mental Hospital,

WHITCHURCH, GLAM.

SENIOR ASSISTANT MEDICAL OFFICER.

Salary £570, rising to £620, from which £120 will be deducted for emoluments if resident, and £70 for house and laundry if married

Applications to reach Medical Superintendent by December 14th.

City of Birmingham.

DUDLEY ROAD HOSPITAL.

GYNAECOLOGIST AND OBSTETRICIAN.

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment.

The present Hospital accommodation is 925 beds, divided into Medical, Surgical, Gynaecological, Obstetrical, and Children's Sections There are completely equipped Pathological and Biochemical laboratories, X-ray, Deep X-ray, Electro-therapeutic, Massage, Ultra violet Electro-cardiographic and Dental departments. Over 4,000 operations are performed annually.

Candidates for the appointment must have had good experience in these subjects and be Fellows of the Royal College of Surgeons (England).

The salary will be £750 per annum, rising by annual increments of £50 to a maximum of £1,000 per annum, and furnished quarters, rations, laundry, and attendance will be provided The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, to the candidate passing a medical examination, and to one month's notice on either side.

The salary and emoluments above referred to will be subject to (a) a "voluntary abatement" which it has been agreed, for the present, shall extend for one year expiring on December 31st, 1932, and (b) superannuation deductions amounting to 5 per cent.

The officer appointed will be required to refund to the Council, all fees, allowances, and emoluments (other than the foregoing) received by him. He will also be required to assist in the training of, and lecturing to, nurses

Further particulars of the appointment may be obtained from the Medical Superintendent, Dr F. W. ELLIS, at Dudley Road Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, and endorsed "Gynaecologist," should be addressed to Dr. ELLIS, and delivered at his office not later than Friday, Dec. 18th.

F. H. C. WILTSHIRE,
The Council House, Town Clerk.
Birmingham. Dec 4th, 1931.

City and County of Kingston-

UPON HULL.

BEVERLEY ROAD INSTITUTION (HOSPITAL).

ASSISTANT MEDICAL OFFICER (Woman)

The Corporation of Hull invite applications from unmarried or widowed registered Medical Practitioners, under the age of 40 years, for the appointment of Assistant Medical Officer (Woman) at the above named Hospital for a term not exceeding one year, and not renewable.

Salary is at the rate of £300 per annum, together with board, residence, and laundry. The salary is subject to any deduction which the City Council may authorise in connection with economic measures

The Hospital Section contains 400 beds, and is equipped with X-ray and Ultra violet Light Departments

A form of application, together with conditions of appointment and a list of duties, may be obtained from the undersigned, to whom completed applications should be returned not later than 10 a.m on Monday, December 21st.

Health Department, GEBBIE,
Guildhall. Medical Officer of Health.
Hull. December 1st, 1931

Caernarvonshire County Council.

PUBLIC ASSISTANCE DEPARTMENT.

Applications are invited from duly qualified Medical Practitioners for the post of DISTRICT MEDICAL OFFICER and PUBLIC VACCINATOR (part time) for the Tremadoc Relief District, comprising the parishes of Treflys, Llysyen Llanarn, Dolbenmaen and Beddgelert.

The person appointed will be required to reside within the above district.

The salary as District Medical Officer will be at the rate of £284 per annum, with such fees for extra medical services as fixed by the Council

The fees payable for Vaccination will be the same as at present paid in the above district

The Council reserve the right to re-arrange the district and the terms of the appointment should they deem it advisable or necessary to do so

Knowledge of Welsh essential

Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, and endorsed "District Medical Officer," must be delivered at this office on or before December 16th

County Offices, DAVID G JONES,
Caernarvon Clerk to the County
November 27th, 1931. Council.

London Jewish Hospital,

Stepney Green, E.1.
(General Hospital—108 Beds)

The Council of Management invite applications for the following posts.

HONORARY ASSISTANT GYNAECOLOGIST. Candidates must be Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or Masters of Surgery of London, Oxford, or Cambridge University. Candidates must send twenty copies of their application, with copies of three recent testimonials, to the Secretary before Friday, December 18th.

ANAESTHETIST Candidates must possess a registered qualification Honorarium at the rate of One Guinea per attendance. Applications, accompanied by copies of three testimonials, especially obtained for the appointment, to reach the Secretary before Friday, December 18th.

Edinburgh Hospital for Women

AND CHILDREN
(Whitehouse Loan, Edinburgh)
(56 Beds, including Radium Ward)

Applications are invited from fully qualified Medical Women for the following posts at above Hospital: (1) HOUSE PHYSICIAN, honorarium at the rate of £50 per annum, (2) JUNIOR HOUSE SURGEON, rising to Senior House Surgeon at the end of three months. Honorarium at the rate of £25 per annum for first three months, £50 per annum for second three months.

The appointments are for six months from January 1st, 1932. Board, residence, and laundry provided Applications, with copies of testimonials, to be sent to the Secretary of the Hospital on or before December 12th.

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17. WESTERN CITY.—PARTNERSHIP, with or without succession. Half share of £1,700, previously doing over £2,000 p.a., and capable of great increase. Central surgery at rental. Panel 2,120. Premium 2 years' purchase.

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NORTH-WEST COAST.—SEASIDE RESORT.—Old-established PRACTICE. Cash receipts 1930, £874. Small select panel. Excellent freehold house, 5 bedrooms. Garage and garden.—No. 266.

LANCS. TOWN.—Old-established PRACTICE. Average cash receipts £995 p.a. Panel 710. Excellent house in pleasant district, 2 reception, 4 bedrooms. Garage and garden.—Prem. 1½ years' purchase.—No. 298.

LARGE LANCS. TOWN.—Sound Industrial PRACTICE. Cash receipts last year, £920, increasing. Panel 1,440. Good house, 2 reception, 4 bedrooms, 3 professional rooms. Garage. To rent on lease. Premium £1,450 (including debts).—No. 310.

MANCHESTER.—Old-established PRACTICE. Cash receipts 1930, £688. Panel 578. House on main road, 2 reception, 5 bedrooms, and garage. Premium—Practice—1½ years' purchase.—No. 294.

LANCS. TOWN.—Old-established PRACTICE. Cash receipts last year, £723. Panel 950. Scope for increase. Freehold house, 2 reception, 6 bedrooms. Vendor retiring.—No. 305.

LIVERPOOL.—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception, 7 bedrooms, garage, and garden, to rent.—No. 276.

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1 N. OF ENGLAND. — Partner required in increasing Practice in beautiful city. Receipts last year £5,000. Panel 4,000. Applicants should be proficient in minor surgery, anaesthetics, and obstetrics. Share of four fifteenths at 2 years' purchase.

2 S.W. OF ENGLAND.—Partnership (after preliminary Assistantship) in Practice about £3,500 p.a., in small industrial town. Panel nearly 900. Considerable scope for increase. One third share to suitable man at 1½ years' purchase.

3 LONDON, N.W.—Non-dispensing Practice over £950 p.a. in good residential district. No panel. Ten-roomed house, with garage and large garden. Rent £200 p.a. Premium 1½ years' purchase.

4 N. MIDLANDS.—Partnership in Practice, about £3,000 p.a. in country district, near two important towns. Panel over 1,600. Small house (3 bedrooms, etc.) available to rent. Great scope, as district is growing rapidly. Premium one-third share 2 years' purchase.

5 DEATH VACANCY.—ESSEX.—Nucleus of Practice, bringing in about £260 p.a. in small coast town. Panel over 50. Well situated house (3 bedrooms, etc.) for sale or rent. Ample scope for increase.

6 DEATH VACANCY. — EASTERN COUNTIES.—PRACTICE about £1,300 p.a. in a favourite town. Panel 1,440. Good house (5 bedrooms), garage and garden, for sale or would be let at £90 p.a.

7 S. DEVON. — Partnership (after Preliminary Assistantship) in Practice over £2,000 p.a. in small seaside resort. Small panel. Very little midwifery. Nice house (4—5 bedrooms) for sale. Cottage Hospital, scope for surgery. Premium for one half share at 2 years' purchase.

8 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

9 MIDDLESEX. — Steadily increasing PRACTICE in rapidly growing residential district. Earnings past 15 months £600. Panel 500. Excellently situated house (4 bedrooms, etc.), for sale. Very good scope for increase. Cottage Hospital. Premium £700.

10 BRITISH WEST INDIES. — Well-established non-dispensing PRACTICE about £2,400 p.a. in a Town. Scope for surgery.

11 MIDLANDS. — Partnership in Practice of £7,000 p.a. in important County Town. Panel 3,500. House to rent. One fifth or one-fourth share at 2 years' purchase, and further share later.

12 SUSSEX. — Country Practice averaging £900 p.a. in beautiful part, easy distance of coast. Panel 640. Large detached house, with three quarters of an acre of garden, for sale. Premium 1½ years' purchase.

13 W. OF ENGLAND.—Practice about £800 p.a. in first-rate City. Panel 1,324. Well built house (4 bed and dressing rooms) to let. Excellent scope. Premium £1,450.

14 S.E. COAST. — Easily worked Practice in exclusive part of seaside town. Receipts last year £1,050, including appointments over £200, fees from resident patients, and small panel. Large modern house, with beautiful garden, to rent. Ample scope. Premium £1,150.

5 CARMARTHENSHIRE.—Increasing PRACTICE of £900 p.a. in pleasant Market Town. Panel 150. Well situated house (non basement), with 3 bedrooms, for sale. Cottage Hospital. Premium one year's purchase.

16 DEATH VACANCY. — CHANNEL ISLANDS.—*PRACTICE doing* about £450 p.a., capable of increase. House (5 bed and dressing rooms, 3 attics) in own grounds in residential quarter, to rent.

17 LONDON, S.E.—Practice averaging about £1,400 p.a. in populous suburban district. Panel about 1,000. House, with 5 bedrooms, to rent. Premium £2,500.

18 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase. Cottage Hospital. One fifth share for disposal.

19 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main thoroughfare. Panel 125. Shop-fronted house to rent on lease. Good scope for increase. Premium £300.

20 S. OF ENGLAND. — Partnership in good middle class Town Practice, over £5,300 p.a. No panel. Suitable house to purchase. Premium, one fourth share, £2,000. Preliminary Assistantship.

21 OPHTHALMIC Practice, doing about £500 p.a., in the West End of London. Premium £300.

22 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from "Lock up" Surgery. Panel about 500. Well-situated corner residence (3 bedrooms) to rent. Premium £900.

23 EASTERN COUNTIES. — Partnership in Practice nearly £1,950 p.a. in country town. Panel 735. Share up to one-half 2 years' purchase. Up to date Cottage Hospital.

24 E. COAST.—Partnership in lucrative PRACTICE of over £5,250 p.a. in large seaport town. Panel over 3,800. Prem., one-fourth share, £2,500. Good scope for increase.

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Practices and Partnerships for Disposal (continued).

25 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Select panel about 417, with scope. Corner house, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

26 MIDLANDS.—Practice averaging £2,300 p.a. in manufacturing town. Panel 1,100. Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

27 S. COAST.—Favourite Resort.—Practice of over £650 p.a. Panel 50. House contains 5 bedrooms. Garage and garden. Rent £150 p.a. Scope for increase. Premium 1½ years' purchase.

28 ESSEX.—Country Practice of £700, including panel and appointments worth about £550 p.a. Premium £1,100.

29 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 360. Substantially built 9 roomed house for sale. Scope for increase. Premium £725.

30 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel. House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash.

31 LONDON, S.E.—Good middle-class PRACTICE of about £1,000 p.a. in pleasant Suburban district. Select panel of 200. Excellent well situated detached house (5 or 6 bedrooms), garage, and good garden, to rent. Considerable scope. Premium 1½ years' purchase.

32 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE, about £1,800 p.a., in first-rate Town. Modern detached house (4 bedrooms, etc.), garage and garden, for sale. Equable climate. Good educational facilities. Premium only £1,250

33 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs. Small panel and very little midwifery. Well-situated house (6 bedrooms), good garden and garage, for sale. Good scope. Premium 1½ years' purchase.

34 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round. Receipts about £150 No panel or midwifery House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

35 YORKSHIRE (W.R.).—Partnership (after Preliminary Assistantship) in Practice about £2,650 p.a. in manufacturing town. Panel 1,640. House available Applicant with surgical experience preferred Premium one third or one fourth share 1½ years' purchase.

36 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town. *Panel 3,000. Nice detached house (7 bedrooms)*, garage etc., garden and grounds of 10 acres, for sale. Sport of most kinds Considerable scope. Premium two-thirds or four-ninths share 2 years' purchase.

37 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district Seven roomed house, with electric light, garage, etc., for sale or rent. Ideal climate. Sport Hospital Premium £600.

38 HOME COUNTIES. — Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London Panel 1,460 House (5 bedrooms), garage and nice garden for sale. One third share for disposal.

39 BIRMINGHAM.—Practice about £700 p.a. in residential suburb. Small panel. Well-situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

40 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000. Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

41 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight-roomed house for sale or rent Excellent educational facilities. Sea fishing, etc. Premium £1,500.

42 KENT.—Country Practice of over £800 p.a. in beautiful part. Panel nearly 400 Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale. Sport. Premium 1½ years' purchase.

43 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,300 p.a. in small but delightful resort. Considerable scope to one able to operate Premium one half share 1½ years' purchase.

44 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock-up Surgery £65 p.a. Premium, to include furniture and drugs, £500.

45 HOME COUNTIES.—Partnership in exceptionally good and rapidly increasing Practice about £5,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent. Partner must hold the F.R.C.S., and be aged about 30. Appointment on Hospital Staff. Premium for one sixth to one fourth share 2 years' purchase. Preliminary Assistantship.

46 S. AFRICA.—CAPE PROVINCE.—PRACTICE of about £1,200 p.a. in small Town (4,000 ft. above sea level), in healthy pastoral district. Well built house (2 bedrooms) to rent. Premium £500.

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49 KENT. — Country Practice of about £850 p.a. Panel 550. Good house and garden for sale. From £1,100.

50 MIDLANDS.—Country Practice of nearly £900 p.a. in beautiful district. Panel over 700 House contains 6 bedrooms and dressing rooms, etc., electric light, beautiful garden, with greenhouse, for sale. All kinds of sport Premium £1,200.

51 MIDDLESEX.—Increasing Practice about £700 p.a. in developing district Panel 250 Convenient semi-detached house (4 bedrooms) with good garage and secluded garden, for sale or rent. Great scope. Premium 1½ years' purchase.

52 CO. DURHAM. — Partnership in Country Practice easy distance of coast. Income about £1,650 p.a. Panel 1,550 and Club appointments £700 p.a. Nice house (5 bedrooms), in quarter acre of garden, for sale Premium for one-half share only £1,000

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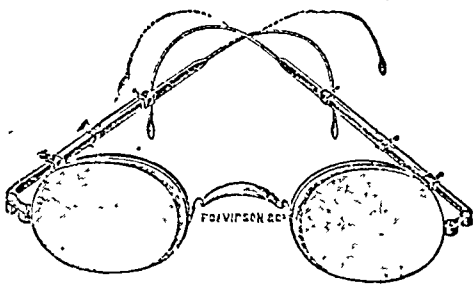
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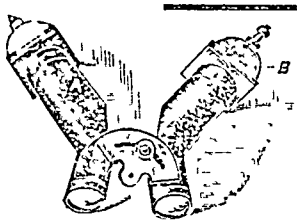


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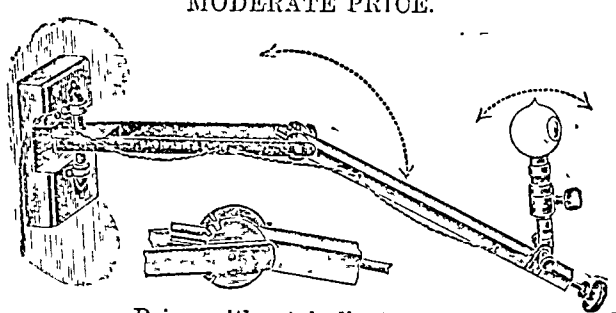
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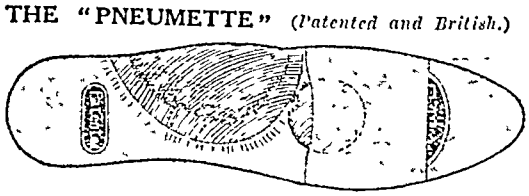
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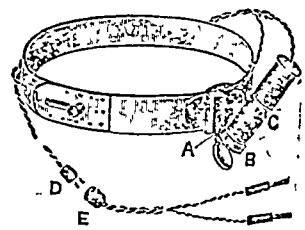
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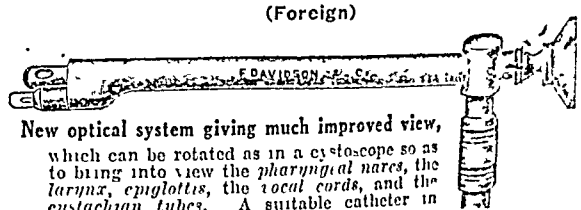
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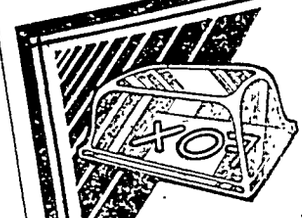
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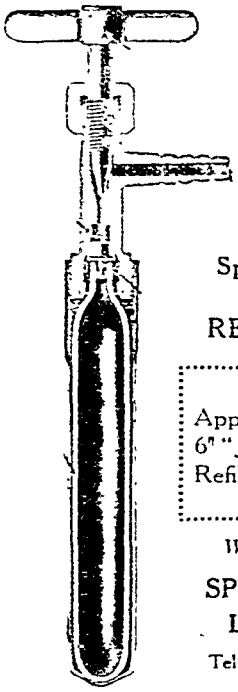
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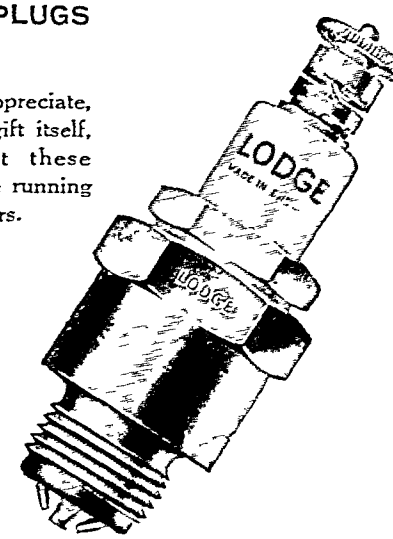
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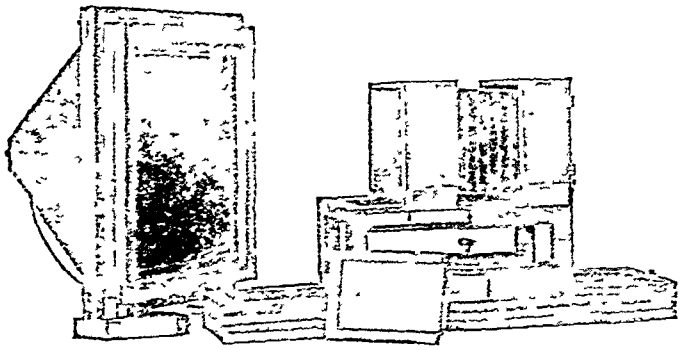
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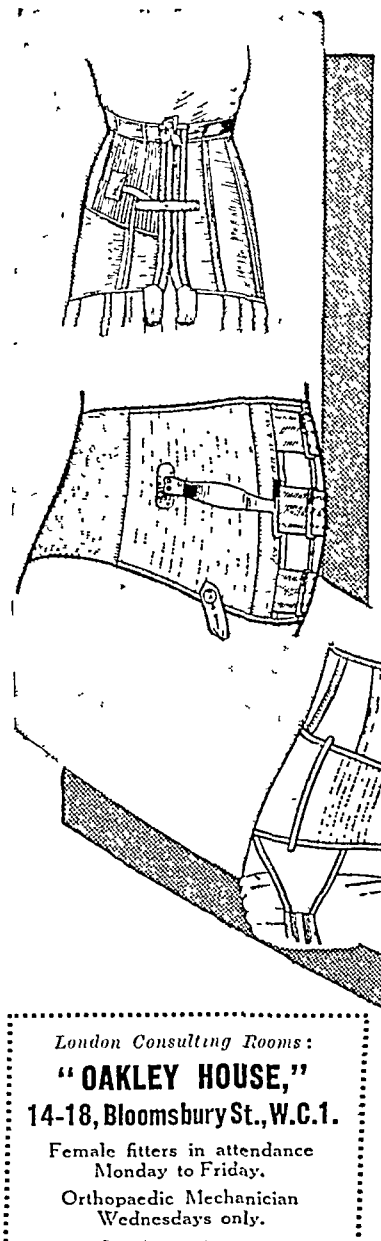
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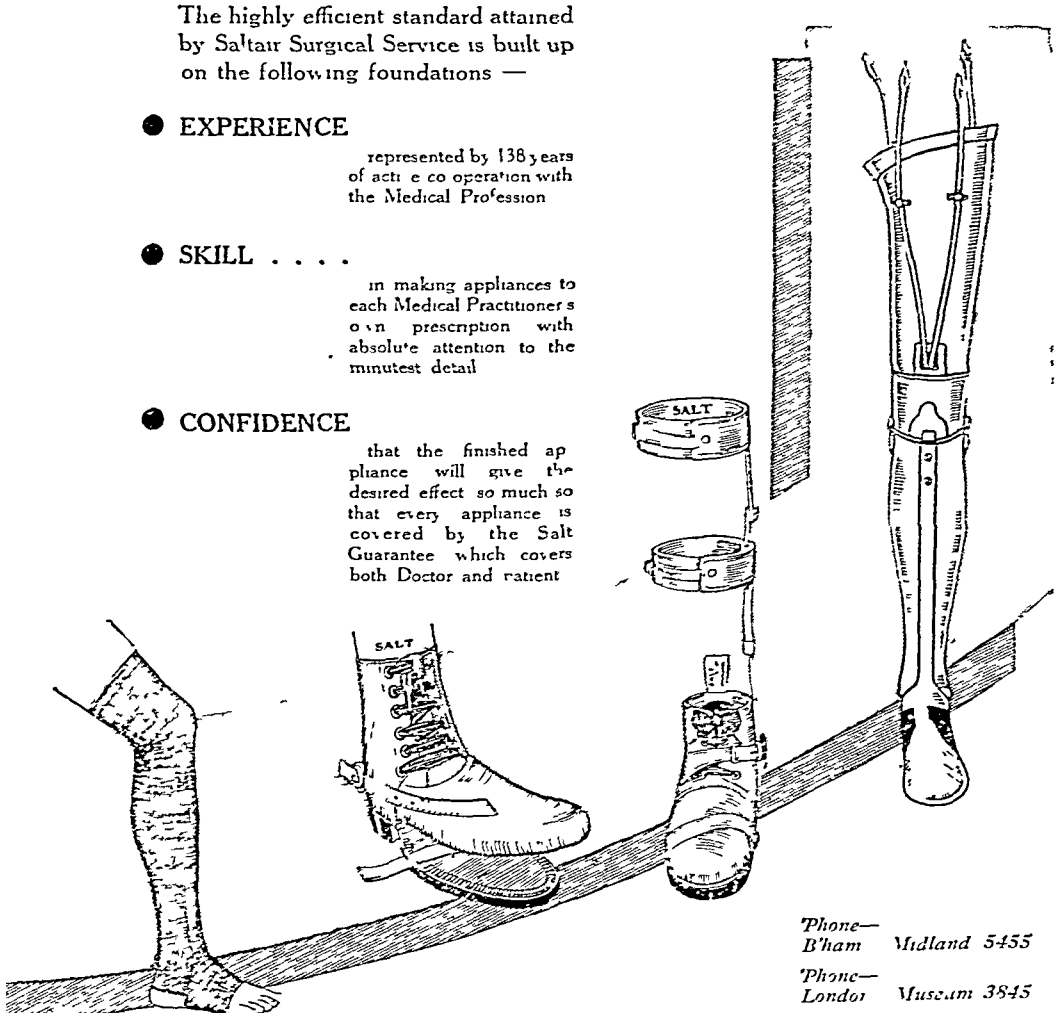
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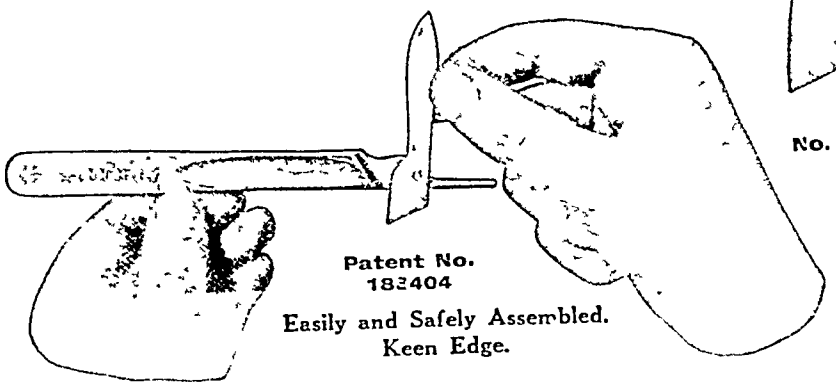
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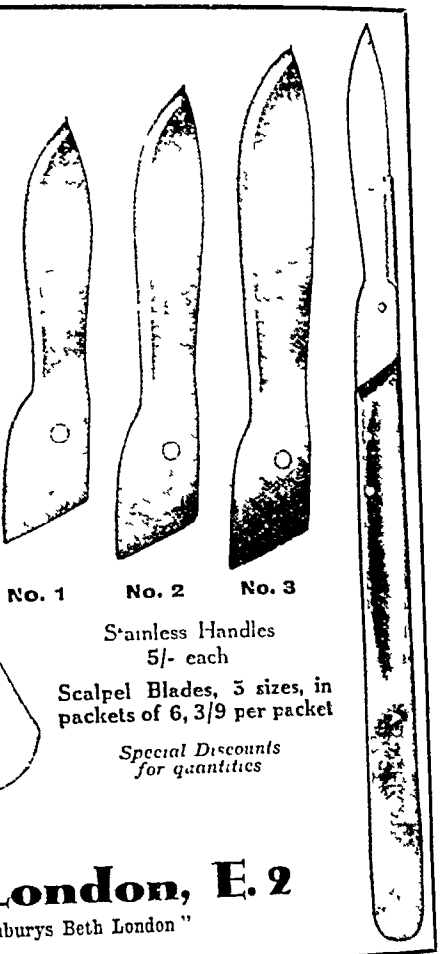
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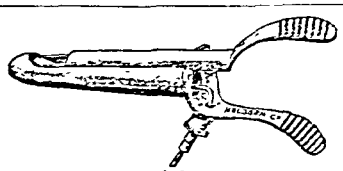
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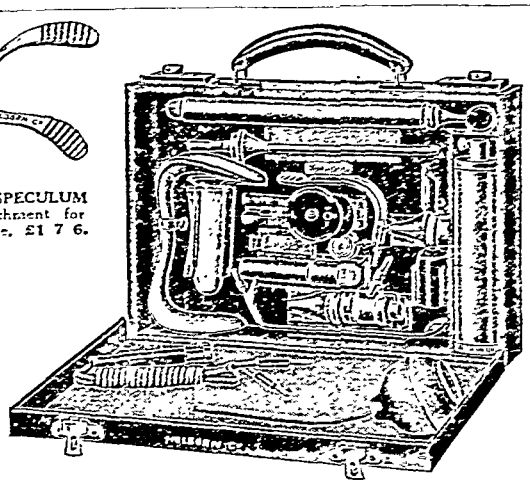
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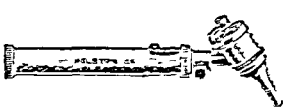


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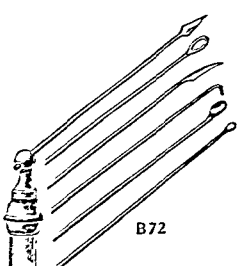
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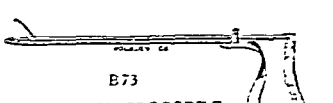
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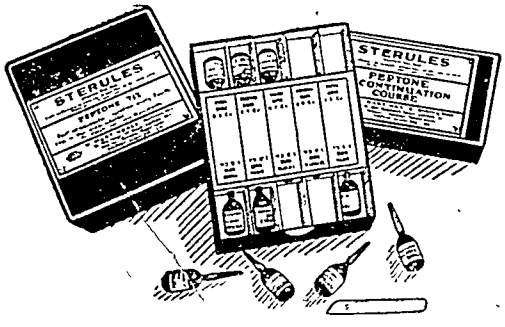
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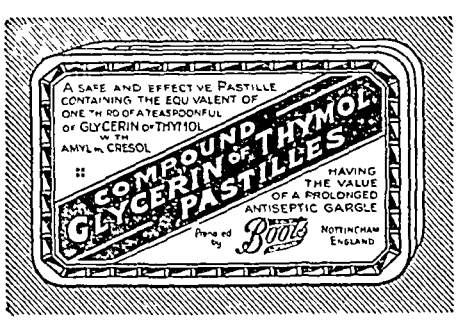
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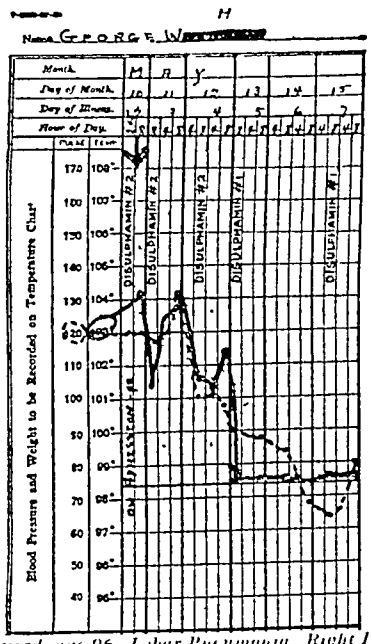
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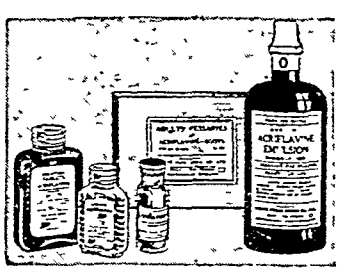
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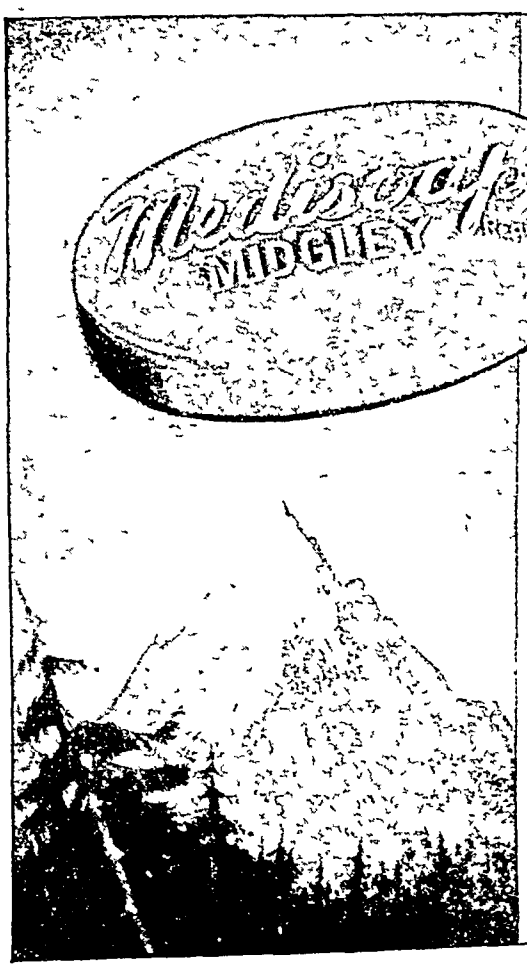
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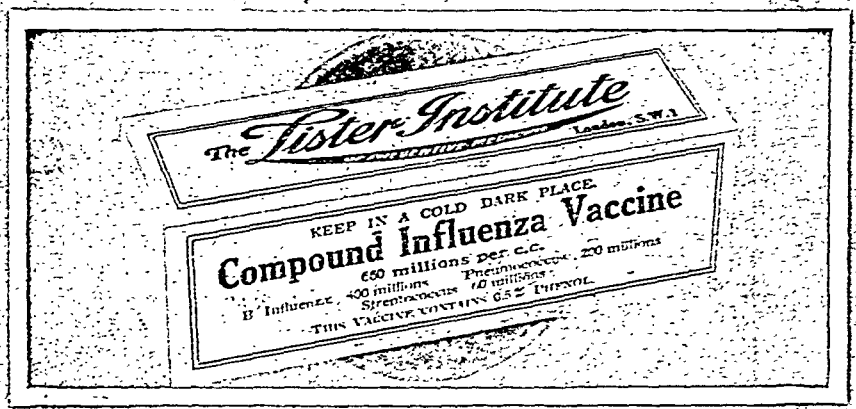
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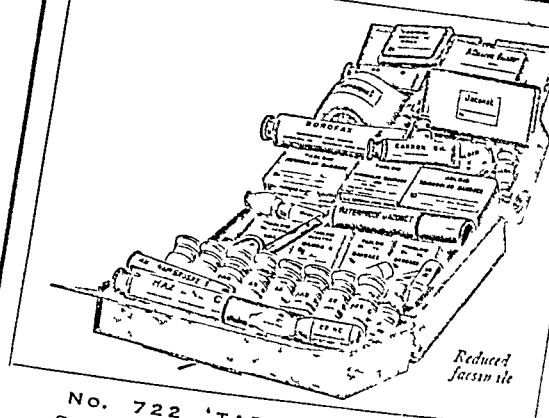
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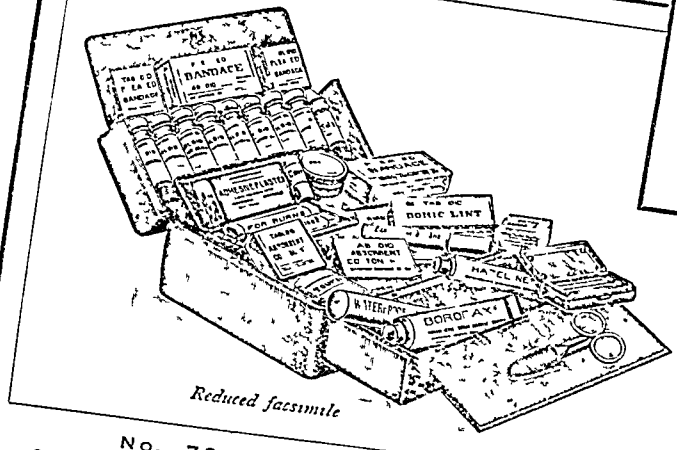


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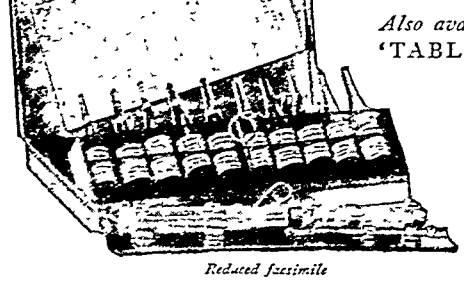
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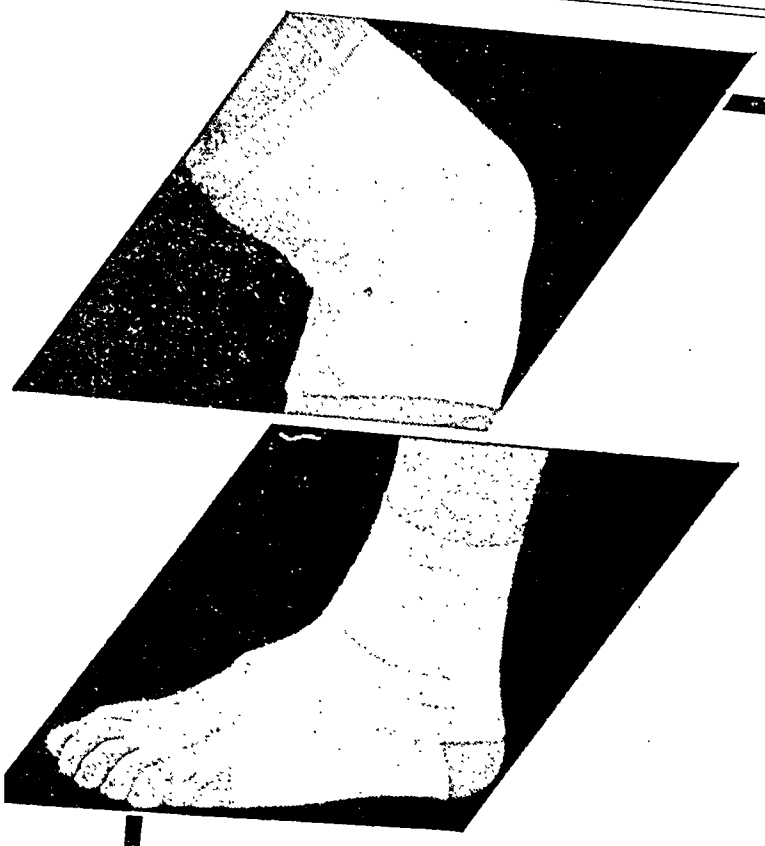
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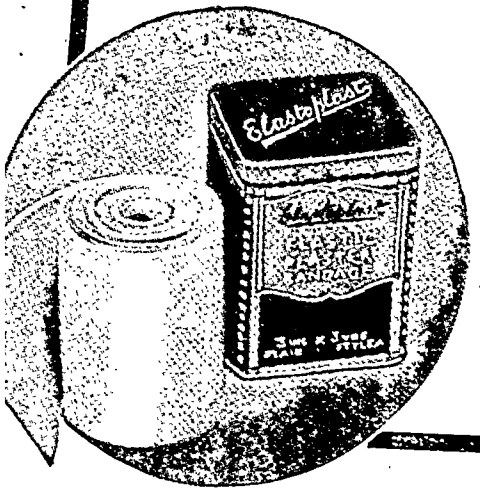
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Remarks on "FAILED FORCEPS"*

BY

J. ERIC STACEY, M.D.Lond., F.R.C.S.Ed.

HON. CLINICAL ASSISTANT SURGEON, JESSOP HOSPITAL FOR WOMEN, SHEFFIELD

In choosing a subject from my special branch of medicine I am guided by certain considerations, one of which is that while we are a body of workers engaged in every branch of medicine, the main bulk of the members of this society are in family practice, in which midwifery looms large as the bane and worry of existence. In addition, there is not one of us but is constantly being confronted with the results of some sequel to a confinement which bears fruit in ill-health and impaired functions of the mind and body. It is a reflection on our progress that the maternal mortality and morbidity rate is but a trifle better now than it was in the days immediately succeeding the introduction of Lister's epoch-making practices. In fact, the Registrar-General's returns for 1929 show a slightly higher rate than any other of the last decade, except that of 1921. This, of course, may in part be accounted for by a better system of notification, and by a better and more scientific description of the cause of the mortality or morbidity in cases which were previously labelled with an inadequate or faulty diagnosis; but, despite any excuses which we may put forward, the distressing fact remains that the risks attendant on child-bearing have not materially diminished by any contribution of medical science during all these years. There is, however, one way in which this doleful picture may be somewhat brightened—namely, by eliminating the cases of failed forceps.

Definition

I have been asked one or twice exactly what is meant by the term "failed forceps," and I can only say that it is self-defining if we add the words "in midwifery," but I propose to confine my address to an analysis of a series of cases in which an ineffective attempt at delivery had been made with forceps and successfully accomplished later by a similar operation or other manœuvre.

We should, I suppose, include under the heading of "failed forceps" all those cases in which we anticipate that delivery will be effected by the use of forceps and in which we have to remove them for any purpose, possibly to confirm our diagnosis of the presentation, and then proceed on a reapplication to bring about the result we have aimed at from the first. In the majority of such cases we should reflect carefully whether we were wrong in the first place to adopt this method of delivery, or whether our technique was untutored. I propose, however, to omit all these cases, not because they would include a large number in which I have figured as obstetrician, but because my records would be difficult, even impossible, to obtain with any accuracy, and because the term "failed forceps" is one which is now in common usage for cases which I have defined as included in the subject-matter of this paper.

Commissions have been sitting, scientific discussions have taken place, and the public imagination has been roused by the inefficient midwifery service provided in this, and I may say, in all other countries, and to us as medical men little has been brought out more strikingly than the sepsis which follows in the train of forceps application or other obstetric operation. For this, the result of an inadequate service, the general public is largely to blame. Once a student has attained to the dignity of qualification he is expected to deal with all and every complication of midwifery, many of the cases involving as much skill in diagnosis as the most complicated medical case, or the dexterity in manipulation of a major surgical operation skilfully performed. Of the various obstetrical manœuvres employed none perhaps requires greater knowledge than the application of forceps, if a successful result to both mother and child is to be attained—a knowledge not only of how, but also when, to resort to their use, demanding in all cases a diagnostic capacity and technical dexterity which it is not right and proper to expect from a student taking out his obstetrical practice. One remedy lies in better teaching facilities, both for the undergraduate and for the man in practice.

In 1928 Dr. Douglas Miller of Edinburgh published a series of cases, and in my analysis I have followed very much the lines he adopted in his. The 154 cases reviewed are a consecutive series which occurred in the practice of the Jessop Hospital for Women during the years 1924–28. I have taken no later case because of the review of the remote after-results.

Etiology and Associated Conditions

Reviewing now the 154 cases from the etiological point of view, many interesting but certain unhappy facts are brought to light.

Early Rupture of Membranes

In 115 cases the membranes ruptured early, and in 88—that is, 77 per cent. (or 57 per cent. of the total), they had been ruptured artificially before the cervix was sufficiently dilated to admit of the passage of a head with a diameter of 3¾ to 4 inches. In the majority of cases this is a regrettable accident or error, and care should be taken to obviate its occurrence.

Many of the cases under review were midwives' cases, in which the doctor was called in after this expedient for accelerating labour had failed, or, in many cases, had had an opposite effect. I am convinced that in a large number of cases of primary uterine inertia and of secondary uterine inertia leading to lingering labour the source of the trouble lies in this practice. It is easy to see how often this potent source of trouble arises. In a large number of cases, particularly in multigravidae, when the patient reaches the second stage of labour with unruptured membranes, they immediately give way spontaneously, or are ruptured artificially; the patient has a few expulsive contractions and the infant is born. If the first time the attendant on the labour sees the patient is when she is in the second stage, and a happy result is brought about rapidly by rupturing the membranes, then it is easy to understand how a series of successful issues may so cloud the judgement that the expedient is tried without due regard to the stage of labour. In many cases where this is done no ill result occurs, even when the patient is only in the first stage, and the faulty manœuvre is employed over and over again, until a case arises where, to the chagrin of the attendant (in 70 per cent. of the cases this is not a doctor) the condition is aggravated.

Most of us have had under our care those trying cases of lingering labour, due to primary uterine inertia, in which no etiological factor is evident beyond this early rupture of the membranes, which may even have happened before labour started—cases in which labour trails on for hours, or even days, with all the accompanying risks to mother and child. Too often are we tempted to hurry on the labour by ill-timed application of forceps. I, personally, am more concerned as to what shall be the *modus operandi* when confronted with this problem than with almost any other difficulty in obstetrics.

* Lecture given before the Sheffield Medico-Chirurgical Society.

INCOMPLETE DILATATION OF CERVIX

In exactly 100 cases (66 per cent.) of the 154 cases reviewed the patient had, when the forceps were applied, a cervix which was not adequately dilated to deliver the child. As almost all the cases were at full term, it was extremely unlikely that, even if delivery were effected, it would be accomplished without some damage to the mother, which would be evidenced at the time or later.

The term "full dilatation" needs no explanation, but, when it is realized that in a large number of cases the child's head was badly flexed, then in these cases particularly it was more important for full dilatation to occur, as the normal *engaging diameter of the child's head* (S.O.B. of 3¾ inches) was often thereby converted into an abnormal one (S.O.F. 4 inches, or even an O.F. of 4½ inches). This non-dilatation of the cervix was not the sole obstructing cause of failure of delivery in the 100 cases I mention, but was in many instances combined with a faulty presentation, such as occipito-posterior or a contraction of the pelvis, or even all three combined.

However, a further analysis of the cases established that in 47—that is, practically one-third of all those investigated—no other cause accounted for the failure in delivery than an incompletely dilated cervix. The degree of insufficient dilatation varies enormously, from that in which it would almost seem to be impossible to pass the blades of the forceps through the os, up to slight degrees of non-dilatation—for example, where the os has a diameter of less than 4 inches.

While on the question of the undilated cervix may I utter a warning about one of the unpleasant consequences which may ensue from ill-advised efforts to stretch the cervix. We all remember that property of the uterus known as its polarity. By traction on the child's head through an undilated cervix this contraction of the uterus so set up may not be regular and rhythmic as we wish, but may be irregular, and bring about the formation of what is called an internal contraction ring, which is really a localized toxic uterine spasm, often in the form of a circular constriction. This is not to be confounded with a Bandl's ring, and cannot be recognized except by internal examination. Should this occur, then the worst possible thing is for further attempts to be made at delivery, aggravating the already too irritable organ.

I have often been asked whether a cervix which has at one time been dilated can again close down, so that when a second examination is made later there is less dilatation than previously. I can only say I have never seen such a sequence of events, and rather think that the error arises from a failure to recognize the degree of dilatation at the first examination, or else from the incorrect recalling of the state of affairs existing then, compared with the actual condition found at the time of the second examination (possibly because of two different examiners with different nomenclature).

Contracted Pelvis

In his analysis Miller found that dystocia from disproportion, due mainly to contraction of the pelvis, accounted for almost a third of his cases. While in my series there were 46 cases (30 per cent.) with contracted pelvis, I do not agree that it was the sole cause of the failure of delivery. In only 21 cases (13 per cent.) was I able to find no other etiological factor than that of the contracted pelvis. In the remaining 25 cases there was always a combination with abnormal presentation (mostly occipito-posterior) or undilated cervix, and in not a few the three conditions were present together. In many cases the head was still found to be freely floating above the brim of the pelvis on the admission of the patient to hospital. I would emphasize once again that it is never correct to apply forceps to a floating head; very rarely even is the correct procedure adopted where the operation of so-called "high forceps" has to be resorted to at all.

In certain other cases the head was engaging in a satisfactory manner, descent was even proceeding, and had the forceps been withheld a little longer a satisfactory termination would have occurred without their aid. This is conclusively demonstrated by the large number of cases which, in fact, did terminate spontaneously after time was allowed to elapse, following an unsuccessful attempt at forceps delivery.

I do not intend to discuss the varieties of pelvic contraction which offered *difficulties*, but rather to show that pelvic contraction alone is by no means the commonest cause of failure. Possibly this is the commonest reason given by the unsuccessful obstetrician to explain the cause of failure, and not, perhaps, without good reason, because the force necessary to extract a child through a normal pelvis, where the presentation is posterior or the cervix undilated, is often greater than that required to deliver a child through anything less than the greatest grade of contracted pelvis, and this leads to impaired judgement in defining the cause of failure where much force has been exercised.

Occipito-Posterior Presentation

We are now brought to that potent source of failure, occipito-posterior presentation of the vertex. In no fewer than 48 cases (31 per cent.) there was an occipito-posterior presentation which, for the most part, had been unrecognized. In 16 cases occipito-posterior presentation was the sole cause of the failure. I think that the commonest obstetrical condition for which I am called out in the midwifery side of my consulting practice is labour complicated by this condition.

Occipito-posterior presentation is by no means easy to diagnose, and it is often necessary to introduce the whole hand into the vagina in order to arrive at a conclusion as to the exact situation of the occiput. In so many cases the sutures and fontanelles are obscured by a large caput, and the old advice of feeling for the ears is by no means so simple as is often stated, because the ears are often flexed forwards and give rise to much doubt. I can instance more than one case in which I have seen an occipito-anterior presentation converted into a posterior before delivery was attempted. I have done this myself.

Miscellaneous Factors

Other conditions which were discovered as the cause of the difficulty include eleven face and brow presentations, three breech presentations, four transverse lies, two cases where tumours were obstructing delivery, and certain abnormalities of the child, such as large child (over 12 lb., three cases), and four hydrocephalic monsters.

TREATMENT

Coming now to the question of treatment in these cases where difficulty is encountered, we must *consider* it from two standpoints. First, I will describe the method by which delivery was ultimately effected after a first attempt at delivery had failed, and then outline certain general observations in the conduct of cases where difficulty is likely to occur should forceps be attempted. In other words, I shall rather reverse the usual way of discussing treatment, and leave the question of prophylaxis until I have dealt with the *modus operandi* adopted.

In 33 cases of the 154 (20 per cent.) a spontaneous delivery was brought about by merely waiting, in these cases until the cervix had dilated or an occipito-posterior presentation had rotated itself forwards. This figure, I feel sure, would have been considerably larger [illegible]

the attempts at delivery been prematurely made in many of the cases, and I would particularly refer to those cases where artificial rupture of the membranes had failed to augment the pains and induced inertia. It is strikingly evident that one of the potent causes for the cessation of labour pains is artificial rupture of the membranes during the first stage of labour, and this is made still worse by exhaustion induced in the mother with unsuccessful forceps application, particularly where this has been done without an anæsthetic. Without intervention, quite a number of cases delivered by forceps or craniotomy would have terminated spontaneously except for inertia, for it must be remembered that the thrust of the uterus in a patient with good contractions is infinitely more effective than where this force is lost and delivery is being brought about by traction alone. For one thing, the force is directed more evenly on the whole of the child's body, and is thus distributed to the entire circumference of the presenting part, whereas with forceps there is a less even distribution of force, with consequent less effect on advance, and greater danger to both mother and child.

In 64 cases in all (42 per cent.) forceps were used to bring about the desired result. This includes 25 in which manual rotation of a posterior into an anterior vertex was first of all resorted to. In many cases the forceps had been applied more than once, and often, I might add, more than one attempt was again made before delivery was brought about after admission to hospital.

In these cases it was usually a combination of circumstances that led to failure. Some of them were cases in which forceps was the incorrect line of treatment in any event; I refer to those in which forceps had been applied where the disproportion between the child and the pelvis made it impossible to expect the delivery of a living child; in many of these cases this was complicated still further by posterior presentation or non-dilatation of the cervix. A preliminary accurate diagnosis would have led to the adoption of other methods of treatment. Why, then, were further attempts made unsuccessfully in hospital after a preliminary failure? The reason was determined by other considerations—namely, whether immediate intervention, in the interest of the mother or child, was desirable, and whether the condition of either was such as to forbid Caesarean section.

In many cases there were tears and lacerations of perineum, vagina, and cervix, which precluded any possibility of a section, because of the grave risks to the mother of peritonitis, with its almost invariable fatal issue. In other cases the child's heart was failing, shown by irregularity and slowing, and at times depressed fractures of the skull were palpable vaginally. In these cases we were faced with the alternatives: Caesarean section with the possible delivery of a dying child whose hope of survival was very slight; craniotomy performed on a living child; or forceps delivery with further risk of failure; and, I should also add, an unsatisfactory version. Which method to adopt is indeed a grave decision to make. The operation performed varies with individuals and different units, but in the Jessop Hospital it is uncommon for Caesarean section to be chosen. Even with what is said to be the safer lower uterine segment incision, there are few cases in which the decision to perform Caesarean section is justified either on account of the conditions found on examination or the dire results which would follow its universal adoption. For my own part, I should hesitate to do a craniotomy on a living child (in fact, on only two occasions have I purposely done this, and both of these were foetal monstrosities). What, then, is to be the position where the only alternatives are forceps or version (excluding a few rare cases suitable for pubiotomy or vaginal hysterotomy)?

Version at one time was much more employed than nowadays, for various reasons. Caesarean section is a safer operation than it was when version had its vogue, but in the cases under discussion both are dangerous. However, I think that in those cases where version is likely to meet with success without much danger to mother or child, Caesarean section is equally suitable, less damaging to the mother possibly, and certainly to the child. The result of dragging on a dying child with forceps will generally seal its fate, and certainly endanger the mother. At the same time, a successful result is brought about in a sufficient number of cases to make this, in my opinion, the method of choice, except in those cases where the disproportion is so great as to make it a certainty that even if the child can be delivered at all it will undoubtedly be dead, when I would prefer to take the risk of a lower uterine segment Caesarean section. I know there are others who will disagree with me and argue that where the chances of a living child being delivered by forceps are so trifling as to be almost negligible, it would be better to perforate at once. But where this combination of circumstances exists, the operation of craniotomy, grave at any time, is almost as likely to be succeeded by as serious a result to the mother as is Caesarean section.

I have already referred to the 25 cases in which forceps delivery was effected after manual rotation of an occipito-posterior presentation. In most of these cases the cause of slipping of the blades had been due to this posterior presentation alone. In a few cases the condition was complicated by pelvis contraction, and in others by an undilated cervix, but in the majority of cases a diagnosis had not been made of the posterior presentation, and usually after manual rotation, which was not always easy, the subsequent delivery became simplicity itself. Many of these cases would have spontaneously rotated forwards if enough time had been allowed, but a new complication of inertia had been induced by premature attempts to terminate the labour.

Delivery was effected in 38 cases (25 per cent.) by craniotomy, and to this might be added three cases of decapitation, where forceps had been applied to a transverse lie. In not all of these cases was it necessary to resort to craniotomy on account of disproportion between child and pelvis, as this would embrace nearly the whole number in the series in which the pelvis was contracted (46). This method of delivery, however, was chosen in many cases to bring about the delivery of an already dead child where, for example, the cervix was not sufficiently dilated to transmit the child, and expediency was urgent on account of the mother's condition.

In certain cases a reduction in the size of the child will cause less ultimate serious damage to the mother than by waiting for full dilatation of the cervix, or by a difficult high forceps delivery. I refer to cases where on account of risk of sepsis Caesarean section is precluded and the cervix is undilatable or where pelvic contraction is too great for a normal child to pass. In only nine cases was Caesarean section resorted to, four of these being by the lower segment route, four mothers died, four became septic, and two children died (two of the septic mothers were cases of lower segment incision). This is an indictment against this method of delivery after failed forceps, except in a very few cases.

Beyond a few immediate remarks, I would prefer to leave the question of prophylaxis until the general summing-up, particularly under the heading of ante-natal care. In eleven only of all the cases had ante-natal examination been made prior to the delivery; this number included two in which previous Caesarean sections had been performed for contracted pelvis, and one where

labour was obstructed by a large tumour, which only goes to show that where ante-natal examination has been made with a view to guidance in the subsequent delivery, the information obtained should be acted on. I will refer to this more fully again.

The End-Results

The immediate results in this class of case indicate an alarming mortality, both maternal and infantile. There was a tragic number of maternal deaths, an even larger number among infants, and such a morbidity rate as can hardly, I think, be presented by any other series of cases included under the heading of childbirth.

Twenty-one mothers died in the hospital (14 per cent.); two of these were undelivered, and three others must be added to this figure as having died in other institutions as an immediate result of the serious confinement. Of the 130 remaining cases, no fewer than 33 (25 per cent.) were morbid according to the B.M.A. standard, and 19 others were notifiable as pyrexial. If the fatal cases are added to the morbid and pyrexial we obtain a figure of 76, leaving only 78 which could be said in any way to pursue an uninterrupted puerperium. If from this 50 per cent. of the cases which apparently presented no grave termination immediately be deducted all those in which there was ill-health in mind and body in after years, we are left with a startlingly small figure to represent the women who had a confinement and suffered no detriment to their health as a result of it.

No fewer than 43 (29 per cent.) of all the infants were already dead before the patient was admitted to hospital. Seventy-nine of the infants were stillborn, and five died in the first few days (two were undelivered), thus leaving only 66—that is, 48 per cent.—who left the hospital alive.

I followed up the after-history of almost all of the mothers. It would be illuminating to know how many of the infants survived the first year of life, how many died subsequently, and how many show permanent impairment of function as a result of their stormy passage into this world. Not a few, where I was able to obtain information, still have gross lesions, such as depressed fractures and paralysis of the face or limbs, but if cerebral haemorrhages occur with such obvious evidence, there must also, I should imagine, be a group in which the damage occurred not in the pre-Rolandic area or communicating motor tracts, but in the silent areas of the brain and its association tracts.

From what has been said under immediate results, it follows that one has to be very guarded in the prognosis of either mother or child after the delivery has been executed, following a previous attempt in which forceps have been unsuccessful.

The puerperium was apt to be stormy, and often many weeks of ill-health were endured by the patient before discharge from hospital was possible. On returning home, large numbers of others required a long period of convalescence before being restored to anything like a semblance of their previous health, if, indeed, that were ever regained. Most patients suffered at least some damage—from varying degrees of ruptured perineum, vagina, or cervix, to the grossest examples of trauma involving the lower uterine segment, bladder, or rectum, leaving in their train vesico-vaginal and recto-vaginal fistulae, necessitating, later on, tedious, and often unsuccessful, operations.

I have followed out the end-results of all except fifteen of those patients who survived. I sent out a questionary to all who left hospital alive, and have received replies from the majority. Of these latter, I have examined practically every one with any complaint, and a large number of those who said they were well. Certain of those who said they had suffered in health showed on examination no pelvic lesion, but they were very few. Others, on the other hand, who said they were perfectly well, revealed pelvic disabilities, the extent of which makes it almost impossible to believe that life was not a burden. I have been struck forcibly during this investigation, years after patients have sustained serious damage, by the fortitude with which so many of them face, almost uncomplainingly, what would be to us crippling disabilities, apparently accepting the detriment to health as the normal consequence of child-bearing. In fact, I am sure that they must think that the curse of Eve does not refer to the labour alone, but is meant to continue throughout life.

In 54 cases of those followed up and traced the patient volunteered the information that she was perfectly well in health, and no ill effect was discovered. The remaining 58 all showed some local evidence of damage sustained at the confinement, and three have subsequently died of conditions not associated with the pregnancy. The injuries discovered were variable in character, but by far the largest group was made up of those women who had some degree of laceration of the cervix with ectropion of the mucous membrane, often associated with some vaginal prolapse and subinvolution of the uterus. This would appear to be the commonest sequel of disability. The laceration of the cervix, of course, is easy to understand, as also apparently the prolapse, but I am not perfectly certain that the prolapse is necessarily the result so much of stretching or tearing of the paracolpus, with its attachments, as a failure of the vagina to involute, due, possibly, to a septic state supervening on the delivery. Immediately after delivery the vagina is always lax, just as the uterus is always enlarged, and, to me, it would appear that any process deterring the involution of one organ will likewise leave the other in its subinvoluted condition. The vast majority of those cases in which vaginal prolapse was present had also some failure of involution persisting in the uterus, not only immediately or in the first few weeks after delivery, but months and years later.

Were we to carry out an investigation into the after-results of damage caused at a confinement, and particularly of sepsis, when many years have intervened, I am sure we should find that even a greater number of these women had suffered ill-health than would appear from an investigation into the after-results where the period of elapse had only been at most six years and shows 52 per cent. with some degree of ill-health. Possibly as a late result, those who had only slight injuries, or mild traces of infection immediately succeeding the labour, would evidence greater degrees of disability than those cases in which trauma or sepsis had been serious, because where serious injury has taken place the patients are usually looked after carefully during the puerperium and succeeding months until they have been restored to some semblance of good health. Gross tears of the vulva, vagina, and often of the cervix are repaired at once as a rule, and though many take a long time to heal, the patients remain under medical supervision and further operative procedures are adopted where necessary. Consider, for example, the woman with a vesico-vaginal fistula due to immediate damage or sloughing in the first few days. In those cases which do not heal spontaneously, as so many of them do, an operation is usually performed within a reasonable time, and, if unsuccessful, is repeated until the patient is cured of the disability. Most women with a complete rupture of the perineum have it sutured at the time, and if healing does not take place further operation is usually advised, and thus the patient is cured of her incontinence.

Likewise, the patient who has a very severe form of puerperal infection is treated continuously until well on

the road to recovery. Complications arising during such a stage of convalescence—for example, parametritis—are recognized and treated appropriately. It is regrettable that patients who sustain slight grades of trauma, such as small vaginal lacerations, trifling tears in the cervix, and minor degrees of sepsis, pass at times unrecognized into the large group which might be labelled "the invalid woman." It is almost as important to repair those small traumatic lesions as the grosser forms, since the latter will usually be treated before permanent ill-health and impairment of function have occurred. Many of the cases of sepsis, however, arise in those women who have only a minor degree of trauma, and often such sepsis would have been averted had the damage been recognized and repaired. A large group of women sustain at confinement a minor degree of sepsis which is overlooked. It is difficult at times to know how this can be obviated. The patient after a difficult confinement, such as occurs in almost all these cases of unsuccessful forceps, will naturally be more ill than her more fortunate sister who had a normal confinement, but beyond the fact that she may be kept in bed rather longer than usual, often nothing further is done to aid her recovery. The slight sepsis about which I am now talking occurs in those cases in which the temperature during the puerperium shows but little rise above normal. The attendant on a case of complicated labour perhaps sees the patient rather more frequently than usual during the first few days, is gratified to find that no serious sepsis has occurred, and the morning temperature which is taken in these cases will often show no rise above 98.4°, so that after the first few days daily records are no longer kept. It should be borne in mind that the temperature should be subnormal during the early days of the puerperium. These very patients, who only have an occasional rise in the evening temperature (pointing to a certain amount of sepsis, such as decidual endometritis), often fall into the category of those who fail to involute the organs normally and give no indication of this puerperal septic state until years later, when the subinvoluted organs cause trouble and stimulate a search for the origin of it.

One almost constant sign, pointing to a failure of involution of the uterus, is a persistence of the lochia beyond the normal period of ten days to a fortnight. In fact, so common is this that I am tempted to think that most women, even among the educated classes, are under the impression that loss should go on from six to eight weeks after delivery. We all know that this is not so if the uterus is involuting normally. The lochia, which may have diminished or ceased by the tenth day, are not commented on by the patient, who, beyond being a little pale and wan, as she expects, is thought to be recovering from the stormy labour and gets up. The same day, or the next day, loss again appears, and often goes on for days and weeks. This, I maintain, is the most constant sign of failure of involution of the uterus, and concurrently there is failure of involution of the supports of the uterus and vagina. One can see, then, how easy it is for vaginal prolapse and retroversion of the uterus to occur, and in a not inconsiderable number of the 60 to 70 patients whom I have examined from one to six years after the confinement in the series under consideration these conditions are present. A tenth-day examination of the patient vaginally, or one made before the patient is entirely discharged, would often have revealed this state of affairs, which could have been often remedied with appropriate treatment, though it hardly comes within the scope of this paper to discuss what that should be.

Other evidence of pelvic infection which I have found beyond this chronic subinvolution was such conditions as salpingo-oöphoritis, retroversion, and impaired mobility of the uterus, due to parametritis or pelvic peritonitis. I would like to say here that pelvic parametritis is a far commoner condition than is generally supposed. We all recognize the large effusion which spreads into the iliac fossa and on the abdominal wall like a "tea cake," but minor grades of the condition are much more frequently met with than I, at any rate, at one time imagined. The end-result of such cases of parametritis where suppuration does not generally occur, is scar tissue formation, which leads to fixity of the pelvic organs and distortion of the broad ligaments, with a blood circulation in the pelvis considerably impaired. Over and over again have I seen the train of ill-health associated with pelvic congestion and varicocele of the broad ligament follow scarring in the broad ligament, due to imperfect resolution of a pelvic parametritis arising in a case of sepsis, unrecognized because mild.

To proceed now with the sequels induced by this often too hasty attempt to precipitate what Nature meant to be a physiological process, we must consider the effect on future pregnancies and potentiality of child-bearing. Of those women in the 130 cases (154, less those who have died) whose after-histories I have followed, 37 have become subsequently pregnant. This figure includes four who are now pregnant, and three whose pregnancies terminated in abortion, while, for the rest, one or two have become pregnant on more than one occasion. Forty-one living infants have been born to them. When we take into account the fact that 82—that is, more than half the cases reviewed—were primigravidae when their serious confinement occurred, it follows that a considerable degree of sterility was the direct result of the labour.

PROPHYLAXIS

I have now recounted the etiology, treatment, and end-results of this series of cases of failed forceps, and, before closing, I would like to say a few words on how such a state of affairs can at least be improved, if not remedied. In the section devoted to treatment, most of what I said referred to the treatment adopted where the forceps had been unsuccessfully applied in the first place and the issue often determined before further treatment was instituted. I have deferred the discussion on prophylaxis, as the two factors involved were so different; in one case treatment had already begun and had to be proceeded with, while the procedure adopted would have frequently been so different in the other case, in which forceps application must have inevitably failed, and would therefore not have been resorted to had prophylactic measures been taken.

Ante-Natal Care

Ante-natal supervision undoubtedly would go far to prevent many of these cases of failed forceps, but certainly not all. So much has recently been said and written about the Utopia we are going to reach in midwifery by the establishment of a sufficient number of ante-natal clinics that the general public is becoming lulled into thinking that because a woman has attended an ante-natal clinic she is as good as delivered. In the first place, I would like to utter a mild word of warning against the use of the word "clinic."

The person who should carry out the ante-natal supervision of the pregnant woman is undoubtedly he who is going to see her through the confinement to the end of the puerperium. If the idea that a patient must attend a special clinic spreads too far, I feel sure that large numbers of pregnant women will not attend at all for ante-natal examinations, as they naturally resent what seems to them mass treatment, and many a patient who would put herself during pregnancy under the care of her

own medical attendant will be precluded from any supervision at all. I cannot too strongly urge that every doctor should fit himself for being an ante-natal clinician.

Too often, also, these clinics are supervised by public health officials with very little clinical experience, or by persons who never conduct a confinement at any time. Do not think that I am depreciating too harshly the good work done by many of these centres, as undoubtedly they have their place in the welfare of the community, but I consider they should be more in the nature of consulting clinics to which any medical man can refer his cases after he has made a preliminary ante-natal examination which he wishes amplified, or where he wishes for advice in the conduct of the labour. Each of these centres should have adequate facilities for the confinement of those women whose housing conditions are unsuitable or where the medical aspect of the case demands suitable convenience for major operations, and patients should be under the care or direction of the same person from start to finish.

If adequate ante-natal supervision was provided, I believe that a large number of these cases of failed forceps would disappear. But the keynote of success is the word "adequate." I have just said who, in my opinion, should exercise that supervision—the medical attendant who is to conduct the labour, guided, if need be, by advice from a consulting centre. Unless, however, the information gained at the preliminary examinations is acted on, then no reduction in the number of cases of failed forceps can be expected by ante-natal supervision. With this proviso, I think all will agree that most of those cases of failure could have been prevented where the etiological factors were dystocia due to disproportion, or tumours obstructing labour, or faulty presentations.

There remains, however, the group where failure to effect delivery was not the result of any condition present at the beginning of labour, and could not, therefore, have been prevented by ante-natal care—those 47 cases, for example, where an undilated cervix was responsible for the non-success. That many of these misfortunes should not have happened must be conceded. In some, the state of dilatation of the cervix had not been recognized, and possibly better teaching facilities will get over that to some extent—for example, when a student's three months' obstetrical practice is replaced by a six months' course.

In others of this group the fault often lay in a humanitarian desire on the part of the obstetrician to get a painful physiological process over as rapidly as possible. I am not saying this in a spirit of criticism, as I know how much greater are the difficulties under which the practitioner works than the consultant, and the consultant, too, is unduly influenced at times by this consideration to adopt measures which his considered judgement tells him are unwise. I hardly see how occasional mistakes of judgement can be prevented in this way, unless all patients are removed from the sphere of family influence, and better anodynes for use in labour are discovered.

I close with words of advice from the great Sydenham, about whom it was said that, when in doubt, he consulted his own reputation and the patient's safety by doing nothing, and it is certain that of all the aids we possess in the safe delivery of woman in labour, none is of greater value than the practice of the art of patience.

THE TREATMENT OF SECONDARY HAEMORRHAGE AFTER SUPRAPUBIC PROSTATECTOMY

BY

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Primary haemorrhage after prostatectomy can be easily and safely controlled by the various methods in vogue for arresting haemorrhage during and after this operation. The operation of Thomson-Walker, in which bleeding vessels are secured by ligature and oozing stopped by packing the prostatic cavity, and, as an alternative, the use of the haemostatic bag, are certain preventives. Secondary haemorrhage, however, is not so easily dealt with as primary, on account of the narrowing of the suprapubic wound, which takes place rapidly after the drainage tube has been removed. Those who have attempted packing the cavity in these circumstances will agree with me that it is a very difficult procedure involving a great deal of pain to the patient and trouble for the surgeon; besides, it may fail to accomplish its object unless an anaesthetic is administered and the suprapubic wound widely opened up.

For some time past I have been using a haemostatic rubber bag (see Fig. 5) which differs from the Pilcher bag in being spherical instead of pear-shaped. One objection to Pilcher's bag is that it enters the membranous urethra and stretches the compressor urethrae muscle, causing temporary or permanent incontinence. The improved bag, being spherical in shape, can be made to fit accurately into the prostatic cavity, and cannot enter the membranous urethra. It was first made for me by Messrs. Mayer and Phelps, and has stood the test of many trials in the prevention and treatment of primary and secondary haemorrhage.

I need not enter now into the preventive treatment of secondary haemorrhage after prostatectomy, which is due to sepsis and sloughing, and may take place from any of the raw surfaces left after operation, particularly from the margins of the mucous membrane at the entrance to the prostatic cavity and from the cavity itself. Rigorous aseptic technique during and after operation will, no doubt, lessen its incidence, but a wound communicating with the surface easily becomes contaminated, and an aseptic course is impossible. Efforts will, of course, be made to render the raw surfaces as clean as possible, but, notwithstanding all precautions, secondary haemorrhage will occur in a certain proportion of cases. During the years I have been in practice I have had cases occurring from time to time, and in the last few months I have had two: one commencing on the thirteenth day and one on the fifteenth. Both patients were poor risks, and quite unsuitable for any prolonged procedure, either at the primary operation or subsequently. In both the haemorrhage was immediately arrested with very little discomfort by the method I am about to describe, and both have made good recoveries.

It is better to anticipate trouble in these cases by inserting the bag at the very first appearance of haemorrhage, before the bladder has had time to fill with clot and before much blood, that can ill be spared, has been lost. There are generally several prodromal attacks of slight haemorrhage before the ultimate burst appears. It is well to be forearmed.

METHOD OF ARRESTING SECONDARY HAEMORRHAGE

A catheter is first passed into the bladder—a soft rubber by preference—but if this does not enter easily a [illegible] elastic may be used. Through the suprapubic [illegible]

light forceps, such as Desjardin's gall-stone forceps, is then introduced, and the catheter gently felt for. As a rule the latter can be easily seized by the forceps and brought out of the wound (see Fig. 1). It may be necessary to introduce the finger to locate the catheter, but this should be avoided, if possible, as it causes a good deal of pain. The urethral tube of the haemostatic bag is then pushed over the end of the catheter and secured by tying round both a piece of linen thread or any available substitute (see Fig. 2). The tube and bag are then smeared thickly with melted sterile vaseline to facilitate withdrawal of the urethral tube and to prevent the bag from becoming unduly embedded. The catheter is then withdrawn through the urethra, bringing the bag, which is thin and collapsible, into position (see Fig. 3). The bag is then distended by filling it with water. When distended it bulges over the edges of the prostatic cavity and makes contact with the walls of the latter, so that pressure can be exerted on both by light traction at the urethral end (see Fig. 4). This pressure is kept up by attaching a weight to the tube emerging from the urethra by a piece of cord, which can be brought over the foot of the bed. The bag must not be over-distended, otherwise it will not fit snugly into the prostatic cavity, but press on the base of the bladder, and may even, if large, exert injurious pressure on the ureteric orifices. The bag is kept in position for two or three days, but is not finally removed until it is judged that all risk of haemorrhage has ceased. It may be allowed to collapse and remain in the bladder as a precautionary measure. Meanwhile, the urethra is irrigated by the side of the tube now acting as a tied-in catheter, using silver nitrate, potassium permanganate, or other suitable solution. This minimizes the risk of urethritis from the presence of a foreign body.

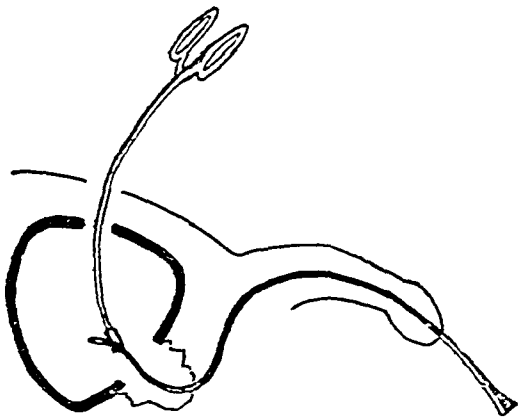


FIG. 1.—Catheter introduced into bladder and grasped by forceps.

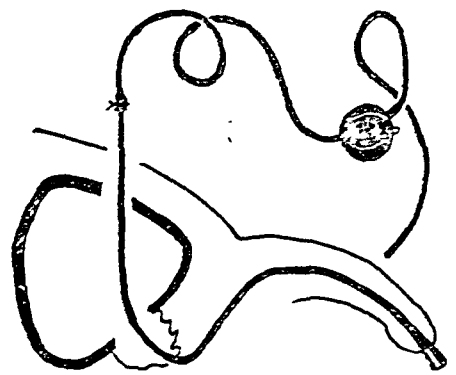


FIG. 2.—The urethral tube of the haemostatic bag is attached to the catheter.

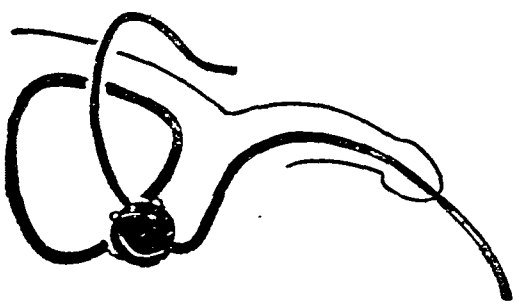


FIG. 3.—The bag in position before inflation.

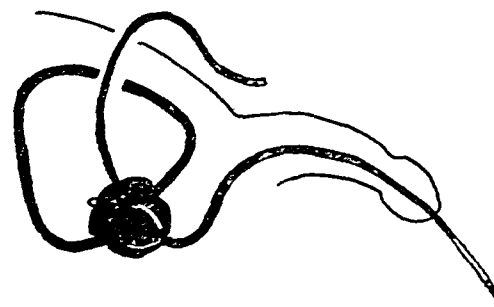


FIG. 4.—On distending the bag with water, pressure is exerted on the cavity and its margins.

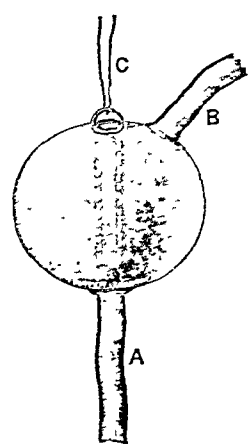


FIG. 5.—Haemostatic bag.

This precaution I always adopt when using the in-dwelling catheter. When it has accomplished its purpose, the bag may be removed easily through the suprapubic wound. To prevent infecting the bladder by drawing the exposed part of the urethral tube, which may be contaminated, back through the urethra, the bag may be cut off close to the meatus before removal.

COMMENTARY

This method of arresting secondary haemorrhage is comparatively painless, is simple and efficient, and I have yet to see any deleterious effect. The same method may be used for reactionary haemorrhage. The haemostatic bag, being globular in shape, fits snugly into the prostatic cavity, and is superior to the pear-shaped Pilcher bag commonly in use. The bag is made in three sizes. For a very large prostatic cavity it might be advisable to have outsizes made. With this apparatus in his possession the surgeon need have no anxiety about his ability easily and rapidly to arrest haemorrhage after prostatectomy, either primary or secondary, and, from my own experience, I am satisfied that he need not anticipate any untoward after-effects.

I am indebted to my former house-surgeon, Dr. R. W. M. Strain, for the illustrations, and to Messrs. Maw and Pledge for the blocks of Figs. 3 and 5.

CONSTIPATION AND RIGHT-SIDED PTOSIS *

BY

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There are few subjects on which medical views have changed more radically during the present century than on constipation. The haggard faces and emaciated frames of the victims of Arbuthnot Lane's "kinks" are now recognized as the stigmata of chronic cascara poisoning, and we spend our days combating the precepts of our medical forebears, and in persuading people to leave their harassed bowels alone. Among those who have contributed to the establishment of the modern view two names stand out, Hurst and Alvarez.

Hurst was the first to describe the gastro-colic reflex, by the operation of which the entry of food into the stomach is followed by mass peristalsis in the colon. This peristalsis, or mass movement, as it is better called, is a remarkable phenomenon of the large intestine, unlike any of the movements of other parts of the alimentary canal. It occurs only three or four times a day, and results in the sudden transference of large blocks of colon contents from one part of the colon to the next, or even from one end of the colon to the other. First observed radioscopically by Holznecht and later studied by Hurst and by Barclay, its exact mechanism is still not clearly understood.

It has never been observed by the naked eye in man, but Alvarez, having filled the colon of a cat with a solution of soap, and then ligatured the rectum, saw "the whole colon shorten and straighten." The manner of entry of the small intestine into the large, and the presence of the ileo-colic valve and sphincter, confer a closed end on the proximal portion of the colon. When the colon shortens by the action of its longitudinal fibres, the blind proximal end, acting like the piston of a syringe, propels part of the contents of the ascending colon round the hepatic flexure into the transverse colon. On the subsequent relaxation, the hepatic flexure breaks the column of faeces and prevents the displaced portion of it from slipping back. When mass movement occurs in the distal half of the colon the natural result is defaecation, but the capacious rectums of dyschezic individuals receive the addition to their contents without response.

Hurst's second great contribution to our knowledge of constipation was his division of the condition into dyschezia and colonic stasis.

DYSCHEZIA

Dyschezia is simply the imperfect functioning of the rectal reflex. It is not so much a disease as an adaptation to civilized conditions of life. Even domestic animals suffer from it; the process of house-training of a dog is merely the painstaking abolition of its rectal reflex. Hurst found that the rectal reflex is excited by sudden increase of pressure in the rectum, normally produced by the entry of faecal material from the pelvic colon. By inserting a balloon into the rectum, and inflating it slightly, he was able to produce a brisk rectal reflex. If the balloon was allowed to remain inflated, it ceased in a short while to excite the reflex, and a further inflation was required to excite it anew. By successive stages of inflation he could induce the rectum to tolerate a pressure enormously greater than that which originally excited the reflex. This is exactly what happens in dyschezia. The rectum becomes tolerant, and finally acts as a collecting tank, much as the bladder does for the kidneys. Unfortunately the evacuation of the rectum is not, in the present state of our evolution, under voluntary control, so the parallel breaks down.

Probably all civilized humans, those who live in cities at any rate, have some degree of dyschezia. It would be highly inconvenient otherwise. It is quite compatible with perfect health; at the worst it is responsible only for such troubles as anal fissure and haemorrhoids. Absorption of toxic material does not occur from the rectum, and in any case the faeces by the time they reach the rectum are comparatively detoxicated. The literature of constipation abounds with instances of people whose bowels did not move for weeks and even months at a time, and yet whose health did not materially suffer.

The vast majority of patients who come complaining of constipation are suffering from dyschezia. When a purgative is given to a dyschezic, all the intestinal movements are accelerated, and the dormant rectal reflex is at length excited by rapid addition to the rectal contents. In other words, the whole complex business of intestinal digestion and absorption is disordered in order to fill the rectum to the threshold of stimulation. The terminal portion of the small intestine contains highly toxic material. Nearly all the valuable products of digestion have been absorbed and the residue abounds in chemical and bacterial poisons. This toxic fluid is normally dealt with in the caecum and ascending colon, where it is detoxicated by dehydration.

This reabsorption of water is also a valuable element in the fluid economy of the body. Purgatives interfere with this process, and insufficiently dehydrated material is carried through parts of the colon which have not the caecum's power of selective absorption. Toxins may be absorbed beyond the power of the liver to detoxicate; foul tongue, headache, and disordered digestion may result. The most logical method of dealing with dyschezia is the periodical simple enema, but it is not very reasonable to train the rectum to act as a tank and then knock it about for so doing.

COLONIC STASIS

Various types of stasis in the colon have been described, but most of them are very rare. Barclay, from long experience of radiology, declared that, apart from mechanical obstructions, there are two, and only two, sites where stasis occurs—the caecum and the rectum. Caecal stasis deserves serious consideration. It is not nearly so common as dyschezia, but is nevertheless fairly prevalent. How can it be diagnosed? Hurst studied the rate of passage of the intestinal contents in normal individuals, and laid down certain criteria. One of these was that caecal stasis was probable, if twenty-four hours after a barium meal most of the barium was still in the caecum. He also observed that the caecum in a normal individual was empty in the morning. Chyme only begins to pass the ileo-caecal valve three or four hours after the morning meal. If a patient at the morning surgery has a distended caecum, caecal stasis can be diagnosed. During the years I examined in this way every panel patient who came to me complaining of constipation or abdominal symptoms of any kind. I found 23 men and 72 women suffering from caecal stasis; this amounted to 4.2 per cent. of the men and 14.1 per cent. of the women on my panel.

Caecal stasis, then, is fairly prevalent, and is three times more common in women than in men. There is reason to believe that it is much more common even than

* Read before the Ashton-under-Lyne Division of the British Medical Association, March, 1931.

these figures would indicate, for they represent only those with caecal stasis and some abdominal complaint. It is noteworthy that persons with caecal stasis do not complain of constipation unless they have dyschezia as well. They will aver that their bowels move normally, though the matutinal examination reveals a boggy distended caecum.

Dyschezia is relatively harmless; can the same be said of caecal stasis? There are not wanting physicians of eminence who hold that view. Geoffrey Evans, in a recent paper, quoted the experiments of Alvarez, and asserted that the normal condition of the bowel is to be full and not empty. Alvarez administered barium to a number of normal individuals, and recovered it quantitatively from their faeces. He found that only 50 per cent. was recoverable in the first three days, and that the excretion of the remainder occupied several more days. The same results were obtained when glass beads were used instead of barium. It appears that the complete passage of the intestinal canal is a more protracted process than was formerly believed. Nevertheless, other abdominal conditions are so frequently found in association with caecal stasis that some causal relation seems an irresistible conclusion. Kantor, Schector, and Marks, three American radiologists, found on examining their records that caecal stasis in a normally disposed caecum was not usually associated with symptoms of marked clinical importance, but, when present in a low caecum, it was much more frequently productive of symptoms. I approached the subject the other way round, but arrived at the same result, for I found that in thirty-seven persons who clinically had caecal stasis and abdominal symptoms, every one when examined radiographically or subjected to operation proved to have an abnormally low caecum.

The question of the position of the caecum and ascending colon has been gradually assuming importance during the past quarter of a century, since Wilms in 1908 pointed out that removal of the appendix failed to cure many cases of right-sided pain, and that these cases all appeared to have undue mobility of the caecum. Many writers have since given the subject attention, but the outstanding British contributions have been from Waugh and Carslaw. Waugh in 1920 reported on a series of 180 cases of operation for the relief of right-sided ptosis, and Carslaw in 1928 described a series of 248 cases treated by Waugh's method, and discussed the whole subject very thoroughly.

The colon in quadrupedal animals is suspended in its whole length from the dorsal abdominal parietes by a mesocolon. Undue tension on this mesocolon is prevented by the support of the anterior abdominal wall. Man, in assuming the erect attitude, incurred certain disabilities unknown in the animal world, such as varicose veins, haemorrhoids, and femoral and inguinal hernia. The intestines also were assailed by the pull of gravity in a direction at right angles to that which they were designed to face, and it is not surprising that certain modifications in peritoneal arrangements have appeared in the course of the further evolution of the human race. That must surely be the explanation of the fixation of the human colon to the parietes at various points. The process can be followed in the human embryo from the wholly free to the partially fixed condition.

Just as the rotation of the colon is sometimes incomplete, so that the caecum lies in the mid-line or even to the left, in the same way (but much more frequently) the fixation of the colon falls short of the usual adult condition. So far as the descending colon is concerned, its fixation, by fusion of its mesentery with the posterior parietal peritoneum, is practically constant. But the ascending colon is only securely fixed to the parietes in 75 per cent. of cases; mobility of the right colon is therefore a congenital condition. Treves found it in 26 per cent. of bodies examined, and Pirie in 20 per cent. of the bodies of children. Recently Larrimore in America has made radiological studies of babies 1 day old, and found that the incidence of mobility of the right colon was identical with that of any other age group. It would appear, therefore, that man's adaptation to the erect attitude is not yet complete.

Controversy has raged on the question as to whether the possession of a ptosed right colon is a disadvantage. Hurst declared that a ptosed right colon is found as frequently in healthy people, with perfect digestion and no constipation, as in the constipated. It is certain that numbers of persons with mobile right colons make no complaint of abdominal symptoms. There must be 325 prolapsed colons on my panel. During three years only 95 persons made complaint which led to the diagnosis of caecal stasis, and only 37 of these cases were sufficiently serious to merit *x*-ray examination or operation. The striking fact is, and this is my contribution to the study of this question, that all those 37 persons were found on investigation to have prolapse of the caecum and ascending colon. Out of 975 individuals with a normally fixed colon during three years no case arose requiring operation for an abdominal complaint; out of 325 with prolapsed colons in the same period there were 37 whose pains and disabilities, I will not say "demanded" operation, but were sufficiently severe to lead them to consent to it.

A surgical colleague recently declared that every woman had a mobile ascending colon; he meant, of course, that every female abdomen he opened showed this condition, and he was right. It is the custom now, when operating for duodenal ulcer or gall-stones, to remove the appendix. How often does a separate incision have to be made? Only once have I had to make it. If the appendix can be removed through an incision, the lower limit of which is at about the level of the umbilicus, there must be some abnormal mobility of the caecum. Carslaw has pointed out the steps by which the drag of a loaded colon lacking support from the parietes produces effects in turn on the right kidney, the gall-bladder, and the duodenum, with all of which it is closely connected. Both Waugh and Carslaw described types of cases with symptoms simulating those of other abdominal diseases, which at operation were found to have nothing but right-sided ptosis. The failure of many abdominal operations to relieve the symptoms they were intended to relieve has been due to failure to recognize this fact.

Confusion is particularly liable to arise with appendicitis. In a series of 21 cases of right-sided ptosis I had operated on three years ago, five had had the appendix previously removed without relief, and in five others a definitely pathological appendix was found at my operation. The only thing that can be said with certainty in this connexion is that right-sided ptosis is frequently associated with appendicitis, and that, when it is, failure to fix the colon may lead to a relative failure of the operation to relieve the condition for which it was performed.

If a prolapsed right colon is so disadvantageous, how is it that only 10 per cent. of persons so afflicted complain of symptoms? It has to be remembered that about a third of each twenty-four hours is spent in a recumbent position, so that the lack of support for the colon is only operating for sixteen hours out of the twenty-four. Further, in muscular individuals, with firm abdominal walls and high intra-abdominal pressure, the abdominal viscera are packed like prunes in a bottle with little or no tendency to change their relative positions. Those who do complain of symptoms are typically females with certain physical charac-

teristics which constitute the well-known "faulty development of the infantile type." They are often undersized and thin, with poorly developed mammae, a long thorax, and an acute subcostal angle. Another fairly common type is the maternal—women whose abdominal walls have never recovered from the stretching of pregnancy.

It is the conjunction of caecal stasis with inadequate support for the caecum which apparently determines the onset of symptoms. The sympathetic nerve supply to the bowel is carried to it in the walls of the blood vessels. The sympathetic, it will be remembered, inhibits bowel movements and closes the ileo-colic sphincter. The theory of Tyrrell Gray and Carslaw is that, when the loaded caecum descends into the pelvis, traction is made on the vascular pedicle, which is the most resistant constituent of the mesocolon. The sympathetic nerves are stimulated by the traction, and the bowel movements are inhibited; stasis increases, the drag and the stimulation are augmented, and so the process continues in a vicious circle. In some of my own cases I have seen the bundle of vessels which run to the ileo-caecal angle standing out like a rope, and obviously supporting the weight of the colon.

The operation of colopexy, as devised by Waugh, seeks to imitate nature, and to confer on the subject of right-sided ptosis the same degree of fixation of the colon as his more fortunate fellow humans have at birth. After the appendix has been removed, an incision is made into the peritoneum in the angle between the ascending colon and the flank. A pocket is made by stripping up the peritoneum from the flank; the colon is rolled into this, and made secure by sewing the peritoneal flap over it. The bowel is thus in contact over a broad area with retroperitoneal tissues, and the adhesions which it there forms are the important element in its fixation. There is no technical difficulty in the operation, provided that a sufficient incision is made. I always use a paramedian incision to avoid weakening the abdominal wall, though the wide retraction entailed is responsible in some cases for a fair amount of after-pain. I have performed the operation fifty-three times, and have had no untoward complications and no deaths.

The results in some cases have been dramatic. In one case the most careful preparation in the ward had failed to remove all solid faeces from the caecum. The day after the operation, for the first time that this patient could remember, her bowels moved naturally, and have continued to move without purgatives ever since. About thirty of my cases have been from my own panel, and the happy result has been that many who were formerly most troublesome cases now make infrequent appearances.

It must not be forgotten that dyschezia is as likely to be present after the operation as before. Caecal stasis also may occur, but it causes no pain. Some of my cases radiographed after the operation show only slight elevation of the colon compared with the previous condition, and moderate caecal stasis; yet they have been relieved of their symptoms. This observation harmonizes with the theory of Tyrrell Gray and Carslaw, for if it is the traction on the mesocolon which causes the pain and the stasis, then a very small lift and fixation is sufficient to relieve the trouble. If a man is hanging by the neck, a lift of an inch or so will save his life.

As the result of the study I have given to this subject I have formed the opinion which I have tried to justify in this short paper that the vast majority of pathological abdominal conditions occur in that quarter of the population who have congenitally ill-supported colons. A timely colopexy would relieve their early symptoms, and save them subsequent visits to the operating theatre for much more serious operations.

THE SOURCE OF INFECTION IN A MINOR OUTBREAK OF PUERPERAL FEVER

BY

C. G. PAINE, M.B., B.S.LOND.

The two cases of puerperal pyrexia to be described occurred at close intervals of time at a nursing home in a town. The home had been until then singularly free from sepsis. Both patients were infected with haemolytic streptococci and, in addition to the rise in temperature, presented one unusual feature in common—namely, multiple suppurative arthritis. It was thought possible that the two organisms might be identical, and that there was present a common source of infection responsible for both cases.

King[1] showed that there is a well-marked correlation between the presence of haemolytic streptococci in the upper respiratory tracts of medical attendants and the incidence of cases of puerperal fever. Subsequently, Smith,[2] by means of agglutinin-absorption experiments, showed that, out of eighteen cases of haemolytic streptococcal infection during the puerperium, the source of infection could be traced in eleven to the throat or nose of the doctor, student, or nurse in attendance.

CASE I

Mrs. X was admitted at 3.30 a.m. on June 18th, 1931. Vaginal examination was made by Sister A on admission and again at 6 p.m. on the same day. At 7 p.m. a vaginal examination was performed by Dr. B; the perineum, etc., was prepared by Sister A and Nurse C, and a low forceps delivery was made by Dr. B. During delivery the perineum was lacerated. The following evening the patient had a rigor, temperature rising to 104° F. on June 19th. Daily rigors followed; suppurative arthritis developed in the right shoulder and wrist, and in the right knee. The patient ran an intermittent temperature, and died at the end of three weeks.

No face masks were worn by any of the attendants either before or after delivery.

Bacteriological Findings.—Throat, negative for haemolytic streptococci; urine, sterile; cervix, coliforms and haemolytic streptococci; perineum, negative for haemolytic streptococci; blood, shoulder, and knee, positive for haemolytic streptococci.

CASE II

Mrs. Y was admitted at 3 a.m. on June 21st, 1931, and spontaneous normal delivery took place at 4 a.m. No vaginal examinations were made before delivery. Sister A only was present at delivery, and she wore a mask. Nurse C relieved Sister A at 6 a.m., and subsequently did all the nursing of this patient until June 27th, when Sister A attended her. Rigors commenced twenty-four hours after delivery, and occurred daily, with high temperature between. Within a week the patient had developed suppurative arthritis in the left sterno-clavicular joint and in the right wrist-joint. After two weeks her condition slowly improved, and the temperature settled after about eight weeks.

No masks were worn by Nurse C up to the time the patient had developed a temperature.

Bacteriological Examinations.—Haemolytic streptococci found in throat, vagina, and blood; urine, sterile.

HISTORY OF CONTACTS

Dr. B delivered Mrs. X only. During the week before and the week after delivery of Mrs. X Nurse C had delivered, had been present at the delivery of, or had nursed during the puerperium, five other women. At Mrs. X's delivery masks were worn. All five had uneventful puerperia. Sister A also dealt with three of these and wore a mask while attending each. They also had uneventful puerperia.

Bacteriological Findings from Throats of Possible Carriers.—Sister A (present at both deliveries), positive for haemolytic streptococci; Dr B (present in Case I), negative for haemolytic streptococci; Nurse C (assisted at both cases), positive for haemolytic streptococci; maid (in attendance on both Sister A and Nurse C), positive for haemolytic streptococci (This maid was suffering from acute tonsillitis.)

Where available, two separate colonies of haemolytic streptococci were picked off the culture plates to initiate strains for investigation. The strains for convenience were labelled as follows:

Strain A	Nurse C	Throat
Strain B	Nurse C	Throat
Strain C	Sister A	Throat
Strain D	Sister A	Throat
Strain E	Mrs. Y	Throat
Strain F	Mrs. Y	Vagina
Strain G	Mrs. Y	Vagina
Strain H	Mr. Y	Blood
Strain I	Mrs. X	Blood
Strain K	Maid	Throat
Strain L	Maid	Tonsil

Technique

With a view to identifying the strains from possible carriers with those present in the blood of the patients agglutinin absorption experiments were performed. The technique adopted was that used by Smith.[2] Agglutinating serums were prepared by immunizing rabbits with killed emulsions of strains H and I. The titres of the serums prepared were 1 in 2,000 for the homologous strains. For the agglutinin absorption tests 0·02 c.cm. of serum was absorbed with the deposit obtained after growing each strain in 50 c.cm. of 10 per cent. ox-serum broth for forty-eight hours at 37° C. These cultures were enumerated by counting against red blood cells, and contained approximately 500 million cocci per c.cm.—that is, 0·02 c.cm. of serum was absorbed by 25,000 million cocci. The deposits in each case were made up to 0·18 c.cm. bulk, so that the final dilution of the serum in absorption tests was 1 in 10. All absorption tests were first incubated in water bath at 37° C. for four hours and then left overnight at room temperature. In order to obtain stable suspensions for agglutination with the homologous serum the strain was repeatedly subcultured in 50 c.cm. of beef-heart broth (*p*H 7·4) for twenty-four hours. The culture was then centrifuged for a very short period, and, if the broth was sufficiently turbid, then one volume of emulsion was added to one volume of normal saline in a Dreyer's tube and incubated in water bath for two hours at 55° C. If no spontaneous agglutination occurred the emulsion was then tested against the homologous antiserum to determine its sensitivity. From seven to nine subcultures were necessary to obtain strains in a suitable condition for the tests. All agglutination tests were incubated in water bath at 55° C. for two hours before being read.

Table of Agglutination of Strain H by Serum H following Absorption by Various Strains

Absorbing Strain	Serum Dilutions											Titre
	1/10	1/50	1/100	1/200	1/400	1/800	1/1,600	1/3,200	1/6,400	1/12,800	Control	
A	−	−	−	−	−	−	−	−	−	−	−	0
B	−	−	−	−	−	−	−	−	−	−	−	0
C	+	+	+	+	−	−	+	+	+	−	−	1,600
D	+	+	−	+	+	−	+	+	−	−	−	1,280
E	+	+	+	+	+	−	+	+	−	−	−	1,280
F	−	−	−	−	−	−	−	−	−	−	−	0
G	+	−	−	−	−	−	−	−	−	−	−	40
H	−	−	−	−	−	−	−	−	−	−	−	0
I	−	−	−	−	−	−	−	−	−	−	−	0
K	+	+	+	+	−	+	+	−	−	−	−	800
L	+	+	+	+	+	−	+	+	+	−	−	1,600

Table of Agglutination of Strain I by Serum I following Absorption by Various Strains

Absorbing Strain	Serum Dilutions											Titre
	1/10	1/50	1/100	1/200	1/400	1/800	1/1,600	1/3,200	1/6,400	1/12,800	Control	
A	−	−	−	−	−	−	−	−	−	−	−	0
B	−	−	−	−	−	−	−	−	−	−	−	0
C	+	+	+	+	+	+	−	+	−	+	−	1,600
D	+	−	−	−	−	−	−	−	+	−	−	1,280
E	+	+	−	−	+	+	−	−	−	−	−	640
F	−	−	−	−	−	−	−	−	−	−	−	0
G	−	−	−	−	−	−	−	−	−	−	−	0
H	−	−	−	−	−	−	−	−	−	−	−	0
I	−	−	−	−	−	−	−	−	−	−	−	0
K	+	−	+	+	+	+	+	+	−	−	−	1,280
L	+	+	−	+	+	−	+	−	+	−	−	1,600

Technique (continued)

Table of Agglutination of Strain I by Serum I following Absorption by Various Strains

Absorbing Strain	Serum Dilutions											Titre
	1/10	1/50	1/100	1/200	1/400	1/800	1/1,600	1/3,200	1/6,400	1/12,800	Control	
A	−	−	−	−	−	−	−	−	−	−	−	0
B	−	−	−	−	−	−	−	−	−	−	−	0
C	+	+	+	+	+	+	−	+	−	+	−	1,600
D	+	−	−	−	−	−	−	−	+	−	−	1,280
E	+	+	−	−	+	+	−	−	−	−	−	640
F	−	−	−	−	−	−	−	−	−	−	−	0
G	−	−	−	−	−	−	−	−	−	−	−	0
H	−	−	−	−	−	−	−	−	−	−	−	0
I	−	−	−	−	−	−	−	−	−	−	−	0
K	+	−	+	+	+	+	+	+	−	−	−	1,280
L	+	+	−	+	+	−	+	−	+	−	−	1,600

Commentary

From the history it was possible that either Sister A or Nurse C could have been the carrier. The maid, who was suffering from tonsillitis and from whose throat haemolytic streptococci were recovered, came into daily contact with both Sister A and Nurse C, but not with the patients. It was possible that the maid may have infected either Sister A or Nurse C, one of whom subsequently could have carried the infection to the patient.

From the above tables of agglutination-absorption tests it appears that strains A, B, F, G, and I have absorbed all the agglutinins present in serum H. Similarly, strains A, B, F, G, and H have absorbed all the agglutinins present in serum I. Thus, strains A, B, F, G, H, and I are serologically identical. If the source of these strains is recollected it will be seen that the organisms recovered from the throat of Nurse C are identical with those present in the blood of both patients and in the vagina of one of them, Mrs. Y. The results, therefore, of these experiments show that Nurse C was the carrier responsible for the infection of both patients.

Summary

1. Cases of puerperal pyrexia have been studied with a view to determining the source of infection.

2. Bacteriological examination of the secretions of the patients and the throats of possible carriers has been made, several strains of haemolytic streptococci being recovered.

3. Possible sources of infection have been discussed, and evidence of the source of infection by means of agglutinin absorption tests has been deduced.

4. In both cases it has been shown that the infecting organism was carried in the throat of a midwife who attended both cases.

References

1 King, W. W. *Brit. Med. Journal*, 1930, 1, 533.
2 Smith, J. Puerperal Fever: Causation and Source of Infection. Reports of Scientific Work, Committee on Department of Health for Scotland, 1931.

RECOVERY OF VISION AFTER TWENTY-SEVEN YEARS

BY

NORMAN FLEMING

OPHTHALMIC SURGEON, PRINCE OF WALES'S GENERAL HOSPITAL

It has recently been my good fortune to be able to operate successfully on a woman, aged 35, who had been suffering from double lamellar cataract (as illustrated in Fig. 3) of an opacity such that she had only been able to distinguish between light and dark since she was 8 years old. Such an opportunity must be of very rare occurrence, and, consequently, there is no routine procedure for such cases; in the circumstances I think that a few notes on my experience may be of some interest.

The patient was employed as a telephone operator, and

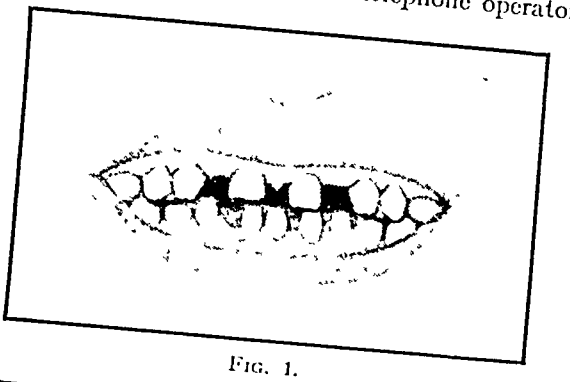


FIG. 1.

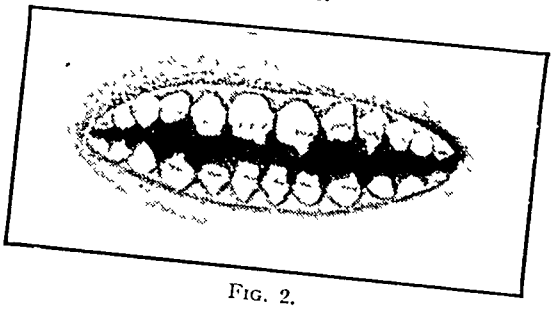


FIG. 2.

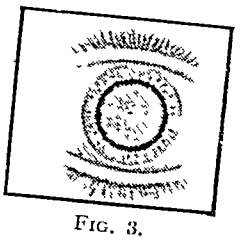


FIG. 3.

performed her duties quite satisfactorily, but her general health was not good; her complexion was bad, and she had little interest in life or in her personal appearance. When a very small child she had been able to see sufficiently well to learn her alphabet and elementary reading and writing, always holding her book very close to her eyes, as she was, in addition, highly myopic.

With regard to her present condition, her teeth illustrate well the defective enamel so frequently found in association with lamellar cataract; they are shown in the accompanying drawing (Fig. 1). Fig. 2 was drawn from a case of a boy, aged 14, on whom I operated for lamellar cataract some time ago; it clearly demonstrates the exposed dentine, affecting, as it almost invariably does, the central and lateral incisors, the canines, and first molars of the permanent dentition in upper and lower jaws; this is found to be worn away in the adult.

The presence of about 10 dioptres of myopia, as measured around the limit of the cataract with a dilated pupil, made me fear the possibility of a detached retina if any operation was performed involving a large opening in the eyeball. I decided to operate by needling only, to proceed by small stages, and to open the eye only in case of urgent need. On each occasion I used a Ziegler knife—one only—and wore a binocular loupe to observe the detail of the operation. On the first occasion I made one long cut only; on the second, two crescentic cuts, joining at each end; this was done to ensure the escape of the contained portion of lens matter and, at the same time, to limit the total amount of lens matter which could escape at one time and so obviate glaucoma. The technique proved to be most satisfactory.

On the day following the second operation I applied two leeches to control the small rise in tension which was inevitable; in this way all trouble from increased tension was avoided. Following the second operation three further needlings were performed on the right eye and four on the left; on each occasion the loupe was worn and the procedure adapted to the condition found.

The result was as follows:

$$\text{Right with } \frac{+4.00 \text{ DS}}{+1.00 \text{ DC Axis } 85^\circ} = \frac{6}{6} \text{ partly.}$$

$$\text{Left with } \frac{+4.00 \text{ DS}}{+1.50 \text{ DC Axis } 90^\circ} = \frac{6}{6} \text{ partly.}$$

With + 3.50 DS added each eye = J 1.

I consider that the failure to read 6/6 fully is due to imperfect development of macular function, as there is no medial obstruction or fundus disease.

Since the patient has been able to see, my efforts to improve her general health have met with remarkable success; she now has a good complexion, has energy and interest in life, and the natural pleasure of being able to choose her own clothes and attend to her own personal appearance has transformed her whole mental outlook. She has learned to write, has become a shorthand-typist, and hopes before long to leave her switchboard for another post, to which she looks forward with much interest.

The illustrations are from drawings prepared by Theodore Hamblin, Ltd., opticians, Wigmore Street.

ACUTE HAEMORRHAGIC PANCREATITIS

REPORT OF FOUR CASES

BY

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Although acute pancreatitis is perhaps not to be considered as one of the very rare causes of the acute abdomen, in general hospital statistics it appears to be infrequent. The occurrence of four cases in one year in the practice of a single surgeon, and the fact that they were all extremely typical of this condition, may justify recording them. The first two of these cases were verified at operation; the second two, unfortunately, were fatal, without operation, and in neither was a necropsy permitted. The symptoms in these latter cases were, however, so characteristic as hardly to admit of doubt. The first patient was a girl, aged 17 years, who was operated on and died, chiefly, I believe, because the tube draining her gall-bladder came out and allowed the escape of stones and bile into the abdomen, in this manner adding the factor of infection to what was, in my opinion, an aseptic inflammation of the pancreas. The second patient recovered. She was a woman, aged 50, who was also operated on in the same manner, and presented at operation much the same appearances. In both these patients the gall-bladder, while showing no definite signs of inflammation, contained numbers of very small cholesterol calculi, the type which, according to the theory of Opie and Archibald, readily lodge at the bile papilla, leaving the opening of the duct of Wirsung patent behind it, and so permitting the regurgitation of bile into the pancreas.

CASE I

Miss Charlotte P., aged 17 years, was a shop assistant. Four days prior to admission she had a sudden attack of severe epigastric pain, accompanied by persistent vomiting and constipation. The patient was sent in as a case of acute intestinal obstruction. On admission, she was obviously extremely ill, complaining of agonizing pain in the epigastrium. There was tenderness below the right costal margin and in the epigastrium, and rigidity over the upper abdomen. Tenderness was also present in the left costo-vertebral angle. Her face was flushed. Temperature 100°, pulse 126, respiration 24.

On November 13th, 1930, the abdomen was opened by a right upper paramedian incision, and a quantity of blood-stained fluid escaped. Extensive fat necrosis was scattered all over the omenta. The pancreas, which was exposed by tearing through the gastro-colic omentum, was found to be swollen and to resemble a piece of raw beef-steak. The gall-bladder was moderately distended, and contained a quantity of small round yellow cholesterol stones about the size of a hemp seed. The operation was rapidly concluded by fixing a tube in the gall-bladder with a purse-string suture. No attempt was made to remove all the stones, and a tube was passed down to the pancreas after scratching through the peritoneum over it. The abdomen was closed with through-and-through silkworm-gut sutures.

Blood sugar at this time was 0.2, the diastatic index of urine being 40. For a week the patient made great improvement and appeared to be on the road to recovery. On November 21st the tube draining the gall-bladder either came out of itself or was pulled out, and from that time she went downhill. On November 29th she was seized with agonizing abdominal pain. The abdomen was then reopened, and it was found that the bile and small gall-stones had leaked freely into the abdomen. The fat necrosis present at the original operation had disappeared. The pancreas was exposed with some difficulty, and was found to be surrounded by a quantity of blood stained fluid. The diastatic index of this fluid was 500. Ten days later the patient died, four weeks after the first operation.

Commentary

In my opinion the sequence of events was as follows. A small stone lodged at the papilla and bile was injected up the pancreatic duct, setting up an aseptic inflammation. With drainage of the pancreas and relief of pressure in the common duct by draining the gall-bladder no further bile reached the pancreas. All her symptoms were relieved, and recovery would probably have ensued, but when the tube came out of the gall-bladder, with the resultant escape of bile into the peritoneum and abdominal wound, an aseptic process in the pancreas became converted into a septic one, with a fatal result.

CASE II

Mrs. Mary J., aged 50 years, a housewife. For years the patient had suffered from attacks of epigastric pain radiating to the back, accompanied by nausea and flatulence. There was no jaundice at any time. Two days before admission to the Cardiff Royal Infirmary she had a severe attack of epigastric pain. The day after admission (August 19th, 1930), I was asked to see her by the house-surgeon, Mr. Morgan, as he thought she was a case of acute pancreatitis. Her face was cyanosed, especially round the lips. She was very dyspnoeic, speaking in gasps and with acute pain. Temperature 98°, pulse 100, respiration 40. The abdomen was distended and rigid. There was acute tenderness in the epigastric and umbilical regions, and at the left costo-vertebral angle.

The abdomen was opened by a right upper paramedian incision on August 20th, when a quantity of blood-stained fluid escaped. Numerous patches of fat necrosis were scattered over the omenta. The gall-bladder, containing a quantity of very small yellow stones, was opened and drained. The pancreas, exposed through the gastro-colic omentum, was swollen and red, and a tube was placed in contact with it. The patient steadily improved from the time of the operation, and was discharged on October 13th free from symptoms.

CASE III

S. E., aged 46 years, was a police constable. On June 20th, 1930, he was seen by me in consultation with Dr. Anderson of Penygraig, who diagnosed an attack of gall-stone colic, the symptoms being severe pain in the epigastrium passing round to the right scapular region, with vomiting. The attack had come on the previous night. When I saw him it appeared to be passing off, and the patient, who was afraid of operation, was endeavouring to make light of it. He was extremely fat, and it was very difficult to make anything out by examining the abdomen, except that there was tenderness in the gall-bladder region; but the history appeared pretty definitely to indicate biliary colic, and I had him admitted to my ward at the Royal Infirmary the following day. He had had a similar attack a week previously. The abdominal symptoms were now less in evidence, and as he was found to have some consolidation at the base of the right lung and was a very unfavourable subject for operation, he was transferred to Professor Kennedy's ward in the Medical Unit. The note states that there was then "tenderness in the right hypochondrium, and the right upper rectus was slightly rigid," and that there was "dullness, fine rales, and pleuritic rub in right axillary region and behind." I did not see the patient again, but was told by Professor Kennedy that the following day he was slightly cyanosed, and this condition became more marked the day after. The pulse varied from 112 to 136. Blood sugar, 400 mg. per cent. On June 25th, 1930, he was seized with severe abdominal pain, and was breathless and drowsy. He then became extremely cyanosed, and died the same day. A post-mortem examination was refused.

Commentary

Although not verified by operation or post mortem there seems little doubt that this was a case of acute pancreatitis; with this opinion Professor Kennedy is in agreement. Two attacks of biliary colic, a remission followed by sudden agonizing abdominal pain and rigidity, rapid pulse, marked cyanosis, and the presence of a very high blood sugar, would seem conclusive evidence. The patient was extremely fat and an alcoholic, and operation would probably have been unsuccessful, especially in view of commencing pneumonia.

CASE IV

With the view I hold of etiology of acute pancreatitis, this case is of particular interest to me. Mrs. P., a housewife, aged 34, was a patient of Dr. Nelson of Treherbert, who was called in by a midwife to a case of prolonged labour. Dr. Nelson found no evidence of pregnancy, and diagnosed intestinal obstruction. The patient was suffering from pains resembling those of parturition, the lower abdomen was distended, and there was obstinate constipation and occasional vomiting. This condition had continued for a fortnight. The patient was then sent into the Treherbert Hospital, where, on July 2nd, 1930, I opened the abdomen under general anæsthesia by a lower median incision. I found that she had had a subtotal hysterectomy, and that a loop of small intestine had become fixed to the cervical stump and was acutely kinked. It was separated, and the raw areas on the intestine and in the pelvis were peritonized. I happened to pass my hand to the upper abdomen and felt the gall-bladder, which was of normal size and consistency, but contained a quantity of small gall-stones, and I remarked then that these were just the sort of stones which might cause acute pancreatitis. As it was impossible to deal with the gall-bladder through a lower abdominal incision, and since her condition did not warrant doing anything further at the time, the abdomen was closed.

Three days later, July 5th, the patient was seized with acute abdominal pain, there was some distension, and she vomited a dark brown fluid. On July 7th she had severe pain in the back, and diarrhœa. On the following day she became cyanosed. Pulse 120, temperature subnormal. Vomiting of brown fluid and diarrhœa continued. On July 9th I was asked to see her, although I was told her condition was desperate. What struck one at once was her appearance. With all the symptoms of collapse she had a bright pink flush on her cheeks. Her pulse was 130, temperature 97°. There was acute tenderness at the pancreatic point above the umbilicus and in the left costo-vertebral angle. The diagnosis of acute pancreatitis appeared evident, but no persuasion would induce

her to let me operate again. The next day she became wildly delirious and was in agonizing pain, still passing dark brown fluid per rectum. She died that night. I feel convinced that after the gall-bladder had been handled a small stone worked its way down the cystic duct and lodged at the ampulla, causing regurgitation up the duct of Wirsung.

Commentary

Although the diagnosis, unfortunately, was confirmed neither by operation nor by post-mortem, the symptoms were so typical as not to admit of doubt. As to the cause the theory of infection seems untenable. No focus of infection was present in the abdomen, the gall-bladder showed no signs of active inflammation, and, at the operation for the relief of obstruction, the bowel was not opened, the operation resolving itself into the separation of an adhesion.

REMARKS

In three of these cases gall-stones were present, all of very small size, such as might block the opening of the common bile duct without at the same time blocking the opening of the duct of Wirsung.

In the *British Medical Journal*,[3] I published a series of twelve cases of acute necrosis of the pancreas, six of these being my own. In ten of these, gall-stones were present in the gall-bladder; in several it is noted that the stones were small. In one case with large stones in the gall-bladder, a small stone was found impacted at the ampulla of Vater. While not for a moment suggesting that all cases of acute pancreatitis are due to the impaction of a stone at the ampulla, I think there is no doubt that in many, if not most, of the acute fulminating cases the cause is the retrojection of bile or duodenal contents into one or other of the pancreatic ducts. In the early stages of the condition the evidence of infection is very slight in many cases. Graham, who at one time was an adherent of the theory of the lymphatic origin of pancreatitis, seems now to have changed his view, and in his recent work on the gall-bladder[1] quotes the investigations of Kodama[2] on the dog. Kodama found that dye injected into the subserosa of the gall-bladder passed in the lymphatic vessels over the pancreas to a gland at the commencement of the portal vein, and did not enter the substance of the pancreas; nor does it appear probable that infection is likely to pass against the direction of the lymph flow. The argument against the views of Maugeret, Deaver, and others has been very fully and clearly discussed by Fiske Jones,[4] and I need not recapitulate it here. It should, I think, carry conviction to those who are not irretrievably wedded to the elusive haemolytic streptococcus. He also points out, what one notes in Graham's work, that it is very difficult to make out whether the upholders of this theory are referring to the above condition or to the chronic interstitial pancreatitis which may conceivably have a lymphatic origin. I quote his remark on this subject: "It is impossible to read the articles of Deaver and others who accept Maugeret's theory as to the cause of pancreatitis, and those of Archibald and others who believe in Opie's theory, without feeling that they are discussing two different diseases."[4]

The question is of more than academic interest, for correct treatment depends, to a large extent, on the view we take of the causation.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

EFFECT OF INTRAVENOUS MAGNESIUM SULPHATE ON THE BLOOD PRESSURE IN URAEMIA

The treatment of uraemia in acute glomerular nephritis by the intravenous injection of magnesium sulphate was originally described by Blackfan and Hamilton (*Boston Med. Surg. Journ.*, October, 1928). They reported eleven cases of children in whom the treatment was used. Of these, eight recovered, and three, in whom it was not used until the terminal stages, died. Blackfan and Hamilton used the treatment in the acute glomerular type of nephritis, characterized clinically by the acute onset, the slight degree of oedema, and a rise in the blood pressure, together with haematuria and albuminuria. This glomerular type shows a marked tendency to progress to uraemia. They found that the degree of oedema and haematuria, and even of oliguria, was of no great significance, provided that the systolic blood pressure remained below 130 mm. But if the blood pressure commenced to rise above 130, with, as often occurred, vomiting, headaches, and visual disturbances, they regarded magnesium sulphate treatment as indicated. Their technique was the slow intravenous infusion of 1 per cent. magnesium sulphate (2 grams of the crystalline salt, $MgSO_4 + 7H_2O$, in 100 c.cm. of distilled water).

CASE HISTORY

A boy, aged 9, was admitted on February 22nd, 1931, with a history of vomiting and sore throat of three days' duration. On examination he was found to have the red throat, tongue, and enlarged glands of a typical thirdday case of scarlet fever, with a temperature of 99° F. and a pulse rate of 112. His urine was then free from albumin. The disease followed a normal course until March 16th (twelfth fifth day of disease), when the routine urinary examination showed that albumin was present. The next day red blood corpuscles, and granular and epithelial casts, were seen microscopically, and the patient's face was noticed to be pale and puffy. A diagnosis of acute glomerular nephritis was made. The bowels were freely opened by the regular administration of jalap, pil. colocynth, and sodium sulphate. However, on March 19th (fourth day of the nephritis) he had six convulsions, lasting from three to eight minutes each, spread over an hour and a half, with complete unconsciousness between. He was then treated by venesection, and chloral and potassium bromide per rectum. Two hours later the patient was still semi-conscious, with a blood pressure of 148/132; 150 c.cm. of 1 per cent. magnesium sulphate was then sterilized and given intravenously by the gravity method. The following systolic blood-pressure readings from the fever chart kept show the effect (the diastolic was found to follow the systolic): after one hour, 148; three hours, 146; six hours, 122; eight hours, 128. By the next morning the systolic blood pressure was found to be 150, and intravenous magnesium sulphate was repeated. The effect on the blood pressure was: after one hour, 144; three hours, 144; six hours, 122; eight hours, 128. The following morning (sixth day of nephritis) the reading was 108, and in the evening 126. After that, except for one reading of 134 on the seventh day of the nephritis, it settled at 120, gradually falling to 112. From the onset of the nephritis the urinary output varied from 8 to 19 ounces until March 24th, when 38 ounces were passed, after eight days of partial suppression. The magnesium sulphate did not affect the quantity of urine. Red blood corpuscles disappeared from the urine on the fourteenth day of the nephritis, and albumin on the fifteenth day. The patient appeared to have suffered no permanent damage to the kidneys, having no recurrence of albuminuria on leaving his bed, and being perfectly well on discharge, ten weeks from admission.

SUMMARY

The systolic blood-pressure readings show that after the first injection there was a fall of 26 mm., and after the second a fall of 28 mm. In both cases the maximum fall was recorded after six hours. These falls in the blood pressure were accompanied by a marked clinical improvement, the patient becoming much less drowsy. The mode of action of the magnesium sulphate is difficult to determine. The quantity of magnesium used is insufficient for the radicle to exercise its sedative action to any appreciable degree. The explanation advanced by Blackfan and Hamilton is that the rise in blood pressure and the uraemia symptoms are due to oedema of the brain. They suggest that this oedema of the brain is reduced by a change in the osmotic relationship between the blood and the tissues of the brain, such as is supposed to occur when salt solution is injected. This change, they suggest, may be due to an increase in the total electrolyte content of the blood. The series described by Blackfan and Hamilton contained no cases of scarlatinal origin; hence it is interesting to note that this case also responded to the treatment. In view of the frequency with which uraemia causes a fatal termination in scarlatinal nephritis, this treatment would seem to offer a useful method of warding off a fatal uraemia until resolution of the nephritis occurs.

I wish to thank Dr. W. T. Benson for permission to publish this case.

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PELVIMETRY BY *X* RAYS

No originality is claimed in arriving at measurements of the true conjugate and transverse diameters of the bony pelvis, but a simple account of the following method may interest those who have not yet tried it.

Antero-posterior and lateral films are taken with centring respectively one and a half inches above the os pubis and just before the great trochanter. Using 20 mA. and doubly screened films, exposures of four and seven seconds respectively are made at 80 to 100 kV. on the Potter-Bucky. It is then necessary to measure the thickness of the patient from pubes to table (a), and her extreme width across the trochanters (b). Let the focus-film distance be 28 inches (c). On the antero-posterior film the transverse diameter is measured (d), and on the lateral film the distance from the sacral promontory to the back of the os pubis (e). The calculation is as follows:

$$\frac{d \times (c - \frac{2}{3}a)}{c} = \text{true transverse diameter}$$

$$\frac{e \times (c - \frac{1}{2}b)}{c} = \text{true conjugate diameter}$$

An actual case may be cited to dispel any doubts as to the ease and simplicity of the method.

Thickness of patient	8 inches	(a)
Width of patient	14 "	(b)
Focus-film distance	28 "	(c)
Transverse diameter measured on film	6½ "	(d)
Conjugate diameter measured on film	5½ "	(e)

$$\frac{6\frac{1}{2} \times (28 - \frac{2}{3} \text{ of } 8)}{28} = \frac{6\frac{1}{2} \times 22}{28} = 5.26 \text{ true transverse}$$

$$\frac{5\frac{1}{2} \times (28 - \frac{1}{2} \text{ of } 14)}{28} = \frac{5\frac{1}{2} \times 21}{28} = 3.94 \text{ true conjugate}$$

Or approximately 5½ and 4 inches.

Tests on the skeleton show an accuracy to within one-twelfth of an inch.

W. H. HOOTON, M.R.C.S., L.R.C.P.,
Radiologist, Manchester City Hospital, West Didsbury.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

FIFE BRANCH

INSANITIES ASSOCIATED WITH CHILD-BEARING

At the first sessional clinical meeting of the Fife Branch, held at the Fife and Kinross District Asylum, on November 12th, with Dr. JAMES ORR (St. Andrews), president of the Branch, in the chair, Dr. WILLIAM BOYD, medical superintendent of that institution, delivered an address on the insanities associated with child-bearing.

Dr. Boyd said that insanity as a whole was much more common in the male than in the female. Between the ages of 20 and 35, however, it was more frequent in the female, owing to the insanities attributable to reproduction, which accounted for 8 to 10 per cent. of all types of insanity met with in the female sex. Four groups of child-bearing insanities could be defined—namely: the insanity of pregnancy (20 per cent.); lactational insanity (30 per cent.); and the insanities of parturition and the puerperium, which together amounted to 50 per cent. No form was peculiar to the reproductive period, but a definite group could be recognized, because the clinical picture was so clearly coloured by the reproductive process; in the majority of cases there was a toxic basis. In addition to child-bearing, certain other factors were present to determine the breakdown: psychopathic or neuropathic heredity; age; exhaustion (including haemorrhage, frequent pregnancies, and instrumentation); change in blood pressure; illegitimacy; emotional stress; auto-intoxication; septic conditions; and endocrine disturbances.

Insanity of Pregnancy

Here the early symptoms were an accentuation of the "longings" of neurotic women, with irritability, excitability, and absurd and extravagant tastes. Sleeplessness was an important factor, and the patient became restless and over-anxious. Morning sickness was excessive, and delusions were present. She refused food, expressed dislike of her husband, and became apathetic and careless, neglecting the household duties. The physical signs were those of melancholia, an important point being constipation; since these patients did not complain of pain, a look out must be kept for retention of urine, oedema of the legs, and the development of varicose veins. The course of the disorder depended on the time of onset. If it began before the fourth month, recovery was usual at the time of quickening. If it appeared after the fourth month, the insanity continued for several months after birth. The prognosis was good in the early months, but less favourable in the later months, the insanity persisting in one-third of the cases. The treatment was that for melancholia, and included rest, dieting, and measures directed to the correction of constipation and insomnia. Refusal of food called for forcible feeding, and any physical symptoms should be dealt with; premature delivery was not indicated. The possibility of suicide was an important consideration, and all modes of suicide must be anticipated and prevented.

Insanity of Parturition

This appeared as a state of delirium or acute mania; hallucinations were present. The treatment was delivery without delay and maintenance of the blood pressure. In puerperal insanity the patient was excited, noisy, and

restless, singing and shouting. She refused food; insomnia was constant, and hatred was displayed for the husband and nurse. Hallucinations of sight and hearing developed; remissions were not uncommon, but the excitement always returned. The physical signs were those of an infective condition, and complications were likely to occur, such as breast abscess, pyelitis, and cardiac failure. The course taken by this form of insanity depended on the severity of the attack. If the health improved, the excitement subsided in a few weeks, recovery ensuing in a month or two, after a state of apathy. There was some danger of the occurrence of prolonged subsequent weakmindedness. As regards diagnosis, the possibility of puerperal fever had to be remembered; it would be indicated by a high temperature, rigors, and suppression of the lochia. The prognosis depended on the time of onset; the earlier the onset the better would be the prognosis. In delirious forms the outlook was bad, and the majority of patients died. Treatment comprised attention to the symptoms and guarding against complications. Sedative drugs were required to allay the excitement, and drugs to raise the blood pressure were often beneficial. Puerperal insanity had a medico-legal interest; insane mothers might be delivered unconsciously and injure their children accidentally.

Lactational Insanity

This usually commenced during the third or fourth month after delivery. The patient became irritable, restless, and sleepless, and developed ideas of persecution, directed towards the husband and child. The majority of cases were of the subacute melancholic type, and ideas of unworthiness were expressed. Suicide and infanticide were common. In cases of exhaustion the patients were confused and hallucinated. The physical signs were those of melancholia, and constipation was constant. The patients were anaemic and debilitated, and loss of appetite was frequent. The disorder usually persisted for some months, but the prognosis was good in the depressed cases, though the disorder ran a long course. In acute delirious forms the prognosis was bad, the patients dying from broncho-pneumonia or acute broncho-pneumonic tuberculosis; improvement often occurred when menstruation returned. The treatment was that of melancholia: rest was essential, and breast-feeding must cease. Attention should be given to the insomnia, diet, and bowels. General tonics should be administered in the form of the scale preparations of iron, and guard should be maintained against suicide and infanticide. Glandular therapy was worth trial in the exhausted types. The toxaemia should be attacked by ensuring regular habits of feeding, defaecation, and micturition. The diet should contain an excess of fat and fruit juice. The bowels required constant attention, the best treatment being a course of calomel, with daily colonic lavage.

Although these were the common types of disorder encountered during child-bearing, other mental disorders might appear, precipitated by the stress so incurred. The chief of these were paranoia, dementia praecox, and general paralysis of the insane. In these child-bearing insanities the question of certification and admission to an asylum might require consideration, but this really depended on the home circumstances. In the insanity of pregnancy an attempt might well be made to treat the patient at home in view of the possibility of a stigma being attached to the child. The patient would, however, require to be dealt with by a nurse trained in mental disorders. The risk of suicide was always present, and in the case of the poorer patients suffering from these insanities there were no facilities other than those offered by the asylum.

Reports of Societies

OBSTETRICS AT THE ROTUNDA

At a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on November 20th, with the president, Mr. VICTOR BONNEY, in the chair, Dr. BETHEL SOLOMONS read a paper on methods of obstetric diagnosis and treatment at the Rotunda Hospital in 1909 compared with 1929.

Dr. Solomons stated that he had now been Master of the Rotunda since 1926, and it was therefore possible to review dispassionately the new ideas, to compare them with the old, and to endeavour to sum up the best of each. During that time he had had the opportunity of studying the results of over 20,000 labours. In 1909 there were two labour wards with stone floors, which were used on alternate weeks. These wards were small and inconvenient for teaching, but there was an undoubted value in being able to give each theatre a rest for thorough cleaning. The bigger theatre now in existence was of very great value from the teaching point of view. Dr. Solomons went on to discuss certain technical points in midwifery. He first dealt with fixation of the foetal head in primigravidae. He found that in 19.5 per cent. of all such cases the head was not fixed in the pelvis at the time labour started, and of these, 75 per cent. delivered themselves spontaneously, and resulted in a normal live child. In 10 per cent. delivery was effected by forceps, and in the remaining 15 per cent. more serious operative treatment was necessary, including lower segment Caesarean section. He spoke enthusiastically of this method, and considered it superior to the higher incision. He next discussed the question of pelvimetry and disproportion. In 1909 he relied almost entirely on the Skutsch pelvimeter, and he still thought that this instrument was of considerable value; on the other hand, if time and place permitted, radiographic pelvimetry gave the best results. During the twenty years under discussion the number of cases of disproportion had increased enormously, and he found it rather difficult to give any satisfactory explanation. It might be due to the present generation having been affected by malnutrition and other factors during the great war.

As regards the third stage of labour he had come to the conclusion that more harm than good was done by controlling the fundus. The danger lay in the assistant being over-anxious, and liable to produce hour-glass contraction and other abnormalities, by constant manipulation. Next he referred to the toxaemias of pregnancy and accidental haemorrhage. The incidence of accidental haemorrhage had increased from six in 1909 to forty-one in 1929, and he was at a loss to understand it. He had entirely given up plugging the vagina for this serious complication, and relied on puncture of the membranes, repeated doses of pituitary extract, and treatment of collapse by saline when necessary. On the question of inducing labour, he professed himself a convert to the method of puncture of the membranes, and was in entire agreement with other authors, including Guttmacher, Douglas, Jackson, and FitzGibbon. In the treatment of inertia watchful expectancy was necessary, and he taught the complete abolition of oxytocic drugs such as pituitrin. In his opinion the pendulum had swung too far in the avoidance of forceps, but the use of Kielland's instrument was dangerous, and suggested meddlesome midwifery. When the head was low the obstetrician should use the instrument to which he was accustomed. Referring to the lying-in period, he stressed the importance of patients sitting up in order to obtain the best drainage of the pelvis. Finally, on the question of the teaching of students, he was of the op-

that the number of cases actually delivered by the student was of less importance than the time spent in a large maternity hospital. At least two months should be the minimum.

The PRESIDENT congratulated Dr. Bethel Solomons on his very excellent and helpful paper. Mr. ALECK BOURNE could not agree with the entire neglect of the fundus uteri during the third stage of labour, inasmuch as it was not possible without a hand on the fundus to be aware of the collection of a concealed post-partum haemorrhage. By control of the fundus he did not mean violent kneading, but a gentle grasp which would prevent the fundus filling up with blood without the doctor's knowledge.

Mr. L. CARNAC RIVETT said his instructions were to make this discussion as acrimonious as permissible within the walls of the society. Dr. Solomons, however, had cut the ground from under his feet, as he found he was in complete agreement with practically everything in the paper. He, Mr. Rivett, was not going to let a trifle like that impede him. He entirely agreed with the Master in regard to pelvimetry, but he did not think that *x*-ray pelvimetry was yet established. He could not understand the difficulty in teaching the use of the head as a pelvimeter. In his opinion the fit of the head could be diagnosed in most cases by pressing the head into the brim with the palm of the hand, and not with the tips of the fingers. In a few exceptional cases the Munro Kerr method was necessary, and in that case an anaesthetic was also necessary. Did the Master really mean that he taught leaving the uterus entirely alone during the third stage of labour, and that he had never seen any ill effects from this? In regard to anaesthetics, hyoscine was not only dangerous to the infant, but it pushed the full amnesia, occasionally producing mania in the mother. He was sorry to hear the Master say that chloroform was dangerous, and was not used at the Rotunda. Was the Master stating that this drug was so dangerous that he would never use it, without having tried? Mr. Rivett was very much in agreement with the remarks on teaching, except that he did not consider the number of cases was anything like sufficient. Every student ought to deliver at least thirty cases, and have at least ten obstetric operations, including forceps, version, and even embryotomy.

Mr. W. GILLIATT was in complete agreement with most of the things that the Master of the Rotunda had described as his normal practice, and particularly with the abolition of chloroform in maternity hospitals and in maternity departments. He could not, however, share his feeling of safety at leaving the fundus uteri without a hand upon it. He considered that there were two other notable changes in practice in the last twenty years which were beneficial: first, the invention and use of Willett's forceps; and, secondly, blood transfusion, which in his opinion should be used in every case of ante- or post-partum haemorrhage where the haemoglobin estimation was less than 55 per cent. forty-eight hours after the termination of labour.

Dr. W. H. F. OAKLEY said that during the thirty years he had been actively engaged in midwifery he had come to rely less and less on instruments of any kind, and more on the use of the two hands where intervention was absolutely necessary. Thus in the 10,000 cases he had recently reported, the forceps rate was only 2.9 per cent., and only one Caesarean section was performed. He thought that careful guarding without irritation of the uterus was necessary, and was confirmed in this belief by reading the reports of a hospital on the Continent, where, after delivery, the abdomen was covered by a towel and the uterus neither palpated nor observed. Out of 2,623 cases delivered there were 244 cases of severe post-partum haemorrhage and 240 of retained membranes, numbers far in excess of those where the English method obtained. In most cases it would be found best to choose one way out of many good ways of treating a condition, and to stick to it. The whole outlook on midwifery had altered in the last twenty years, owing to the introduction of ante-natal care, the provision of a large number of trained midwives, and the benefit derived under national health insurance, which enabled a prospective mother to leave work during the last few weeks of pregnancy, and to have a longer rest during the puerperium. The preventive outlook had made an enormous difference, and he was sure that we should not get the best results until every mother had close personal attention during the whole of pregnancy, parturition, and puerperium.

Lady BARRETT thought that pituitrin had a use in medicine, but required the greatest care in use toward the end of labour, when the uterine muscles might be nearly exhausted. With regard to the use of forceps at the end of labour to save the mother pain, she felt that anaesthesia, which relieved the suffering, and at the same time allowed labour to be completed more slowly and normally, was better treatment.

Dr. BETHEL SOLOMONS, in reply, said that he definitely did not believe in control of the fundus, nor did he believe that post-partum haemorrhage was caused by non-control. As he had seen severe accidents and even fatalities following pituitrin in labour, he was inclined to avoid it, even though it might be useful in infinitesimal doses to assist in starting labour, and possibly in the very early stages. The main fact was that it required an extensive experience to settle on the type suitable for its use. Fibrillary contraction of the uterus had already been noted from the Rotunda. As chloroform was killing women in most maternity hospitals, he had adopted ether as an anaesthetic at the Rotunda. Gas and oxygen might be more suitable, but they were very expensive. He disagreed entirely with the use of the curette in the puerperium. It should never be used, and no teacher had any right to allow it to creep into his lectures. He taught the use of Willett's forceps at the Rotunda, but they had very little use. Donors of blood were not always available for the general practitioner.

X RAYS IN UTERINE DISEASE

A paper was also read by Dr. LOUISA MARTINDALE on recent advances in deep *x*-ray therapy in non-malignant and malignant uterine disease. She said that there were two big groups of cases in which *x* rays were of value—non-malignant and malignant. Considerable advances had been made in the technique, particularly in the treatment of glandular hyperplasia of the endometrium, fibromyomata of the uterus, and adenomyomata. She traced the advances from 1902, when W. J. Morton treated his first case of fibromyomata. From 1913 to 1920 the small-field cross-fire method was used, and the years 1920 to 1927 showed the development of high-powered *x*-ray apparatus, eventuating in the Stabilivolt installation. She enumerated the now well-known contraindications which definitely limited the number of cases it was safe to treat by deep *x* rays. In her own series of 500 cases she had treated 260 by surgical operation, 224 by deep *x*-ray therapy, and 16 by radium. Regarding the possibility of regulating the menstrual loss by irradiation of one ovary only, she concluded that this method is not certain enough to be advocated. Another method was to give a 28 per cent. of unit skin dose to each ovary. The author had herself used it in rare cases of menorrhagia in younger women, and in three of such cases the temporary amenorrhoea was followed a few years later by healthy pregnancy and childbirth. In discussing *x* rays for malignant disease, Dr. Martindale described the methods used at various clinics. She showed figures indicating

that there was a considerable improvement in the five-year survival rate with the more modern methods. Summarizing the actual recent advances in deep *x*-ray therapy in uterine disease, she said that the results in the newer technique in the treatment of small interstitial fibromyomata and climacteric haemorrhages were excellent, succeeding in curing 98 per cent. of cases, and, further, that the necessary treatment could now be carried out in a much shorter time than formerly—namely, in from thirty-five to ninety minutes, depending on the type of case. The improvement in results was due not only to the newer types of *x*-ray installations, but also to the more general acknowledgement on the part of gynaecologists of the necessity for better care of the patient both before and after radiotherapeutic measures.

The PRESIDENT objected strongly to the use of *x* rays in the treatment of fibroids. There were exceptional cases in which their use was justified, but to destroy as a routine healthy ovaries for the sake of a diseased uterus was an altogether wrong principle. Fibroids subjected to *x*-ray treatment often shrank, but never entirely disappeared, and he had had on many occasions to operate on elderly women because fibroids thus shrunken were giving rise to trouble. The ideal treatment of fibroids was myomectomy, and the technique of that operation was now so much improved that very few cases were outside its scope.

ACUTE HEAD INJURIES

At a joint meeting of the Sections of Neurology and Surgery of the Royal Society of Medicine on December 2nd, with Mr. C. H. FAGGE in the chair, a discussion on the diagnosis and treatment of acute head injuries was opened by Dr. GEORGE RIDDOCH.

Cases of head injury, Dr. Riddoch said, were frequent, and appeared to be on the increase. Effective treatment in the early stages could do much to prevent sequelae. Concussion, the commonest result of head injury, had been defined as a widespread paralysis of the function of the brain. Concussed patients showed a tendency towards recovery. The onset of symptoms followed immediately on the injury, and might include loss of consciousness, dizziness, and sometimes confusion. In a mild case there was no change in pulse or temperature, and the patient might carry out whatever he was doing, even to the extent of playing out a game of football. Afterwards he might have no recollection of his actions following the injury, and his behaviour at the time usually gave the impression of imperfect conscious guidance. In a severe case, loss of consciousness was deep, the pupils might be fixed, the pulse rate slow, reflexes abolished, and the blood pressure low, indicating loss of function in the cerebrum and brain stem. If the bulbar centres were affected respiration suffered first, and might be suspended long enough for artificial respiration to be needed to tide the patient over the first shock. As recovery took place the heart began to beat more forcibly, the patient vomited, consciousness returned, he was restless, stupid, or irritable, and complained of headache. If recovery was delayed, if unconsciousness or a stuporous state persisted, if there was local paralysis, or blood in the cerebro-spinal fluid, brain injury must be suspected. Symptoms of severe concussion with fixed pupils and bulbar signs were almost always associated with contusions throughout the brain, in spite of the contrary opinion often expressed by pathologists. After the initial collapse, patients with cerebral contusion began to recover slowly; they were irritable or drowsy, complained of severe headache, vomited, and were sometimes delirious at night. This state might persist for days. Even when the more serious symptoms abated the headache often persisted, and might be accompanied by loss of attention and initiative, by irritability and sleeplessness. Headache might be associated with either an increase or a decrease of tension within the skull. Where it was due to hypertension it was severe, and aggravated by emotion, strong light, physical effort, or by lying down. The pressure of the cerebro-spinal fluid was found to be raised. Headache due to hypotension was associated with a low pressure of cerebro-spinal fluid, and was relieved by lying down. These patients were often relieved by tilting up the foot of the bed on blocks. Gross mental defect for longer than a few days was uncommon, though minor mental disturbances, such as loss of attention and initiative, were frequently found. Focal signs of cerebral contusion were sometimes absent. When present, they usually affected the pupils, the sense of smell or of hearing. Diplopia, squint, or defect of conjugate lateral movement of the eyes was sometimes found. Rarely, a Parkinsonian state followed head injury, and epileptiform fits had been known to develop months or even years afterwards.

Surgery had little place in the early treatment. Rest for a week or ten days was advisable after slight concussion. In severe concussion the patient must be treated for shock and kept at rest; strychnine was sometimes valuable at this time, and some clinicians recommended the use of pituitary. When the stage of reaction was over, lumbar puncture might be performed, and the pressure of the cerebro-spinal fluid measured. If it was high the patient should be propped up; if low the foot of the bed should be raised. To reduce intracranial pressure three methods were available. The first of these, lumbar puncture, was not without danger, and its use should be confined, he considered, to cases where there was much free blood in the cerebro-spinal fluid. The second method was to give hypertonic solutions intravenously, by mouth, or by the rectum. Glucose could be given intravenously, and magnesium sulphate by way of the alimentary tract. This was also a dangerous measure if pushed too far, but was valuable in some cases. Operative decompression, the third method, was not often necessary. To raise the intracranial pressure the patient should remain lying down, intravenous injections of hypotonic solutions being given. He did not favour the use of morphine to control restlessness; bromide and chloral were safer. The patient should remain at rest for three weeks after an injury with contusions, and convalescence should cover another three or four weeks.

Mr. GEOFFREY JEFFERSON said that in all cases of head injury serious enough to call for treatment in the early stages the state was probably due to contusion of the brain. Trotter regarded the symptoms of concussion as being due to an arrest of the cerebral circulation. Whatever the actual mechanism, it was likely that these patients who remained stuporous had suffered cerebral contusion. Contusion was usually taken to imply haemorrhage, and small haemorrhages were frequently found scattered in the brain substance in such cases, but they were not nearly so widespread as was generally supposed, being for the most part limited to the pole and to the vicinity of any laceration. Oedema was frequently found round the cells of the cortex, and the perivascular sheaths of the capillaries were often distended with red blood cells so closely packed that they could only have collected by rupture of the vessels. Perivascular oedema was also a common finding in the region of a haemorrhage. It was possible that these appearances were artefacts, but they were not seen in ordinary sections prepared in the same way. Possibly these collections of oedema might themselves injure the tissues into which they were forced. In the ventricles the fluid might be driven downwards towards the bulb. Animal experiments showed that this might cause death if it occurred rapidly.

but he had not seen it happen in man. Surgeons took the view that patients with head injuries who failed to recover consciousness were suffering from compression, but actually a number of them were not compressed at all. The pressure of the cerebro-spinal fluid might be low, and this explained why intravenous injections of hypertonic solutions were not invariably successful. The histological pictures of oedema were so striking that he considered the use of hypertonic solutions rational in most cases. But it would not produce improvement in patients with cerebral contusion, and it should not be used until the pressure of the cerebro-spinal fluid had been found to be high. Lumbar puncture was dangerous if used as an uncontrolled therapeutic measure. Haemorrhage from the middle meningeal artery was comparatively rare, but had received exaggerated attention in the textbooks. Venous bleeding with subdural haematoma was commoner in his experience than extradural haemorrhage, and acute subdural haemorrhage could cause death as rapidly as bleeding from the middle meningeal artery.

Dr. RITCHIE RUSSELL described the records of 200 cases of head injury investigated at the Royal Infirmary, Edinburgh. These had been grouped according to the length of loss of consciousness. In uncomplicated cases, he said, the steps in recovery were similar. The patients might be in a drowsy, talkative, or unreserved state, and would then, quite suddenly, realize that they were in strange surroundings. Retrograde amnesia was usually brief, seldom covering more than one or two minutes. The pupils might be affected, and the plantar response was often extensor, particularly in those patients who failed to recover. Rigidity was often a sign of subarachnoid haemorrhage; the red cell count in the cerebro-spinal fluid gave some indication of the extent of haemorrhage. There was a large group of stuporous patients in whom the pressure of the cerebro-spinal fluid was low, and another group of patients whose mental condition appeared to be normal, but in whom the pressure of the cerebro-spinal fluid was high. Those with a high red cell count in the fluid were often stuporous and no red cells could be found, as a rule, four or five days after the injury. The white cells shared in the fall of the cell count except in one case where purulent meningitis had developed. He did not consider that it was always desirable to attempt the reduction of intracranial pressure in the early stages, when a high tension might have a function in checking haemorrhage. The use of morphine appeared to be safe, provided the patient was allowed to recover between each dose.

Mr. J. P. Ross mentioned the difficulty of recognizing subdural haematoma where it was subacute rather than chronic. He described a case in a man of 40, who sustained a fracture of the left parietal. The symptoms were those of contusion, but on the twenty-third day his pupils became unequal for the first time, and he died within an hour. Post-mortem examination revealed a large subdural clot. A second case had a somewhat similar history, and Mr. Ross gave it as his opinion that where any patient diagnosed as suffering from contusion was not doing well, the cranium should be explored. He asked whether the presence of haemorrhage could be ruled out of consideration if the pressure of the cerebro-spinal fluid was low, and described a case in which conservative treatment had been successfully adopted on this assumption. He had also deliberately refrained from operating on four cases of depressed fracture of the skull, and had obtained good results. He asked whether the meeting considered that depressed fractures invariably required operation.

Mr. JULIAN TAYLOR described a case in which cerebral oedema had been demonstrated by the discovery of arachnoid blisters at operation. In dealing with subdural haemorrhage he reminded the meeting that the larger the lesion the more slowly it grew, and the more urgent was the need for operation. A mild bout of coma might be followed by a severe one in which the patient died, so that it was essential to make the diagnosis as early as possible, and to explore both sides for the haemorrhage. The brain would to some extent accommodate itself to the growth of the haematoma, but there was a point at which it would be suddenly overcome.

Mr. DONALD ARMOUR asked what was the basis of photophobia occurring as an isolated symptom following a head injury, and described cases in which severe photophobia had occurred, apparently without other symptoms.

Dr. C. P. SYMONDS proposed the adoption of "traumatic stupor" and "traumatic delirium" in place of vaguer terms which had been used, such as "cerebral irritation." He considered that in head injuries the state seldom bore a resemblance to cerebral compression as found in patients with cerebral tumour or hydrocephalus, and that the symptoms were more likely to be due to injury to neural tissues. On the Continent recent observations made on patients dying from intercurrent disease within a few weeks of a head injury showed that there were changes present in the nerve cells and myelin. These might account better for the clinical picture than the compression theory. He agreed that morphine could safely be used in the manner described by Dr. Russell.

Dr. RUSSELL BRAIN said that Mr. Jefferson had explained clearly why hypertonic solutions were often valueless. They increased the osmotic pressure of the blood, and, consequently, not only reduced the flow of cerebro-spinal fluid, but increased its absorption; but, as Mr. Jefferson had shown, the perivascular sheaths of the capillaries were distended with fluid, so that absorption must be defective; and he doubted whether it was wise to add to the strain on the capillaries by trying to promote absorption through a damaged channel.

In reply to the chairman, who asked whether there were any clinical signs by which it was possible to recognize the type of case in which lumbar puncture might be harmful, Mr. Jefferson said that it was dangerous to draw off a quantity of cerebro-spinal fluid by lumbar puncture from a patient who was stuporous and cyanotic. He had found cases in which extradural haematoma was associated with a low pressure of cerebro-spinal fluid. He agreed that where subdural haematoma was suspected both sides should be explored.

Dr. RIDDOCH, in reply, said that the existence of photophobia as an isolated symptom was difficult to explain. Some symptoms of cerebral irritation might have been present in the cases described by Mr. Armour.

OBSTETRICS AND GYNAECOLOGY

At a meeting of the North of England Obstetrical and Gynaecological Society, held in Manchester, Professor CARLTON OLDFIELD (Leeds) described an unusual case of obstructed labour, due to retroflexion of the full-term gravid uterus.

The patient, who was a primigravida aged 25 was not examined ante-natally. She had no abnormal symptoms during pregnancy. The membranes ruptured twelve hours before the onset of labour pains. Her doctor was then called in and found the fundus 2 to 3 inches above the umbilicus, and, on vaginal examination, an arm presenting and a large mass in the hollow of the sacrum. The os was high up and could not be reached. The patient was admitted to a nursing home, and Mr. Oldfield opened the abdomen, intending to remove the tumour and deliver later *per vias naturales*. On inspection of the uterus it was noted that the bladder reflection lay a hand's breadth above the symphysis. The uterus on being lifted out of the abdomen tended to slip back. The tumour, having been raised from the pelvis, was

found to be uterine, possibly a fibroid. As the child lay obliquely its position was rectified, the arm being replaced by pressure upwards through the pouch of Douglas and the head placed over the brim of the pelvis. It was then decided to remove the tumour. A small incision was made with a view to enucleation, but on deepening this it was found that the placenta had been entered. The incision was therefore enlarged through normal thick uterine tissue and a Caesarean section performed. It was now evident that the incision was on the posterior wall of the uterus, extending from the insertion of the right tube obliquely down and to the left. Apart from a crack in the peritoneal surface of the posterior wall at the junction of the two segments no sign of adhesion or injury could be found. Mother and child both did well.

Professor DOUGAL (Manchester) described an unusual case of carcinoma of the cervix uteri.

The patient, aged 31, had been married five years, but had not been pregnant. The periods were regular, the loss normal, and there was no intermenstrual discharge. She was admitted to the Manchester Royal Infirmary as a case of pyrexia of unknown origin. There was a history of ill-health for four months, and a continuous temperature ranging from 100° to 103°, with night sweats. Repeated and varied physical and laboratory examinations having failed to reveal anything beyond a severe secondary anaemia, the the speaker was asked to see her. A tentative diagnosis of cystic disease of the cervix with infection was made after examination, and confirmed by further examination under an anaesthetic. Before anything could be done the patient died. At post-mortem the condition was found to be a cystic carcinoma lying to the left of the canal and displacing it to the right. Both iliac and lumbar glands were infected, and contained malignant deposits. Microscopically the tumour was found to be a very active squamous-celled (not, as one would have expected, columnar-celled) carcinoma. Though sufficiently advanced to produce metastases in the lumbar glands it had not yet broken through into the cervical or vaginal canal. The age and nulliparity of the patient, the absence of bleeding discharge and pain, were remarkable features of this case.

Mr. N. T. EDWARDS (Derby) showed a pear-shaped multilocular cystic tumour growing in the anterior part of the right labium minus. The cystic spaces were lined by cubical epithelium dipping down in places into the stroma and suggesting sweat glands. The patient, a multipara, had had the tumour as long as she could remember. It became swollen and painful at the menstrual periods. Mr. Edwards inclined to the view that it was an adenoma arising from a sweat gland.

Mr. S. B. HERD reported a case of rupture of the uterus during spontaneous delivery.

The patient, when a primigravida aged 35, two weeks post-mature, was delivered by classical Caesarean section after being in labour for forty-six hours. Convalescence was afebrile. Five years later she was again pregnant, and the pelvis being normal she was allowed to go into labour. The first stage, assisted by morphine, lasted fourteen hours, the second stage two and a half hours. After delivery of the child a gap in the anterior wall could be felt. As there was considerable loss the placenta was removed manually. Operation was decided on, and though there was no sign of free fluid in the abdomen the patient became shocked and was given a blood transfusion of 500 c.cm. Panhysterectomy was performed under spinal anaesthesia. There was little blood in the abdomen and no signs of adhesions to the ruptured scar. The scar showed, at the point of rupture, a poorly developed network of fibrous tissue. It was of interest that the child could be delivered naturally in the presence of a rupture of the uterus.

Professor DOUGAL showed an unusually large mucous cervical polyp in a patient, a nullipara aged 25, married one year. She complained of five weeks' severe loss following five months' amenorrhoea. A large friable mass was felt filling the vagina. On microscopical examination this was found to be an extremely active but benign adenoma of the cervix. On this finding it was decided to remove the growth locally, which arose from the posterior wall of the cervical canal. The patient went home in good condition a week later. Professor MILES PHILLIPS said he had had a similar case, which later became very actively malignant. He doubted very much if these large cervical adenomas should be considered benign so far as the future was concerned. Professor DOUGAL said he had seen the patient four months after operation, and there was so far no sign of recurrence.

Professor DOUGAL gave a cinematograph demonstration of an operation on a huge procidentia. This was the largest he had seen. The patient was aged 47, had one child, now 21, delivered by forceps, and had complained of "dropping of the womb" for nearly twenty years. The operation performed was the Fothergill modification of the Donald colporrhaphy. Professor Dougal had operated on procidentias of varying size, and had found that the combined amputation of the cervix and double colporrhaphy never failed to cure the condition.

TREATMENT OF VESICULAR MOLE

Professor LEITH MURRAY read a paper on the treatment of vesicular mole. He had been stimulated to read this paper by a remark he had heard at the meetings to the effect that abdominal hysterotomy for vesicular mole was indefensible. He considered the condition a grave one, and though the fourteen cases he now reported did well he had, in his younger days, seen many desperate cases result from evacuation from below. The recorded mortality ranged between 10 and 25 per cent. Vesicular mole was a disease occurring in women old enough to have further pregnancies. It had a slight but definite tendency to malignant transformation, carried an inherent tendency to serious haemorrhage, and, when treated inauspiciously, a risk of sepsis and perforation of the uterus. He recommended the operation of abdominal hysterotomy for this condition. Even with a large mole it was almost bloodless. A dry swab easily and rapidly evacuated the whole mole in a few seconds, the mole coming away practically intact within a brownish capsule of decidua. After this the uterine wall could be easily inspected for signs of penetration or haemorrhagic infiltration. This treatment was carried out in four of the fourteen cases reported. Of the ten not so treated two developed chronic epithelioma later, and though there was no case of sepsis in the series, in two bleeding was leading to a visible anaemia. Of the four treated by abdominal hysterotomy, two had since borne full-term children. In one, aged 49, hysterectomy followed the hysterotomy on account of age. The third, who had not since had a child, was aged 39, and had two fibroids removed at the same time.

THE SEDIMENTATION TEST

At a meeting of the Section of Pathology of the Royal Academy of Medicine in Ireland, held in the Royal College of Physicians on November 20th, with the president, Dr. J. T. WIGHAM, in the chair, Dr. A. R. HALPENNY read a note on the sedimentation test.

In the course of discussion, the PRESIDENT expressed the view that if this test could be performed with a smaller quantity of blood than 8 c.cm. it would be easier to carry out. He felt that the same rate of sedimentation would be obtained if the tube used were narrow or wide. After asking whether age made any difference, he gave it as his opinion that the rate might possibly increase with advancing years.

Dr. SPENCE SMYTHE said that during the last eight months the sedimentation rate had been estimated in the

Rotunda Hospital in various cases of pregnancy. As controls, twelve normal non-pregnant women were taken, in all of whom the sedimentation rate was 120 per minute or over—a perfectly normal figure. During the child-bearing period, age did not seem to affect the sedimentation rate at all. The test was really of no use as a test for pregnancy because the rate was not accelerated before definite clinical evidence of pregnancy was present. In one case of hyperemesis gravidarum, the rate was much delayed for the particular time of pregnancy. This might have been due to the fact that the patient had been starved in the course of treatment. In eight cases of normal puerperium where food was given, the rate, one and a half hours after a meal, was definitely delayed. The giving of anti-streptococcal serum intramuscularly also delayed the rate. In puerperal sepsis of uterine origin the rate was much accelerated, and took a very long time to return to normal. Anaemia caused no increase in the rate.

Dr T. T. O'FARRELL said that figures for this test had been given in Parkinson's disease, and the question arose as to whether one got different results when that disease followed encephalitis lethargica. He had done the test in a few cases, and those which were of the ordinary type showed a more rapid drop in rate than did the post-encephalitic cases. Dr. T. W. T. DILLON said that in cases of lung tuberculosis, this test had proved to be of no value in diagnosis, but it had been found useful as a prognostic test. In cases of bone tuberculosis, however, it was extremely valuable. Personally he regarded this test, together with accurate estimations of weight, as even more important than the keeping of a temperature chart.

Dr HALPENNY, *in reply*, said that all her patients had had 8 c.cm. of blood removed from the vein. She found this preferable to taking blood from the finger. Any slight inaccuracy in the carrying out of the test might be accentuated by using a small amount of blood. All her patients were under 30 years of age. She had had no opportunity of using the test in a case of Parkinson's disease.

CARCINOMA OF APPENDIX

Mr F. J. HENRY showed a specimen of carcinoma of the appendix. The patient, a young woman aged 22, was admitted to hospital with a typical attack of acute appendicitis. It was her first attack which, when she was seen, appeared to be subsiding. Operation revealed an acutely inflamed but unperforated appendix with a single concretion at the distal end and a nodule of solid yellow tissue immediately above it. Mr. Henry briefly reviewed the literature dealing with these tumours, in reference to the statements of Wilkie, McQueen, and Shera, who had reported similar cases.

Dr J. LAIT described the pathological condition.

The PRESIDENT suggested that this was a case of infiltrating carcinoma. He did not think it was a basal-celled tumour. Mr A. B. CLERY referred to two cases of carcinoma of the appendix recently under his care. In both cases metastases formed, the cancer being of the colloid type.

Dr T. T. O'FARRELL said that in cases of carcinoma of the intestinal tract, yellow pigment was frequently seen. He thought this might be a secondary tumour, and regarded it as being of the scirrhous type. He could not believe that a specimen could be genuinely malignant microscopically and fail to prove malignant afterwards.

Mr D. J. TORRENS referred to tumours which were described as argentine carcinomata (because the cells stained with silver nitrate), and mentioned that in the Mayo Clinic this condition was said to occur in about one out of 250 cases examined. In some cases the patients were over 60 years of age. He mentioned one case in a man aged 39, and another he had seen in which metastases had been found in the testis eight years after operation. Most of the cases which were recorded were, clinically, cases of acute intestinal disease.

Sir WILLIAM WHEELER deprecated the use of the term "carcinoma" in connexion with these unusual tumours of the appendix. Cases of carcinoma occurring in young people grew rapidly and destroyed life by early metastatic glandular involvement. The type of growth under discussion was found almost without exception in young people, and there was a striking absence of metastases. He did not regard these growths as malignant in the accepted sense of the word. The term "carcinoma," when applied to a tumour removed from a young subject, suggested to the clinician that metastases were to be expected and that the prognosis was unusually bad; the exact reverse was the fact in cases of so-called carcinoma of the appendix.

SARCOMA OF TESTIS

Mr. F. J. HENRY showed a specimen of sarcoma of the testis. The patient was a man aged 22. For two months he had noticed a hard enlargement of the right testis, which had increased progressively until it had attained the size of a grape fruit. The swelling was nodular, particularly at the posterior part, where it simulated the clinical features of tuberculous disease. The testis and epididymis were removed through an inguinal incision. The macroscopic appearances of the sectioned organ showed a fibrous stroma with scattered areas of necrosis. Early recurrences in the iliac lymph glands had taken place, but these were yielding in the most dramatic way to deep *x*-ray therapy. Dr. J. LAIT described the pathological condition, the tumour being, in his opinion, a seminoma.

The PRESIDENT said that testicle tumours were usually mixed tumours. He thought that this tumour was a genuine carcinoma and not a sarcoma, and that the cells were more of an epithelial than of a connective tissue nature. Dr J. MCGRATH agreed that this tumour was a seminoma; it seemed to him to have the typical features. The cells were large, had large nuclei, and extended in sheaths arranged round the blood vessels. The only thing against a seminoma was the patient's age, for these tumours usually occurred in men between 40 and 50. Dr T. W. T. DILLON thought there was a difference between the cells which were in sheath formation and those which were arranged round the blood vessels.

Dr LAIT and Mr HENRY replied, the latter stating that from the clinical point of view this was a tumour of excessive malignancy.

At a meeting of the Aberdeen Medico-Chirurgical Society held on December 3rd, with the president, Mr F. K. Smith, in the chair, Mr. Norman M. Dott of Edinburgh read a paper on the surgery of the posterior cranial fossa *in childhood and adolescence*. Mr Dott discussed in detail the three commonest lesions—chronic basal leptomeningitis, astrocytoma, and medulloblastoma of the cerebella vermis, as exemplifying an inflammatory disease, a benign tumour, and a malignant tumour. Several illustrative cases of these conditions were demonstrated, and the diagnosis and treatment were described. Mr Dott also mentioned tumours of the pituitary neighbourhood, gliomas of the cerebral hemispheres, benign meningiomas of the convex surface of the brain, angiomas, tumours of the cerebello-pontine angle, and trigeminal neuralgia, giving illustrations of several of these conditions to bring out the particular methods of diagnosis and surgical treatment required for each. Mr WILLIAM ANDERSON, Dr A. G. ANDERSON, Professor CRUICKSHANK, Sir ASHLEY MACKINTOSH, Mr G. H. COLT, and Dr J. Ross MACKENZIE, took part in the discussion following Mr Dott's address, and Sir John Marnoch expressed the appreciation of the large audience.

increasing belief that the "bistouri diathermique," or other suitable electrode, will revolutionize surgery, particularly in its relation to the cure of cancer. The treatment of accessible cancers and tumours by diathermy coagulation has yielded results beyond all hopes, and in certain cases quoted has proved superior to x rays and radium. The chapter on cancer of radiologists shows that diathermy coagulation has brought fresh hope to the treatment of radium dermatitis. This treatment has also been successful in cases of lupus where actinotherapy was not suitable—that is, where the lesion was extensive and deep, and the patient anxious for a quick cure and less concerned with the good cosmetic result achieved by light. The author supports his observations with convincing notes and photographs of the patients he has treated.

As long ago as 1919 Dr. Bordier was using diathermy coagulation in treating tonsillar hypertrophy and infection, and continues to find the results all that he wishes for. There is never any haemorrhage, the bactericidal effect is enormous, and the scar non-adherent and supple. He has treated children with success, but does not advocate this method for those under 10 years. His original treatment of anterior poliomyelitis, combining radiotherapy and galvanization with diathermy, is now being practised by many electrotherapeutists.

To the casual observer, this book may seem to be advocating diathermy as a universal remedy, but on closer study it is obvious that the author speaks from a thorough experience, and has a sound basis for his statements.

CUTANEOUS RAY THERAPY

During the last twenty years actinotherapy in one form or another has become increasingly important in the treatment of skin diseases, and in particular the debt owed by dermatologists and their patients to the healing powers of x rays and radium has become incalculable. Nevertheless, there have not been many practical handbooks written on the subject, and consequently we welcome Dr. H. H. HAZEN's volume on *Cutaneous X-ray and Radium Therapy*.[5] Dr. Hazen is a dermatologist of very great experience in this subject, and the methods and technique which he describes can be safely followed. There is, however, one great difference between American and European practice in the measurement of x-ray dosage. On this side of the Atlantic we are still accustomed to rely on the Sabouraud pastille, while in America (owing apparently to the dryness of the atmosphere) it has proved unsatisfactory, and hence Americans for the most part use an arithmetical formula, which has to be worked out separately for every x-ray tube. In consequence of this, gas tubes, the output of which varies considerably, are almost extinct in America, and their place is taken by the Coolidge tube, which lends itself to comparatively easy standardization.

Dr. Hazen's remarks on the action of radiation upon pathological tissues are very interesting. He does not believe that the cure of cancer depends upon the direct destruction of cancer cells, and thinks that the work done by those who have spent their energies in searching for the lethal dose necessary in dealing with various forms of cancer has been largely wasted. He believes that the tissue reaction is the central factor in the cure. His discussion of this very important and interesting subject is well worth reading. The importance of radiation as a therapeutic agent is brought home by his classification of skin diseases amenable to its effects. These are classified into thirteen groups, ranging from those in which radiation gives good results with or without the aid of other therapeutic agencies, down to a group of rare diseases in which radiation has occasionally been successful. Perusal of this list shows quite clearly how wide is the scope for actinotherapy in dermatology. In some conditions the x ray, and in others radium, is the agent of choice. In the treatment of plantar warts much better results are claimed for radium than for x rays, but the difficulty which these troublesome lesions give to the dermatologist is proved by the very odd confession that very old warts are so difficult to handle that they are best left untreated. In our opinion, even the most stubborn will yield to a suitable combined therapy. We have but little else to cavil at in an excellent and practical book, which should be read alike by dermatologists and by those radiologists who interest themselves in the problems of superficial therapy.

[5] *Cutaneous X-ray and Radium Therapy*. By Henry H. Hazen, M.D. London: H. Kimpton. 1931. (Pp. 166; 28 figures. 12s. 6d. net.)

NOTES ON BOOKS

The fifth edition has now appeared of Professor HERRICK'S textbook, *An Introduction to Neurology*.[6] With the increase of knowledge now available the subject-matter has been thoroughly revised and the details brought up to date. The main part of the book consists of a detailed account of the anatomy and physiology of the brain and nervous system; the illustrations are clear and the index is good. Controversial difficulties, such as the functions of the cerebral cortex, are dealt with thoughtfully, and the book will be welcomed by those who wish to place their neurological knowledge on a sound basis.

The seventh edition of *Bainbridge and Menzies' Essentials of Physiology*[7] has been again revised by Professor H. HARTRIDGE, who contributes new chapters on the basic principles of the blood, the heart, the circulation, respiration, the autonomic nervous system, the digestion, the metabolism, the kidneys, ductless glands, and sex organs. The account of the central nervous system has been rearranged with a view to clarifying the information. In the previous issue—which appeared in 1929—the chapters dealing with the sensory nervous and muscular aspects of physiology were rewritten by him. The whole volume is now up to date; it can be warmly commended to medical students and others interested in elementary physiology.

The appearance of a fourth edition of the well-known book *Tropical Hygiene*,[8] by the late Sir PARDEY LUKIS and Colonel BLACKHAM, is in itself the best testimony to the useful purpose which it serves. The present edition has been revised by Lieut.-Colonel A. D. STEWART, and chapters on sprue, filariasis, relapsing fever, leprosy and typhus, maternity and child welfare, etc., have been added. The aim is to provide a book on elementary hygiene which will appeal to the ordinary resident in the Tropics, and peculiarly in India. This aim has been well fulfilled. The book is admirably conceived, its scope has been carefully chosen, and the subject-matter, though intended for the non-medical reader, is treated in a properly scientific manner, and opinion when expressed is well balanced. Communicable diseases in the Tropics and the part played by insects, climatic conditions, water, food, nutrition, clothing, housing, and sanitation, are dealt with in turn as in a large textbook. Its chief use will be

[6] *An Introduction to Neurology*. By C. Judson Herrick, Ph.D. Fifth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1931. (Pp. 417; 138 figures. 12s. 6d. net.)

[7] *Bainbridge and Menzies' Essentials of Physiology*. Seventh edition. Edited and revised by H. Hartridge, M.D., Sc.D., M.R.C.P., F.R.S. London and New York: Longmans, Green and Co. 1931. (Pp. x + 583; 166 figures. 14s. net.)

[8] *Tropical Hygiene*. By the late Surgeon-General Sir Pardey Lukis, K.C.S.I., and Colonel R. J. Blackham, C.B., C.M.G., C.I.E., D.S.O., M.D., D.P.H. Fourth edition, revised and enlarged by Lieut.-Colonel A. D. Stewart, M.B., F.R.C.S.E., D.P.H., D.T.M. & H., I.M.S. Calcutta: Thacker, Spink and Co. 1931. (Pp. xi + 441; 79 figures. Rs.5.)

as it is intended to be, for those resident in India and the East; for this reason plague in South Africa, trypanosomiasis, and American leishmaniasis find no place; also it may be mentioned that venereal diseases, yaws, and schistosomiasis are not dealt with, and helminth injections outside ankylostomiasis receive but scanty notice.

Minor Surgery,[9] by the late Mr. L. R. FIFIELD, has now been revised by his colleague Mr. R. J. MCNEILL LOVE, who has preserved in the second edition the general style and arrangement which proved so acceptable to many readers. Certain additions have, however, been made in regard to the examination of the patient, and a short section on the ear has been included, dealing with the presence of foreign bodies, rupture of the drum, acute otitis media, and furunculosis of the external ear. The new edition will be welcomed by students and practitioners who desire a short practical summary of minor surgery clearly expressed and well indexed.

The formation of the National Government and the subsequent general election have brought about many changes in the sixty-fourth annual issue of *Whitaker's Almanack*,[10] published early in December in order that it may be available for transmission over-seas before the end of the year. The Cabinet as reconstructed and the New House of Commons are included, together with articles on the financial crisis and government by party. Statistical tables are also provided to show the source of the world's food and other products, and the quantities and places of origin of Great Britain's food imports. The preliminary results of the Census are recorded. The index has again been enlarged, and now consists of 140 columns, containing upwards of 20,000 references.

The recent financial and social conditions in Germany probably account for the fact that since the commencement of this year there has been a marked slowing-down in the appearance of the various volumes of the third edition of Kolle and v. Wassermann's *Handbuch der pathogenen Mikroörganismen*,[11] which is being published seriatim. We have now received three further Parts—48, 49, and 50. The last of these is indicated as the conclusion of the whole series, and contains a general detailed index, a list of authors, and an analysis of the contents of each of the preceding volumes. Part 48, which is concerned entirely with dysentery, has been prepared by the capable hands of Professors O. Lentz of Berlin and R. Prigge of Frankfort. As in the case of the rest of this series, a great amount of minute detail is compressed into the volume, which will thus be of more particular interest to research workers. Part 49 contains an account of paratyphoid infections, prepared by Dr. G. Elkeles of Berlin and Dr. R. Standfuss of Potsdam. Each volume includes a comprehensive bibliography, and these three final Parts form a fitting conclusion to a work of high merit.

The series of French books entitled Précis de Pathologie Médicale[12] is being issued in eight or nine volumes, of which some have already appeared and others are in course of preparation. The third volume, on respiratory diseases, by F. BEZANÇON and S. I. DE JONG, has reached a second edition, and the fourth volume, on diseases of the heart and vessels, by M. A. CLERC and N. DESCHAMPS, has recently been issued. These well-illustrated books aim at giving to medical students and practising physicians a general review of the pathological aspects of disease, the subject being approached from the clinical rather than from the purely pathological point of view. The complete series is a valuable addition to a medical library, and the two volumes which have just appeared maintain the high standard previously reached.

[9] *Minor Surgery*. By Lionel R. Fifield, F.R.C.S. Second edition, revised by R. J. McNeill Love, M.S., F.R.C.S. London: H. K. Lewis and Co., Ltd. 1931. (Pp. viii + 440; 281 figures. 12s. 6d. net.)

[10] Paper cover, 3s. net; cloth, 6s. net.

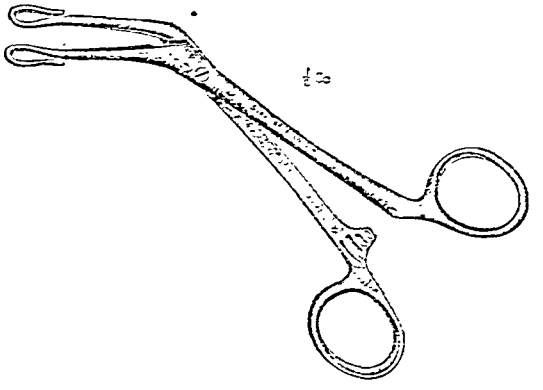
[11] *Handbuch der pathogenen Mikroörganismen*. Begründet von W. Kolle und A. v. Wassermann. Lieferung 48, 49, 50. Dritte, erweiterte Auflage. Jena: G. Fischer; Berlin und Wien: Urban und Schwarzenberg. 1931.

[12] Précis de Pathologie Médicale. Tome III, *Maladies de l'Appareil Respiratoire*; Tome IV, *Cœur: Vaisseaux*. Paris: Masson et Cie. 1931. (70 fr. and 100 fr.)

PREPARATIONS AND APPLIANCES

A NEW SUTURE-HOLDING FORCEPS

Mr. W. H. OGILVIE, F.R.C.S., writes: The continuous suture, rare on the Continent but almost universal in Britain, requires that the material shall be held taut after each stitch, to prevent slack developing in the suture line. In most surgical operations this is best done by the hands of the assistant. In bone and joint surgery, where "no touch" methods are an essential part of good technique, this is not permissible, and the surgeon must either use interrupted stitches or employ some form of suture-holding forceps. The usual patterns have metal jaws which, though smooth, weaken the suture material considerably where they grip it, so that it may break at the time or afterwards, allowing the whole length of the suture line to gape. This accident is very liable to happen with the fine 00 catgut usually employed for tendon suture, for approximating the synovial membrane and capsule of a joint, or for closing the soft tissues over a bone. Down Brothers have made for me a pair of suture-holding forceps, whose general design is that of the familiar



Guy's pattern, but whose blades end in a rounded loop open at one end, over which is slipped a length of fine rubber tubing. The rubber gives a secure grip, but cannot injure the finest gut; it can, of course, be renewed when worn.

OUABAIN

Ouabain (Burroughs Wellcome and Co. is a crystalline glucoside extracted from the seeds of *Strophanthus gratus*. In virtue of the fact that it can be obtained in a chemically pure form this substance has been adopted in certain countries as the standard of reference for the bio-assay of cardiotonic drugs. For clinical use it has the advantage of being a pure crystalline substance readily soluble in water.

BIOLOGICAL TREATMENT OF ORAL DISEASE

Spirogyl ointment for massage of the gums is stated to contain 35 per cent. of fuso-spirochaetic antivirus. Besredka showed that heated filtrates of microbic cultures could produce local immunity, and Séguin investigated the action upon lesions of the gums of filtrates of this kind prepared from the flora of the mouth. He concluded that they produced a beneficial action, and the preparation under consideration is based on this work. The makers claim that it has given satisfactory clinical results. It is marketed by Sealand Trading Co., Ltd.

COLLOIDAL MERCURY SULPHIDE

Mercolloid (Bio-Chemical Laboratories, Ltd., Locarno is a preparation of mercury sulphide in colloidal form. It is supplied in ampoules for intramuscular injection. The makers claim that the injections are painless, that the drug is well tolerated, and that it has a powerful treponemicidal action. It is recommended for the treatment of syphilitic and parasyphilitic conditions, and also for the treatment of psoriasis. Chemical analysis of a sample supplied to us showed that about four-fifths of the mercury sulphide was suspended in colloidal form, whilst the remainder had formed a precipitate.

BRITISH HYPODERMIC NEEDLES

British Surgical Industries, Ltd. 14, Regent Street, S.W.1 have placed on the market their new all-British stainless steel hypodermic needles. It is claimed that the quality is superior to that of needles of Continental manufacture, which have for so long been in general use; the prices at which they are retailed compare favourably with those of the foreign articles.

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CARCINOMA OF THE HYPOPHARYNX

The treatment of carcinoma in the lowest part of the pharynx, situated behind the larynx and immediately above the junction with the oesophagus, presents a surgical problem of great complexity. The primary functions of respiration and deglutition have to be maintained, and, if possible, it is most desirable to provide for phonation also by preserving the larynx. Further, the treatment planned must take into consideration the common routes of extension and the usual sites of metastases, besides the difficulties in controlling septic infection inherent in the surgery of the pharynx. These tumours, which are not very rare, occur chiefly in women immediately behind the plate of the cricoid cartilage, but there is also a male group in which the tumour is situated on the posterior pharyngeal wall. In women the tumours often arise a decade or two before the time at which carcinoma usually appears, and are constantly preceded by a long period of slight dysphagia. Early diagnosis is therefore exceptional, and the growths tend to spread down to the cervical part of the oesophagus, up towards the pharynx, and laterally into the thyroid gland before the nature of the complaint is recognized.

The discussion of this subject, initiated by Mr. Wilfred Trotter at the Laryngological Section of the Royal Society of Medicine on December 4th, provided an opportunity to review the various therapeutic measures, any of which may give a brilliant result, but are more often unsatisfactory owing to the situation and character of the disease. The most drastic surgical operation is that devised by Professor Gluck. The entire larynx, with a complete segment of the lower pharynx, is removed, along with the cervical lymphatic glands of both sides; the pharynx is reconstructed six months later by a plastic operation, and the patient is left with a tracheal stoma as after a simple total laryngectomy. Professor Gluck has long advocated this operation, on the ground that no attempt to preserve the larynx is compatible with a reasonable expectation of freedom from recurrence, and that the separation of the airway from the pharynx is a protection against inhalation pneumonia. Although a severe mutilation is produced by the operation, it is capable of giving a brilliant and lasting result. In this country, however, Mr. Trotter has long protested against laryngectomy, and has advocated an operation which removes the tumour and its extensions freely, but retains both the larynx and the pharynx as far as possible, the portions removed being reconstructed by means of skin flaps. Mr. John Hunter gave an account of the technique to be followed in the varying circumstances which may arise in such undertakings, devoting himself to this aspect of the question in greater detail than Mr. Trotter, who gave a general description of those pharyngeal tumours which take origin around the larynx, and of the principles underlying their surgical treatment. He related a number of cases in which the patients had survived many years without recurrence and without serious mutilation.

Professor Carl von Eicken of Berlin also gave a general review, in which he outlined the pathology of tumours which arise in the hypopharynx. They differ from those of the epilaryngeal group, which grow more slowly and form metastases later than do tumours which originate in the sinus pyriformis and lowest part of the hypopharynx. Microscopically, many of these tumours are of the anepidermoid or mucous type of epithelioma, indicating that a certain proportion might prove sensitive to ray therapy. He considered that on the whole purely surgical treatment was unsatisfactory on account of the technical difficulty of the operations, the mortality from sloughing, cellulitis, and pneumonia, and the necessity for subsequent plastic operations. He had therefore sought a solution of the problem in radiological treatment, and related some encouraging results. The application of radium to tumours of the hypopharynx can be carried out either by external application with a pack or in combination with surgery. The latter method had been used in eleven cases without producing any complication, and in two cases the tumour had disappeared, leaving the patients free from symptoms, whilst in five of the remaining nine the tumour had diminished in size. He had no personal experience of radiotherapy by deep x rays, but he thought that the method of Coutard, who employs protracted fractional doses by exposing the patient to treatment for one hour daily over a period of three weeks, was very promising. Coutard claimed 20 per cent. of permanent cures, a better result than could be claimed for surgical intervention.

Mr. Douglas Harmer admitted that so far the results of deep x-ray therapy had been disappointing, but he thought that a combination of surgery and radium with deep x rays, provided by an apparatus of the requisite strength, would show improved results. He gave a warning about the stimulating effect on tumour growth of inadequate x-ray treatment. Mr. Mollison also described what has been accomplished by the deep x-ray department at Guy's, where an apparatus of sufficient power is available. The discussion tended to show that in the hands of Mr. Trotter the surgery of this region has reached its zenith. Those, however, who hold that any further advance in treatment is likely to be along lines which are not purely surgical would do well to bear in mind some words used by that surgeon a few weeks ago: "It is commonly supposed that the use of radium has greatly simplified the treatment of epithelioma of the pharynx. This supposition is not true. Radium has given us a new and very powerful addition to our means of attack, but so far from simplifying the attack has made it more than ever dependent on experienced judgement and expert handling. It is possible even that up to the present time the total

results as to cure or notable periods of freedom from recurrence are actually worse for the introduction of radium, since it seems likely that many patients who might have had a good chance of cure by operation in competent hands have had their chance frittered away in ineffective radium treatment. If this is so it is, of course, only a transient phase, for a proper appreciation of the technical requirements of sound radium treatment is already replacing the cruder view and must in time result in the full benefits of radium being made manifest."[1]

The general conclusion reached at last week's meeting may be summed up as follows. In relatively early cases, where the larynx, the thyroid gland, and the upper end of the oesophagus have not been invaded, the treatment of choice is the operation of Trotter. A segment of the pharynx containing the growth is excised and replaced by a flap of skin turned into the wound from the surface of the neck. In more advanced cases the operation of Gluck is capable of giving the patient a long period of freedom from the disease with a tolerable functional condition, but with the sacrifice of the larynx. On the other hand, where no operation can be undertaken, or when it is declined, the use of deep *x* rays or of radon seeds, implanted around the tumour either into an open wound or through the skin of the neck, may provide great relief from dysphagia or even a long period of freedom from active disease. Even if the initial treatment be successful, whether it be surgical or radiological, it is unfortunately not improbable that the patient will succumb in the end either to a local recurrence or to invasion of the mediastinal glands. Nevertheless, we may echo the hope entertained by Mr. Trotter "that the number of cases of the severer type will diminish when the natural history of these growths becomes more generally known, and it is learnt that diagnosis is usually easy at an early stage if one knows what to look for."

SERO-DIAGNOSIS OF SYPHILIS

Uruguay is to be congratulated on having staged a serum conference at Montevideo last year in continuation of those held at Copenhagen in 1923 and 1928. The diagnosis and determination of cure of syphilis by serum tests are so important, and at the same time so difficult, that every encouragement should be given to those who are anxious to improve and correlate the methods at our disposal. The campaign against syphilis —only really launched at the beginning of this century —depends very much for its success on perfecting the various serum reactions. So long as pathologists remain in watertight compartments, carrying out their own favourite reactions, little progress will be made. It is only by getting them together and comparing their results—both with each other and with the clinical findings—that the relative value of the various methods can be assessed. In this conference twelve methods were considered—namely, seven modifications of the Bordet-Wassermann, four flocculation, and one sero-haemo-flocculation. It will be useful to compare these with one another in respect both of sensitiveness and of specificity.

Four of the Wassermann methods, one flocculation, and the sero-haemo-flocculation method gave such a high percentage of false positive results that they may be dismissed at once. The Kahn "presumptive" test gave by far the highest percentage of positive results in syphilitic serums, with three false positives in non-syphilitic ones, while it held its own with the other tests in the case of cerebro-spinal fluids, but gave four false positives out of 142 non-syphilitic specimens. Its principal value, therefore, is as a test of cure and to exclude syphilis—for example, in blood donors. There remain three Wassermann methods (Scaltritti-Cassiniga, Sordelli-Miravent, and Wyler) and two flocculation methods (Kahn "standard" and Müller—M.B.R. II). Of these the Kahn and Wyler are outstanding as having yielded no false positives in the whole series of 966 serums and 200 cerebro-spinal fluids—a very remarkable achievement. The Kahn test, however, was much the more sensitive, giving 63.9 per cent. as against 54 per cent., and 35 as against 28 positives in syphilitic serums and cerebro-spinal fluids respectively. The Müller (M.B.R. II) reaction came out very well in respect of sensitiveness, but gave two false positives on serums and one on a cerebro-spinal fluid. Of the three Wassermann methods none recorded a false positive on a serum, while their percentages of positives on syphilitic serums were: Sordelli-Miravent, 55.9; Wyler, 54.4; Scaltritti-Cassiniga, 49.9. In the cerebro-spinal fluid series the Sordelli-Miravent method was not employed; Scaltritti-Cassiniga recorded 39 positives out of 52 in syphilitic cases, and one false positive out of 147 non-syphilitic; Wyler out of 53 syphilitic cases recorded 28 positives, and had no false positives in the non-syphilitic group; moreover, he had 10 "doubtful" reactions in the syphilitic group, which would probably have been recorded as weak positives under less exacting conditions, since he had none among the non-syphilitics. Speaking generally, the complement-fixation reactions quite held their own with the flocculation reactions in the case of cerebro-spinal fluids; this is a matter of some importance, since the Kahn test, for example, is laborious to carry out on cerebro-spinal fluids, and does not work well with specimens which are not clear; such specimens are, unfortunately, all too common in everyday practice.

To sum up, the Kahn standard test must be given the palm both for specificity and for sensitiveness. Of the Wassermann methods three proved almost equally reliable, though not quite so sensitive as some of the flocculation tests. However, in view of the fact that in a certain number of cases of syphilis the Wassermann reaction was positive when the flocculation test was negative it would appear that, as a routine, two methods —one a Wassermann test and one a flocculation— should be employed on all serums. This was recommended after the Copenhagen conference in 1928, and

[1] Wilfred Trotter: Some Principles in the Surgery of the Pharynx. Address at the Central London Throat Hospital. *Lancet*, October 17th, 1931.

also after the conference under consideration. An interesting side-line was the testing of twenty-seven serums from cases of leprosy; about one-third of these gave positive results in the hands of most of the workers. A general agreement was obtained as to the recording of results: ++ or + indicating a positive, ± a doubtful, − a negative. If pathologists all over the world would adopt his method a good deal of doubt and misconception would be avoided. The value of the conference cannot be overestimated, but there is one point which does not seem to have been discussed, and that is a really good eliminating test. What is needed is a highly sensitive test—easily and quickly carried out, and applicable to large numbers of specimens. This might be used as a routine; then those serums giving positive results might be tested further by one or other of the methods that have been proved satisfactory. This would save a vast amount of time for those pathologists who have large numbers of specimens to deal with.

The report of the Montevideo conference is well got up and clearly printed.[1] Tables are included giving a summary of the results obtained by the various serological methods, and also the detailed results obtained on each individual specimen. Each specimen was divided up among the various workers and labelled only with a number, so that its origin and the clinical diagnosis were not disclosed till the end.

THE HISTORY OF ERGOT

The history of drugs is in many cases a long and curious story that runs back to classical times and even earlier. This interesting subject suffers, however, from an undeserved neglect, because few people have either the patience or the varied knowledge necessary for its pursuit. The history of ergot begins with the epidemics of ergotism, one of the many horrors, now half-forgotten, that afflicted mediaeval Europe. Professor Barger[2] has given a full account of these epidemics from the ninth to the nineteenth century, with numerous quotations from original documents and interesting mediaeval pictures depicting the evil effects of ergotism. These epidemics were of two kinds, the gangrenous and the convulsive, and the reason for this distinction has, until recently, been a mystery; but investigations by Mellanby suggest that convulsive ergotism may have been due to ergot poisoning combined with lack of vitamin A. Professor Barger shows by quotations that clinical observers in the past were convinced that convulsive ergotism could be prevented by the addition of butter and eggs to the diet. Hence, a half-forgotten clinical observation has been confirmed and explained by recent scientific work. The tragic experience of epidemic ergotism led to recognition of the abortifacient action of ergot, and the drug, first used as a folklore remedy, was finally recognized and employed by the medical profession. Professor Barger's account of the chemistry of ergot has special importance, because the author is one of the chief authorities on this subject. Chemical research on ergot, while presenting great difficulties, has yielded results of extraordinary interest, for the fungus has proved to be a veritable storehouse of substances of first-rate biological significance. The specific alkaloids are the substances to which the drug owes its clinical value; moreover, it was in this material that histamine and ergosterol were first discovered. Professor Barger, indeed, concludes that the general interest of ergot is greater than that of any other drug. Barger and Carr found that the chief active alkaloid of ergot of rye was ergotoxine, and this has been confirmed recently by Smith and Timmis. Stoll, however, found that ergotamine was the chief alkaloid present. One point of considerable practical interest in the clinical use of ergot is that, since the introduction of ergotamine, a number of cases of severe gangrene have been attributed to it by certain authors. Chapters on the chemical and biological assay of ergot, the sources of supply of the drug, and the methods used for estimating whether ergot-infected rye is suitable for human consumption, conclude the monograph. It therefore deals with a wide variety of subjects, and provides a remarkably complete and very interesting account of the use of ergot as a drug and of its action as a poison.

PARASITOLOGY IN CHINA

Modern parasitology is very intimately connected with China. It was there, in 1878, that Patrick Manson carried out the fundamental work on filaria which introduced to medicine the conception of the biting intermediate host. It was there that Leiper, in 1913, found the clue to the life-histories of the African blood-flukes, and later it was there, too, that Faust and Cort and other American workers conducted some of their most important researches. That China, though no longer a virgin field, still offers an inexhaustible wealth of material for scientific research, is well shown by the August–October number of the *National Journal of China*, which is entirely devoted to original articles on protozoa, helminths, fungi, and their treatment and prophylaxis. The wide ground covered by the twenty-two articles indicates that China's own sons are now giving parasitology the attention it merits. In a leader the editor discusses the general ignorance of medical practitioners on the subject. This he believes is due to the fact that students returning from abroad know little or nothing about parasitology because it is either omitted entirely or else inadequately taught in the ordinary medical schools. Except in countries with tropical possessions, it is not considered advisable to burden the medical student with what is unnecessary for his future career. Even in countries with tropical possessions parasitology is not included in the ordinary medical curriculum to any extent, but is reserved for study in post-graduate diplomas. Undoubtedly this criticism is true, but in these days of overcrowded curricula it seems unfair to suggest adding to the ordinary course instruction which only has an extraordinary application, and which in any case is provided for in special courses intended for medical men proceeding to the Tropics. There are three such courses in Britain—in London, Edinburgh, and Liverpool—and these seem to meet most requirements. The criticism is, however, more to the point in suggesting that what

[1] League of Nations. Health Organization. Report of Laboratory Conference on the Serodiagnosis of Syphilis, 1930. Geo. Allen and Unwin, Great Ormond Street, W.C.1. (3s. 3d.)

[2] *Ergot and Ergotism.* By George Barger, F.R.S. London and Edinburgh: Gurney and Jackson. 1931. (15s. net.)

little parasitology is necessarily included in our M.B. courses is not adequately, and often not even accurately, taught. There should be no excuse for lack of accuracy in the teaching of the subject in this country: only half a dozen worms or so are important, and sufficient information can be easily obtained; and yet the most profound ignorance persists. The real solution of China's problem would seem to lie in the provision of more and better local instruction. The position is appalling. In a commencement address at Peiping by Hu Shih (reported in the same issue) it is pointed out that the proportion of modern-trained doctors to the population in the interior cannot be more than one to every million inhabitants. In the old days the Chinese doctor could, somewhat empirically, prescribe for the more common diseases; but he is quickly dying out without being replaced, because the products of the modern secondary school are unwilling to master the mysteries of the ancient profession, which they know must sooner or later give way to the modern medicine from the West. In Hu Shih's own district a population of half a million people is relying in matters of life and death on an opium-smoking quack doctor. The need for modern physicians is extreme in the interior, where curable diseases and preventive epidemics kill thousands, and where millions of lives are resigned to fate and ignorance. In her efforts to solve the problem China has a right to expect assistance from the modern medical science of the West.

FOOD PRESERVATION

It is only about fifty years since the first consignment of frozen meat from Australia was delivered in sound condition at the London docks. In this brief period an industry has grown up which now employs over a thousand vessels, with a total cargo capacity of about a million tons. These figures, which are given in an introductory note to the first number of vol. iii of the *Index to the Literature of Food Investigation*,[1] issued by the Department of Scientific and Industrial Research, are instructive from several points of view. We are not here concerned, however, with their political, economic, or sociological implications, but with the need they suggest for continuous scientific research in preserving the quality and freshness of the natural product. In this connexion the publication referred to above contains some illuminating information, which reveals incidentally how various branches of inquiry are being turned to practical account. Thus, Tadokoro and Watanabe in Japan are reported to have made some interesting observations on the chemistry of fish muscle, while Linneweh and his co-workers have investigated the constitution of "anserine" and its presence in the muscles of different birds. In this country the importance of physico-chemical considerations to storage problems was indicated at the meeting of the Faraday Society held at Cambridge last year, when reference was also made to work on the double refraction of muscle. "It not only promises to close the century-old controversy about the structure of striated muscle fibres, but also reopens that too much neglected theory of the structure of fluid which began with Poisson and seemed to end with Poynting." In regard to by-products a bulletin issued by the Hannah Dairy Research Institute, describing an inquiry into the utilization and marketing of surplus milk and milk residues during 1926, concludes that the amount of separated milk wasted in Scotland was sufficient to furnish the whole of the Scottish imports of condensed separated milk. Another subject that has been recently investigated by various workers is the deterioration of animal and vegetable fats on storage. It has been found that the three main factors responsible for the production of objectionable taste, odour, and appearance are moulds and bacteria, atmospheric oxidation, and tissue enzymes, and that any combination of these may cause rancidity. Studies on the gas storage of fruit appear to have shown fairly conclusively that this method of preservation has become a commercial proposition, and attention is now being directed, especially in America, to the effects of cold storage, canning, dehydration, and preservatives on the vitamin content of fruits and vegetables.

[1] Compiled by Agnes Elisabeth Glennie, B.Sc. H.M. Stationery Office. 1931. (2s. 6d. net.)

SIR BENJAMIN WARD RICHARDSON

In exhibiting a flagon from Sir Benjamin Ward Richardson's wine cellar at the Section of the History of Medicine of the Royal Society of Medicine on December 2nd, Dr. J. D. Rolleston said that his object was to put an end to a legend connected with Richardson, who died in 1896, and was at once an eminent consulting physician, sanitary reformer, and antiquarian. Although his work and even his name are unknown to a large proportion of the medical profession to-day, his memory, according to Dr. Rolleston, is still kept alive by those interested in such apparently heterogeneous subjects as the alcohol problem, in the scientific investigation of which he was a pioneer, the establishment of model abattoirs and medical biography. Among some of the older members of the profession, including several of Richardson's successors in the chair of the Medical Society of London, the legend has long been current that Richardson, with the fanatical zeal of a teetotaler, had poured down the sink the contents of a priceless wine cellar which had been left him by the celebrated naturalist and antiquarian, Sir Walter Trevelyan, to be applied for scientific purposes. The contents of the cellar, as Richardson relates in *Macmillan's Magazine* of January, 1880, consisted of twenty or twenty-one specimens of wine, spirits, and beer. Very many bottles were half empty, and their corks destroyed, on their delivery to Richardson, but about sixty dozen were in a good state of preservation. Richardson was much embarrassed by the gift, though he had no lack of suggestions as to how he should dispose of it. Nothing however was done, and the bottles, with their contents remained intact in the possession of Richardson's family who last July sent a large consignment to the late Professor W. E. Dixon at the Pharmacological Laboratory at Cambridge, where they still remain, Dixon's untimely death having taken place before an examination of the contents of the bottles could be made. The flagon exhibited by Dr. Rolleston was estimated by the authorities of the Victoria and Albert Museum to date from about 1820 and to be of Austrian or Bohemian origin. According to Dr. J. E. McCartney its contents consisted of 140 c.cm. of muddy dark-brown fluid,

which had probably been a full rich wine with a fairly high alcoholic strength, such as a good Burgundy. Owing to a defective cork, however, evaporation had taken place, and the alcohol had disappeared, either from evaporation or conversion into esters.

RADIUM IN MALIGNANT DISEASE

In a recently issued publication of the Medical Research Council,[1] a comprehensive account is given of the results of radium research in the treatment of cancer and other malignant conditions during 1930. This report, the ninth of its kind, summarizes the work of the Council's thirteen research centres, and takes up the story at the point reached a year ago. Before considering the results obtained from individual centres, the report opens with a brief review of the present position of radium in relation to cancer therapy. The probability of success by this method of treatment depends, as might be expected, on the site of the disease and the early or late manifestation of the growth. At the present moment the breast, cervix uteri, and buccal cavity offer the most promising fields for radium therapy. While in rectal cancer little progress has been made with treatment solely by radium, cases are reported in which advanced growths have been rendered inactive, mobile, and therefore operable as a result of initial radium treatment. The problem of the oesophagus, nevertheless, remains unsolved. The general impression gained is that while radium has a recognized place in the treatment of cancer, its exponents have to rely to a large extent on the selective action of the radiation used. Up to the present no method has been discovered by which malignant cells can be made more radio-sensitive, if we except variations in the time factor. Any successful step in this direction would have wide-felt effects. When due allowance is made for the technical difficulties of treating malignant growths, there seems to be, normally, a considerable range of sensitiveness to radiation among the many varieties of cancer cells. Only further research can show what the expectations in radium therapy may be.

[1] Medical Research Council. Special Report Series, No. 160. Medical Uses of Radium. Summary of Reports from Research Centres for 1930. H.M. Stationery Office. 1931. (9d. net.)

SCIENTIFIC AND TECHNICAL ABSTRACTS

A scientific abstracting service was recently held at the Imperial College of Science and Technology at the invitation of Mr. H. T. Tizard, President of the Association of Special Libraries and Information Bureaux. The object of the meeting was to exchange experience and to discuss methods, not with a view to advocating standardization, but in order to produce a body of information which could be utilized to mutual advantage. The conference unanimously approved of ascertaining the methods employed by societies and industrial undertakings for collecting and reviewing foreign publications. A small committee was appointed to issue a questionary to abstracting organizations and information bureaux, and to summarize the replies. One of the main objects is to try to provide a more complete and prompt review of foreign scientific and technical publications, especially in the less understood languages, such as Russian and Japanese. The committee will attempt to indicate precisely what methods have been found successful or ineffective, and to analyse the collected experience and opinions. It is hoped that all firms and societies which maintain such organizations will help to promote the efficiency of scientific abstracting in general by taking part in the survey. Copies of the questionary may be obtained from Mr. S. S. Bullock, secretary of the Association of Special Libraries and Information Bureaux, 16, Russell Square, London, W.C.1. Replies should, if possible, be received not later than the end of the year.

RESEARCH DEFENCE SOCIETY

Among his many activities the late Lord Knutsford was chairman of the Research Defence Society, a national society of men and women united to promote the health and well-being of the community by bringing about a better understanding of the value of medical and scientific research. To find a successor to Lord Knutsford was no easy task, but the society announces now that the Hon. Sir Arthur Stanley, chairman of the Executive Committee of the British Red Cross Society, and treasurer of St. Thomas's Hospital, has accepted the office. Lord Knutsford had been chairman since the foundation of the society in 1908, and during his term of office he rendered signal service to medical progress by his ardent support of medical research in our hospitals and universities, and, moreover, by his insistence that such work should not be hindered. In Sir Arthur Stanley the Research Defence Society has again secured the services of a man whose life is devoted to the cause of suffering humanity. The society also announces that Professor A. V. Hill, F.R.S., has been appointed vice-chairman, which office has not been filled since the death, in 1926, of Stephen Paget, F.R.C.S., the founder of the society.

POSTURE IN YOUTH

The importance of posture as a sign of correct or faulty muscular balance and tonic action has been long insisted upon by Goldthwait and others in America, and by Dr. M. Forrester-Brown in this country. The lack of a guide to school teachers and those in charge of cripples' clinics in the teaching of exercises intended to develop and strengthen the faulty muscles and restore tone, has been for some time felt. Miss L. S. Rolleston and Lieut.-Colonel W. K. Steele, R.A.M.C., have compiled a very short and simple guide for the use of the Devizes Orthopaedic Clinic.[1] To this Dr. Forrester-Brown has written a foreword in commendation. The chief points aimed at in the exercises are: to reduce exaggerated curves of the spine; to strengthen the abdominal muscles; to develop the capacity of the chest; and to teach the fullest type of breathing. This guide, with its many illustrations, should certainly help teachers to attain the desired ends.

[1] *School Orthopaedics: A Guide for Teachers.* George Simpson and Co., Devizes, Ltd. (2s.)

An editorial paragraph in the *Canadian Medical Association Journal* congratulates Professor W. Harvey Smith on receiving the honorary degree of LL.D. from McGill University at its last quinquennial celebration. All members of the British Medical Association who took part in the Annual Meeting at Winnipeg last year under his presidency will be pleased to hear of this honour conferred on Professor Harvey Smith.

Nova et Vetera

AN ELIZABETHAN MEDICAL ADVERTISEMENT

A few really rare medical books may arouse the collecting instincts of connoisseurs in London within the next few days. Perhaps the most desirable is the 'Liber Pandectarum Medicinæ," by Matthaeus Silvaticus, printed in folio at Strasbourg by an anonymous printer in the fifteenth century, bound in contemporary pigskin over wooden boards, with the original iron staple to the lower cover and four links of chain. This is to be sold at Sotheby's on December 14th. In the same sale are R. Boyle's Apparatus ad Historiam Naturalem Sanguinis Humani, 1684, and "Medici Antiqui Omnes, qui Latinis libris diversorum morborum genera et remedia persecuti sunt, a folio of 1547, as well as two or three others of lesser interest. The next following sale, beginning December 17th, contains a Basel issue of 1526 of Hippocrates' "Cor Medicorum Omnium longe principis", a Paris edition of Ambroise Paré's works, dated 1582, a translation, by Culpeper, of Riolanus's Guide to Physick and Chyrurgery, 1657, as well as two or three more original works by this translator, a Galen of 1551, Sir Thomas Elyot's "Castel of Helth," London, 1541 (not the first edition, of course), Philip Barrough's "Method of Physick,' 1596, and John Banister's "Needefull, new, and necessarie Treatise of Chyrurgerie," in the original vellum, 1575.

The foregoing are all for sale by public auction, a few more may be mentioned which are now on sale at W. H. Robinson's bookshop in Pall Mall. Foremost, a copy of the 'Physicorum Elementorum" of Carolus Bovillus, published at Paris in 1512, which contains a manuscript memorandum, bound in as a flyleaf, made about 1575 by a travelling Elizabethan physician and thought to be a notice to be given out by the town crier on the doctor's arrival in each town of his itinerary. This advertisement runs as follows:

> Whereas yt hathe bene reported by certaine maleticus persones that ther ys certaine phesesyons and chururgins and none of them good Then therfor ar to lett all men understand for my dyscharge that occacon doth serve that I must depart from this towne and yf ther be anye man or woman within this town of Richmond or Richmondshire or Newcastell where I remayned last for the space of xviij wekes and now here for the space of ij monthes and odde dayes that if I haue in the places aboutesaid taken anye money of anye person and not performed my convenaunt or discharged my cure accordinghe that they come now to my ost house at Willm Atkinson's And ther I am redie for everye grote so receyved to restore yt duble Least they have occacon to report the lyke by me after my departure Written this xxiij ot October by me Walter Doctor and chyrurgion and practiser in phesycke

In the same firm's catalogue are Walter Bruel's "Praxis Medicinæ," 1632, with the rare leaf at the end giving the apothecaries' weights, Sir John Flover's "Treatise of the Asthma,' 1726, and a number of medical tracts on various subjects, published in the eighteenth century. The Bovillus, which is not in the Bibliotheca Osleriana, is priced at £36.

Another firm, Messrs. Hodgson of Chancery Lane, are selling at auction, on December 11th, the library of Dr. L. W. Sambon, which contains many medical rarities. The most important is a "Hortus Sanitatis," printed at Strasbourg in 1497 by J. Preuss, a clean copy, but slightly worm holed. Others of note in this collection are Ambroise Paré's "Workes," first English edition, 1634; Valverde's 'Anatomy,' 1586, Fabricius's "Anatomy, 1625, Vesalius's "Anatomy," 1642, Durante's "Il Tesoro della Sanita," 1586, another, hitherto regarded as the first edition, 1588, A. T., "A Rich Storehouse, or Treasurie for the Diseased," 1607 (rare), Rueff, "De Conceptu et Generatione Hominis," 1554, and many others.

ANNUAL CONGRESS OF RADIOLOGY

The annual congress of the British Institute of Radiology was held at the Central Hall, Westminster, on December 2nd, 3rd, and 4th. After the official opening by Lord Rutherford, the fifteenth Silvanus Thompson Memorial Lecture was delivered by Sir James Jeans, in the form of a fascinating description of modern theories of radiation. On the following day the twelfth Mackenzie Davidson Memorial Lecture was delivered by Professor Hans Holfelder, who entered upon a comparison of medical, surgical, and radiological conceptions in relation to the treatment of disease. Successive mornings were devoted to a series of papers on the physical side of radiology, and to two medical discussions, which are reported below. An exhibition of apparatus and materials, to which eighteen firms contributed, was associated with the congress.

PRESIDENTIAL ADDRESS

Dr. A. E. BARCLAY, in his presidential address gave a history of the Institute and of its forerunner, the Röntgen Society, and went on to discuss domestic affairs. One looked back, he said, with increasing respect to the early days, when, in the face of inertia and discouragement, the early workers struggled to lift radiology from its humble beginnings. It was their self-sacrificing work which had built up this science and given it the standing it now enjoyed. The Institute was what its members had made it, and it was to the young men on both the medical and physical sides, that they looked to take up the work that began to weary the shoulders of those who had given of their best during the last quarter of a century. Some false and damaging remarks had been lately made about the Institute and he desired to say that it was not, never had been and never would be, financed or controlled in any way by the *x* ray or any other industry. Approximately 80 per cent. of its members were practising radiologists. Of the remainder, a number were physicists engaged in laboratories and in industry, together with a handful of technical assistants in *x* ray departments. He suggested that the council should consider the formation of sections interested in different aspects of radiology and having the power of ordering their own affairs. Without a forward policy he saw the Institute crumbling.

THE RADIOLOGICAL CONCEPTION OF DISEASE

The Mackenzie Davidson Lecture was delivered by Dr. HANS HOLFELDER of Frankfort. At first he said the history of Roentgen and Curie therapy had followed only surgical conceptions of disease; medical conceptions coming later. Radiotherapy, originally created as an accessory method of surgery, had become now an autonomous therapeutic procedure differing in very characteristic features from surgery as well as from internal medicine. The careful planning out and application of the *x* ray beam was one of the supreme duties of the modern radiologist, and conditioned the result of the therapy just as the exact wielding of the knife determined the result of the surgical operation. But it had been proved to be wrong to tie up radiotherapy so very closely with surgical conceptions. Laboratory research had discovered that one could never kill at once and with one carcinoma dose, all the different cell of a malignant tumour, on account of the differing sensitivity of

such cells. It was now known that the toleration dose was increased up to a well-determined degree by splitting up the whole amount of the radiation into a number of small fractioned doses. Thus, the fixed one-day method of treatment was abandoned for a more flexible distribution of treatment over days or weeks—a more troublesome and expensive method, but one more efficient and successful in its results. Radiotherapy was following in the line, not of surgical conceptions, but of those of internal medicine. Though there was not yet agreement as to which method of fractioning the doses was most efficient, it was clearly proved that the results in malignant conditions were considerably better with any of the "long-time treatment" methods than with one-day treatment. Radiotherapy, said the lecturer in conclusion, had become essentially a clinical method, and it urgently required clinical facilities. There were no qualitative differences between *x* rays and radium in regard to biological effect, and the two agents could thus supplement one another very usefully. He believed that the future of radiotherapy belonged mostly to *x* rays, but that in some regions radium should come into combination. For all these reasons he thought it necessary that radiotherapy should be developed, like surgery and internal medicine, into a clinical province, and that in every hospital there should be an autonomous radiotherapeutic clinic, enjoying the same rights as the others in the hospital.

RADIATION TREATMENT OF LEUKAEMIA

Sir THOMAS HORDER, opening the discussion on this subject, said that some form of radiation might be regarded as the most helpful form of treatment in leukaemia. The essential pathology of leukaemia remained elusive. There were two hypotheses in particular: one that the leukaemic state was a reaction to some infective process, and the other that the essence of the disease was neoplastic, though for either of these hypotheses it was rather difficult to find convincing evidence. They were both of some importance in view of the aim of radiation, for if there was a neoplasm certain rules of guidance, derived from the irradiation of known neoplastic areas, could be taken. How did radiation produce its effects in leukaemia? This question, again, must be left open. His own impression was in favour of an indirect, rather than a direct, mechanism. Was the effect of radiation merely symptomatic or to be regarded as curative? He believed it to be symptomatic. He thought it was agreed that if life was prolonged in leukaemia as a result of radiation treatment, it was not prolonged by very much—say, by one-fifth or one-sixth—of the expected duration. Nevertheless, the state of comfort of the patient during this period was considerably increased by careful and well-planned radiation. Leukaemia was controlled, but not cured. As to the aim in radiation treatment, he thought this should not be to bring the white-cell count back to normal, but rather to bring the haemoglobin and red cells to a normal standard—that is, to dispel the associated anaemia and to improve nutrition and general tone. There was a temptation to take the criterion of the blood count too mechanically instead of paying regard to the general state of the patient. The aim should be to improve the patient's general condition as indicated by his own feelings, by a rise in his general state, and improvement of weight if this had been lost. That was better than trying to produce what might be regarded as an ideal leucocyte count. He was rather dubious about a re-treatment at the first sign of some change in the patient; *x* rays should rather be kept in reserve. Certain general features in the patient were contraindications; these included pyrexia, myocardial weakness, renal insufficiency, and haemorrhages. Acute lymphatic leukaemia, which was probably a different disease from leukaemia, was not good material for radiation treatment unless there happened to be some pressure by a particular group of glands, as, for example, massive glands in the neck, or mediastinum. With regard to the relative value of radiation in different parts of the body, once the spleen had become hard from irradiation there was no chance of benefit from further *x* rays. It might be useful to follow the plan of irradiating the thorax (the ribs, scapula, and sternum), as they were rich in blood forming marrow. No doubt the relative values of surface application of radium and irradiation by *x* rays would be discussed.

Dr. N. S. FINZI said that probably cases of leukaemia were underdosed. One reason for this was that it was quite easy to kill a leukaemic patient with *x* rays, especially when it was an acute case, if too large a dose were given in too short a time. There was also a tendency to pay too much attention to the white cells and too little to the red cells and haemoglobin. Dr. Finzi gave a table of acute and chronic cases treated between 1920 and 1927. (He did not include cases of later date because many of these were still living.) It appeared from this table that the average period of survival after the first radiation treatment was one year and eleven months in myelocytic leukaemia, and one and a half years in cases of the lymphatic type. It happened in most cases that on repetition of the treatment larger and larger doses were required to obtain a response, and that in the terminal stages there might be a failure to respond at all. The best results had been obtained when fairly large doses were given eventually, though the initial doses might have been small.

Dr. A. PINEY described some cases treated by irradiation of the long bones and of the spleen. By this means the patients had been kept free from clinical relapses, and rendered able to continue their work—in some cases hard work—for two years or more. In the radiation of cases of leukaemia, the full effect was not obtained right away. The white cells dropped and continued to drop for weeks afterwards, so that it was necessary to cease the radiation treatment before the white cells were reduced too low. He did not believe that the white-cell count or the red-cell count of the peripheral blood was a definite indication of the state of the bone marrow.

Dr. J. H. DOUGLAS WEBSTER agreed with Sir Thomas Horder that a good deal of the effect of radiation was indirect. The more dramatic changes were shown in the myelocytic type of leukaemia, but the end-results in the lymphatic type were better. Dr. Webster described a certain technique of radium treatment, and also discussed different methods of *x*-ray application. He agreed with Sir Thomas Horder that radiation treatment should be held in reserve (not used too prodigally) for definite symptoms.

LIPIODOL IN DIAGNOSIS OF INTRATHORACIC DISEASE

Dr. L. S. T. BURRELL, in opening a discussion on this subject, said that the most obvious indication for the use of lipiodol was bronchiectasis. Its use here was to assist in treatment. The treatment of bronchiectasis depended very largely upon whether the disease was unilateral or bilateral. He had frequently seen cases with obvious signs of bronchiectasis on one side, but only by the use of lipiodol had he discovered considerable bronchiectatic dilatation on the other side. Before urging a surgical operation of any magnitude, therefore, it was essential to have an *x*-ray examination after using lipiodol. Again, it was difficult or impossible clinically to determine the extent of the bronchiectasis. As treatment depended very largely upon this, lipiodol was useful for the purpose of diagnosis. It was not until lipiodol was introduced that it was recognized that a certain proportion of cases of unexplained haemoptysis were really bronchiectatic. Abscess of the lung might be another indication, if

he had not had very much help from lipiodol in such cases. Lipiodol did not enter the abscess, but it might occasionally be useful in assisting to locate it. In carcinoma of the bronchus, too, lipiodol would often suggest the diagnosis. He had also seen cases of pyo-pneumothorax, or spontaneous pneumothorax, where lipiodol had been used to try and locate the site of the perforation and discover whether the perforation was still open. As for contraindications, in pulmonary tuberculosis lipiodol did sometimes cause an exacerbation of the disease. He had read that it produced haemoptysis in cases of tuberculosis, but possibly the occurrence was a coincidence. What was sometimes found with lipiodol was that the patient got iodine poisoning. There were also other cases of discomfort, and altogether lipiodol should not be used indiscriminately.

Dr. STANLEY MELVILLE, speaking with regard to bronchiectasis, said that they had been told in the past—and most of them had believed it—that the chief factor in the causation of bronchiectasis was chronic cough, which produced such increase in the intrathoracic pressure as to dilate the bronchi. There was very little in support of such a theory. Not enough was thought about the physics of intrathoracic pressure. The most interesting thing in connexion with bronchiectasis was the occurrence of haemoptysis; frequently a recurrent haemoptysis was the only evidence of severe bronchiectasis. The initial lesion from the pathological point of view was invariably a definite ulceration in the bronchial wall itself. Another matter with regard to which they had got a little adrift was the fact that all bronchiectasis was regarded as being a fibrotic condition. There was very little fibrosis as a general rule.

Dr. JAMES MAXWELL found that, on the whole, the cases in which he used lipiodol were getting fewer every year. As to methods of administration, in his view the nasal method was the one of choice. One point about lipiodol should be stressed—namely, the necessity of making sure, before putting lipiodol in the chest, that the patient was not sensitive to iodine. Dr. DUNCAN WHITE recommended an intra-oral form of injection, and said that fully 80 per cent. of the cases could be examined satisfactorily by this method. The whole success of it depended upon the control of the tongue. Dr. W. J. FENTON dealt with the spray method of anaesthetizing the larynx, and the use of a laryngeal mirror, showing an arrangement which he had devised for the purpose. Dr. J. V. SPARKS showed a number of lantern slides illustrating cases in which the crico-thyroid method of injection had been followed. Dr. ALEX. ORLEY spoke in favour of the nasal method.

Finally, Dr. PETER KERLEY dealt with the subject of bronchiectasis in children. He said that this was not by any means a simple diagnostic problem, which the textbooks led one to believe. Of sixty proved cases of bronchiectasis in children seen at the Royal Chest Hospital, thirty-two lacked the characteristic symptoms, and were first diagnosed as chronic bronchitis or post-pneumonic fibrosis. The only symptoms were cough and coarse rales at the bases, this despite the fact that many of the patients had lobar collapse. In the Royal Chest Hospital lipiodol injections had taught them three interesting facts: (1) increased translucency due to compensatory emphysema was a persistent accompaniment of infantile bronchiectasis, and in not a single case was there loss of translucency around the bronchiectatic areas; (2) the diaphragmatic movements in infantile bronchiectasis were usually better than those with post-pneumonic fibrosis and chronic bronchitis; (3) when a collapsed lobe was present there was invariably a congenital basis for the bronchiectatic dilatation. The lobe was collapsed before it was bronchiectatic, and might be bronchiectatic for a considerable time before it became infected.

Scotland

Royal Infirmary, Edinburgh

At the thirteenth annual meeting of the League of Subscribers to the Royal Infirmary of Edinburgh, held on November 26th, a statement regarding the year's work was made by Dr. John Orr, of the board of managers of the institution. Referring to the question of payment for treatment in the infirmary, the speaker said that a clause in a provisional order promoted by the town council before Parliament, designed to give the managers of the infirmary powers to institute paying wards, had been withdrawn. According to the present constitution the infirmary was unable to make a charge upon any patients admitted; but the Maternity Hospital, which was soon to be incorporated in the infirmary, had a proportion of paying beds, and it would be necessary to obtain permissive powers to institute charges for treatment when the responsibilities of the Maternity Hospital were taken over. The waiting list, which stood at 2,900, indicated that people appreciated the services which could be given, and were willing to wait for a certain time in order to get the benefits of the institution. There was always room, however, for every person who required immediate attention or operation; every primary accident case, every urgent medical case, and every case of cancer was provided for at once. Last year the number of occupied beds had been 973, as contrasted with the 6 beds available when the institution was opened two hundred years ago; 19,184 in-patients were treated during the year and 64,081 out-patients. A matter which called for investigation was the cost to the infirmary of treatment in cases of motor accidents. In the past year 396 such cases had been treated at a cost to the infirmary of £3,360, and for these the infirmary had recovered only £234. A report from the League of Subscribers showed that, as a result of a general survey of the Edinburgh district, there were few large works or business establishments which did not contribute in some form to the league. There were numerous small places of business, with small staffs, which covered a large section of the community, and the league was endeavouring to extend its operations to these persons. With regard to contributory schemes operating in English hospitals, it was suggested that the practice prevailing among English employers, who contribute an agreed percentage of that subscribed by the employees—sometimes as high as 25 or 33 per cent.—might be adopted. This was more generous support than prevailed among Scottish employers towards hospital finance. The league had collected for the financial year ending September 30th, 1931, a total sum of £21,867. Of this sum, £16,027 had been subscribed by the 1,160 groups of subscribers in the city, and 388 groups in country districts had collected £5,839. Although the sum contributed had shown an advance of £204 on the contributions for the previous year, a large number of groups had collected a smaller amount, or had suspended payment altogether in consequence of unemployment. Of the subscribing groups the largest was that of employees of the L.N.E.R. Company, whose contributions amounted to £1,074. Among the provincial towns served by the infirmary the outstanding contributions were: from Kirkcaldy, £687; Musselburgh, £414; Galashiels, £401; and Hawick, £348. During the thirteen years of the league's existence there had been handed over towards the maintenance of the infirmary an aggregate sum of £245,525.

A meeting of the General Committee for the Royal Infirmary Bicentenary Extension Appeal Fund was held in the City Chambers on November 25th. Lord Provost Sir Thomas B. Whitson presided, and said that towards the

desired sum of £500,000 the amount at present subscribed was £222,000. It was reported that a general appeal had been issued in October of last year, and a further appeal had been sent to every medical graduate of Edinburgh University, in reply to which contributions had been received from almost every part of the world.

Glasgow District Nursing Association

At the annual meeting of the Glasgow District Nursing Association, held in Glasgow on November 23rd, Sir Archibald Campbell, Bt., of Succoth, mentioned that he had offered to transfer Garscube Cottage Hospital to the association for the nominal price of £500, on the condition that the building should be used solely as a residence for nurses or such other charitable purpose. The hospital was erected in 1876 by the late Lady Campbell, his cousin, with the intention of using it as a convalescent home. At the time of the South African war it was used for sick and wounded soldiers considered to be incurable, and it was used again as a war hospital from 1914 to 1918. For some years it had been employed by the Public Health Department of Glasgow Corporation as a convalescent maternity hospital, and it was now proposed to transfer the hospital to the Glasgow District Nursing Association at Whit Sunday, 1932. Dr. A. S. M. Macgregor, medical officer of health for Glasgow, said that he knew of no other service which conducted such widespread operations as the District Nursing Association on so small an annual sum as £12,000. The association was a valuable ally to the city hospital, and ought to be expanded. The annual report showed that during the year 9,463 cases had been visited, and that in all 219,503 visits had been paid. The ordinary income for the year, excluding £500 from Bellahouston Bequest Fund for the purchase of Garscube Cottage Hospital, had amounted to £12,924, and the expenditure to £12,252.

Foot Clinic in Glasgow

The Incorporated Society of Chiropodists in Glasgow has established the Glasgow and West of Scotland Foot Hospital at Windsor Terrace, Glasgow, for the provision of free foot treatment for the poorer and working-class community in the West of Scotland. This movement was due to the success which has been attained for some years past by the foot clinic in Edinburgh. The Glasgow Foot Hospital consists of an eight-apartment dwelling-house, in three floors, which has been converted for the purpose. The clinic will be open on Monday and Wednesday of each week, but it is anticipated that, when it becomes better known, a morning and evening service will be necessary. The voluntary staff consists of ten male and six female chiropodists. The initial expenses of opening the institution have practically been covered, and it is expected that within a short time the small remaining deficit will be met and the work of the hospital rapidly developed.

Edinburgh Mothercraft Club

A club has recently been formed in Edinburgh, under the presidency of the Countess of Rosebery, with the object of helping mothers in the care of children under 5 years of age. This organization aims at doing for the more well-to-do mothers what child welfare centres do for the poorer classes. A clinic in charge of a registered nurse will be held once weekly at Castle Terrace, Edinburgh, for the benefit of mothers desiring help. Advice will be given to expectant mothers in regard to the bringing up of children, feeding, etc., and lectures and practical demonstrations will be held. Dr. James Young is the chairman of the committee of management, which includes several medical men and others who take a special interest in the objects for which the club exists.

Ireland

Irish Sweepstakes and English Hospitals

In his reply to a letter from Irishmen in London suggesting that English hospitals might benefit from the next Irish sweepstake, the Lord Mayor of Dublin points out that the Act of the Dail, authorizing the sweepstakes, specifically confines their benefits to Irish hospitals. To amend the Act to include English hospitals might expose the Dail to a charge of interference in English legislation. If, however, any English hospital applied for a voluntary donation, or made it clear in some other way that an unconditional gift would be acceptable, the position, in his view, would be altered. It appears that in a subsequent letter the Lord Mayor states he desires to make it clear that in suggesting a voluntary contribution towards the English hospitals he did not intend to suggest that the Hospitals Trust should make such a grant. His intention was that, in view of the splendid way that the British public had come to the assistance of the Irish hospitals and helped to make a success of the "sweep," the Irish public might, in return, help any English hospital which was in difficulties by a voluntary contribution. Sir William Taylor, in the course of an interview, stated that English hospitals could not benefit from the sweep stakes. Such a suggestion was quite contrary to the Act which legalized them. If, he pointed out, the British Parliament authorized sweepstakes for the hospitals, it would be quite within the rights of the Irish Hospitals Trust to arrange with the English authorities to have two sweepstakes for each country at times when they would not clash. The Irish Hospitals Trust could even undertake to run them, allocating the proceeds from two sweepstakes to the English hospitals and the proceeds from the remaining two to the Irish hospitals. Sir William pointed out that the Irish hospitals received the money for their own benefit, and under the Act they could not use it for any other purpose.

Poor Law Reform in Northern Ireland

The main proposals for the reform of public services in Northern Ireland, as set forth in a circular issued by the Government, are as follows: boards of guardians (except the Belfast board) to be abolished, and their duties vested in new committees for areas larger than the present unions; regional homes to be substituted for workhouses, and to be administered by a special committee of representatives of certain urban and rural districts, the admission of inmates to rest with the councils of the districts concerned, and the expense of the administration of the home to be chargeable to the various districts; rural and urban councils to be responsible for outdoor relief, which is to be administered on a purely district basis; each county to prepare a scheme involving the establishment of one or more district or regional hospitals serving a specific number of rural and urban districts in that county, the hospitals to be administered by special medical committees appointed by the councils of the districts concerned, and the costs of the hospitals to be borne in a manner similar to the arrangement proposed for the regional homes. It is proposed to link up the hospital system with the medical relief system by making the medical committees responsible for medical relief in the homes of the sick poor and in clinics in the regions concerned; county councils to administer public health services, but urban and district councils to retain their local executive functions; county councils to have power compulsorily to remove to hospital persons suffering from tuberculosis who are likely to infect others. Each county council will be required to appoint a county

medical officer of health, with assistant officers of health for certain areas, this new service to be substituted for the existing disjointed system under which dispensary medical officers automatically become medical officers of health for rural and urban areas at nominal salaries It is suggested that tuberculosis medical officers and school inspection medical officers should be included in the service, and that county councils might co ordinate and strengthen the veterinary staffs, and so relieve the rural and urban councils of the cost of the part time officers

England and Wales

London School of Medicine for Women

The annual dinner of the London (Royal Free Hospital) School of Medicine for Women was held at the Savoy Hotel on December 3rd, under the presidency of Lord Riddell The number of members and guests present was 430, which, it is understood, constitutes a record attendance at this function The principal toast, that of "The School and Hospital," was proposed by Lady Simson (Miss Lena Ashwell), who evoked in her speech memories of the fight for women's suffrage, and paid a tribute to medical women of the past, notably Miss Jex Blake and Mrs Garrett Anderson, for their adventurous spirit, which had resulted in opening up the profession to women Lady Simson invited the company to wish all the women now working in the school and hospital the courage, enthusiasm, and tenacity of purpose of those pioneers who had made it possible for these their daughters to enter the great profession of medicine Lord Riddell, in responding, mentioned that during the last five years the hospital had raised £500,000 Shortly after a recent wireless appeal which he had made, a lady had furnished a cheque for £18,000, the amount of the overdraft at that time, the only condition being that her identity should not be disclosed The amount of the present overdraft was £40,000, and he hoped that someone present would emulate, if only in part, the example of that very noble lady He welcomed the appointment of Miss Bolton, M D , who had succeeded Lady Barrett as dean of the school , her judicial mind should prove a tower of strength The thanks of the school must also be tendered to Sir Alan Anderson, Sir Francis Dyke Acland, and Miss Brooks, the warden Dr Haldin Davis, in welcoming the guests, coupled with the toast the name of Miss E. M Delafield, the novelist, and also that of Dr H H Bashford, another charming writer But the "surprise packet ' of the evening, he said, was that Miss Peggy Salaman, the heroine of the recent flight to the Cape, had dropped out of the skies as their guest also He expressed admiration for the pluck, courage, skill, and organization exhibited during her wonderful journey Miss Delafield, in responding, mentioned some of the tribulations of a novelist, including the indignation of a reader who, referring to what the author believed to be an entirely new character, said, "Where did you meet my Aunt Jane, and how dare you put her in your book?" Dr Bashford also thanked the school for its hospitality, and made some amusing remarks on the psychology of early childhood Miss Peggy Salaman, who was greeted with warm applause, described the success of her flight as having been due to good luck and weather Dame Louise McIlroy expressed the delight of the company at seeing the chairman, Lord Riddell, so fully recovered from his recent illness In proposing his health, she said that the names of Dr Carr and Dr Burrell ought to be coupled with the toast for their share in promoting his recovery The hospital lived in the reflected glory of its president's achievements In addition to possessing an attractive personality, Lord Riddell occupied great positions in the newspaper world and the world of public affairs. The reputation of the hospital was always safe in his hands, and they owed much to his wisdom and generosity The toast was given musical honours, and Lord Riddell briefly replied After the conclusion of the speech-making a large proportion of the company remained for a dance.

Disease and the Public Abattoir

In the tenth Benjamin Ward Richardson Memorial Lecture, delivered to the Model Abattoir Society, in London, on November 25th, Mr Hal Williams, designer of the new abattoir for the Sheffield Corporation, paid tribute to the aims and ideals of Sir B W Richardson, the founder of the society, and pointed out that the public health and economic aspects of a public abattoir were of the first importance Touching on one much debated question, he said that far more cruelty took place in the mishandling of the animals than in the act of dispatch, and the old-fashioned design of many existing public abattoirs left the slaughtermen with no alternative Experience had shown that wherever slaughter was concentrated in one place in which a proper system of meat inspection existed, there was an extraordinary increase in the amount of meat condemned as diseased and unfit for human food After the opening of the Sheffield Corporation abattoir the increase of diseased meat was approximately 80 per cent The only possible inference was that that increase represented the amount of diseased meat that had previously been eaten—in most cases by the poorest of the population It had been proved beyond question that the consumption of diseased meat was responsible for disease, and its effect on the national health and physique was devastating A sound and healthy meat supply could only be obtained by rigid and thorough inspection, and this was only possible when private slaughterhouses were abolished and the slaughter of animals was concentrated in an abattoir designed for that purpose In this direction, and in the support of veterinary training, we were far behind the leading Continental nations, where all meat was by law, killed in public abattoirs The speaker advocated regional abattoirs, which would enable proper inspection to be carried out, assist the movement for the grading and marking of meat conducted by the Ministry of Agriculture, and not interfere with any of the butcher's legitimate opportunities for making a profit by the exercise of his judgement The value of this system had been thoroughly proved at Adelaide, Australia, and had been recommended by a commission of investigation appointed by the Queensland Government in 1928.

Voluntary Patients at London Mental Hospitals

A report presented to the London County Council shows that the number of voluntary admissions to its ten mental hospitals during the three months ending September 30th was 38, and the number of departures 21 A total of 63 patients (36 males and 27 females) were in residence on the date mentioned The number of patients, all voluntary admitted to Maudsley Hospital (which is not included among the county mental hospitals) during the same quarter was 140 the number departing was 145, and the number of deaths 4 The patients in residence at Maudsley on September 30th numbered 177 (73 males and 104 females In addition the number of patients receiving treatment in the out patient department at Maudsley during the quarter was 1,171 (386 men, 590 women, and 195 children

Correspondence

"THE MENTAL DEFECTIVE"

SIR,—I have read with interest and profit Dr. Tredgold's signed review of the above work. It leads me to hope that the net result may be a quickening of professional interest in a national and social problem of protean aspect. Restricted as English practice necessarily is by Acts of Parliament and the definitions contained therein, the resultant outlook on mental deficiency will almost certainly differ from that obtained from a biological survey, or from the practice of countries where such definitions are not in operation. My own experience has been chiefly derived from this wider field. When these several legal and biological jigsaws can be fused into a composite and finished picture the apparent differences of opinion or of interpretation of facts between the reviewer of this book and its authors will be found to be on convergent lines, not on those which never meet.

Dr. Tredgold has correctly enough pointed out several errors, especially on the legal side, which have crept into the book, but, if opportunity arises to remove them, such blemishes will disappear. It remains true, however, that I have myself seen such follies as teaching the names of the Saxon kings to low-grade defectives, and from an extensive knowledge of institutions I know many lay visitors whose knowledge of mental deficiency really is in inverse ratio to their enthusiasm. For them this book was largely written. I fancy Dr. Tredgold would agree with the objective, and should accept the necessary "dogmatism" so essential to successful teaching or preaching. If these be indeed "grave faults," I am entirely unrepentant.

That Dr. Tredgold finds some clinical descriptions to be of little value I can well believe, for they are much better done in his own successful book, and this being so it would have been a futile ploughing of the sands for us to do again what he has better done. On the other hand, from some of his comments my own experience (which I again emphasize has been gained in other fields) leads me to differ. Mental deficiency as it presents itself in the consulting room, and especially as restricted by the Acts of the lawyers, is one thing. As met with in the greater world beyond it is quite another. That the numbers of undeveloped defectives in the nearly 200 million peoples of Great Britain and the United States may be nearer the biological 15 or 20 per cent. than the statutory 8 per thousand is not nearly so devoid of evidence as Dr. Tredgold would have us believe. Personally, I should hope that he is right and I am wrong, but I doubt it. I found the Middle West of America a perplexing and disturbing problem, as I also do many of our own C 3 folk; but then I do not view these through the rosy spectacles provided so generously by the law, so there is ample room for differences of opinion. Nor do I agree with Dr. Tredgold that we must necessarily follow a division of the amentias into primary and secondary, nor that we must equally slavishly agree with these unsatisfactory distinctions for all time. Again, experience has led me, and is increasingly doing so, to a profound disbelief in the existence of "types" of mental defectives. I can see little or no difference between the *imbecility* of the mongolian imbecile and that of any other imbecile, though why the former should be accompanied by some very definite *physical* characteristics is another, and to me inexplicable and unexplained, problem, unless, indeed, Crookshank be really right in his ethnological theses.

All these are, however, differences of interpretation rather than of fact; and if Dr. Tredgold's review, coming as it does from one of his deservedly great reputation, directs the attention of the profession, not so much to the small book in question, but to the greater problem beyond, I feel sure that both reviewer and authors may rest content, for that, after all, is what we really have at heart.—I am, etc.,

RICHARD J. A. BERRY.

Stoke Park Colony, Stapleton, Bristol, Nov. 30th.

EPIDEMIOLOGICAL REPORTS OF THE LEAGUE OF NATIONS

SIR,—I should be glad if you would give me the opportunity of replying to the reference in Dr. E. W. Goodall's letter in the *Journal* of November 21st relating to the reliability of the figures given in the Monthly Epidemiological Report of the League of Nations.

It is unfortunately inevitable that figures relating to prevalence of particular diseases given in different publications of the Epidemiological Intelligence Series should sometimes materially differ, seeing that they have to be taken from different official publications and returns, which may have been prepared with different objects at different times and from different data. This particularly applies to figures of notified cases given by countries which are in a transition stage in regard to notification.

In the League of Nations' monthly reports the discrepancy between the two tables noted by Dr. Goodall is accounted for by the fact that in one table the figures from the weekly returns of notified cases were given, whilst the second table is taken from the reports of cases in hospital for the whole year. As typhus was not compulsorily notifiable at the date in question the numbers notified were naturally only a very small fraction of the total cases. "Tropical" typhus was only made compulsorily notifiable in the Federated Malay States in 1930. —I am, etc.,

Y. BIRAUD.

League of Nations, Geneva, Dec. 2nd.

MUSCLE SPASMS IN CHRONIC ENCEPHALITIS

SIR,—Dr. Arthur Hall has done valuable service to the study of chronic epidemic encephalitis by devoting a large portion of his recent Schorstein Lecture to the special consideration of the ocular attacks, which are now such familiar features of the disease. But in pondering the ingenious and suggestive theory, which Dr. Hall has done so much to promote, that the various fixations which occur represent dissociated elements in the posture of sleep, one must, I think, recognize that there are still certain difficulties in harmonizing this theory with all the facts. May I mention a difficulty of mine, and illustrate it by a case which is at present under my care?

Those who have watched a group of these patients upon an institutional playing-field are familiar with the sudden access of mobility which enables a youth whose rigid, shuffling pace is about four inches, to swing his arms and shoot an excellent goal when he finds the football at his feet. A counterpart to this dramatic remission of the poverty of movement, to which Dr. Hall refers in his lecture, is a sudden conversion of poverty of movement into absence of movement. A patient who has walked the length of the room swinging his arms will slip one arm half out of the sleeve of his dressing-gown and then become immobile for ten or twenty seconds. During such attacks it is usually possible to detect an increase in muscular rigidity. The subject's own description is that the limbs suddenly refuse to move. Ocular crises frequently accompany these attacks of immobility.

I have three patients at the present time who show "in and out" of ocular attacks all day long. In one of these the attack consists of an *active* spasm of the eyelids, unaccompanied by obvious change

general rigidity Another, however, has the following syndrome, constantly repeated The ocular spasm, or posture, directs the eyes downwards and slightly to one side At the same moment speech is lost (" the words come to my mouth, but I can't get them out "), the neck flexes slightly, with a slightly increased rigidity of the neck muscles, and if one arm be moved back and forth passively before and during the attack, there can be no doubt about an increase of rigidity with the onset of the attack In this case, too, there is usually an active spasm of the eyelids during the crisis

In interpreting spasmodic muscular contractions and postures as " release phenomena " it is difficult to know where to stop, but in view of the type of case illustrated in this patient it is difficult to abandon a conception of the ocular attack as being linked with the other inhibitions of motor function which, together with itself, are frequently linked, by coincidence in time at least, with variations of rigidity It is also difficult to feel quite convinced that all these events can find their explanation along a line of association, or of dissociation, of the function of sleep —I am, etc.,

London, W 1, Nov 24th RANYARD WEST

DEATHS ASSOCIATED WITH ANAESTHESIA

SIR,—Dr Frederick L Hoffman's letter in your issue of November 28th is interesting, but, I am afraid, not illuminating Anaesthetists would wish to know before taking his figures too seriously to heart (1) What is the death rate (under or associated with anaesthesia) per 100,000 *anaesthetics given* in the United States of America and England and Wales? (2) What are the laws governing those whose duty it is to report such cases in the two countries? (3) How far are those laws conscientiously observed? Without answers to these questions no proper conclusions can be arrived at from Dr Hoffman's figures —I am, etc,

London, N W, Dec 1st RAYMOND E APPERLY

ALLERGY AND THE " PROTEOSE "

SIR,—In reply to Dr John Freeman's letter, published in your issue of November 28th, I should like to draw attention to the following points

1 In the isolation of a new substance it is an invariable experience that the original technique used for isolation has to be modified in the light of subsequent experience The *criterion of potency of proteose* does not depend on its quantity, but on its power of reaction with antibodies Whereas a normal person excretes a certain quantity of " proteose " he never so far as I am aware, gives a positive skin test to this substance, neither does its injection cause symptoms

2 Dr Barber will, I believe explain to Dr Freeman the *technique which should be employed to elicit a specific* reaction in the eczema asthma syndrome

3 The case Dr Freeman quotes as giving a negative reaction to ' proteose ' by his technique was used for the experiments in urinary antigens reported to the Royal Society of Medicine (*Proc Roy Soc Med*, Section of Dermatology, July 1931 xxiv 55) In Fig 1 the experiment with " proteose " labelled " *Proteose, Dr F.'s case*," is the identical case which Dr Freeman quotes as giving a negative skin reaction Guinea pig experiments were used in this connexion as they are recognized to be more specific than skin tests

4 In some work in process of publication, Dr Combeare working at the Asthma Clinic, Guy's Hospital, undertook an independent investigation, using a " proteose " isolated from a patient suffering from hay fever-asthma and tried the effect of intradermal tests with this patient's " proteose " on (*a*) pollen sensitive subjects (*b*) asthmatic subjects who were not pollen sensitive, (*c*) normal controls. In this series of approximately 100 cases it was found that 80 per cent of the pollen-sensitive patients gave positive skin tests to the hay fever " *proteose*," whereas *none* of the normal controls did so. Some 20 per cent of the asthmatic patients who were not pollen sensitive gave positive tests It is interesting that some of these patients were clinically hay fever subjects, although they gave negative skin tests to pollen Tracings of all these skin tests were kept, and will be available for inspection by anyone interested as soon as Dr Combeare, who is at present in America, is able to return them

It seems to me that the question of the specificity of the " proteose " is of sufficient importance to justify further investigation, and I should be pleased to arrange a demonstration of the skin tests in which Dr Freeman finds difficulty, if he will be good enough to indicate the time and place that will be suitable for him —I am, etc,

London, W 1, Dec 2nd G. H. ORIEL, M D

ASTHMA STATISTICS

SIR,—Your editorial review of Gram's " Danish asthma statistics " is very interesting, but the age incidence varies so greatly from that found to exist in my own series of cases that one may doubt whether the figures taken from a " sickness insurance organization " give us much idea of the age incidence in Denmark as a whole

Reduced to percentages, Gram finds that in his series of cases asthma started in the first five ten yearly *periods of* life, in the proportions of 12, 13, 24, 23, and 16 per cent. of his patients respectively The age incidence in my own series of 1,000 cases (already published) was totally different—namely, 40 started asthma in the first ten years of life, 12, 15, 13, and 9 in the subsequent decades In a second series of 1,000 cases my figures are 39, 13, 14, 14, and 11 Thus I differ from Gram My finding is that asthma most commonly commences in the first ten years of life

On the question of sensitization his figures agree almost exactly with mine Applying my percentages to the numbers of patients he details to each ten yearly period, I should expect ninety-six of them to give reactions to the dermal tests As a matter of fact he found *ninety-one* to be sensitive to this method Thus the skin reactions, which were at one time so much belittled, again receive confirmation

Probably a series taken from our own national insurance service would be more correctly parallel with Gram's cases, but in neither case would they give the asthma figures for the whole population In short, I see no reason to suspect any difference in the age incidence of asthma in two places so similarly situated as Denmark and England —I am, etc,

London, W 1, Dec 7th FRANK COKE, F R C S

" REAL PAIN "

SIR,—In your report of the Royal Society of Medicine's discussion on nervous dyspepsia (*Journal*, December 5th, p 1035), Dr Robert Hutchison is represented as having said that " the presence of real as distinct from imagined pain might almost be said to negative a diagnosis of nervous dyspepsia Possibly unavoidable condensation of his remarks has eliminated whatever he may have said to define and explain the distinction to which he refers This is unfortunate for it would be interesting to know by what criterion he estimates the reality of pain, dyspeptic or otherwise A patient may be imaginative or mistaken as to the reasons he gives for his pain or as to the organ which he states to be involved on such matters he is not competent to judge But surely what makes pain real is simply painfulness and on that point the patient is the only possible judge Failure

to appreciate this fairly obvious fact must mean that "real" pain will receive real treatment and "imagined" pain will receive imagined treatment. That, indeed, is what only too often happens. The physician is as self-deceived as his patient if he fails to recognize that subjective realities are, in their own way, as "real" as any other sort of reality.—I am, etc.,

Glasgow, Dec. 5th. D. YELLOWLEES.

*** We understand from Dr. Robert Hutchison that what he said was: "The presence of real (or, if you like, 'severe') pain as opposed to mere discomfort may almost be said to negative," etc.

CHILD GUIDANCE CLINICS

SIR,—I have followed this correspondence with interest. I had no intention of taking part in it till I read Dr. E. Rowland Fothergill's letter in your issue of December 5th. That letter contains the surprising suggestion that the work of child guidance should be relegated to the private practitioner.

As far as my own experience goes, most private practitioners are very ready to admit that their knowledge of psychopathology in the child is limited. With adequate study and training many of these could no doubt do a great deal to cope with the simpler maladjustments of childhood. In the absence of such knowledge, and in the severer cases, the child guidance clinic fulfils an important function. I submit that its essence is team work. The psychiatrist does not pretend to have the technical knowledge of the working psychologist, nor yet the leisure in which to visit the homes and collect the family histories which constitute the function of the social worker. But apparently the general practitioner is not only to know more than the psychiatrist, but also to have more time at his disposal.

If the child guidance movement is essentially on wrong lines, and if the work would more properly be done by the private practitioner, I would ask Dr. Fothergill to explain the following points: (1) Sir George Newman, in his 1930 report, devotes five pages to the subject of child guidance clinics without making the suggestion that the proper man to treat the behaviour problems of children is the private practitioner. (2) A large number of private practitioners refer cases to our children's department, and appear to appreciate our efforts. (3) School teachers are increasingly prone to advise parents to take their difficult child to a child guidance clinic. (4) Magistrates of juvenile courts make extensive demands on our resources, but I have still to learn that they would prefer to have a report on the mental status of a juvenile delinquent from a private practitioner.

Dr. Fothergill denounces "a mass treatment system" as "contrary to all the dictates of medicine." Perhaps he is right, but assuredly there is no shred of justification for describing the work of a modern child guidance clinic as "mass treatment." On the contrary, the amount of individual study each child receives is the most complete antithesis of the "mass treatment" to which many an overworked private practitioner is driven in coping with a large panel practice.

I am ready to believe that there are weak spots in the child guidance clinics now available in this country. It is possible that they have been modelled too closely on the American pattern. We hope that such defects will in time be eliminated. Two facts are, however, beyond dispute. The first is that they are doing work which the private practitioner could not hope to do as well, even if he attempted it. The second is that their methods can, in no circumstances, be described as "mass treatment." In controverting these points, Dr. Rowland Fothergill reveals complete ignorance either of the methods of the child guidance clinics or of the requirements of the maladjusted child.—I am, etc.,

December 7th. H. CRICHTON-MILLER, Honorary Director, Tavistock Square Clinic.

CHILD PSYCHOLOGY

SIR,—Our attention has been called to an annotation in the *British Medical Journal* of October 10th, the opening sentences of which are: "It has been a common complaint of Continental and American visitors that there is no provision for the study of medical psychology in London. Especially is this true for those wishing to study child psychology." It is nowhere explained in the article that this complaint is unjustified, being based on misinformation. It is not our place to enumerate the many institutions in London at which some aspect or other of medical psychology is taught; but we wish to say that at the only institution in this country where instruction is given in psycho-analysis—the central theme from which the rest of modern medical psychology radiates—namely, the Institute of Psycho-Analysis, there is a special department in which child analysis is both taught and practised. Further, London is in some important respects the only place, not only in the British Empire, but in the world, where this important instruction is available. Therefore, while we agree with your implied conclusion that the teaching of medical psychology in London still leaves very much to be desired, we should like to point out that there is another side to the picture which is worthy of mention.—We are, etc.,

ERNEST JONES,
Director, London Clinic of Psycho-Analysis.
EDWARD GLOVER,
Assistant-Director, London Clinic of Psycho-Analysis.
SYLVIA PAYNE,
Secretary of the Institute of Psycho-Analysis.

London, W., Dec. 2nd.

EDUCATION IN QUESTIONS OF SEX

SIR,—It is so seldom that the Church visits our province of medicine and makes such a welcome practical contribution toward the solution of a medico-social question that I have been moved to re-read the address delivered at the Eastbourne Meeting of the British Medical Association by the Rev. Wentworth Pym, published in the *Journal* of August 1st. Anyone engaged in mental medicine must be struck with the large percentage of patients with nervous and mental illness whose history discloses that the foundations of derangement were laid during the sheltered period of childhood and adolescence. Canon Pym, however, deals with only a section of the trouble, which he lifts out of its natural setting, and which could, perhaps, be more adequately treated by inclusion in a bigger and more comprehensive survey of the world scheme.

All life, at all levels, is really a struggle to live, and, though civilization brings the necessaries to our doors, the ambition for social success and eminence merely replaces the simple needs by something more specious but equally clamant. The well-meaning parents in their tender love of their offspring shield them from a knowledge of the actualities of life, and unwittingly lead them to unhappiness and destruction by an over-pampering care and worship, resulting in Narcissism and self-omnipotence—an egocentric incapable of dealing with anything it cannot overcome. So is formed the first barrier against discipline and proper parental control and relationship.

Although far removed from primordial life we are nevertheless, the inheritors of every level from the simplest to our own crowning heights in humanity, and are inherently furnished with the means of living in an environment swarming with battling factors, which we should be capable of overcoming, and also adapting ourselves to our surroundings. All life is one vast brigandage the greater absorbing the lesser, but these natural phenomena, seemingly cruel by our human standards should be explained as part of the scheme of the universe, and not hidden from developing youth.

It is reproduction which replenishes this wastage and reveals a unity of purpose which we can observe but neither explain nor understand. Examples of natural forces constantly working can be demonstrated—such as gravity magnetism, polarity, and the affinities of the elements of which our bodies are composed. The school chemistry experiments serve to show the perpetual flux in the inorganic kingdom, also plants flowering seeding and springing up again. To the more advanced youth the ties of companionship, affection, love, and passion may be dwelt on and explained in their setting of romance and tragedy and he may be shown how links can be forged in the mind which survive when passion and love have faded. A background of this kind of abstract texture gives the subject of sex a fitting place as one of the most profound mysteries, and without which life would be poor indeed. Unfortunately the subject is approached too directly, and with insufficient delicacy, or is treated as though it were altogether taboo, producing shock and embarrassment in a matter which can be made beautiful, for there is nothing improper in nature—it is only the mind that makes it. Later on with no apprenticeship to life as it is, and little knowledge of the facts, *the rough and tumble comes as an astonishment* and there is inability to adjust matters, the usual problem of undeserved suffering presents itself and either Job's attitude is taken, or his wife's which is frequently the prelude to a mental home. There is nutritional hunger and sex hunger, and with some who are more highly charged, it is almost as dangerous to renounce the one as the other for there is that insistent inarticulate quest which will assert itself at times for satisfaction and full orbed development of self.

Canon Pym has given most valuable assistance towards handling a very hushed subject, and these humble suggestions are made as a plea for extending and further clothing the subject without in any way clashing with modern Church doctrine or morality. In my experience I have been forcibly led to the opinion that with many people the mere mention of 'sex' envisages the organs of reproduction rather than one of the most wonderful mysteries in creation, and (as stated in the address) it is to the quality of the mind of the educator that we must look for suitable presentation of this interesting and important theme.—I am, etc.,

Armagh Nov. 28th ARTHUR KING, M.D.

THE CREOSOTE ENEMA IN PNEUMONIA

SIR,—In recent papers and lectures on pneumonia no mention appears to have been made of Schoull and Weiller's method of treatment by the creosote enema. No one imagines that the use of creosote in respiratory affections is new for fifty years ago it was advocated in the treatment of pulmonary tuberculosis. But these authors, in their small brochure[1] of 70 pages, advise its use, not in chronic lung infections, but in the acute, particularly those due to the pneumococcus. Their method, briefly, is as follows. In pneumonia, after a wash-out enema, forty drops of pure creosote, *well shaken for several minutes* in 2 ounces of warm milk, are injected slowly well up the rectum. The enema should be retained about two hours. If not retained longer than half an hour it should be repeated, and in the adult ten drops of tincture of opium may be added to it. The dose in an adult should be repeated twice in twenty four hours. In children under 1 year two to ten drops in the dose, twice daily, in second infancy and adolescence five to ten drops, with an extra drop for each year. In old age less than forty drops may be given. The action of creosote in the purely pneumococcic condition seems to be almost specific, like serum, when it fails a streptococcic infection must be feared. It is interesting to note that in pneumococcic peritonitis Daru Loederich and Mamon[2] also advise its use for its selective action on the pneumococcus.

In the *Presse Medicale* (November 11th 1931) there is a useful summary of the value and details of the method. When our attention was called to this use of creosote we at once obtained some striking results in the treatment of *pneumonia at all ages*. We then applied it as a prophylactic in post-operative pulmonary complications. It quickly clears up catarrhal states in patients awaiting operation, and is now part of our routine preparation for all laparotomies or major operations of general surgery. In 150 cases of laparotomy of all types under open ether no case occurred of post operative pneumonia. But in two cases in which the enema was omitted by mistake pulmonary complications occurred—a broncho-pneumonia in a simple inguinal hernia, and a severe and prolonged congestion of the right lung in a gastrectomy for hour-glass stomach. Both patients recovered creosote being given at once on the appearance of the lung trouble. In urgent surgery we try to give the enema before the patient goes on the table if there is time, if not, immediately *after operation*.

Bassett[3] has also recently called attention to the value of creosote, in 174 operations, mostly gynaecological, no death occurred from lung complications when the drug was administered for some days before operation. Kocher,[4] over twenty years ago, evidently believed in its efficacy for he then wrote:

> We do not hesitate to give large doses of creosote when necessary two and a half drachms may be administered night and morning in the form of an enema. Dr. Rollier who has carefully investigated the action of this drug for some years has shown it prevents complications, and acts beneficially on the course of a pneumonia.

In these days when economy is necessary and three doses of Felton's serum cost approximately £10, it may be worth while giving another trial to creosote, administered in this simple way.—I am, etc.,

Huelva Spain Nov. 17th IAN MACDONALD, M.D.

[1] Published by Malone, Paris.

THE "SOBERING UP" RATE

SIR,—A matter of considerable medico-legal importance is raised by the question whether persons under the influence of alcohol "sober up" at the same rate or whether individual variation may be exhibited in this particular, such as is well known to occur in the process of becoming intoxicated. From inquiries made the latter view appears to be held widely and although I am unable to find any statement in current literature to the effect that the sobering up rate is constant for all persons, I venture to suggest that all the experimental evidence at our disposal supports that view.

Schweisheimer, Mellanby and others have shown that there is a close relationship between the concentration of alcohol in the blood at any given time and the symptoms

[2] *Journal de Chir.* October 1931.
[3] *Bull. et Mem. Soc. Nat. de Chir.* No. 29.
[4] Kocher *Operative Surgery*.

accommodation required, and every effort will be made to make these charges as inclusive as possible.

Attached to the nursing home is a block of thirty-six consulting rooms occupied by members of the medical group to whose enterprise the nursing home owes its existence, and who will be responsible for its organization, although they have no concern in its finance. Their own relations are best described by the paragraph of their Articles of Association, that

"Every member of the Group shall have the right to carry on his private practice in his consulting room without any restriction and for his own benefit. In particular he may call in and have the advice and co-operation of any duly qualified medical practitioner, surgeon, or dentist, whether a member of the Group or not."

It is obvious that an undertaking of these dimensions, involving the capital outlay of nearly half a million sterling, cannot be carried out without an organized control. We have, however, endeavoured to combine the co-ordination which is essential to the success of any business undertaking with the liberty which has always been such a characteristic feature of British medical practice.—We are, etc.,

H. MORELAND MCCREA
Chairman
G. LENTHAL CHEATLE
Vice-Chairman
A. P. BEDDARD
W. ROWLEY BRISTOW
HAROLD D. GILLIES
WALTER HOWARTH
P. MANSON-BAHR
H. S. SOUTTAR
A. J. WALTON

London, W.1, Dec. 3rd. *Executive Committee to the Medical Advisory Board.*

Universities and Colleges

UNIVERSITY OF OXFORD

The Francis Gotch Memorial Prize has been awarded to D. H. Hertz of New College.

UNIVERSITY OF BIRMINGHAM

Mr. Charles Rudd, M.B., F.R.F.P.S., ophthalmic surgeon to the Queen's Hospital, Birmingham, has been appointed a university clinical teacher in ophthalmic surgery at that hospital.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—*Part II:* F. W. A. Fosbery, J. A. Kersley, A. J. B. Miall, S. C. Wake. *In Group I (Completing Examination):* O. J. P. Bollon. *In Group I only:* A. C. Price. *Part I:* S. B. Adams, A. J. Board, Violet Fry, Winifred M. Hill (with distinction in Materia Medica, Pharmacy, Pharmacology, and Therapeutics), A. D. Jones, Gwladys R. Llewelyn (with distinction in Pathology), H. E. Pearse (with distinction in Pathology and in Forensic Medicine and Toxicology), Frances E. Powell, Mary G. Thomas.

UNIVERSITY OF DURHAM

On the nomination of the Senate, the Chancellor (Lord Londonderry) has appointed Sir Robert Bolam, M.D., LL.D., F.R.C.P., to be a Pro-Vice-Chancellor for the ensuing two years.

UNIVERSITY OF DUBLIN

SCHOOL OF PHYSIC, TRINITY COLLEGE

The following candidates have been approved at the examination indicated:

FINAL MEDICAL EXAMINATION.—*Part II, Medicine:* *A. A. Cunningham, J. A. Wallace, I. G. L. Ford, J. Miller, O. W. S. FitzGerald, Dorothy R. R. Solomons, E. Morrison, H. J. Eustace, E. S. Samuels, J. A. Page, A. J. Harden, E. W. West, H. St G. Smith. *Surgery:* *A. A. Cunningham, H. F. G. Irwin, G. A. Wray, J. A. Wallace, I. G. L. Ford, J. B. Fleming, R. C. Sutton, O. W. S. FitzGerald, E. FitzG. Burton, J. A. Page, E. W. West, A. P. Barber, H. J. Eustace, J. Miller, C. H. Hutchinson, D. Nolan, J. L. Martin, R. D. Scott. *Midwifery:* *J. J. Russell, J. L. du Pre, C. J. Hassett, P. H. Stone, S. Brass, C. H. M'Mahon, P. P. Murphy, C. J. Mullen, C. de V. Shortt, Edith M. P. Brodrick, M. Fallon, R. M'Neilly, P. G. Daly, Ray G. Barron, W. J. Craig, A. L. Pennefather, J. W. Craig, G. C. V. O'Driscoll, A. Pollitt.

* Passed on high marks.

NATIONAL UNIVERSITY OF IRELAND

At the meeting of the Senate on December 3rd a report from Dr. Denis J. Coffey, as representative of the University on the General Medical Council at the November session, 1931, was considered.

Dr. Edward J. Conway was appointed Professor of Biochemistry and Pharmacology in University College, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

The annual meeting of the Royal College of Physicians of Edinburgh was held on December 3rd. Dr. Robert Thin was elected President. The following were elected to form the Council for the ensuing year: Sir Norman Walker, Dr. Robert A. Fleming, Dr. William Fordyce, Dr. Edwin Bramwell, Dr. Edwin Matthew, and Dr. A. Fergus Hewat. Sir Norman Walker was nominated Vice-President.

At an extraordinary meeting held at the close of the annual meeting, Dr. G. Lovell Gulland and Dr. William Fordyce were elected representatives of the College on the board of management of the Edinburgh Royal Infirmary for the ensuing year. John Wheeler Dowden, President of the Royal College of Surgeons of Edinburgh, was elected an honorary Fellow of the College.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

At the monthly business meeting of the College, held on December 4th, Surgeon Commander Richard L. G. Proctor, R.N., was admitted to the Membership.

The following were admitted Licentiates in *Medicine* and Midwifery under the conjoint scheme with the Royal College of Surgeons in Ireland: P. J. Byrne, E. S. Cooke, R. P. S. Lewer, J. A. McGuinness, P. J. MacMahon, T. F. Quigley, F. E. Reilly, F. H. Ryan, J. J. Walsh.

The representative of the College on the General Medical Council reported on the recent proceedings of the Council.

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA

The second annual meeting of the Royal College of Physicians and Surgeons of Canada took place at Ottawa on November 19th, with the President, Dr. J. C. Meakins of Montreal, in the chair. The morning was occupied by a meeting of Council. Approximately 160 Fellows were present for the annual meeting of the College in the afternoon. The Fellows and their wives were entertained in the evening by their Excellencies the Governor-General and Countess Bessborough, at Rideau Hall.

The newly elected President of the College is Dr. F. N. G. Starr of Toronto. Dr. W. T. Connell of Kingston becomes Vice-President in the Section of Medicine, and Dr. P. C. Dagneau of Quebec Vice-President in the Section of Surgery. Dr. T. C. Routley of Toronto continues as Registrar-Secretary. The following were elected members of Council: Dr. J. C. Meakins (Montreal), Dr. Duncan Graham (Toronto), Dr. K. A. MacKenzie (Halifax), Dr. A. Rouseau (Quebec), Dr. J. E. Dube (Montreal), Dr. A. T. Bazin (Montreal), Dr. N. J. Maclean (Winnipeg), Dr. E. L. Pope (Edmonton), Dr. A. K. Monroe (Edmonton), Dr. L. J. Austin (Kingston), Dr. George C. Hale (London, Ont.), Dr. H. A. Farris (St. John, N.B.), Dr. A. H. Gordon (Montreal), Dr. Charles Hunter (Winnipeg), Dr. J. G. FitzGerald (Toronto), Dr. R. E. McKechnie (Vancouver), Dr. W. Harvey Smith (Winnipeg), Dr. W. E. Gallie (Toronto), Dr. A. Primrose (Toronto), Dr. E. W. Archibald (Montreal), Dr. W. W. Chipman (Montreal), Dr. H. G. Topping.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have been approved at the examination indicated:

MASTER OF MIDWIFERY.—J. T. Cameron, Mary D. Rankin.

Obituary

SIR T. EUSTACE HILL, O.B.E., M.A., M.B.

Lately Medical Officer of Health to the County of Durham, and Professor of Hygiene, University of Durham College of Medicine

The death of Sir T. Eustace Hill took place, under very sad circumstances, on November 25th, at Parkstone, Dorset, where he had been living since his retirement, eighteen months ago, from the position of county medical officer for Durham.

Thomas Eustace Hill was born in Birmingham in 1865. He was a son of the late Dr. Alfred Hill, medical officer for that city, who died only two or three years ago at a great age. The name of Hill of Birmingham stands boldly in the annals of public health. Dr. Alfred Hill's eldest son, Professor Alfred Bostock Hill, is emeritus professor of hygiene and public health at the university there. Perhaps it accounts for not a little of Eustace Hill's reforming zeal that his boyhood was spent in the stimulating atmosphere of the Birmingham of the 'seventies, when social reform was pursued with extraordinary eagerness under the inspiration of the radical mayor, Mr. Joseph Chamberlain, and the history of modern urban sanitation may be said to have begun.



After receiving his early education at the King Edward School in the Midland city, Hill went to Edinburgh University, where he graduated M.B., C.M. in 1887. In the following year, having taken also the B.Sc. in Public Health, he returned to his native Birmingham, and occupied for a short time the position of medical officer to the Isolation Hospital there and deputy medical officer of health. By 1890, however, he had found his life's work in the county of Durham. He served first of all for two years as medical officer of health for South Shields, and in 1893 he became medical officer to the county, a post which he held until 1930, when he retired under the age limit amid a wealth of tributes to his worth and work.

Durham, when Eustace Hill went there, was one of the most backward areas in England from a public health standpoint; he left it one of the most progressive. Typhoid and other former scourges were virtually stamped out during his reign at the Shire Hall. The infant mortality rate, which had been something like 300 per 1,000 births, fell to 73. Overcrowding and dreadful housing conditions were ameliorated. A network of health services extended from the Tyne to the Tees. The same influences which made for public health progress in the rest of England were, of course, affecting Durham, but in Durham they would certainly not have gone so far nor been so effective without the personality and driving force of the medical officer. He was an ardent reformer, but his unvarying charm, his courtesy, his virility, his devotion to high ideals, continually won over the reluctant, and spurred on the lethargic. He inspired everywhere respect and affection for himself, and therefore confidence in his administrative gifts, and a willingness to give his reforming projects fair play. He had an astonishing influence with his council, partly, perhaps, because he believed in the county as such—that is to say, in the value of county administration—and he was prepared to fight for it. In later years he appeared more than once as an expert witness on behalf of county councils at inquiries when county boroughs were seeking to extend their boundaries at the county's expense.

Whatever his own political views may have been, Hill's instinctive social sympathies in a densely populated industrial area like Durham gave him an understanding of Labour ideals, and he was proud to serve one of the two county councils—the other being Glamorgan—where Labour was in power. Speaking at the annual dinner of the Society of Medical Officers of Health a year ago, he said that he had found Labour control not a bad thing from the point of view of the medical officer of health, and he went on to relate instances of sympathetic understanding with his own work which had been shown him by working men and their leaders, especially by the chairman of his public health committee, a checkweighman at a colliery.

In 1911 Dr. Hill succeeded his friend, the late Dr. H. E. Armstrong of Newcastle, in the professorship of hygiene and public health at the University of Durham. He gave up the chair in 1920, owing to a multitude of other duties, but he retained the post of examiner in public health until his retirement from Durham. During the war he served in the R.A.M.C., and held the rank of lieutenant-colonel.

During the last ten or fifteen years he took a more prominent part in general professional affairs. He was always one of those medical officers who "got on" with the general body of the profession. He occupied during the same period—1921–22—the presidency of the North of England Branch of the British Medical Association and of the Northern Branch of the Society of Medical Officers of Health, his second tenure of the latter office. In the same year he succeeded to the presidency of the Society of Medical Officers of Health, and later was president of the Association of County Medical Officers.

Although he was a member of the Central Council of the British Medical Association only for one year, and of the Representative Body only for five, he served on many of the Association's committees, and his was one of the names immediately thought of when some work affecting public health required to be done. He served on the old Ministry of Health Committee, on the Public Health and Hospitals Committees at various times, on the Private Practice Committee, and on the subcommittee formed to deal with maternity and child welfare. He also took part in Government inquiries, and was a member of the Consultative Council of Medical and Allied Services to the Ministry of Health and of the Departmental Committee on the Training of Midwives. The efficiency of the midwifery service was one of his great interests. He had devoted much attention to perfecting this in Durham, and those who attended the Winnipeg meeting of the Association last year will recall his effective extempore

address in which, evidently impressed by the relative backwardness of midwifery organization in Canada, he described what had been done in England, and urged on Canadian medical officers and others a careful study of the question. He was president of the Section of Public Health at the Annual Meeting at Bath in 1925, and vice-president of the corresponding Sections at the Newcastle meeting in 1921, and the Winnipeg meeting in 1930.

The announcement of his retirement astonished many who knew him, for his youthful appearance made it difficult to believe that he had reached the age limit. An ardent pursuit of cricket, tennis, hockey, and boating in earlier years, and of golf later, kept him young and alert in the midst of many duties. There was every expectation of a long period of happy retirement and of wider service.

Dr. JAMES R. WHITWELL writes:

I should like to pay my tribute to the memory of my very dear friend Eustace Hill. We were close friends as students and friendly rivals for various university honours, and we kept in touch until death unlinked us. I have never met a finer character—high ideals, great thoughts, noble aspirations, and deadly in earnest in all he undertook—absolutely sincere and straight, and without much use for the word "expediency."

[The photograph reproduced is by Jas. Bacon and Sons, Newcastle-upon-Tyne.]

ARTHUR TAYLOR WEAR, M.D.

Newcastle-upon-Tyne

By the death of Dr. Arthur T. Wear in his eightieth year, Newcastle loses its oldest medical practitioner.

Born at Kingston-upon-Hull in 1852, he went to Newcastle-upon-Tyne at the age of 7, and was educated at the famous academy of the late Dr. Collingwood Bruce. Later, he underwent his professional training at the University of Durham College of Medicine and at University College, London. An interesting link in the progress of medical education emerges from the fact that, the days of medical apprenticeship having recently departed, he held, from November, 1872, to April, 1873, the office of resident clinical assistant (unqualified) at the Newcastle Infirmary. Since about 1887, these resident clinical assistantships, which afforded excellent opportunities to final-year students gaining clinical experience, have been replaced by other methods of instruction. In 1873-74 Wear qualified as M.R.C.S. and L.R.C.P., and in 1892 received the degree of M.D. in the University of Durham. From his student days he showed much interest in pulmonary tuberculosis, and eventually became one of the founders of the Northern Counties Chest Hospital. He held the post of honorary physician to that institution for fifty years, a record of service that found public recognition in the presentation made to him on his retirement two years ago. His other public appointments were those of honorary consulting surgeon to the Newcastle-upon-Tyne Dispensary, medical officer to the Salvation Army Rescue Home, and physician to the Hospital of St. Mary the Virgin.

In younger days he was keenly interested in the Volunteer movement, and served with the Newcastle R.G.A. for seventeen years, attaining the rank of surgeon lieutenant-colonel. For some time he was chairman of the Newcastle Division of the British Medical Association, and in that capacity did good organizing work, holding the respect and esteem of his fellow practitioners. He also represented the North of England Branch on the Council from 1905 to 1909, and the Newcastle-on-Tyne Division in the Representative Body from 1903 to 1906. He retired in 1929, and, after two years of failing health, he died on November 22nd, 1931. The funeral was very largely attended, both by the public and by his medical colleagues.

Dr. Wear was thrice married, and leaves a widow, four sons, and four daughters. Two of his sons follow him in a medical career, the elder in the public health service, and the younger succeeding to his father's practice.

The MEDICAL SECRETARY adds: I have particular reason to remember Dr. Wear with affection and gratitude. As a student beginning my medical career at the University of Durham College of Medicine I went to him as dispenser and assistant (this was in the days before unqualified assistants were abolished by the General Medical Council) I was with him till I qualified in 1891, and look back on the time I lived with him as perhaps the most fruitful part of my education. Dr. Wear was a very conscientious practitioner. He believed in hard work and inculcated it, to the best of his ability, into a succession of men like myself, who were thus initiated into general practice and the handling of patients in a way which later stood them in good stead. He had a stern sense of duty, and a high ethical standard in his relations with fellow practitioners. As an honourable man and a good doctor his memory will be honoured by all who knew him well.

We regret to record the death, on November 27th, of VINCENT DORMER HARRIS, M.D., F.R.C.P., consulting physician to the City of London Hospital for Diseases of the Heart and Lungs, and to the Royal National Hospital, Ventnor. Passing at the age of 80, after thirty years of retirement in his country home in Hampshire, the name of Vincent Harris will be remembered by his surviving contemporaries as that of a conscientious physician and a good friend, who did an immense amount of useful work without any thought of personal advancement or reward. Educated at St. Bartholomew's Hospital, he took a prominent place as a student, and held the post of demonstrator of physiology, subsequently becoming editor of some of the earlier editions of *Kirkes's Physiology*. He was elected a Fellow of the Royal College of Physicians as long ago as 1885, and was for many years an examiner. Leaving London about 1900, he settled down at Milford-on-Sea in Hampshire, and manifested his continued interest in hospital management by constant attendance at the board of the Ventnor Hospital and by helping to establish a cottage hospital in his own district. As a county magistrate, also, he took part in many local institutions, and the remarkable gathering of all classes on the occasion of the funeral at Milford bore touching evidence of the respect and affection in which his memory was held by those who knew him best.

Readers of the *British Medical Journal* who are aware of their debt to the printing office will appreciate the loss we have suffered by the death of Mr. J. F. BRUNETTE, on December 5th, less than three and a half years after the death of Mr. Lapworth, his predecessor in the post of head printer. Mr. Brunette was highly skilled in his craft, and faithfully served the Association for thirty-three years. A most conscientious and resourceful worker, his long experience in the business of medical typography was always at the service of the editorial department, and he responded loyally to every fresh call on his time and energies.

The following well-known foreign medical men have recently died: Dr. AUGUST SCHARNKE, extraordinary professor of psychiatry and neurology at Rostock University, aged 46; Dr. ARTHUR SCHNITZLER of Vienna, the eminent playwright and novelist, aged 69; Dr. ARTHUR SIMARD, professor of surgery at Laval University; Professor GUSTAV FINDER, aged 64, Berlin oto-laryngologist and editor of *Zentralblatt für Hals- Nasen- und Ohrenheilkunde*; several years; and Dr. JUSTIS BARTH, a prominent gynæcologist and obstetrician of Oslo, aged 68, of angina pectoris.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons was occupied this week with the Bill to authorize the taxation of out-of-season horticultural produce imported from abroad. A general discussion of policy followed on a vote of censure moved by the Opposition, and the motion for the Christmas adjournment was to be taken on December 11th. The House is due to reassemble on February 2nd.

In the House of Lords, on December 8th, the National Health Insurance (Prolongation of Insurance) Bill was read a third time and passed.

In the House of Commons, on December 8th, the Horticultural Products (Emergency Customs and Duties) Bill passed through committee. Dr. Salter supported an amendment to exempt tomatoes from the customs duty. He said that the tomato, which contained all the vitamins necessary for dietetic purposes, was an essential item of diet among three-quarters of a million poor people in South-East London, who could not afford to purchase other vegetables in sufficient quantities. The amendment was negatived.

B.C.G.

On December 7th Sir F SANDERSON asked the Minister of Agriculture to take steps to ensure that the Calmette or B C G vaccine was not used on farm animals in this country without his consent. Sir JOHN GILMOUR replied that he was informed that vaccine cultures had been distributed by Professor Calmette to responsible medical and veterinary authorities for experiment and trial In this country three veterinary laboratories were supplying vaccine to veterinary surgeons for the treatment of calves born in certain selected infected herds, but no case had been brought to his notice in which the vaccine was alleged to have produced harmful effects He understood that the vaccine was not being sold by commercial firms, and was not obtainable by the public He did not propose to restrict the work of the laboratories engaged on farm trials of the vaccine.

Small-pox

On December 1st Sir E HILTON YOUNG, replying to Mr. Groves said that sixteen deaths occurred among the small-pox cases tabulated on page 49 of the Report of the Chief Medical Officer of the Ministry of Health for 1930. Those deaths, following the classification adopted in the tabular statement, were distributed as follows successfully vaccinated, 5 deaths, of persons aged 46, 47, 56, 66, and 77 years respectively, successfully revaccinated, no deaths, unvaccinated, 8 deaths of persons aged 3 weeks, 4 weeks, 7 weeks, 8 months, 8 months, 10 years, 11 years, and 13 years respectively, vaccinal condition doubtful, 3 deaths, of persons aged 45 58, and 59 years respectively. As the table related to certain districts only, and the total number of deaths from small-pox during the year was given elsewhere in the report, it was not necessary to arrange for the deaths, if any, to be included in the table

Insurance Medical Service

Sir E HILTON YOUNG told Dr. Hillman, on December 3rd, that a proposed Regulation under the National Health Insurance Acts to regularize the practice of permitting a doctor to charge a fee for treating an insured person, if such person declared in writing that he did not desire treatment under the Insurance Acts, had not yet been actually made or published in draft. The requirement of a written declaration was designed to safeguard the interests of insured persons. The provision was proposed by the Ministry of Health itself for inclusion in a general redraft of certain parts of the Medical Benefit Regulations designed to make them clearer and easier to administer in regard to fee charging and other matters. He had no information suggesting that doctors would make large sums of money out of the new Regulation and recoup themselves for their losses on the "economy" proposals In reply to Dr. O'DONOVAN, he said he had no statistics showing to what extent advantage was still taken of the special conditions, which provided that a panel practitioner might accept fees in respect of treatment given to an insured patient not on the practitioner's list.

Sir E. HILTON YOUNG informed Mr Rhys Davies, on December 7th, that the actuary's report on the third valuation of approved societies had been laid before Parliament and was being printed. Publication within a week or two therefore might be expected.

Foot and mouth Disease

Sir JOHN GILMOUR, replying on December 7th to Mr Hurd, who asked what administrative action he proposed to take following on the conclusion of the Government of Northern Ireland that the outbreak of foot-and-mouth disease in this country last summer had its origin in vegetables imported direct from disease-ridden countries on the Continent, said that the only effective action possible would appear to be in the direction of the prohibition of imports How far such action was justified and practicable must be determined in the light of all the circumstances The information at the disposal of his Department would not at present justify such action in the case of Continental vegetables The position, however, would continue to be carefully watched Mr HURD asked if the vegetables which carried the virus of this disease were still being imported Sir JOHN GILMOUR said that in numerous cases foot-and-mouth disease had been attributed to this source, but that had not been the case in general

Ministry of Pensions.—Major TRYON replying to Mr Jo l on November 30th, stated that the cost of administration of the Ministry of Pensions for each of the five years ending on March 31st next was 1927–28, £1 505 000, 1928–29, £1 290,000, 1929–30 £1,295,000, 1930–31 £1 221 000 and 1931–32, £1 039,500 (estimated) At the end of September last 430 000 final awards of disability pension or retired pay were in payment For the year ended September, 1930, fresh applications from all classes of claimant including disabled officers and men, widows, and dependants numbered 24,600, and for the year ended September last 13,600 Awards of pensions or other grants were made in 3,570 cases in the former year, and in 3,170 in the latter Answering a supplementary question by Captain Crookshank, Major TRYON said that the total expenditure on war pensions since 1914 was £1,015,000,000.

Dangerous Drugs.—Sir HERBERT SAMUEL told Dr Fremantle, on December 2nd, that before the British Government could ratify the 1931 Convention for the limitation of the manufacture of narcotic drugs the Dangerous Drugs Act would require amendment in certain minor respects A Bill was now in preparation.

Russian Butter.—On December 8th Mr E BROWN, replying to Sir W. Davison, said that the Minister of Health was aware of statements in the press in regard to recent Russian official statements as to the insanitary condition of many of the farms where milk was produced in Russia Russian butter, with other foods, was subject to examination on arrival under the Imported Food Regulations and the Preservatives Regulations. The Department had not investigated the conditions under which the butter was produced but arrangements were made last summer for samples of the butter to be examined bacteriologically The reports on these examinations were satisfactory but the Minister was considering the desirability of further similar examinations

Miners' Vaccinations.—Mr ISAAC FOOT said that it would be impossible with reasonable accuracy to state the number of miners who had been refused employment underground owing to having drawn compensation for nystagmus.

Medical News

Mr. E. Muirhead Little, consulting surgeon to the Royal National Orthopaedic Hospital, is to read a paper to the Historical Section of the Royal Society of Medicine on January 6th, at 5 p.m., on "The introduction of tubercle into bone and joint surgery." This will be of special interest in view of the fact that 1932 marks the fiftieth anniversary of the discovery of the tubercle bacillus.

At a meeting of the Royal Microscopical Society, to be held at the B.M.A. House, Tavistock Square, W.C., on Wednesday, December 16th, at 5.30 p.m., Dr. Edward Hindle will read a paper on thermophilic micro-organisms. The annual general meeting of the Society will be held on January 20th, 1932, when Professor R. Ruggles Gates, F.R.S., will deliver his presidential address.

The Royal Society of Medicine will hold a reception at 1, Wimpole Street, W.1, on Monday, December 14th, at 8.30 p.m. Fellows and their friends will be received in the library by the President and Mrs. Watts Eden, and at 9.15 p.m. a cinematograph film will be shown. Admission will be by ticket only, applications for which should be addressed to the secretary.

The annual medical dinner of the Birmingham Medical School will be held in the Grosvenor Rooms, Grand Hotel, Birmingham, on January 28th, 1932, at 8.15 p.m. The guest of honour will be Professor Leonard Gamgee, to whom a presentation is to be made by his past students upon his retirement from the chair of surgery, which he has occupied since 1919. Donations are limited to £1 1s., and it is hoped that as many past students as possible will subscribe towards the presentation, and also be present at the dinner. The cost of the dinner ticket is 10s., but for students and residents the charge is 7s. 6d. Tickets can be obtained from Mr. Cyril A. Raison, F.R.C.S., 85, Cornwall Street, Birmingham.

The Fellowship of Medicine and Post-Graduate Medical Association announces the following free demonstrations: Royal Waterloo Hospital, Tuesday, December 15th, 2 p.m., Dr. Bernard Myers on pulmonary affections of childhood; Miller General Hospital, Thursday, December 17th, 11 a.m., Mr. Reginald Ledlie on varicose vein injections. The next series of Wednesday afternoon lectures (free to the profession), at the Medical Society of London, 4 o'clock, will be on treatment, beginning on January 13th. A course of six lectures on endocrinology (detailed syllabus now ready) will be given at the Medical Society by Dr. Langdon Brown at 8.30 p.m., Mondays and Fridays, January 11th to 29th, 1932; fee, £3 3s. for course, or 12s. 6d. per lecture. A special evening M.R.C.P. course is being arranged by the Fellowship for February 22nd to March 18th. Six clinical and two pathological evenings will be given at the London Temperance Hospital, ophthalmic demonstration at the West End Hospital for Nervous Diseases, lecture and laboratory demonstration at 10, Bedford Square, and four lectures at the Medical Society (number of post-graduates at demonstrations limited to 25).

A new series of lectures and practical courses for the Diploma in Psychological Medicine will open at the Maudsley Hospital on January 4th, 1932. Dr. F. Golla will give twelve lectures on the physiology of the nervous system, and four lecture-demonstrations on physiological psychology. Four lectures on biochemistry in relation to the nervous system will be given by Mr. S. A. Mann, D.Sc.; twelve lectures on the anatomy of the nervous system by Mr. W. Le Gros Clark; practical instruction and demonstrations by Mr. Charles Geary; eight lectures on psychology by Dr. Henry Devine, followed by a course of practical instruction; and six lectures by Dr. E. Mapother on mental mechanisms. Part I of the course will extend through January and February, and Part II from March to May. The fee for the whole course is £15 15s., for either part separately £10 10s., for single series of lectures in Part I £4 4s., for single series of lectures in Part II £2 2s., and for one series of demonstrations £1 1s. Inquiries should be addressed to the director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E.5.

The executive committee of the second International Congress of Tropical Medicine announces that the congress which was to be held in Amsterdam from September 12th to 17th, 1932, has been postponed. Owing to economic conditions the Dutch Government feels unable at present to grant its financial support, and private contributions so far received have been inadequate to cover the estimated expenses of the meeting. The committee intimates that subscription fees which have already been paid will be returned without delay.

As announced in the advertisement pages of this issue, applications for the George Henry Lewes studentship in physiology, of the annual value of about £250, should be sent, by December 31st, to Professor Barcroft, Physiology School, Cambridge, from whom the regulations may be obtained.

The Alvarenga prize of the College of Physicians of Philadelphia for 1931 has been awarded to Dr. Edgar S. J. King, Melbourne, Australia, for an essay on "The nature of the stroma of the ovary." The next award of the prize, amounting to about 300 dollars, will be made on July 14th, 1932, provided an essay deemed worthy of the prize has been offered. The essay should be based on original or literary research in medicine, and should not have been presented elsewhere, in part or in whole, for a prize or for publication. It should be typewritten and unsigned, but marked with a motto, and accompanied by a sealed envelope having on its outside the motto, and within the name and address of the author. The successful essay will remain in the possession of the College, but, with its consent, may be published by the author. Rejected essays will be returned upon application within three months of the award. Essays should be sent to the secretary of the College, 19, South 22nd Street, Philadelphia.

The Ministry of Health is issuing this week as No. 66 of its Reports on Public Health and Medical Subjects an account by Dr. Janet E. Forber (*née* Lane-Claypon) of an investigation of hospital patients in Eastern London suffering from incurable cancer. It is published by H.M. Stationery Office at 1s. net.

On the occasion of his retirement from the office of medical officer of health for Ayr, Dr. W. F. Brown has been presented by the members of Ayr Town Council with two easy chairs as a memento of their esteem. Dr. Brown was secretary of the Ayrshire Division of the British Medical Association from 1914 to 1919, and chairman in 1929–30.

The issue of *Le Progrès Médical* for November 17th is devoted to therapeutics, and contains an illustrated supplement written by Professor C. Lenormant on French surgery in the eighteenth century, on the occasion of the second centenary of the Académie Royale de Chirurgie.

The Cambridge University Press announces for publication in January *The Cambridge Medical School: a Biographical History*, by Sir Humphry Rolleston, Regius Professor of Physic in the University.

The October and November issue of *Schmerz Narkose Anaesthesie* contains a concise history of chloroform since its discovery in 1831 by Samuel Guthrie.

The British Serbian Units Branch of the British Legion held its tenth annual dinner in London on the evening of December 5th. The president, Miss C. M. Mure, was prevented by illness from being present, and the chair was ably taken by Lady Berry, M.D., on her behalf. The Chargé d'Affaires, Dr. Pouritch, represented the Yugoslav Minister (who is out of England), and replied to the toast of "The Guests," proposed by Lady Berry. Major-General Sir Frederick Maurice, treasurer of the British Legion, proposed the toast of "The Branch and its President." During the evening Mr. P. H. Mitchiner F.R.C.S., presented a silver bell and silver spoons as prizes for miniature-rifle shooting, and after dinner the guests enjoyed Serbian and English dancing.

In order to inaugurate a new thermal establishment at Vichy, which is nearing completion, the Société des Sciences Médicales is holding an international congress on biliary lithiasis at the end of September, 1932. This congress will be the first of a series of medical meetings which will be held periodically at this town to discuss liver diseases and associated complaints.

A stained-glass window, in memory of Dr. S. H. A. Lambert of Harrow, is to be placed in Roxeth Parish Church, but many of his friends feel that there should be a memorial also at the Harrow and Wealdstone Hospital, with which he was most intimately associated, and a fund for this purpose has been opened. It is suggested that the men's ward in the extension to the hospital should be endowed in Dr. Lambert's memory and bear his name.

The Golden Square Throat, Nose, and Ear Hospital, near Piccadilly Circus, has recently opened two contributory wards, one for men and one for women. These wards have been redecorated and refurnished, and divided into cubicles. The charge for admission is four guineas a week, inclusive.

In the report for the year 1930, the Blind Relief Association, Bombay (the first of its kind in India), describes measures taken for the prevention and treatment of blindness. Centres exist at Surat, Bulsar, Anaud, Chalisgaon, and Bijapur. Relief is provided for people of all ages and of both sexes, irrespective of creed, caste, or colour.

We have received the first issue, dated last October, of *Archivio Italiano delle Malattie dell' Apparato Digerente*, which will be published bi-monthly by L. Capelli of Bologna, under the editorship of Professors C. Frugoni and G. N. Fasiani of Padua and A. Busi of Rome, and is intended for physicians, surgeons, and radiologists specially interested in diseases of the digestive system. The subscription is 80 lire for Italy and 100 lire for foreign countries.

The annual report of the Lester Chinese Hospital, Shanghai, for 1930 reveals that 46.7 per cent. of the in-patients and 37 per cent. of the out-patients come from the International Settlement. The number of patients in the emergency department reached a total of 9,400, mainly owing to a large increase in traffic accidents and wounds from assaults. This side of the work is a costly matter, in view of the fact that very little financial recompense can be made by the victims.

Dr. Bernard Day has been appointed by the Secretary of State for the Colonies to be one of the consulting physicians in London to the Colonial Office.

Dr. Arthur Stanley Woodwark has been appointed a Deputy Lieutenant for the County of London.

Sir Norman Bennett has become president of the British Dental Hospital, in succession to the late Sir Harry Baldwin.

The late Mrs. J. Thompson Long of Bath, who left estate of £45,324, with net personalty £39,601, bequeathed all her property (subject to legacies amounting to £5000) in trust for her husband for life, and then one-half to St. Thomas's Hospital to endow beds for the free and separate treatment of aged and necessitous gentlefolk, and the other half in like manner to the Hospital for Sick Children, Great Ormond Street, for the benefit of children of necessitous gentlefolk.

A marble bust of the late Dr. Giovanni di Cristina, professor of children's diseases at Palermo, who died in 1928, has recently been unveiled in the grounds of the Palermo Children's Hospital.

Professor Cesare Frugoni of Padua, the author of works on asthma, pulmonary oedema, and splenomegaly, has been elected successor of the late Professor Ascoli in the chair of clinical medicine at Rome.

A new pathological institute has recently been opened at the Sen Yatsen University in China, under the direction of Dr. Ernst Dormanns.

Dr. Charles Nicolle, director of the Institut Pasteur of Tunis, has been nominated Commander of the Legion of Honour.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed *to The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.*

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors *desiring REPRINTS of their articles published in the British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and *the British Medical Journal* are *MUSEUM* 9961, 9962, 9963, and 9964 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Articulate Westcent, London.*

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Cellulose Spraying

"T. M. G." writes: Are there any toxic symptoms to be expected in a man who does a great deal of cellulose spraying in the process of finishing motor-car bodies? Some of the patient's friends tell him that he will get very bad indigestion and septic sores. The only thing I have noticed (during the three or four years he has been on the spraying job) is that he seems very liable to sores which take a long time to heal.

Nausea and Vomiting of Pregnancy

Dr. A. ELLIOTT (*Sparkbrook, Birmingham*) writes: In answer to the query of Dr. Lawson L. Steele (November 28th, *p. 1017*) as to effective treatment for the vomiting of pregnancy, I should like to ask whether he has tried sodium luminal, or its *B.P.C.* equivalent, sodium phenobarbitol. I have found that one-half to one grain of this drug administered at night will often completely control the condition which, however, tends to start again if the drug is omitted. In these doses it seems to have no toxic effect, even if used for long periods.

Dr. A. L. MARTYN (*Crantock, Cornwall*) writes: Allow me to suggest the old device of drop doses of recently made tinct. nucis vom. in a drachm of fresh water, taken on waking *in the morning*, and, say, *twice again before breakfast*; and if it be possible, also a teaspoonful of good Italian salad oil in coffee or wine, also some time before breakfast. Provided other things are equal, I have never known this remedy to fail.

"M." writes: I suggest that Dr. Steele should try liq. adrenalini hydrochlor. (1 in 1,000) in 2 or 3 minim doses by mouth after food; this should be accompanied by an extra intake of sugar in some form. I have noticed in several of these cases that there is a definite distaste for sweet things, and patients have found sugar to be the least disagreeable in the form of actual lumps which they crunch and swallow as quickly as possible. I have not been able to investigate these patients (other than observe the fact that the vomiting and nausea are definitely lessened), but the best explanation I can suggest is that there may be some hypoglycaemia in these cases and that the adrenaline raises the blood sugar and presumably counteracts the tendency to an alkalosis.

Cobalt

Income Tax

Replacement of Car

"D. R." bought a car in 1928 for £35; in 1931 he sold it and bought another for £185. What should he claim, on the basis that five-sixths of the use of the car is professional?

*** As an expense of the practice—five-sixths of (£35 − £*x*), £*x* being the amount which the old car realized. The excess of £185 over the net cost of the old car represents capital outlay. The deduction will reduce the amount of the net profits for 1931, and therefore the income tax assessment for 1932–33; consequently "depreciation" cannot be claimed for that year, but should be claimed for 1933–34, unless another replacement is effected in 1932.

Cost of Maintenance of Assistant

"G. J. H." employs an indoor assistant. In calculating his profits he has deducted an agreed amount covering one-half the cost of two maids and one-half of the Schedule A assessment, rates, lighting, and heating, etc., of the house as representing the expense of providing and maintaining the professional portion of the establishment. What would be a fair deduction for the cost of maintenance of the assistant?

*** A great deal must depend on the precise facts—for example, what standard of living is maintained, and what proportion of the house is used by the assistant personally. The cost of maintenance elsewhere is not necessarily a reliable guide, as that would include an element of profit and of payment for the services of the "landlady," whereas all "G. J. H." is entitled to charge is the cost of the assistant's food, laundry, etc., plus a proportion of that moiety of the general expense of maintenance of the establishment not already allowed for in the calculation. Prima facie, £3 per week is too much on that basis, but the inspector's figure of 25s. per week seems inadequate; 35s. would seem nearer the mark than either of these figures.

Withdrawal of Car Allowance

"D.P.H.Camb." bought a new car for £240 on the strength of a decision by the appointing local authority to give him an allowance of £65 per annum for use of a car in his work. It is now proposed to withdraw the allowance on grounds of economy. The car is worth £120. Can any claim be made for this "loss"?

*** No. The only claim that seems valid is that as from the withdrawal of the "allowance" a deduction at a corresponding rate should be made from the amount of the salary as representing the necessary expense of maintaining the car; alternatively, a claim for the actual expenditure incurred in running the car after that date can be made. It has to be remembered that as the income is assessable on the basis of the earnings of the previous year, the above adjustments will affect liability for 1932–33, not 1931–32.

LETTERS, NOTES, ETC.

The "Medical Directory"

No reference book is consulted so often in this office as the *Medical Directory*, and it would be ungrateful to let a new edition appear without testifying again to its value. So far as can be judged from a preliminary survey, the eighty-eighth annual issue, for 1932 (J. and A. Churchill, 36s.), fully maintains the standard of its predecessors in the matter of accuracy and compendiousness. The numerical summary, which will be found near the contents page, shows that this volume includes 55,480 names, representing an increase of 445 on the total for 1931. The figures for London, the Provinces, and "Abroad" have increased; Ireland is almost unchanged; and there are slight decreases in Scotland, Wales, and the Services. Dr. Fortescue Fox's medical notes on British spas and seaside resorts have been revised and amplified. The "Late List" of new names and changes of address appears at page 2122, following the list of certified institutions and houses under the Mental Deficiency Act.

Age Limits

"ECONOMY" writes: I agree with "Juvenis" (November 28th, p. 1018) on the absurdity of limiting medical appointments to the age of 45. We hear a great deal nowadays on the subject of national economy, yet the State overlooks the fact that the public health service is a closed door to medical officers of the fighting services, who have been retired from the Army or Navy at the age of 55. A large proportion of such officers have specialized in public health work, taken the D.P.H., and spent twenty to thirty years actively employed in keeping a high standard of health in the fighting forces of the country. These officers are kept up to date by the necessity of passing examinations for promotion, and do a long post-graduate course before promotion to higher ranks. Here, then, exists a pool that could supply many candidates to the public health services—efficient men of experience; yet the State that has helped to make them efficient by paying for their special training in public health work has no use for them after the age of 55, and allows them to idle out the rest of their lives on small pensions. Very few men wish to be idle at 55, even if they can afford to be, and I am confident that a guarantee of further employment under the Crown for medical officers who specialized in public health during their service would do much to popularize the medical branches of the Army, Navy, and Air Force.

Early Use of Liver in Medicine

Dr. E. J. TYRRELL (London, E.C.) writes: In your notice of the *Medical Art Calendar*, 1932, it is said: "The first use of liver in medicine would seem to be of ancient origin, for the Angel Gabriel turned heart and liver of a haddock to beat the devil so that Tobit might marry his bride." It was not the Archangel Gabriel who did this, but the Archangel Raphael. The story runs thus: "As he went, he remembered the words of Raphael, and took the ashes of the perfumes, and put the heart and the liver of the fish thereupon, and made a smoke therewith. The which smell, when the evil spirit had smelled, he fled into the utmost parts of Egypt, and the angel bound him." (Apocrypha, Tobit, 8, 2–3).

Prescribing British Drugs

"COUNTRYMAN" writes from Ayrshire: It appears to be certain that a major cause of this country's present financial position is the hoarding of gold by America and France. As a profession we have been called upon to accept cuts in our fees, and to many of us the income tax has become a still more dreadful worry. At present the campaign of "Buy British" should find as whole-hearted support among the profession as it is apparently doing among the general public. There must be an enormous amount of drugs of foreign origin prescribed with little more reason than that the drugs are "well pushed" by their energetic proprietors. In America, salesmanship has become a fine art, and every practitioner who prescribes an American preparation when there is an equally satisfactory British one is paying tribute to American cleverness. He is also sending more gold unnecessarily to America, and more gold to France when he prescribes a French remedy for which there is an equally satisfactory British substitute. The number of active and proved foreign preparations for which there is no British equivalent must be very small. Of course, the interests of the patient come first, but I would plead with the prescriber to pause with pen in hand and not sign away British gold carelessly and needlessly to those countries whose financial policies have added to his already heavy load of cares.

Diaries and Calendars

We have received from Messrs. John Walker and Co. (Farringdon House, Warwick Lane, E.C.4) an attractive selection of diaries, calendars, memorandum pads, and appointment books. The habitual diarist will be pleased to find the customary information as to the moon's phases, lighting-up time, and the inland postal rates, whilst the pages devoted to cash accounts, which in most cases cease to be made use of during the early weeks of February, will satisfy the enthusiast. Those who, like ourselves, seldom do this, astronomically, will be interested to learn that there are four eclipses during 1932.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals will be found at pages 40, 43, 46, 47, and 48 of the advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 to 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 318.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

532 The Significance of Large Q-Waves in the Electrocardiogram

F. A. WILLIUS (*Amer. Heart Journ.*, August, 1931, p. 723) has correlated the clinical findings in patients showing enlargement of the Q-wave in Lead III of the electrocardiogram. In his selection of tracings he has observed the following criteria of Pardee: (1) that only normal or left axis deviation was present; (2) the downward excursion of the Q-wave in Lead III was the initial deflection and more than 25 per cent. of the greatest QRS excursion; and (3) tracings with notching deformity of the QRS in Lead III were excluded. Among the 309 patients studied, only 0.1 per cent. had apparently normal hearts. In 89 per cent., hypertensive and arteriosclerotic heart disease was present, and this group included patients with or without the anginal syndrome. The remaining group of 11 per cent. was composed of a variety of conditions, such as exophthalmic goitre, syphilitic aortitis with insufficiency, and rheumatic heart disease. These were in general diseases that might throw a strain on the left ventricle. Pathological control was available in only nine of the cases; in eight there was considerable hypertrophy. The fact that four hearts showed no coronary changes supported the view that hypertensive disease was the dominant factor in the production of an enlarged Q-wave in Lead III. In two-thirds of the patients no other electrocardiographic abnormality was present, permitting the conclusion that this abnormality might be considered an additional diagnostic sign. The author has employed as a control for his series a composite group of electrocardiograms made from 977 normal individuals; in only 0.2 per cent. of this group were large Q-waves found in Lead III.

533 Contagiousness of Herpes Zoster

M. ESCARAVAGE (*Thèse de Paris*, 1931, No. 426), who records an illustrative case, and reviews the literature, states that the epidemic occurrence of herpes zoster has long been known, having been described by Celsus, Pliny, and Scribonius Largus. The true epidemics must be distinguished from the false, which are due to the coincidence of the same adjuvant causes, as in the case of epidemics of zoster in patients treated by arsenic or tuberculin. There do not appear to be any special etiological factors in zoster epidemics, the age, sex, season, and occupation being indifferent. The contagiousness of zoster is much less evident than its epidemic character, as hitherto only nine cases have been recorded, although Trousseau was the first to describe an example. Recent study of the relations between zoster and varicella has shown that the duration of the incubation period is about a fortnight; in at least two of the cases collected by the present author the incubation period was the same.

534 Circulatory Failure in Diabetic Coma

A. PEIPERS (*Deut. med. Woch.*, August 28th, 1931, p. 1499) agrees with the generally accepted view that the threat to the general circulation in diabetic coma arises from the acidosis, polyuria, and disturbance of the carbohydrate metabolism. Circulatory failure, a common premonitory symptom of impending coma, may occur suddenly after effort, but coma may appear without warning when conditions seem favourable. It may result in syncope leading to typical diabetic coma which, though delayed, is inevitably fatal. Peipers describes the case of a man, aged 57, who had had symptoms of diabetes for twelve months, and was on dietetic treatment. The odour of acetone in the breath was observed for about three weeks before coma supervened; he was very emaciated, and there was ocular hypotonus; the pupils were contracted, but reacted to light. The typical deep inspiration was present, and the pulse was small, soft, and rapid. The blood sugar figure was 450 mg. The patient was given insulin (50 units) and, simultaneously, glucose by the mouth. Hypoglycaemia supervened, accompanied by profuse sweating, tonic spasm, and jactitation; coarse bubbling pulmonary rales indicated serious circulatory failure. Glucose was administered by the nasal tube, the syncopal symptoms subsided rapidly, and the circulation improved. Seven hours later the blood sugar had risen to 600 mg., and two hours afterwards the man regained consciousness. Later he complained of severe thirst. Exertion produced dyspnoea, but the respiration improved, the rales disappeared, he was able to speak, and the acetone odour had disappeared. A glycerin injection produced a copious stool, but he then collapsed suddenly, with stertorous respiration. Cardiac stimulants and adrenaline produced transient improvement, but he died two hours later. Peipers considers that the sudden collapse after obvious clinical improvement was due to respiratory failure, induced by cerebral anaemia secondary to sudden lowering of the intra-abdominal pressure after defaecation, and consequent flushing of the splanchnic circulation.

535 Complications of Diabetes

F. D. MURPHY and G. F. MOXON (*Amer. Journ. Med. Sci.*, September, 1931, p. 301) believe that a diagnosis of diabetes alone is often incomplete; when the progress of a diabetic patient is unsatisfactory after he has been rendered sugar-free, the possibility of a complication being present must be seriously considered. An analysis of 827 cases of diabetes showed that 681 (82.37 per cent.) were complicated by one or more diseases, and, of these, 428 patients (69.2 per cent.) died. The 75 various complications are discussed under the following seven headings: diabetic coma, cardio-renal vascular diseases, infections other than gangrene, pulmonary tuberculosis, carcinoma, syphilis, and miscellaneous complications, such as epilepsy and hyperthyroidism. A complication usually interferes with the welfare of a diabetic patient, and indicates the probability of a fatal termination of the case. Hence, the early recognition and treatment, as well as prevention, of complications is highly important. E. L. SEVRINGHAUS (ibid., p. 311) also presents a study of 500 diabetics, 90 of whom died. The causes of death, in the order of importance, include sepsis, cardio-vascular renal disease, and coma; gas gangrene occurred only three times, and tuberculosis was infrequent. Pyogenic infection after gangrene, and pneumonia, were the commonest septic processes leading to death. Pains in the extremities were found in 36 per cent., and diminished or absent patellar reflexes in 46 per cent. Transitory visual disturbances were noted in 38 per cent. Ketosis at the time of the first examination indicates the need of insulin, its absence implying that this form of treatment is unnecessary.

536 Phosphaturia

L. H. BARETZ (*New York State Journ. of Med.*, September 1st, 1931, p. 1084) discusses persistent non-infected phosphaturia producing a cloudy alkaline urine, and associated with neurasthenia and intestinal derangement. The condition is caused by an absolute increase in the earthy phosphates, owing to an inability of the large bowel to excrete the normal amount; there may also be a low-grade infection of the prostate or seminal vesicles requiring routine massage for the removal of the foci. In the non-infected variety, dietary treatment is fundamental; the urine must be kept acid, and the alkaline tide be reduced by the omission or reduction of base-forming foods, such as vegetables and fruits, and increasing the meats and cereals. Any concomitant intestinal disorder must be dealt with, such as constipation and colitis, so that normal calcium excretion through the

intestinal tract may be produced, with a tendency to normal phosphatic urinary excretion. Medicinally, acid sodium phosphate or some other urinary acidifier should be given. Since there is frequently an associated neurosis, it is important that any psychic factor should be removed. Cystoscopic treatment is usually unnecessary, unless indicated by persistent renal colic or vesical symptomatology. Reports of three cases are given to illustrate the syndrome of phosphaturia with associated renal colic, excessive vegetable diet, intestinal disorder, and prostatic or seminal vesicular infection.

537 Catarrhal Gingivitis

R. E. PERL (*Wien. klin. Woch.*, September 4th, 1931, p. 1136) describes a constant type of gingivitis which formed part of a syndrome observed in seven cases in November–March, 1930–31. The preliminary symptoms were a day's malaise preceding a coryza, generally more marked on one side than the other, and a labial herpes. There followed an acute and painful gingivitis, generally also unilateral, a mild trachitis, occasionally bronchitis, and a recurrence of the labial herpes. The condition was generally associated with mild pyrexia, and subsided in a few days. In all but one of the cases the nasal secretion, the purulent deposit on the gums, and the sputum were examined bacteriologically, and in each case a short non-motile Gram-negative bacillus was found, belonging to the Pasteurella group of organisms ; this is regarded as the cause of the syndrome described. The organism was not present in a control series of cases of coryza in which the characteristic gingivitis did not occur.

538 Tularaemic Meningitis

J. O. HAZLIP and A. E. O. NEIL (*Journ. Amer. Med. Assoc.*, September 5th, 1931, p. 704), who record an illustrative case, state that apart from five fatal cases of tularaemia mentioned by Francis, which terminated with meningeal symptoms, no previous example of meningitis due to *B. tularense* has been recorded. Their patient was a man, aged 45, who developed meningitis secondary to a sore on the left thumb. *B. tularense* was found in the exudate from the thumb, and in the turbid cerebro-spinal fluid. The blood serum agglutinated a *B. tularense* antigen in a dilution of 1 in 40. Inoculation of guinea-pigs with the exudation from the thumb and the cerebro-spinal fluid produced typical tularaemia with the characteristic lesions.

Surgery

539 Etiology and Prognosis of Septic Empyema

E. SCHILDT (*Upsala Läkareför. Förhand.*, September 21st, 1931, p. 1) records his observations on 289 cases of septic empyema treated at the Upsala Surgical Clinic during the period 1916–29. All cases complicated by tuberculosis, actinomycosis, or tumour were excluded ; 282 were recent cases, 4 were recurrences, and only 3 were chronic cases. A considerable increase in the incidence of empyema occurred in the years when influenza was prevalent. Nearly 50 per cent. of the cases were found in the first 20 years of life, and over 70 per cent. in the first 30 years. The number of female cases showed a continuous rise with advance in age, while the number of male cases increased sharply about the 20th year as the result of influenza. More than 85 per cent. were undoubtedly, or probably, due to primary disease of the lung, and in more than 9 per cent. the etiology was obscure ; the remainder were secondary to trauma, pyaemia, infections of the thorax, or abdominal disease. In only a small number of cases was the empyema caused by rupture of a pulmonary abscess. Streptococcal infections were more numerous than any other infection. Typical complications occurred in 59 cases, nearly 60 per cent. of which ended fatally. Pulmonary and pleural complications on the opposite side were noted in more than 12 per cent. Nine patients, of whom five recovered, were treated by puncture, but the operation mainly used was subperiosteal resection of a rib, or intercostal incision, and open drainage. Local anaesthesia was chiefly employed, and only in a few cases, especially in children, was a general anaesthetic thought desirable. Permanent recovery resulted in at least 76 per cent. of the acute cases ; recurrence ensued in 32 cases (over 11 per cent.). Pain followed the operation in more than 5 per cent., and thoracic deformity in more than 6 per cent. of those who made a permanent recovery. Transient or permanent loss of the working capacity resulted in more than 7 per cent., 10 per cent. showed tuberculous changes in the lung, and 4 extensive bronchiectasis. The mortality among the acute cases was about 17 per cent., and the total mortality 18.6 per cent. The mortality was least between the ages of 6 and 30 years, and very high during the first two years of life.

540 Perinephritic Abscess

L. G. RIGLER and M. H. MANSON (*Amer. Journ. Surg.*, September, 1931, p. 459) classify cases of perinephritic abscess into two groups: those of renal and those of extrarenal origin. Nineteen cases are reported, of which two were renal in origin ; 16 were extrarenal, and one was doubtful. The diagnosis of this condition is extremely difficult, and accounts, to a certain extent, for the high mortality. In the series under review the average time from the onset of symptoms to the admittance into hospital of the patient was 22.5 days. The most common symptoms are chills, fever, malaise, loss of weight, and backache, with, possibly, tenderness in the lumbar region, spasm of the erector spinae group of muscles, and a fullness or bulging posteriorly between the twelfth rib and the crest of the ilium. The average age in the group reported was 32, and in all but one case operative treatment was undertaken. The youngest patient was 2 years old. In this case the original diagnosis was tuberculous hip disease, since the first symptom was an apparent lameness, followed by inability to walk and a tendency to flexion of the right thigh. An *x*-ray examination is of considerable value in diagnosis ; it was used in eleven cases of the series. An obscuration of the psoas muscle shadow with a loss of kidney outline was observed ; this was due, probably, to infiltration and oedema of the fatty corpuscles. Upward displacement of the diaphragm, and evidence of displacement of the colon, may also be observed. Scoliosis of the lumbar spine was present to a slight degree in four cases. The *x*-ray signs are frequently absent, or doubtful, up to ten days after the onset of symptoms ; they are almost always present within fourteen days. Out of the 19 cases under review, 15 were treated by lumbar drainage, one by drainage following appendicectomy, and two by nephrectomy ; all the patients made good recoveries. The remaining patient died from a uraemia abscess, which was found at the post-mortem examination.

541 Perforated Duodenal Ulcer

V. PAUCHET (*Rev. de Chir.*, September, 1931, p. 473) emphasizes the importance of early diagnosis of acute duodenal ulcer before it has had time to perforate, in order that operative treatment may be given as quickly as possible. Before perforation, there is usually a history of indigestion and general disorder of varying severity ; palpation of the abdomen reveals a localized muscular contraction of the abdominal wall. The symptoms which show that perforation of the ulcer has taken place are unmistakable: a sudden violent pain in the epigastrium or in the right hypochondrium ; rigidity of the abdomen on palpation ; loss of the liver dullness ; and the general signs of shock. When these indications are present, the operation must be performed without delay. The condition occurs most frequently in men between the ages of 25 and 45 who have a history of intermittent dyspepsia. The prognosis is very grave ; if the operation is delayed beyond twenty hours death occurs in 90 per cent. of cases, but when an operation is performed within the first six hours after the perforation, 90 per cent. of the patients recover if the correct technique is followed by the surgeon. Local anaesthesia is most satisfactory, and gives the best results. In cases where the perforation is small, suture

suture is the operation of choice, but when the perforation is large, a gastro enterostomy must also be performed An anterior anastomosis is advised, and drainage of the peritoneal cavity is usually necessary Jejunal ulcer occurs as a late complication in 3 to 4 per cent of cases where a gastro enterostomy has been performed The only treatment in these cases is by an extensive gastrectomy, which is a severe and prolonged operation

542 Bilharzia Infestation of the Renal Pelvis

A DE LUCA (*Arch Ital di Urol* September, 1931, p 74) records the first case on record of bilharziosis of the renal pelvis The patient was a man aged 27, who after serving as a soldier at Leros in Greece underwent ureterolithotomy for ureteral calculus and nephrostomy The operation was followed by the formation of a fistula and rise of temperature, for which a second operation was performed three years after the first, the diagnosis then being subacute pyelonephritis On removal of the kidney fibro lipomatous changes were found in it, together with a papillomatous appearance of the renal pelvis, which revealed the characteristic ova of bilharzia Recovery ensued

543 Epithelio-sarcoma of the Gall-bladder

Malignant tumours of the gall bladder of mixed epithelio-sarcomatous structure are of exceptional occurrence, and only one case has hitherto been reported (by Landsteiner in 1907) A KLEINKNECHT, V NESSMANN and C OBERLING (*Bull de l Assoc Franç pour l Étude du Cancer* July 1931, p 476) record another case of this nature in a woman, aged 69 The condition was acute, the patient dying about nine weeks after the onset of symptoms Nineteen days before death, a very large gall bladder was removed The tumour proved to be a fusiform cellular sarcoma, infiltrated in many parts by epithelioma The authors believe that there had not been a change of the sarcoma to an epithelioma, but that the two growths, though intimately connected, were distinct and had evolved simultaneously with a predominance of the sarcomatous elements The liver was studded with similar metastatic nodules, and evidences of carcinomatous peritonitis were noted Simple sarcoma of the gall bladder is also extremely rare The cases reported show that these neoplasms attack especially aged women, that the gall bladder becomes enormously enlarged, and that the growths have a tendency to give rise to metastases, especially in the liver Various types have been noted, the most common being the fusiform celled variety

544 Fracture of the Acetabulum

G LECCHESE (*Arch Ital di Chir* August, 1931 p 719) records with skiagrams, six cases of fracture of the acetabulum In one case the fracture extended into the ilium without dislocation of the femur, in four the fracture was limited to the base of the acetabulum, and in three of these the head of the femur entered the pelvis In the sixth case the fracture was confined to the rim, and associated with dislocation In addition to the cases recorded by the author, he has collected references to 170 similar cases Since the introduction of radiography more cases have been recorded, owing to the recognition of the less severe types, and to improvement in treatment, the prognosis of these cases is not so gloomy as it used to be Much depends on the degree of concomitant injury, especially in those cases where the head is driven into the pelvis The injury is usually brought about by falls on the trochanter in some cases there may be possibly a certain degree of friability in the acetabulum The dislocation may be direct or secondary, and is commonest when the rim of the acetabulum is affected In these cases reduction of the dislocation is essential, and great care must be taken to avoid recurrence In the intrapelvic dislocations reduction does not seem to be always necessary, in the author's three cases quite good results were obtained without any attempt at reduction Lecchese discusses the question whether it is advisable to perform an open operation in the intrapelvic dislocations, and concludes that except in special cases this is inadvisable, where the concomitant injuries are serious an open operation is impossible It is these injuries which are the cause of bad results, rather than the dislocation The diagnosis rests ultimately on radiography, but ecchymosis of the scrotum, flattening of the trochanter, tumefaction in the iliac fossa, and diminution of the distance between the anterior iliac spine and the trochanter, as well as between the symphysis pubis and the trochanter, may suggest the nature of the injury

Therapeutics

545 Combination of Digitalis with Ephedrine

As it had been observed that a few patients who received therapeutic doses of digitalis showed untoward effects when small daily doses of ephedrine were given, C A JOHNSON and N C GILLEPT (*Journ Amer Med Assoc* May 16th, 1931, p 1668) assumed that the simultaneous exhibition of the two drugs might cause dangerous results They accordingly performed a series of experiments on dogs to determine this question The drugs employed were ephedrine hydrochloride, digilutea, digitol, and ouabain The results and certain clinical observations showed that such undesirable or even dangerous effects are apt to occur The combined effect of these drugs may be merely a summation effect of two cardiac poisons acting on the irritability or conductivity of the cardiac tissue Death in the dogs was apparently due to sudden cerebral anaemia consequent on ventricular fibrillation The authors conclude that when digitalis is being used in cardiac conditions, ephedrine should be avoided or be given only with extreme caution

546 Oleo-chryso therapy

Since the success attending the administration of bismuth in oily suspensions or solutions has been much greater than in aqueous ones, F LEBEUF and H MOLLARD (*Presse Méd* August 29th 1931 p 1671) suggest that the employment of gold salts in a similar vehicle should be followed by equally better results As in the case of bismuth the resorption and elimination of the salt will be much slower, and, consequently its action much more prolonged moreover, it will be better tolerated The work of other authorities on the use of oily suspensions of gold salts is reviewed The present authors recommend the following suspension solganal B an organic combination of gold discovered by Feldt) 1 gram with oil of nuts 10 c cm An intramuscular injection of 2 c cm of this mixture is given three times a week The injections, if made very slowly, are almost painless, and the results obtained in the treatment of syphilis, tuberculides, cutaneous tuberculosis, and psoriasis have been markedly superior to those by other methods Accidents (mucous and cutaneous infiltrations of gold, albuminuria, icterus) are exceptional The authors are now investigating its use in pulmonary tuberculosis, especially in gold resistant subjects, and in those who tolerate badly the usual gold medication

547 Strophanthin Therapy

F GRÜNBAUM (*Med Journ and Record* October 7th 1931, p 320) advocates the employment of intravenous strophanthin therapy in chronic heart insufficiency as practised extensively with satisfactory results in German clinics by specialists and by general practitioners He believes that in all cases in which digitalis effects an improvement, strophanthin is equally effective It is particularly valuable in those cases which respond insufficiently or not at all, to digitalis and to which it would be unwise to administer digitalis in such large amounts as would be necessary to restore the circulatory function Provided that there has been no digitalis medication for at least forty eight hours previously a single intravenous dose of 0 5 mg is safe but this is best administered in the form of two doses of 0 25 mg given night and morning on the first day and possibly repeated on the second day The single dose of 0 5 mg is then given on the first day, and later every second day

therapeutic result. If dehydration and the reduction of oedema proceed too slowly, diuresis can be promoted by combining intravenous injections of salyrgan with the strophanthin. While by this means alone, rather than by the internal digitalis medication, can the optimum therapeutic effect be obtained in severe cases of cardiac decompensation, the method is also said to be of value in milder grades of cardiac insufficiency, since the capability of precise dosage of strophanthin is greater than with digitalis preparations.

548 Indications for Follicular Hormone Therapy

W. SCHOELLER, M. DOHRN, and W. HOHLWEG (*Amer. Journ. Med. Sci.*, September, 1931, p. 326) discuss the chemistry and action of the follicular hormone, and suggest various methods of administering it. Animal experiments appear to justify its being given by the mouth in human patients. Climacteric changes form the chief indication for its use; it was also found to benefit conditions arising from the partial or complete artificial suppression of ovarian function. The relief of vasomotor disturbances is most important, but cutaneous manifestations, intestinal symptoms, and arthritic conditions are also alleviated. Mental changes, especially the frequently occurring psychic depression, are also benefited owing to the generalized tonic effect of the hormone. Menstrual disorders are an indication for this treatment; the hormone has been proved capable of re-establishing a regular menstrual cycle. The follicular hormone alone will fail to produce those effects which depend on its association with the corpus luteum hormone. It is contraindicated in cases of primary amenorrhoea due to complete absence of development of the sexual organs, and in cases of amenorrhoea secondary to such conditions as advanced pulmonary tuberculosis and cachexia.

549 Iodine in Exophthalmic Goitre

W. O. THOMPSON and PHEBE K. THOMPSON (*Arch. Int. Med.*, September, 1931, p. 351) record observations upon the development of refractoriness to iodine in exophthalmic goitre. Contrary to the prevailing impression that the nervous manifestations are brought under complete control while iodine is being administered in excess, irrespective of the basal metabolic rate, notes of cases are given in which the patients after a marked initial response to this treatment became completely refractory to it. One patient, after showing a remission, became completely refractory to a dose of 6 mg. of iodine daily, while four others became partially so during its prolonged administration in doses of from 6 mg. to 250 mg. daily. In four out of the five the refractoriness disappeared within twenty-four days when the iodine was omitted. One patient who was operated upon, when the metabolism was rising rapidly during continuous iodine administration, died about forty hours afterwards from a typical post-operative crisis, which was indistinguishable from those previously seen in patients to whom no iodine had been given. These reactions of refractoriness appeared to be more characteristic of severe than of mild cases. In severe cases the authors believe that an operation is indicated as soon as a maximum reduction in the basal metabolic rate occurs. When this is markedly increased during the administration of iodine, the operation should be postponed until three or four weeks after the suspension of iodine treatment, the patient resting in bed, to allow the refractoriness to disappear. The iodine administration is resumed before the operation.

550 Treatment of Chronic Myelogenous Leukaemia

R. G. GILES (*Radiology*, October, 1931, p. 764) emphasizes the importance of treating the leukaemic process in chronic myelogenous leukaemia, as well as the secondary anaemia. In addition to dieting, general ultra-violet treatment, the administration of iron and arsenic, and the employment of blood transfusion, irradiation of the spleen, chest, and the long bones is recommended as being one of the most hopeful procedures in securing and prolonging remissions. The author has noted on more than one occasion that, even after the disease has finally become refractory to the longer *x*-ray wave-lengths, the more penetrating short wave-length rays can be relied upon to give further remission from the symptoms. Splenectomy does not modify the evolution of the disease, or alter the leucocytosis, but irradiation brings the blood formula towards the normal for longer or shorter periods. The frequency of such irradiations should be controlled by leucocytic determinations, the results of which should not be allowed to fall below 30,000 per c.mm. The smallest effective dose should be determined, and then be used until repeated observation indicates that a heavier form of irradiation has become necessary.

Anaesthetics

551 Pre-operative Hypnosis in Children

MARY E. BOTSFORD (*Anesthesia and Analgesia*, September–October, 1931, p. 221) advocates the oral administration of sodium iso-amyl-ethyl-barbiturate to children as a pre-operative hypnotic. The advantages of the drug in adults having been fully established, it was given to 50 children between the ages of 2 and 14, in doses of 1.5 to 9 grains according to age, weight, blood pressure, and the general physical condition. Except in one case of oesophageal stricture (when it was introduced through the gastrostomy feeding tube) it was administered in capsules or solution by the mouth half an hour before the operations; these included tonsillectomies, mastoidectomies, cystoscopies, orthopaedic operations, sinus irrigations, and circumcisions. No other preliminary hypnotic was employed, and the routine dose of morphine and atropine was omitted. Nitrous oxide induction and ether anaesthesia were used for the tonsillectomies and nitrous oxide and oxygen for other operations. Blood pressure observations showed a systolic fall of 2 to 9 mm. in 39 cases, and a rise of 4 to 12 mm. in 11 cases. Transitory acidosis occurred in two instances in which pre-operative alkalization had not been effected. From these observations the author concludes that the drug is a safe pre-operative hypnotic for children, and that it is more effective than opium derivatives in preventing fear, with its immediate effects upon the induction and depth of the anaesthesia and upon later morbidity.

552 Percaine Anaesthesia

E. THOMSEN (*Ugeskrift for Laeger*, September 10th, 1931, p. 922) reviews the first 50 cases in his hospital in which percaine was used as a regional or local anaesthetic. The advantages it possesses over novocain-suprarenin include an almost instantaneous and protracted effect, comparative cheapness, and the fact that it has not to be supplemented by adrenaline. But percaine is said to be about five times as toxic as cocaine, as well as being ten times as effective as an anaesthetic. On account of its toxicity, care must be taken not to inject it into a vein. The ages of the first 50 patients ranged from 14 to 84, and the amount of the 1 in 1,000 solution injected ranged from a minimum of 4 c.cm. to a maximum of 97 c.cm. In the case of a man, aged 59, operated on for hernia, and given 54 c.cm. of a 1 in 1,000 solution of percaine, alarming and sudden collapse ensued, with cyanosis and great air hunger. Stimulants were given, but for the rest of the day he looked very ill. Though this case did not end fatally, the author considers it an indication for great caution in the use of percaine, and he does not recommend it for operations on goitres, the facilities for an unintentional intravenous injection of the drug in this case being too great.

553 P. KÜHNEL (ibid., p. 924) records a fatal case of percaine poisoning. The patient was a girl, aged 13, suffering from Little's disease, on whom an operation in the popliteal spaces was to be performed under local anaesthesia. Altogether 110 c.cm. of a 1 in 1,000 solution of percaine were injected into the limbs. The operation had only just been started when convulsions set in, and

marked cyanosis and respiratory disturbances Death occurred a little more than an hour after the injection It should be noted that the patient suffered from well-compensated heart disease, and it was on this account that a local, instead of a general, anaesthetic had been given The author concludes that, as percaine has shown itself to be superior to other anaesthetics in such important ways, his fatal case does not warrant the abandonment of this drug in those spheres in which it has given satisfaction

554 S WITH (*ibid*, p 925) records the case of a woman, aged 43, suffering from a goitre, for which she was to be operated on under local anaesthesia ; 70 c cm of a 0 5 per 1,000 solution of percaine suprarenin (3½ cg of percaine) were injected in four different places Most alarming symptoms, including cessation of the respiration, dilatation of the pupils, and cyanosis, began while the last portion of the drug was being injected, and it is possible that some of it escaped into a vein Although there were no permanent sequels to this incident, and the patient was well next day except for some pyrexia, local anaesthesia was not again attempted, and she left hospital without a further attempt at operation

555 Spinal Anaesthesia in Abdominal Emergencies

J S GAREISO (*Rev Med Latino Americana*, August, 1931, p 1617) records his observations on 41 cases in patients aged from 15 to 73 of acute abdominal emergency, including appendicitis, with or without peritonitis, strangulated inguinal hernia, haemorrhagic pancreatitis, retroperitoneal haematoma, ruptured tubul pregnancy, perforation of the uterus, and fracture of the pelvis with extraperitoneal rupture of the bladder The anaesthetic mixture used was stovaine and morphine All the patients made a good recovery The results showed that spinal anaesthesia can be employed in any case of abdominal emergency, that arterial hypertension is no contraindication to its use, that no other method produces such complete anaesthesia without any shock, and that the toxic effect on the liver, lungs, kidneys, other organs, and general parenchyma is very slight

Obstetrics and Gynaecology

556 Friedman's Modification of the Aschheim-Zondek Test

M DAVIS and ELISABETH W WALKER (*New England Journ of Med*, September 17th, 1931, p 566) report their results obtained with the Friedman modification of the Aschheim Zondek test, they found this modification reliable and more simple than the original technique One intravenous injection of 10 c cm of the first voided morning urine is made into the marginal ear vein of a rabbit The ovaries of an isolated unmated rabbit contain no corpora lutea or corpora haemorrhagica, since the rabbit does not ovulate spontaneously, but only after coitus After the injection of the urine of a pregnant woman (which in its biological effects simulates those of the anterior lobe of the pituitary) the ovary of the rabbit quickly responds by the formation of corpora lutea or corpora haemorrhagica The result can be read at the end of twenty-four or thirty-six hours, instead of at the end of 100 hours as in the original test The development of methods for concentrating the hormone from the urine will probably enable a diagnosis to be made at even shorter intervals This modified test has been used in 308 cases, and has proved to be delicate and accurate It can also be employed for the differential diagnosis in the case of pelvic masses or neoplasms, and in menstrual irregularities of various types Early pregnancy can be ruled out in cases where some form of instrumentation of the uterus is to be undertaken Death of the ovum may be diagnosed, and it is possible also to determine the presence of active placental tissue in cases of incomplete abortions, of hydatidiform mole, and of chorion-epithelioma.

557 Hysterectomy for Large Gangrenous Polyps of the Uterus

J VILLAR (*Journ de Méd de Bordeaux*, September 20th 30th, 1931, p 809) draws attention to the fact that in the course of one year two patients were admitted to the Hôpital Boursier with very large gangrenous polyps of the uterus Both were operated upon by vaginal polypectomy without any great difficulty, yet both succumbed in twenty-four to forty eight hours to a fulminating septicaemia Villar discusses the advisability of employing the vaginal route in these cases when the polyps are of such a size that they fill the vagina, and do not permit the examining finger to reach the pedicle Vaginal polypectomy is usually the operation of choice, since it seems more natural to deliver a descending tumour in that manner Moreover, it appears to be wiser to perform as limited an operation as possible on an already debilitated patient Further, to limit a septic operation to a septic area would appear to give the patient more chance of resisting septicaemia Statistics, however, reveal that vaginal polypectomy is far from being a benign operation, the mortality ranging from 50 to 60 per cent , death generally occurs from twenty four to forty-eight hours after the operation The uterus, damaged by the operator, affords suitable lodging for bacteria, which multiply in the genital passages To improve these lamentable results Villar suggests that the following principles should be recognized (1) complete extirpation of the septic focus , (2) adequate drainage , and (3) prevention of loss of blood These requirements are only fulfilled by total hysterectomy, and Villar maintains, consequently, that this method of treatment for gangrenous polyps gives the optimum results

558 Uterine Suspension

R W LAGERSEN (*Surg , Gynecol and Obstet* , October 1931, p 545) criticizes the methods of uterine suspension by shortening the round ligament, and advises the following modification The uterus, grasped with forceps, is drawn upward and forward, and is incised for an inch on the posterior median line, so that two-thirds of the incision is below the round ligaments A subserosal dissection is then made bilaterally, and the round ligament is grasped bilaterally and drawn medially The two ligaments are then opposed, and adjusted for tension and obviation of ante and retro-flexion The suspensive mechanism, having thus had any fault corrected, is apposed by suturing the ligaments to each other and to the uterus The serosal incision is then closed by a subserosal continuous suture The serosa is sometimes difficult to separate , an injection, before incision, of normal saline solution in the middle line and laterally beneath it, forces away the serosa, and simplifies dissection The advantages claimed for this technique are : there is no break in the peritoneal continuity, except at the serosal incision , the suspension is likely to maintain its integrity , and there is no opportunity for herniation, either through a loop of the round ligament or a rent in the broad ligament.

559 Uterine Fibromata and Arterial Hypertension

M VASSITCH (*Gynécol. et Obstet* , August 1931 p 128) discusses the question whether uterine fibromata and arterial hypertension have a common causal factor To further the investigation he undertook a comparison between the arterial tensions of women known to have uterine fibromata, and a similar number of chance patients who were free from fibromata The arterial tension was measured by the Vaquez Laubry apparatus and the figure 15 was taken as the normal limit Among 38 patients with uterine fibromata 21 were found to have a raised tension (before operation which varied from 18 to 28, and there was only a slight alteration subsequently Among the 38 control patients 6 had a tension raised to between 17 and 27 The frequency of the coexistence of uterine fibromata with arterial hypertension appeared to be confirmed Numerous hypotheses have been advanced to demonstrate a causal relationship between the two conditions, such as. (1) peripheral "barrag due to the

mechanical action of compression of the tumour; (2) compression of the uterus influencing the cardio-vascular circulation; (3) a neuro-arthritic diathesis; (4) endocrine imbalance; and (5) haemorrhage. Vassitch considers it necessary to envisage the frequent coexistence of these conditions as an evolutionary coincidence, the two diseases having analagous affinities.

560 Treatment of Menorrhagia

B. F. SCHREINER (*Radiology*, October, 1931, p. 796) discusses the treatment of myopathic and thrombopenic menorrhagia, and records a series of 73 cases in which radium and *x* rays were employed. In 68 cases the bleeding was myopathic in origin; 3 patients were treated solely by *x* rays, 55 by radium alone, and the remainder by a combination of these methods. Seven patients were lost sight of immediately after the treatment, but all the remainder were found to have been cured. The remaining five cases were diagnosed as thrombopenic purpura haemorrhagica. Four were controlled by *x*-ray applications alone, but the remaining one had to undergo splenectomy three months after treatment. Schreiner insists on the importance of a thorough blood examination in the diagnosis of this condition in all cases where no demonstrable causes are discoverable. Details are given of the technique of the treatment; little, if any, disturbance in the form of nausea or vomiting resulted.

Pathology

561 The Etiology of Tsutsugamushi Disease

N. OGATA (*Zentralbl. f. Bakt.*, October 1st, 1931, p. 249) gives a short description of the tsutsugamushi or kedani disease of Japan, and cites evidence that it is caused by an organism belonging to the Rickettsia group. The disease is confined to certain provinces; it occurs in the summer and autumn months; it is most frequent in low-lying territory subject to flooding; and it follows the bite of the akamushi mite *Trombicula akamushi* (Brumpt). The main symptoms appear about a week after the bite, and consist of fever, local swelling at the site of the puncture wound, enlargement of the lymph glands and spleen, and a rash. The case mortality rate is about 40 per cent. The disease can be experimentally reproduced by the intracutaneous inoculation of Japanese monkeys with the patient's blood. Rats and guinea-pigs can be used, but the symptoms in them are less characteristic. The author has, however, found that the causative organism can be successfully maintained in the laboratory by passage every two or three weeks through the rabbit's testicle. Over 150 transfers of the organism have been made by this method during the past four years, without any evidence of a decrease in virulence to monkeys. An orchitis results with the production of swelling, induration, and small haemorrhages. Microscopical examination of the testicle reveals the presence of small Gram-negative, often bipolar-stained, coccobacilli, 0.7 to 1.7μ long and 0.5 to 0.7μ broad. These organisms cannot be grown in the usual culture media, though in tissue cultures they may remain alive for four weeks. On account of these properties, its non-filterability, and its carriage by arthropods, the author considers the causative organism to belong to the Rickettsia group, and suggests the name *Rickettsia tsutsugamushi*.

562 Functions of the Renal Glomerulus

D. L. WILBUR (*Proc. Staff Meetings Mayo Clinic*, July 29th, 1931, p. 449) gives reasons for concluding that the anatomical evidence, considered in the light of present physiological knowledge, is overwhelmingly in favour of the theory that the glomerular function is based on a filtration process. The kidneys are concerned with keeping the composition of the blood plasma more or less constant. The glomerular basement membrane, although appearing to be directly continuous with the intertubular and capillary membranes of the kidney, differs somewhat in appearance and also chemically in several important respects. The marked changes it undergoes in hypertension and nephritis are in large part characteristic of the disease. The intermittency of the blood flow through the individual glomeruli is not related to the pulse, or to any extrarenal factors, but is under the capillary-constricting influence of the splanchnic nerves which is overwhelmed from time to time by anoxaemia. No anatomical evidence in support of a secreting function has been obtained in the case of the glomeruli, and the only cells in them which could possibly have a secretory function are so few, so closely similar to the parietal cells of Bowman's capsule, and so scantily provided with cytoplasm that secretion can hardly be regarded as possible. The author cites various physiological conditions, such as the production of diuresis, to strengthen further his conclusion, and his belief in the inseparability of the glomerulus and the tubule as a functioning unit.

563 Cultivation of Tubercle Bacilli from the Blood

A. SAENZ (*C. R. Soc. de Biologie*, September 18th, 1931, p. 1455), following Loewenstein's technique, has made blood cultures on 300 patients, and has succeeded in cultivating acid-fast bacilli on eighteen occasions. In only seven of these cases did macroscopic colonies appear; in the other eleven the bacilli were detected by microscopical examination of scrapings of the surface of the culture, though on subculture on to fresh medium it is stated that nearly all produced visible colonies. How many of the strains were properly studied is not recorded, but one of them is said to have been of the avian type, and one to have possessed characters intermediate between those of a tubercle bacillus and a saprophytic acid-fast bacillus. The author has no great opinion of Loewenstein's Congo red medium, which not infrequently becomes contaminated, and prefers to use Lubenau's or Petragnani's medium. On the other hand, he is impressed with the importance of strictly following Loewenstein's directions with regard to the treatment of the blood clot. It is concluded, however, that the method offers too many difficulties to be of value in routine diagnosis.

564 Equilibrium Between the Cerebro-spinal Fluid and Plasma

F. FREMONT-SMITH *et al.* (*Brain*, September, 1931, p. 303) record a series of ninety-four comparative freezing-point determinations on simultaneous samples of blood serum and cerebro-spinal fluid in seventy-three patients. In eight patients with various kinds of meningitis twenty-three determinations were made; sixty-five of the non-meningitic patients, and nine of the meningitic had been fasting for nine hours or more before the samples of cerebro-spinal fluid and blood were obtained. In forty-four of the seventy-one comparative determinations the freezing point of the cerebro-spinal fluid was within 0.005° C. of that of the serum. In only fifteen instances was the difference in freezing-point depression greater than 0.015°, the greatest difference being 0.037°. The authors conclude that this increase in the human cerebro-spinal fluid is ordinarily in osmotic equilibrium with the blood serum, thus confirming the views of Mestrezat and Teschler. The occasional appreciable differences which may be noted in the freezing-point depression of these two fluids are probably to be explained by the occurrence of a latent period before changes in the composition of the blood are reflected in the spinal fluid. Even in the case of acute purulent and tuberculous meningitis, where rapid changes in the blood composition may be expected, six of the twenty-three comparative determinations showed identical freezing points within 0.005°, while in only [illegible] instances was the freezing-point difference between [illegible] serum and cerebro-spinal fluid greater than 0.025°. In each of these ten instances, moreover, the blood serum was hypertonic to the spinal fluid, which is what would be expected if the patient was being rapidly dehydrated by sweating and vomiting, and the spinal fluid had not reached equilibrium with the concentrated blood.

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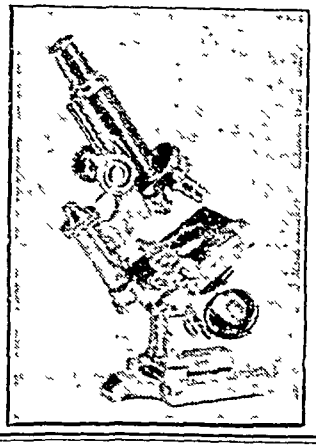
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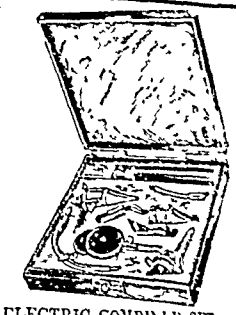
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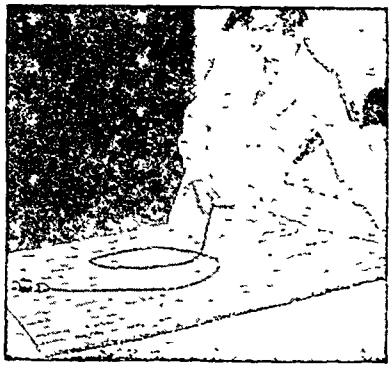
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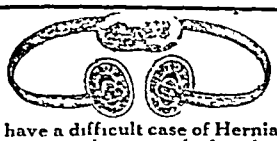
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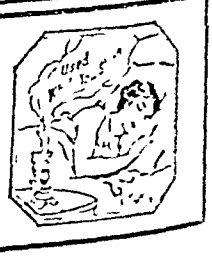
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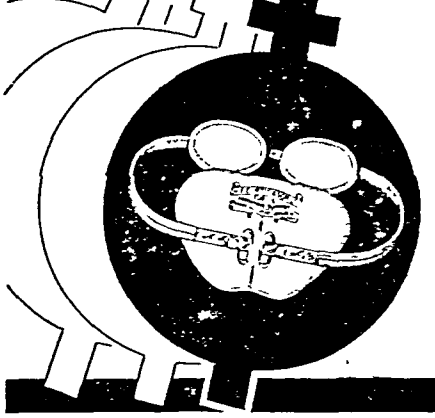
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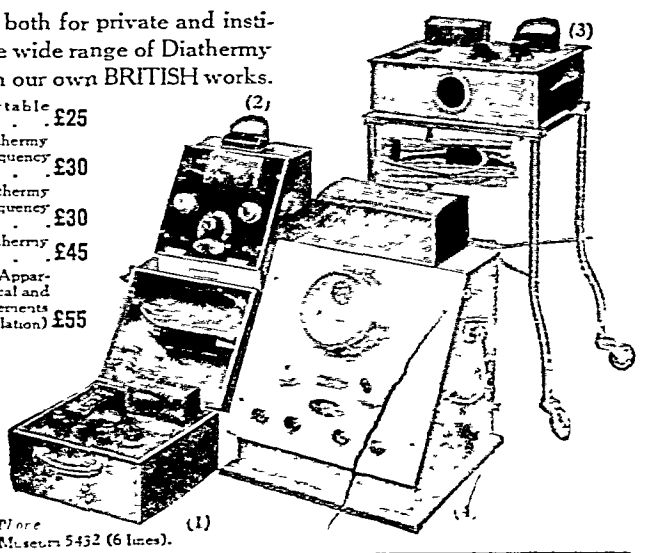
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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the Hospital. Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

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A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both sexes.

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A modern country house, 12 miles from Marble Arch, in beautiful and secluded grounds.

Fees from 10 guineas per week.

Voluntary Patients received for treatment.

Special provision for "Temporary" patients under the new Mental Treatment Act.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 7 Barnwood.

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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (*See Medical Directory*, p. 2234.) Apply, J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8450.

ST. ANDREW'S HOSPITAL

FOR MENTAL DISORDERS,

NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres at Llanfairfechan, amidst the finest scenery in North Wales. On the North West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing beach on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for hard exercise such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 5 Northampton), who can be seen in London by appointment.

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For the care and treatment of Ladies suffering from Mental Disease. Limited to eight patients. Telephone: Starcross 19

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well appointed house, with lovely views of the South Devon coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An Approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

The Home is a Mansion of Historical interest, standing in 9 acres of garden and grounds and is situated 14 miles from Northampton, and 12 miles from Bedford on the main London to Northampton Road, fifty miles from London. Both sexes are accommodated. Electric Therapeutic Treatment is used extensively in suitable cases. Radiant Heat, X Ray, and Ultra-violet Light. Diathermy and Foam Baths. Billiards, tennis, etc. Fees from five grs per week.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and garden in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an elevated site a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent.*

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

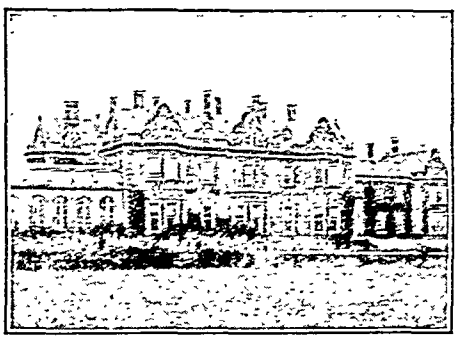
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Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

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as carried on for the last twenty years, is available. Booklets and particulars from the Resident Medical Superintendent.

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Proprietors: The Norwood Sanatorium, Limited.



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At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. CARVER, M.D., D.P.H., D.P.M.

Particulars may also be obtained from the Cent. Sec., 40, Marsham St., London, S.W.1.

ALCOHOLISM, DRUG HABIT, NEURASTHENIA, etc.

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ESTABLISHED 1922. *'Phone:* PAIGNTON 5110.

A comfortable private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients.

The treatment is the outcome of many years' experience, and besides removing all craving for drink and drugs, it has a tonic action on the system, and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental and Nervous cases are received without certificates as Voluntary Patients under the provisions of the Mental Treatment Act, 1930. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. 'Phone: 10 P.O. Church Stretton.

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PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone:* 2708.

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For Mental Disorders, with or without certificates.

Resident Physician: CEDRIC W. BOWER.

Ordinary Terms: Five Guineas per week.

(Including Separate Bedrooms where suitable.)

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Fees 5—10 guineas. Ample amusements. 25 bedrooms. Annexe for mild cases. Quiet and pleasant situation.

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'Phone: Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

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A HOUSE Licensed for the reception of a *limited number of Ladies suffering from* Nervous and Mental disorders. Both certified and voluntary patients received. Approved for Temporary Patients. This is a large country house, with beautiful grounds and park, five miles from Sheffield Station. Grange Lane, L. & N.E. Railway, Sheffield. Telephone No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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For Mental Defectives of all ages.

Under private management.

Apply to Dr. Langdon-Down,

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Ladies and Gentlemen received for treatment under certificates and without certification, as either VOLUNTARY or TEMPORARY PATIENTS, at a weekly fee of TWO GUINEAS and upwards.

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REDUCTION OF FEES

In view of the present economic position, the inclusive fees at Ruthin Castle, formerly from 17 guineas a week, have been reduced to from 15 guineas a week.

The fees include medical attendance, all scientific investigations that may be needed, such as analyses, bacteriological cultures, the ordinary x-ray examinations, and electrocardiograph readings; all treatment that may be prescribed, such as special diets, insulin, artificial sunlight, electrical treatment, baths, massage, nursing; medicines or vaccines, board and lodging.

The only extra charge is that for a complete alimentary x-ray examination, or for x-ray therapy.

Many people who would go abroad for health will not do so this winter. All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 30.5 inches, that is, less than the average for England. There is central heating throughout. Should the accommodation in the Castle not prove sufficient, comfortable rooms can be obtained near by for those undergoing treatment.

Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 66.

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WOODSIDE AVENUE, MUSWELL HILL, LONDON, N.10

Chairman: THE RIGHT HON. LORD BLANESBURGH, G.B.E. Opened November 8th, 1930.

Fully equipped with every modern appliance for the diagnosis and treatment of

FUNCTIONAL NERVOUS DISORDERS

Private Rooms, Broad Verandahs, Electrotherapy and Hydrotherapy, X-ray and Dental departments, Laboratories for investigation and research. For terms and particulars apply to the Physician in charge at the Hospital. Telephone: Tudor 4211.

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Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: **Dr. Hubert James Norman**, assisted by three Medical Officers, also resident, and visiting Consultants. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON—CONVALESCENT BRANCH OF THE ABOVE.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741-4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a sea-side branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Private Suites. Voluntary Patients and Temporary Patients received without certification.
Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the Medical Superintendent.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

ST. ALBANS, HERTS.

(20 miles from London.)

Ladies suffering from all forms of MENTAL ILLNESS received for treatment at the Herts County Mental Hospital, Hill End. Convalescent and mild cases can be treated in a delightful country mansion, with extensive grounds, known as **"HIGHFIELD HALL,"** situate about a mile away from the Hospital.

Fees 3 guineas weekly.

Particulars from the MEDICAL SUPT.

CHEADLE ROYAL,

CHEADLE, CHESHIRE.

This Registered Hospital for MENTAL DISEASES, with the seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary, and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ITOY, M.B., who may also be seen in Manchester by appointment.

Telephone: 2231 GATLEY.

THE LAWN, LINCOLN.

This Registered Hospital situate [illegible] grounds near the Cathedral [illegible] TARY and PRIVATE PATIENTS [illegible] for treatment of Mental and Nerv[illegible] including Post-Encephalitic [illegible] adults. Special facilities [illegible] co-operative cases.

All particulars may be [illegible] Resident Medical Superintendent,

Dr. MARY R. BARKAS, M.D., D.P.M.

The MUNDESLEY SANATORIUM

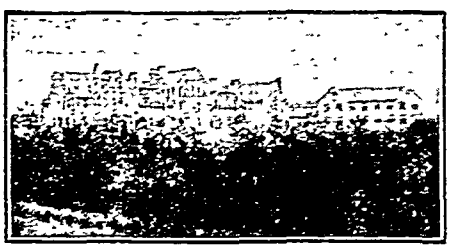
The newly opened central building makes the Mundesley Sanatorium the best equipped building in England for the cure of Tuberculosis. All the bedrooms have hot and cold running water, electric light, and wireless head-phones. The new public rooms are spacious and comfortable.

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ANDREW MORLAND,
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For all information apply:
THE SANATORIUM, MUNDESLEY, NORFOLK.
(Telephone: Mundesley 4.)

The buildings face S.S.W. and are sheltered from the sea by a pine-clad ridge. The sunshine record and dry air complete a perfect site. The medical equipment is of the latest kind, and there is a day and night nursing staff.

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Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent: J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

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PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Special milk supply from tuberculin-tested herd. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D. (Cantab.), J. A. Hennesey, M.B., Ch.B.; Matron Miss S. A. Eddy, S.R.N., Late Sister-in-Charge, Royal Hospital Annexe, Sheffield.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. (Phone, 20.)

LINFORD SANATORIUM,
RINGWOOD, NEW FOREST, HANTS.

Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch.(Cantab.).

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FOR THE TREATMENT OF TUBERCULOSIS, was opened in January, 1899, by ROWLAND THURNAM, M.D.

All modern forms of treatment are available. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an altitude of 802 feet above sea-level, surrounded by woods and moorland. All rooms are heated by hot-water pipes and electrically lighted.

Fees 4, 5, and 6 guineas per week.

CYRIL FRANCIS ASHBY, M.R.C.S., L.R.C.P., *Certificate of Sanatorium Stephani, Switzerland. Formerly Medical Supt.*
For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

THE COTSWOLD SANATORIUM

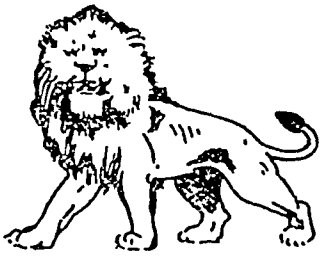
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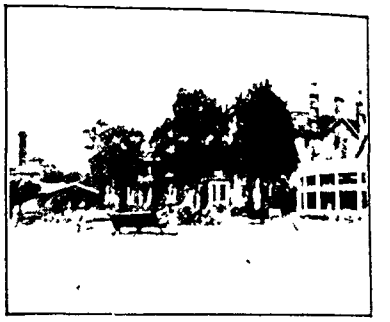
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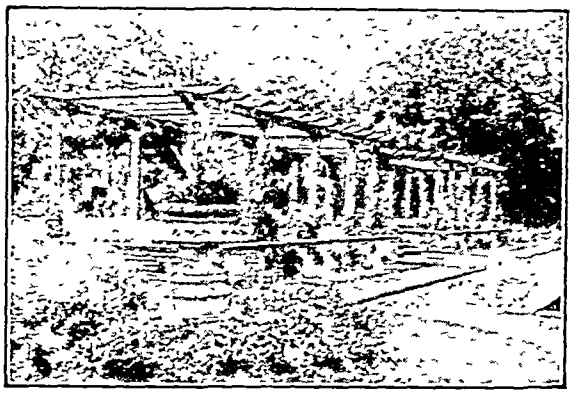
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ANNUAL VALUE £250 (about).

The student is required to give his whole time to research work except such as in the opinion of the Trustees does not interfere with his original enquiries. Candidates must (a) have attained their 22nd year (23rd in the case of those proposed to avail themselves of one of the Postgraduate Exhibitions); (b) have taken a Cambridge Degree in Natural Science or Medicine.

Candidates for December 31st 1931 from whom the regulations may be obtained by November 21st 1931.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students for London and Provincial Centres in March and June, September and December. Full particulars may be obtained on application to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anaesthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

Royal College of Physicians of EDINBURGH.

KIRK DUNCANSON FELLOWSHIP FOR MEDICAL RESEARCH.

In accordance with the Bequest of Mrs. Isabella Kirk Duncanson to commemorate the late Dr. J. J. Kirk Duncanson, the Council of the Royal College of Physicians will make an award of a Kirk Duncanson Fellowship in January, 1932. The Fellowship will be awarded annually for a period of one year. It may be renewed to the same beneficiary for two additional periods of one year each. The emoluments will be upwards of £150 for the first year, about £250 for the second year, and about £350 for the third year. In recognition of Dr. Kirk Duncanson's interest in the Diseases of the Ear, Nose, and Throat, some preference will be given to the claims of candidates who propose to devote themselves to research in that branch of Medicine.

Applications and recommendations, with particulars of the special line of research contemplated and of the place where the investigations are to be conducted, should be in the hands of the Secretary of the College, 9, Queen Street, Edinburgh, by January 15th, 1932.

Birmingham Medical School.

(University of Birmingham Medical Society.)

ANNUAL MEDICAL DINNER
to be held at
The Grand Hotel, Birmingham, on January 28th 1931, at 8.15 p.m.

PRESENTATION TO PROFESSOR GAMGEE Ch.M., F.R.C.S., upon his retirement from the Chair of Surgery.

Dinner Tickets 10/- (Students and Residents 7/6). Donations towards the presentation are limited to £1 1s.

CYRIL A. RAISON,
85, Cornwall St., Birmingham. F.R.C.S., President and Senior Treasurer.

City of Manchester.

PUBLIC HEALTH DEPARTMENT.

BOOTH HALL HOSPITAL.

APPOINTMENT OF AN ASSISTANT MEDICAL OFFICER.

The Public Health Committee invites applications from qualified Medical Men for the position of Assistant Medical Officer at the Booth Hall Hospital for Children (750 beds), Charlestown Road, Blackley, Manchester.

Every applicant must be a registered Medical Practitioner and unmarried.

Preference will be given to applicants with previous Hospital experience.

The Hospital is a recognised Training School for Nurses and is equipped with all modern hospital requirements.

Salary £243 10s per annum, with board, residence, and laundry in addition, subject to the terms and conditions of the Manchester Corporation Grading Scheme. No bonus.

The appointment will be made, in the first instance, for a period of six months. The successful candidate, however, will be eligible for reappointment for a further period of six months at the end of that period.

Every application, stating fully the training, qualifications, and experience of the candidate, and his age, with copies of three recent testimonials, and endorsed on the envelope "Assistant Medical Officer, Booth Hall Hospital," must be addressed to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than Monday, December 21st.

The candidate appointed will be required to commence duty as soon as possible after January 17th, 1932, to devote the whole of his time to the duties of the position, to pass a medical examination, to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service.

Canvassing in any form, oral, or written, direct or indirect, is prohibited.

Town Hall, Manchester. F. E. WARBRECK HOWELL, Town Clerk.
December 7th, 1931.

University of the Witwatersrand, JOHANNESBURG.

SENIOR LECTURER IN ANATOMY.

Applications are invited for the above post from medically qualified candidates. The teaching embraces Histology in addition to Gross Anatomy.

The salary at present offered is £516 per annum, rising by annual increments of approximately £26 to £726 per annum, but these rates may be affected by the financial position of the country, and candidates who have applied will be informed of any reduction which may take place.

Participation in the University Teachers' Provident Scheme is compulsory. This scheme provides for a contribution by the members of 6 per cent. of their basic salary (£450—£25—£650), the fund contributing the same amount. A higher commencing rate of salary may be approved in the case of a candidate possessing special qualifications or experience.

An amount of £60 will be allowed for travelling expenses, and half salary paid from the date of embarkation to the date of arrival in Johannesburg.

The appointment, which is a full time one, is subject to all the conditions and rules now in force, and duty is to be assumed as soon as possible after appointment, which will be communicated by cable.

Further particulars as to the conditions of service may be obtained from the Secretary, Office of the High Commissioner for the Union of South Africa, South Africa House, 73, Strand, London, W.C.2, from whom forms stating the particulars required may be obtained.

Applications, in duplicate, accompanied by testimonials, should reach the High Commissioner's Office not later than Jan. 15th, 1932.

Applications are invited for an appointment as PROFESSOR OF PATHOLOGY, MEDICAL COLLEGE, CALCUTTA, and BACTERIOLOGIST to the GOVERNMENT OF BENGAL. Candidates must possess a medical qualification registrable in England, and should have considerable practical experience in Bacteriology and Parasitology and Morbid Anatomy and Histology and experience in teaching these subjects. Age should normally not be more than 40 years. (Applications will be accepted from officers serving under Government in India upon special terms.)

Agreement for three years in the first instance. Pay at rate of Rs 800, rising by annual increments of Rs 50 to Rs.1,500 a month (subject to a reduction of 15 per cent.), plus a Bacteriological allowance of Rs.225 a month, plus overseas pay (for an officer of non-Asiatic domicile) of £50 a month. Provident Fund. Free first-class passage to India. Strict medical examination.

Further particulars and forms of application may be obtained upon request by postcard to the High Commissioner for India, General Department, India House, Aldwych, London, W.C.2. Last date for receipt of applications December 31st.

City and County of Kingston-UPON-HULL.

BEVERLEY ROAD INSTITUTION (HOSPITAL).

ASSISTANT MEDICAL OFFICER (Woman).

The Corporation of Hull invite applications from unmarried or widowed registered Medical Practitioners, under the age of 40 years, for the appointment of Assistant Medical Officer (Woman) at the above named Hospital for a term not exceeding one year, and not renewable.

Salary is at the rate of £300 per annum, together with board, residence, and laundry. The salary is subject to any deduction which the City Council may authorise in connection with economic measures.

The Hospital Section contains 400 beds, and is equipped with X-ray and Ultra-violet Light Departments.

A form of application, together with conditions of appointment and a list of duties, may be obtained from the undersigned, to whom completed applications should be returned not later than 10 a.m. on Monday, December 21st.

Health Department, Guildhall, Hull. N. GEBBIE, Medical Officer of Health.
December 1st, 1931.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay of £E 660 or £E 720 per annum (according to age and qualifications), with five or six annual increases to £E 1,080, and thence after three years to £E 1,200. These rates of pay are as the conditions of service are subject to Government rules and regulations from time to time in force. (£E 1 = £1 0s 6d.)

Applicants must be unmarried, and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience (with special reference to Pathology) and names of testimonials, should be sent to the Director, Wellcome Tropical Research Laboratories, Khartoum, Sudan.

Further particulars regarding this post may be obtained on application to the Central Sudan Government, London Office, Wellcome House, Buckingham Gate, London, S.W.1.

City of Birmingham.

DUDLEY ROAD HOSPITAL

GYNAECOLOGIST AND OBSTETRICIAN.

Applications are invited from fully qualified registered Medical Practitioners for the above whole time appointment.

The present Hospital accommodation is 920 beds, divided into Medical, Surgical, Gynaecological, Obstetrical, and Children's Sections. There are completely equipped Pathological and Biochemical laboratories, X-ray, Deep X-ray, Electro-therapeutic, Massage, Ultra-violet Electro-cardiographic and Dental departments. Over 4,000 operations are performed annually.

Candidates for the appointment must have had good experience in these subjects and be Fellows of the Royal College of Surgeons (England).

The salary will be £750 per annum rising by annual increments of £50 to a maximum of £1,000 per annum, and furnished quarters, rations, laundry, and attendance will be provided. The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, to the candidate passing a medical examination, and to one months' notice on either side.

The salary and emoluments above referred to will be subject to (a) a "voluntary abatement" which it has been agreed, for the present, shall extend for one year expiring on December 31st, 1932, and (b) superannuation deductions amounting to 5 per cent.

The officer appointed will be required to pay to the fund to the Council, all fees, allowances, and emoluments (other than the foregoing) received by him. He will also be required to assist in the training of, and lecturing to, nurses.

Further particulars of the appointment may be obtained from the Medical Superintendent, Dr. F. W. ELLIS, at Dudley Road Hospital.

Applications, stating age, experience and qualifications, accompanied by copies of recent testimonials, and endorsed "GYNAECOLOGIST," should be addressed to Dr. ELLIS, and reach him at his office not later than Friday, December 18th.

F. H. C. WILLSHIRE, Town Clerk.

The Council House, Birmingham, Dec. 4th, 1931.

The Radium Institute,

Riding House Street, London, W.1.

Applications are invited for the post of HOUSE SURGEON. Candidates must be fully qualified, unmarried, and of British nationality. The appointment is for a term of six months, and the successful candidate will be required to take up the duties on January 15th, 1932. The salary will be at the rate of £150 per annum, with board, lodging, and laundry. Applications, stating age, qualifications, and experience, with copies of three testimonials, must be received at the Institute later than the first post on December 19th.

THOS. A. GARNETT, Secretary.

Peckham House,

112, Peckham Road, London, S.E.15.

JUNIOR ASSISTANT MEDICAL OFFICER required, male, single, and under 30, for a large private Mental Hospital. Salary £150 per annum with all found. Apply to the Superintendent.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE *permanent* COMMISSIONS *in the* ROYAL ARMY MEDICAL CORPS will be offered in January, 1932. Applications should reach the War Office not later than January 18th, 1932.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1932, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—From £476 to £2,000 a year according to rank and length of service.

Candidates who have held a full-time house appointment in a recognised civil hospital before appointment to a permanent Commission in the R.A.M.C. may, subject to certain conditions, be allowed to count the period of service in such an appointment, up to a maximum of 12 months, as Army service for promotion and increase of pay.

Gratuities on Retirement.—After 7 years' service £1,000.
" 15 " " £2,800.
" 18 " " £3,500.

Current rates of retired pay range from £352 10s. per annum normally earned by a Major after 20 years' service, to £890 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowances.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I.), Whitehall, London, S.W.7.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

NOTE.—It is not possible to state at present what, if any, prospects of employment on the civil side will be open to Indian Medical Service Officers under the proposed new constitution for India.

PAY.

Owing to the state of financial emergency at present prevailing in India the existing monthly rates of pay, which are as follows, are being subjected, under the authority of the Secretary of State in Council, to a temporary reduction not exceeding 10 per cent.

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Years of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.	—	500	150	1st
			150	2nd
Capt.	(i) During first 3 years' service as Captain		150	3rd
		650	150	4th
			£15	5th
	(ii) With more than 3 and less than 6 yrs.' service as Captain		£15	6th
		750	£25	7th
			£25	8th
	(iii) With more than 6 years' service as Captain		£25	9th
		850	£25	10th
			£25	11th
Major	(i) During first 3 years' service as Major		£30	12th
		950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £50 towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a post-graduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America, is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pension are as follows:

	Per annum. £
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. With effect from October 1st, 1931, a reduction of 8½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in January next, and the selected candidates will be required to join a course of instruction commencing early in February, 1932, prior to sailing for India in the Autumn of 1932. Applications should be submitted as soon as possible.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
GENERAL POST OFFICE. *(Assistant Medical Officer—Women.)*	**CONTRACT PRACTICE** *(contd.)*	**CONTRACT PRACTICE** *(contd.)*
CONTRACT PRACTICE.	LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*
PETERBOROUGH TRADES AND FRIENDLY SOCIETIES INSTITUTE. *(Medical Officer.)*	MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	DEVON COUNTY COUNCIL. *(School Medical Inspector—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	LOWESTOFT BOROUGH. *(Assistant Medical Officer—Women.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	YORESHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, B.M.A. House, 206, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)* *(Toowoomba Associated Friendly Societies, Medical Institute, Toowoomba.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	*Dr. J. P. MAJOR*, (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

December 9th, 1931. By Order of the Council. ALFRED COX, Medical Secretary.

Victoria Hospital, Burnley.
(125 Beds.)

TWO HOUSE SURGEONS (Male).

Applications are invited for the above two posts. The appointments are for six months *from January 1st next*, and each carries a salary of £150 per annum, together with board, residence, etc. This Hospital is approved by the *London University* for the purpose of the M.B. and M.S. examinations.

Applications, giving full particulars of qualifications, age, nationality, etc., together with copies of recent testimonials, should be addressed to the undersigned forthwith

GEO. W. COOLING,
Superintendent & Secretary.

Royal South Hants and SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

Applications are invited for the following vacancies:

HOUSE SURGEONS (Two).
CASUALTY OFFICER.

The appointments will be for a period of six *months in each case*, commencing January 1st, 1932. The salary payable is £150 per annum, with board, lodging, and laundry. Applications, *accompanied* by not more than three testimonials, should be sent to the undersigned as soon as possible.

HY. TRUSSON, Secretary.

North Riding Infirmary, MIDDLESBROUGH.
(General Hospital—150 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (lady or gentleman) to commence duties middle of December.

The appointment will be for a period of six months. Salary at the rate of £125 per annum, with board, residence, and laundry.

Applications, stating age and nationality, with copies of recent testimonials, should be sent forthwith to the undersigned.

CHARLES POSTGATE,
Secretary-Superintendent.

Cheltenham General and Eye HOSPITALS.

APPOINTMENT OF ASSISTANT HONORARY SURGEON.

The Board of Management of the Cheltenham General and Eye Hospitals invite applications for the post of Assistant Honorary Surgeon. Candidates, whose names must appear in the *Medical Register* as Graduates in Surgery of a recognised University of Great Britain or Ireland, or as Fellows or Members of the College of Surgeons of England, Ireland, or Edinburgh, should send their applications in sealed envelopes, endorsed "Assistant Honorary Surgeon," to the undersigned not later than December 19th.

Personal canvass of members of the Board is strictly forbidden.

J. CUMMING SMITH, F.C.I.S., Secretary.
General Hospital, Cheltenham.
November 30th, 1931.

Hull Royal Infirmary.
(367 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant December 31st.

The appointment will be for six months in the first instance and will be determinable by one month's notice on either side.

Salary at the rate of £150 per annum, plus board, residence, and laundry.

Applications, stating age, qualifications, experience, and nationality, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS,
Dec. 5th, 1931. House Governor.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified candidates for CLINICAL ASSISTANTSHIPS in the Medical, Surgical, and all Special Departments. Intending candidates should submit applications, stating age and qualifications to the undersigned on or before January 9th, 1932.

REGINALD E. GARRATT, Secretary.

The Hospital for Sick Children, Great Ormond Street, London, W.C.1.

A PART TIME JUNIOR CASUALTY OFFICER is required on January 6th, 1932, to assist in the Casualty Department, from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the Direction of the Casualty Officer.

The work of the Office includes a large number of Tonsil operations and other minor operations.

Candidates must be registered Medical Practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, January 4th, 1932, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months, and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, January 6th, 1932, at 5 p.m. precisely.

Forms of application and copies of the Rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES M. KAY,
Dec. 1st, 1931. Secretary.

Manchester Royal Infirmary.

VENEREAL DISEASES DEPARTMENT.

MEDICAL OFFICER in charge of the Out-Patient Department.

THREE ASSISTANT MEDICAL OFFICERS for the Wards.

Applications are invited for the above appointments, which are not pensionable, and will commence on January 1st, 1932.

Further particulars may be obtained from the undersigned, to whom applications, stating age, qualifications, and experience, should be sent not later than December 19th.

FRANK G. HAZELL,
Dec. 3rd, 1931. Chief Clerk & Secretary.

(Appointments continued on p. 46)

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Assistant, indoor, with or without view, for industrial Practice, young Scottish Graduate preferred Must be ready to start January 1st Previous experience not essential. Starting salary £240 p.a., if not experienced. State full particulars, with height and weight — Address, DR. ELLICH, Pelaw, Co Durham

Wanted, a qualified indoor ASSISTANT (single) for a panel and private Practice in London, E. No dispensing or midwifery, and little night work Good salary to a suitable man.—Address, No. 7520, B.M.A. House, Tavistock Square, W.C.1

Wanted. — Assistantship, with or without view, in or near London preferred, by M.R.C.S., L.R.C.P., male, single, aged 26, experience general practice References Free now — Address, No 7421, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship, with or without view, by M.B., Ch.B., British, Jewish, male, single, aged 25, ex H.S. Keen and conscientious. Excellent testimonials. Now free. — Address, No 7515, B.M.A. House, Tavistock Square, W.C.1

Wanted, Jan. 1st, indoor Assistant, with view. Male, British, with car preferred Midlands, industrial and rural. £300 Usual bond State age, experience, references — Address, No 7420, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Scot, aet 33, married, M.B., Ch.B. Edin 1924, ex H.P., 6 yrs.' G.P. Own car. Well received and keen. Free as required — Address, No 7590, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistantship or long LOCUM by woman, 30, B.Chir. Cantab and Conjoint, ex H.S., H.P. Experienced anaesthetics and general practice — Address, No. 7302, B.M.A. House, Tavistock Square, W.C.1

Wanted.—Assistant, male, indoor in general Practice, loyal and abstainer Suit recently qualified. Good experience to be gained Moderate salary — Address, No 7536, B.M.A. House, Tavistock Sq., W.C.1

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view, good salaries state full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester

Woman, M.B., B.Ch., wants an ASSISTANTSHIP or LOCUM Five yrs.' experience panel and private practice Used to sole charge Excellent testimonials Now free in London — Address, No 7508, B.M.A. House, Tavistock Square, W.C.1

Wanted. — Assistant, male, Protestant, energetic, for large panel and midwifery, in Lancashire. Able to drive car House available for married man — Address, No 7533, B.M.A. House, Tavistock Sq., W.C.1

Wanted. — Indoor Assistant in Liverpool Salary according to experience Prospects References essential — Address, No 7522, B.M.A. House, Tavistock Sq., W.C.1

Temporary Assistantship or Part-TIME WORK wanted by woman Doctor, experienced general practice, ex H.S. Liverpool, Manchester, or Preston, etc., district — Address, No 7527, B.M.A. House, Tavistock Sq., W.C.1

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION — Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees

LOCUMS.

FOR LOCUM TENENS APPLY TO PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 50 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone. Temple Bar 9011.
After Office Hours: Epsom 9142

Wanted, post as Locum or ASSISTANT, M.B., B.Ch., N.U.I., extensive knowledge of G.P. and panel; aet 37. Excellent testimonials. — Address, No. 7507, B.M.A. House, Tavistock Square, W.C.1.

Experienced and reliable Locum, now free, English Conjoint, St Thomas's Motorist. Country preferred. Aged 40 Abstainer. — Address, No 7532, B.M.A. House, Tavistock Square, W.C.1

Locum Tenens now available for coming vacation, experienced panel and G.P. work Qual. 1907, St Bart's Recent refs — Apply, stating terms, "MEDICUS," Red House, Lancing. 'Phone: 57 Lancing

PARTNERSHIPS.

An Opportunity is offered to a thoroughly capable, experienced, hard working doctor, with a good record, to obtain at two years' purchase the outgoing Senior Partner's ONE-FIFTH SHARE in an old established four doctor dispensing Practice earning about £7,500 per annum, in a densely populated, pleasant, residential, and shopping London suburb, where scope is unlimited. Some capital is preferable, but not essential, as the banks will advance money to an incoming partner on the accountant's certified report The practice, with a panel producing about £2,000 per annum, has been increasing consistently year after year and is now run as four separate practices by the four partners Opposition is negligible Fees vary from 2/6 to 10/6 for surgery attendances, 3/6 to 21/- for visits, and £3 13s 6d to £10 10s for midwifery, the latter of which has been rather discouraged and consequently offers much scope if desired. Expenses are very moderate. The incoming partner should take over the established lock-up surgery early in the New Year, but excellent residential accommodation is available in the immediate vicinity, from a flat at 25/- per week, to a house, with garage, garden, etc., at £150 per annum Any further particulars desired will be given with pleasure to suitable gentlemen, and the fullest investigation welcomed, on application, in confidence — Add., No. 7517, B.M.A. House, Tavistock Sq., W.C.1

East Anglia.—A one-third share is offered in a sound, old established unopposed PRACTICE in small market town, pleasant country. Receipts about £3,500 (audited); panel 2,000 Good house, with ample accomm., 3/4 acre of gard., tennis lawn, garage for 2 cars, etc., to be sold for £1,250 f'hd (incl. man's cott.) Prem 2 yrs.' purchase —No 7526, B.M.A. House, Tavistock Sq., W.C.1.

Partner wanted by Cambridge M.D. in old established general Practice of £4,000 per annum, in country town in the Midlands, with Cottage Hospital, and scope for surgery. Applicant should be well qualified and have held resident appointments at a London General Hospital or Edinburgh Infirmary. One-quarter share offered at 2 years' purchase after preliminary Assistantship — Address, No 7504, B.M.A. House, Tavistock Square, W.C.1

Partnership. — A Third Partner required in large mixed Practice in N.W. London. Share worth £1,200—£1,500, more later. Aural experience a recommendation — Address, giving details of experience, etc., No 7592, B.M.A. House, Tavistock Square, W.C.1.

Partnership or Succession wanted by English Graduate, aet. 41. Considerable experience hospital and private practice. S. of England preferred. House to rent — Address, No 7537, B.M.A. House, Tavistock Square, W.C.1.

Partnership for Sale, with view to early Succession. Manchester suburb. Receipts £2,000. Panel over 2,000 One third share at 1½ years' purchase — Address, No. 7523, B.M.A. House, Tavistock Square, W.C.1.

Yorks. — Partnership in good Practice, with receipts of £2,3[illegible] over 1,500, rapidly increasing [illegible] available Price 1/3 share (to [illegible] £1,000 — MANCHESTER MEDICAL & SURGICAL ASSOCIATION, 6, Brown Street

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Lady Dispenser-BOOK-KEEPER, fully qualified and experienced, for private and panel Practice in Chadwell Heath district — Address No 7511, B.M.A. House, Tavistock Square, W.C.1

A Lady Dispenser-Bookkeeper supplied immediately on request qualified and with practical experience in private practice and dispensary work, also trained Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN Preparation for Examinations — Write, wire or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2

Chartered Masseuses and MASSEURS recently showed their loyalty to the Medical Profession by passing a Bill pledging themselves to work only under medical direction. In return, please employ only Chartered Masseuses or Masseurs (Members 8,200)
Names and addresses can be obtained from the Secretary, C.S.M.M.G., Tavistock House (North), Tavistock Square, W.C.1
Telephone: Museum 9223 4 5

Dispensers supplied to Doctors at short notice, without fee Qualified and experienced in private and panel practice for manency and part time Bookkeeper Dispensers Secretary-Dispensers, Nurse Dispensers, and Chauffeuse Dispensers — Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1

Dispenser - Secretary, qualified, with good experience in town and country, seeks POST. Help with electrical treatment and minor operations — DISPENSER, 48, Crouch Hill, N.4 Telph after 7 p.m. Archway 2 5

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 3858 The DISPENSERS' BUREAU, 15, Lindsay House, 171 Shaftesbury Avenue, London, W.C.2

Evening and Week-end work wanted in Hospital or G.P. in London commencing January, by Post graduate aet 29 Reliable, conscientious Interview — No 7506, B.M.A. House, Tavistock Sq., W.C.1

Housekeeper seeks Re-engagement where maid kept, last post 11 years Sole reason leaving, tired of country Town preferred — Address, No 7529, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser and Bookkeeper desires RE-ENGAGEMENT, [illegible] experience, competent bookkeeper Good testimonials Disengaged now. — Address MISS DANIELL, Kenmuir, 72, Gower Rd., Haywards Heath, Sussex

Lady Dispenser (Hall), bookkeeper, seeks POST in or near London 8 yrs' exp private and hospital [illegible] V.D. Personal interview — YOPATH Ltd., The Common, Berkhamsted, Herts Tel. Berkhamsted 341

Lady Radiographer, M.S.R. (Part I), London Hospital trained, seeks post as SECRETARY RECEPTIONIST to Medical Man; London or Home Counties preferred Thorough knowledge of medical terminology No 7538, B.M.A. House, Tavistock Square

Lady, 25, unqualified, desires post as RECEPTIONIST, [illegible] generally. Good disposer, typing [illegible] Drive car. Experience in nursing, [illegible] pearance and manner, thoroughly [illegible] Mod. salary.—VICKERS, Home Farm, [illegible]

Naval Medical Officer, [illegible] retired, requires EMPLOYMENT—[illegible] No 7505, B.M.A. House, Tavistock Square

The Royal Army Medical Corps ASSOCIATION, 85, [illegible] 8 W.1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses and Special Treatment Orderlies, Dispensary Orderlies, Porters, Caretakers, etc. No charge to prospective employers.

Typewriting and Duplicating.—Testimonials, Theses, etc., neatly and accurately copied. Scientific work a specialité.—WOBURN BUREAU, 3, Upper Woburn Place, London, W.C.1 (adjoining B.M.A. House). 'Phone: Museum 4475.

Testimonials Duplicated per return of post. Prices per testimonial—12 copies 1/6; 50, 2/6; 100, 4/-.—MISS NANCY MCFARLANE (B.M.J.), 44, Elderton Road, Westcliff-on-Sea.

Typewriting and Duplicating undertaken by Expert. Testimonials, Theses, Legal Documents. Numerous letters of appreciation from Doctors.—BEATRICE RADFORD (B), 341, Finchley Road, N.W.3. 'Phone Hampstead 6430 (any hour).

PRACTICES.

Wanted, a Practice or Partnership in a residential town or good suburb, returning an income of £1,500 to £2,000 a year, by a well qualified experienced married man, and with ample capital at command.—Details will be received in strict confidence by Mr. PERCIVAL TURNER, 4 and 5, Adam Street, Strand, W.C.2.

Wanted.—Practice, net cash receipts £1,000, large panel essential, in suburb of large town or city. Capital available. House, with garage, on lease, with option to purchase.—Address, No. 7521, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—General Practice, mid. income £4,500 upwards. Panel 3,000 or over. Good house, with garden. Ample capital.—Address, No. 7120, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—General Practice, fair-sized panel, income £800—£1,000, accounts audited, scope, by experienced Universities Graduate (L.C.C. age 31. Capital available.—Address, No. 7511, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—General Practice in London or suburbs. Income £800—£1,000. With panel over 600. Capital available.—Address, No. 7525, B.M.A. House, Tavistock Square, W.C.1.

Wanted by exper. Graduate, PRACTICE or PARTNERSHIP SUCCESSION in London. Income about £2,000 or more, with panel. Cash available.—Address, No. 7593, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Practice, with panel £1,000—£1,200, house to rent, in or within easy reach of London or on S. Coast. Capital available.—Address, No. 7510, B.M.A. House, Tavistock Square, W.C.1.

An exceptional opportunity to obtain a cash and panel PRACTICE in S.E. London. Receipts £1,340 a year, panel 635. Premium £1,600, payable only £350 down.—Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

Bournemouth (for disposal shortly).—Small but old-established PRACTICE, neglected through failing health. Scope. Estimated to produce £600 (about). Panel 450. No midwifery, no night work. Excellent family house, nice situation, near sea, shops, at low rental or for sale. Principals only.—Address, No. 7516, B.M.A. House, Tavistock Sq., W.C.1.

Bradford.—Practice wanted with panel. Income £1,500 upwards. Good house. Cash available.—Address, No. 7121, B.M.A. House, Tavistock Square, W.C.1.

Co. Durham.—Death Vacancy.—Old-established PRACTICE. Held 7 years by late Vendor. Receipts average £900 a year, panel 600. Ten-roomed house, rent £40. Premium £1,400.—Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

Cornwall.—Old-established un-opposed PRACTICE. Receipts average £920 p.a., including panel 550. Good house can be had on rental. Premium £1,150.—Apply, PEACOCK & HADLEY, LTD., 19, Craven Street, Strand, W.C.2.

For Sale, an excellent busy PRACTICE in London, E. Panel of 4,000 can still be further increased; private income £5,000 p.a. Large corner house (main road); garage; lease 21 years. Suitable for two partners. Price 2 years' purchase, cash.—No. 7494, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Small Nucleus Prac-TICE, Kentish Town district, London. £80 or near offer. No agents.—Address, No. 7519, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Cheshire.—General PRACTICE, old-established, beautiful district; sports and excellent schools available. House, with garage and garden, let or sale. Receipts (cash) average £1,500. Small panel, capable of development.—Address, No. 7514, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Midlands.—Good-class PRACTICE, increasing good scope. Small panel. Income £400. Price 1 year's purchase, or near offer, for quick sale. Good house, every convenience. Price £250, half can be left on mortgage if required.—Address, No. 7534, B.M.A. House, Tavistock Square, W.C.1.

For immediate Sale.—Nucleus of Practice in North Wales. Suitable for a woman.—Address, No. 7501, B.M.A. House, Tavistock Square, W.C.1.

General Medical Practice for Sale, residential suburb of Western town. Receipts £2,100. Good medium-sized residence, with detached surgery.—Details of WOODCOCK & SON, Ipswich.

Greater London, N.W.—Practice in popular, rapidly developing district. Income about £1,000. Panel 300. Exceptional prospects. Premium £1,500 cash. Centrally situated labour-saving house (leasehold) for sale. Bona fide purchasers only.—Address, No. 7531, B.M.A. House, Tavistock Square, W.C.1.

Hants.—Coast Town.—Well-established PRACTICE. Receipts average £600 p.a., panel 450. Nice house, £75 p.a. Premium £750.—Apply, PEACOCK & HADLEY LTD., 19, Craven Street, Strand, W.C.2.

Lancs Town.—Excellent and old-established Good house, central position, 2 surgeries, garage. Average receipts £1,700, great scope. Panel over 1,500. Price—Practice and property—£5,750, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

London, S.E.—Small, but stead-ily increasing PRACTICE. Doing at present £4 per week, with a panel of 90. Surgery, rent 22/6 weekly. Premium required £175 or near offer.—Apply, PEACOCK & HADLEY, LTD., 19, Craven St., Strand, W.C.2.

Rural Practice wanted by experi-enced Practitioner. Good house and income essential. Fishing and shooting. Ample capital. Replies in confidence.—Address, No. 7539, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers.—Do not buy without expert assistance. With 50 yrs. experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Young Ophthalmic Surgeon, well experienced, able to operate, seeks OPHTHALMIC PRACTICE or PARTNERSHIP, preferably with Hospital appointment.—Address, No. 7503, B.M.A. House, Tavistock Sq., W.C.1.

HOUSES, CONSULTING ROOMS.

Boscombe, main road, central.—Self-contained spacious Ground Floor FLAT, facing South, with four good rooms, kit-hen, bathroom, with lavators, separate and usual offices, also large cellar, small garage and cupboards. Suitable for medical man or Dentist. Rent £120 per annum, including rates.—24a, Parkwood Road.

Consulting Room, Portman Sq. (adjoining).—Well furnished or would be let unfurnished, ground floor, quiet, light. Good service, doctor's house. Moderate rent.—Addr., No. 7509, B.M.A. House, Tavistock Sq., W.C.1.

Consulting Rooms to Let.—Harley Street and District. Whole and part time. Rents £20 to £300. Lists sent on application. Rooms wanted in Harley Street district.—ERCOOP & CO., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

Forest Gate, main road.—Corner PREMISES, first floor above Ground, 3 rooms, all conveniences. Suitable Doctor's Consulting Rooms. Rent £2 weekly incl.—Apply PHILLIPS, 16, Upton Lane, E.7.

Harley Street (adjoining).—Bachelor SERVICE FLAT (or combined with furnished Loft. Floor). 3 gns. Also Bachelor Bedroom 2 gns. Part-time Consulting Room if required.—Address, No. 7535, B.M.A. House, Tavistock Square, W.C.1.

London, E.—Lease of six-roomed HOUSE for disposal. Has been Surgery for 45 years. Excellent position. Rent £52 p.a. Best offer accepted.—Address, No. 7515, B.M.A. House, Tavistock Square, W.C.1.

Residential Club for Gentlemen. —Hampton Club, Hampden Street, N.W.1, close to King's Cross Station. Large Club rooms. 300 bedrooms and bedsitting rooms, 15/- to 25/- per week. Illustrated Prospectus, Secretary, Museum 3424.

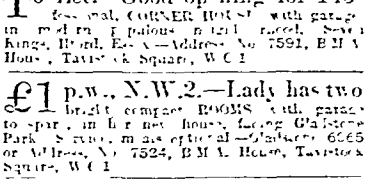
To Let, adjoining Harley St., SELF-CONTAINED FLAT of three rooms and consulting room, with decorative £250 per annum.—Address, No. 7499, B.M.A. House, Tavistock Square, W.C.1.

To Let, owing to death, roomy Ground Floor FLAT, Bow Heath district. Recently occupied by Doctor with practice. Good-class district.—Apply, ANDELL, 32, Shell Road, London, S.E.13.

To Let.—Good opening for Pro-fessional, CORNER HOUSE with garage in modern populous retail parade. Seven Kings, Ilford, Essex.—Address, No. 7591, B.M.A. House, Tavistock Square, W.C.1.

£1 p.w., N.W.2.—Lady has two bright comfort ROOMS with garage to spare, in her own house, facing Gladstone Park. Service, meals optional.—Gladstone 6665 or Address, No. 7524, B.M.A. House, Tavistock Square, W.C.1.

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Supply Instruments, etc. Three bottles of Tablets as sample, 500 Aspirin, 500 Cafe. Sulph., and 500 Pil. Scillae Co. Post free, 3/6.

Showroom: 97, Swinderby Road, Wembley.

Wanted.—Second-hand Apneu INHALER. Particulars.—Address, No. 7523, B.M.A. House, Tavistock Square, W.C.1.

Midland Health Resort.—Old-established NURSING HOME for Sale, 7 bedrooms, well-equipped operating theatre and Nurses' accommodation. The premises are held on lease, with garage, stabling, etc., and could be let to purchaser.—Address, No. 7415, B.M.A. House, Tavistock Sq., W.C.1.

Safety First.—Ernest Grimaldi, Ltd., have expressed a desire that purchasers of Medical Practices should realize their Assurance requirements. They value and explain on a year to year basis. Your present expectations and future needs. All best companies represented. Full particulars and quotations free from Ernest Grimaldi, Ltd., [illegible] Gerrard 1245 [illegible] Mid. 2621 & 7.

U.V.L. Arc Lamp for Sale, [illegible] £2 [illegible] £10.—Address, No. 7512, B.M.A. House, Tavistock Square, W.C.1.

IMPORTANT NOTICE

to MEMBERS of the

MEDICAL PROFESSION

CLOTHES of DISTINCTION for MEN of DISCRIMINATING TASTE. Specially Cut, Fitted, and Moulded to each individual figure, made from Finest Quality Materials and in the Best Possible Style, cost no more than mass production ready made clothes.

The Invaluable Practical Experience of our 14 Expert Cutters and Fitters is always at your disposal.

SPECIAL OFFER.

JACKET & VEST (in black or grey), **£5 5s**
SOLID FANCY WORSTED TROUSERS, **£2 2s**

THE Ideal Suit for Professional or Business wear
OVERCOATS & SUITS to measure from **£6 6s**
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Makers of Finest quality Civil, Sporting, and Hunting Clothes for Ladies and Gentlemen.

Highest Awards. 12 Gold Medals. Est. over 35 years.

APPOINTMENTS.—Contd.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of SURGEON at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W C 1.

Candidates must be Masters in Surgery of a University in the United Kingdom, or of the British Empire, or Fellows of the Royal College of Surgeons of England The appointment carries with it a seat upon the Medical Council.

The elected candidate will be appointed for twelve months, but will be eligible for re-election

Applications, with copies of not more than three testimonials, which should be printed or typewritten, to be sent in on or before December 22nd, to the undersigned, from whom further particulars can be obtained

By Order,
Seamen's Hospital Society, R. E V BAX,
Greenwich Secretary.
December 7th, 1931.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN with charge of Out patients at the DREADNOUGHT HOSPITAL, Greenwich The elected candidate will have beds allotted to him, and will be appointed for twelve months, but will be eligible for re election

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London

Applications to be sent in on or before Monday, January 4th, 1932, to the undersigned, from whom further particulars can be obtained.

By Order,
Greenwich R E V. BAX,
November 28th, 1931. Secretary.

Liverpool Stanley Hospital.

There will be a vacancy on January 1st, 1932, for a Female RESIDENT GYNÆCOLOGICAL SURGEON The appointment will be for a period of three months Salary at the rate of £100 per annum, with board, laundry, etc Candidates must be on the *Medical Register*, and submit their applications, with copies of three recent testimonials, addressed to the undersigned by December 16th

E W. OSBORN, Secretary.

Weymouth and District HOSPITAL, WEYMOUTH.

Wanted immediately, HOUSE SURGEON (male). British Salary £180 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and copies of testimonials, to be sent to the undersigned

MORRIS LODGE, Hon. Secretary.

London County Council.

Applications are invited for appointment to the undermentioned positions. Persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the Council. Successful candidates will be required to live in the Hospital.

NORTH EASTERN (FEVER) HOSPITAL, St. Anne's Road, Tottenham, N.15.—ASSISTANT MEDICAL OFFICER. Salary £350 a year, rising annually by £25 to £425 a year, together with board, lodging, and washing. Candidates must be qualified Medical Practitioners of at least one year's standing, and it is desirable that they should have held a resident appointment in a General Hospital for at least six months. Person appointed will receive training in radiological work, with a view to acting as deputy to radiologist at the Hospital

NORTH-WESTERN (FEVER) HOSPITAL, Lawn Road, Hampstead, N.W.3. — HOUSE PHYSICIAN (man only). Salary £80 a year, together with board, lodging, and washing. Appointment is for six months only in the first instance. Candidates must be qualified Medical Practitioners, but need not necessarily have had previous Hospital experience.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S E 1, and must be returned by December 30th. Canvassing disqualifies. Further inquiries should be addressed to Medical Superintendent at the Hospital.

London County Council.

Applications are invited for appointment as (a) SECOND ASSISTANT MEDICAL OFFICER (man or woman), and (b) ASSISTANT MEDICAL OFFICER (man or woman) at the MAUDSLEY HOSPITAL, Denmark Hill, S.E 5 (for treatment of Incipient Mental Disorder). Candidates must be under 40 years of age (unless already in the Council's Mental Hospital Service), must be registered to practise both in medicine and surgery in England, and must have held a residential position in a General Hospital for six months or have had comparable general experience Appointments pensionable under the Asylums Officers Superannuation Act, 1909 (in the case of women marriage terminates contract of service) Salary: Second Assistant Medical Officer, £625 a year, rising to £700; Assistant Medical Officer, £475 a year, rising to £550 (additional allowance of £50 to holders of D P.M). Charges made for board, lodging, etc. (at present £2 9s weekly) if required to be resident.

Application form (state for which appointment), giving full particulars, obtainable from Chief Officer (Ref M O.), L C C. Mental Hospitals Dept, Artillery House, Artillery Row, S W 1. Applications must be received by Dec. 28th. Canvassing disqualifies.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER (RESIDENT).

Applications are invited for the above appointment from duly qualified men (unmarried) holding a Diploma in Public Health, who have had special experience in hospitals for infectious diseases

The appointment carries with it a salary of £350 per annum, rising by annual increments of £25 to a maximum of £550 per annum, with emoluments (residence at the Infectious Diseases Hospital, board, and laundry), valued at £150 per annum

The successful candidate will be required to pass a medical examination, and a deduction of 5 per cent will be made from salary towards the Council's scheme under the Local Government and Other Officers Superannuation Act, 1922

Canvassing members of the Town Council, either directly or indirectly, will disqualify

Particulars of the appointment and form of application may be obtained from D MOLLEY MATHILSON, Esq, M A , M D , Medical Officer of Health, 9, Hamilton Square, Birkenhead

Applications must be received by me not later than January 9th, 1932, endorsed "Assistant Medical Officer"

Town Hall, E W TAME,
Birkenhead Town Clerk.

The Infants Hospital,

Vincent Square, Westminster

Applications are invited for the post of HOUSE PHYSICIAN (Female) The appointment is for six months Salary at the rate of £75 per annum, with board, residence, and laundry. Applications and copies of testimonials should reach the undersigned by December 18th.

ALFRED J. SMALL, Secretary.

Bucks County Council.

ETON URBAN DISTRICT COUNCIL
SLOUGH URBAN DISTRICT COUNCIL.
ETON RURAL DISTRICT COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH
(Local Government Act, 1929, s 58)

Applications are invited from duly qualified Medical Practitioners, with experience in Public Health duties, possessing the qualifications specified by Section 18 of the Local Government Act, 1888, and the Sanitary Officers Order 1926, for the following joint appointment

(a) Medical Officer of Health for the Urban District of Slough
(b) Assistant County Medical Officer to assist in School Medical Inspection and Medical Officer to Infant Welfare Centres in the following districts: the Urban Districts of Eton and Slough, and the Rural District of Eton.
(c) When vacancies occur, Medical Officer of Health for the Urban District of Eton and Rural District of Eton

The salary will be £800 per annum and will be subject to the temporary percentage abatement now in force.

Travelling expenses will be paid for County Council duties on the County Council scale, but part of the salary will be subject to a superannuation deduction of 5 per cent in accordance with the Local Government and Other Officers Superannuation Act, 1922

Applicants must not be over 40 years of age, and will be required to pass a medical examination as to physical fitness, and the final appointment will be subject thereto

The appointment is subject to the approval of the Minister of Health and on the terms of the Sanitary Officers Order, 1926, and the Public Health Officers Act, 1921. The particulars and conditions of appointment set out on the form of application can be obtained from the Clerk of the County Council, County Hall, Aylesbury

Office accommodation and the necessary clerical assistance will be provided

Applications on the prescribed form, accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to the Clerk of the Bucks County Council, and delivered to the County Hall, Aylesbury, not later than 10 a.m on Thursday, December 31st, marked "Medical Officer"

County Hall, GUY R CROUCH
Aylesbury. Clerk of the Bucks
Dec 7th, 1931. County Council

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointments from January 1st 1932.

HOUSE PHYSICIAN. Salary £70 p.a.
HOUSE SURGEONS (3) Salary £70 p.a.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by December 21st.

A. H. LEANEY,
December 2nd, 1931. House Governor.

The Jessop Hospital for Women, SHEFFIELD. (146 Beds)

Gynæcological & Maternity Departments

The Board of Management invite applications for the post of ASSISTANT HOUSE SURGEON (male) for a period of six months from January 1st, 1932

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of testimonials, should be addressed to the undersigned immediately

H. B SHELSWELL, Secretary.

Kent and Canterbury Hospital, CANTERBURY.

(Recognised by the University of London for the purpose of M S Examination)

HOUSE SURGEON required, to commence duties on January 8th, 1932 Six months' appointment Salary payable at the rate of £100 per annum, plus board, residence, and laundry

Applications, stating age and full particulars, and enclosing copies of testimonials, should be forwarded to the undersigned

W. T. SOUTHWOOD
Superintendent.

General Infirmary, Salisbury

(General Hospital—191 beds)

TWO HOUSE SURGEONS (male) required to commence duties on January 3rd, 1932 Candidates must be unmarried and registered Salary £150 per annum, board, etc

Applications, with copies of three testimonials, to be sent to the House Governor, from whom a copy of the rules may be had on application.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

Applications are invited for appointment as CLINICAL ASSISTANT to the following members of the Honorary Staff, who attend the Out-Patient Department at the times indicated:

Mr. Alban Andrews	Tuesdays 2 to 5 p.m.
Mr Ogier Ward	Wednesdays 2 to 5 p.m.
Mr. F. J F. Barrington	Thursdays 3 to 7 p.m.
Mr Ogier Ward	Fridays 9.30 a.m. to 11.30 a.m.
Mr. Alban Andrews	(Women & Children) Fridays 2 to 5 p.m.
Mr. Harkness	Venereal Dept. on Mondays, Wednesdays, Thursdays, and Saturdays 5 to 7 p.m.

Appointments will be for six months, commencing January, 1932, a fee of Five Guineas being payable to the Hospital.

Applications will be received by the undersigned on or before Monday, December 14th.

BEECHEY ROGERS, Secretary.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

The Committee of Management invite applications for the office of HONORARY ASSISTANT SURGEON.

Candidates must be Fellows of the Royal College of Surgeons of England, or Masters in Surgery of a University in the United Kingdom.

Applications, accompanied by copies of testimonials, will be received by the undersigned on or before January 4th, 1932.

By Order of the Committee,

BEECHEY ROGERS, Secretary.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

OPHTHALMIC HOUSE SURGEON;
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON;
ASSISTANT CASUALTY OFFICER.

The appointments are tenable for six months from January 1st, 1932, with salary at the rate of £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service salary is at the rate of £100 per annum. Applications, with copies of testimonials, to be sent to the undersigned forthwith

JNO. W. BARNES, F.C.I.S.,
Gen. Supt. & Secretary.

Board Room.
November 25th, 1931.

The Royal Gwent Hospital,

NEWPORT, MON. (160 Beds.)

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6 LONDON NORTH WEST—Well-established middle-class non-dispensing PRACTICE averaging for the past three years £840, including appts. worth about £500 p.a. and panel of 120. Fees 3/6 to 21/-. Large house with thirteen rooms in addition to professional accommodation, etc. Price, for freehold £3,200, £2,000 on mortgage. Prem. £1,250

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8 SOUTH WEST OF ENGLAND—PARTNERSHIP—A two-thirds or three-fifths share is offered in a well-established PRACTICE, in particularly attractive district near two good towns. Gross cash receipts for last 12 months over £2,500. Panel of £1,500. Fees from 2/6 to 10/6. Not much midwifery. Exceptionally nice house, specially built, with all modern conveniences, 3 reception, 6 bedrooms, beautiful garden. Price for freehold £5,000, half on mortgage. Premium 2 years' purchase. Hunting, fishing, etc., and good schools within reach. Up-to-date Hospital, and excellent surgical scope

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12 LONDON—OUTLYING RESIDENTIAL SUBURB—PARTNERSHIP—A one-third share to commence is offered in a good middle-class Practice having large scope. Cash receipts for last 12 months about £2,700 including panel of 1,500. Suitable house can be purchased for £1,750, part on mortgage. Premium 2 years' purchase

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14 SOUTH WALES—Residential district, close to coast—Old-established good middle-class PRACTICE, averaging over £2,000 p.a. Panel of 1,100. Fees 3/6 to 10/6. Mid. from 3 gns. House contains 3 reception, 5 bedrooms etc. Can be rented or purchased. Sport of all kinds, and good schools. Premium 1½ years' purchase

15 NORTH WALES—Very old established and mixed-class PRACTICE, averaging £830 p.a., including panel of 453. Fees 2/6 to 10/6 medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Can be rented on lease at £50 p.a. Good sport. Premium £1,200, part down and balance by instalments. Ill health reason for sale

16 WEST OF ENGLAND—LARGE TOWN—Well-established PRACTICE producing nearly £900 p.a., including panel of over 1,300. Suitable houses, in excellent position. Price £700, or can be rented at £60 p.a. Premium £1,450. Good scope for increase

17 SOUTH WEST OF ENGLAND—FAVOURITE COAST TOWN—Old established good middle-class non-dispensing PRACTICE, averaging £2,100 p.a. Select panel of 700. Very good appointments worth about £400 p.a. Fees 5/- to 21/-. Midwifery from 5 gns. (about 10 cases yearly). House contains 2 reception, 4 bedrooms etc. waiting, and consulting rooms. Freehold can be bought, or other suitable houses available. Good Hospital in the town, and excellent scope for surgery. Premium 2 years' purchase

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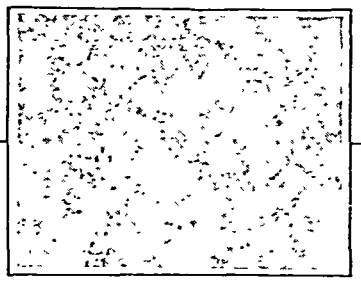
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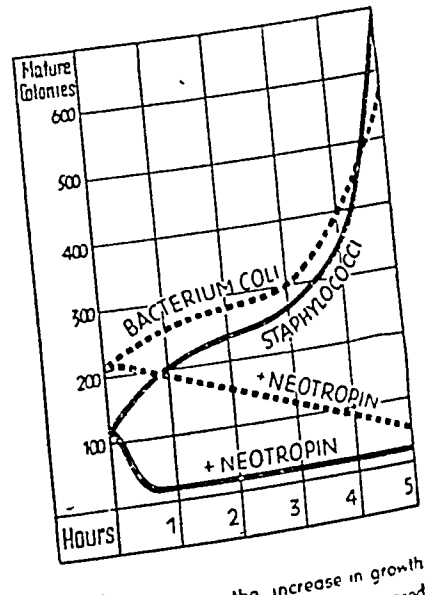
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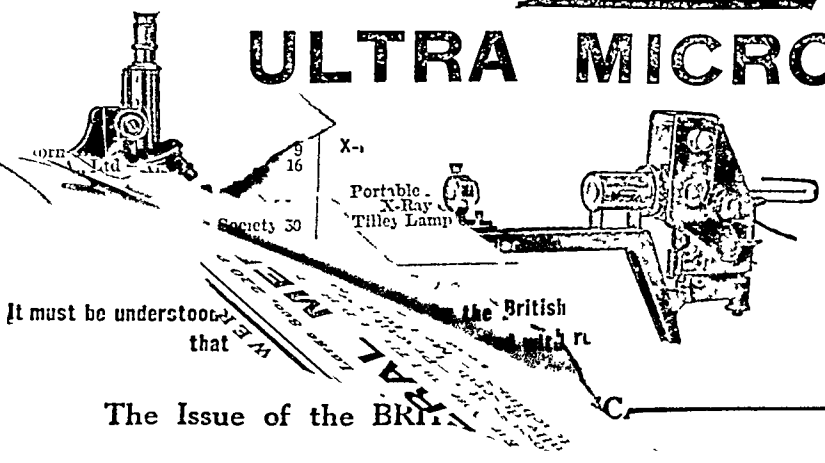
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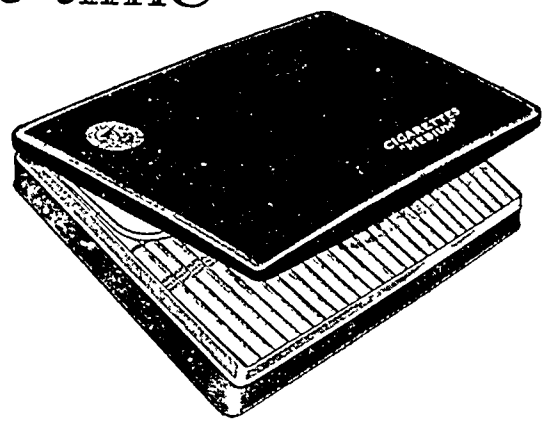
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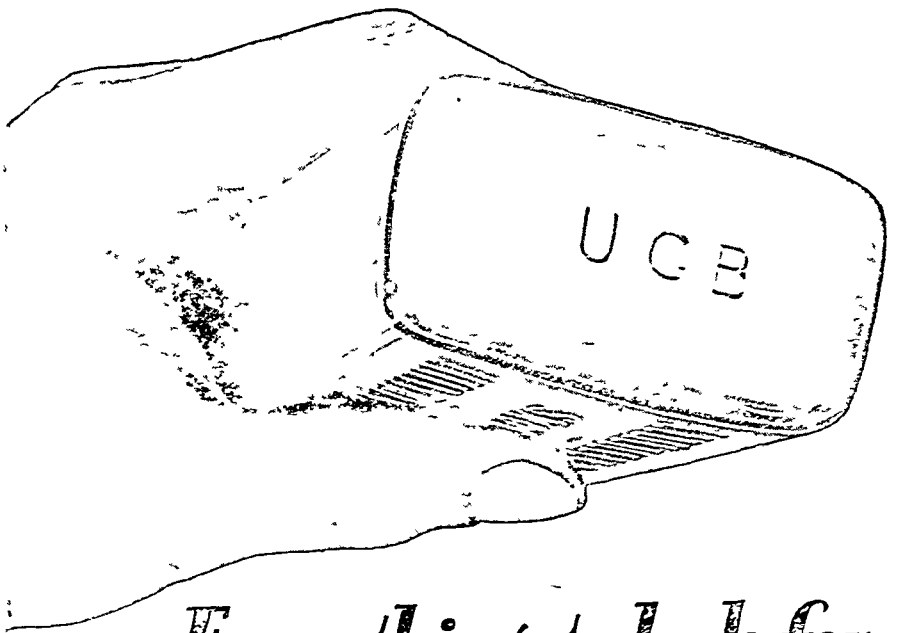
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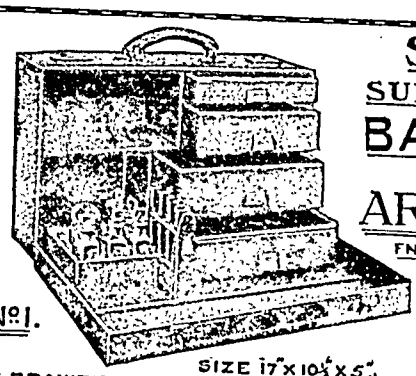
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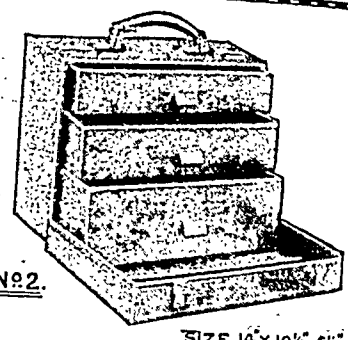
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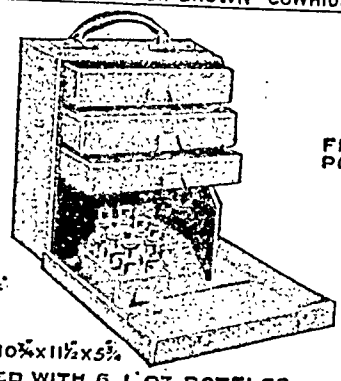
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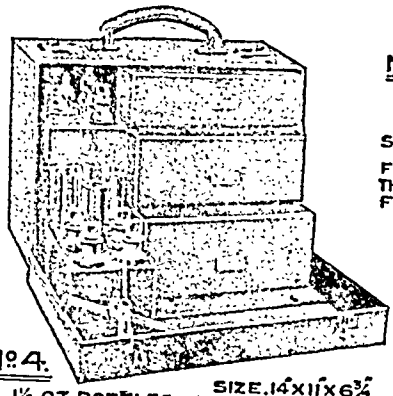
No1.
SIZE 17"x10½"x5"
4 DRAWERS, 5 BOTTLES, SPIRIT LAMP, 4 TEST TUBES.
£3-17-6.



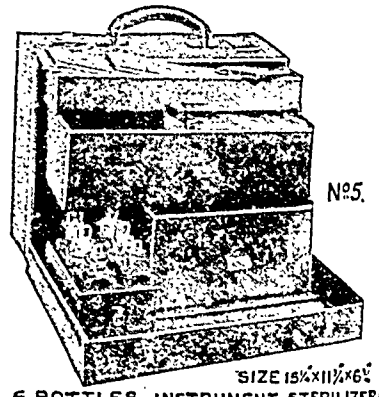
No2.
SIZE 14"x10½"x6¾"
FITTED WITH 3 DRAWERS AND POCKET IN LID FOR PAPERS.
£3-3-0.



No3.
SIZE 10¾"x11½"x5¾"
FITTED WITH 6, 1 OZ. BOTTLES THREE DRAWERS, POCKET IN LID FOR PAPERS.
£2-15-6.

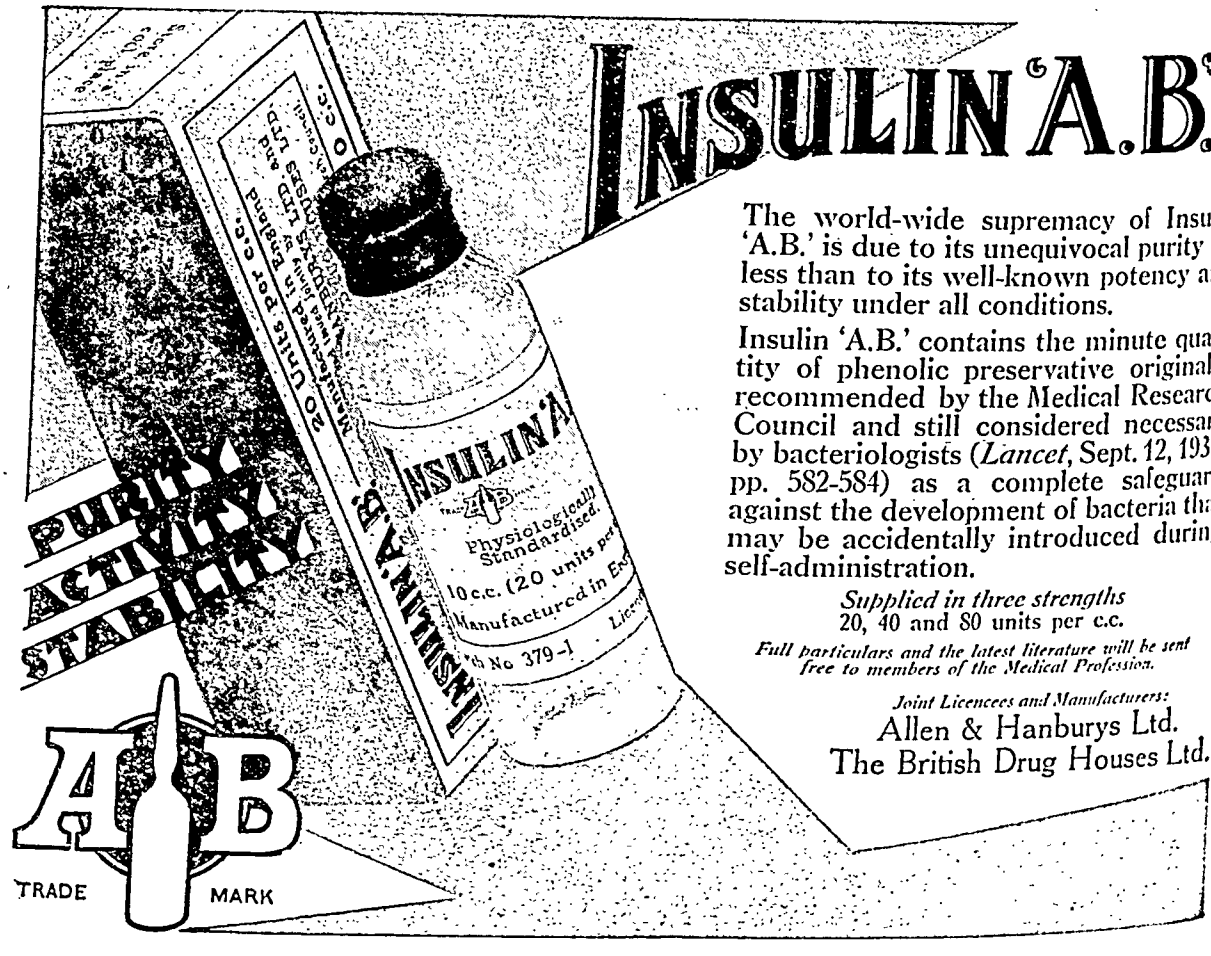


No4.
SIZE 14"x11"x6¾"
4 1½ OZ BOTTLES, 4 1 OZ, BOTTLES, 5 TEST TUBES URINOMETER AND TRIAL JAR. 3 DRAWERS POCKET IN LID.
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No5.
SIZE 15½"x11½"x6½"
6 BOTTLES INSTRUMENT STERILIZER 6 SPLINTS, 3 DRAWERS.
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IN ASSOCIATION WITH
JOHN BELL & CROYDEN.
SURGEONS INSTRUMENTS AND HOSPITAL FURNITURE MAKERS.
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LONDON, W.1.



INSULIN "A.B."

The world-wide supremacy of Insulin 'A.B.' is due to its unequivocal purity no less than to its well-known potency and stability under all conditions.

Insulin 'A.B.' contains the minute quantity of phenolic preservative originally recommended by the Medical Research Council and still considered necessary by bacteriologists (*Lancet*, Sept. 12, 1931, pp. 582-584) as a complete safeguard against the development of bacteria that may be accidentally introduced during self-administration.

Supplied in three strengths
20, 40 and 80 units per c.c.

Full particulars and the latest literature will be sent free to members of the Medical Profession.

Joint Licencees and Manufacturers:
Allen & Hanburys Ltd.
The British Drug Houses Ltd.

PITUITARY EXTRACT B.D.H.

(Posterior Lobe)

'In considering the whole pituitary controversy the most important question is one of dosage.'
(J.A.M.A., May 3, 1930, p. 1428)

Accurate dosage presupposes a product of unvarying potency and therapeutic effect; hence whether the Pituitary Extract be for use in obstetrics for the prevention of post partum haemorrhage, or in general surgery for the prevention of post-operative shock and collapse, for the relief of post-operative flatulence or other conditions of intestinal stasis, the essential factor is that the extract employed be accurately standardised.

Pituitary Extract B.D.H. is such an extract; it is doubly standardised, being tested for its pressor effect and its oxytocic power.

The Pituitary Extract

that is

Doubly Standardised

Literature on request

THE BRITISH DRUG HOUSES LTD. LONDON N-1

Pit Ext/10

STANIFORM

Reg. BRAND. Trade Mark.

METHYL STANNIC IODIDE

OINTMENT
Immediately stops the pain in all cases of burns, scalds, etc.

DUSTING POWDER
For application where a greasy substance is contra-indicated.

LINIMENT
Remarkably effective in treatment of Rheumatoid Arthritis

LOTION
A panacea for Mosquito and other insect bites. Most effective for all purposes where Tr Iodine is employed. Does not stain the skin and there is no sting

TABLETS
Staniform being an organic compound is more easily assimilated than the Tin preparations at present in use

Supplies may be obtained through the Wholesale Druggists, Druggists' Sundriesmen, or Dental Supply Companies

What the Profession says

The following are three recent testimonials received from users reported to the Manufacturers by Medical Men.

"I continue to get every satisfaction from Staniform in the case of carbuncles, boils, whitlows, and, in fact, all kinds of infected wounds."

"In a case of acute eczema on leg, the skin was quite normal with one week after starting applications of 'Staniform.'"

"In a case of an abrasion with large scab the ointment was tried and I was very effective. Scab came away very quickly and healing was very clean and satisfactory."

Similar testimony has been received from a large number of medical men when "Staniform" has been used for the treatment of Burns, Wounds, and Skin Affections

STANIFORM is used in Leading Hospitals.

STANIFORM over a wide field of clinical experience has exhibited positive curative properties. Combining the well known usefulness of Tin in staphylococcic infections with the powerful germicidal properties of Iodine, Staniform is indicated generally in local inflammations, inducing an immediate soothing effect with rapid healing."

STANIFORM LTD., CARNWATH ROAD, LONDON, S.W.6

ACKERMAN-LAURANCE

"Brut-Royal" and "Dry-Royal"

"may be recommended with every confidence. By reason of the very low "content of sugar these wines are "specially suitable for persons with a "rheumatic or gouty tendency."

(Vide Report, Institute of Hygiene, Feb. 1927)



Obtainable everywhere

Per bottle - -	9/-
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Per quarter-bottle -	2 6

General Agents (Wholesale only) for the United Kingdom

ANDERSON DOBSON & CO., LTD.

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A useful attachment for U.K. Telephone, holding Memo Pads, sent post free on application.

MONSOL
Liquid GERMICIDE



The use of MONSOL in Obstetric Practice is daily gaining ground and replacing the caustic disinfectants used in the past. The reason being that Monsol has a Selective Action on the Streptococcus Pyogenes, notably the Strain Haemolyticus, and being NON-CAUSTIC can be used at adequate strength to kill these bacteria without the slightest harm to the most delicate tissues. Literature and clinical sample, together with special price list, will be sent to members of the Medical Profession on request.

NON-CAUSTIC
INVALUABLE IN MIDWIFERY
RELIABLE AND SAFE

MOND STAFFORDSHIRE REFINING CO., LTD., ABBEY HOUSE, WESTMINSTER, S.W.1

RHEUMATISM

*Osteo and Rheumatoid Arthritis alike respond readily to treatment by Arthritone. For over a decade it has been used by practitioners throughout the country, with consistently good results, and in many cases after all other forms of medication had proved of no avail.

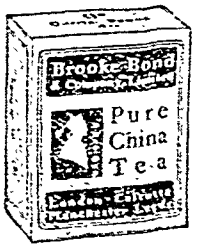
TAB. ARTHRITONE H. H. & Co.		ELIXIR FORMASAL CO. H. H. & Co.	
100	200	½-pint	1-pint
4/6	8/2	3/3	6/3

and larger sizes.

*In cases of Rheumatoid Arthritis of gouty origin, treatment will be accelerated by using Elixir Formasal Co., H. H. & Co., in conjunction with Tab. Arthritone.

TAB. ARTHRITONE H, H&Co.

HOUGH, HOSEASON and Co., Ltd.,
PHARMACEUTICAL SPECIALISTS to the MEDICAL PROFESSION
MANCHESTER



WE should be pleased to send you a free ¼-lb. sample of our *pure* China tea to test. Send us a request on your professional card.

Brooke Bond & Co Ltd
Goulston St
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SOME so-called China teas are mixed with other growths.

Patients for whom you have ordered China tea may buy one of these teas under the mistaken impression that they are carrying out your instructions.

These patients may not benefit to the extent which you expected. It is, therefore, important to specify *pure China* when prescribing.

For your information Brooke Bond China tea is *pure* China, unmixed with any other growths.

Brooke Bond *pure* China Tea 3/- lb

Any grocer can easily get it.



Standardised amounts of

Vitamins A B_1 B_2 and D

For building up resistance against infection
For overcoming anaemic and debilitated conditions
For maintaining the general health of the whole family

Sample on request

THE BRITISH DRUG HOUSES LTD. LONDON N-1

P—J127

BRITISH DRUGS

A 100% BRITISH PRODUCT

DIMOL LABORATORIES LTD.,
40, Ludgate Hill, London, E.C.4.

Distributing Agents:—SANGERS LTD.,
258, Euston Road, London, N.W.1.

It frequently occurs that a member of the profession is given the opportunity of choosing between two articles, one the product of British research and labour, the other foreign. In such cases there should be no doubt which to choose.

Dimol

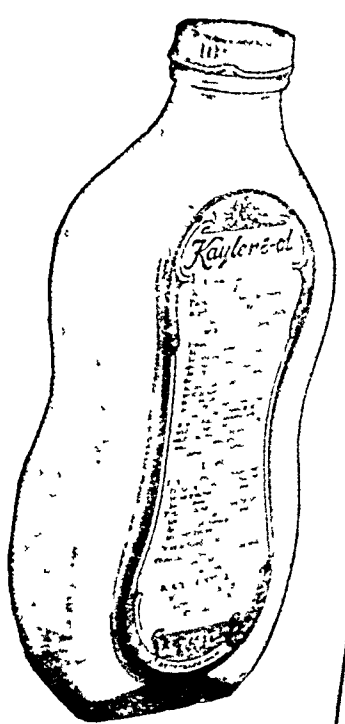
(Dimethylomethoxyphenol)

The safest and most reliable non-toxic bactericide for all pathogenic conditions associated with an intestinal focus.

DETOXICATE WITH KAYLENE-OL

Since the introduction of Kaylene-ol, the adsorption treatment of putrefactive toxaemias has received increasing attention, and to-day this method of detoxicating the contents of the bowel is recognised as a valuable addition to the medical treatment of gastro-intestinal disorders.

Samples and "Adsorption" Literature obtainable from the Manufacturers



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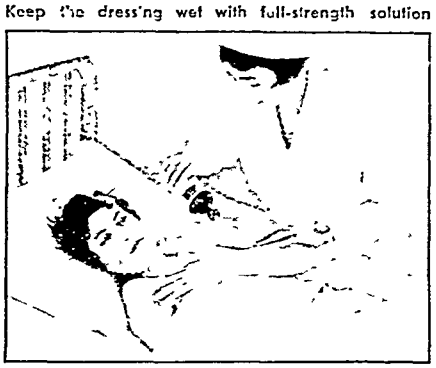
Telephone. Gladstone 1071
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BRITISH PRODUCTS MADE & SOLD BY A BRITISH COMPANY

In your next burn case

use this remarkable antiseptic dressing

Keep the dressing wet with full-strength solution



- ANALGESIC — Quickly relieves the pain.
- GERMICIDAL — Prevents infection

Clinical reports from physicians stress the value of Hexylresorcinol Solution S.T. 37 in the treatment of Burns and Scalds.

The technique is simple: cover the affected area with a thin layer of absorbent cotton or gauze saturated with Hexylresorcinol Solution S.T. 37, and bandage lightly to keep it in place. Keep the dressing wet with full-strength solution. In a short time the pain and burning will subside.

Leave the dressing on for 24 hours. Then note how dry, clean and relatively *insensitive* the affected area has become. Continue the use of the wet dressings until healing starts . . . usually two or three days. Then use dry dressings, simply moistening the denuded area with Hexylresorcinol Solution S.T. 37 daily to prevent infection.

SOLUTION S.T.37

Liquor Hexylresorcinolis, 1:1000

SHARP & DOHME, LTD., 252 REGENT STREET, LONDON, W.1

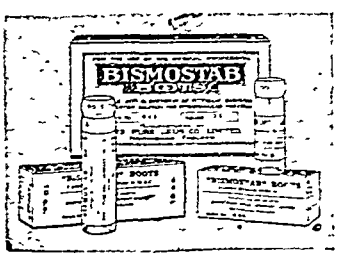
TRADE MARK BRAND

BISMOSTAB (BOOTS)

METALLIC BISMUTH SUSPENSION

THE Standard Bismuth Preparation for the treatment of Syphilis and other spirochætal diseases (Bismuth having largely replaced Mercury as an adjunct to Arsenobenzol Therapy). Bismostab (Boots), a suspension of specially prepared, finely divided, pure Bismuth metal in 5% Glucose solution is non-irritant, highly concentrated, sterile and ready for use.

BOOTS PRODUCTS
ARE OBTAINABLE THROUGH ALL BRANCHES of BOOTS The CHEMISTS



WHOLESALE AND EXPORT DEPARTMENT
BOOTS PURE DRUG CO. LTD.
NOTTINGHAM, ENGLAND
TELEPHONE: NOTTINGHAM 45501
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Calorie Values

MELLIN'S FOOD, when prepared with milk, has a calorie value of 12 per fluid ounce. But mere calories are not a complete measure of feeding value unless the ratio of absorption is known. MELLIN'S FOOD is completely absorbed, and hence ensures the greatest gain in weight, because maltose is the most readily absorbed of all carbohydrates.

Mellin's Food

Samples and booklet containing full details of composition and calorific value of mixtures suggested for different ages and conditions, post free, from:—

MELLIN'S FOOD LTD., Dept. G/52, London, S.E. 15.

Has the Ordinary Diet Sufficient Vitamin B?

At the request of many correspondents a series of tests were recently conducted at the Bemax laboratories to determine how far the ordinary daily diet is an adequate source of Vitamin B.

The diet chosen for the tests included Eggs, Bacon, Bread, Butter, Beefsteak, Cabbage, Potatoes, Cheese, and a suitable percentage of A and D Vitamin.

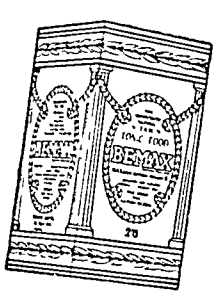
The results prove conclusively that such a diet is in fact deficient in B Vitamin and cannot, by itself, meet the nutritional requirements of adults or promote normal growth in children.

Ample evidence is already available to show that partial B Vitamin deficiency results in a progressive deterioration of the digestive system, and may well be the principal cause of the many intestinal complaints which are so common to-day.

Bemax provides an ideal way of supplementing the ordinary diet with an adequate supply of B Vitamin, of which it is the richest known source in B, Bii, and Biii.

Its value as a tonic restorative food can hardly be over-estimated and its use has been attended with striking results in Dyspepsia, Constipation, Sleeplessness, Nervous Debility, Rheumatism, and all B deficiency diseases. As its content of E Vitamin is also exceptionally high it can be used with great advantage in the treatment of Sterility.

Medical Men are invited to write for reports of the tests referred to in this advertisement.



Laboratory Reports on Bemax and Clinical Sample for personal trial will be sent to any Medical Man on request.

BEMAX

THE NATURAL VITAMIN TONIC FOOD

The perfect LOCAL ANAESTHETIC *at last . . .*

SELF-STERILISING Novutox Local Anaesthetic is autogenously sterile and actually remains sterile for weeks after an ampoule or bottle is opened. Novutox can be stored in and used direct from a bottle, thus eliminating waste and economising both time and money.

• • • NOVUTOX BRAND LOCAL ANAESTHETIC can be safely injected into infected infiltrated areas.

Read this extract from a letter recently received from a well-known surgeon:—

"Novutox I find is very rapid in its action, is absolutely non-toxic, and helps the tissues to heal quickly."
B.A., M.B., B.Ch., D.P.H.

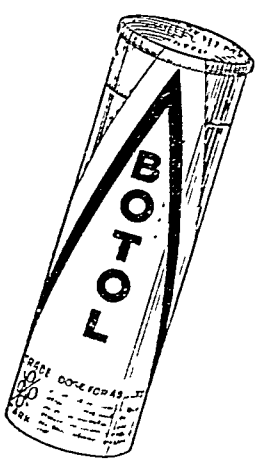
1. Is seven times less toxic than cocaine.
2. Promotes quick and clean healing.
3. Ensures freedom from post-operative pains.
4. Gives deep and lasting anaesthesia.
5. Requires no preparation of any description.

NOVUTOX
BRAND
LOCAL ANAESTHETIC
is not classified as a Dangerous Drug, and does not contain cocaine

Prices direct or through usual wholesaler.
Large free testing sample on request.

PHARMACEUTICAL CORPORATION LTD., 39 ALDERSGATE STREET, LONDON, E.C.1
Telegrams NOVUTOX LONDON Telephone NATIONAL 8906

BOTOL



REG. TRADE MARK.

A LARYNGEAL NARCOTIC

Prepared by a new process which enables SOLID BROMOFORM to be combined with CODEINE

IN TUBES OF TWENTY TABLETS
AND IN TINS OF 100 AND 250 TABLETS

Clinical Samples gladly sent on request

"Taxolabs, Sowest, London" CONTINENTAL LABORATORIES LTD 30, Marsham Street, LONDON, S.W.1 Victoria 2041

Modern diets often lack minerals

To-day, authorities are stressing the importance of the essential mineral salts. In addition to building sturdy bones, and blood rich in hemoglobin, these mineral elements aid metabolism and contribute to nervous stability.

Yet many modern diets cannot be depended upon to furnish the proper quota of minerals, and therefore millions of people suffer from the effects of demineralization. Cooking destroys a variable amount of the mineral value of foods—in some instances as high as 76 per cent.

To correct this loss and to remedy demineralization—with its attendant symptoms of nerve fag, neurasthenia, lowered vitality and loss of energy—a tonic rich in mineral salts is needed.

Compound Syrup of Hypophosphites "Fellows" contains the mineral salts of sodium, calcium, potassium, manganese, iron and phosphorus, together with the added metabolic stimulants—strychnine and quinine. Sixty years of clinical experience the world over testify to its value as a tonic.

Suggested dosage: A teaspoonful in half a glassful of water three or four times daily.

Compound Syrup of Hypophosphites

TRADE **"FELLOWS"** MARK

CONTAINS THE ESSENTIAL MINERALS

SAMPLES ON REQUEST

Fellows Medical Manufacturing Company, Inc. 26 Christopher St., New York City

A Distinct Advance Over Preparations of Acetyl-Salicylic Acid

Acetyl-salicylic acid possesses a notable disadvantage. Physicians have proved that it cannot be tolerated by patients suffering with a delicate stomach. Consequently, the value of this medicament in the wide field in which it is indicated is very seriously reduced.

Alasil" completely overcomes this objection. By combining calcium acetyl-salicylate with "Alocol," unfavourable secondary action upon the stomach is prevented. This beneficial influence is undoubtedly due to the presence of "Alocol" (Colloidol Hydroxide of Aluminium), which preparation has brilliantly stood the test of practice in the treatment of hyperacidity and other ill conditions of the gastric tract. "Alasil" is therefore a triumph over acetyl-salicylic acid. It enables higher doses to be administered and maintains the patient's system under its influence for a greater length of time. Analgesic, Antipyretic, and Sedative. "Alasil" is indicated in all cases where acetyl-salicylic acid has been used heretofore.

A supply for clinical trial with full descriptive literature sent free on request.

A. WANDER, Ltd., Manufacturing Chemists,
184, Queen's Gate, London, S.W.7.

Alasil

A Highly Efficient Local Anæsthetic for Sub-cutaneous Regional & Spinal use

"PLANOCAINE" Trade Mark

BRAND ETHOCAINE

Replacing with advantage cocaine and its substitutes, Planocaine is the ideal agent for use in all cases where a local anæsthetic is indicated.

Supplied in the form of powder, tablets or solution.

Descriptive literature and clinical trial sample on request.

Prepared in the Laboratories of

MAY & BAKER, LTD.

BATTERSEA LONDON, S.W. 11

Telegrams Bismuth, London.

Telephone Battersea 1813 (6 lines)



VITAMALT

Containing Vitamins A, B and D.

A well-balanced food which ensures an adequate supply of these essential vitamins and which corrects disorders arising from deficiency of these important bodies.

Vitamalt has been skilfully blended to make a preparation which is easily assimilated and provides an acceptable form of vitamin medication.

During expectant and nursing motherhood Vitamalt provides a plentiful supply of vitamins and is a valuable aid to nutrition during this important period.

1/9 and 3/- per jar.

(Special Discount to the Medical Profession)

OBTAINABLE FROM

The Boots Chemists

OVER 900 BRANCHES IN GREAT BRITAIN

WHOLESALE AND EXPORT DEPARTMENT

BOOTS PURE DRUG CO. LTD.

NOTTINGHAM, ENGLAND

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TELEGRAMS 'DRUG NOTTINGHAM'

Full size trial sample free to any medical practitioner in British Isles on application by postcard to Boots the Chemists, Station Street, Nottingham

RELIABLE PREPARATIONS

CREODYNE

(Duncan)

A palatable preparation of Lacto-Creosote, Codeina, Aconite, &c., specially suited for affections of the respiratory organs—Chronic Bronchitis, Coughs, Catarrh: &c.



MIST. VALERIAN SEDAT.

(Duncan)

A well-blended preparation of Scotch-grown Valerian in combination with Bromide, Hyoscyamus, &c. Indicated in the treatment of Hysteria or whenever a nerve sedative is required.

In bottles of 4, 8, and 16 fluid ounces.

SAMPLES ON APPLICATION.

DUNCAN, FLOCKHART & CO.

EDINBURGH and LONDON

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Valentine's Meat-Juice

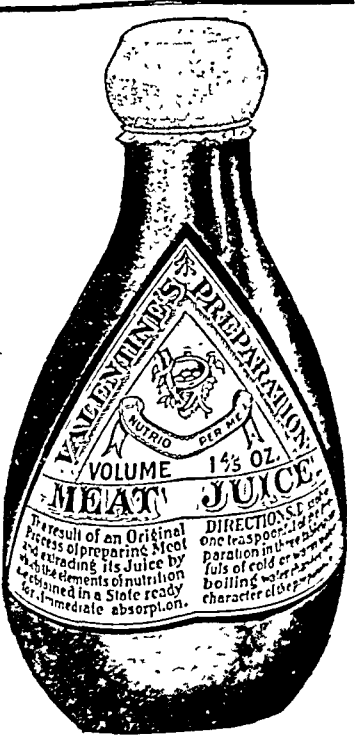
IN Vomiting of Pregnancy, in the Exhaustion following Haemorrhage or Prolonged Labour, and before and after Abdominal Operations, the Ease of Assimilation and Power of Valentine's Meat-Juice to Restore and Strengthen has been Demonstrated in

Hospitals for Women.

The quickness and power with which Valentine's Meat-Juice acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

Physicians are invited to send for Clinical Reports.

For sale by European and American Chemists and Druggists.



Valentine's Meat-Juice Co., Richmond, Vir., U.S.A.

JB 96



"STERULES" Regd.

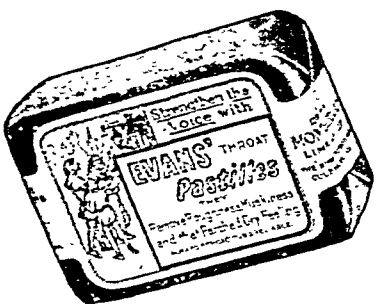
FOR HYPODERMIC, INTRAMUSCULAR AND INTRAVENOUS USE AND FOR INHALATION.

AMYL NITRITE "STERULES" are used in Angina Pectoris, and threatened fainting and collapse, with success.

The rights in the Trade Mark "Sterules" are rigidly guarded. *Complete List on request.*

W. MARTINDALE (MANUFACTURING CHEMIST), 12, New Cavendish Street, London, W.1

Telegrams: "MARTINDALE, CHEMIST, LONDON." Telephone: LANGHAM 2441.



EVANS' THROAT *Pastilles*

ENTIRELY BRITISH MADE BY

EVANS SONS LESCHER & WEBB Ltd.

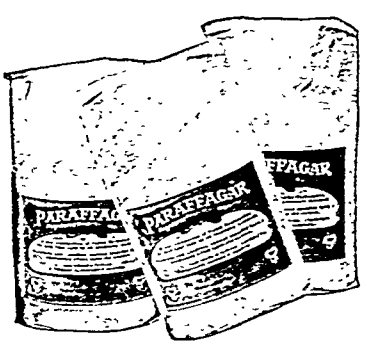
56, Hanover Street, LIVERPOOL
50, Bartholomew Close, LONDON

THROAT THERAPY

Evans' Pastilles are prepared to a formula of the Liverpool Throat Hospital. Their action is soothing and demulcent, the formula being carefully balanced with both these objects in view. Evans' Pastilles relieve harshness and irritation and maintain their effect for some time after the pastille has dissolved.

Sold in 1/- tins or in bulk for dispensing.

We will send with pleasure a physician's sample on request.



"PARAFFAGAR"

(Registered Trade Mark)

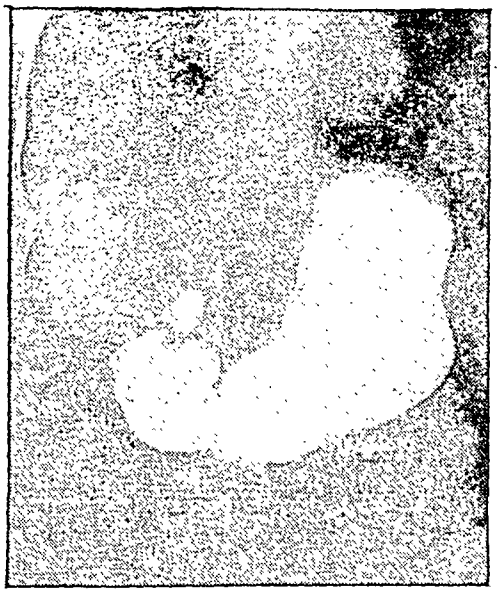
An effective Lubricant (introduced in 1913) containing 50% LIQUID PARAFFIN OF HIGH VISCOSITY, and Agar-Agar in relatively high proportion.

Also LIQUID PARAFFAGAR—A Palatable Preparation.

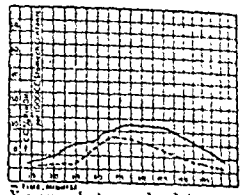
Supplied in 3/- Bottles.

W. MARTINDALE, 12, New Cavendish St., London. W.1.

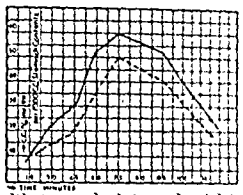
Telegrams. "Martindale Chemist, London." Telephone: Langham 2441.







X-ray photograph (left), and acidity graph, of a typically atonic stomach. Solid line of graph: Total acidity. Dotted line: Free acidity.



Photograph of stomach (right), and acidity graph, showing quick return to normal tonic condition. Solid line of graph: Total acidity. Dotted line: Free acidity.

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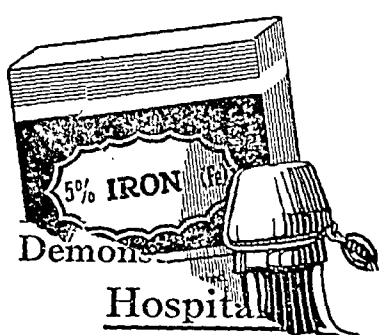
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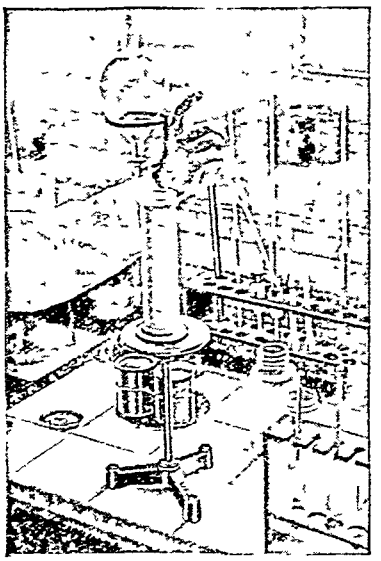
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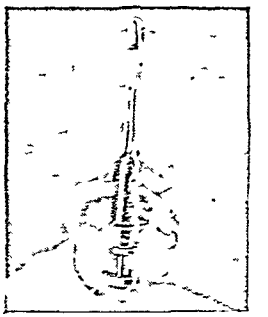
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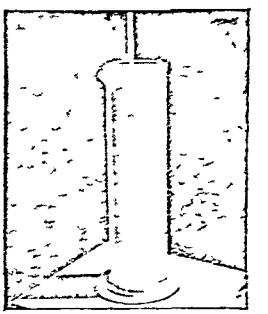
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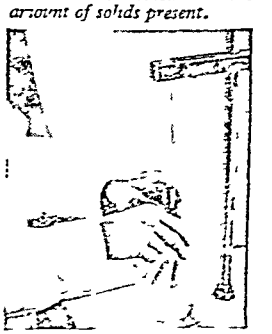
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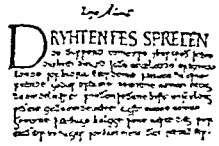
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The John B. Murphy Oration

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ON

MURPHY, AND SOME PRINCIPLES OF URINARY SURGERY*

BY

A. H. BURGESS, M.Sc., F.R.C.S., LL.D.

PROFESSOR OF CLINICAL SURGERY, VICTORIA UNIVERSITY OF MANCHESTER

We are met to commemorate a great surgeon and a great man, one who was recognized throughout the civilized world as the greatest American surgeon of his time, and one whom future generations will undoubtedly place among the greatest surgeons of all time. It seems only fitting therefore, that at the commencement of each annual clinical congress of the American College of Surgeons, in the foundation of which he took so keen an interest and played so active a part, we should recall in respectful and appreciative remembrance John Benjamin Murphy.

It was my good fortune to meet Murphy on three occasions, the last immediately before the outbreak of the war, when this congress met in London, under his presidency. Well do I recall his commanding presence, his handsome appearance, his tall and erect bearing. Any slight surprise on first hearing him speak, that nature had not endowed him also with a proportionately powerful voice, became rapidly dissipated in the beauty, the grandeur, and the consistence of the argument, and the obvious sincerity, enthusiasm, and earnestness of the speaker. Murphy undoubtedly possessed, in a superlative degree, the power of presenting facts and deductions from them in so orderly, concise, and forceful a manner as to convey the profoundest conviction. None who heard could for a moment doubt but that he himself was firmly convinced of the truth of all his statements, and that such belief was not born merely of intuition, but was founded upon prolonged observation of his facts and their careful testing by direct experiment.

It is of necessity, however, by his published writings that posterity will judge him, nor need its verdict be feared. The volumes of his *Surgical Clinics*, published bi-monthly from 1912 until his death, reveal his innermost thoughts on the most varied topics of surgical interest, and many truths are there presented in the form of aphorisms so peculiarly appropriate as to command remembrance. Besides articles in textbooks and yearbooks of general surgery Murphy published sixty-six papers in medical and surgical journals, all of them substantial additions to surgical knowledge, and many of epoch-making importance, practically everything he originated has become standard practice to-day.

In this era of increasing specialism, it seems almost incredible that, within such recent times, any single individual could have written with such intense originality and authority upon so many and such diverse branches of the surgical art. As W. J. Mayo so aptly phrases it of Murphy—"We must remember the number of targets at which he shot, and that he always rang the bell." Murphy's earlier writings were concerned mainly with abdominal surgery, and it was undoubtedly in connexion with his "button" for intestinal anastomosis that he first became prominently known outside America. Introduced only after many careful experiments upon dogs, it provided surgeons with an easier, quicker, and safer method of anastomosis than any hitherto available. Its supreme value, however, has been as an educational factor—it taught us the essential principles of union between peritoneal-clad surfaces. Though it is now the almost universal practice to dispense with any form of mechanical device in performing visceral anastomosis, yet it can be truly said that the Murphy button has been the most valuable single educative step in the history of abdominal surgery, and that without it the marvellous progress since achieved would not have been possible.

The closely allied conditions of appendicitis and peritonitis soon attracted Murphy's attention, and I cannot conceive that the essential features in their treatment could be stated more concisely or more accurately than in Murphy's masterly paper on perforative peritonitis. Though his words were written almost a quarter of a century ago, they still represent the truth, the whole truth, and nothing but the truth, in the treatment of acute peritoneal infections, a truth, moreover, which amounts to an almost complete reversal of what was previously considered orthodox. Of all Murphy's contributions to surgical progress, this recognition of the defensive and protective capabilities of the peritoneum, and the principles by which these can be aided and not hampered in their beneficent efforts, constitutes, in my opinion, his supreme achievement. Only those of us who, by length of experience, are able to contrast the results of surgery in peritonitis prior to Murphy's epochal work with those now obtained can realize what an enormous number of lives he has already been the means of saving, and what an immeasurable load of human suffering he has already prevented.

To a remarkable extent Murphy possessed the ability to sift rapidly the essential from the non-essential, and to establish broad basic principles. My predecessors in this Oration have shown how he applied these principles in certain selected spheres of his surgical activity, but only scant reference has yet been made to that of the urinary system. I propose, therefore, to consider some of the principles of urinary surgery, and Murphy's work in relation thereto.

RENAL FUNCTIONAL TESTS

One of the first of these principles, and one which Murphy continually stressed throughout his teaching, is that the state of the renal function as a whole must be thoroughly appreciated before any capital operation is performed upon the kidney or, indeed, upon any part of the urinary tract. It is essential to know beforehand, not only that there is a second kidney actually present, but also that its functional capacity is sufficiently good to carry on life should its fellow require removal. In pre-cystoscopic days it was often quite impossible to obtain this information, and disaster was not infrequent. My old chief and predecessor in the chair of surgery once confessed to me that during his thirty-five years of practice he had on three occasions removed a patient's only working kidney. Such errors, though at that time unavoidable, are quite inexcusable since the advent of the cystoscope and of the many tests of renal function. These have enabled us to measure the functional capacity of the kidneys with an accuracy that is truly remarkable, and which compares very favourably with that obtainable in any other system of the human body.

Of the many tests of renal function that have from time to time been proposed, the surgeon is concerned chiefly with those that, while trustworthy, are yet readily practicable. Of the blood tests, the estimation of the urea-nitrogen, and of the kidney elimination tests, the "urea concentration" test of MacLean, the indigo-carmine, and the phenolsulphonephthalein tests are those most in favour in England. The last is certainly the best quantitative test, but the indigo-carmine has an exceedingly high qualitative value, and is particularly useful for detecting differences in function between the two kidneys.

* The full text will be published in *Surgery, Gynecology, and Obstetrics*, the official organ of the American College of Surgeons.

Reliance should never be placed, however, on any single test, and in my wards the blood-urea, urea-concentration, and indigo-carmine tests are used as a routine in all cases.

Though the older method of pyelography, by the introduction of opaque media directly into the renal pelvis through the ureter catheter, yields valuable information of its anatomical shape, size, and situation, yet it gives no evidence of the renal function. Many workers, chiefly in America and Germany, have recently attempted to remedy this defect by introducing a shadow-casting substance into the blood stream, so that, upon excretion in the urine, radiography would reveal the outlines of the pelves and ureters. Sodium iodide in 10 per cent. solution, at first alone and later in combination with urea, uroselectan, abrodil, and uroselectan B, have been tried successively for this purpose. Researches are in progress with compounds of bromine, which are said to be safer and less costly than those of iodine, and, as there is little doubt but that in the near future preparations will be discovered still less toxic and yielding a deeper shadow, this "intravenous" or "excretion" pyelography promises to be of the greatest value to urology; it may, indeed, prove epoch-making. It has the advantage over the older or "retrograde" pyelography that it does not require ureteral catheterization, and can therefore be used where this is difficult or impossible. Moreover, it gives bilateral pyelograms, and avoids the risk, inherent in the "retrograde" method, of conveying infection in septic and tuberculous cases. It must not, however, be regarded as a substitute for, but rather as complementary to, retrograde pyelography, and where the renal function is so defective that the drug is not excreted in sufficient quantity to cast a recognizable shadow, the latter will still be required.

Renal Back Pressure

Another principle to which Murphy constantly referred, and one, moreover, applicable to systems of the body other than the urinary, is that long-standing pressure upon an organ or system should never be released suddenly, but always gradually. The evil effects of pressure are well known, and if this be brought to bear suddenly upon an organ it may lead to its actual rupture, or, short of that, to damage more or less irreparable. If, however, increasing pressure be applied slowly, so great is the adaptability of the human tissues to altered circumstances that compensatory mechanisms arise which delay its injurious effects. If sudden relief be given, there may follow such a repercussion as even to exceed in its harmful effects the original pressure, whereas gradual alleviation may lead to recovery, the completeness of which will vary inversely with the delay in its application. It can, in fact, be laid down as a general principle that the greater the pressure the more gradual should be its relief.

The best illustration of this is undoubtedly afforded in the treatment of "back pressure" upon the kidneys, such as occurs with a progressively increasing obstruction from the prostate gland. Once the prostate gland commences to impede the urinary stream, from that moment onwards the whole of the urinary tract proximal to the prostate inevitably suffers from the steadily increasing pressure. Since, however, Nature has granted us a fairly generous reserve of renal tissue over and above our actual necessities, clinical manifestations of such pressure may not be apparent until comparatively late. We then meet with the symptoms typical of chronic uraemia, and if the back pressure continues unrelieved, gradually increasing coma supervenes and heralds death.

These back-pressure effects are seen in their most extreme form in those cases of "silent" distension of the bladder, which are not infrequently associated with a small contracted fibrous prostate, or with a small "middle lobe" enlargement. Such a patient walks into your consulting room feeling perfectly well and often looking so, complaining only that he "makes too much water," which is the layman's mode of expressing frequent micturition. The bladder is found distended to the level of the umbilicus or beyond, yet without arousing in him the slightest sensation of distension; his urine, which is passed frequently and in very small quantities, is merely the "overflow" from the hugely distended bladder; it is clear, very pale, with a urea content of 0.5 per cent. or less, while his blood urea may be from 100 to 300 mg. per 100 c.cm. of blood, or even higher. He scoffs at the idea that there is anything seriously wrong with him, and yet, notwithstanding, he is on the very brink of uraemia. The immediate cause of his dangerous state is not the actual pathological condition of his prostate gland, but the back-pressure effects it has produced upon his kidneys; hence our first concern is the release of the kidneys from such back pressure rather than the removal of the prostate—that is for future consideration.

This opens up the interesting question as to what should be our main reason, as surgeons, for ever recommending a patient to undergo the operation of prostatectomy, especially if he be only in the early stages of his trouble. The patient's mind is concentrated upon the purely local effects—the difficulty and frequency of micturition—and it is the removal of what he regards rather as nuisances that reconciles him to the radical operation. The surgeon, however, advises prostatectomy for a much stronger reason—namely, as a measure designed primarily to prevent progressive destruction of the kidneys from back pressure. It cannot be too strongly emphasized that a patient with even a slight degree of prostatic obstruction cannot possibly have perfectly healthy kidneys; from the first moment of obstruction the kidneys commence to suffer; prostatic obstruction and healthy kidneys are as incompatible as are heat and cold.

If this renal back pressure be released suddenly, as by completely emptying a chronically distended bladder at one catheterization, then a characteristic sequence of events is frequently observed. The urine next passed spontaneously, or withdrawn by catheter, contains blood, the haemorrhage being of renal rather than of vesical origin. This haematuria may last for two or three days only, or it may continue to the end. The urine steadily diminishes in quantity and deteriorates in quality, the patient becomes increasingly drowsy, and all the signs of uraemia appear within about fourteen days of the first catheterization, coma and death supervening shortly afterwards. It is because of this comparatively long interval of from twelve to fifteen days between the first catheterization and the fatal issue that many practitioners fail to recognize the real causal relationship of the one to the other. I well remember an enthusiastic house-surgeon who, when I entered my wards one morning, proudly greeted me with the information that he had just withdrawn eighty ounces of urine from a case of prostatic obstruction; I recall, also, how his countenance changed from one of pleasure to one of pained and surprised incredulity when I gently hinted that he had possibly also withdrawn the man's last chance of recovery; and I was unfortunately, this proved so, since death from uraemia occurred on the fourteenth day. The risk of catheterization in chronic prostatic obstruction cannot be too strongly emphasized; it constitutes a risk considerably greater than that of many major abdominal operations and one that should never be undertaken save under appropriate physical and aseptic conditions. The plea of urgency cannot here be pleaded, as it might properly be in a case of acute prostatic obstruction, since in chronic obstruction the patient is not in any distress, and is

indeed, usually quite unaware of the distended state of his bladder.

The various methods of effecting gradual renal decompression need not be referred to in detail; the more gradually and continuously they act the greater their safety. In the most serious instances, however, and especially in those of that "silent" distension of the bladder to which I have already referred, and where instrumentation even of the slightest kind is fraught with danger, decompression should commence with medical rather than with surgical measures—rest in bed, warmth, vapour baths, milk diet, restriction of fluids, diaphoretics, and saline purges. When by these means the fundus of the bladder has been induced gradually to recede below the umbilicus, decompression may be continued with an indwelling catheter connected to the Shaw-Young or other controlling apparatus.

HAEMATURIA

Another important principle in urinary surgery is that haematuria should never be regarded lightly. While haemorrhage from other sources may not necessarily be of serious import—for example, epistaxis, bleeding from haemorrhoids—haematuria is always of weighty significance. Fortunately for the diagnosis of its cause, haematuria is usually accompanied by other symptoms of urinary disorder, which assist in its interpretation. A very interesting group is constituted by those cases where haematuria is absolutely the only symptom of which the patient complains; indeed, many of them volunteer the statement that, had they been blind, and so unable to detect the altered colour of their urine, they would never have known there was anything wrong.

Haematuria of this symptomless type may arise from diverse pathological conditions; in fact, almost any disease of the urinary tract may occasionally so first declare itself, though with most of them this is very exceptional. In 1927, I analysed 200 cases that had come under my own observation, and found that the haemorrhage was of vesical origin in 60 per cent., and of renal origin in 40 per cent. Of the whole series, 50 per cent. were due to benign and 31 per cent. to malignant neoplasm. Of the renal haematurias, 45 per cent. were from malignant neoplasm, while of the vesical haematurias, only 25 per cent. were associated with malignancy.

The term "essential" or "idiopathic" haematuria is sometimes used to indicate renal bleeding of unknown causation, but such a title merely cloaks our ignorance, and is one against which every scientific mind must revolt. Murphy was himself very sceptical of the reality of idiopathic haematuria, and stated that, in his experience, blood in the urine always indicated pathology in the genito-urinary tract. Yet in one of his clinical lectures he referred to a case in which Senator of Berlin had removed a kidney for extreme anaemia from haematuria, and which, on subsequent microscopical examination, failed to reveal any cause for the haemorrhage. The disquieting truth remains, therefore, that a kidney may take upon itself to bleed, and to bleed so furiously as to threaten death from haemorrhage and necessitate nephrectomy for its arrest, and yet subsequent careful macroscopical and microscopical examination by a skilled pathologist may fail to disclose any abnormality whatsoever. I have met with three such cases.

In symptomless haematuria it is only by cystoscopy that the source of the haemorrhage can be determined with certainty, and this should be regarded as a matter of extreme urgency, particularly if bleeding is actually occurring. Murphy constantly insisted upon this point, and yet it still happens much too often that the practitioner's first efforts are directed, not to ascertaining the source of the bleeding, but to its arrest; he puts his patient to bed and administers morphine and internal styptics. Although this course may allay the alarm which many patients not unnaturally feel at the discovery of blood in their urine, yet it may, in the long run, prove the greatest possible disservice; it is much more advisable to allow the haemorrhage to continue until arrangements can be made for a cystoscopic examination. Cystoscopy is here as urgently called for as is early laparotomy in acute abdominal crises, and if it be postponed until haemorrhage has ceased it will often fail, in renal haematuria, to indicate its source.

When, through the cystoscope, blood has been observed to escape from one ureteric orifice only, a thorough investigation must be instituted by all the urological methods to ascertain the pathological lesion in the corresponding kidney. By them positive evidence may be obtained of certain conditions—for example, calculus, neoplasm, or tuberculosis—but when their findings are entirely negative the interesting question arises whether we are to treat the bleeding expectantly, or whether we should explore the kidney operatively. Those who advocate surgical exploration do so mainly because of the fear that otherwise an early malignant neoplasm might be overlooked. Most American writers favour expectancy, but my own inclination is towards exploratory nephrotomy in these circumstances, and only when this has been undertaken with a negative result do I care to label the haemorrhage as "idiopathic" or "essential." It was by such exploratory nephrotomy that the two earliest malignant renal neoplasms I have ever operated upon were discovered, and both these patients are alive and well eight years and four years respectively after nephrectomy. Should exploratory nephrotomy fail to reveal any macroscopic lesion, a small slice of the parenchyma is removed for microscopical examination, and the kidney carefully sutured. The case is now regarded as one of "idiopathic" haematuria, and should the haemorrhage ever recur it may then be treated expectantly with the confidence that a malignant growth has not been overlooked.

EARLY SYMPTOMS: RENAL TUBERCULOSIS

One of the most characteristic features of Murphy's clinical teaching was the extreme importance he so consistently attached to an accurate account of the early history of the complaint under consideration, and especially to the order of onset of the respective symptoms and signs. Acute appendicitis affords the best example, and Murphy's description of the order of onset of the symptoms of this disease will long remain classic. In the differentiation of renal conditions, Murphy was equally insistent upon the value of the onset symptoms—in renal calculus it is pain that is to be expected, in neoplasm of the kidney it is haematuria, while in renal tuberculosis it is increased frequency of micturition.

The subject of renal tuberculosis had a profound personal interest for Murphy, for in 1883, while a post-graduate student in Vienna, he had a sharp attack of haematuria, which a Viennese professor ascribed to tuberculosis of the right kidney. The haematuria soon ceased and never recurred, nor is there any record of the tubercle bacillus ever having been found, though throughout his life he had slight transitory albuminuria after great exertion or following any special mental strain. At the necropsy upon Murphy, which he himself had requested to be made, his right kidney was found to be extremely small, with extensive cicatricial change; no giant cells were discovered microscopically, and the opinion formed was that the condition represented a chronic persistent infection due, probably, to some organism other than the tubercle bacillus. The cause of death was angina pectoris from atheroma of the coronary arteries, and this was regarded as an infection metastasis from the right kidney. His friend, Dr. W. A. Evans, has expressed the

opinion that, had the right kidney been removed in 1883, or at any time within twenty years after, this arteritis would have been prevented.

The evolution of our knowledge of urinary tuberculosis, particularly the great progress that has been made in its earlier recognition, constitutes one of the most interesting and beneficent advances in neurology that have occurred within our time. Our present-day ability to recognize the existence, and often also the extent, of tuberculous change in a kidney from the cystoscopic appearance of the corresponding ureteric orifice—and this we owe largely to the work of my fellow countryman E. Hurry Fenwick—always appeals to me as the most fascinating of the cystoscope's innumerable and priceless contributions to urology.

Murphy considered renal tuberculosis to be usually a blood-borne infection, the bacilli entering the blood, by way of the lymph stream, from a primary focus in the bronchial glands. He believed (1) that in visceral tuberculosis tubercle bacilli may be found in the urine even in the absence of a tuberculous focus in the kidney, (2) that in the great majority of early cases the disease was unilateral, and (3) that early cases could be cured by non-operative measures, prominent among which he placed the injection of tuberculin. In the fifteen years that have elapsed since Murphy's death, although considerable discussion has ranged around these same three questions, and much clinical and experimental investigation has been carried out, no general agreement has yet been reached. Many recent workers now hold (1) that "secretory bacilluria" does not exist, and that the presence of the tubercle bacillus in the urine from a kidney denotes the actual existence therein of a focus of tuberculosis, even if microscopical only; (2) that renal tuberculosis is at first a bilateral condition; and (3) that the initial renal lesions frequently heal.

Despite these divergent opinions, the surgical position of to-day does not differ materially from that of Murphy's time. Renal tuberculosis, if clinically unilateral, should be treated by nephrectomy, whereas, in clinically bilateral involvement, nephrectomy should be performed only very exceptionally, as when there is severe pain, haemorrhage, or acute sepsis in a tuberculous kidney, whose fellow is but slightly affected.

In tuberculosis of the epididymis, Murphy was a forceful advocate of the conservative operation of epididymectomy as opposed to castration. He wrote: "There is no more occasion for taking out the testis proper in the early stages of tuberculous epididymitis than there would be for taking off the caput coli if you had a case of appendicitis." The treatment Murphy recommended was the removal of the epididymis, and as much of the vas as could be reached from the groin; he never excised a seminal vesicle, and shortly before his death stated that he had never seen a case presenting clinical evidences of tuberculous involvement of a seminal vesical that did not entirely heal after epididymectomy, without further operation. These views, as is well known, are strongly opposed by H. H. Young, who, however, is at one with Murphy in protesting emphatically against the unnecessary removal of the testis, which hitherto has been so frequently practised.

PROSTATECTOMY

In his earlier work in radical prostatic surgery Murphy removed this gland by the perineal route, and in 1904 recorded fifty-one perineal prostatectomies with one death. From this time onward, however, he regarded the suprapubic route with steadily increasing favour, and shortly before his death stated that he removed all his enlarged prostates suprapubically. This gradual change of attitude towards perineal prostatectomy is typical of the majority of surgeons whose work has covered approximately the same period, and the oft-debated question as to the relative merits of perineal and suprapubic prostatectomy would appear to have been decided, for the present at any rate, in favour of the suprapubic. Nevertheless, we have in this country the world's greatest perineal prostatectomist in the person of Dr. H. H. Young—the archprotagonist of the operation itself. At the hands of the average surgeon, however, and not of a super-surgeon, perineal prostatectomy carries with it the two dangers of wound of the rectum and of defective sphincteric control, and these, combined with the greater ease of performance of the suprapubic operation, account for the present-day preference for the latter.

In recent years, the death rate of prostatectomy from its former two chief component factors—renal insufficiency and haemorrhage—has been greatly lessened, and it is infection that now constitutes its most serious risk.

One form of this infection of especial interest is post-operative epididymitis, the frequency of which has been varyingly stated as being from 20 to 39 per cent. Since in the vast majority of the cases the infection is conveyed along the vas deferens, division of the vas can be relied upon to prevent epididymitis provided it be performed before the organisms have reached the epididymis. Murphy recognized this, and wherever the history disclosed a former epididymitis, however mild, he always divided the vas bilaterally immediately prior to removing the prostate; he does not appear, however, to have adopted it as a routine procedure. Since 1922 I have divided and ligatured the vas on both sides in all my prostatectomies, and I have not met with a single case of epididymitis in 177 consecutive operations. There can be no objection to vaso-ligation from the point of view of future sterility, since, in any event, the patient after prostatectomy will almost certainly be sterile, though far from necessarily impotent. Indeed, if there be any truth in Steinach's contention that vaso-ligation leads to "rejuvenescence," then the patient gains this additional benefit.

CONCLUSION

The time allotted to me will not permit of reference to the many other interesting features of Murphy's work in urology, but I trust that enough has been said to indicate that, as in other fields to which your previous Orators have drawn attention, so in this field of urinary surgery Murphy held a foremost place, and was, in many respects, a pioneer.

SHOCK FOLLOWING BLOOD EXTRAVASATION

WITH SPECIAL REFERENCE TO THE TREATMENT OF ACCIDENTAL HAEMORRHAGE*

BY

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In April, 1931, at the eighth International Congress of Obstetrics and Gynaecology in Glasgow, I brought forward twenty-eight cases of albuminuria which were observed to appear as a result of absorption from recent localized blood extravasations.

In all the material considered some degree of shock was present, and it was evident that the severity of the shock which could be induced by reabsorption from a blood effusion depended on the facility of reabsorption rather than on the quantity of blood which was extravasated. As an example of this, there was one case in which the total quantity of blood extravasated

* Paper read in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, July, 1931.

approximately three-quarters of a pint. There was no previous loss in this case, and before the blood effusion the blood pressure was 126 mm. Hg. One and a half hours after the rupture of a tubal pregnancy and extravasation of the three-quarters of a pint of blood the blood pressure had fallen to 68 mm. Hg. There was a fast feeble pulse, subnormal temperature, pallor, sweating and restlessness. From the time of removal of this small extravasation the blood pressure rose steadily, and in six hours had reached 100 mm. Hg.

Still more interesting was the marked shock and blood-pressure collapse which followed the formation of a small effusion in the perineum, due to the tearing of a blood vessel at the time of delivery. In this woman the blood pressure fell from 115 to 90 mm. Hg in the course of half an hour. Symptoms and signs of shock were well marked, and the removal of about 2 oz. of effused blood immediately restored the blood pressure and the general condition.

Other instances have been noted in which a similar sequence of events followed blood effusion, and made it evident not only that severe shock was induced by reabsorption from blood effusions of small size, but that the clinical condition could be accurately estimated by blood-pressure readings.

The points which I wish to bring before you to-day are the intimate relationship between certain blood extravasations and the subsequent urinary and blood-pressure disturbances, and the fact that these, taken in conjunction with clinical phenomena, constitute obstetric shock. I wish also to illustrate the effects of, and to attempt to impress the necessary indications for, the various means of active treatment of shock.

TECHNIQUE OF OBSERVATIONS

The following points were investigated from the time the patient first came under observation: two-hourly records of systolic blood pressure, pulse rate, and temperature; estimation of the volume of urine and its albumin content (specimens were taken four-hourly as a routine, in some instances two-hourly by catheterization); full notes on the clinical condition and the effects of treatment on blood pressure and urinary phenomena.

From the material under consideration it appears very definitely that shock is produced by reabsorption from altered blood effusion, and that the first symptom in the onset of shock is a fall in blood pressure. Almost simultaneously with the fall in blood pressure the pulse rate becomes slower, the diminution in its volume not being appreciable save with the aid of a sphygmomanometer. This initial fall in blood pressure may be approximately 10 to 15 mm. Hg, but varies in individual cases.

Coincident with the further fall in blood pressure there is an increase in the pulse rate to between 100 and 120, with further loss of its volume. Sweating, pallor, flaccidity of muscles, with restlessness, coldness, vomiting, and a sense of faintness, overcome the patient. This change may be expected when the blood pressure reaches the 100 mm. Hg level, and the symptoms become more urgent as the blood pressure falls.

In the event of the blood pressure remaining at a low level, or falling still further, the anoxaemia and sluggish renal circulation become more marked. Figures in such examples show diminution in the urinary output with increasing albumin content. From the foregoing remarks, it is evident that should this fall in blood pressure continue, finally there would be no urinary secretion, and the last few drops found per catheter would boil solid. Such has been the case in several recorded instances, and the opposite phenomena are noted when recovery of the blood pressure takes place.

In women in whom the blood pressure reached 40 to 60 mm. Hg, shock was very marked, but in one case recovery occurred even after no reading could be obtained. From this it may be pointed out that recovery can be hoped for, with appropriate treatment, even in the most severe degrees of shock. In the fatal cases which were recorded the blood pressure showed a persistent downward course, and the cause of the shock was found only at post-mortem examination in the form of retroperitoneal and subserous effusions whose volume varied from 2 to 8 oz. If these extravasations had been removed at a safe stage of shock, the patients would almost certainly have recovered.

Professor Tweedy first described the condition which he named "haemorrhagic shock" in 1918. He stated that this was probably due to reabsorption of some toxic product evolved from clotting blood being in contact with fresh blood. This state of affairs would allow very free reabsorption, as it infers that the vessels are still open and capable of reabsorbing any toxic products. He also maintained that relaxation of all smooth muscle was a constant feature of severe shock.

This has been very fully verified in the numerous examples of blood-pressure collapse which I am able to place on record in connexion with blood reabsorption subsequent to extravasation. We may therefore take it as an established fact that the most definite information as to the exact condition of the patient and the state of her smooth muscles is to be determined by blood-pressure observation.

EFFECTS OF VARIOUS TREATMENTS ON SHOCK

I wish now to consider the effects of various treatments on the condition of shock. The routine pre-operative treatment in all the instances which I noted while in the Rotunda Hospital may be summarized as follows:

1. Warmth and elevation of the end of the bed.
2. Hot drinks, rectal coffee salines with brandy.
3. Submammary and intravenous salines.
4. Hypodermically; ether, brandy, camphor in oil, pituitrin, ephedrine, and morphine.

In reviewing these procedures it should be remembered that they are used in conjunction with each other, and their effects are best judged by the response which is obtained in blood-pressure elevation. The most important elements in this treatment appeared to be warmth, fluids, morphine, pituitrin, and ephedrine. The last produces an elevation of 15 to 20 mm. Hg, and its effect is sustained for at least half an hour. In this respect it is far more potent than pitpressin, pituitrin, or adrenaline.

Of even greater importance than the prevention of increased extravasation are the removal of already extravasated blood and the prevention of its reabsorption. All these principles are well illustrated by the methods adopted in the Rotunda Hospital for the treatment of accidental haemorrhage. Here it must be emphasized that the cases included are only those which would have produced severe constitutional symptoms had they not been subjected to immediate prophylactic treatment.

On the appearance of the initial symptoms restorative treatment is adopted to combat the shock. This may vary from merely applying warmth to the more energetic routine, such as morphine, ephedrine, salines, etc. The value of submammary salines in this connexion cannot be overestimated. The salines administered are either sodium bicarbonate or sodium chloride, in the strength of 1 drachm to the pint; glucose 5 to 10 per cent. may be added in saline.

The infusion is given with a tube and funnel, to which are attached two large infusion needles. When the saline is flowing, these needles are plunged into the connective

tissue between the gland and the pectoral muscles parallel to the chest wall, the funnel being held 1 to 2 feet above the patient's head. The correct surface marking is known by the fold between the uplifted breast and the chest wall. Full aseptic precautions are very necessary, and it is also most important to administer the right amount of saline at the correct temperature. It should be poured into the funnel at 115° F. so that it will reach the body at 100°. Too co'd infusion adds to shock, and sloughing of the breast has followed too hot salines, or excessive quantity. A fair average is one pint under each breast, and this may be repeated every two to four hours, if necessary.

This combined prophylactic treatment will deal with the shock and produce a rise of 10 to 15 mm. Hg. It is therefore of great value, but will not in itself prevent blood flow or reabsorption. In a number of cases labour follows the partial restoration of the patient, and accidental haemorrhage, accompanied by labour, is rarely a serious condition. Even though the labour has started, rupture of the membranes should not be neglected, as it will expedite labour and prevent blood flow with further reabsorption by causing contraction and retraction with c'osure of the open sinuses. In the event of labour not starting in spite of the restorative methods for raising the blood pressure, the membranes must be punctured, a tight binder applied, and 1/4 c.cm. of pituitrin given at half-hourly intervals until 1 c.cm. is administered. This will cause partial emptying of the uterus, with consequent retraction of the muscle fibres and partial or complete closure of the sinuses.

In the more serious type of cases in which symptoms grow progressively worse in spite of the already mentioned treatment, other procedures must be adopted. Here the blood pressure is in the neighbourhood of 80 mm. Hg; pallor, restlessness, faintness, and sweating are more marked. In these cases there is a continuance of the outflow of blood and its reabsorption. In these circumstances, Sir William Smyly strongly advocated plugging of the vagina by the use of numerous pledgets of cotton-wool squeezed out of lysol solution. He asserted that by this means labour pains were promoted and the os opened. In the same connexion Tweedy claimed that the plugs exerted direct pressure on the uterine vessels.

In later years this treatment has not been so enthusiastically advocated, for the reason that it undoubtedly increases shock. Its supporters, while admitting this to be true, maintain that it hinders, if not altogether stops, the fresh outflow of blood. It is probable that the prejudice against plugging has arisen from the fact that it has been employed in cases where the blood pressure has been in the neighbourhood of 60 to 80 mm. Hg; the additional shock due to this operation has reduced it to a still lower and more dangerous level. In addition, plugging does not remove the cause of the shock, but only prevents further loss taking place. In such low degrees of blood pressure, plugging the vagina should not be considered, as rapid emptying of the uterus by Caesarean section offers the best chances of success.

In the past, much misgiving has arisen in connexion with Caesarean section, for it was considered that in the presence of an atonic uterus the dangers of post-partum haemorrhage would be great. In practice this is not so, as the muscle, though flabby, will rapidly retract on emptying the uterus, with control of the bleeding. This has been the universal experience in the Rotunda Hospital, where the operation was first performed for this condition, and is still adopted with success by the present Master, Dr. Bethel Solomons. There is no doubt as to the claims which have been made on its behalf, and when performed rapidly under ether or gas-oxygen the ensuing shock is small and the recovery rapid.

On the other hand, the statistical report on the operation of Caesarean hysterectomy is very high, probably 50 per cent., under similar conditions. It must therefore be rightly considered an unjustifiable operation.

It must never be forgotten that very severe haemorrhage can occur from rupture of a blood vessel other than in the uterine wall, and extravasations occur into the abdominal cavity as well as into the broad ligaments. This complication can only be dealt with by abdominal section.

It has already been pointed out that it was not in accidental haemorrhage alone that shock was found to develop subsequent to blood extravasations. In such conditions as haematoma of the vulva, ruptured tubal pregnancy, my experience was that shock occurred in a similar manner, and that the degree of shock appeared to depend on the facility of reabsorption rather than on the quantity of blood extravasated.

It must not for one moment be concluded that every case of blood effusion will cause shock; it is only a certain percentage which will develop these phenomena. It is best seen when oozing takes place over a clot, as in this instance the clot mechanically keeps the vessels open and readily allows reabsorption to take place.

CASES ILLUSTRATING SHOCK SUBSEQUENT TO BLOOD EFFUSION

M. C. (1) was first seen with uterine bleeding and blood pressure of 116 mm. Hg at 5 p.m. The bleeding was of no consequence, but, nevertheless, at 7 p.m. she was in marked shock with pallor, sweating, pulse 120, and a blood pressure of 63 mm. Hg. The uterus had been the size of an average six weeks' pregnancy, but was now ballooned out by the detached ovum and about 4 to 6 oz. of blood clot. The uterine contents were emptied, and a hot intrauterine douche given. The blood pressure and urinary output recovered almost immediately, and within two hours the patient could be clinically considered normal.

M. R. suffered from concealed accidental haemorrhage. In spite of all prophylactic treatment, puncture of membranes etc., the shock persisted, and it was thought the patient would die with any manipulation. When the blood pressure was at 85 mm. Hg, the pulse was almost imperceptible at 120; pallor, faintness, coldness, sweating, and anxiety were very marked. The condition was too critical to temporize by plugging the vagina, and death would have followed any further conservative treatment. As a desperate resort classical Caesarean section was performed with rapid removal of the foetus, placenta, and about three-quarters of a pint of blood clot. The uterus retracted perfectly, though pains were absent, and the blood pressure rose rapidly from the time of emptying the uterus.

In contrast to the cases mentioned, in one of which recovery followed from an apparently hopeless condition, I would like to quote the example

M. C. (2). The blood pressure readings in this case of concealed toxaemic haemorrhage are particularly interesting. At the onset the prophylactic treatment caused an increase in blood pressure from 136 to 152 mm. Hg. Shock was present in moderate degree, and delivery took place spontaneously at this level. There was no post-partum haemorrhage, but in spite of all prophylactic treatment there was a persistent fall in blood pressure. Shock increased, the blood pressure fell to 48 mm. Hg, and the pulse became imperceptible at 140 to 150. At this stage the woman was quite unconscious. The last reading obtained was: blood pressure 44 mm. Hg, pulse 148; half an hour later death occurred. The series of events took place in the nine hours following delivery. A post-mortem revealed the cause of the progressive shock and only treatment that could have saved this woman would have been the timely removal by laparotomy of the 6 to 8 oz. volume, partially clotted, retroperitoneal effusion in the neighbourhood of the right kidney.

M. K. was another example of persistent fall of pressure after a spontaneous delivery. No loss of blood but coldness, pallor, sweating, and faintness with a pressure of 65, and pulse 132, were present three hours

delivery, in spite of prophylactic treatment. The last readings were blood pressure 50, and pulse 156, the patient being restless, cold, and unconscious, with marked air hunger. Post-mortem examination revealed localized haemorrhagic infiltrations through the lower segment of the uterus, the total volume being 4 to 6 oz. Haematomata were present under the peritoneum, and on the interior of the uterus, over this extravasation.

CONCLUSIONS

In conclusion, there are several points which I wish to emphasize.

As already stated, shock can follow blood extravasation, but this is not inevitable. The necessity for reabsorption was pointed out by Tweedy when he stated that shock would occur when fresh blood came in contact with blood already effused into the tissues.

The first step in the production of shock is a fall in blood pressure, and accordingly as the blood pressure falls to lower levels pulse rate and urinary changes become evident.

A persistently falling blood pressure, in spite of prophylactic treatment, is of very serious import, and efforts should be made in the presence of such readings to localize and remove the blood effusion.

Prophylactic treatment is of the utmost importance, especially the several points already detailed. By its use otherwise inoperable cases will be rendered safe for operation.

In the event of labour not starting after puncture of the membranes, etc., plugging the vagina should be performed without delay, provided that the blood pressure is approximately 80 mm. Hg. Below this level, unless marked improvement in the patient is soon noted, classical Caesarean section should be performed.

I am deeply grateful to the Master of the Rotunda Hospital, who was at all times most anxious to allow the large amount of clinical material under his care to be at the disposal of his assistant.

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THE NASAL ELEMENT IN SPASMODIC ASTHMA*

BY

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I am convinced that many cases of spasmodic asthma are cured or greatly improved by appropriate intranasal treatment of such abnormalities as may be present. At the same time it must be admitted that some cases are not so benefited.

In many cases of asthma there are nasal abnormalities calling unmistakably for treatment, but similar abnormalities may exist without asthma; while, further, cases of asthma occur in which there are no apparent nasal abnormalities. It follows that whatever importance may be attributable to nasal abnormalities in the production of the asthmatic reflex, there must be some other condition in greater or lesser proportion. It may therefore be asked what the other condition may be, and I think it will be generally accepted that it is something which heightens the sensibility of the vago-accessory centre in the medulla oblongata, producing a condition recognized, with some reservation, as vagotonia.

Dr. Langdon Brown,[1] in his presidential address to the Section of Therapeutics, classifies *the possible excitants* as psychical stimuli, foreign proteins, and peripheral stimuli. It is in the last group that nasal irritation finds itself, along with eyestrain, hay fever and other nasal troubles, sinus infections, gastric and intestinal disturbances, and uterine disorders. The centre may receive sensory stimuli through the sensory divisions of the fifth and those of the tenth nerve. Through the former are conveyed the stimuli aroused by nasal disorders, and through the latter those from the bronchi, the stomach, and other internal organs, derangements of any of which may excite the asthmatic spasm.

In regard to *the psychical element*, we all know of the instance of spasm excited by the presence of an artificial rose, which is only a special case of the effect of expectation so strongly emphasized by Hurst.[2] The existence of a cortical centre for expiration has been proved by the experiments of Horsley and Semon,[3] and there should therefore be no difficulty in explaining the psychical influence which may determine the asthmatic explosion. This centre is closely associated with that for the adduction of the vocal cords and production of voice. In one of my cases in which there was a strong desire to awaken the sympathy of a couple of indulgent parents, and to keep a husband in a state of anxiety, each expiration was accompanied by a vocal sound which was to a great extent voluntary.

Relative hypersensitiveness may be caused indirectly by the removal of cerebral cortical inhibition, and may be supposed to occur in Dixon's experiments, but, as he says, it is doubtful whether it has any significance in the case of the dog. Direct facilitation by a too excitable cortex may produce the same effect, as also may a want of "balance" from defective endocrine action on the sympathetic.

A most important cause of vagotonia is *the anaphylactic action of foreign proteins* producing undue irritability of the vagal centre. Admitting this to be a frequent factor in the asthmatic condition, it is unlikely that it is the only one or an inevitable one. This part of the subject has been thoroughly dealt with by Coke[4] in his exhaustive work on asthma. It appears that only 50 per cent. of cases of asthma answer positively to the skin tests for special sensitization. Drs. Knott and Oriel[5] say that they are not of any clinical value, and Hurst[6] states definitely that except for food proteins in children and also for pollens, they are unsatisfactory. Dr. Adam,[7] in his masterly treatise, holds that overfeeding, especially with farinaceous food, is mainly responsible for the disease we are considering, and treatment founded on this hypothesis appears to be eminently successful. Its importance as a cause is indisputable, both as an excitant of a general toxaemia and a peripheral stimulus through the sensory gastric branches of the vagus. McDonagh[8] says, "Prevent and get rid of familial chronic intestinal intoxication and there would be no asthma." The need for appropriate nasal treatment is at the same time stressed by Adam[9] and by Coke.[10]

While admitting these possibilities, I think there is every reason to attribute a very large share in the

* Read in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

production of asthma to the *peripheral stimulation exercised by nasal abnormalities*, as shown by (*a*) the frequency of nasal pathological conditions, (*b*) improvement after their removal, (*c*) recrudescence after their return, (*d*) disappearance of sensitiveness to special irritants after operation, and (*e*) the experiments of Dixon, Brodie, and Ransom.

With regard (*a*) to the *frequency of the presence of nasal disease in cases of asthma* in general, it must be very considerable, as shown by the investigation of 107 cases.[14] In 68 there were nasal changes so well marked as to call for or at least justify operation, in 31 changes so slight that operation was not indicated, in 1 uncertain, and in 7 no nasal abnormality. These seem very high figures, but they were arrived at with every effort made to steer between over-enthusiasm in finding indications for intranasal interference and over-anxiety to avoid operation in which no benefit was likely to result. Making every reasonable allowance for rhinological enthusiasm the proportion is, nevertheless, a high one, and far beyond what simple coincidence would account for. The conditions usually offering themselves to inspection are: abnormally large size of one or other middle turbinated body, hypertrophy of the anterior lip of the hiatus semilunaris, deflection of the septum, especially of its upper part, polypoid outgrowths or typical polypi, suppuration in the antrum or other sinuses.

(*b*) The *disappearance or mitigation of the asthmatic paroxysm after the removal of nasal disease* is now a frequent observation. In a comparatively unselected lot of 120 cases reported with the nearest possible approach to accuracy, there were 33 cases of practical cure and 67 of improvement. Gratifying as these results might be considered, they seemed to me less favourable than my observations of the striking results in individual cases led me to expect. I therefore investigated a consecutive series of seventeen non-hospital cases. Two of them were subjects of neurotic dyspnoea (which recovered), and in the remaining 15 (genuinely asthmatic) the results were: recovery in 9; great improvement in 3, considerable relief in 1; and results unobtainable in 2.

That such a high proportion of good results should be possible in a consecutive series of cases is a strong evidence of the value of intranasal treatment in cases which are as appropriate for it as these happened to be. The particulars were published in the *Practitioner* for December, 1927.

The results of a consecutive series of *cases of asthma in children* persisting even after the removal of tonsils and adenoids are equally striking; it is very rare in such cases to fail to find enlargement of the middle turbinal on one or both sides to a degree which would arrest the attention of even the most sceptical. Out of 18 consecutive cases at Brompton Hospital the results were as follows: complete relief, 14; attacks fewer and less severe, 1, temporary relief (recrudescence after bronchitis and pleurisy), 1; relief (attacks less severe, nose still requiring treatment), 1; no improvement, 1. When this last patient, who had received no benefit, presented herself recently, she was quite free from asthmatic attacks. Short notes of these cases appeared in the [illegible] for February 28th, 1931, p. 468.

[illegible] has been [illegible] *recrudescence of the asthma* after the recurrence of the nasal disease affords further evidence of where the [illegible] and is still us between the two conditions.

Dr Bethel [illegible] *disappearance of sensitiveness to specific irritants* which have [illegible]ly be anticipated as a result of nasal treatment rapidly under[illegible]s a noticeable feature in one of my cases, small and the [illegible] in whom the presence of a cat induced asthma and who, after nasal treatment, was free from asthma and was able to pet a cat without any discomfort. Another boy, who reacted to cake and nuts, could, after operation, indulge in both without inconvenience. Other observers have reported similar occurrences.

(*c*) The *experiments of Dixon*,[11 12] *Brodie*,[11] *and Ransom*[13] demonstrate beyond question the presence of asthmogenic areas in the nose, especially the upper and back part of the septum. Irritation of this region in decerebrated animals produced contraction of the bronchioles, the action failing when the vagus was cut, but returning when the lower part of the cut nerve was stimulated. The nasal disturbance is therefore, *a priori*, a pre-eminent, even if not the only exciting cause of the asthmatic attack.

It has been suggested that it is not the contraction of the bronchial muscle, but a vasomotor dilatation of the vessels that produces the obstruction. This can only form a comparatively small element, as the bronchial mucous membrane is extremely thin and devoid of anything comparable to the erectile or cavernous tissue which produces the nasal obstruction in vasomotor rhinitis.

A remarkable illustration of the effect of nasal stimulation is the contraction of the lungs in the turtle when the posterior nares are rubbed, as observed by Drs Carlson and Luckhardt on the authority of Dr. Mount[15] of the Mayo Institute.

While insisting on the importance of the nasal element, and recognizing that of the other factors, I suggest that our *treatment* should be regulated according to the proportion in which each is found. Thus, if, say, the anaphylactic element is very obvious and the nasal one only slight, our attention should be mainly directed towards the former, but if, as in the majority of the cases that come before me, the nasal element is unmistakable, this should be dealt with discreetly without neglecting the other factors. This is well illustrated by the case of a distinguished actress, referred to me by my late friend Dr. Perkins, in whom the removal of the anterior portion of the left middle turbinal, with a small polypus attached, was followed by a complete and lasting disappearance of her distressing asthma. In this case the nasal factor preponderated over every other. In the case of an elderly lady, a long sufferer from asthma, I found on one side a much enlarged middle turbinal, and on the other a hypertrophic anterior lip of the hiatus semilunaris. I removed both, and heard no more of the patient till I wrote a year later, and learned from her medical attendant that her asthma had disappeared, her health had greatly improved, and her doctor's bill had diminished by 80 per cent.

As my judicially minded friend Dr. McBride went the length of saying in a discussion on asthma in the London Laryngological Society in 1899:

> "In some asthmatics nasal treatment is [illegible] and even desirable, where the conditions are such [illegible] on other grounds operative measures would certainly [illegible] be indicated."

The operation most often called for is the [illegible] of the anterior part of the middle turbinal by [illegible] a snare, after making a snip in the neck of the [illegible] with a Grunwald's punch or, as preferred by Mr Orr, a Struycken's shear. Occasionally, it is an [illegible] anterior lip of hiatus semilunaris which [illegible] removed. This is best shaved off by means of [illegible] probe-pointed bistoury, the detachment of the [illegible] being completed with a snare. Sometimes [illegible] turned punch forceps has to be used to remove [illegible] or projecting residuum. The object to be kept in [illegible] to clear the pathological tissue away from [illegible] the septum with as little removal as possible, [illegible]

may often be best achieved by submucous resection of a deflected portion of the septum itself, most usually in the upper part.

From the above considerations, it is obvious that asthma depends on many diseased conditions, and is in a way rather a symptom than a disease in itself. This may not afford much immediate consolation to the sufferer, but it indicates to the practitioner that it must be analysed and attacked from various sides. If on one side there is failure, an attack may be hopefully made on another, *if undue delay is avoided*. On the strength of the results I have produced, I urge writers on asthma in our textbooks of medicine to place among their foremost instructions that *the nasal condition should be thoroughly investigated and judiciously dealt with.*

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A SURVEY OF PROBABLE PROGNOSTIC FACTORS IN THE TREATMENT OF GENERAL PARALYSIS *

BY

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Most of the data on which this paper is based have been obtained from observations made on some 700 to 800 patients who, while under certificate in the London County Council mental hospitals, received malaria, relapsing fever, sapro-vitan, sulfosin, or tryparsamide, or a combination of any of them, together with subsidiary treatment by novarsenobenzene and the like.

SEX OF THE PATIENT

The first factor I wish to comment upon is that of sex. As is well known from the work of Moore, Solomon, and others, the incidence of neurosyphilis in the female is only one-third of that found in the male, although the nervous systems of both, as shown by the relative percentages of spinal fluid abnormalities, are invaded with equal frequency in the early stages of syphilis. This difference is even greater in women who have had one or more pregnancies, and the greater the number of pregnancies the lower the incidence of neurosyphilis. Such being the case it is of some interest to consider if this increased immunity of parous women to the *Spironema pallidum* is helped or enhanced by pyretic treatment. An analysis of the female paretics treated in the London County hospitals reveals the fact that 28 per cent. were nulliparous, 22 per cent. had had a single pregnancy, and the remaining 50 per cent. had had two or more. The discharge rate of these women as a whole was 31 per cent., but the nulliparae only gave a 19.2 per cent. discharge rate, in contrast to a rate of 47.6 per cent. in primiparae and 30 per cent. in multiparae. That is, pregnancy bettered the discharge rate in the ratio of 1 to 2.5 in single pregnancies and in 1 to 1.6 in multiple pregnancies, or, in round figures, pregnancy doubles the chances of a successful remission. In a similar ratio it also increased their chances of improving sufficiently to become useful workers under supervision, although the mortality percentage did not show any marked variation between the three groups.

AGE

Taking age as the next factor, one finds most observers of the opinion that, with the exception of juvenile paretics, the younger the patient the better the prognosis. In a restricted sense this is true, but when dealing with certifiable mental disease one is usually satisfied if the patient reaches a state of remission good enough to justify his discharge from hospital and sufficiently prolonged to allow of his remaining out indefinitely. In general paralysis it is even satisfactory if the patient has a cessation of seizures, a freedom from contractures, and does not become bed-ridden. If the first-mentioned state is accepted, age is not of such paramount importance, for some patients as old as 56 years remit after treatment and have been discharged, while others over 60 years of age definitely improve and become useful institutional workers. I am purposely rather over-emphasizing the probability of improvement occurring after treatment in elderly paretics to counter a policy of *laissez-faire* towards these patients, which is advocated by some authorities. On the other hand, if an approximate return to normality is demanded, then undoubtedly the younger paretic makes the better citizen. In the cases under consideration the discharged patient who was able to resume his or her occupation to the full, and who only revealed mental abnormalities following an exhaustive mental examination undertaken months or years after treatment, had an average age of 37 years, in contrast to the average age of 46 years of discharged patients who, although they could not be justifiably detained in hospital, still required a certain amount of control and guidance by relatives, and in whom deviation from mental normality was easily detectable. Expressed differently, 71 per cent. of the discharged patients who could be regarded as being economically satisfactory were under 40 years of age. This age factor, however, is of little value in assessing the chances of life of a treated paretic, for in this collection of cases the highest relative death rate was found in patients between the comparatively early ages of 36 to 40 years.

TYPE OF CASE

When reviewing the literature which deals with the relative prognosis of the various so-called types of dementia paralytica, one is confused at the lack of uniformity in the findings, and inclined to be sceptical of type as any aid to prognosis. One could easily understand such differences occurring if it were the relative incidence of the types that varied, for national characteristics and temperaments differ in the normal. The discrepancies occur, however, in the relative results of type as compared with type, inclining one to presuppose that there are certain sets of conditions which vary from community to community, thereby affecting the type result of treatment in different centres. As far as this group of cases is concerned, this supposition cannot be substantiated, for between the types there was little variation in such ascertainable conditions as the average age (excluding, of course, juvenile paretics), the age at which infection occurred or its treatment, the incubation period of the neurosyphilis, or the standard of education and the occupation of the patient. True, women were more prone to be of the manic-depressive types, but not more so than the usual tendency of women to develop a manic-depressive psychosis more frequently than the male. It is a fact, however, that different types do vary in their response to treatment. In this country the expansive grandiose paretic is still the commonest, and at the same time gives the greatest relative

* Paper read in the Section of Neurology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

discharge rate, very closely followed by patients of the manic type. At the other extreme must be placed juvenile and depressed cases. The latter only remit well enough to be discharged with about one-third the frequency of expansive cases, while "stuporose," "simple dementing," and "tabo-paretic" types, which each give very much the same discharge percentage, only do so one-half as frequently as expansive cases. On combining the percentages of discharged and improved patients, one finds that the total is over 50 per cent. in the expansive and manic types, compared with 22 per cent. only in depressed cases. The latter type also gives the highest mortality percentage—nearly three times that of the manic, which of all types seems to have the greatest resistance to both the *Spironema pallidum* and the rigour of the treatment.

REMARKS ON TREATMENT

As is to be expected, there is a definite tendency for early treatment—that is, two to five months after the first manifestation of general paralysis—to give better results, since not only is the discharge rate higher in the earlier months, but the unimproved cases tend to increase proportionately as time elapses, such a tendency being even more marked in the mortality percentages.

It is still a subject for conjecture when dealing with a disease of which the general public is so fully aware and in which, in the large majority of cases, the primary lesion is so easily observable, how infrequently one is able to obtain any history of its occurrence or treatment. It is almost as remarkable that patients who are able to give such a history remit well enough to be discharged twice as often as the others. One doubts whether this is entirely due to the primary treatment, for there is less than a 5 per cent. difference in the results obtained from cases treated with the organic arsenicals alone, or mercury and iodides only. What I have previously termed the incubation period of neurosyphilis—the length of time elapsing from the primary infection up to the development of the first symptoms of general paralysis—averaged in this collection of cases ten to fourteen years, with extremes of two and forty-three years, and, apart from a slightly greater tendency in patients who develop the disease early—that is, from two to six years after the chancre—to remain unimproved, there was no relationship between incubation period and result. Similarly, the quantitative pathological findings in the serum and cerebro-spinal fluids show no relationship to the result. Two points are worthy of comment here. The first is the increased frequency with which one is encountering patients who have a negative serum Wassermann reaction and positive spinal fluid findings, so much so that one is almost inclined to suggest that lumbar puncture should be routine in all new cases admitted to a mental hospital. The second is the ability of both the macro- and the micro-Meinicke reactions to pick out partially treated cases of neurosyphilis when the Wassermann reaction gives a negative result.

Among the factors making for success in the treatment of general paralysis is a short course of tryparsamide before the induction of the pyrexia. This tends to lessen the activity of the cortical spirochaetosis, and allows the patient to rehabilitate his or her general condition and partially eliminate the causes of the toxic disturbances so commonly found in these cases on admission, thus better fitting them to withstand the exhaustion of the fever. The evidence of such improvement is to be found in the increased weight, diminution in the severity of the tremors, and improvement in muscular co-ordination.

Malaria is still our most successful pyretic agent, for, excepting sulfosin and allied sulphur preparations, the introduction of which is of too recent a date for a correct assessment of their value to be made, the other agents are uncertain in their ability to produce any reaction in the organism or, having become effective, are uncontrollable in their course. From a review of this group of cases it appears that one should aim at the production of ten or more pyrexial peaks of 103° or over, while there is some evidence to support the belief that up to an optimum the longer the fever the greater the immunity response. Unfortunately, malaria *per se* has a recognizable mortality rate, but this, as is recommended by the Ministry of Health workers, Horton Mental Hospital, can be controlled to a large extent by the daily enumeration of the number of parasites and the temporary cessation of the fever with small doses of quinine whenever the count gives a higher number than 25 per field.

Again, if the malaria is followed up with novarsenobenzene or sulfarsenol, one may expect a result better by over 10 per cent. than if the treatment consists of malaria alone, while further factors in the continued remission of discharged patients are periodic clinical and serological examinations, accompanied by further treatment with tryparsamide whenever mental or neurological abnormalities present themselves or if the spinal fluid findings show tardiness in reverting to the normal.

SUMMARY

To recapitulate briefly: pregnancy doubles the chances of remission; patients below the age of 40 years make the most economically satisfactory remission, although this should not prevent every patient whose physical state will stand it from receiving treatment quite irrespective of age. In this country expansive and manic paretics give the best prognosis, while depressed and juvenile cases do not respond very satisfactorily to treatment. The ability to remember the primary infection and its treatment is of prognostic value, although neither the length of time elapsing before the onset of neurosyphilis nor the pathological findings are of any value in this respect. Treatment must be thorough, and should be supported by a subsidiary course of organic arsenic after the fever.

TREATMENT OF TRUE RHEUMATOID ARTHRITIS BY BLOOD TRANSFUSION AND INSULIN*

BY

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The treatment of true rheumatoid arthritis by orthodox methods yields, on the whole, disappointing results, even when the condition is in an early stage. In this respect it is unlike the other types of arthritis in which the results of proper treatment appear to be in direct relation to the period of the disease at which such treatment is commenced. The treatment here described has been evolved during the last three years, and is an attempt to improve the condition of these patients physiologically by increasing their blood resistance and body weight, since it is assumed that these two factors are the key to the rapid downhill course which is usually observed in these cases.

DEFINITION AND ETIOLOGY

The term "rheumatoid arthritis" is generally used loosely. For the purposes of this paper I refer only to the condition which occurs almost exclusively in

* Based on part of a paper read to the East Suffolk Division of the British Medical Association. Received for publication September 11th, 1931.

young women in the child-bearing period, and which is characterized by lassitude, pallor, loss of weight, and often dyspepsia. The condition commences insidiously, but often runs its course in one or two years, leaving the patient a cripple, the residual ankylosis generally being of a bony nature. The initial lesion appears generally to be a symmetrical, bilateral wasting of the small muscles of the hands, followed shortly by a peri-articular swelling of the mid-phalangeal joints, generally, it seems, of the middle or ring fingers. The metacarpo-phalangeal joints rapidly suffer in similar fashion, as do the wrists, elbows, and feet, if the condition is neglected. As Ray[1] points out, one of the chief characteristics of the established condition is the wasting and atrophy of the skin, muscle, and bone. The skin has a glossy white appearance, and is very transparent. Certain muscle groups tend to waste selectively, particularly extensor groups, and this produces the deformities typical of the condition; the *x* rays show a marked decalcification of the bones, with little other change; the blood nearly always shows a secondary anaemia, while an enlargement of the main lymphatic glands is not unusual.

With regard to the etiology of the condition, very little can be stated with certainty. A toxic focus is generally assumed, but can be located comparatively rarely, while, if such a focus be found, the results of its removal are apt to prove disappointing.

The sex incidence, the age period (which is prior to dental sepsis in most cases), the menstrual disturbances, the symmetry of the lesions, and the intermissions which often occur in its course, are somewhat suggestive of an endocrine disturbance, while the undoubted psychic element which is often present at the onset points in the same direction.

Recently it has been suggested that this condition may have to be classed, in the future, among the "deficiency" diseases.

THEORY OF TREATMENT

If the theory be held that a toxic focus is responsible for the manifestations of rheumatoid arthritis, but at the same time no such focus can be found for removal, the physiological method of dealing with such a case is to increase the antitoxic power of the blood. This is the rationale of vaccine treatment, but this treatment has proved insufficient by itself to deal adequately with these cases, in the experience of most people. The indication would therefore appear to be for an immuno-transfusion, in which the donor is immunized with a specific vaccine prior to giving his blood. This method has been used with some success by Willcox and Dyson in one (unpublished) instance, but in the majority of cases this method would appear to be too cumbersome, in view of the uncertainty with regard to the specific nature of most organisms which might be cultured from the patient, and the necessity for a regular donor. In the present series of cases ordinary large transfusions were employed.

It has been pointed out by Wyatt[2] that one of the most important factors in preparing the soil for rheumatoid arthritis is "under-weight," and it has been stated that the disease never occurs in those whose body weight is up to the average. Since this was considered to be probable, a method was sought whereby these patients could be made to regain their "expected" weight—a very difficult matter in most cases.

It was found that no dietetic measures appeared to have any effect upon the body weight of these patients, who were, on an average, about one stone under the weight which would be expected for their age and height.

Pemberton[3] reported that the sugar tolerance of the rheumatoid arthritic is generally impaired, and although this was in the present instance not found to be an invariable rule, the majority of cases did show a definitely delayed blood glucose curve, without glycosuria.

As a result of these findings it was thought that insulin might be of value in these patients in order to increase the combustion and storage of carbohydrates, and to induce a mild degree of hypoglycaemia before meals, which would lead to an increased appetite, and therefore, it was hoped, to an increase in body weight. These patients generally have very poor appetites, and it is customary to cut down their carbohydrates very considerably. It was found that the use of insulin was, in a majority of cases, instrumental in increasing the body weight, as had been hoped, and that the patients stated that they felt better in every way.

It will be well to consider in turn (*a*) transfusion, (*b*) insulin, and (*c*) the combined treatment, since this was the evolutionary sequence followed clinically.

TRANSFUSION

In sixteen cases which have been reported,[4] ordinary blood transfusions were employed with satisfactory, although never dramatic, results. The patients were taken into hospital and a thorough search made for a toxic focus. In no case among these patients was this found. They were then given a blood transfusion of 500 c.cm., after which intensive physical treatment was given to the affected limbs and muscles on the same day, since the antitoxic power of the patient's blood, if it had been raised by the addition of normal blood, might be expected to be at its maximum at this time. This was repeated every day, and it was found that more treatment could be tolerated than prior to the transfusion. The whole transfusion procedure was then repeated on the eighth day. The citrate method was employed in all these cases, although it is possible that the defibrinated blood method might be more effective, on theoretical grounds. These patients very seldom complained of any reaction, except for a slight headache for a few hours. In two or three cases pain was complained of in the affected joints, lasting a few minutes only, after which the joints remained considerably less painful than previously. This improvement in the pain and in the general condition of the patients (including the appearance of the skin) has been so far maintained for nearly three years in two instances, and for lesser periods in the case of those patients treated subsequently. It was claimed, therefore, that this method of treatment was able to show an advance on other methods in so far as it appeared to arrest the acute course of the disease, and to improve the clinical condition generally. It supplements the more usual methods of treatment, and should in no particular supersede them.

INSULIN

The method adopted is similar to that advocated by Hunt[5] (for cases of visceroptosis), but much higher doses are used. The patient receives initially two injections daily of 5 units of insulin a quarter of an hour prior to luncheon and dinner. The next day 10 units are given in the same way; while on the third day, if no reaction has been experienced, a dose of 30 units is given and continued daily for about three weeks. The patient is not put on a special diet, but is given, as far as possible, what she likes, and is asked to consume, in addition, 1 lb. of glucose in the twenty-four hours. This is best taken as a drink with water or soda-water. It is wise to restrict drinking until after meals. Some of the glucose should be taken last thing at night to prevent any delayed hypoglycaemia occurring during sleep, and a bar of chocolate may, in addition, be eaten after each meal. The course ordinarily lasts for three weeks,

although it may be continued in the out-patient department with one injection daily (according to F. Howitt) for several months, with advantage. Three examples will suffice to demonstrate the type of improvement in the body weight which may be expected in an average case during the initial period of treatment.

Weight Table

Case	Age	Weight on Admission	Date	Weight on Discharge	Date	Increase in Weight	No. of Days of Treatment
		st. lb. oz.		st. lb. oz.		lb. oz.	
L. W.	28	6 12 4	20/5/31	7 2 5	24/6/31	4 1	35
B. L.	24	6 4 0	19/4/31	6 7 0	8/5/31	3 0	28
F. O'R.	54	6 13 1	4/8/31	7 4 3	28/8/31	5 2	24

COMBINED TREATMENT

The best method of dealing with a case of rheumatoid arthritis which fails to respond to ordinary measures appears, as the result of trial in a limited number of hospital cases, to be by a combination of the two preceding methods. No harm will result, and in most cases considerable benefit may be expected. The complete procedure will therefore be as follows.

SUMMARY OF COMBINED TREATMENT SUGGESTED

1. Search for toxic focus; appropriate treatment if found (not forgetting bowel as a "focus").

2. If this produces no improvement, estimate (*a*) the blood sedimentation rate, to see whether a hidden focus of infection is probable, (*b*) the sugar tolerance curve, in view of future treatment with insulin.

3. Place the patient in bed, and carry out the transfusion treatment as described above; two injections at an interval of eight days with intensive physical treatment after each. With nervous patients it is often best to refer to the procedure as a blood "injection," rather than as a "transfusion."

4. Get the patient up on the ninth day. It is important to do this (if she is fit enough) before the psychological effect of the procedure has worn off, particularly with a patient who is almost resigned to being bed-ridden, as is so often the case. The patient must be keen to help, and her co-operation and interest must be sought if the best results are to be obtained.

5. Put the patient on the insulin regime, as described above, and make her weigh herself every day and chart her weight as a curve to stimulate her interest in the method. Most patients will gain about 1 lb. in the first week, and after that about 1 to 2 lb. per week in favourable cases. If the patient has been losing weight prior to the institution of this method, a "latent period" of seven to ten days must be expected before any gain in weight is made. The patient must be cautioned against the expectation of any "miraculous" result, but should be told to expect and report gradual improvement in her general and local condition and weight, the effect on the general health and mental outlook generally being the initial signs of permanent improvement.

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THE RATIONAL DOSAGE OF DIPHTHERIA ANTITOXIN

BY

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Since the introduction of diphtheria antitoxin, many attempts have been made to standardize the dosage of serum, adequate and not excessive, for the different stages and varying degrees of severity of the disease. At one extreme Park[1] suggests that doses of 10,000 to 20,000 units are sufficient for the most severe cases, while Bie[2] maintains that the rational dosage for a severe malignant case should be at least 160,000 to 220,000 units, and, where possible, 20,000 of this should be administered by the intravenous route. In the treatment of cases in which the condition is local and not associated with appreciable toxaemia it is held[3] that antitoxin is of no value, yet although this is probably true, a failure to inject any definite case of diphtheria, even though mild, would lead to difficulties should the infection progress to a more severe stage.

Another point in dispute is that of re-injection of the case after a preliminary injection on diagnosis. Park states: "The injection of a single dose only, of sufficient quantity, is required, and multiple doses, although not harmful, are useless." Friedemann[4] holds that the repetition of large doses is an important factor in the cure of severe cases. It must be almost impossible to judge in advance the requisite dose in all cases, and re-injection must therefore be necessary in some cases at least. The route of administration has been the subject of a good deal of controversy in the past, but since Rolleston[5] pointed out that intramuscular injection is not only more efficacious, but also safer than subcutaneous injection the latter method has become obsolete. Intravenous injection has recently been used, but this method is attended by many dangers in a severely ill and somewhat frightened child, and, unless used immediately, is not so satisfactory as an earlier intramuscular injection. An attempt will be made to show that intravenous injection is not called for.

The following table will indicate the diversity of opinion on the subject of necessary dosage.

	Mild	Moderately Severe	Malignant	Large
Park... ...	I.M. 3,000 to 4,000 6,000	I.M. or I.V. 5,000 to 10,000 —	I.V. 10,000 to 20,000 — 40,000	—
Thompson...				
Banks and McCracken	I.M. 14,500	I.V. 19,000 I.M. 19,000	I.V. 71,000 I.M. 31,000	I.V. 2[illegible] I.M. 2[illegible]
Bie	I.M. 16,000 to 20,000	I.M. 64,000 to 80,000	I.V. 20,000 I.M. 140,000 to 200,000	—

I.M.=Intramuscular injection. I.V.=Intravenous injection.

Banks and McCracken, as well as Bie, re-inject after a short period, and, in malignant cases, repeat the injection once or twice according to the needs of the more severe cases. Parks injects all the antitoxin in the primary dose.

In a recent investigation, Bie came to the following conclusions:

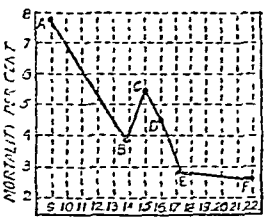
1. Diphtheria antitoxin has no effect in reducing the temperature in cases of diphtheria.
2. The membranous condition in the throat frequently spreads after the first injection of antitoxin.
3. Antitoxin hastens the separation of the membrane, but this effect is not marked.

These clinical findings, then, afford no useful data for the determination of an adequate dosage, and, consequently, the percentage mortality of the disease has been chosen in this paper as an index of a satisfactory dosage.

An attempt to correlate the dosage of antitoxin with the percentage mortality from diphtheria in a number of London fever hospitals made it apparent that a relationship existed. The protection conferred by antitoxin is known to vary with the dosage and the day of disease on which the dose is given, but in the consideration of many hundreds of cases admitted to each of several hospitals, it is probable that the average day of disease on which the serum is administered is approximately the same. It would appear, therefore, that any difference in mortality is due to the differences in dosage at the several hospitals, the figures being taken during a non-epidemic period. In the annual report of the Metropolitan Asylums Board,[6] in which are recorded, for each hospital, the total case mortality from diphtheria and also the average primary dose of antitoxin administered to each case on admission, the figures read as follows:

Hospital	Average Primary Dose	Mortality Percentage
A	9,000	7·81
B	13,700	3·84
C	15,000	5·43
D	15,000	4·40
E	17,200	2·87
F	22,000	2·66

The graph below, showing percentage mortality, brings out even more clearly the beneficial effects of the higher dosage (primary dose of antitoxin in 1,000 units).



It is evident, from a consideration of differences in dosage in the various hospitals, that a satisfactory standard of dosage has not been prescribed, or is certainly not widely applied in the infectious hospitals of this country.

An analysis of the exact methods of treatment was undertaken in the two hospitals marked A and F on the graph, and for the purpose of this analysis the cases were divided into three groups.

Group 1.—Malignant

(*a*) Extensive membrane at least on fauces, tonsils, uvula, soft palate, and in the nasopharynx.

(*b*) Cervical adenitis and periadenitis producing bull neck, or this condition on one side.

(*c*) Severe toxaemia amounting at least to hebetude.

Group 2.—Moderately Severe

(*a*) Membrane on both tonsils and on one or both pillars of the fauces and possibly extending to the soft palate.

(*b*) Cervical glands enlarged at least to the size of a walnut.

(*c*) Subdued demeanour, but mental alertness.

Group 3.—Mild

(*a*) Membrane on tonsils and faucial pillars.

(*b*) Glands palpable.

(*c*) Patient somewhat subdued.

Hospital A

During the period under consideration, the average dosage for the various groups of cases was as follows:

Group 1.—Primary injection (intramuscular), 15,400. Total, 27,400 units.

Group 2.—Primary injection (intramuscular), 10,000. Total, 18,000 units.

Group 3.—Primary and total injection (subcutaneous), 4,000 units.

This treatment is almost identical with the recommendation of Park. The high case mortality of 7·81 would appear to show that this dosage is inadequate.

Hospital F

The average dosage used in this hospital was found to be:

Group 1.—Primary injection (intramuscular), 55,000. Total, 145,000 units.

Group 2.—Primary injection (intramuscular), 25,500. Total, 40,500 units.

Group 3.—Primary injection (intramuscular), 14,500. Total, the same.

Remarks

In cases in the first group re-injection was practised after an interval of twelve to eighteen hours, and the serum again introduced by the intramuscular route, usually in doses of 32,000 units. After the second injection, subsequent treatment varied according to the progress of the case. The intramuscular dose of 32,000 units was repeated once or twice on successive days, or, if the faucial membrane showed definite signs of separation, a smaller and final dose was given.

Polyvalent anti-streptococcal serum in doses of 10 to 20 c.cm. was combined in cases showing a marked toxic oedema of the neck, or bull neck, if this condition was thought to be accentuated by invading streptococci. Cases in the milder groups were treated according to the severity of the local condition, but re-injection was never necessary in Group 3 cases, while Group 2 cases usually received only one re-injection of 16,000 to 18,000 units intramuscularly. The use of these larger doses reduced the case mortality to 2·66, including all fatal cases. Those cases where death prevented a full dose of antitoxin being administered are excluded only from the calculation of dosage, and not from the percentage of deaths.

The case mortality of 2·66 has previously been claimed by observers[7] in this country using antitoxin by the intravenous route. If the same protection is conferred by an early intramuscular injection of slightly larger dose, then it would appear to be the more reasonable method of administration, having regard to the possible serious results of the use of the intravenous route.

Conclusions

1. The case mortality in diphtheria varies almost inversely as the amount of antitoxin administered until an adequate dose is reached.

2. The average dosage should be equal to that given in Hospital F.

3. Intramuscular injection of antitoxin is a perfectly satisfactory method of administration.

4. Re-injection of large doses after twelve to eighteen hours, with repetition in malignant cases, is indicated.

References

[1] Park, *Journ. Am. Med. Assoc.*, 1921, lxxvi, 1021.
[2] Bliss, *C. P. Soc. de Biol.*, 1921, lxx, 1189.
[3] Idem, *Ann. Int. Med.*, 1922, 573.
[4] Freymann, *Deutsch. med. Wochenschr.*, 1922, xlviii, 1050.
[5] Wheeler, *Arch. Int. Med.*, 1925, [illegible].
[6] Annual Report Metropolitan Asylums Board, 1923, pp. 101-2 and 116.
[7] Dains and McCrea, *Lancet*, 1923, [illegible].

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

BUNDLE-BRANCH BLOCK OF VAGAL ORIGIN

The usual causes of bundle-branch block are degenerative lesions of the myocardium, often due to obliterative changes in the small arterioles causing deficiency of blood to the bundle. In younger people syphilis and rheumatism cause a small percentage of cases. Willius[1] gives 4 per cent. as the incidence in cardio-vascular syphilis. In the case described below the striking feature is the constant presence of bundle-branch block, which could be made to disappear temporarily by the injection of atropine. This seems to point strongly to the vagus influence on the heart as, at least in part, responsible for the condition in this subject.

CASE HISTORY

The patient, a girl aged 17 years, was sent by her doctor to consult me at the out-patient clinic at the Liverpool Heart

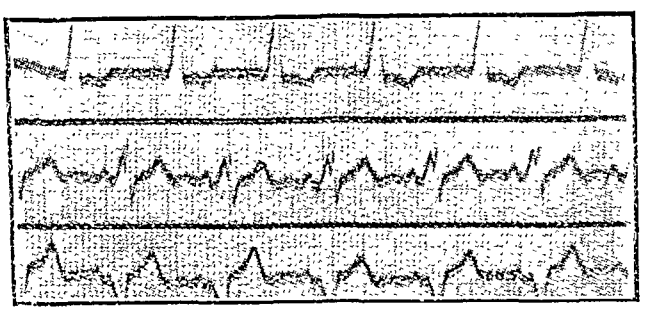


FIG. 1.

Hospital on May 6th, 1930. Her only complaint was infrequent attacks of palpitations since the age of 14 years. The attacks resembled those of paroxysmal tachycardia, beginning and ending abruptly, and lasting from one to fifteen minutes. The attacks sometimes came on while the patient was resting, and at other times on exertion. Between the attacks the patient felt quite well and energetic. There was no dyspnoea on exertion, nor any cardiac pain either between or during the attacks. Apart from a history of acute tonsillitis when 5 years old, there was no history of

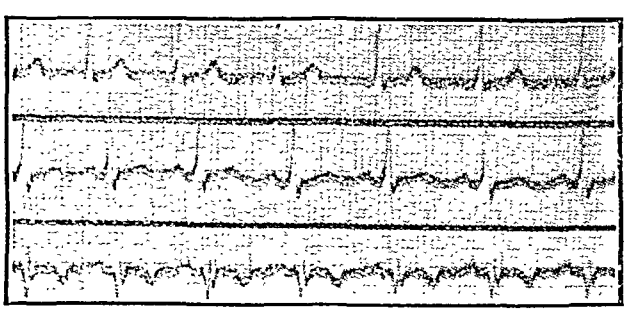


FIG. 2.

any acute illness, of rheumatic fever, of chorea, or of rheumatism. Her family history was unimportant.

Physical Examination.—The patient was of average size and build. There were no signs of anaemia, of cyanosis, or of clubbing of the fingers. The heart examination showed no abnormal signs. The apex beat was normal in position, the heart sounds normal. There was no reduplication of the first or second sound at the apex, no murmurs, nor a bifid visible and palpable apex beat as described by King[2] in cases of bundle-branch block. The *x*-ray picture of the heart showed no abnormality, the orthodiagram being normal in size and shape. The blood Wassermann reaction was negative. The other systems showed nothing abnormal.

Electrocardiographic Records.—On the first examination of the patient on May 6th a routine electrocardiogram was taken, and showed typical right bundle-branch block (Fig. 1). On May 20th a second electrocardiogram was taken, and was similar to Fig. 1; a subcutaneous injection of 1/50 grain of atropine sulphate was then given, and electrocardiograms were taken at intervals of fifteen, thirty, and forty-five minutes after the injection. Fig. 2 shows the electrocardiogram fifteen minutes after the injection of atropine, in which the record is normal, the bundle-branch block having disappeared. The record forty-five minutes after the injection showed the transition back to the bundle-branch lesion. Numerous electrocardiograms were taken for many months after this, and all showed typical right bundle-branch block.

COMMENTARY

A similar case to the above, as far as I can make out in the literature, has never been described. Wilson and Herrmann[3] recorded a case indicating vagal influence in bundle-branch block, but in this the block was transitory, whereas in the above case the block was constantly present except on abolishing the influence of the vagus by the injection of atropine. The fact that the electrocardiogram was converted into a normal record after the injection of atropine shows that the bundle-branch block was not due to organic disease in the bundle with destruction of the tract, but was only effected owing to increased tone of the vagus.

Liverpool. MAURICE NEWMAN, M.D.Liverp., M.R.C.P.

ACUTE APPENDICITIS ASSOCIATED WITH TRANSPOSITION OF VISCERA

The following case is, I consider, sufficiently unusual to be worth publishing.

On July 8th a young woman, aged 21, was admitted to Nenagh District Hospital, at 11 p.m., with a diagnosis of acute appendicitis. About 2 p.m. that day she had been suddenly seized with a severe pelvic pain, which was soon followed by vomiting; this eased after a while, only to return with greater severity after some hours. When seen by me about 12.30 a.m. on the next morning her temperature was 100° F., and her pulse over 100; she had a pain, which was more severe on her right side, but which was felt also in her left side. There was no question of salpingitis, and on the usual examination there was every appearance of acute appendicitis. Rigidity was not marked, and was about equal on either side.

I opened the abdomen immediately by an oblique incision through McBurney's point, and found the right ovary somewhat haemorrhagic, with a pedunculated cyst, which showed signs of torsion. A careful search revealed no sign of appendicitis on that side, and it seemed quite possible that the pain was due to the condition of the ovary. However, it was desirable to inspect the appendix, and further search failed to reveal it in its usual position. I then saw that what I had taken to be the caecum descended into the pelvis, and I immediately suspected transposition of viscera. Further examination revealed that the liver was on the left side, and the heart apparently on the right.

The question now arose whether to close the original incision, after removing the ovarian cyst, and open on the other side, or inspect the appendix from the opening already made. I decided to do the latter, and by extending the incision somewhat could feel a distinct massing of intestines on the left side. Fortunately the appendix proved to be anterior to the caecum, and without much difficulty I brought it into the field of operation. I found the appendix lying in the shape of a U, and very acutely inflamed at the tip. I succeeded in removing it without very much difficulty, and closed the abdomen without drainage.

The patient made an uneventful recovery, apart from a small stitch abscess developing; this cleared up without any trouble, and she is now quite well. I subsequently had her *x*-rayed by Dr. Roche Kelly of St John's Hospital, Limerick, who sent me the following report: "*X*-ray examination with bismuth showed transposition of viscera as follows: heart to the right, liver to the left, caecum [illegible]

[1] Willius, G. A.: *Amer. Heart Journ.*, 1925–26, p. 576.
[2] King, J. T.: Ibid., June, 1928, p. 505.
[3] Wilson, F. N., and Herrmann, G. R.: *Arch. Int. Med.*, 1923, xxxi, 923.

of stomach to the right, pylorus to the left, and caecum to the left, gastro-intestinal tract generally appears normal, except that relations are reversed."

The points of interest in this case appear to be, first, that it is distinctly unusual to encounter an acute appendix in a hitherto undiagnosed case of transposition of viscera. Moreover, the fact that the case presented itself at midnight scarcely helped to simplify matters. The presence of the ovarian cyst on the right side, which had previously given rise to pain, would also tend to obscure the condition. The only point left—namely, not noting the position of the heart—is accounted for by the fact that the patient had a well-developed chest; the heart could be heard quite distinctly on the left side in the examination undertaken by the anaesthetist, and did not attract attention.

I was assisted in the case by Dr. A. W. Courtney, who had sent the patient to hospital.

District Hospital, Nenagh. A. D. COURTNEY, M.B.

Reports of Societies

ANAESTHESIA AND RESUSCITATION

At a meeting of the Section of Anaesthetics of the Royal Society of Medicine on December 4th, with Mr. G. RAMSEY PHILLIPS, president, in the chair, SIR FRANCIS SHIPWAY read a paper on *resuscitation during anaesthesia and of the newly born*.

Anaesthesia, he said, was not sleep, but a state of unconsciousness brought about by the action of depressing drugs or conditions. At times there must be a danger of paralysis of the respiration and circulation. Resuscitation was the restoration of these vital processes. The nervous and muscular activities of the body depended largely on an adequate supply of oxygen and the removal of carbon dioxide excess. The exchange of gases might be interrupted by (1) temporary paralysis of the nervous system owing to lack of oxygen, or action of anaesthetics, (2) paralysis of respiratory muscles, generally secondary to paralysis of the nervous centres, (3) failure of the circulation of the blood.

Artificial respiration supplied the needs of the nervous system and reduced the amount of the anaesthetic present. The alternate expansion and contraction of the lungs produced a mechanical effect by pumping the blood, and brought about the respiratory reflex if the medulla was excitable. If the medulla was paralysed, this phenomenon could not be obtained by artificial respiration alone. In combination with oxygen and enough carbon dioxide to stimulate the centre, artificial respiration was effective. As long ago as 1910, Levi used a mixture of oxygen and 15 per cent. CO_2 when any tendency to failure of respiration occurred. Henderson and Menker stated recently that in the resuscitation of newly born children and of persons suffering from carbon monoxide asphyxia, a carbon dioxide percentage of 7 was often effective when one of 5 had failed. In some cases, 8 or even 10 per cent. was needed to stimulate an asphyxiated respiratory centre. A cylinder containing 7 per cent. CO_2 in oxygen should be available in every operating theatre. Carbon dioxide exerted a powerful influence on the tone of skeletal muscles, and, by augmenting the venous return to the heart, improved the circulation. Care should be taken when mixtures stronger than 10 per cent. were used. A percentage of about 30 produced narcosis and death. In children, failure of respiration was best treated by lowering of the head, partial inversion, rhythmical compression of the chest, and administration of carbon dioxide and oxygen. In the adult, Sylvester's method often failed to restore the respiration; Howard's method was more efficient and less fatiguing, Schäfer's being rarely applicable on the operating table. The use of the latter, however, should be borne in mind in the event of acute respiratory obstruction, under anaesthesia, due to the presence of a foreign body. Occasions might arise when a laryngotomy was necessary, and the forcing of air into the lungs by inflation. Caution was needed against undue violence in carrying out any measure of artificial respiration. When the heart had ceased to beat, attempts to revive it might be made by massage, intracardiac injection of a drug, or puncture of auricle or ventricle.

Many successful cases of restoration by massage had been reported. The route commonly employed was the sub-diaphragmatic. Most attempts, however, were unsuccessful. Bost restored the heart's action, after sub-diaphragmatic massage had failed, by incising the diaphragm and grasping and squeezing the heart. Norbury was unable to restore pulsation in thirteen out of sixteen hearts using sub-diaphragmatic massage, but direct massage, when the abdomen was open, was quickly followed by pulsation. The movements of the hands in this method were those of compression, not of massage. They brought about stimulation of the heart by pressure on the nerve ganglia and by emptying the ventricles.

To prevent pneumothorax, the parts were pressed round the wrist. Levy recommended intubation or passage of an endotracheal catheter so that perflation of the lungs could be effected. The rate of compression should not exceed forty to the minute. The heart usually recovered slowly, and there should be brief intermissions with the first feeble beats. The heart should be stimulated from time to time till the beats became strong and regular. Ogilvie reported a case in which massage was continued for seventy-five minutes before spontaneous beats were obtained. Artificial respiration should be kept up until natural breathing started again. Many drugs had been used for intracardiac injection—caffeine, camphor, digitalis, strychnine, strophanthus, pituitrin, adrenaline, metrazol, and sodium thiosulphate. Imerman revived an elderly patient moribund from insulin hypoglycaemia by injection of 20 per cent. dextrose solution. Adrenaline was the drug most advocated. It was not without danger, as it could produce myocarditis or fibrillary contractions. Success having attended the use of so many different drugs with widely differing actions, it would seem that there was something more at work than the action of the drug. Watson showed in 1887 that in twenty-two out of sixty experiments on dogs killed by chloroform, puncture of the heart alone sufficed to start the beat. Hyman, acting on the view that success of intracardiac injection depended on the irritant action of the needle puncture, succeeded in reviving a patient, collapsed during ether anaesthesia, by puncture of the ventricle after other methods had failed. He stated that the arrested heart became irritable and responded readily to any strong stimulus. The first beats were extrasystoles, usually succeeded by normal rhythm, but if the myocardium had suffered much damage, arrhythmia might persist and develop into ventricular fibrillation. This might explain secondary collapse after successful resuscitation. Extrasystoles arising in the auricles followed by auricular fibrillation were compatible with life. The auricles were more sensitive to stimulation than the ventricles. For these reasons Hyman punctured the auricle in four patients who had died from various causes. In two, the heart-beat was restored, in one for seventeen minutes, and in the other for eight days. Hyman had collected forty-four instances in which auricular puncture had been performed. Out of four patients with healthy asystolic hearts, two responded to the treatment and were still alive. The most

weighty reason for failure was delay in starting resuscitation. Failure did not arise because of inability to restore the heart-beat, but because of damage done to the cortical cells through prolonged interference with their supply of oxygen. It was probable that if the heart-beat was not restored within five minutes, systemic death occurred. Cases of resuscitation, after periods of apparent standstill of ten, eleven, or even fourteen minutes, had been reported, but the time of cardiac arrest was difficult to determine with accuracy. The patient should be given the benefit of the doubt. Unnecessary delay in taking active measures to restore an effective circulation should be avoided, especially if chloroform had been used or the myocardium was known to be degenerated. In Petty's case of recovery after arrest of six minutes, somnolence lasted for twelve hours. Consciousness had not been regained in others, although respiration and circulation were restored for a considerable time. In Mollison's case, the child, who recovered after a period of cessation of the heart's action for at least thirteen minutes, suffered afterwards from the serious damage caused to the cortical cells.

Ventricular fibrillation, under light chloroform anæsthesia, was then discussed, Sir Francis maintaining that Levy had probably overstated the case. Going on to resuscitation of the newly born, the lecturer said that the first essential was to clear the air passages of fluids. This was done by posture or by suction. Mouth to mouth inflation should be kept for emergencies. The child with blue asphyxia should be placed in a warm bath and the skin stimulated by cold douching. If this failed, Schafer's artificial respiration was to be used. With white asphyxia, warmth was most important, and extreme gentleness, with artificial respiration, oxygen, and carbon dioxide. If these failed, direct stimulation of the heart by auricular puncture was to be tried. In some cases, white asphyxia depended not on injury to, or interference with, placental circulation during a difficult labour, but on absorption of an anæsthetic drug from the mother's blood. To meet this a mixture of oxygen and carbon dioxide should always be carried. During all attempts at resuscitation the body temperature of the patient should be maintained.

In the discussion which followed, Dame LOUISE MCILROY described the method which she employed for resuscitation of the newly born. Its main features were warmth, cleansing the infant with oil and no bath, and insufflation of oxygen with 5 per cent. carbon dioxide by a facepiece and bag. A number of other speakers related relevant cases, and took part in the discussion.

SIXTY YEARS OF SURGICAL RETROSPECT

At the December meeting of the Section of the History of Medicine of the Royal Society of Medicine, with Dr. R. O. MOON, president, in the chair, Mr. G. BUCKSTON BROWNE related his surgical experiences during the last sixty years, mainly in private practice. He discussed the almost inexplicable feeling against doctors and surgical science, generally calling it an *odium medicum*, and giving instances of it in the past and present. He dismissed much of it as trivial, but pointed out how grave it was when it ventured to retard research, to interfere with the prevention of disease, and to treat contemptuously the efforts of the medical profession to keep itself pure and honourable by insisting upon proper education, proper qualification, and obedience to its laws and etiquette, the latter all framed in the interest really of the public itself. He gave an account of surgery in London hospitals before the days of Lister, touched upon the progress of anæsthesia, and the rise of the modern nursing home and of the modern nurse. The address ended practically with a plea, that, putting aside very exceptional cases where great difficulties existed, patients with ordinary prostatic retention should have fairly put before them the possibility that if they were content to live the auto-catheter life they might live to be 100, and that the care, punctuality, and moderation of the catheter life itself often seemed actually to prolong life. He pointed out the curious fact that prostatic patients were often remarkable for special abilities, and that their lives were well worth prolonging, even at the expense of a small handicap. The names Mr. Buckston Browne mentioned as specially distinguished during his sixty years of more or less special surgery were Henry Thompson, Clover, Bigelow, Henry Morris, William MacCormac, Garson, and McGill.

Lord MOYNIHAN, who had been McGill's dresser, and had assisted him in his first prostatectomy, said that no one had done anything in prostatectomy that McGill had not done. He described Mr. Buckston Browne as the most prolific ancestor of scientific surgery that this country had ever known, and as one who had created friendships and occasions for conviviality and had done a great deal for the encouragement of research.

Sir JOHN THOMSON-WALKER, in thanking Mr. Buckston Browne for his address, stated that he himself could not claim to have had experience of pre-antiseptic days, but he had been a house-surgeon in the wards of the Glasgow Royal Infirmary next to those in which Lister had done his original work on antiseptics, and had heard many tales from the nurses of the conditions before antiseptics were introduced. Antiseptics were applied to bladder surgery at a later period, and he remembered at the beginning of his hospital work seeing the bladder wounds ulcerated and encrusted with phosphatic deposit, a condition that had now been abolished. Anæsthetics had made great advances since the beginning of the century, and we could now use spinal, rectal, and intravenous anæsthetics either alone or in combination with inhalation anæsthesia. Apart from antiseptics and anæsthesia, progress in the surgery of the urinary organs depended on several factors. (1) The cystoscope, introduced by Mitze in 1886, and brought into use in this country by Fenwick in 1893. To this, many developments, such as catheterization of the ureters, testing the function of each kidney, and pyelography, had been added. (2) The *x* rays, discovered by Roentgen in 1895, and first applied to kidney surgery by MacIntyre, who showed the shadow of a renal calculus in a patient in the Glasgow Royal Infirmary in 1896. (3) Tests of the renal function, the earliest practical work on which was published by Guyon and Albarran in 1898, using methylene blue as the test. We now relied in this country on the urea concentration test, introduced by MacLean and de Wesselow in 1919, and in the combination of this with the estimation of the blood urea. (4) The use of high-frequency currents for destruction of growths in the bladder, introduced by Beer of New York in 1911. It would, he proceeded, be easy to give examples of the progress made by the use of each of these new methods, but one would suffice. Nephrectomy for tuberculosis of the kidney in the decade 1890 to 1900 had a mortality of 25.4 per cent. (Schmieden), while in 1924 and 1927 the mortality was 2.4 per cent. (Wildbolz), and 2.5 per cent. (Thomson-Walker). This was due to the use of the modern methods of diagnosis, and especially of catheterization of the ureters and estimation of the function of the kidneys. Mr. Buckston Browne had expressed some fears of the danger of the cystoscope. He might rest assured that to-day it was a safe instrument of diagnosis in daily use. Electrolysis of stricture was a method which reappeared every ten years or less, only to disappear again into deserved obscurity. But as time went on the number and severity of cases of stricture of the urethra, due to the improved treatment of chronic urethritis, had diminished.

The admission of strictures for operation at St. Peter's Hospital had fallen from about 120 to 20 or 30 a year, in the last twenty years. In regard to the treatment of the enlarged prostate, castration and vasectomy were rightly condemned. But he would not blame White, who first suggested the method, for he did so in the most careful and tentative fashion without any thought of it being universally adopted. The claims for what McGill did in prostatectomy expanded as the years went by, until they embraced every operation performed on the prostate to-day. The speaker preferred to accept McGill's own description of the work clearly set out in his writings up to within three months of his death. It was pioneer's work and the claims were becomingly modest. When Mr. Buckston Browne recommended catheter life in place of prostatectomy, he should not forget the labouring classes. The wealthy, leisured, highly educated classes could command assistance or learn the method of aseptic catheterization in many cases, but to give a labourer a catheter was almost certainly fatal in a very short time.

SURGICAL TUBERCULOSIS IN CHILDREN

At a meeting of the London Association of the Medical Women's Federation, held on November 29th, with Dr. LETITIA FAIRFIELD in the chair, Dr. LOTTE MAHLER of Frankfort read a paper on surgical tuberculosis in children.

Dr. Mahler spoke first of the fundamental conception which must underlie treatment. Tuberculosis, manifesting itself in any organ of the body, was a sign that the tissues of the host had not been able to overcome the bacillus at the portal of entry, and that therefore he must be held to have yielded some ground in the fight against tubercle. It was on that account never permissible to remove a focus without at the same time subjecting the whole body to systematic treatment. The speaker said that she worked in a 2,000 bed hospital, in which certain wards were allocated specially to men, to women, and to children suffering from so-called surgical tuberculosis. It was considered necessary to have special wards for these cases, not only because 60 per cent. of them were found to suffer also from pulmonary tuberculosis, but also, and mainly, because it was necessary to provide facilities for sun treatment, special diet and nursing, and for disinfection. Patients reached them from the medical men in the town, from sanatoriums, and from the other departments of the hospital. The work was done in close contact with the medical consultants and with the follow-up department.

Dr. Mahler enumerated the pathological tests which, with clinical examination and *x* rays, were used for diagnosis. The subcutaneous test was never used for fear of activating the focus. The sedimentation rate of the red blood cells was not considered specific for tuberculosis. Its repeated performance had value, as it enabled observers to note the course of the illness and the results of treatment. A combination of surgical and conservative treatment was now the rule. Good nursing and fresh air, with special diet and sun treatment, were desirable in all cases. Local conservative treatment was designed to stimulate a defensive reaction in the part involved and in the whole body. The best means were sunlight and ultra-violet rays. In the absence of pulmonary tuberculosis, iodine was combined with passive hyperaemia. Soft soap was sometimes used for skin applications. Tuberculin was seldom used therapeutically. Simple orthopaedic appliances were used to support the part affected in such a position as would be most convenient to the patient. Only light fixation was employed, so that small active movements were possible ; disuse atrophy was thus eliminated as far as possible. In after-treatment a splint was used to keep the parts in apposition, or, in case of a leg, to remove the weight of the body. Patients were treated in the out-patient department for some years after leaving hospital. Conservative treatment had to be abandoned in those cases in which it was thought that operation might avoid the risk of amyloid degeneration or in the presence of a severe mixed infection. It was sometimes helpful to remove one focus in order to place the patient in a better position to cope with another. Besides these absolute indications for operation there were some relative ones. In adults, operation was sometimes performed if the condition was such that many years of conservative treatment might be needed. In these cases operation would often restore the patient to his family in a comparatively short time. Operations were also advised if the focus could be removed radically without crippling the patient. Again, if the focus was near a joint, it might be wise to remove it to avoid possible joint infection, with its attendant complications. Each joint had to be considered separately according to its position and functions. In children with joint tuberculosis operations were never performed, even if the process of healing was likely to take many years. In adults, economic conditions might influence the decision in regard to operation, but no such considerations should be allowed in the case of children.

The large majority of patients in Professor Schmieder's clinic, where Dr. Mahler worked, suffered from tuberculosis of the spine. As a rule, conservative treatment was used —that is, the patients were placed on horsehair pillows, built up to fit the normal curves of the spine, with special support to the part involved. Plaster-of-Paris beds were never used. Children were fastened with straps. If there was any sign of irritation of the spinal cord, extension therapy was employed with straps and weights. In this way the muscles could be kept from atrophy, and the skin of the whole body could be exposed to air and sun. When pain and irritation had disappeared, it was easy to turn the patient to a comfortable position on his back or face for some hours every day. Though many years were necessary for the fusion of the destroyed vertebrae, the results were good in the end. Dr. Mahler showed *x*-ray pictures of typical patients to demonstrate that the radical removal of a focus in a vertebra was almost impossible. In the treatment of cold abscesses, incision was avoided if possible. Puncture through healthy tissue and the injection of iodine and glycerin was the method of choice, unless high temperature, in cases of a mixed infection, forced an operation. The injection of lipiodol was useful to enable the track of a cold abscess to be followed. Even in cases of compression of the spinal cord operations were avoided, extension therapy giving better results. In disease of the hip-joint, a board similar to that used at Alton was considered the most effective way of securing immobility. Operation was rarely performed for lesions of the hip-joint, or of the sacro-iliac joint. In the knee-joint cases, young people were treated by conservative methods. In adults, seen only when the joint had already been destroyed, operation gave better results in a shorter time. The patient had a stiff leg, but a useful one. Elbow-joints were treated by conservative methods if in any way possible.

Dr. Mahler referred briefly to tuberculosis of the intestines, glands, and other organs, and described phrenicotomy and thoracoplasty, and methods of cutting and burning adhesions. She described briefly the technique of heliotherapy. A feature of this was the sun garden, open to out-patients. Those who were able to walk could be discharged fairly soon and allowed to go to the sun garden every day, walking back home at night.

Dressings were avoided as far as possible, also plaster of Paris. When the latter had to be used it was blackened on the surface to avoid reflection of light. In this way a higher temperature would be obtained round the parts covered by the plaster, and it was found that the resulting hyperaemia had good effects.

OPERATION FOR GASTRIC DISEASE

At a clinical meeting of the Devon and Exeter Medico-Chirurgical Society, held on November 16th, with the president, Dr. J. R. Harper, in the chair, Mr. R. Wayland Smith showed a series of four cases in which he had recently performed partial gastrectomy.

Carcinoma of Stomach. Married woman, aged 46, with a history of symptoms of peptic ulcer since February, 1931. A large lump could be felt in the epigastrium. Partial gastrectomy (one-third of stomach) was performed. Specimen removed showed a large ulcer with everted edges. Section proved to be epithelioid-celled carcinoma. Progress was satisfactory up to date.

Ulcer of Stomach, Perforated. Man, aged 17. Had had pain every morning for a year, relieved by food. Had noticed definite lump in the epigastrium for two weeks. On November 11th, at operation the portion of stomach removed showed a large ulcer with everted edges. In one place ulcer proved the development of early malignant change. Glandular infection appeared to be slight.

Ulcer of Stomach. Man, aged 47, with four years' history of symptoms, and delay in gastric emptying time noted in 1930. On reading was to hospital, October, 1931, the delay had become extreme, and all symptoms were accentuated. Partial gastrectomy was performed on November 9th, the removed structure showing a non-malignant ulcer of considerable size in the pyloric region.

Ulcer of Stomach. Man, aged 31, with nine years' history of abdominal pain and vomiting. After showing a persistent filling up on the lower curvature on November 11th a V-shaped excision was performed after some difficulty had been experienced in stripping the adherent pancreas from the posterior wall.

Dr. C. J. Fuller read notes on a case of bleeding fissured ulcer of stomach for discussion with Mr. Wayland Smith's cases.

The patient, a man aged 52, came to hospital on October 6th with a 14 months' history of vague dyspeptic symptoms and an account of the passage of a large "black stool" on October 2nd. On admission he was exsanguinated, and died within twenty four hours of admission. The necropsy showed a minute ulcer with the open mouth of a vessel protruding into it.

Dr. F. A. Roper, discussing the indications for operation, as opposed to medicinal treatment and diet, said that the four points emphasized by Mr. Wayland Smith —namely, (1) evidence of stenosis, (2) adherence of the ulcer to a neighbouring viscus, (3) proof of excavation, and (4) relapse after medical treatment—were excellent criteria, and he was in complete agreement with them. Unfortunately, it was by no means easy to diagnose their presence. In the series of cases under discussion these considerations were satisfied, and the radiograph and test-meal findings gave ample justification for operation in each case.

Dr. Fuller said that in deciding upon treatment in cases of gastric ulcer he had found occupation an important factor; for, whereas a leisured man could afford to diet and live carefully for some two years, this was impossible for the working-man, in whom operation was the economical course. Amongst definite indications for operation in all classes Dr. Fuller considered hour-glass stomach, severe haematemesis from a definite ulcer, and adherence to other organs, to be the most outstanding. In the case he had just narrated, operation was contraindicated by the collapsed state of the man on admission; and the condition noted at the necropsy made it seem extremely unlikely that the cause of the haemorrhage would have been discovered before death, even if the condition had justified exploration.

Pseudo-mirror-writing

Dr. Richard Eager showed a case of pseudo-mirror-writing, the subject being an unmarried woman aged 28. She was admitted to the Devon County Mental Hospital for [illegible] and suicidal tendencies, but there was no mention of this peculiarity. It was now known that there was a history of mental deficiency, and that she had been an inmate of public institutions since the age of 20, when she had exhibited the same idiosyncrasies. Examples of writing, the addition of numerical figures, and free-hand drawing, were produced at the meeting, and it was seen that she wrote and drew with the right hand, but that, in distinction to mirror-writing, the girl merely reversed her words, beginning each word from the right instead of the left. Numerical figures, on the contrary, were normal, but drawing was carried out upside down. She was also seen to read up-side down, turning the book clockwise to attain her object. On the other hand, she was found to be unable to read true mirror-writing. When asked to spell a word she responded without hesitation, spelling backwards. Dr. Eager said that in addition to the fits and this hitherto unrecorded abnormality, she had suffered from giddiness, headaches, and imperfect co-ordination.

Dr. Russom Pickard remembered having seen the young woman some eight years before, when the same psychiatrists were in evidence. He said that here was a case where the letters (that is, phonetic constituents) were correct, but the word was reversed—the concept for which the word stood was reversed. In mirror-writing, the word and its constituent letters were reversed as a whole, so that, viewed in a mirror, they conformed to the right-handed conventional writing. If a left-handed mirror-writing child was taught to write successfully in the conventional manner, there was often an intermediate stage in which, while the letters were in the correct order, some of them were still mirrored. In true mirror-writing the phonetic conception was right; hence the essential difference.

EARLY PULMONARY TUBERCULOSIS

At a meeting of the Manchester Medical Society held on November 4th, with the president, Professor J. S. B. Stopford, in the chair, Dr. C. P. Lapage read a paper on early pulmonary tuberculosis in children, dealing with the modern concept of tuberculosis, the diagnosis, and the ideas underlying the B.C.G. inoculation of Calmette.

Dr. Lapage demonstrated some cases of primary infection in young infants (two of them under the care of Dr. J. H. Gibbens) in order to show the primary nodule of infection with satellite glands and the progress either by spread, breaking down and generalization, or by healing and recovery. Radiograms illustrating cases of tuberculosis at the ages immediately following infancy and of hilus tuberculosis at later ages were demonstrated. It was shown that tuberculosis was a very prevalent disease; that infection often took place in the first few years of life and sometimes in the first few months, and that it was often recovered from. Once the child had been infected there followed a period of hypersensibility, and then allergy and resistance were developed. After this infection and resistance the tendency was to localization of disease, and this applied even to a general blood infection. The increased frequency of bacillaemia could now be demonstrated by improved methods. In dealing with diagnosis in early pulmonary tuberculosis, Dr. Lapage said that there was a tendency to decry the clinical examination and to rely on four points: (1) history of infection, (2) positive skin reaction, (3) *x*-ray examination, (4) search for the tubercle bacillus. He insisted strongly that a thorough and complete clinical examination, together with a most careful history of symptoms and signs, were also

of extreme importance, and his criteria for diagnosis of tuberculosis were as follows: (1) careful history of symptoms, including history of infection; (2) thorough clinical examination; (3) *x*-ray examination; (4) search for the tubercle bacillus, including the examination of the contents of the stomach; (5) skin reaction; (6) progress under treatment. Interpretation of skin reaction was mainly that of negation, since it was very doubtful whether gravity of infection and severity of skin reaction were correlated. With regard to Calmette's method of producing immunity by B.C.G., ingestion was preferred, because of the special permeability of the mucous membrane in the early days of life. Statistics pointed to good results, but the explanation of the Lübeck disaster was still being sought. A very large number of babies had been inoculated in many European countries, and Great Britain was certainly behind other countries in regard to the adoption of this method, but Dr. Lapage thought it was probably wise to wait for fuller proof, especially in view of what had occurred at Lübeck. Statistics were not always easy to interpret.

Serum Treatment of Pneumonia

Dr. G. J. LANGLEY read a paper on the serum treatment of pneumonia. Figures from the Registrar-General's returns for mortality from pneumonia were first given, followed by figures supplied from the Health Office of the City of Salford showing the much higher incidence and mortality of pneumonia in the area surrounding Manchester than elsewhere in England. The problem of atmospheric pollution in its relation to the incidence of respiratory diseases was touched upon. Figures were then given, collected from various workers, to show the type incidence of pneumonia in this and other countries, and the figures of Ferguson and Lovell were quoted as indicating the type incidence in Manchester itself. The variation in mortality in different epidemics was shown to be independent of the type incidence of the disease, and was attributed to variations in virulence of the organism itself. It was argued that serum treatment could not as yet be undertaken without adequate typing of the organism concerned for several reasons, difficulty of administration of the serum, and its high cost, being perhaps the chief. Methods of typing which might easily be carried out by the clinician were discussed, and were thought to give no satisfactory results, at least in the early stages of the disease; they were therefore regarded as useless. Sabin's rapid method was considered to be a distinct advance, and, in the few cases in which it had been tried, Armstrong's modification saved a little time; in any case five to six hours were necessarily occupied in this procedure under even the best conditions. Experience with the monovalent Type I serum had not been happy, largely because patients seldom came under treatment early enough in the disease to make success even probable, but also because the large volume of serum used, its frequent repetition, and the occurrence of grave serum sickness were severe handicaps. Dr. Langley then referred to the growing literature on the polyvalent concentrated antibody known as Felton's serum, and compared the British and American records. He considered that estimations of success could only be formed when no-selection alternate case control was rigidly adhered to. In such records as were available, when this had been faithfully done, there was much reason to believe that a very material reduction, both in suffering and in mortality, could be achieved, where the serum was used in adequate doses and early enough in the disease—namely, before the end of the third day. A single case was quoted in which the serum, in large dose, had been used on the sixth day of disease, chiefly on account of a positive blood culture obtained on the fifth day, where an entirely happy issue appeared to justify the procedure.

Reviews

THE PROBLEM OF ALLERGY

Growing interest in the problem of allergy is shown by the recent publication of three books. Dr. G. W. BRAY is to be congratulated on the industry shown in his work.[1] The vast literature of the subject has been well sifted and summarized, while the 1,660 references make the more important original papers readily accessible. The chapters on biochemical aspects and blood changes are particularly good, but, although asthma and hay fever are discussed at length, cutaneous allergy, and the treatment of these conditions, are not dealt with in such full detail. The advances in our knowledge of the biochemical side of the question should enable progress to be made in the near future towards the treatment of allergic states. Clinical observations of these conditions, as Dr. HURST points out in the foreword, now require the help of laboratory investigation, and in this book an account of both will be found. Dr. Bray has produced a work of real value. In brief, it is an accurate summary of the present state of our knowledge, clinical and experimental, and it should prove very useful both to investigators and to clinicians.

Dr. ROWE'S book on *Food Allergy*[2] is of a different type. He has emphasized the importance of food allergy in many symptom-complexes, pointing out that positive skin tests may not be obtained to a particular food, although elimination of that food from the diet brings relief of symptoms. For that reason he has devised "elimination diets" designed to ascertain, by experiment, whether symptoms are due to a particular food or not. The diets are given in detail, together with recipes for their preparation. Ninety-four case histories and twenty-nine tables of statistics are given in the course of 379 pages, thirty-one pages being devoted to a summary of the literature. The subject of food allergy is of great interest, and, on clinical grounds, the author has made out a strong case for his thesis. Experimental evidence is lacking as to the means by which the mechanism of food sensitization is brought about, but possibly none is yet available. It is badly needed; for, as the author points out, patients do not take kindly to restrictions in diet, and some foods, such as eggs, are very difficult to avoid. Specific desensitization as a cure for food allergy does not appear to have been very successful in his experience. As sensitization is usually multiple, in some cases many years might be needed for desensitization to all the foods to which sensitization exists. By Dr. Rowe's "elimination diet," foods responsible for the patient's symptoms may be avoided.

There is evidence that an allergic manifestation depends on a summation of stimuli, so that the more allergens are avoided the less likely are symptoms to occur. Dr. VAUGHAN'S book on *Allergy and Applied Immunology*[3] is designed to assist the allergic patient in understanding what is aimed at for his relief. It gives a clear account of the general principles applicable to the treatment of allergy, and should be easily comprehensible to the intelligent layman, besides being of interest to the medical practitioner. The account of the use of desensitization is especially good, and a clear distinction is drawn between the production of immunity and the process of desensitization. Use of increasing doses of a vaccine to produce

[1] *Recent Advances in Allergy.* By George W. Bray, M.B., Ch.M. With a foreword by Arthur F. Hurst, M.D., F.R.C.P. London: J. and A. Churchill. 1931. (Pp. xii + 432; 98 figures. 12s. 6d.)

[2] *Food Allergy.* By Albert H. Rowe, M.S., M.D. London: Baillière, Tindall and Cox. 1931. (Pp. xi + 442. 25s. net.)

[3] *Allergy and Applied Immunology.* By Warren T. Vaughan, M.D. London: H. Kimpton. 1931. (Pp. 289. 18 figures. 21s. net.)

desensitization in bacterial allergy is condemned. The author brings forward evidence to explain current failure in the treatment of such a condition as rheumatoid arthritis. This is said to result from the employment of too large doses, owing to a confusion about the methods of producing desensitization and immunity.

Each of these three books is well suited to its purpose, and the impression gained is that the results of treatment of allergy have improved considerably in the last few years.

AESTHETIC SURGERY

Pure Aesthetic Surgery (Technique and Results),[4] by RAYMOND PASSOT of Paris, is a small, handy volume of 283 octavo pages. Apart from its intrinsic merit as a book filled with useful information and instruction, it is, we believe, the first publication of its kind devoted exclusively to a subject which is receiving rapidly increasing attention. So far, information on aesthetic surgery—we much prefer the author's adjective to that more commonly used, cosmetic—has been introduced in a fragmentary and half-apologetic manner into works covering the wider subject of plastic surgery. The author is to be congratulated on the excellent case he makes out for a specialty, at one time considered frivolous, of which his experience is obviously wide, for he is able to refer to 2,500 operations for facial wrinkles and 180 operations of an aesthetic nature on the breast. His book is intended for the benefit of practitioners, who, it is felt, should know something about the rudiments of this subject, just as they require a knowledge of the elements of ophthalmology or otology. It is emphasized throughout that aesthetic surgery calls for exclusive specialization, requiring artistic sense, delicate technique, and infinite patience and care over details if mistakes, which cannot be hidden, are to be avoided. Stress is laid on the pronounced psychical effects of physical blemishes and on the gratifying mental improvement which follows correction. A youthful appearance is considered more and more necessary in modern life, for employment often depends on it. It is pointed out, however, that the procedures described are not employed to make old women look young, but to prolong apparent youth in active energetic women who refuse to see themselves looking old before they feel so.

We are glad to see consideration given to the paramount importance of careful diagnosis, to free discussion with the patient of the precise nature of the treatment recommended and the results to be expected from it, and to the particularly important part which dressings may play in this class of work. A warning is given against the tendency on the part of the patient to seek replacement of one extreme by another, and it is aptly stated that Cyrano did not want a Greek nose, but envied the possessor of the retroussé type. We agree that very careful discernment is required if artistic and harmonious results are to be obtained. Local anaesthesia is employed almost exclusively by the author; any serious or lengthy interruption in his patient's routine life is thus avoided. In the chapter on scars, an unusual confidence and optimism is expressed regarding the treatment of keloid scars by excision, followed by immediate *x*-ray or radium treatment. The information about radium therapy is incomplete, for the length of tubes, each containing 10 milligrams of radium element, is not given, and it cannot, therefore, be judged over what length of scar the dose is to be distributed. Further, we do not clearly understand why a shorter exposure should be advised when more than one tube is used in the length of the scar. An oblique arrangement of tubes along a scar would appear preferable to the end-to-end arrangement advocated, if small areas of scar, corresponding to the solid extremities of the tubes, are not to escape radiation.

All classes of nasal deformity are discussed, and the procedures used for correction are well illustrated by diagrams. Paraffin injections are rightly condemned. An interesting description is given of a method of removing lipomata and skin cysts through minimal incisions. Defects of the palpebral fissure, ptosis, lip and ear deformities, facial paralysis, and defects of general facial contour are all dealt with fully, and plastic procedures for the masking of baldness and for the provision of new eyebrows and eyelashes are described. A chapter is devoted to facial wrinkles, and the procedures used for the correction of these, in their different degrees, are well described and illustrated. It is surprising to see local excision advocated for the treatment of double chin, although we realize that by some patients the resulting scar may be thought preferable to the disfigurement. The production of a vertical scar in this region is wisely condemned. The treatment of a certain type of lower eyelid bagginess, by the subcutaneous removal of fat via the lower conjunctival fornix, appears to carry with it too great a risk of infection to justify its inclusion as a purely aesthetic procedure. The author's wide experience convinces him that "face-lifting" procedures exercise a beneficial nutritional influence on the skin. The chapter on breast operations is well constructed, and a full description, helped by many useful diagrams, is given of those procedures employed in the correction of different degrees of prolapse. A useful bibliography and a number of photographic case records are appended.

ARTIFICIAL CRANIAL DEFORMATION

We owe to the great industry and ability of Dr. E. J. DINGWALL an authoritative account of the ethnological aspects of *Artificial Cranial Deformation*.[5] The purpose of the author in this splendid book, which contains five maps, fifty-five plates, a bibliography of over one thousand citations, and an excellent index, is to give a complete and unbiased compilation of the facts that bear on the ethnic aspects of this singular mutilation.

Cranial distortion differs from all other ethnic deformations in that it has obviously nothing to do with initiatic ceremonies or puberty rites, for clearly the deliberate attempt to fashion the skull according to some artificial standard must be begun immediately after birth and continued for the next three or four years. The intentional deformation must of course be distinguished from the accidental results of swaddling the infant or enforcing a prolonged decubitus against some kind of resisting framework, and even the attempts of midwives to massage the skull to close the open sutures. It is true that practices which began as deliberate attempts to mould the head linger on with some spurious justification from the medical opinion of the time. Such rationalizations are at best dubious, for almost invariably the profession at all times has proclaimed the evil of all mechanical restraints to the growing infant. The author's main purpose holds him from discussing at length those aspects of head deformation of more immediate interest to medical science, but from his inquiries it does seem clear that accidental distortions are recovered from almost completely, if not kept up beyond the first year of life. Also all the evidence, despite occasional opinions to the contrary, suggests that even the most extreme deformations, the result of years of restraint, are followed by no untoward effects. Exostoses are not more common in such cases. It is even doubtful if wormian bones are more frequent. There is no reason to believe that

[4] *Chirurgie Esthétique Pure (Techniques et Résultats)*. Par Raymond Passot. Collection des Actualités de Médecine Pratique. Paris: G. Doin et Cie. 1931. (Pp. 283; 80 figures, 8 plates. 45 fr.)

[5] *Artificial Cranial Deformation*. By Eric John Dingwall. London: J. Bale, Sons and Danielsson, Ltd. 1931. (Pp. xvi + 315; 55 plates. £3 10s. net.)

of vision or of smell occur, that intelligence is impaired, or other mental qualities affected

The methods by which the deformation is produced are, of necessity confined to variations in the use of compressing boards and bandages Very impressive is the world distribution of the practice Though no clear case of deliberate deformation of the cranium has been discovered in this country, yet the practice is known in France from Neolithic times onwards to the eighteenth century Without any considerable geographical interval the custom prevails from France through Central Europe to the Caucasus It has existed in Eastern India, Northern India, and Indo-China It can be traced through Melanesia and Polynesia, but apparently did not reach Australia or New Zealand It flares up again in Central America and radiates from there north and south, diminishing in degree and frequency as it passes to the periphery This girdle round the world is joined to Egypt by a pendant in Eastern Europe The author, despite his intentions, naturally returns again and again to the explanation of this bizarre phenomenon Extraordinarily unsatisfactory are such suggestions that the custom is local and sporadic, springing up here and there because of the fundamental unity of the human mind, continued because of the aesthetic impulse, or surviving because it is believed that the practice enhances the intelligence or is conducive to obedience

The genius of Elliot Smith has hit upon an explanation as simple as it is intelligible The author has summarized the evidence which shows that the custom is aristocratic, and that it is the upper classes who deform their heads Apparently this practice began in Egypt, for it so happened that the potent abilities of Akhenaton, the Heretic King, were housed in a skull whose occiput bulged prodigiously—probably the result of hydrocephalus Thereafter the royal family and the courtiers acquire this skull shape by intentional deformation, and Egyptian art which affords no earlier example of this deformity, now depicts it frequently The commerce and the prestige of Egypt spreads the custom and so it slowly extends round the world, often flaring up often dying down, or becoming extinct The chronology of its appearance in various parts of the world, its association with the ruling classes and an abundance of collateral evidence, all combine to support Elliot Smith's theory—a theory rendered more secure by this able and comprehensive monograph of Dr Dingwall

MEDICO CHIRURGICAL PRACTICE

Volumes v to viii of *Pratique Medico Chirurgicale*[6] complete the new third edition of a French medical encyclopaedia, the first four volumes of which were reviewed in these columns on August 22nd (p 345) Although the best wine, in our opinion, has been served last, the criticisms offered upon the work as a whole still hold good It would seem impossible in these days to produce an encyclopaedia of reasonable dimensions which would meet the needs of the family practitioner and at the same time satisfy the specialist, whose clinical and therapeutical field becomes more and more intricate as his interests become more concentrated upon a single subject The omission of the greater part of operative surgery in the next edition would not detract from the value of the present work Those called upon to operate on brain or prostate for instance, go for instruction elsewhere than to encyclopaedias On the other hand, *Pratique Medico Chirurgicale* affords much information to the general practitioner in those discussions of treatment of disease where the medical and surgical possibilities are weighed up and the available methods judicially examined

The volumes before us deal largely on general textbook lines with most of the subject matter, but we would choose the practical and comprehensive sections on syphilis and tuberculosis as outstanding excellencies in an excellent production The sections devoted to obstetrical and gynaecological subjects are most lucid, and the genito-urinary tract is minutely dealt with, the value of the articles being greatly enhanced by beautiful illustrations The pictures of lesions in the bladder as viewed with the cystoscope are perfect in their clarity The attention to detail is exemplified in the description of the passage of catheters—a manœuvre usually passed over in most textbooks

Admirably printed and bound, the volumes will attract the eye and hold the attention of those interested in French medical thought and methods

FAMOUS CENTENARIANS

In *Five Score A Group of Famous Centenarians*,[7] Mr. FORBES GRAY tells in a most readable and attractive manner the life histories of twelve examples of longevity eminent in very different fields As a rule women live longer than men, though it has been said, perhaps by way of consolation, that extreme length of days is less infrequent in the male sex, among the interesting group here presented to the reader three of the sex formerly regarded as the weaker find a place—Lady Smith (1773–1877), the wife of Sir James Smith the botanist Mrs Haldane of Cloan (1825–1925) and the Hon Katherine Plunket, born in 1820 who has more than 110 notches to her not out score The authenticity of these centenarians is well established except in the cases of Charles Macklin *dramatist and actor, the date of whose birth is* doubtful and Martin Routh (1755–1854), the bibliophile and president of Magdalen College, Oxford who died in his hundredth year Only two and these both women, lived beyond 101 years It is rather surprising that the author's diligent search in many likely quarters has failed to reveal more than one medical man who has reached the hundred year mark—Sir Henry Pitman whose autobiography, which constituted much of his obituary notice in the *Lancet* is admittedly drawn on here The account of Manuel Garcia, musician and inventor of the laryngoscope, mentions that he received the degree of doctor of medicine *honoris causa* from the University of Konigsberg A specially interesting life is that of Sir Moses Montefiore, the philanthropist, whose travelling companion, Thomas Hodgkin of Guy's Hospital died at Jaffa, when there with Sir Moses on a mission of mercy during a cholera outbreak *Centenarian representatives of* the Church, diplomacy, the Navy and the Army are also described

BLOOD SUGAR IN CHILDREN

Dr ELISABETH SVENSGAARD has written a monograph in English on *Blood Sugar in Normal and Sick Children*[8] and in particular deals with the metabolism of sugar in coeliac disease She presents a valuable series of data on the fasting level of blood sugar in babies and older children, and its rise after the ingestion of sugar. Unfortunately she appears to use the term hyper-

[6] *Pratique Medico-Chirurgicale* Publiée sous la direction de A Couvelaire, A Lemierre, Ch Lenormant Troisième édition entièrement nouvelle Tomes v, vi, vii et viii Paris Masson et Cie 1931 (1480 fr the set of eight volumes, 165 fr each volume separately)

[7] *Five Score A Group of Famous Centenarians* By W Forbes Gray LRCP FSA Londn J Murray 1931 (12 × 7½, pp 222, 8 plates 12 net)

[8] *Blood Sugar in Normal and Sick Children* By Elisabeth Svensgaard Acta Pædiatrica Vol xi Supplement Uppsala Lewin and Munksgaard 1931 (Pp 240 illustrated)

glycaemia" somewhat loosely for any rise above the fasting level, and writes in the same paragraph of an "extremely slight hyperglycaemia" and a "low blood sugar curve" as synonymous in cases of coeliac disease after ingestion of glucose. Once the terminology has been mastered, however, readers will find this monograph full of useful information. The level of blood sugar in eczema and rickets is also discussed on the basis of a small number of cases. The English is throughout excellent for a foreign writer, although the influence of America is shown in the use of the term "crackers" for biscuits, and the spelling of names is not always accurate, Professor Leonard Parsons having lost his final "s."

NOTES ON BOOKS

The second and revised edition of *A Manual of General Medical Practice*,[9] by Dr. STANLEY SYKES, can be recommended for those who are beginning medical practice. It contains pithy and practical comments on the conditions most likely to be met, and takes for granted such medical and surgical knowledge as the student will have already obtained, thus saving space. It is therefore an eminently readable book, with a satisfactory index and a helpful outlook.

Dr. WILLIAM A. WHITE has contributed a volume (No. 54) to the Nervous and Mental Disease Monograph Series. It is entitled *Medical Psychology: The Mental Factor in Disease*,[10] and surveys the subject generally, though entering into a good deal of detail. The main theme is that disease, wherever occurring, has always a psychological aspect, and that therefore psychology should be just as much an essential part of the medical curriculum as is physiology. The author's arguments and clinical illustrations go far to support this thesis.

Two further Parts—XI and XII—of Baillière's *Synthetic Anatomy*[11] have now appeared. They deal with the male and female perineum in much the same way as previous members of this useful series. In so far as structural and regional anatomy can be taught by pictorial methods, this series is undoubtedly most valuable, but it will probably find its chief use in recalling to the memory of the surgeon, as well as of the medical student, the visual impressions gained by actual study of the human subject.

The *Proceedings of the Second International Congress for Sex Research*,[12] held at the house of the British Medical Association from August 3rd to 9th, 1930, under the presidency of Professor F. A. E. Crew of Edinburgh, have recently been published in a single volume, which is divided into five parts, devoted respectively to biology, hormones, therapy, contraception, and sociology. Of the eighty papers contained in the volume, forty are in English, twenty-one in German, eleven in French, and eight in Italian. Among the papers may be mentioned those on the influence of diet on the procreative faculty of white mice, dogs, and cats, by E. Agduhr; the evolution of secondary sex characters and of accessory sex organs, by J. J. Cunningham; sex differences in the physique of Minnesota University students, by C. H. Jackson; the physiology of sexuality in plants, by F. W. Sansom; biochemical studies on the testicular hormone, by F. C. Koch and A. E. Womack; biological tests of the female hormone, by J. Freud; gynaecology and sexology, by P. Strassmann; constitutional factors in human sterility, by A. W. Rowe; chemical contraceptives, by J. R. Baker; the erotic life of the child, by P. K. Bruhn; and psycho-analysis and biology, by Ernest Jones.

[9] *A Manual of General Medical Practice*. By W. Stanley Sykes, M.B., B.Ch., D.P.H., M.R.C.S., L.R.C.P. Second edition. London: H. K. Lewis and Co., Ltd. 1931. (Pp. xi + 213; 1 figure. 7s. 6d. net.)

[10] *Medical Psychology: The Mental Factor in Disease*. By William A. White. New York and Washington: Nervous and Mental Disease Publishing Company. 1931. (Pp. v + 141; 4 figures.)

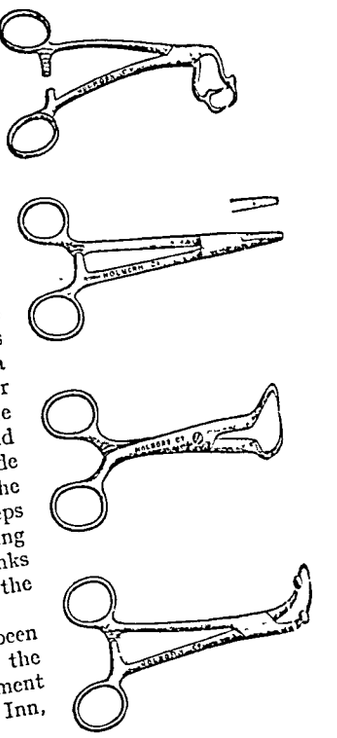
[11] *Baillière's Synthetic Anatomy*. By J. E. Cheesman. Part XI, Perineum (male); Part XII, Perineum (female). London: Baillière, Tindall and Cox. 1931. (3s. net each part.)

[12] *Proceedings of the Second International Congress for Sex Research*, London, 1930. Edited by A. W. Greenwood. Edinburgh and London: Oliver and Boyd. 1931. (Pp. xi + 637; illustrated. 21s. net.)

PREPARATIONS AND APPLIANCES

AN IMPROVED TETRA FORCEPS

Dr. ERNEST W. LEWIS (Southport) writes: The tetra forceps in common use have several disadvantages. For instance, the bows, being on the same plane as the teeth, tend to stick up and get in the way of the surgeon. The teeth or jaws are too small, and for this reason are difficult to release from the towel with one hand. The illustration shows an improved model made on my suggestions. The jaws are large, enabling one to apply or remove the forceps with ease. They are a convenient length, shorter than the usual type, the shanks are curved, and the finger-rings are made at right angles to the teeth, so that the forceps lie flat. The jaws being double-toothed, the shanks do not slip about under the tetra cloth.



The forceps have been made for me by the Holborn Surgical Instrument Co., Ltd., 26, Thavies Inn, E.C.1.

CRYSTALLINE VITAMIN D

Calciferol is the name given to pure crystalline vitamin D, as recently isolated by a team of workers at the National Institute for Medical Research (see *British Medical Journal*, November 7th, p. 858). This substance has now been produced on a larger scale by British Drug Houses Ltd., who are offering it for sale. The product has an amazing biological potency, for it contains 40,000 units per milligram. British Drug Houses Ltd. are to be congratulated on having performed a useful service to scientific research by making this substance generally available.

NOVUTOX LOCAL ANAESTHETIC

Novutox local anaesthetic is described as containing para-amino-benzoyl di-ethyl-amino-ethanol hydrochloride and adrenaline in Ringer's solution, with an addition of quinine derivatives and 0.1 to 0.2 per cent. benzoic acid. The first drug is also termed procaine hydrochloride (*U.S.P.*, xi, ethocaine hydrochloride (*B.P.C.*), but is best known under various proprietary names, such as novocain. E. Bergen (*Deut. med. Woch.*, 1929, lvii, 1835) states that novutox contains 1 in 80,000 chinatoxin; he reports favourably on its antiseptic and local anaesthetic action. The makers (Pharmaceutical Corporation Ltd., 39, Aldersgate Street, E.C.1) report bacteriological tests which prove that solutions of novutox remain sterile for weeks after a bottle or ampoule is opened. The advantages and convenience of a local anaesthetic solution that is self-sterilizing are obvious.

A QUININE DERIVATIVE

Thio-quin is a quinine derivative of Indian manufacture (Bio-Technical Works, Ahmedabad). The makers state that its composition is di-hydroxy-trimethoxy-quinine phenyl ester phonate. They claim that it does not produce cinchonism, that it is efficacious as a prophylactic and curative agent in malaria, and that it can be produced at a price which compares favourably with that of quinine. Any advance in antimalarial therapy is a matter of great importance, and we hope that further investigation will substantiate the claims made by the makers.

Nova et Vetera

A DISSERTATION BY WILLIAM HUNTER ON THE UNCERTAINTY OF THE SIGNS OF MURDER IN THE CASE OF BASTARD CHILDREN

Early in the seventeenth century the practice of killing illegitimate children directly they were born had become a very common occurrence The unmarried woman of that time who became pregnant did not resort to illegal operations Abortion then was rare, infanticide quite common Just the converse obtains at the present time —illegal operations being very common, infanticide comparatively rare

THE ACT OF JAMES I

So frequent had the crime of infanticide become that in the reign of James I an Act of Parliament was passed to deal with the matter Briefly, the provisions of the Act were as follows If a woman delivered of a child, which, being born alive, would be a bastard, endeavoured by burying, drowning, or other means, by herself or others, to conceal its birth so that it would not be possible to determine whether it were born alive, it was murder, unless she could prove by one witness at least that it was born dead By this law there was this very important difference between ordinary murder and the murder of a bastard child—that in the latter case the *onus probandi* was in some measure thrown on the accused person, a practice totally at variance with an essential principle of English justice

The law was regarded as so unfair and severe that in practice it seems that judges, juries, and even the prosecution entered into a conspiracy to defeat its harshness

Many fictions and judicial evasions were resorted to in order to evade the Act For example, it was held that if the mother had provided clothes for the expected child she had not concealed the birth, if she knocked on the wall during the actual birth she had called attention to the birth, and again was not guilty of concealment, and so on The Act, however, remained in nominal force till the reign of George III, when in 1803 it was repealed, and it was enacted that trials for murder of bastard children should be taken on the same rules of evidence as in other cases of murder The Act has many interesting features, and some of the relevant portion is here quoted

"And whereas doubts have been entertained respecting the true sense and meaning of a certain Act of Parliament made in England, in the twenty first year of the reign of his late Majesty King James the First, intituled an Act to prevent the destroying and murthering of bastard children, and also of a certain Act of Parliament, made in Ireland in the sixth year of the reign of her late Majesty, Queen Ann, intituled an Act to prevent the destroying and murthering of bastard children, and the same have been found in sundry cases difficult and inconvenient to put in practice, for remedy whereof, be it enacted by the authority aforesaid, that from and after the first day of July in the year of our Lord one thousand eight hundred and three, the said two several Acts, and everything therein contained, shall be, and the same are hereby repealed, and that, from the first day of July in the said year of our Lord one thousand eight hundred and three, the trials in England and Ireland respectively of women charged with the murder of any issue of their bodies male or female, which being born alive would by law be bastard shall proceed and be governed by such and the like rules of evidence and of presumption as are by law used and allowed to take place in respect to other trials for murder and as if the two several Acts had never been made

"Provided always, and be it enacted, that it shall and may be lawful for the jury by whose verdict any prisoner charged with such murder as aforesaid shall be acquitted, to find, in case it shall so appear in evidence, that the prisoner was delivered of issue of her body, male or female, which, if born alive, would have been bastard, and that she did, by secret burying or otherwise endeavour to conceal the birth thereof, and thereupon it shall be lawful for the court before which such prisoner shall have been tried, to adjudge that the prisoner shall be committed to the common gaol, or house of correction, for any time not exceeding two years"

The same Act provides that if any person shall maliciously administer to, or cause to be administered to or taken by any woman, any medicines, drugs, or other substance or thing whatsoever, or shall use or employ or cause or procure to be used or employed any instrument or other means whatsoever, with intent thereby to cause or to procure the miscarriage of any woman not being, or not being proved to be, quick with child at the time of administering such drugs or using such means, such persons shall be guilty of felony, and shall be liable to be fined, imprisoned, set in the pillory, privately or publicly whipped, or transported for any term not exceeding fourteen years If at the time the offence was committed the woman were proved to be quick with child, the punishment was death It was by this Act that the procuring of abortion was first made a statutory offence. Previously, it was punishable by Common Law only.

WILLIAM HUNTER'S VIEWS

The great William Hunter, as the result of his experience in cases of infanticide, believed that injustice was often done to the mothers concerned He gave an address on the subject to the Medical Society in July, 1783, in which he made the following statements

"What is commonly called the murder of a bastard child by the mother is a very different crime if all the circumstances were known In most cases the mother has an unconquerable sense of shame, and pants for the preservation of her character. She has not the resolution to meet and avow her infamy In proportion as she loses the hope either of having been mistaken as regards her pregnancy or of being relieved from her terrors by a fortunate miscarriage she every day sees her danger greater and nearer and her mind more overwhelmed with terror and despair In this situation many of these women would destroy themselves if they did not know that this would infallibly lead to an inquiry and thus disclose their secret. In this perplexity and meaning nothing less than murder of the infant, they are meditating different schemes for concealing the birth of the child They often are taken in labour sooner than they expected, their schemes are frustrated, their distress of body and mind deprives them of all judgement and rational conduct, they are delivered by themselves just where they happen to be, they faint away and on recovering consciousness find the child apparently lifeless. In these circumstances they hide every appearance of what has happened, and do their best to conceal the birth"

Here he mentions several examples, but the lack of space prevents my quoting them But to do the very forcible views of Hunter justice I must relate, even if somewhat fully, one instance

Her scheme was, when taken in labour, to have run out to that house, to be delivered by a midwife who was to have been brought in to her. She was to have gone home after, and to have made the best excuse she could for being out. She had heard of the wives of soldiers having been delivered behind a hedge, and following the husband with the child a short time afterwards. She hoped to be able to do as much herself. She was taken ill at night of a cholic, as she thought; put on some clothes to keep herself warm and that she might be ready to run out if her labour came on. After waiting some time she suddenly fell into such a racking pain and terror that she found she had neither strength nor courage to go downstairs and through the street in that condition, and in the night. In despair, she threw herself on the bed, and by the terror and anguish she suffered she lost her senses and fainted. When she came to a little recollection she found herself in a deluge of discharges, and a dead child lying beside her limbs. She first of all attended to the child and found that it was certainly dead. She lay upon the bed for some time considering what she could do; and by the time that there was a little daylight she got up, put all the wet clothes and the child into her box, and put the room into order.

"Mr. Pinkstan and I declared we thought her tale very credible, and reconciled the circumstances of the swimming of the lungs to the satisfaction of the jury. She was acquitted.

"To form a solid judgement about the birth of a newborn child from the examination of its body a professional man should have seen many newborn children, both stillborn and such as had outlived their birth a short time only, and he should have dissected or have attended dissections of a number of bodies in the different stages of advancing putrefaction.

"I have often seen various common and natural appearances, both internal and external, mistaken for marks of a violent death. The material question, in suspicious cases, is—how far may we conclude that the child was born alive, and probably murdered, if the lungs swim in the water?

"First. We may be assured that they contain air. Then we are to find out if that air be generated by putrefaction.

"Second. To determine this question, we are to examine the other internal parts, to see if they be emphysematous or contain air; and we must examine the appearance of the air bubbles of the lungs with particular attention. If the air which is in them be that of respiration, the air bubbles will hardly be visible to the naked eye; but if the air bubbles be large, or if they run in lines along the fissures, the air is certainly emphysematous, and not air which had been taken in by breathing.

"Third. If the air in the lungs be found to be contained in the natural air vesicals, and to have the appearance of air received into them by breathing, let us next find out if that air was not perhaps blown into the lungs after the death of the infant. It is so generally known that a child born apparently dead may be brought to life by inflating its lungs, that the mother herself or some other person might have tried the experiment.

"If it be clearly made out that the child had breathed, may we infer that it was murdered? Certainly not. It is a circumstance which amounts only to a suspicion.

"If a child makes but one gasp and instantly dies the lungs will swim in water as readily as if it breathed longer, and had then been strangled. A child will very commonly breathe as soon as its mouth is born, and in that case may lose its life before its body be born, especially when there happens to be a considerable interval of time between the birth of the child's head and the protrusion of its body. And if this may happen when the best assistance is at hand, it is still more likely to happen when there is none.

"We frequently see children born who are but barely alive. After breathing a short time they die in spite of all our attention. And why may not that misfortune happen to a woman who is brought to bed by herself?

"When a woman is delivered by herself, a strong child may be born perfectly alive, and die in a very few minutes for want of breath; the following case illustrates this point. A lady at a pretty distant quarter of the town was taken with labour pains in the night time. Her nurse was called up and I was sent for. The child was born before my arrival. It cried and was felt to move vigorously. Expecting to see me every moment come into her bed chamber, and being afraid that the child might be some way injured if an unskilled person should take upon the office of a midwife on the occasion, she would not permit the nurse to touch the child, but kept herself in a very fatiguing posture that the child might not be pressed upon or smothered. I found it lying upon its face in a pool which was made by the discharges, and so completely dead that all my endeavours to rouse it to life proved vain.

"These facts deserve a serious consideration from the public, and as I am under a conviction of mind that, when generally known, they may be the means of saving some unhappy and innocent woman, I regard the publication of them as an indispensable duty."

AN INQUEST OF 1815

The views expressed by Mr. Hunter one hundred and fifty years ago are quite in consonance with modern medical jurisprudence. An account of an inquest held in London in January, 1815, is of interest in connexion with this question. The report is taken from the *Morning Chronicle* of January 24th, 1815.

"Coroner's Inquest. Yesterday evening an inquest was held at the Lion and Lamb, Lower Grosvenor Street, before A. Gell, Esq., Coroner for Westminster, on the body of Sarah Sylvester, a cook in the family of the Rev. Dr. Robert Hodgson, Rector of St. George, Hanover Square, who put an end to her existence by cutting her throat with a razor, in a hay-loft over the stable, in the rear of the house in Lower Grosvenor Street, after having delivered herself of a male child, whose body was found lying near her with a silk handkerchief tied round its neck, and the body covered with hay bands.

"It appeared in evidence, that between 10 and 11 o'clock on Thursday morning the deceased was missed from her master's house. It was then supposed she was gone out on some business of her own, but not returning as the dinner hour drew near, the butler inquired for her at the houses of several persons where she used to frequent, but she was not to be found. Between 7 and 8 o'clock in the evening, the butler and kitchen maid commenced a fresh search for her, and, after looking over every part of the house, they searched the out-offices; on their going up to the loft over the stable, they found the door shut close to; the butler knocked at the door and called, but receiving no answer, he pushed it hard, and found that it was unlocked, but kept shut by something being placed against it on the inside. He forced open the door so far as to admit his head, and looking in, saw the deceased lying against the door with her throat cut, and the floor covered with blood. He turned away horror struck, and made the circumstance known to his master, who sent for Mr. Barrow, a surgeon. Dr. Hodgson, Mr. Barrow, and several of the domestics proceeded to the hay-loft. The deceased was quite dead, with her throat cut from ear to ear, an open razor was lying by her side, and at her feet was the body of a newborn infant, also dead, with a silk handkerchief tied round its neck, and the body wrapped in a hay band.

"No particular acts of insanity on the part of the deceased were laid before the jury, but it appeared that her having the razor in her possession might be accounted for, as it was necessary for the woman to have a sharp instrument for the purpose of delivery; that she might so have it without any idea of committing suicide; and that her pains and the want of proper assistance at the time might bring on a momentary derangement. On the body of the infant there appeared no particular marks of violence, and the jury were led to suppose that the cause of the handkerchief being tied round the child's neck was for the purpose of delivering herself."

The inquiry was long and minute. At length the jury, under the direction of the coroner, returned a verdict of "Suicide whilst of unsound mind," in the case of the woman, and of "Found dead," in the case of the child.

At that time a verdict of suicide carried with it the odium of burial at a cross-road, with a stake driven through the body and forfeiture of goods. The law which was responsible for this horrible procedure was repealed in 1824 (4 Geo. IV, c. 52).

L. A. PARRY.

British Medical Journal

SATURDAY, DECEMBER 19th, 1931

GENITO-URINARY TUBERCULOSIS

In our opening pages this week will be found an interesting account, by Professor A. H. Burgess, of the late John B. Murphy's contributions to urology. Although the name of this prolific worker is associated more particularly with the abdomen, his work in the genito-urinary field of surgery was equally valuable. As not infrequently happens a personal illness first directed his attention to the disease, to the study of which he afterwards made such valuable contributions. Whilst a post-graduate student in Vienna he suffered from a sharp attack of haematuria, which was considered at the time to be due to renal tuberculosis The diagnosis was a mistaken one, but the experience directed Murphy's thoughts not only to the general significance of haematuria, but more particularly to the question of genito-urinary tuberculosis Notwithstanding that he did not possess the many advantages enjoyed by the modern urologist, that the cystoscope was still a primitive instrument, and that such methods of examination as ureteric catheterization and pyelography were unknown, it can be said that the views he arrived at on the subject of urinary tuberculosis differ very little from those held at the present day. Indeed, on only one point would the modern urologist part company with him.

The discovery of a tuberculous focus in a kidney is, according to modern views, a definite indication for nephrectomy, provided the kidney on the opposite side can be certified as sound. It is true that a few workers still maintain, as did Murphy, that spontaneous healing of an early renal tuberculosis may take place, but to the majority, even though they may admit this possibility, the risks of the expectant attitude appear too great to allow of an infected kidney being left, once it is diagnosed. Indeed, there are many who throw doubt on the existence of these cases of spontaneous healing, or consider them so rare that they should not be allowed to influence the plan of treatment. Renal scars are found in the post-mortem room that are uggestive of old healed tuberculous foci, but the proof that they are examples of spontaneous cure is often lacking, or at any rate insufficient to upset the dictum that the only treatment which can free a patient from the risk of a widespread urinary tuberculosis is prompt and early removal But the fact that renal tuberculosis, even in its early stages, is now regarded as a condition that demands surgical intervention does not mean that medical measures play no part in treatment. The removal of the infected kidney is only the initial step, and the adoption of such therapeutic measures as rest, climate, and diet, supplemented, perhaps, by the giving of tuberculin, plays as important a part in achieving a complete and lasting cure of the disease as it did in the days of Murphy. All that can be asked of surgery is that it should rid the patient of tissue that is grossly infected, and place him in a better position to cope with that which has been left behind. The explanation of Murphy's more conservative attitude towards nephrectomy undoubtedly lies in the fact that in his day methods of differential diagnosis were less refined than they are at the present moment. It was difficult, even in the more favourable cases, to be certain that the opposite kidney was sound. If the work of estimating its capacity to support life were handicapped by the existence of tuberculous cystitis and haematuria, the difficulties may well have proved insuperable. In these circumstances a conservative attitude towards nephrectomy would be encouraged, for the danger of removing the wrong kidney, or of leaving the patient with an organ unable to support life, must always have been present Nowadays, however, thanks to the progress made in diagnostic methods, this danger exists only in a small degree, and the surgeon can cut down on a kidney, confident not only that he will find in it a focus of infection, but also that if he removes it the opposite organ is sound and able to maintain the patient in a state of health

But if Murphy, in the light of our present knowledge, erred on the side of conservatism in his treatment of renal tuberculosis, he was certainly right in his attitude to genital infections. As Professor Burgess says, he was a " forceful advocate of the conservative operation of epididymectomy, and strongly opposed to the mutilation of castration " To quote again Murphy's own words, " There is no more occasion for taking out the testis proper in the early stages of tuberculous epididymitis than there would be for taking off the caput coli if you had a case of appendicitis." In this he was most assuredly right, and yet even at the present day there are surgeons who do not hesitate to remove the whole testicle, however early the disease, and however free from infection the body of the testis may be. It would be difficult to justify such a proceeding even if there existed no danger of the opposite epididymis being involved later. When we realize, however, that in over 60 per cent. of cases the disease becomes bilateral within the space of two years, the error is still more flagrant. To the average patient the loss of a testicle comes as a shock, and if a year or two later he discovers that the opposite organ is also involved, he is likely to be plunged into despair. If the epididymis alone has been sacrificed at the first operation, the thought of a second intervention entails little distress, for the patient feels that as he has suffered little or no inconvenience from what has been done before, he can submit to a similar operation with an easy mind Even in cases that cannot be considered early, epididymectomy is all that is necessary, for it is a fact that the testis may remain free from disease even when the epididymis has been converted into a caseous mass This resistance of the testis to invasion, and the tendency for the disease to become bilateral, should therefore always be

uppermost in the mind of the operating surgeon. Indeed, he would do well to assume that even if the epididymis on the opposite side is sound, it will sooner or later become involved, and that for this reason it is advisable to anticipate future trouble and adopt what preventive measures are possible. One of two things may be done: either the sound epididymis may be removed or the vas may be divided between ligatures. Although the former procedure is the more certain, vasoligature, by blocking the path along which the future invasion will take place, affords valuable protection to the epididymis. Some surgeons, and more particularly H. H. Young, have advocated the removal of the entire seminal tract, on the grounds that the testicular lesions are always secondary to a central focus in the prostate and vesicles, and that any operation that does not deal with this central focus is necessarily incomplete. But whether the pathology on which this contention is based be correct or incorrect, there is little clinical evidence that such a wholesale operation is desirable or necessary. It is a matter of general experience that, provided the supply of infected material from the epididymis be cut off, the central lesions in the prostate and vesicles in the vast majority of cases rapidly clear up.

Surgery should not be regarded as the means of eradicating the last trace of tuberculosis either in the genital or in the urinary tract. It is a means to an end, a preliminary to the adoption of medical measures; and in none but the very advanced cases complicated by sinuses is it necessary to include within the sphere of an operation the prostate and vesicles.

THE VIRUS HYPOTHESIS

The somewhat hackneyed title of the imposing volume of 500 pages by Dr. Gye and Dr. Purdy, *The Cause of Cancer*,[1] conceals the fascinating record of six strenuous years of research directed to establish the following propositions: (1) The essential part of the "agent" responsible for the non-cellular transmission of the filterable tumours of the fowl is a living, ultramicroscopic microbe, or virus. (2) The specific characters of non-cellular transmission are due to an associated accessory factor, produced by the tumour cells. Joint action of the two factors, virus and tissue accessory substance, is necessary for infection of new cells. (3) The accessory factor is the same or nearly related in tumours of the same mother cell, and different when cells of a different type are involved. (4) A similar mechanism is responsible for the phenomena encountered in mammalian tumours. If these propositions can be established, cancer can fairly be described as an infective disease, the peculiarities of which depend on the complexity of the mechanism responsible for infection. How far have the authors succeeded in their attempt?

The evidence for the presence of a virus in active filtrates, although still indirect, is very impressive. The close parallel between the mode of action of antiseptics in inactivating tumour filtrates and in killing ordinary bacteria (colon bacillus) or the virus of pleuro-pneumonia is demonstrated at considerable length. (The results of S. L. Baker, not mentioned in the book, on the action of ultra-violet light on *B. coli*, bacteriophage, Rous tumour filtrate, and trypsin, lead to the same conclusion.) The evidence for the complexity of the infecting mechanism occupies the greater part of the book. The fundamental fact requiring explanation is the specific character of the transmission in the absence of living cells. There are now some five or six filterable fowl tumours in existence, which differ among themselves in histology and in biological behaviour, and they all breed true when propagated over long periods by cell-free filtrates. Most of them can also be propagated by injection of completely desiccated tumour tissue after long storage at a temperature a little above 0° C.; and, again, the new tumours reproduce the characters of the parent tumour perfectly and never one of the others. In contrast to this remarkable hardiness the filtrates quickly lose their infectivity on incubation, so that after a few hours highly infective material may be injected into susceptible birds in large doses without result. A careful study of this rapid deterioration by the authors, and by J. H. Mueller, has shown it to be due to the action of tissue oxidases. In consequence it can be retarded by a variety of procedures which inhibit oxidase activity—for example, low temperature, anaerobiosis, dilute hydrocyanic acid, cystein. It is highly improbable that the addition of a cell poison like hydrocyanic acid would lessen the killing effect of otherwise inimical conditions. For this and other reasons the suspicion arose that the loss of infectivity on incubation resulted from the destruction of a labile non-living accessory substance present originally in the active filtrate and necessary for infection.

An account of the authors' efforts to obtain this labile accessory substance entirely free from virus, and to demonstrate its existence and properties in other ways, occupies the second half of the book. The attempts to eliminate the virus by the action of phenol, chloroform, acriflavine, and hydrocyanic acid were carried out in a variety of ways with most elaborate precautions, and the details of the experiments serve as a model for work of this kind. The results were nevertheless inconclusive, and it was impossible to establish experimental conditions under which an accessory factor free from st... viving virus could be prepared with certainty. Th... failure of this line of investigation, and the equivocal nature of the results of experiments in which the re... combination of virus and accessory factor re-te... infectivity, are described with complete candour, and led the authors to attack the problem in another way— by the preparation of antiserums to products contain... the active substances separately or in different a... Active filtrates prepared in all sorts of ways were ... as antigens, either fresh or after heat inactiva... ducks, geese, goats, and horses being employed. T... antiserums, after inactivation by heat, acted in ... ways. Certain tumour filtrates were rendered in ...

[1] *The Cause of Cancer*. By W. E. Gye, M.D., and W. J. Purdy, M.B. London: Cassell and Co., Ltd. 1931. (30s. net.)

lessened in potency, by the heated immune serum alone. Other heated antiserums only acted when fresh normal serum (complement) was added. The inference from general immunological findings was that the first type of action, without complement, corresponded to the action of antitoxic serums on toxins, and showed the presence of the non-living accessory factor. The reaction requiring the presence of complement revealed the presence of an antibody directed against the virus component of the infecting filtrate. An imposing number of experiments of this type were performed, and are recorded in full detail. They cannot be explained on any assumption other than that more than one active substance is present in infective tumour filtrates. Of these, one is made inert by inactivated antiserum, only when complement is present, and its antibody cannot be absorbed by normal fowl tissues. Hence it must be extrinsic and most probably viral. The other is cut out without the assistance of complement. its antibody can be absorbed by normal fowl tissues. Hence it is intrinsic—derived from the cell proteins of the fowl—and not microbic at all.

In regard to proposition (3), evidence that the active component derived from the fowl is the factor responsible for the tissue specificity of the filtrates was not obtained. On the contrary, heated antiserum to Rous sarcoma I, without complement, not only inactivates Rous I filtrate, but also Begg endothelioma filtrate, which is a histogenetically different tumour, but does not inactivate filtrates of Fujinami myxosarcoma, histogenetically identical. In regard to proposition (4), no new evidence of non-cellular transmission of mammalian tumours is adduced.

The charts which accompany the protocols are models of conciseness and clarity. They enable the reader to follow the most intricate arguments without hesitation. A plaintive protest may be permitted at the "art" lettering which mars their legibility. The attack on pathologists and other workers on cancer in the last chapter for their adherence to the "cell theory" of cancer is unjustified and out of place. The hardening of opinion against the virus hypothesis must be attributed much more to the publication of observations in the last few years, claiming an easy demonstration of a microbic etiology of mammalian cancer, than to any ingrained affection for cellular conceptions, physical or chemical. Such conceptions, we believe, are entertained with the reservation that they are subject to revision in the light of new knowledge.

PLAGUE IN 1930-31

The current (September) issue of the *Monthly Epidemiological Report* of the Health Section of the League of Nations contains an instructive survey of the incidence of plague in various countries during 1930 and the first six months of 1931. Generally speaking, the disease was less severe in 1930 than in previous years, this being almost entirely due to the fact that there has been a remarkable diminution in morbidity and mortality in the provinces of British India, which represent the most important foci of plague. In Java and Madagascar alone has the endemic shown no change, while in hardly any other country but Kenya has an increase of the disease been noted. In Northern Africa small epidemic foci have appeared in Morocco (where outbreaks have been known to occur since the end of the eighteenth century), in Algeria, Tunis, Tripolitania, and Egypt. In all these Northern African countries it was possible to distinguish a "maritime" plague (generally of the bubonic type), connected with rat plague in the ports, and a "rural" plague, transmitted either directly from man to man (pulmonary form) or through flea bites (septicaemic and bubonic forms). In Upper Egypt the seasonal variations were well marked, and the peak incidence of plague took place in spring, while in Alexandria the prevalence of the disease is almost constant. In Uganda the incidence of plague is closely related to the development of the cotton industry, so that the victims are most numerous in the districts along the railways where cotton-growing is well established. In the Union of South Africa the principal recent outbreaks of plague have been associated with severe infestations of veld rodents, such as gerbils, hares, and mice. Vaccination with various types of anti-plague vaccine has been carried out on a very large scale throughout Africa during the period under survey. The reduction of plague mortality in British India is shown by the fact that only 23,825 deaths were reported in 1930, as compared with 69,572 in 1929 and 135,647 in 1928. The most striking improvement has taken place in the Punjab, which recently has been second only to the United Provinces in its plague mortality. In Bengal and Assam the disease has been completely absent, and its incidence along the sea coast in the Madras and Bombay presidencies has been comparatively insignificant. In China, plague continues to prevail in several provinces of Manchuria and Mongolia. As regards America, no cases have been noted in the United States since 1928, while in South America the chief foci have been Peru, Argentina, and Brazil, but in none of these countries were the outbreaks extensive. In Europe, plague in 1930 was confined to the Mediterranean Basin, apart from a case reported in Bristol in December in a ship from Novorossiysk, South Russia, and a case at St Ouen, near Paris.

GASTRIC ACIDITY

Dr. J. D. Robertson's monograph on gastric acidity[1] places workers on this subject in his debt for a scholarly study. The function of the stomach is to triturate the food, reducing it to a chyme of uniform consistency for passage into the intestine, and to act on it chemically so as to forward the digestion and solution of the food. Various methods have been used to obtain gastric juice for analysis: opening the stomachs of animals (and even criminals) immediately after death, sponges swallowed and withdrawn later, induced vomiting. Beaumont's observations on his case of traumatic gastric fistula led to a considerable advance in knowledge. The use of the stomach tube mentioned by Boerhaave at the end of the seventeenth century, adopted for cases of poisoning by John Heysham of Carlisle and for dysphagia by John Hunter at the end of the next century, and adapted by Leube a century later for diagnostic purposes is

[1] *Gastric Acidity*. By John D. Robertson, M.D. London: J. Murray. 1931. (8s. net.)

now indispensable in the investigation of gastric disease. Dr. Robertson traces the evolution of our knowledge: first, the verifying that the gastric secretion is acid, and later, the establishing that the predominant acid is hydrochloric acid. Apparently William Prout in 1823 was the first to prove that the gastric juices contained free hydrochloric acid, and, further, that this was the only acid present. This latter conclusion was not, however, generally accepted; for, although it was proved that organic acids were not present in pure gastric juice, a different condition existed when food, especially carbohydrates, entered the stomach. Hydrochloric acid does not appear for some time after the ingestion of food, so that there is time for the action of the ptyalin of the saliva to form lactic acid from the carbohydrate portion of the meal. Many of the experiments on the physiology of digestion were made on dogs, and a dog's saliva has no ptyalin. In man and most other animals which have ptyalin, however, lactic acid is formed during the early stages of digestion. Werner in 1880 pointed out that lactic acid occurred normally in the stomach in the first stages of digestion, and that if found in the later stages in large amounts it constituted a pathological indication, and was due to delay of the ingesta in the stomach, or to insufficiency of hydrochloric acid, which normally inhibits the formation of lactic acid. A new turn to the controversy was given by Ewald, who in 1885 noted a prolongation of the lactic acid phase in pathological conditions, particularly in cancer of the stomach. A few years later Boas claimed that lactic acid was a specific indication of cancer of the stomach, and, further, that it was an early sign. Though Boas afterwards retracted his previous views, and concluded that the production of lactic acid was due to stagnation and deficiency of hydrochloric acid—factors which appear in cancer but which may be present in other conditions as well—some recent writers claim that lactic acid formation is not related to stasis, but is pathognomonic of carcinoma of the stomach, and may arise by the specific activity of the cancer cells in glucose. Dr. Robertson has carried out a series of carefully planned and accurately conducted experiments to settle this question. The material consisted of fractional test-meal examinations of seventy-four consecutive cases at the Middlesex Hospital. The conclusion is drawn that the ordinary qualitative tests and simple reactions for lactic acid are so easily influenced by so many substances that no reliance can be placed on them as a helpful sign in the diagnosis of carcinoma of the stomach. Further careful quantitative tests prove that the absolute specificity of the presence of lactic acid in the gastric contents in cases of carcinoma cannot be upheld. From a chemical analysis of the lactic acid recovered from gastric contents, Dr. Robertson concludes that the lactic acid present is the optically inactive form, of a composition indicating that it is the result of fermentation, and is not sarcolactic acid derived from the body cells. The cases with obstruction had much greater amounts of this lactic acid of fermentative origin. Dr. Robertson's admirable historical and experimental study will have a wide appeal. For many years it was hoped that the test meal would provide a specific chemical diagnosis for various affections of the stomach. Many who were taught to place reliance on the forms of the curves of acidity in various types of gastric disease will be brought up sharply by the author's just conclusion that "careful consideration will reveal the hopelessness of attempting exact mathematical deductions from the analysis of a mixture of food, itself of complex chemical character, saliva, regurgitant duodenal contents, secretions from the mouth, throat, and naso-pharynx."

DIET IN HISTORY

"Diet can have amazing consequences in history" is the *motif* of a recent article by Dr. T. R. Glover, the Public Orator at Cambridge.[1] Diet, he points out, is a factor which has attracted little notice from historians. Sugar, for example, has played a great part in the history of the West Indies and other regions of the world. It was one of the initial causes, though not the only one, of negro slavery in the West Indies, and was at last the supreme cause of the negro remaining in slavery. Thus it came about that slavery spread to the southern colonies in North America, and the cultivation there of rice, tobacco, and subsequently of cotton, was carried on. It was on the question of sugar that the whole struggle for emancipation centred in the days of Clarkson and Wilberforce; and indirectly it was responsible for the American Civil War. Sugar, except in the form of honey, was unknown as a food to the Hellenistic world, though there is some evidence that it was used as a medicine. The sugar cane was early introduced from India into Persia, and was carried by the Arabs to Egypt, Northern Africa, and Spain; the Portuguese introduced it into Madeira; and at the beginning of the sixteenth century it reached the West Indies. Until recent times the question of food chiefly interested historians in so far as it was concerned with famine and bread riots. Herodotus, however, was an exception, for he analysed the regimen of the Egyptians, the "healthiest of men," whose land had no vines, and who would not eat beef. Dr. Glover, referring to the low birth rate of the present day when Gargantuan meals are out of date, reminds the reader of vitamin E (anti-sterility accessory factor) by the remark, "we have paid more attention to food in relation to death than to birth." If it be true, as Timaeus opined, that historians show their own nature in what they linger over, Homer must have been a good trencherman. Athenaeus (circa A.D. 200), who compiled a masterpiece on diet, is described as "a kind of gastronomic Burton, not so pithy, nor so quaint, but as discursive, as learned, and as everlastingly reminiscent of lost authors who discussed the table and its delights, and everything else that might crop up at dinner." In mediæval England meat was poor in quality, and to make it attractive spices and seasoning were much in vogue; but they had to be brought from the East, and this helped to make traders sail far afield, especially the Portuguese and later the Spaniards. Then the Dutch took up the trail, until in an evil hour they so put up the price of pepper and spice that London resented it and established the East India Company. "If our diet affected history, it was surely when bad English meat and high Dutch prices drove Englishmen to find their own pepper."

[1] Glover, T. R.: *The Queen's Quarterly*, Kingston, Ont., p. 25.

SIR RONALD ROSS

In *Ronald Ross: Discoverer and Creator*[1] Mr. R. L. Mégroz, who has written other biographies, clearly proves that the popular belief that a man cannot be first-rate in more than one line of work is not without exceptions, and that his hero's record as an all-round genius is remarkable. The author and Mr. Osbert Sitwell (who contributes a brief but highly appreciative preface) both express unqualified admiration for Sir Ronald Ross's literary achievements, not only in poetry, but in prose, his novels, *The Child of Ocean* and *The Spirit of Storm*, not having received the attention they deserve. The first part of the volume is devoted to his activities in medical science and research, especially after the inspiring acquaintance with Patrick Manson; these are set out with sufficient detail to inform the lay reader of the essential facts without entering into too many bewildering technicalities. Working on the basis of Laveran's discovery in 1880, and the part played by mosquitos as carriers of malarial infection, Ross determined to concentrate his work on the study of the malaria parasite in the mosquito rather than in the man, with the triumphant result known to everyone. The original record of the discovery of the malaria parasite in the stomach wall of an anopheles mosquito on August 20th–21st, 1897, is reproduced from the laboratory notebook. In mathematics he was actively interested throughout his career, and long before he took up medical research; his originality was obviously shown in his publications on algebra and equations, the theory of errors and statistics—subjects of use in biological investigation. In the second part of this book his literary works are very fully described in twelve chapters, which present him as a satirical, dramatic, and lyrical poet, and as a critic of life, as a novelist, and as a descriptive writer. The author adds a personal epilogue, illustrated by a photograph of a group celebrating "mosquito day" (August 20th) in 1930. Appendices deal with Sir Ronald Ross's bibliography and other matters. Like other great discoverers he has had to meet opposition, but his name must ever be held in grateful memory.

[1] *Ronald Ross: Discoverer and Creator.* By R. L. Mégroz. London: G. Allen and Unwin, Ltd. 1931. (10s. 6d. net.)

KING EDWARD'S HOSPITAL FUND

At the annual distribution meeting of King Edward's Hospital Fund for London, held on December 11th, a letter was read from the King, in which he congratulated the council on being able to make a further increase in the distribution this year, and urged the importance of maintaining the income of the Fund and of the voluntary hospitals during the present crisis. The Prince of Wales, who presided, made some introductory remarks about the finances of the voluntary hospitals. In 1930, he said, voluntary contributions reached the remarkable total of £2,900,000 a year in London alone, or £9,000,000 a year for the whole country. Never was it more necessary than at present that there should be no falling off in these contributions. It was an encouraging fact that the ordinary grants made by the Fund had increased from £266,000 to £275,000, and that grants in aid of the pensions scheme were over £19,000. The Fund had been greatly helped by substantial legacies (about £65,000 in each of the past four years), and by special contributions. In addition to those acknowledged at the last meeting, a legacy of £50,000 had been received from the late Sir Otto Beit, and a further donation of £9,000 from an anonymous friend, whose gifts during the last few years now amounted to £63,000. His Royal Highness explained that the Distribution Committee had used the surplus funds available to strengthen the finances of the hospitals which had suffered most in 1930, or which had incurred exceptional liabilities. Commenting on the subject of patients' waking hours, he expressed his satisfaction that the proposals circulated by the Fund had been found feasible in some hospitals, though in the present circumstances it was not easy to make changes that involved additional staff. The Ministry of Health had commended these suggestions to all county councils and county borough councils throughout the country. In regard to the pay-bed insurance scheme for the professional and middle classes (submitted by the British Provident Association in 1929), he gave some striking figures to illustrate the success of the Hospital Saving Association in performing a somewhat similar service for the ordinary hospital patients. Subject to the agreement of the original donors, it was now proposed that £5,000 repaid by that body should be employed to help to launch the British Provident Association. Finally, he referred to the setting up of a special committee of inquiry into the defects of out-patient departments, whose sole object would be to find an impartial solution of the problem that would be accepted and put into operation by all the hospitals. Lord Marshall announced that the League of Mercy proposed to allocate once again to the King's Fund the sum of £17,000 from its collections.

BRITISH POST-GRADUATE MEDICAL SCHOOL: APPOINTMENT OF DEAN

It will be remembered that a provisional organization committee, to proceed with the action necessary to establish a British Post-Graduate Hospital and Medical School at Hammersmith, was set up in July, 1930, and reported last March; and that a Royal Charter constituting the Governing Body of the School was granted in July. The Governors of the School now invite applications from registered medical practitioners for the post of dean, at a salary of £1,800 a year. Applications must be received not later than first post on Monday, February 15th, 1932, by the chairman of the Governing Body, British Post-Graduate Medical School, New Public Offices, Whitehall, S.W.1, from whom further particulars may be obtained.

DEATH OF DR. R. H. TODD

We deeply regret to announce the death of Dr. Robert Henry Todd of Sydney on December 14th. Dr. Todd, who was a vice-president of the British Medical Association, and had for many years been regarded as the centre of medical organization in Australia, was present at the Eastbourne Annual Meeting last summer. He had just returned to Sydney, and intended to come back for the Centenary Meeting. We hope to publish an obituary notice in a later issue.

We regret to announce the death on December 14th, of Dr. James Alexander Lindsay, Emeritus Professor of Medicine, Queen's University of Belfast.

WINTERING IN ENGLAND

CLAIMS OF THE HOME RESORTS

A meeting attended by about eighty members of the medical profession was held at 28, Portland Place, W., on December 9th, to receive and consider a medical statement on the subject of wintering in England, following upon the influentially signed letter which appeared in these columns on December 5th (p. 1059). The chair was taken by Dr. W. G. WILLOUGHBY, President of the British Medical Association, and letters were read from Sir Thomas Oliver, Sir George Newman, Sir Robert Philip, and the Executive Committee of the Bath Division of the British Medical Association endorsing the objects of the movement.

Dr. Willoughby said that the fall of the pound sterling was likely to result in breaking the habit of many people of spending the winter abroad, and the time seemed opportune to put forward the claims of British health resorts, which had never received their proper due. It had been customary in the past to over-acclaim foreign resorts at the expense of British. Yet the British resorts compared very favourably with winter places in the Alps, Riviera, and the Desert. The daily range of temperature, which was a matter of importance to invalids, was 19° in the Alps, 18° at Nice, and 28° at Assouan, as against 7.8° in his own town of Eastbourne, and about the same elsewhere in the South and West of England. Nice had a daily average through the winter months of 3.99 hours of sunshine, but the average length on his own part of the South Coast was 2½ hours—not nearly so great a difference as was popularly imagined. Rainfall for the winter months on British coasts was sometimes a little higher and sometimes a little lower than for Nice. The Desert, to which people were sometimes sent for chest trouble, was overrated. During the war, in January, 1917, he lived for some time in the Desert, and, while the days were full of sunshine, the temperature at night was 44°, representing a difference of 60° between the day and night temperature. On one occasion he went to see a patient in a Swiss sanatorium, and had there not been a mountain railway it would have been impossible to find the spot on account of the prevailing mist. The patient told him that in that month of April there had been only thirteen days on which they had seen the sun at all. The British climate, said Dr. Willoughby, was a mixed one, but it was fitted to the British race, and had helped to make that race what it was. In any statement which went forth from the meeting it was, of course, important to avoid exaggeration, and also to avoid the mention of certain British health resorts at the expense of others. The sunshine records for all the resorts on the coast from Margate to Torquay only varied by small fractions. An important point was to have amenities at these resorts; the British people did not want casinos, but they did want good music and entertainment, and he thought, also, that the hotel people wanted waking up a little.

PROPOSALS FOR ACTION

Dr. FORTESCUE FOX, who has been the leading spirit in this movement, then read a memorandum which the provisional committee had prepared. Various suggestions for revision were accepted at the meeting, and the statement as revised appears below.

Colonel R. H. ELLIOT said that it was not for the medical profession to deal with hotel accommodation, cost of living, and so on, yet those were questions which affected largely the success of the movement towards getting patients to winter in England. British resorts had many advantages, first in respect of good sanitation. Sewage was not poured from our towns on a tideless sea. The food was generally excellent, and one knew what one was eating; it was plainer and better than was met with abroad. The country was a beautiful one, and full of interest of all kinds. The climate in many southern towns was very mild, with a large proportion of winter sunshine. Patients also had the advantage of being within reach of doctors of their own race, and he did not think there were any doctors as good. But patients demanded a greater standard of comfort than had been possible in the average British hotel in the past.

Sir WILLIAM WILLCOX thought the statement a little too restrained. Moreover, the point should be made that for invalids suffering from complaints of a rheumatic nature there were spas in the British Isles which could be well utilized during the winter months. Bath was one of the finest winter spas in the world.

Dr. WATTS EDEN said that although he had at various times sent patients for convalescence to English coast resorts, he had not been very successful. The post-war craze for excitement appeared to affect even the convalescent patient, who declared that he or she would be bored to death at a particular British resort. Somebody ought to write a thesis on the therapeutic value of dullness. For the worn-out mind and body quietude was wanted, with the kind of amusements which could be enjoyed without emotional thrill.

Dr. R. A. YOUNG said that it was possible to envisage great results from this movement on the medical side, but it badly needed the co-operation of the public authorities of the places concerned, the hotel proprietors, and those responsible for the social amenities. In some foreign countries there was available a collective account of their spas, with particulars of their climates and of their provision for visitors, and something of the kind was necessary here. Dr. C. A. MORTLOCK-BROWN urged that sanitation in respect of water supplies and drainage should precede any influx of convalescents into the country side; she had often come across Londoners sent to recruit in areas where there was inadequate sanitation to cope with infectious outbreaks. Dr. COLLIS HALLOWES referred to the desirability of the members of the local profession in each region coming together to decide as to the most suitable spots to send patients. Dr. E. P. POULTON put in a word for the East Coast. He had had a letter from a practitioner in Cromer pointing out that the East Coast was not such a dreary place in winter as was sometimes imagined, and that really uncomfortable winds occurred only in March and April, while the winter sunshine record for Cromer was even higher than for Bexhill. Dr. EGERT MORLAND said that when he was in charge of a foreign health resort a small local committee was established which concerned itself with the conduct of the place from a health point of view. On that committee hotel proprietors and public men, as well as doctors, were represented, and it proved very useful in promoting the amenities of the place. Dr. GEOFFREY HOLMES said that there was already a movement whereby medical men and the municipal authorities in the health resorts of the country were being brought together. One of the difficulties in the whole question was that members of the medical profession in general knew so little of climatology. He suggested that the present movement in favour of wintering in England might well get in touch with the Spa Practitioners Group of the British Medical Association, where an organization would be available for furthering its ends.

APPOINTMENT OF COMMITTEE

After other speakers had addressed the meeting, chiefly with a view to emphasizing the claims of certain localities for inclusion in the statement, the CHAIRMAN said that the suggestions made at the meeting would be duly considered

and a revised statement drawn up. A rather important point was a proposal that there should be regional conferences, perhaps three or four such conferences to cover the coast, where the medical men in the district could meet together and talk over the advantages of the different areas. He thought that such conferences would prove very useful indeed.

The memorandum, amended on the lines suggested at the meeting, was then unanimously approved, and a committee was appointed to carry the matter further. The committee included the signatories to the letter calling the meeting—namely, Sir Farquhar Buzzard, Dr. Watts Eden, Colonel R. H. Elliot, Dr. Fortescue Fox, Sir Thomas Horder, Dr. Robert Hutchison, Dr. E. P. Poulton, Sir Humphry Rolleston, Sir StClair Thomson, Sir William Willcox, Dr. W. G. Willoughby, and Dr. R. A. Young. To these it was proposed to add the name of Dr. King Brown, and also to give the committee power to add to its number, including members representing the coast regions.

MEMORANDUM ON BRITISH WINTER SEASIDE RESORTS

It is impossible at the present time for most people to travel abroad for health, thus gaining complete change of surroundings, mental and physical. But the same benefits in other forms can be obtained in our own country, and the short and comfortable journey to the seaside is often more advisable for invalids and convalescents. Over one hundred marine resorts in this country are now described in the *Medical Directory*. Only a few of these are usually recommended for the winter months; and they are generally regarded abroad as summer places! On the 6,000 miles of British coast there is actually a profusion and variety of places suitable for winter visitors as far as climate is concerned, although many of them are not yet adequately equipped. From the health point of view the coast is therefore an undeveloped asset, to an extent hardly realized either by medical men and the travelling public or the localities themselves.

The object of the present statement is to set forth the values attaching to the various groups of winter marine resorts for the guidance of those who usually winter in warmer climates. The tempering or tonic influences of the sea, at all seasons, give to the seashore definite climatic and medical characters. Marine resorts must therefore always be distinguished from inland health resorts. Only the seaside in the winter season will be here considered.

THE WINTER WARMTH OF BRITAIN

The British seaside resorts differ widely in the quality of the air, aspect, exposure, and winter temperature. Many of them in the south and west have very equable sheltered climates, unaffected by the Polar currents, and protected from easterly winds by intervening land. They lie open to the Atlantic and to the Gulf Stream, which is so effectual a heat carrier that Cape Wrath is as warm in winter as the Isle of Wight. Hence it is that the British Islands enjoy a climate 20° warmer than would be proper to their latitude, as may be judged by the fact that, where shelter is good, in the West, palms and fuchsias, eucalyptus and hydrangeas flourish in the open air.

COMPARISON WITH ALPINE RESORTS AND THE RIVIERA

Comparing the British resorts with winter places in the Alps, Riviera, and the Desert, the average temperature from November to March, the "invalids' winter," is 24° in the Alps, 45° in the South-West of England, 49° at Nice, and 67° at Assouan. The daily range of temperature, a matter of importance for invalids, shows striking differences: it is 19° in the Alps, 18° at Nice, 28° at Assouan, and 8-10° in the West of England.

As compared with the Riviera, the days in England are a little cooler, but the nights are considerably warmer. In place of a sudden fall in temperature at sunset, the Western nights are warm from the protecting clouds. A dry atmosphere, with cold in the Alps or heat in the Desert, is sometimes of definite medical value; but it is also true that the more humid British winter resorts, with great equability of temperature, are very favourable to the preservation and restoration of health. The proportion of sunshine and of daylight cut off by a cloudy atmosphere may differ greatly within a few miles. It often happens that when cloud or fog prevails in London or further north, the day is luminous, with bright sunshine, on the coast. "Fogs are often very localized, sea fogs being more prevalent in summer and land fogs in winter; on the English Channel fogs occur five times more often in June than they do in November, whilst in London land fogs are twenty times more prevalent in December than in June or July" (Hawkins).

THE WESTERN COASTS

This wide area includes the West of Scotland, the coasts of Ireland and Wales and of the Isle of Man, and of the western counties from the Severn to Portland Bill, and has practically an "ocean climate," very temperate and equable. Excepting sheltered places, it is a stormy region, but fogs and mists are uncommon. Among the more interesting wintering places are, in the North-West, Blackpool, Southport, Lytham St. Annes, Douglas, Llandudno, and Colwyn Bay. Further south are Barmouth, Aberdovey, Aberystwyth, and Tenby in Wales; Sidmouth, Exmouth, Teignmouth, and Torquay in South Devon; Falmouth, Penzance, and St. Ives in Cornwall. In the Channel Islands Jersey and Guernsey have slightly higher temperatures, both in the air and sea, as well as longer hours of sunshine. It may be noted that mortality tables in the South-West often show the influence of sheltered climates in prolonging life.

SOUTH AND SOUTH-EAST COASTS

These extend from Portland Bill to the estuary of the Thames. The South is two degrees cooler than the South-West, but more sunny. The southern air is more bracing towards the east—for example, at Brighton, the largest seaside town in England, where the air in winter is strong and invigorating. Worthing is more sheltered, and equally sunny. Further west are Littlehampton, Bognor Regis, Southsea, and Bournemouth, the latter a well-established place for winter visitors. Other wintering places in this region are Ventnor, Swanage, and Weymouth.

In the South-East of England the blending of the sedative western air with the tonic eastern air gives the coast a special quality, well suited for rather robust people, especially children, at all seasons of the year. Westcliff-on-Sea and Hastings, with St. Leonards, have local shelter and aspect appropriate for invalids in winter, especially those with respiratory catarrhs. Eastbourne, with a south-eastern aspect, and Seaford and Bexhill, are more bracing. Clacton-on-Sea and Felixstowe, with their fine air and nearly southern aspect, can be recommended in the early part of the winter, and even the more northern Lowestoft. November and December are often pleasant at the Thanet resorts—Margate and Westgate, Ramsgate and Broadstairs. All the southern places have sunshine records averaging two and a half to two and three-quarter hours per diem from November to March. Many other places not here mentioned have similar climatic advantages.

MEDICAL VALUE OF THE WINTER RESORTS

The seaside has a value for the tired city dweller in winter as well as in summer. It is one of the surest available means of mental and physical refreshment and recovery from slight ailments. In winter-time establishments for recuperative baths are an additional attraction.

Experience has proved particular values of the coast resorts for disordered health. The many disturbances of health which are the precursors of illness in middle life may often be allayed by a right choice of marine climate, with diet, baths, and rest or exercise in pleasant surroundings.

In the south-west a soothing or sedative influence predominates—the breathing becomes easier, bronchial and other respiratory catarrhs are allayed, the action of the skin is encouraged, tissue changes are diminished, the tension of the circulation and nervous stimulation are reduced. Those suffering from fatigue and overstrain are more inclined to rest and sleep. Health resorts having this quality, such as Hastings and Torquay, with its well-appointed medical bath establishment, Falmouth, Weymouth, Sidmouth, Tenby, and

many others, are therefore often chosen for respiratory and circulatory disorders, and for many forms of nervous exhaustion.

There is also in England a group of winter resorts on the south and south-east coasts where the predominating influence is stimulant. The "bracing" quality of the air leads to increased cooling of the body, larger demands on digestion and tissue change, increased activity of the excretory organs and of the heart, and more nervous activity and exercise. The invigorating influence of the sea is especially beneficial after catarrhs and influenza, and in convalescence from serious illness. There is a wide choice of winter resorts of this character, such as Brighton, Eastbourne and Worthing (both with hot sea baths), Bournemouth, Westcliff-on-Sea, Aberystwyth, Colwyn Bay, Lytham St. Annes, and many others.

It is remarkable that simple remedies such as change of air to the coast, with increased daylight and sunshine and the cessation of work and worry, should be sufficient to remove catarrh, to complete the recovery from illness, and even to check the onset of disease. In the summer the open-air life on the shore often meets the needs of health and pleasure, but it must be recognized that the requirements of a winter resort are much more exacting. Although many places have provided the music, social amenities, and entertainments which are necessary for visitors, there is still much to be learnt from Continental resorts in this respect. Pleasant employment and distraction for the mind are necessary in the pursuit of health. Moreover, to make the British coast resorts more generally available, it seems desirable that the cost of accommodation for visitors should be reduced.

In addition to the coast resorts, there are inland spas in the British Islands that can be utilized in the winter months.

INCURABLE CANCER

A METROPOLITAN SURVEY

Some early inquiries made by the Departmental Committee on Cancer gave the impression that a great many women died in London without having availed themselves of existing facilities for hospital treatment. To test the validity of this belief an investigation was made of hospital patients suffering from incurable cancer, the results of which have been published by the Ministry of Health in a report by Dr. Forber—better known as Janet Lane-Claypon.[1] The material was difficult to report on, because the returns covered a number of complex factors, and those from the voluntary hospitals within the selected area fell very short of the numbers anticipated. In the end it was possible to obtain records of 1,983 patients, only about 300 of whom had been in the voluntary hospitals. The area selected was South-East London, and most of the records come from the twenty municipal hospitals of that district. The more important complicating factors in the record were the site of growth and the previous surgical or radiological history of the patient. The inquiry confirmed two familiar features of the cancer problem: the low mortality among women from cancer of the lip, tongue, mouth, and larynx; and the overwhelmingly high relative mortality from cancer of the reproductive organs. The large numbers who had received palliative treatment or an exploratory operation had not been foreseen. When the cases had been divided into classes—(1) recurrence after radical operation; (2) treatment by irradiation; (3) palliative operation; (4) exploratory operation; and (5) no operation or irradiation—it was seen that only 61.3 per cent. belong to Group 5.

TIME AND CHOICE OF TREATMENT

No less than 69 per cent. of all the patients, and probably more, made application in the first place to a private practitioner, by whom they were referred to the voluntary or municipal hospital. Only 206 patients applied direct to the municipal service, twenty-eight being referred by the district medical officer. These figures constitute a striking testimony to the work and place of the general practitioner.

It proved difficult to get a clear answer to the questions: When did the patient first become aware of symptoms? When did he first seek help? and When did he first attend hospital? Generally, more than half the patients who applied to a general practitioner did so within one month of first noticing the symptoms, and of those who applied direct to a hospital about one-third attended within the same period. The data are too inadequate for the report to give definite figures showing the interval which elapsed between visiting a practitioner and being referred by him to a hospital. Since all these patients were incurable by the time they consulted the hospital, and since on the whole they seem to have sought help soon after noticing their symptoms, the conclusion is that cancer of certain sites progresses to a comparatively advanced stage before causing symptoms severe enough to alarm the patient. These figures exonerate the practitioner from the charge sometimes brought against him of delaying under his own care patients who ought to be sent to hospital for more radical procedures. Indeed, the tables show that patients suffering from cancer of the stomach and colon got to hospital rather more quickly if they consulted a private doctor than if they went direct. The only indications of any delay were found in cases of cancer of the rectum and oesophagus.

DURATION OF ILLNESS AND OF IN-PATIENT TREATMENT

In-patient care was available for all applicants at the municipal hospitals without delay; the patient was usually admitted on the day he applied or on the following day. The final stages of the disease are seldom long—hardly longer than those of diseases usually regarded as far more acute. There is also some indication that the duration is shorter in elderly people. The average in-patient treatment in these cases was 2.28 months; for 46 per cent. it was under one month; and only 7 per cent. spent more than six months in hospital.

The average age of death in cases of cancer of the skin and prostate was particularly high, while the mean ages of death from cancer of the lung, uterus, and ovary were low. Generally speaking, cancer attacks the female reproductive organs earlier than it attacks the male organs. A study of the proportions of recurrent and of untreated cases according to the age at death shows that the great majority of untreated cases of cancer of the breast, uterus, and tongue die over the age of 60, and it is approximately true to say that, while from one-quarter to one-third are treated, only from one-quarter to one-third are treated above this age. This may be because old people feel disinclined to face radical procedures, or because they trouble less about their symptoms, or because the disease has a shorter natural duration. It seems likely that the proportion of elderly people treated will increase with the more extended use of radiation.

CURABILITY

All suffering from cancer can be grouped under three heads: those dying without treatment, those "cured" (the standard for which is taken as ten years without recurrence), and those dying within ten years after some form of treatment. The use of the term "incidence" as synonymous with mortality is incorrect, though frequently used. The present inquiry, taken in conjunction with previous publications of the Ministry, makes it possible to group cases of cancer of the breast, [illegible] and uterus in these three classes. For every 100 [illegible]

[1] Janet E. Forber: Incurable Cancer. Reports on Public Health and Medical Subjects, No. 66. H.M. Stationery Office, 1931. Pp. 59. (1s.)

of cancer of the breast which occur, 21 are cured, 48 are treated but die from recurrence, and 31 die untreated. For cancer of the tongue the figures are 9 per cent., 40 per cent., and 51 per cent.; and for cancer of the cervix, 18 per cent., 27 per cent., and 55 per cent. The bases of calculation for the uterus and the tongue are not, however, so reliable as those for the breast.

The report concludes by suggesting three important objects of inquiry: (1) the social services question, Are there adequate nursing facilities in any given area, and to what extent do patients use them? ; (2) the biological question, What is the natural duration of the untreated disease, and what is its relation to the age at onset or at death ? ; and (3) the curative question, What proportion of patients are treated radically, and what are the results ? It is necessary to acquire information of this kind before those concerned with the control of cancer can attempt to cope with that very complex problem on a sound foundation.

France

[FROM OUR OWN CORRESPONDENT]

Depopulation

The congresses are over, and every department of medicine has been discussed. France should now be able to take good care of her population, but, as it was forcibly pointed out at the Congress of Social Hygiene held at Mulhouse, the first necessity is that there should be a population. Exclusive of foreigners the population of France is about 38 millions, roughly the same as it was just before the war of 1870. The population of Germany over this period, however, has increased from 39 to 65 millions, and that of Italy from 25 to 42 millions. The birth rate of France has decreased by more than 30 per cent., and it is probable that it will go on decreasing ; this is partly because of the comparatively small number of births during the war, and partly because the younger generation seems strongly in favour of birth control. A declining population is the greatest danger we have to face. The medical profession is doing its utmost to fight infant mortality, and Dr. Devraigne, well known as an ardent protector of both mother and child, showed us a film, which is to travel throughout France, illustrating the principles of hygiene—the care of the child, hygiene in the home, the consequences of alcoholism, protection against infectious diseases, etc. The congress dispersed after having proposed that the Government should consider all questions connected with ante- and post-natal care of the mother and child as of the first importance, and, further, that taxation should vary in accordance with the number of children in the family. This is yet another example of an error which is common in France—that of appealing to the State rather than to the individual.

The Rat Menace

War was declared against the rat by the delegates from twenty countries who met at the Pasteur Institute. The figures revealed were astounding. In America, year in, year out, the rat destroys agricultural produce to the value of a billion dollars, in England £15,000,000, and in France 200 million francs. A rat consumes 16 lb. of wheat a year, and it has been calculated (not without humour) that under " ideal " conditions, a pair of rats might be responsible for 3,000,000 descendants in one year. Perhaps it is just as well that they are germ carriers, and thus subject to epizootic diseases ; otherwise, in a very short period of time, which could be easily calculated by the mathematician, the whole world—humanity included—would be nibbled away. Most of the methods employed to combat the rat only succeed in driving it over to the next man's barn ; it is therefore of the first importance that this crusade should be an international one. Professor Marchoux, president of the congress, insisted on the necessity of arousing the interest of the whole world and of co-ordinating effort. Dr. Loir relied more especially on the sporting instinct of a special breed of cats which is native to Le Havre, and which seems to have the fighting instinct of the Normans as an innate quality.

Unsuspected Dangers of Butter

Rats are obviously hostile and dangerous to humanity, but if anything looks innocent, is it not that vitamin-provider, butter? Professors Levaditi, Kling, and Lépine, however, have suggested that it takes a share in disseminating infantile paralysis. They have demonstrated by experiments with monkeys that butter is a most successful virus carrier, even after it has been kept at a temperature below freezing point for three months. They conclude that butter should be suspect in cases of epidemics, and that prophylactic measures should be taken. How this is to be done is something of a problem.

A New Medical Unit

The faculty of Medicine at Lyons has been transferred to Grange Blanche, in the suburbs. Two large hospitals are soon to be moved into its immediate neighbourhood—the Charité Hôpital, which is the largest in Lyons, and the Military Hospital, Desgenettes, which is connected with the national military medical school. This will mean an immense saving of time and effort, and is in keeping with the modern tendency towards centralization, but it will be necessary to accustom ourselves to the idea of a hospital city rather than a city hospital. It is hoped that this more up-to-date arrangement, which has been made possible by increased transport facilities, will serve its purpose until transport has been still more simplified, and the carbon-dioxide-poisoned inhabitants of the modern tentacular city can be spread over a much larger area outside the city in which they work. The problem of the hospital will arise once more, of course, but this may be solved by the ambulance aeroplane in the future.

The Psychotechnicist

Efficiency is a compelling force. It is responsible for the creation of yet another specialist in our midst—the psychotechnical doctor. For the first time physicians have been called to the Congress of Technical Teaching, and asked to give their expert advice on the choice of a career. Numerous examples of children born during the war are now met with in the technical colleges. The horrors, the strong emotions, and the sorrows which their mothers experienced during pregnancy have left their mark. They are hypersensitive individuals, who inhibit their emotions, tremble at the slightest remark, however gently spoken, who are tortured by a continual need for useless movement, and whose impulses are often violent. It is necessary to employ mental hygiene and medical treatment in the case of such individuals, because neurotics can be cured if the origin of their malady can be discovered. But it is not only a question of curing or of relieving a malady, but also of economizing effort. The schoolmaster has complained of the intensive efforts required with such individuals and the uncertainty of the results. It must be endeavoured, therefore, in certain cases, to save the schoolmaster from wasting time, to open the eyes of the family to the facts, and to remove the painful confusion which these unhappy individuals must feel in a society for which they are not made. It is here that the advice of the physician is required, and from now onwards the important place which systematic medical investigation must take in technical education, and in all organizations connected with the training of the adolescent, must be realized.

G. MONOD.

England and Wales

London School of Hygiene and Tropical Medicine

At the last meeting of the Court of Governors of the London School of Hygiene and Tropical Medicine, with Sir Holburt Waring in the chair, Sir Harry Goschen, chairman of the Board of Management, in presenting the seventh annual report, said that the School had completed two years' occupation of the new building, and the foundations of the courses of study and of the various research activities of the School had been laid on a sound basis. The dean and the School council were to be congratulated on the year's results as shown by the examinations, particularly in the case of the new university diplomas of bacteriology and public health, and also upon the important developments in the course of study in tropical medicine and hygiene. The Board found satisfaction in having placed clinical tropical medicine on a broader and better-defined basis, in association with the Hospital for Tropical Diseases. In carrying out the programme of teaching and research to which the School had set its hand, it was comforting to learn that the Exchequer grant of £40,000 a year, paid through the University, appeared to be reasonably safe for some time, notwithstanding the present financial emergency. The annual report stated that a Supplemental Charter had been granted to the School, and the amendments embodied therein provided for the addition to the Board of Management of a representative of the Colonial Office, and for the retirement of one-third of the members of the enlarged Board at intervals of three years. The Board had been considering the administration of the School and the functions of the staff. It had recognized as an accepted principle in university institutions that the professors and other teachers on the staff should have a proper share of influence in the management of the work. This end was secured if one of the professors appointed to be dean presided over the deliberations of the School council, and afterwards sat with the Board and took part in its discussions. The Board had decided that the appointment of dean should be held during its pleasure, though, in the first instance, for a period of five years. The dean was to assume the functions hitherto allotted to the director with regard to leave and sick leave, and to have the responsibility for all questions of discipline throughout the School. After adopting the memorandum, the Board had decided to offer the appointment of dean to Professor W. W. Jameson. The death of Sir Andrew Balfour had left a vacancy in the post of director of the division of tropical medicine and hygiene. This appointment was a matter of extreme difficulty, but it would come up for further consideration at an early date. In reporting on the financial position, grateful acknowledgement was made of the help given by the Medical Research Council, the Empire Marketing Board, and the Department of Scientific and Industrial Research. The whole of the research work of the division of epidemiology and vital statistics was financed by the Medical Research Council; the division of bacteriology and immunology also received from the Council a large grant, which was essential for the carrying out of its studies of experimental epidemiology; while the work attaching to the newly founded chair of medical industrial psychology also depended largely on financial aid from the Council. A report of the dean (Professor Jameson) was presented, incorporating the departmental reports. The members of the Court, standing, observed a few moments' silence to do honour to the three great figures in tropical medicine who have passed away during 1931—namely, Sir Andrew Balfour, the first director of the School, and Sir David Bruce and Sir William Simpson, both members of the Court of Governors.

Bristol Medical School Reunion

Under the chairmanship of Dr. Charles Corfield, nearly 150 medical practitioners attended the annual reunion dinner of the Bristol Medical School, held at Clifton last week. In proposing the health of Professor D. C. Rayner, the principal guest of the evening, the chairman said a great many of those present were under an obligation to the professor for teaching them all they knew and helping them out of many difficulties. The high standard of professional conduct set by him, and his personal charm, had done much to win the esteem of all with whom he came in contact. In reply, Professor Rayner said he had been connected with Bristol University for twenty-five years, and could not help comparing the medical school as he first knew it with the wonderful building they now possessed. Great progress had been made during that time, but prestige did not consist entirely of buildings, however magnificent they might be. A much more important asset was the keenness and enterprise of the staff of the opportunities offered, the future of Bristol University would be even more brilliant than its past. The president's health was proposed by Dr. Leonard Moore, and the evening concluded with the handing of the Rugby football cup to Mr. Hughes, captain of the Bristol Royal Infirmary side.

Employment of Married Medical Women by the London County Council

The London County Council at its last meeting had before it a resolution passed by the Medical Women's Federation expressing the firm opinion of that body that marriage should not constitute a bar to the appointment of a woman to any medical post, nor should it be a cause for the termination of her contract; her ability to carry out such a contract should be the only deciding factor. The Council's policy with regard to the employment of married women is embodied in a Standing Order which provides that, with certain exceptions and subject to certain conditions, the marriage of a woman shall put an end to her contract of service with the Council, and married women should be ineligible for employment or re-employment in the Council's service. It was decided to inform the Federation that its protest had been noted, that the Council had a settled policy with regard to the employment of married women, and that, in the Council's view, it would be undesirable to disturb that policy by singling out one section of the staff for differential treatment.

Chief Medical Superintendents of L.C.C. Hospital Service

The late Metropolitan Asylums Board, ten years ago, approved an arrangement whereby three of its medical superintendents, whilst still retaining their posts as such, were appointed "chief medical officers," one for the infectious hospitals service, one for the children's institutions and surgical tuberculosis service, and the third for the medical tuberculosis service. This arrangement has worked well in practice, and the London County Council, which has inherited the institutions of the Metropolitan Asylums Board, has decided that it shall be continued, but that the designation shall be changed to that of "chief medical superintendent." In addition to their ordinary remuneration as medical superintendents, the chief medical officers of the infectious hospitals service and of the children's institutions and surgical tuberculosis service will receive an allowance at the rate of £200 a year, and the chief medical officer of the medical tuberculosis service an allowance at the rate of £125 a year.

Presentation to Dr. J. Yule, Hull

After six years in the public health service of the city and port of Hull, Dr. John Yule, senior assistant medical officer of health, has been appointed medical officer of health to the county borough of West Bromwich. On the eve of his departure, a representative meeting of the Hull health and port sanitary staffs was held in the Council Chamber at the Guildhall, to present to Dr. Yule a mahogany sectional bookcase. The chairman, Dr. N. Gebbie, medical officer of health for the city and port of Hull, said that although he had been in Hull only four weeks, Dr. Yule had in that time rendered him invaluable assistance, which he very highly appreciated. In making the presentation, Dr. Leete, medical superintendent, Infectious Diseases Hospitals, observed that Dr. Yule had, in the course of his experience, covered every phase of public health work, including the transference to the local authority of two large public assistance institutions and hospitals. Other speakers paid tributes to the sterling work and worth of Dr. Yule, who, in thanking all subscribers to the gift, remarked that he would always look back with pleasure to the whole-hearted assistance which had been given him during the past six years. Dr. D. L. Macrae Tod, senior medical officer at the Anlaby Road Institution, extended, on behalf of all sections of the health department staff, a warm welcome to Dr. Gebbie as head of the department.

Scotland

Health of Scotland

The report of the Registrar-General for the quarter ending September 30th, 1931, which has just been issued, shows that the 22,659 births registered during the quarter were 1,463 fewer than in the previous quarter, giving a rate of 18.6 per 1,000 of the population. This is 0.7 per 1,000 below the average rate for the corresponding quarters of the five preceding years. The rates range from 26.9 in Coatbridge, 22.9 in Port Glasgow, and 22.5 in Hamilton, down to 15.8 in Edinburgh, and to 12.4, 12.5, and 12.9 in the counties of Bute, Selkirk, and Peebles respectively. The total births of the quarter included 11,450 male and 11,209 female children. The number of marriages registered in the quarter was 9,351, or 1,193 more than in the previous quarter. With regard to deaths, the number during the quarter was 13,242, or 2,676 fewer than those recorded in the previous quarter. The death rate was 10.8 per 1,000, being 2.4 below that for the previous quarter, and 0.1 below the standard figure for this period in the preceding five years. In the aggregate of large burghs the death rate was 10.9 as compared with 10.8 for the rest of Scotland. Deaths registered during the three months under review were: for July, 4,512; for August, 4,303; and for September, 4,427; with equivalent monthly death rates of 11.0, 10.5, and 11.1 respectively. As regards infant mortality, the deaths of children under 1 year numbered 1,353, equivalent to a death rate of 60 per 1,000 registered live births. This number was 514 less than in the previous quarter, while the rate compared favourably with the standard rate of 64 per 1,000 for this quarter. The rate in the aggregate of large burghs was 65 as compared with 53 for the rest of Scotland, the rate ranging from 83 in Perth, 76 in Ayr and Stirling, and 73 in Glasgow, down to 33 in Dumfries and Hamilton, and 10 in Dumbarton. In the counties the rate ranged from 100 in Kinross, 98 in Caithness, down to 17 in Bute, 20 in Peebles, and 0 in Sutherland. Of these deaths 3.6 per cent. were attributed to the principal epidemic diseases, including 97 from measles, 19 from scarlet fever, 121 from whooping-cough, 69 from diphtheria, 56 from influenza, and 54 from cerebro-spinal fever. The main feature in this group, as compared with the previous quarter, was the diminution of the deaths attributable to each of these diseases, with the exception of measles, from which 13 more deaths were recorded. Deaths from all forms of tuberculosis accounted for 7 per cent. of the total number. The quarterly death rate from all forms of tuberculosis was 76 per 100,000 as compared with the standard rate of 83, and from respiratory tuberculosis 54 as compared with 58. Malignant disease accounted for 13.3 per cent. of deaths from all causes; although this represents 42 more than in the previous quarter, the rate is exactly equal to the standard for the same quarters of the previous five years. Deaths of mothers from diseases and accidents of pregnancy and childbirth numbered 115, equivalent to a rate of 508 per 100,000 births, which is 124 per 100,000 below the standard average for the past five years. The total number of deaths assigned to accidents with motor vehicles was 201, or 48 more than those recorded in the previous quarter.

Sanitary Progress in Edinburgh

At a general meeting of members of the Edinburgh Women Citizens' Association, held on December 3rd, Mr. Allan W. Ritchie, chief sanitary inspector for Edinburgh, gave an account of recent sanitary progress in the city. He said that Edinburgh used to have a reputation for extreme congestion, dingy and foul dwellings, and absence of sanitary facilities. Much had now been done by the city council for cleanliness, health, and the well-being of the community, but a great deal could still be done to secure a cleanly and healthy environment for the whole mass of citizens. In the larger question of housing and sanitary reform the corporation was carrying out various slum clearance schemes. A great transformation had taken place in the lives of occupiers transferred to new homes in the districts of Lochend, Prestonfield, and Niddrie. It had been found that a few tenants lagged behind in the progress of improvement, but, generally speaking, the change wrought by the majority of the transferred inhabitants had been remarkable. There were still many families throughout the city living in overcrowded conditions, but these were receiving attention as alternative accommodation became available. There were numerous instances of sub-letting in small two-apartment houses, where all the accommodation was intended for one family. It was found that the charges for sub-letting rooms sometimes exceeded the normal rent of the whole house, and this form of overcrowding was a very serious matter, which resulted in cramping of sleeping accommodation and lack of separate accommodation for the different sexes. With regard to smoke abatement, much had been done by approved methods in firing factory furnaces and heating public buildings, as well as by the extended use of gas and electricity in houses; the demand for solid smokeless fuel was gradually being met. With regard to clean food production, many places where food was produced had now been modernized, and there had been a widespread adoption of the practice of making up foodstuffs in packets and wrappings to lessen the amount of handling. Great strides had also been made in the better distribution of milk, which was now largely delivered in sterilized bottles.

Child Guidance Clinic

A child guidance clinic for Roman Catholic children has been established, with the approval of the ecclesiastical authorities, at India Buildings, Edinburgh. This is intended to deal with "problem" children who, with average home conditions, discipline, and physical care, fail to conform in behaviour to average children of similar

with this or that food substance. The laborious and complicated nature of the work would, however, seem to make it difficult to do adequate controls, and would give an opening for accidental results. I find myself, in reading of them, saying, "I wonder if he did this control!"; "I wonder if he had any results going the wrong way!" I hesitate to write that comment because it seems a niggardly recognition of a great deal of very ingenious work. Five years ago Dr. D. Morien Thomas and I attempted to sensitize passively thirty guinea-pigs, most of them with serum from hay-fever patients, but some with serum from horse-asthma cases. We tried a variety of methods, but did not succeed in sensitizing any one of the guinea-pigs to pollen or to horse dandruff, as judged either by dermal reactions or by Dale's uterus technique.

With regard to Dr. Barber's clinical evidence, it is always difficult to ascribe with certainty a "reaction" to this or that inoculation dose, and never more so than in patients of the asthma type. I have got such dramatic "reactions" after control injections of normal saline that I distrust such clinical evidence. Dr. Barber's warning that it may be dangerous to use more than a fortieth of a cubic centimetre of a hundred-million-fold dilution of "proteose" gives me a shock when I reflect that I injected a twentieth of a cubic centimetre of what I believe was the undiluted "proteose" prepared by Dr. Oriel and got absolutely no effect with it, either local or general. If we accept Dr. Barber's clinical evidence, then the fact that reactions occur usually on the third day after his dose again suggests very strongly that this business is not comparable to, say, horse asthma or egg sensitiveness.

Turning now to Dr. Oriel's letter in your last issue, it is interesting to learn that the "protcose" made by him, which had failed to react intradermally on my asthmatic eczema patient who had produced it, was subsequently used to make a guinea-pig typically anaphylactic; this shows that, whether or not it reacted specifically on my patient, it was at any rate capable of functioning as an antigen.

The difficulties stated in my original letter have not been, for me at least, removed. I think we may say that the "proteose" reactions do *not* stand on the same footing as, for instance, the pollen dermal reactions for hay fever. Though the work on the "protcoses" is interesting and suggestive, I would regard their character as still *sub judice*.—I am, etc.,

JOHN FREEMAN.

London, W., Dec. 12th.

RICKETS AND GROWTH OF BONE

SIR,—Rickets is unfortunately still too prevalent both in London, in the provinces, and in the countryside, and is even found quite commonly among the children attending infant welfare centres.

It is notorious, too, that some of the children are much deformed. While I agree with Dr. Thursfield that the gross deformity due to rickets is seen less frequently, it is my own experience to come across daily deformities of less severity, but still requiring instrumental or operative correction. Further, they occur from time to time in children who, it is alleged, have been fed in accordance with instructions from their medical practitioner or from the doctor in charge of the infant welfare centre. They also arise, alas! in the children of well-to-do parents, who have been nursed, it is alleged, with their mothers' milk in the normal way.

It would therefore appear that there is still much to be done to eradicate rickets and its deformities.—I am, etc.,

B. WHITCHURCH HOWELL, F.R.C.S.

London, W. 1, Dec. 1st.

DEATHS ASSOCIATED WITH ANAESTHESIA

SIR,—It appears to me that this question requires a good deal of ventilation. Dr. W. Howard Jones, in the *Journal* of December 5th, makes some very pertinent remarks—for example, that "Dr. Hoffman must prove to our satisfaction that their [the American] system of registration is as stringent throughout the States as it is in this country before any value can be given to his figures." I imagine that in this country, if anyone dies of advanced disease of any sort, provided he dies under an anaesthetic, this death is classified as due to anaesthesia—a grossly unfair classification.

But apart from systems of registration it is quite probable that there are too many "anaesthetic deaths" here as compared with the United States of America—this, in spite of the fact that in the States, as we are told, nurses, not doctors, administer large numbers of anaesthetics. This raises another point—namely, that the administration of anaesthetics, although based on scientific principles, is to a very great extent what might be called an art rather than a science, so that it is likely that if any nurse is chosen to give anaesthetics after an adequate training, and devotes her whole attention to this branch of her work, then her results may average out better than those of the (comparatively) untrained general practitioner or house-surgeon who is frequently called upon to administer anaesthetics in this country. Again, the most important point of all, large numbers of anaesthetics are given in this country, so to speak, casually—for example, in the dentist's surgery or at the patient's house, with no adequate preparation, and by practitioners who may perhaps not be giving more than half a dozen anaesthetics in the course of twelve months.

It is perhaps to some extent our own fault that the public does not realize the importance of a properly qualified anaesthetist, and therefore will not pay his fee as well as that of a competent surgeon. The surgeons themselves realize the importance of the anaesthetist. In the bigger towns, at least, one seldom finds a surgeon operating without the help of his own anaesthetist, and it would be interesting to know what proportion of the anaesthetic deaths occur when the surgeon who is operating has the assistance of the anaesthetist whom he habitually employs.

Mr. Ernest H. Griffin's criticism appears at first sight somewhat ill informed; no anaesthetist is likely to spend £200 to £300 on apparatus which he is not competent to handle. At the same time, the point he makes is very important—namely, that in giving anaesthetics, as in all other "games of skill," it is vital "to keep your eye on the ball."—I am, etc.,

R. K. ROBERTSON,
Anaesthetist, Sheffield Royal Hospital

December 9th.

SIR,—Dr. Howard Jones's letter (December 5th) does explain, in a sentence, the real reason for the difference in the British and American figures. He says: "But we are aware that the conditions in America are very superior to those prevailing here." On page 10 of *Anaesthesia* (Blomfield) we find this, which puts the matter in a nutshell.

"Thus the Gordian knot of chloroform danger has been untied by cutting it. If anaesthetists have not succeeded in robbing chloroform of its perils, at any rate they have learned to get good results without it. Much of this progress has been due to American work. From that country came the ideal of shockless operation, and the practice of complete local and general anaesthesia as founded by Crile upon physiological experiments. American physiologists and anaesthetists have expended trouble and imagination in devising numerous forms of apparatus for the smooth and precise administration of nitrous oxide and in exploring the physiology of the anaesthesia obtained. Their efforts have met with much success."

Dr Howard Jones's faith in the accuracy of the British figures one can admire, but, knowing something of the real conditions, one feels it is slightly misplaced Probably the American figures are not correct either, but having seen anaesthetics given in the United States and Canada, my surprise is that the figures are so much in our favour I do not know the figures for the Mayo Clinic, for instance, but if accurate records are kept anywhere I should imagine it is there Those, at any rate, can be obtained I saw some anaesthetics given in Crile's Clinic at Cleveland, and spoke to the patients, their post operative condition was wonderfully good, and if his post operative death rate is not very low indeed I shall be greatly astonished At the Presbyterian Hospital in Chicago, when I was there about four years ago, *10,000* anaesthetics of ethylene and oxygen had been given, with no death in any way attributable to anaesthesia

I agree with Dr Howard Jones that sometimes, in this country, deaths are attributed to anaesthetics which should truly be put down to another cause Certainly the figures should be either disproved or explained To me the explanation is clear It is summed up in their more accurate methods, the use of precise instruments, lighter anaesthesia, and less rule of thumb, and generally a much more thorough investigation of the pre operative condition of surgical patients Until we do as much we cannot hope to approach the American figures —I am, etc,

E J CHAMBERS, M R C S, L R C P

Doncaster, Dec 6th

SIR,—As Dr Hoffman's letter in your issue of November 28th simply begged for contradiction, I felt certain that dozens, better qualified than I to speak, would hasten to point out the obvious fallacy in his comparison To-day I am disappointed to find that, though Dr Howard Jones ably and tactfully indicates certain probabilities of error, no one has troubled to note that Dr Hoffman's conclusion is based on a false premise Please allow me to repair the omission by asking a question How can the number of deaths associated with anaesthesia, when *expressed as a rate per 100,000 population*, pretend to reflect the actual state of affairs?

Emergency operations are responsible for by far the greatest number of such deaths, and the splendid hospital system of America contributes (in those densely populated districts to which its splendour is confined) to the low death rate more by ease of access than by any superiority in anaesthetic methods On the other hand, there are vast tracts of the United States that are beyond what one might call the "acute" radius of an operating theatre, so their statistics are further diluted by the not inconsiderable number of people who die from acute conditions before they get as far as a hospital or an anaesthetic In Great Britain the hospital system may lack some of the American efficiency, but the institutions are so freely scattered throughout the land that it may be said that no one is so far from a suitable hospital that he may not at least reach the operating table before he succumbs

Surely the only basis for such a comparison as Dr Hoffman desires to make is the number of deaths *expressed as a percentage of anaesthetics administered* And even then, numerous restrictions would require to be applied in compiling statistics, as for example (1) All deaths under anaesthesia, as in this country, must be recorded as such, even if obviously and indubitably due to the patient's disease (2) The type of operation associated with each death must be indicated There can be no comparison between, for example, an operation for toxic goitre, on the one hand, and for a chronic appendix, on the other (3) Local, and, particularly, peripheral anaesthesia, must be expressly included or excluded in compiling *both* lists of anaesthetics administered (4) We must feel reasonably certain that all surgeons are as completely uninfluenced by what Dr Howard Jones so aptly calls "enthusiasm for results" as are our surgeons, that every patient who stands the slightest chance of being saved will be given that chance—as he is here—even though the surgeon is aware that he is almost certainly adding one more to his personal list of "deaths on the table"—I am, etc,

Edinburgh, Dec 5th E J THOMSON

ETHER CONVULSIONS

SIR,—I have read with interest the reports of cases of ether convulsions which have appeared recently, and I should like to record my own experience

The patient a boy of 12 years was admitted under Mr C A Joll on November 23rd with severe lacerations of the left leg and thigh I gave him open ether while the leg was cleansed and an attempt made to repair the damaged tissues in the hope of saving the leg The operation and the post anaesthetic phase were uneventful Twenty-four hours later gangrene of the skin had set in so amputation was carried out at once I again gave open ether, and towards the end of the operation convulsions set in The first sign was a twitch of the neck muscles, but as the femur was being sawn through at the moment, and one arm was being prepared for an intravenous saline, necessitating some movement of the patient I was not convinced that it was a genuine twitch A few seconds later pronounced twitching of the neck muscles began and I at once stopped the anaesthetic The twitching spread rapidly to the face and then to the body and limbs and lasted fifteen minutes During a short part of this time there was slight cyanosis and I gave oxygen, but for the greater part of the time the colour was good The pulse was rapid (130) but regular and of good volume considering the general condition The twitching ceased in the reverse order to which it had begun the legs first then the body the face a few moments later and the neck last of all Up to the present the boy is improving steadily

This is the third case I have experienced the other two being of a similar type—that is, children with gangrenous appendices, who both made uninterrupted recoveries It would appear from these cases that the septic element is very much to blame —I am, etc,

PHYLLIS F L SIMON,
Anaesthetic Registrar, Royal Free Hospital

December 4th

RITTER'S DISEASE

SIR,—Dermatitis exfoliativa neonatorum is undoubtedly (and fortunately) rare, but it is not entirely unknown in this country Dr MacKay (*British Medical Journal*, December 5th) will be interested to hear that two typical cases have in past years come under my care in the Royal Liverpool Children's Hospital Both of them died In addition, I have seen in consultation a more doubtful case, which recovered In this the diagnosis lay between mild von Ritter's disease and severe pemphigus neonatorum (bullous impetigo)—if, indeed, there be any essential difference between the two diseases except the severity of the symptoms and the consequent prognosis —I am etc,

Liverpool, Dec 8th HUBERT ARMSTRONG

END RESULTS OF CHOLECYSTECTOMY

SIR,—Cholecystectomy has now been practised for many years We are familiar with the excellent immediate results but what are the end results? Is there anywhere available a record of the pathological conditions found at necropsy or of the state of the bile duct discovered in subsequent operations whether for recurrent cholelithiasis or for other complication? What happens? Does the common bile duct become dilated and its form?

Does this dilatation extend upwards? Is an infected condition of the bile apt to continue or to supervene, with a tendency to toxic absorption or to recurrent formation of gall-stones?

Can any of your readers throw light upon these matters? There should by now be a store of accumulated experience if it were only made available.—I am, etc.,

ERNEST F. NEVE, M.D.

London, Dec. 4th.

NEO-HIPPOCRATISM

SIR,—The letter from Dr. Warden of Cannes in the *Journal* of November 28th must appeal to all students of the history of our profession. Dr. Warden expresses what many of us are thinking to-day about our healing art in relation to the world changes around us. We feel that it would be regrettable and, in any historical perspective, disastrous if we should leave entirely to lay enthusiasm the task and also the glory of reducing our confused therapeutics to Hellenic simplicity. This matter is in many minds to-day. Following Dr. Hutchison's masterly statement I anticipate a lively discussion of this tremendous subject by those more competent than myself to handle it.

To what Dr. Warden has said I wish only to add a note about the Sunbathing Society in London. Readers of the *Journal* need not go to Germany to inspect the latest form of therapeutics. The Sunbathing Society, founded at Norwood by a layman, has shown itself always most anxious to co-operate with the medical profession. No attempt is made to treat specific ailments until the family doctor has first been consulted. About two years ago I referred to this society in a letter in your columns about active sun- and air-bathing. Subsequently many practitioners wrote expressing interest, and several joined the society. There is to-day universal interest in sun and air and water as healers. Even the daily newspapers, for so long unable to decide whether sun-bathing was buffoonery or lechery, have joined the chorus of sun worshippers.

With the approval of the mayor and corporation of Croydon the Sunbathing Society now has four acres of woodland on the hills at Addington. Here, remote from London smoke, contact may be made with the above-mentioned simple therapeutic agents. In a sympathetic notice of *Man and Sunlight* by Hans Suren your reviewer asked how his recommendations could be adopted on any appreciable scale in this country. That was in 1928. In 1931 the activities of the Sunbathing Society provide an answer.—I am, etc.,

REGINALD HODDER, M.R.C.S., L.R.C.P.

Penge, Nov 29th.

"BUY BRITISH"

SIR,—The recent inauguration of the "Buy British" campaign by H.R.H. the Prince of Wales calls from our profession as a whole for much more than passing approval.

Brief reflection on the material used in daily practice, such as catgut, rubber gloves, instruments, proprietary medicines, toilet requisites, plaster-of-Paris bandages, electric lights, sterilizing equipment, and *x*-ray material, causes a somewhat startling realization of the extensive sums which leave this country in payment for these foreign goods. Further investigation would probably extend this list considerably, but it is convincing enough to prove the scope for the use of British goods in practice and in hospital. A well-deserved stimulus would be given to our established industry and enterprise, and foreigners would be encouraged to manufacture in this country.

Recently a firm of foreign wholesale druggists opened a factory in England. This was cheering from many points of view, but less pleasant was the revelation from one of the directors that he had no difficulty in obtaining trained research chemists with honours degrees for a salary of £180 to £200 a year, which is considerably less than he paid his shorthand-typists. By insisting on the "Buy British" slogan, the deplorable depreciation in the value of our own finer intellects will be lessened, and a splendid opportunity will be available for our professional hospital boards of management, and public health authorities, etc., to help Britain towards a greater independence and prosperity.—I am, etc.,

HAROLD DODD.

London, W.1, Dec. 3rd.

TUBERCULOSIS RESEARCH

SIR,—I am engaged in investigating the bacteriology of the tubercle bacilli to be isolated from the sputum in cases of pulmonary tuberculosis in which there is a definite history or other clinical evidence of a *previous* glandular infection. Such cases are not common, and I venture to beg the courtesy of your correspondence columns in order that I may ask if any tuberculous officers, sanatorium superintendents, or others who have such cases under their care, would be good enough to let me have specimens of sputum. It is not essential that tubercle bacilli be demonstrable microscopically, so long as the lung lesion is tuberculous. If anyone will send me a post-card I shall be very glad to send suitable container, cover, etc.—I am, etc.,

W. M. CUMMING

Bradford City Sanatorium, Grassington, Yorkshire, Dec. 6th.

Obituary

C. A. LEEDHAM-GREEN, CH.M., F.R.C.S.

Consulting Surgeon, Queen's Hospital, Birmingham

Mr. Charles Albert Leedham-Green, who died recently at Trevone, Cornwall, was at one time a prominent figure in the medical world of Birmingham. He was born in 1867, and was educated at Queen's College, Birmingham, where he won the Ingleby Scholarship, and at the Universities of Göttingen and Heidelberg. He obtained the M.R.C.S. and L.R.C.P. diplomas in 1891, and became a Fellow of the Royal College of Surgeons of England in 1893, in which year he graduated M.D. of Heidelberg. Before settling down to surgical practice in Birmingham he had been demonstrator in physiology and assistant lecturer in bacteriology at Mason College, Birmingham, and assistant surgeon in the University Surgical Clinic at Göttingen. He became surgeon to out-patients at the Queen's Hospital, Birmingham, in 1897, and was promoted full surgeon nine years later. On retiring from the active staff in 1921 he was elected consulting surgeon. He was also, for some years, consulting surgeon to the Birmingham Dispensary, the Redditch Hospital, and the Tamworth Hospital; surgeon to the Birmingham Hospital for Sick Children; and joint professor of surgery in the University of Birmingham, in which he had graduated M.B. soon after its incorporation by Royal Charter in 1900, and Ch.M. three years later. During his professional life Mr. Leedham-Green contributed a number of papers on surgical subjects to British and German periodicals. He published a small work on *Stenhouse's Hands* in 1896, and his book on the *Treatment of Gonorrhoea in the Male* reached a third edition. When the British Medical Association held its Annual Meeting at Birmingham in 1911, under the presidency of Sir Robert Saundby, he acted as joint secretary of the Section of Surgery.

As may be judged from the brief outline of his career printed above, Mr. Leedham-Green was a surgeon highly esteemed in Birmingham and the Midlands. He was

and forceful personality inspired confidence, and he was full of enterprise and resource in all operative procedures Nevertheless, though stimulating to the individual dresser and house surgeon, he found it difficult to make effective contact with students in the mass during the routine work of a lecturer on the principles and practice of surgery

We much regret to announce that Dr MARK HENRY HERBERT VERNON died at his residence at Horsham, Sussex, on December 7th, aged 78 He was educated at Marlborough College and at St Bartholomew's Hospital, where he later held the appointment of ophthalmic house surgeon In 1875 he won the Brackenbury scholarship and took the M R C S diploma, and in the following year the L R C P After being resident surgeon to Leeds General Infirmary he went to Horsham in 1878, as a member of the partnership Bostock, Bostock and Vernon, and practised there until 1922, when he retired On several occasions Dr Vernon was chairman of the Horsham Division of the British Medical Association, and was elected president of the Sussex Branch in 1926 and again in 1931 After his retirement he gave much time to public affairs, being chairman of the Horsham Urban District Council, and a member of the West Sussex County Council The funeral took place on December 10th at Horsham Parish Church Dr L A Parry writes We of the Sussex Branch have sustained a great loss by the death of our president, Vernon of Horsham He has been one of us for so long, helping us by his sound advice and by his kindly and courteous dealings with us, that we have come to look on him as one of the elders on whom we could always rely for assistance I have had the privilege of serving as secretary of the Branch both during his first presidency in 1926 and during his present term of office, and I have been able to go to him at any time when needing help with the full assurance that he would give me all of which he was capable His loss to me, and I know to all of us in the county, is great We shall remember him as a true friend and as a doctor of the very best type, always willing to give of his large knowledge of men and affairs to those of us who consulted him *Requiescat in pace*

Dr LOUIS BENNETT CLAREMONT, who died on November 23rd, at the age of 71, received his medical education at University College Hospital, where he obtained the diplomas M R C S, L R C P in 1882, and was obstetric assistant to the late Sir John Williams He then joined his father in practice in Hampstead Road, N W, for twelve years, after which he removed to Haverstock Hill, and subsequently to Golder's Green Dr Claremont held several public appointments in St Pancras and Highgate, including those of public vaccinator for St Pancras and medical officer to the St Martin in the Fields Almshouses, both of which posts he took over from his father He was also nose, throat, and ear surgeon to the St Pancras Clinic, Kentish Town, and to the Highgate New Town Clinic, in the construction and equipping of which he had been active Dr Claremont was a member of the British Medical Association During the war he acted as clinical assistant at the Golden Square Throat Hospital, in order to release younger medical men for active service His son, Dr Edmund Claremont, is director of the Eastman Dental Clinic at the Royal Free Hospital

Dr DONALD STEWART DEWAR of North Shields, who died on December 10th, after a short illness, was born in 1871, and graduated M B, C M, at the University of Glasgow in 1894 After practising successively at Ronaldkirk, Yorkshire, and Whitley Bay and Willington Quay, Northumberland, Dr Dewar went to North Shields in 1925 The honorary secretary of the Tyneside Division of the British Medical Association, of which Dr Dewar was a member, writes Whilst of a retiring disposition he had a most genial and engaging personality, which endeared him to his patients and made a lasting impression upon all his colleagues He possessed a high sense of duty and honour, and his cheerful and unassuming personality will be missed and remembered by all his many lay and medical friends Dr Dewar leaves a widow, one son, and one daughter.

The following well-known foreign medical men have recently died Dr ANTONIO DIONISI, professor of morbid anatomy at the University of Rome, Dr JOHN BLAIR DEAVER, professor of surgery at Philadelphia, and author of works on surgical anatomy, appendicitis, disease of the breast, and enlargement of the prostate, aged 76, and Dr APCILE ZAMORA, professor of therapeutics in Bolivia

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

Both Houses of Parliament stand adjourned till February 2nd, but the Lord Chancellor and Speaker are authorized to summon them earlier if emergency requires this

Before the House rose on December 11th the Royal Assent was given to the Horticultural Products (Emergency Duties) Act, the National Health Insurance (Prolongation of Insurance) Act, and the Statute of Westminster Act On the same day, in the House of Commons, Major Oliver Stanley, Under Secretary for Home Affairs, presented the Children and Young Persons Bill, "to make further and better provision for the protection and welfare of the young and the treatment of young offenders, to amend the Children Act, 1908, and other enactments relating to the young and for objects connected with the purposes aforesaid" The second reading of this Bill is put down for February 4th The business for February 2nd is the second reading of the Town and Country Planning Bill

India and Medicine

During the debate on Indian policy in the House of Commons on December 2nd Dr W J O'Donovan spoke of the service which European doctors had rendered to Indians. Without distinction of colour race or political outlook, England and Western civilization had given India the boon of life Malaria reduced fertile plains to wild jungle, and made man unable to contest with nature In the medicine taught in the schools of Europe India saw a prospect of being freed from that scourge Hookworm disease, which made men unfit to work, afflicted 60 to 70 per cent of the population in some parts of India It had been studied in British and Continental schools of medicine but to that study his Indian colleagues had contributed practically nothing In the Section of Tropical Diseases of the Royal Society of Medicine, and in the Hospital for Tropical Diseases in Endsleigh Gardens, London, the dysenteries were studied, and the benefit of that research was at the disposal of every Indian hospital Were English medicine and the English connexion to be abruptly cut off, Indians would suffer Similarly with leprosy if modern medicine and research were allowed full play leprosy could be abolished The history of Indian medicine was empty of any records of the study and cure of cholera Many of his professional brothers had died because of that disease and its investigation and it was sad that in the Government's White Paper on India and the records of the *Round Table Conference* the work of the medical profession was almost unrecorded Tuberculosis was as prevalent in India as in the United Kingdom perhaps because of that custom of enclosing their womankind which led to stunted growth, early death and death in childbirth That custom could only be broken by a great increase in medical education throughout the Indian Empire He drew attention to the keenness of Indian students to study in England Deans of medical schools were hard put to it to find places for them This proved that England had much to give to India and that politicians should do nothing until a precedent that help being freely offered He had never been in India but so intimate was the knowledge of the London medical schools had of the medical needs of India that he spoke

as one to whom these things were an everyday matter. Politics were phantoms unless addressed to the health of the people, which was more important than votes or status.

Mr. E. T. CAMPBELL, as one who had lived twenty-one years in the Tropics, congratulated Dr. O'Donovan on his interesting speech.

Miss ELEANOR RATHBONE adduced evidence that the average life of an Indian was 25 years, as against 54 for an Englishman, and that the Indian death rate was 30 to 35 per 1,000. Even in the large towns few sick people ever saw a doctor, and certificates of death were usually guesswork by a non-medical registrar. Abject poverty and ill-health were the cause of Indian discontent, and she trusted that the committees of inquiry which the Government proposed to set up would make possible a quickening of the slow pace of Indian social reform in health, and, above all, in the conditions of marriage and maternity.

Sir SAMUEL HOARE, Secretary of State for India, congratulated Dr. O'Donovan on his useful contribution to the debate.

Shop Hours: Sale of Medicines, etc.—Sir HERBERT SAMUEL, in reply to Mr. Goldie on December 10th, stated that shops were required by the Shops Act, 1912, to close for a weekly half-holiday, but an exemption was provided for the sale of medicines and medical and surgical appliances. Though there had been no legal decision, chemists in Central London treated toothbrushes as covered by this exemption. Wherever there was legislation dealing with such a matter as a weekly half-holiday for shops, some special exceptions must be permitted. Any amending legislation would involve either the surrender of the half-holiday or else borderline cases of a different character.

Asbestosis.—In reply to Mr. J. Jones, on December 10th, Sir HERBERT SAMUEL said 582 workers engaged in the asbestos industry had so far been examined by members of the medical board; three had been found to be suffering from asbestosis, of whom one had been certified to be totally disabled, and two had been suspended. In addition, one had been suspended on account of tuberculosis and one on account of defective physique, making a total of four who had been suspended. In seventy-seven of the cases examined the Board was awaiting the result of a radiological examination, and had come to no conclusion. Replying to Dr. Fremantle, he said these figures covered the period since June, when the measure came into force.

Mental Hospital Accommodation.—Sir E. HILTON YOUNG told Dr. J. H. Williams, on December 10th, that the initial cost of providing a bed in a mental hospital might be estimated at £500 at present, but the annual cost of maintaining it was about £70. The suggestion that expense might be avoided by the provision of suitable and inexpensive hostels for slight and temporary cases that did not require detention was impracticable, because the adequate preventive treatment of incipient cases required resources of staff and equipment which could not be provided in inexpensive hostels.

Imported Fruit Pulp.—Replying, on December 10th, to Mr. Dunner, Sir E. HILTON YOUNG said imported fruit pulp was examined at the ports under the Imported Food Regulations, which empowered the sanitary authorities to seize for destruction any articles of food which were found to be diseased, unsound, unwholesome, or unfit for human consumption. At present there was no information which would justify the prohibition of the importation of Russian fruit pulp in the interests of public health.

Veterinary Research.—Replying on December 10th to Dr. Fremantle, Sir J. GILMOUR said the Ministry of Agriculture had formulated proposals for the development and co-ordination of veterinary medical research. These were now under discussion with the Agricultural Research Council. Any scheme finally settled could only be put into operation as and when financial circumstances permitted.

B.C.G. Vaccine.—Sir HERBERT SAMUEL told Sir F. Sanderson, on December 10th, that a licence under the Cruelty to Animals Act, accompanied by Certificate A, would permit experiments upon animals with the Calmette or B.C.G. vaccine to be conducted. Some research work on the subject had been done in this country.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The Faculty Board of Medicine has appointed the following to be members of the Committee for Medical Radiology and Electrology for the year 1932: Professor J. T. Wilson, Dr. G. S. Graham-Smith, Dr. Stanley Melville, Dr. E. P. Cumberbatch, Professor Sidney Russ, and Dr. Russell J. Reynolds.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A meeting of the Council of the College was held on December 10th, with Lord Moynihan, the President, in the chair.

Court of Examiners

Mr. E. Rock Carling (surgeon to the Westminster Hospital), Mr. A. E. Webb-Johnson (surgeon to the Middlesex Hospital), and Mr. Claude H. S. Frankau (surgeon to St. George's Hospital) were re-elected members of the Court of Examiners.

Diplomas and Licences.

The Fellowship of the College was conferred on the following forty-six candidates:

H. E. Harris, C. S. Hallpike, E. Jacobson, Diana J. K. Beck, Gertrude M. B. Morgan, C. L. Owen, O. Hooper, E. S. Evans, J. K. Monro, H. E. James, A. B. Pain, R. W. Raven, A. H. S. Handousa, G. S. Storrs, J. C. F. L. Williamson, T. H. Bevill, E. C. B. Butler, J. B. Blaikley, B. W. Rycroft, S. N. Mather, A. M. Boyd, V. Hariharan, A. S. Philps, N. C. Tanner, Ebra Hargreaves, T. H. Wilson, P. V. Reading, P. B. Ascroft, Margaret M. White, H. A. Phillips, H. G. Letcher, D. S. P. Wilson, H. L. Body, D. D. Boovariwala, S. B. Cooper, A. Cruickshank, R. Lal, D. M. Mitchell, D. H. Mitchell, L. M. Park, E. E. Price, L. S. Rogers, T. O. Sayle, H. H. Skeoch, V. S. Stone, F. Welsh.

A diploma of Membership was granted to E. A. Knappett, and the Licence in Dental Surgery was conferred upon fifty-six candidates.

Appointments

Sir John Rose Bradford, Bt., was elected a member of the Executive Committee of the Imperial Cancer Research Fund, on the nomination of the General Committee of the Fund.

It was reported that the Secretary of State had appointed Mr. W. Sampson Handley to be a member of the Advisory Committee on the Administration of the Cruelty to Animals Act, 1876, in place of Sir Charters Symonds.

Legacy

It was reported that a legacy of £50, free of duty, for the laboratory fund of the College, had been bequeathed by the late Dr. F. W. Collingwood.

Representation of Members on the Council

The Council considered the following resolution, which was carried at the annual meeting of Fellows and Members on November 19th:

That this forty-third annual meeting of Fellows and Members of the Royal College of Surgeons reaffirms that it is essential that Members, who constitute nine-tenths of the College, should be admitted to direct representation on the Council, especially having regard to the striking result of the poll of Members taken last year.

The following reply to the resolution was adopted:

The Council, having considered the report of the proceedings at the annual meeting of Fellows and Members, adheres to the opinion expressed at its meeting in January, 1931.

Primary Fellowship Examination

The following 53 candidates, out of 180 who presented themselves, were approved at the examination held from December 1st to 12th:

S. W. Allinson, A. W. Badenoch, G. T. Balean, H. C. Evans, J. Bastow, G. H. Bateman, R. H. R. Belsey, M. J. Bennett, J. G. Bowen, V. R. Clifton, R. B. W. A. Cole, A. L. Dallas, R. P. Dalal, R. S. de Bruyn, Jean M. Dillar, C. L. S. Dodd, R. S. Ellis-Brown, F. I. Evans, W. J. Ferguson, J. D. Fergusson, E. O'D. C. Grattan, A. Hilmy, J. E. Hughes, A. T. Hunter, D. W. Jones, L. E. Jones, B. L. Kapur, A. McDowall, D. B. Mc[illegible], A. H. McIndoe, Jocelyn A. M. Moore, R. F. Mould, J. H. Moynihan, C. S. Patel, P. H. L. Playfair, D. C. Price, J. Robertson, M. A. Robertson, I. G. Robin, Enid H. Rose, J. R. Rose, B. J. Sanger, N. T. H. Schafer, G. M. A. Scott, T. G. Tregaskis, R. W. D. Turner, F. H. Weston, C. W. Willard, S. L. Wilson.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

The following have been admitted Fellows of the College: David Riddell Campbell, Malcolm Carfrae Douglas, John Dunn, Gilbert Garrey, James Livingstone Loudon, Alexander Miller, Ellen Brown Orr, Albert Arthur Fitzgerald Peel.

Medical News

The house and library of the Royal Society of Medicine will be closed from Wednesday, December 23rd, to Saturday, December 26th, both days inclusive.

The Institute of Medical Psychology, 51, Tavistock Square, W.C.1, has arranged a series of twenty lectures on psychological types and mechanisms as an introductory course in psychological medicine for the general practitioner. It will be given at the Friends House, Euston Road, N.W.1, on Wednesdays, beginning January 20th, 1932. The course is divided into two series, ten lectures being given by Dr. E. Graham Howe and ten by Dr. H. Crichton-Miller. The fee for either series is £1 11s. 6d., or for both series £2 2s.

A three months' course of lectures and demonstrations on clinical practice and in hospital administration for the D.P.H. (instruction in hospital administration) will be given at the Brook Hospital, Shooters Hill, S.E.18, by the medical superintendent, Dr. J. B. Byles, on Tuesdays and Fridays at 3 p.m., and alternate Saturdays at 11 a.m., beginning on Tuesday, January 5th, 1932. Medical men proposing to join the course must, before attending the hospital, pay the fee, £3 13s. 6d., to the Medical Officer of Health, London County Council, Public Health Department (Special Hospitals), Victoria Embankment, E.C.4.

The Fellowship of Medicine and Post-Graduate Medical Association announces a course of lectures on treatment, to be given at the Medical Society of London, 11, Chandos Street, Cavendish Square, on Wednesdays, at 4 p.m., from January 13th, 1932. These lectures are free to members of the Fellowship; the fee to non-members is £1 1s. for the series of nine, or 5s. a lecture, payable at the lecture room. An evening course of six lectures on endocrinology will be given by Dr. Langdon Brown at the Medical Society of London on Mondays and Fridays at 8.30 o'clock, starting January 11th; fee for the series £3 3s., or 12s. 6d. a lecture, payable at the lecture room. In future, all special courses and lectures arranged by the Fellowship of Medicine will be open only to its members; the annual subscription is £1 1s., including the monthly *Post-Graduate Medical Journal*. A lecture-demonstration on rheumatic infection and heart disease in children will be given by Dr. Bernard Schlesinger at the Children's Heart Hospital, West Wickham, Kent, on Saturday, January 2nd, from 10.30 a.m. to 12 noon; fee 7s. 6d., payable to the Fellowship, 1, Wimpole Street, W.1; applications must be received by December 28th.

At the December meeting of the Central Midwives Board for England and Wales the dates of the ordinary meetings of the Board for the year 1932 were fixed as follows: January 7th, February 4th, March 3rd, April 7th, May 5th, June 9th, July 21st, October 6th, November 3rd, and December 1st.

The twenty-second annual exhibition of scientific instruments and apparatus, arranged by the Physical and Optical Societies, will be held on January 5th, 6th, and 7th, 1932, at the Imperial College of Science and Technology, South Kensington, from 3 to 6 p.m., and from 7 to 10 p.m. Tickets may be obtained from the exhibition secretary, Institute of Physics, 1, Lowther Gardens, Exhibition Road, S.W.7. Admission on January 7th will be free, without ticket.

The presidential address of the West London Medico-Chirurgical Society, on the relationship of the general practitioner to the voluntary hospitals, is published in full in the fourth quarterly number of the *West London Medical Journal*.

A special matinee was arranged by Mrs. Frank Worthington at the Aldwych Theatre, on December 10th, in aid of the Royal Free Hospital, and the East London Hospital for Children, Shadwell. The play, *The Black Parrot*, by H. Fletcher Lee, was admirably produced by Mr. Wilfred Fletcher, who also gave an excellent rendering of Philip Quinton, the husband of Lois Quinton, the leading lady, whose part was played with great charm by Mrs. Frank Worthington herself. The matinee was a brilliant success, and the Royal Free Hospital and the East London Hospital for Children have every reason to be grateful to Mrs. Worthington and all who helped her, as we understand that by this and another performance of the same play she has raised £960 for these two charities.

The *Deutsche Zeitschrift für Chirurgie* and the *Zentralblatt für Chirurgie* have each published a Festschrift on the occasion of Professor August Bier's seventieth birthday, which was celebrated at the Langenbeck-Virchow House on November 23rd.

The next annual congress of the Royal Institute of Public Health will be held in the city of Belfast from May 10th to 15th, 1932, on the invitation of the Lord Mayor and Municipality and the Queen's University of Belfast. It will be presided over by the Marquess of Londonderry, Chancellor of the University. The inaugural meeting will be held on the morning of Tuesday, May 10th, and the scientific work of the congress will be conducted in the following Sections: State medicine and municipal hygiene (including port sanitation); Industrial hygiene; Women and children and the public health; Tuberculosis; Pathology, bacteriology, and biochemistry. Delegates are being invited from the Governments, the municipalities, the universities, and other public bodies of Great Britain and Ireland and the British Dominions, as well as from Continental and other foreign countries. Arrangements have been made with the railway companies for a reduction in the fares.

Dr. James Cran has been appointed an unofficial member of the Legislative Council of the colony of British Honduras.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

Intestinal Flatulence

"PUZZLED" writes: Could any of your readers recommend treatment for intestinal flatus in a well-nourished, but somewhat neurotic man of 35. Urine, etc., are normal. X rays show no abnormality beyond a very slight kinking of the colon. The bowels are kept easily moved by a teaspoonful of is-o-gel at nights. The flatulence begins in the mornings after defæcation, and continues all day with distension pains and general depression. Sometimes it can be dispelled by lying on the left side. He has had courses of abdominal massage and exercises, without much improvement. Temporary relief is obtained by rectal injection of two tablespoonfuls of glycerin. Are any drugs helpful? He has tried bismuth etc., without result. Might the condition be purely functional?

Painful Heel

Dr. R. C. BRISCOE (Kisumu, Kenya) writes: I have a patient suffering from a painful heel. There is no swelling or constitutional disturbance, but the patient, by deep pressure on the plantar surface of the heel, can demonstrate a definite tender spot. He has had to give up tennis on account of the pain, and is now wearing rubber heels to his shoes. I shall be glad of any suggestions for treatment.

Vomiting and Nausea of Pregnancy

Dr. L. L. STEELE (Blyth) wishes to thank the doctors and manufacturing chemists who replied to his query in a recent issue of the *Journal*. The replies, he says, are too numerous for individual attention.

Pseudo-Hermaphroditism

Mr. G. S. WOODMAN writes from the Royal Hospital, Baghdad:
In reply to Messrs. Neal and Cox's query of October 31st (p. 832) with reference to my memorandum on pseudo-hermaphroditism, in the *Journal* of October 24th (p. 750), the following were the secondary sexual characteristics in this case. The breasts resembled in size those of an obese male, the nipples and areolae were distinctly smaller than those of the average female. Pubic hair was scanty, and the voice definitely masculine. With the exception of a degree of superficial hypogastric adiposity not in conformity with that of the rest of the body, the general conformation was that of a stocky male. A short bull neck, masculine face with a few hairs on upper lip and chin, broad shoulders, deep chest, muscular upper and lower extremities, with powerful hands and broad feet, and an absence of any trace of female genu valgum, were the outstanding general features of the case. The mental outlook was apparently that of a female, and a prolonged inquiry failed to elicit any evidence of preference for the female sex.

Income Tax

Cash Basis—Cessation of Practice

"P. P. A." has been assessed for the past twelve years on the cash basis. He has sold his practice as from November 1st, 1931, and has been asked to put in statements setting out his profits on an "accounts" basis for the year to April 5th, 1931, and the period from that date to October 31st, 1931.

** Under the law now in force "P. P. A." can be required to submit to a revision of his liability for the two periods specified from the statutory basis of the previous year to the "actual" year. At the same time he cannot be required to prepare special accounts for the period merely because his existing accounts are made up to some date other than April 5th. For instance, if his accounts throughout had been on the basis of bookings less allowances for bad debts instead of on the cash basis, the new calculation would have been: (*a*) for 1930–31—three-quarters of the 1930 profit plus three-tenths of the profit for the ten months from January 1st, 1931, to October 31st, 1931; and (*b*) for the final period from April 5th, 1931—seven-tenths of the last-mentioned profit. The chief question to be faced is whether the inspector of taxes can properly require the cash basis to be thrown over for the purpose of the contemplated adjustment of liability, bearing in mind the extreme difficulty of arriving now at any reliable estimate of the value of the debts outstanding at January 1st, 1930, January 1st, 1931, and October 31st, 1931. If the work of the practice was growing during that period, or, for some reason, receipts were coming in at a slower rate than normal, then the cash basis would show a smaller profit than was really being earned. In that case the revenue authorities are justified in requesting some adjustment, seeing that receipts subsequent to October 31st, 1931, will not be assessable. But if the facts do not suggest that there has been too low a "cash" profit the adjustment is unlikely to benefit the revenue, and we consider that the official request might properly be withdrawn.

Reduction in Salary

"J. J." has for some years held a whole-time appointment on a salary of £800. The salary is to be reduced by 7½ per cent. as from January 1st, 1932. What is his liability to tax for the year to April, 1932?

** On £800, that being the amount of the earnings of the "previous year," which forms the statutory basis of the assessment for the current year. When "J. J." paid tax on £800 for 1930–31 he cleared his liability up to April, 1931, but his 1931–32 income must by law be regarded for assessment as being the amount of the 1930–31 earnings.

LETTERS, NOTES, ETC.

British Hypodermic Needles

We have received the following letter from a leading firm of instrument makers:

With reference to the statement in last week's *Journal* that needles of Continental manufacture have been for "so long in general use in this country," we venture to inform you that we have never supplied hypodermic needles of foreign manufacture. The error has no doubt arisen from the fact that the well-known Record syringe is generally known as of foreign origin. However, we have always supplied British make. We have been in the habit of supplying the *all-glass* syringes, both English and French (distinctly so quoted and marked), but in this case also with English-made needles, and we are confident that most of the leading surgical instrument manufacturers do supply British-made needles.

Local X-ray Treatment of Infection

Mr. E. P. WATERS, F.R.C.S.Ed. (Barrow-in-Furness), writes: It is beyond dispute that some of the sun's rays are antagonistic to micro-organisms. For this reason I think that radiation therapy will occupy a prominent position in the future in the treatment of disease due to pathogenic bacteria. I have sometimes wondered whether exposure to *x* rays would be of any value in the treatment of such disease, more especially, perhaps, where the organisms are localized—for example, tonsillitis, diphtheria, osteomyelitis, furunculosis, phthisis, etc. Possibly some of your readers have had actual experience along the lines suggested above.

Asthma and the Endocrine System

Dr. A. K. JAMES (Calne, Wiltshire) writes: In the search for a common constitutional factor in the etiology of asthma the endocrine system has not been neglected; in this connexion the following case merits publication. A married woman aged 29, gave a history of attacks of asthma since she was 17; no family history of asthma was obtained. She had attacks at about six-weekly intervals from the age of 17 until she became pregnant in January, 1926, when the asthma ceased until January, 1927. Her next attack was about four months later, and the attacks subsequently became much more frequent—in 1929 and 1930 on an average every three or four weeks. All the usual investigations were negative. Treatment by all usual methods, including whole-blood injections, ultra-violet light, glucose, etc., was of no benefit. In view of the fact that the only period during which the patient had been free from attacks was during her one pregnancy, treatment by thyroid and corpora lutea in tablet form was begun in October, 1930, with striking success. The patient has now been completely free from asthma for the last thirteen months, and has put on 1 st. 3 lb. in weight.

New Motor Regulations

The Automobile Association draws attention to the following new regulations affecting motorists, which come into force on January 1st next. Every motor vehicle (motor cycles excepted) must be fitted with a reflecting mirror, so that the driver may be acquainted with the proximity of vehicles about to overtake. All glass fitted to windscreens or windows facing to the front on the outside of any motor vehicle, except glass fitted to the upper deck of a double-decked vehicle, must be safety glass. Vehicles registered before 1932 are exempt until 1937, but meantime the glass fitted (safety or otherwise) must be maintained in a condition which does not obscure the driver's vision. "Safety glass" is defined as glass which, if fractured, does not break into fragments capable of causing severe cuts. Motor vehicles (except motor cycles or mobile cranes) registered after January 1st, 1932, and any trailer constructed after June 1st, 1931, must be equipped with suitable and sufficient springs between each wheel and the frame of the vehicle. The *Motorist's Legal Guide*, available free of charge to A.A. members, deals with these and other points of importance to motor owners. Any motorist who is in doubt as to the effect of the new regulations should communicate with the A.A. Legal Department, Fanum House, New Coventry Street, W.1.

Vacancies

Notifications of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 41, 42, 43, and 46 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 331.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

565 Asymptomatic Subacute Bacterial Endocarditis

G. L. West (*New England Journ. of Med.*, October 1st, 1931, p. 675) reports a case illustrative of the wide variations between the ordinary course of subacute bacterial endocarditis and the asymptomatic course. This case presented the classical pathological findings in the endocardium, but no symptomatology was noticeable until a few minutes before death, when embolism of the coronary artery occurred as a direct result of the ulceration and detachment of the vegetative growth. A healthy athletic woman suddenly stopped playing tennis, her body relaxed, she became unconscious, and died within half an hour. She was an athletic instructor, a regular swimmer, and an equestrian. She had never been known to make any physical complaint Three years before her death she had consulted a physician for a wrench of the neck muscles due to an automobile accident. Her past history only revealed that she had once been thrown from her horse, and was supposed to have had malaria. The post-mortem examination brought to light no abnormalities except in the heart and kidneys. The endocardium was normal apart from the region of the aortic valve, on the under surfaces of all the aortic cusps were friable vegetations The anterior cusp showed a vegetative growth 2 mm in length, 2 mm. wide, and 5 mm. thick; it was red in colour, and easily detachable. A single vegetation occupied the under surface of the other two aortic cusps. This mass had ulcerated, and had left a deep ulcer with irregular roughened walls At the bifurcation of the left coronary artery was found the cause of death, an embolus of vegetative growth from the aortic valve, resting in such a way as to occlude both branches distal to the bifurcation. The kidney sections revealed healed glomerular embolization, and the lungs were oedematous. The growth showed a few Gram-positive cocci growing singly and in chains, but no cultures were obtained from the blood or from the vegetations

566 The Influence of Resident Hospital Treatment on Asthma

H. C Gram (*Nordisk Medicinsk Tidskrift*, October 3rd, 1931, p 625) produces statistical evidence on behalf of his thesis that the prophylaxis of asthma is essentially a problem of social conditions, and that success is to be achieved in this field primarily by rational hygiene in the home. It is common for severe cases of asthma to be cured in one to three days simply by the patient being admitted to a good hospital, which may, for that matter, be next door to the patient's own home. These dramatic recoveries, he remarks, are quite independent of any or every special treatment given in the hospital, the staff of which is apt to question the judgement and veracity of the practitioner who has sent the patient to hospital with a report of violent and prolonged asthmatic crises In the sickness insurance records in his possession, the author has notes on 366 asthmatics who were admitted to hospital In as many as 187 cases, hospital treatment proved beneficial This improvement may have been due to one or more of the three following factors. The patient may be sensitive to certain specific factors, domestic animals, or articles of food, with which he does not come in contact in the hospital. It is, however, rare for such sensitiveness to be strictly specific and limited to a single object Secondly, admission to hospital often entails the breathing of a different kind of air. The patients who recover temporarily on account of this factor would do so equally well if they were admitted to a private house in the same locality as the hospital. Thirdly—and this is probably the most frequent cause of the relief of symptoms which hospital treatment confers—the modern hospital has light and dry wards, kept scrupulously dust-free. The bedding is frequently disinfected, and thus the development of organic life in it is prevented. The author insists that it is impossible to overestimate the importance of these factors in the prevention and treatment of asthma.

567 Streptococcaemia and Latent Tuberculosis

G. Denes (*Studium*, September 1st, 1931, p. 359) considers that the infective acute stage which precedes the usual manifestation of tuberculosis is not to be attributed to a filterable tuberculous virus, but to other organisms, especially streptococci; an acute streptococcal infection, not itself fatal, can bring about the activation of latent tuberculous foci, and cause an extension of that infection. Two cases are described, one of acute tonsillitis, the other of an injury to the heel, from both of which non-haemolytic streptococci were recovered by blood culture. After recovery from the septicaemia, both patients developed in the course of a couple of months symptoms of tuberculosis, which soon ended fatally. Before the streptococcal infection there had been no tuberculous signs in either of these cases.

568 Paraplegia following Measles

L. Babonneix and F. B Levy (*Bull. Soc. de Péd*, July, 1931, p. 371) record the case of a boy, aged 5½, who a few days after a mild attack of measles developed complete quadriplegia, with involvement of the nuchal muscles, sphincter disturbances (retention and obstinate constipation), anaesthesia of the lower limbs, and Babinski's sign. In the course of a fortnight considerable improvement took place, the paralysis being confined to the lower limbs Since diphtheria and infantile paralysis could be excluded, the authors attribute the condition to an acute myelitis involving the pyramidal tract, the posterior columns, and the anterior cornua.

Surgery

569 Retroperitoneal Tumours

I Cohn (*Arch. of Surg.*, October, 1931, p. 655) reports seven cases of retroperitoneal tumour which included one case of retroperitoneal lymphoblastoma (Hodgkin's type), one of retroperitoneal lymphosarcoma, one of retroperitoneal sarcoma secondary to sarcoma of the thigh, one of retroperitoneal sarcoma without metastases, and three cases of retroperitoneal metastases following teratoma of the testicle. Diagnosis in all cases of retroperitoneal tumours is extremely difficult, but is helped by *x* rays. Symptoms depend on the site of the growth; proximity to the coeliac plexus causes digestive disturbances, and anaemia is present in many cases Oedema of the extremities and ascites are present when the growth is large and on the right side, and when it interferes with the venous return. Retroperitoneal growths may be associated with chylous ascites and chylous pleural effusions; some may present the clinical picture of an infection, such as Hodgkin's disease In the first case reported, which was retroperitoneal lymphoblastoma, the patient suffered from acute digestive disturbances with severe abdominal pain, nausea, vomiting and violent abdominal cramp, these manifestations had recurred at intervals for twenty years The diagnosis made in this case was gall-bladder disease, and cholecystectomy was performed without relief of the symptoms, after a further exploratory laparotomy the patient died The necropsy showed large retroperitoneal glands near the stomach, pancreas, and duodenum, and an ulcerating lesion of the wall of the stomach The case of retroperitoneal lymphosarcoma was associated with ascites which later became

chylous, with chylothorax, and oedema of the extremities. Paracentesis and thoracocentesis were undertaken, but the patient died; metastases were found in the mediastinum, pelvis, uterus, ovaries, spleen, and kidneys. In the case of retroperitoneal sarcoma the condition appeared to be secondary to a sarcoma on the outer side of the thigh. This was excised, and deep *x*-ray therapy was instituted for the retroperitoneal involvement; after further operations fatal oedema and respiratory troubles developed, and metastases were found involving the entire gastro-intestinal tract, the liver, lungs, pleura, kidneys, and lumbar vertebrae. One case of retroperitoneal sarcoma is reported in which no metastases were found, but the patient died shortly after an exploratory laparotomy. The remaining three patients were suffering from teratoma of the testicle with retroperitoneal metastases. Of these, two were treated by orchidectomy with high ligation, followed by applications of radium, and the persistent use of *B. pro-digiosus* toxins. These patients remained in good health for two and five years respectively. The remaining patient died some months after operation. The author points out that the mortality rate for all cases of retroperitoneal tumour is extremely high.

570 Diagnosis and Treatment of Appendicitis

V. PAUCHET (*Bull. et Mém. Soc. Méd. de Paris*, October 9th, 1931, p. 478) states that Soresi's sign is a very important diagnostic aid in appendicitis. With the patient in the prone position the surgeon places his right hand vertically in the nipple line over the right hypochondrium, and the patient is told to cough. If pain is felt in the appendix region, the diagnosis is confirmed. The explanation is that pressure applied thus to the abdominal muscles is transmitted to the colon, and the gas contained therin causes pain on coughing in appendicitis. This method is said to be preferable to the usual application of pressure to the appendix region, and to exclude psychic elements. The author strongly recommends the latero-posterior incision in appendicectomy; he has employed it for two years with most satisfactory results (only one death in nearly 400 cases). The incision commences at the iliac crest, and is carried forwards for two to four inches parallel to that landmark. The external oblique fascia is divided, and the fibres of all the subjacent muscles are separated, but never cut. The peritoneum is incised parallel to the skin incision. The caecum is exposed, and is raised until the base of the appendix appears. Whatever may be the position of the appendix it can always be found and removed when its base is exposed. The serious complication of retrocaecal appendix becomes quite simple when the latero-posterior incision is employed. An appendicular abscess can be evacuated completely without infecting the peritoneum. In general peritonitis, dependent drainage is secured by the incision; when adhesions are present, complications do not follow, post-operative hernia never ensuing. Pauchet adds that the Trendelenburg position should always be employed, and that this incision is suitable only for appendicectomy; it should not be used in exploratory laparotomy, or for the removal of any other abdominal organ.

571 The Spastic Colon and Abdominal Pain

Chronic or recurrent abdominal pain, with few or no objective signs, presents a difficulty as regards the diagnosis between an organic and functional cause, and chronic colospasm or spastic colon has been a frequent cause of unnecessary operations. F. L. APPERLY (*Australian and New Zealand Journ. of Surg.*, September, 1931, p. 192) records a study of this condition based on 45 cases. The affection is usually considered to preponderate in females and in asthenic types; the reverse of this, however, was found in the present series. The majority of the patients were nervous and neurasthenic, and many showed allergic manifestations. Various predisposing causes are cited, and the frequency of past, unsuccessful abdominal operations is noted. The commonest symptom is pain and discomfort of varying intensity and duration; it may appear over any part of the abdomen, but the commonest sites are the right and left iliac fossae, the left side being more often concerned. Constipation is common; some cases are normal, however, as regards bowel action, and a few have diarrhoea. Reflex phenomena, such as pylorospasm and bradycardia, may occur. Gastric symptoms appear in most cases, and other symptoms such as headache and insomnia are frequently noted. Physical examination reveals little, and the gastric acidity varies greatly. The chief conditions to be differentiated are enumerated, and the pathology is briefly discussed. Treatment is medical rather than surgical.

Therapeutics

572 Combined Treatment of Chronic Syphilis

Since the general adoption of serological tests as guides in the routine treatment of syphilis, many cases presenting persistently positive reactions have been recorded. Repeated courses of anti-syphilitic treatment frequently fail to produce a permanently negative reaction in the serum and cerebro-spinal fluid, and many patients subsequently develop cardio-vascular or neural syphilis. In chronic latent syphilis with constantly positive Wassermann reaction, when ordinary treatment has been ineffectual, and also in cardio-vascular and neurosyphilitic cases (most frequently tabetic) in which specific and non-specific treatment has failed, E. RAJKA and E. RADNAI (*Ann. de Derm. et de Syph.*, September, 1931, p. 956) have obtained good results from actinotherapy, either alone, or with intra-gluteal injections of the patient's own blood, withdrawn thirty minutes after the commencement of irradiation. The entire body is exposed to an erythema dose thrice weekly for ten weeks. Blood is withdrawn during the first and last ten of a course of thirty irradiations, and is injected intramuscularly in increasing doses of from 2 to 15 c.cm. In latent syphilis 57 per cent. of positive Wassermann reactions became negative; in neurosyphilis, this result followed in 28 per cent. of cases. This negative phase persisted for periods of from two months to three years, but later some cases became positive. The treatment increased the blood-calcium content. In 41 cases of neurosyphilis with aortitis, the subjective symptoms improved constantly. Remissions lasted for one to nineteen months. Relapses occurred in 22 per cent. of cases, but a second course reduced relapses to 12 per cent. The procedure described improved the patients' general health and vigour, but objective symptoms generally persisted. The treatment should be repeated at regular intervals, since this appears to render amelioration permanent. The authors have not substituted their method for those already employed in the routine treatment of syphilis, but they recommend its use in refractory cases.

573 Hypertonic Salt Solution in Post-operative Anuria

Vomiting may bring about such an excessive loss of chloride from the body as to induce prolonged anuria, with grave consequences. H. F. ROOT and P. P. HENSON (*Journ. Amer. Med. Assoc.*, August 22nd, 1931, p. 540) report a case of post-operative anuria in which relief was obtained by giving intravenous injections of a hypertonic saline solution after the subcutaneous introduction of normal saline solution had failed to produce any benefit. A boy, aged 5, was operated on for acute uncomplicated appendicitis, and about two days after the operation passed urine containing acetone in large quantities, with slight traces of albumin and sugar. Anuria then ensued for four days, the bladder remaining empty; there was vomiting, but the bowels were open. The non-protein nitrogen of the blood was 162 mg. per 100 c.cm., and the blood plasma chloride 248 mg. After the failure of dextrose administration, intravenous injection of normal saline solution, and the introduction of tap water into the rectum, 60 c.cm. of a 10 per cent. solution of sodium chloride was injected intravenously. Four hours later the patient passed 120 c.cm. of urine, thus terminating an ill-

of suppression which had lasted for 97 hours. He complained of thirst and hunger, and took food and fluids freely; in the next fourteen hours he passed nearly 3,000 c.cm. of urine; subsequent progress was uneventful. The authors remark that this suppression was apparently due to a reduction of the plasma chloride to a level where urinary secretion ceased—the consequence of continued vomiting with marked chloride loss. The amount of chloride needed to replace this was doubtful, because 15 grams had been given subcutaneously; this was either retained in the tissues or lost in the subsequent vomiting. The salt deficit in the blood was calculated from a theoretical estimate of the total blood volume, associated with the plasma chloride content estimation, and two-thirds of the dose thus indicated was given with excellent results. In such cases of vomiting and acidosis the authors stress the importance of blood plasma examination so that salt deficiency can be corrected without delay.

574 Vaccine Therapy in Whooping-cough

E. J. SCHMITZ (*Deut. med. Woch.*, October 16th, 1931, p. 1784) remarks that among the numerous remedies recommended for whooping-cough, no specific has been found, but many satisfactory results have been reported from vaccine therapy, which appears to mark a definite advance. He has found it necessary to divide the patients into two classes—namely, infants and children of school age. Vaccines were used for prophylaxis, as well as for treatment. At first a mixed vaccine was employed, but in several instances this appeared to aggravate the catarrhal symptoms; in some cases the temperature rose to over 102° F. A pure whooping-cough vaccine was then tried, commencing with a minimal dose of 2,000 millions and increasing the dosage rapidly to the largest doses—8,000 or 10,000 millions—after two or three days. Among the 38 infants so treated, the vaccine had no effect in five cases; in two instances the results were doubtful. In all the remaining cases the effect was favourable. Schmitz found that the best results were obtained in the early stages of the disease, and that it was necessary to continue the injections, even when a single dose gave relief. No ill-effects were observed, even after the largest doses of the vaccine.

Radiology

575 Meningitis produced by Iodized Oils

The injection of lipiodol and of other iodized oils for skiagraphic purposes is not free from danger. A. F. LINDBLOM (*Acta Med. Scand.*, September 30th, 1931, p. 395) has endeavoured to find a non-irritant iodized oil, suitable for myelography, and to ascertain the oily components causing chemical meningitis. The experimental animals (rabbits) showed considerable variation in reaction. Four rabbits received subarachnoid injections of 0.5 c.cm. of iodized poppy oil (acidity 2.5); two died of acute meningitis within 24 hours; two were moderately affected for two days, and when killed three days later, aseptic meningitis was found. The presence of catalytic agents may be important. Experiments showed fundamental differences between iodized vegetable and animal oils. Various vegetable oils differed in effect—for example, sesame oil caused slight irritation, while poppy oil produced severe meningitis owing to the presence of varying percentages of free fatty acids. When iodized sesame oil with a varying acidity content was used, the resultant irritation was proportionate. Iodine increased irritation by combining with free fatty acids. Hydriodic acid is formed by hydrolysis, during or after preparation of the iodized oil, being increased by higher temperatures and by iodine saturation of the oil. After injection of iodized oil, the iodine compounds are absorbed, usually in a few days, but free oil may be retained for years, either in bulk or as numerous small droplets, producing pachymeningitis. The effects of injecting animal oils are entirely different. Iodized cod-liver oil is emulsified in 24 hours after injection. The animals generally died in one or two days, but some improved after resorption of the oil; meningitis was due to decomposition products such as oxy-acids and glycerin, and for this reason animal oils are unsuitable for skiagraphic purposes. Lindblom concludes that iodized oils should be used only when clearly indicated, and not as a routine procedure.

576 Treatment of Ureteral Fistula

According to A. WALTER and K. DECKNER (*Zentralbl. f. Gynäk.*, October 3rd, 1931, p. 2946), suppression of the function of one kidney by *x*-radiation in large doses was first recommended by Klein in 1928, and was inspired by the finding of Kraemer that a parotid fistula became healed after radiotherapy. About a dozen cases of success of the treatment have been described, in one of which it was found that function of the irradiated kidney persisted after closure of the fistula. Six unsuccessful cases have been reported; in one of them the subsequently excised kidney was pyelonephritic, and in another the histological features of the kidney did not differ from those of other (non-radiated) pyonephroses. The present authors record a case in which a kidney was removed after its unsuccessful radiation for ureteral fistula; early fibrotic and also inflammatory conditions were found throughout, together with signs of ascending pyelonephritis. In two other instances, accidental division of the ureter at operation was treated by knotting of the ureter, and on the same and subsequent days by *x*-radiation of the kidney. In neither case did a fistula occur. In one which eventually came to necropsy, the kidney was free from infection, and showed macroscopically and microscopically no other abnormality than a slight hydronephrosis. It should be remembered that spontaneous healing of a ureteral fistula is not uncommon; it seems possible that *x*-radiation of the kidney may promote healing without annulling renal function in the manner demonstrated in animal experiments.

577 O. JÜRGENS (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, October, 1931, p. 664) reports a case in which a ureteral fistula following a gynaecological operation became closed eight days after radium application. Renal function on the other side had been previously proved to be satisfactory. Before the treatment the ureteral orifice had functioned continuously, though partially, but after irradiation it ceased transmitting urine—a confirmation of Klein's contention that an atrophic sclerosis of the kidney is induced.

578 Radiotherapy with Internal Medication in Localized Decalcifications

According to G. CHAUMET (*Journ. de Radiol. et d'Électrol.*, September, 1931, p. 510) *x* rays are known to benefit certain osteo-arthritic conditions; ultra-violet rays have been employed in the treatment of rickets and other osseous conditions, and phospho-calcium salts have been long exhibited in tuberculosis and various skeletal deficiencies. It was thought that a combination of these agents should be beneficial, and Chaumet has obtained happy results by this method in infective osteo-arthritis, in articular rigidity with decalcification following long immobilization, and in retarded union of fractures. His technique is as follows. Small doses of *x* rays are given daily or on alternate days over the same field of the affected member. At each treatment 150 R under 15 mm. aluminium, with a tension of 130 kV, and an anti-cathode-skin distance of 22 or 31 cm., are given until a total of 1,800 to 2,000 R is reached. The number of fields depends on the size of the region. The rhythm of the treatment is so determined that the *x*-ray series corresponds to the duration of the ultra-violet series—namely, 40 days. The latter rays are applied every two days in large thoraco-abdominal irradiations, first anteriorly, then posteriorly. These irradiations are progressively increased from a duration of 4 or 5 to 25 or 30 minutes, and the distance of the lamp is decreased from 1.5 to 0.9 metre. The series consists of 18 to 20 treatments. The patient's reactions are a guide in treatment; erythema is not desired, and fever or nocturnal agitation must be avoided. During the 40 days of treatment the patient is given tricalcine or similar medication orally.

Obstetrics and Gynaecology

579 Post-menopausal Haemorrhage and Ovarian Tumours

That uterine bleeding in patients beyond the menopause who show no gross abnormality of the uterus may be an early sign of ovarian tumour has been pointed out by Moulonguet-Doléris, R. Meyer, Neumann, and others; it has been described as being specially associated with the type of diffuse primary carcinoma of the ovary known as granulosa-cell tumour. K. TIETZE (*Arch. f. Gynäk.*, August 10th, 1931, p. 197) finds that in 50 per cent. of malignant post-menopausal ovarian tumours metrostaxis is present, but it is sometimes due to other causes than the ovarian tumour, such as uterine polypus. In a series of 71 cases of ovarian tumours of all sorts in women beyond the menopause, 23 per cent. had uterine haemorrhage, and all these had a malignant tumour. Of 12 cases fully investigated the metrostaxis was associated in 4 with granulosa-cell tumour of the ovary; in these cases there was also marked hyperplasia of the uterine muscle, endometrium, and tubal mucosa. The uterine changes are probably due to hormonic influences from the diseased ovary; Schuschania and Siebke proved this to be so in one of Tietze's cases by demonstrating in the urine large amounts of folliculin before but not after the operation.

580 Sudden Alteration of the Blood pH during Delivery

H. SIEDENTOPF (*Zentralbl. f. Gynäk.*, October 24th, 1931, p. 3117), measuring the hydrogen-ion concentration, the acetone content, and the β-oxybutyric acid content of the blood during labour, found that these increased on the whole very slightly during the relatively long course of the first and second stages. In the relatively short period, however (nine minutes as an average), corresponding to the expulsion of the foetus at the end of the second stage, there occurred an acute and substantial shifting of the blood composition towards the acid side, with much rapid increase of the *p*H, and of the acetone and β-oxybutyric acid content. After considering possible explanations of this sudden change, he concludes that it is due to the acute shrinkage of the uterus, and the expression from this into the general circulation of large amounts of blood and lymph laden with products of katabolism. In confirmation is reported a sudden increase of the non-protein nitrogen of the blood during expulsion of the foetus.

581 Pregnancy Complicated by Goitre

R. D. MUSSEY and W. A. PLUMMER (*Journ. Amer. Med. Assoc.*, August 29th, 1931, p. 602) find that the use of small doses of iodine is of value in the treatment of colloid goitre during pregnancy; that hyperthyroidism responds satisfactorily to the administration of thyroid extract (under careful observation); and that adenomatous goitre, uncomplicated by hyperthyroidism, rarely needs treatment during pregnancy, although both adenomatous and colloid goitre may produce sufficient venous or tracheal pressure to necessitate partial thyroidectomy. Hyperthyroidism, resulting from adenomatous goitre, is often not satisfactorily controlled by iodine, and it is then safer to remove the adenomatous tissue. The use of the compound solution of iodine in doses of 10 drops three times a day in cases of exophthalmic goitre should be followed by distinct improvement, including a definitely c. lowered basal metabolic rate, within a fortnight. Patients *lia* must, however, be watched carefully, and repeated p. 1 etabolic rate determinations be made, since recrudes-The ace of the disease often occurs in spite of the con-females and inition of iodine. Except in certain cases in ever, was found nths of pregnancy, partial thyroidectomy the patients were rmed without delay if the exophthalmic showed allergic n show complete, or nearly complete, causes are cited, and wo weeks after the institution of iodine abdominal operations ay be followed by irreparable damage is pain and discomfort hen the strength of the patient is it may appear over any

diminished, or the heart is injured as a result of the severity of the hyperthyroidism, it may be necessary to shorten labour by forceps or version, or, rarely, by Caesarean section. Whereas, formerly, interruption of pregnancy was usually advised when severe hyperthyroidism was present, and miscarriages occurred spontaneously in the absence of treatment, it has now been shown that partial thyroidectomy in adenomatous goitre with hyperthyroidism (and, since 1922, the use of iodine in exophthalmic goitre, followed by partial thyroidectomy, when indicated) enables pregnancy to be continued safely and effectively.

Pathology

582 Testing for Immunity to Yellow Fever

W. A. SAWYER and W. LLOYD (*Journ. Exper. Med.*, October 1st, 1931, p. 533) have elaborated the test described by Theiler for demonstrating immunity to yellow fever. Theiler mixed the suspension of virus and the serum to be tested, and injected them intracerebrally into white mice, using six or more mice for each test. Fairly satisfactory results were obtained, but many mice died, presumably from simple trauma of the brain tissue, and excessive numbers of animals had to be used to obtain reliable results. The present authors have found that more satisfactory results can be obtained by injecting the virus-serum mixture intraperitoneally, at the same time introducing a small quantity of starch emulsion into the brain to assist in the cerebral localization of the virus. If the serum lacks protective power, the mice die of yellow fever encephalitis, usually between the fifth and tenth days. The test is highly sensitive, and is likely to be of considerable value in survey work to ascertain the extent of endemic yellow fever in various districts. It may also be used to determine whether artificial vaccination has led to the development of immune bodies. It is necessary to employ a strain of virus that has been passed through a large number of mice in series so as to render it more or less fixed. The actual strain of mouse used likewise seems to be of importance, since some strains appear to be much less susceptible than others.

583 Food Poisoning Apparently due to Staphylococci

E. O. JORDAN and J. R. HALL (*Journ. Preventive Med.*, September, 1931, p. 387) record a small outbreak of food poisoning due to the consumption of chicken gravy. Two members of the family who partook of the gravy developed severe symptoms in about three hours; the third member, who did not do so, showed no signs of illness. Examination of the gravy failed to reveal any members of the Salmonella group, but colonies of staphylococci were abundant, belonging to the *S. aureus* type. Experiments made on human volunteers with the filtrate of a 72 hour broth culture of this organism gave interesting results. Six volunteers, at some time during a period of nine weeks following the preparation of the filtrate, were fed with 5 c.cm. of the filtrate in a glass of milk. Four of them developed acute symptoms about three hours later with vomiting and diarrhoea; the other two showed no symptoms. The close correspondence as regards the symptoms and in the incubation period between the volunteers and the original victims suggests very strongly that the products of growth of the staphylococci in the food were responsible for the outbreak described. In another paper, E. O. JORDAN, G. M. DACK, and O. Wo[illegible] (ibid., p. 383) report the results of experiments made to determine the heat resistance of staphylococcus [illegible]. The experiments were conducted on a small scale and showed that though some diminution in toxicity may be caused by heating even at temperatures below [illegible] sufficient toxicity might remain after exposure for minutes at the temperature of boiling water to cause severe and characteristic symptoms when fed to [illegible] in 2 to 10 c.cm. quantities.

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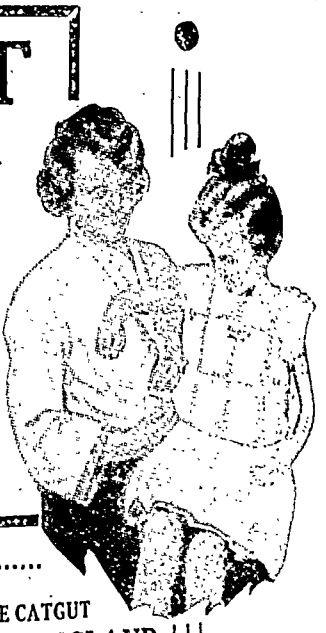
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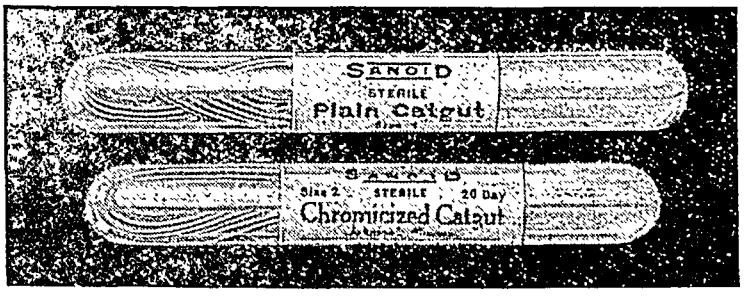
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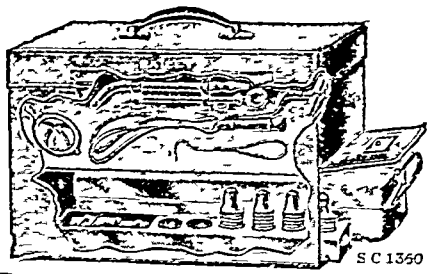
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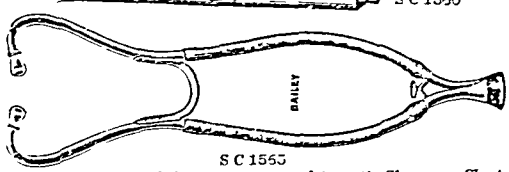
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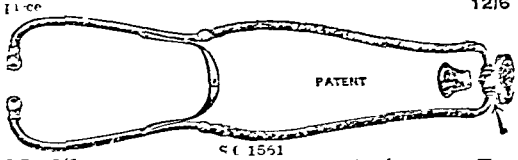
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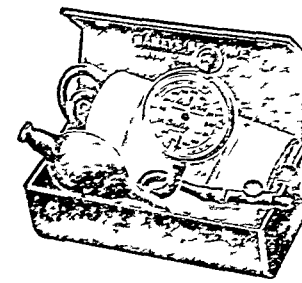
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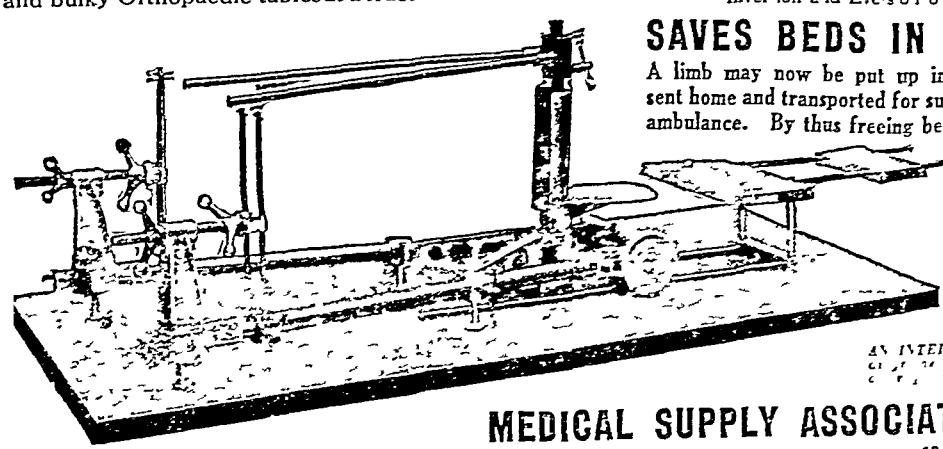
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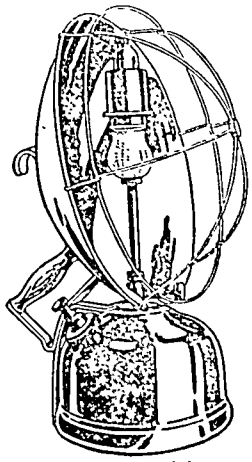
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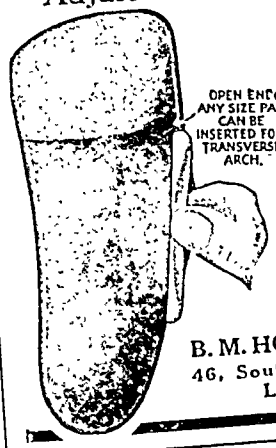
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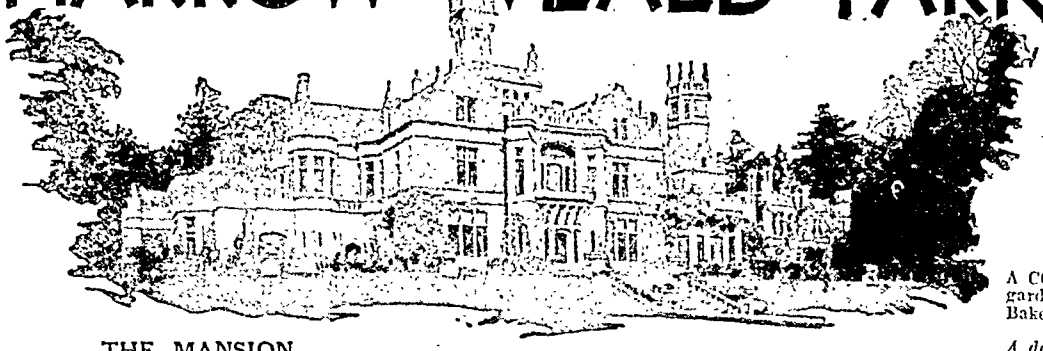
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Telephone: 2231 GATLEY.

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For Mental Disorders, with or without certificates.

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

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Monks Orchard, Monks Orchard Road, Eden Park, Beckenham, Kent.

Reg Tel Address. Bethlem, Beckenham. *Telephone.* Springpark 1180—1181.

Station: Eden Park (Southern Railway).

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This Registered Hospital is now situated at Monks Orchard, in some 250 acres of park, pleasure, and farm grounds.
Applications can be considered on behalf of patients of the educated classes in a presumably curable condition.
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Patients who can contribute 5 guineas weekly towards the cost of treatment and maintenance may be received as vacancies arise. The Committee will also consider applications for admission at lower rates, and in certain cases will be prepared to admit patients free of charge.
Every facility for specialized investigation and treatment is provided in the Lord Wakefield Science and Treatment Unit. In this Unit is found the X-ray and Dental Departments and the Bio-Chemical, Pathological, and Psychological Laboratories.
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For forms and further particulars apply to the Physician-Superintendent at the Hospital.

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In view of the present economic position, the inclusive fees at Ruthin Castle, formerly from 17 guineas a week, have been reduced to from 15 guineas a week.

The fees include medical attendance, all scientific investigations that may be needed, such as analyses, bacteriological cultures, the ordinary x-ray examinations, and electrocardiograph readings, all treatment that may be prescribed, such as special diets, insulin, artificial sunlight, electrical treatment, baths, massage, nursing, medicines or vaccines, board and lodging.

The only extra charge is that for a complete alimentary x-ray examination, or for x-ray therapy.

Many people who would go abroad for health will not do so this winter. All the usual forms of treatment are given at Ruthin Castle. The climate is mild. The annual rainfall is 30·5 inches, that is, less than the average for England. There is central heating throughout. Should the accommodation in the Castle not prove sufficient, comfortable rooms can be obtained near by for those undergoing treatment.

Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams:* CASTLE, RUTHIN. *Telephone.* RUTHIN 66.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741-4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

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Conveniently situated four miles from Charing Cross. Easy access from all parts.
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Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

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FOR MENTAL DISORDERS,
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

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FUNCTIONAL NERVOUS DISORDERS, MEDICAL & CONVALESCENT CASES.

An Approved Nursing Home for reception of Female Cases under the Mental Treatment Act.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

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Telephone: No. 7 Barnwood.

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DAVID LEWIS COLONY

for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

Apply to the Medical Superintendent,

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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2234.) Apply, J. H. EARLS, M.D., Late Physician. Telephone: Streatham 8450

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Voluntary Boarders received in the Hospital. Large Mansion on outskirts of Bath, with 7 acres of grounds (see *Medical Directory*, p. 2134).

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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 29.)

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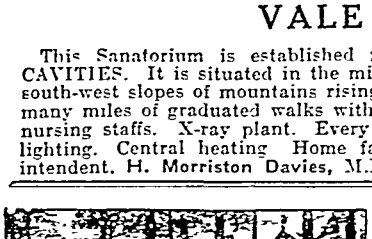
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Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. *Telephone:* 41 WITCOMBE. *Telegrams:* "HOFFMAN, BIRDLIP.

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Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 850 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax and Ultra Violet Rays for surgical cases of Tuberculosis. Terms: £4 7s. 6d. to £6 6s. per week inclusive. No extras.

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Travel by the "Torbay Limited," leaving Paddington at 12 noon week-days—the epitome of speed and luxurious comfort. Enquire at Railway Stations and Offices for details of train services, fares, etc., from all parts

OFFICIAL GUIDE and all information free from PUBLICITY DEPARTMENT, 2, Baths Offices, TORQUAY.

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COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on January 6th and October 1st, and for the Diploma in Tropical Hygiene on January 13th and April 23rd (Candidates for the D T H. must possess the D T.M. of this University)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool

F.R.C.S.(Edin.).

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February—March 1932.

A Course in preparation for the Examination for the Membership of the Royal College of Physicians of London will commence on Monday, February 1st, 1932, and will continue for a period of eight weeks. Fee for the Course £21. A limited number of vacancies is available, and application for admission to the Course should be made immediately to the Dean, Guy's Hospital Medical School, London Bridge, S.E.1.

T. B. JOHNSTON, Dean.

CITY OF LONDON MATERNITY HOSPITAL,

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PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from J. BROWNING, Alexander, M.D., Dean.

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How to Pass the F.R.C.S. free, [illegible] to the Secretary.

British Post-Graduate Medical School

APPOINTMENT OF DEAN.

The Governors invite applications from registered Medical Practitioners for the post of Dean of the School.

Salary £1,800 a year.

Applications should be received not later than first post on February 15th, 1932, addressed to the Chairman of the Governors, British Post-Graduate Medical School, Ducane Road, Shepherd's Bush, W.12, from whom further particulars may be obtained.

St. Mary's Hospital for Women & Children, Plaistow, E.13.

[illegible] are required for the [illegible] ANY CLINICAL ASSISTANTS [illegible] Obstetric [illegible] Female [illegible] with [illegible] to the [illegible]

ERNEST [illegible]

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

NOTE.—It is not possible to state at present what, if any, prospects of employment on the civil side will be open to Indian Medical Service Officers under the proposed new constitution for India.

PAY.

Owing to the state of financial emergency at present prevailing in India the existing monthly rates of pay, which are as follows, are being subjected, under the authority of the Secretary of State in Council, to a temporary reduction not exceeding 10 per cent.

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Years of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.	—	500	150	1st
			150	2nd
Capt.	(i) During first 3 years' service as Captain		150	3rd
		650	150	4th
	(ii) With more than 3 and less than 6 yrs.' service as Captain		£15	5th
		750	£15	6th
	(iii) With more than 6 years' service as Captain		£25	7th
			£25	8th
Major	(i) During first 3 years' service as Major	850	£25	9th
			£25	10th
			£30	11th
	(ii) With more than 3 and less than 6 years' service as Major	950		12th
	(iii) With more than 6 years' service as Major	1100		
Lieut.-Col.	(i) Until completion of 23 years' total service	1250		
	(ii) During 24th and 25th years' service	1500	£30	13th and over
	(iii) After completion of 25 years' total service	1600		
	(iv) When selected for increased pay	1700		
		1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administiative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £ towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a post-graduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America, is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. With effect from October 1st, 1931, a reduction of 8½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £300 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passages to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in January next, and the selected candidates will be required to join a course of instruction commencing early in February, 1932, prior to sailing for India in the Autumn of 1932. Applications should be submitted as soon as possible.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

Applications are invited for appointment as CLINICAL ASSISTANT to the following members of the Honorary Staff, who attend the Out-Patient Department at the times indicated:

Mr. Alban Andrews	Tuesdays 2 to 5 p.m.
Mr. Ogier Ward	Wednesdays 2 to 5 p.m.
Mr. F. J. F. Barrington	Thursdays 3 to 7 p.m.
Mr. Ogier Ward	Fridays 9.30 a.m. to 11.30 a.m. (Women & Children)
Mr. Alban Andrews	Fridays 2 to 5 p.m.
Mr. Harkness	Venereal Dept. on Mondays, Wednesdays, Thursdays, and Saturdays 5 to 7 p.m.

Appointments will be for six months, commencing January, 1932, a fee of Five Guineas being payable to the Hospital.

Applications will be received by the undersigned on or before Monday, December 14th.

BEECHEY ROGERS, Secretary.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

The Committee of Management invite applications for the office of HONORARY ASSISTANT SURGEON.

Candidates must be Fellows of the Royal College of Surgeons of England, or Masters in Surgery of a University in the United Kingdom.

Applications, accompanied by copies of testimonials, will be received by the undersigned on or before January 4th, 1932.

By Order of the Committee,

BEECHEY ROGERS, Secretary.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of SURGEON at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W.C.1.

Candidates must be Masters in Surgery of a University in the United Kingdom, or of the British Empire, or Fellows of the Royal College of Surgeons of England. The appointment carries with it a seat upon the Medical Council.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Applications, with copies of not more than three testimonials, which should be printed or typewritten, to be sent in on or before December 22nd, to the undersigned, from whom further particulars can be obtained.

By Order,

Seamen's Hospital Society, Greenwich
R. E. V. BAX, Secretary.

December 7th, 1931.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN with charge of Out patients at the DREADNOUGHT HOSPITAL, Greenwich. The elected candidate will have beds allotted to him, and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before Monday, January 4th, 1932, to the undersigned, from whom further particulars can be obtained.

By Order,

Greenwich
November 28th, 1931.
R. E. V. BAX, Secretary.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates must be duly qualified and registered. Number of beds 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before January 2nd next.

Town Hall, Accrington,
W. H. WARHURST, Hon. Secretary.

December, 1931.

Oldham Royal Infirmary.

HOUSE PHYSICIAN and CASUALTY OFFICER required to commence duty January 1st next. Appointment tenable for a period of six months. Salary at the rate of £175 per annum, with board, residence, and laundry. Successful candidate will be required to assist the Honorary Pathologist, and will be eligible for re-appointment. Applications to be submitted forthwith, together with copies of three recent testimonials, to the undersigned.

CHARLES D. DRAKE, General Superintendent.

Royal West Sussex Hospital, CHICHESTER.

The Board of Management invite applications for the post of HONORARY PHYSICIAN.

Applicants must be Graduates in Medicine of some University recognised by the General Medical Council, or a Member of the Royal College of Physicians, London, Edinburgh, or Ireland.

Also applications for the post of SECOND HONORARY ANAESTHETIST.

Applicants must be duly qualified under the Medical Acts, and must submit evidence of special training and proficiency in the administration of Anaesthetics.

Direct or indirect canvassing will disqualify.

Both appointments will be made on Tuesday, January 5th, 1932. Applications, with not more than three testimonials, must be sent to me not later than December 28th.

HERBERT S. AYLMORE, Secretary.

Royal Sussex County Hospital, BRIGHTON. (Beds—246)

HOUSE SURGEON (male) required end of January, 1932, with charge of beds, part casualties, and anaesthetics. Salary £150 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried and when elected under thirty years of age.

Applications, with copies of testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Superintendent.

Royal Sussex County Hospital, BRIGHTON. (246 Beds.)

CASUALTY HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Superintendent.

Bury Infirmary, Lancashire.

Applications are invited for the post of THIRD HOUSE SURGEON, who must have both Medical and Surgical qualifications. The appointment is for six months, at a salary at the rate of £150 per annum, with board, residence, and laundry. The successful applicant will be required to commence duties early in January.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not later than December 26th.

Particulars of duties may be had on application.

ALEX. W. MAITLAND, Honorary Secretary.

Midland Hospital, Easy Row, BIRMINGHAM.

A vacancy will occur for the post of HOUSE SURGEON (lady or gentleman) at the above Hospital on February 7th, 1932. Salary £150 per annum, with board, residence, and laundry. The work included Surgery, Gynaecology, Dermatology, etc.

Applications, stating age and qualifications, accompanied by recent testimonials, should be forwarded at once to—

JAMES O. AYRES, Easy Row, Birmingham. Secretary.

East Suffolk & Ipswich Hospital, IPSWICH. (265 Beds—7 Residents.)

Applications are invited for the post of CASUALTY OFFICER, vacant January 1st, 1932. Salary at the rate of £120 per annum. Board, residence, and laundry.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

ARTHUR GRIFFITHS, The Hospital, Ipswich. Secretary.

General Infirmary, Salisbury.

(General Hospital—161 Beds.)

TWO HOUSE SURGEONS (male) required to commence duties on January 3rd, 1932.

Candidates must be unmarried, fully qualified and registered. Salary £150 per annum, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

Woolwich and District War MEMORIAL HOSPITAL,

Shooters Hill, London, S.E.18.
(GENERAL HOSPITAL—112 Beds)

HOUSE PHYSICIAN; also HOUSE SURGEON.

The Board of Management invites applications from suitably qualified male candidates for appointment as (a) House Physician, and (b) House Surgeon, for a period of six months from January 1st, 1932. In addition to his general duties the House Surgeon will have the care of a Maternity Unit of 8 beds.

An honorarium of £100 per annum will be paid in respect of each appointment, plus board, residence, and laundry.

Applications, accompanied by copies of not more than three recent testimonials, should be addressed to the Secretary (at the Hospital) to reach him not later than first post on Monday, December 21st.

Queen's Hospital for Children,

Hackney Road, London, E.2.

HOUSE SURGEON required February 15th, 1932.

CASUALTY OFFICER required February 15th, 1932. Some Ear, Nose, and Throat work additional. Six months' appointments. Salary at the rate of £100 per year, with board, lodging and washing.

Applications must be made on forms to be obtained from the undersigned, and must be sent in, with copies of not more than four testimonials, on or before January 12th, 1932.

CHARLES H. BESSELL, Secretary.

December 11th, 1931.

The London Lock Hospital,

91, Dean Street, Oxford Street, W.

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital. Candidates must be duly qualified and duly registered. The appointment is at the rate of £200 per annum, with furnished rooms, full board, and laundry. The appointment is for six months. Duties to commence January 9th, 1932. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W., on or before January 1st, 1932.

By Order of the Board,

Nov., 1931. HY. J. EASON, Secretary.

Harrogate Royal Bath Hospital.

(Special Hospital for Rheumatic Diseases, etc.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties beginning of February. The appointment will be for a period of six months. Salary at the rate of £156 per annum, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before January 12th, 1932.

E. P. L. DIXON, M.D., Secretary.

Hull Royal Infirmary.

(367 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant December 31st.

The appointment will be for six months in the first instance and will be determinable by one month's notice on either side.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, experience, and nationality, together with copies of testimonials, should be sent to the undersigned.

R. J. CARLESS, House Governor and Secretary.

Dec. 5th, 1931.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three resident, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), and accompanied by copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATT, Secretary-Superintendent.

Rotherham Hospital

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £153, with board, residence, and laundry. 130 beds.

Applications, with copies of testimonials, to be sent to the Secretary, Mr. ROBERTS, 8, Moorgate Street, [illegible]

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh

(a) British Islands.

Town or District	Town or District	Town or District
GENERAL POST OFFICE (*Assistant Medical Officer—W[illegible]*)	**CONTRACT PRACTICE** (*contd*)	**CONTRACT PRACTICE** (*c[illegible]*)
CONTRACT PRACTICE.	ILLSWYNPIA COLLIERY, PENYCAE, GLAMORGAN (*Workmen's Medical Service*)	OGMORE VALLEY CL[illegible] (*W[illegible] Officers Me[illegible] Service*)
PETERBOROUGH TRADES AND FRIENDLY SOCIETY INSTITUTE (*Medical Officer*)	MARDY, GLAMORGAN (*Workmen's Medical Service*)	**PUBLIC HEALTH.**
PRESTATYN (*Workmen's Medical Society*)	MEIRION VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE (*Workmen's Medical Service*)	BUCKS COUNTY COUNCIL (*Mo[illegible] Officer of Health*)
GILFACH GOCH, GLAMORGAN (*Workmen's Medical Service*)	NEATH AND DISTRICT (*Medical Aid Association*)	DEVON COUNTY COUNCIL (*Sch[illegible] Medical Inspector—W[illegible]*)
LOWESTOFT MEDICAL INSTITUTE (*Medical Officer*)	OAKDALE, MON (*Medical Officer for Medical Aid Association*)	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch	Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES (*All Friendly Societies Institutes*)	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W	SOUTH AUSTRALIA. (*Lodge Institutes etc*)	Secretary South Australian Branch, B M A House, 205 North Terrace, Adelaide	WELLINGTON, NEW ZEALAND. (*Friendly Societies Institutes*)	Dr G F W[illegible]SON (Hon Sec New Zealand Branch) Friendly Societies Medical Association P O Box 1550 Wellington New Zealand
QUEENSLAND. (*Friendly Societies Institutes*) (*Town[illegible] Associated Friendly Societies Medical Institute Toowoomba*)	The Hon Sec, Queensland Branch British Medical Association, B M A Building Adelaide St, Brisbane	VICTORIA. (*All Friendly Societies Medical Dispensaries*)	Dr J P MAJOR (Hon Sec Victorian Branch) British Medical Association, Medical Society Hall East Melbourne, Victoria	WESTERN AUSTRALIA. (*Friendly and Labour Societies*)	Hon Sec Western Australian Branch British Medical Association 8 and 9 Barrack Chambers Barrack St Perth W Australia

British Medical Journal,
BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

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Up to Six Lines (32 Words) 9s.
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Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Assistant, with view to Partnership later on, in large mixed Practice in S.E. Coast Resort. H.S., single, keen, energetic. Scot and abstainer preferred. Further particulars on application. Interview. Usual bond.—Address, No. 7694, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, small house provided, with or without view, North-West Coast; good salary offered. Own car preferable.—Address, stating experience, age, photograph, No. 7632, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, by B.S.(Lond.), M.R.C.S., L.R.C.P., Hospital exp. Leeds and London. 1½ years' experience of G.P., better-class, and panel. Conscientious worker. Own car. Free January 1st. —No. 7615, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistantship, with or without view, preferably in or near London, by M.R.C.S., L.R.C.P., male, single, aged 30, ex H.S., H.P., and R.M.O.; 3 years' experience general practice. Own car. Refs.—No. 7036, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistantship, London area preferred, not essential. Woman, well qualified, with good Hosp. and G.P. experience, keen. Able to drive car. Age 29. Interview desired. Parties., salary, etc.—Address, No. 7629, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, ex H.P. or H.S., general or ophthalm. (refractions). No midwifery. £365 p.a. (indoor). Married or single. State exp., height, and capital (if with view). Photo.—Address, No. 7634, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with or without view, in or near London preferred, by M.R.C.S., L.R.C.P., male, single, aged 26, experience general practice. References. Free now. — Address, No. 7421, B.M.A. House, Tavistock Square, W.C.1.

Wanted early in January, a young, outdoor ASSISTANT, male or female, for an industrial town, near Nottingham. — Address, No. 7693, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view, good salaries; state full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, Glasgow, Assistantship by male Univ. Graduate, age 28, 5½ years' exp. Hosp., San., G.P. Reliable, conscientious. Good refs. Drive car.—Address, No. 7617, B.M.A. House, Tavistock Square, W.C.1.

Wanted, January 1st, indoor ASSISTANT, male, middle-class Practice, South Midland Town. Salary £300 p.a., increase later. Usual bond. References.—Add., No. 7016, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, British, indoor or outdoor, London, E. No midwifery, little night work.—Address, No. 7631, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted, with view to PARTNERSHIP by Woman Doctor, M.B., Ch.B., D.P.M. Wide experience H.S. and H.P. Special experience in gynaecology and mental disorders. Drive own car.—Address, No. 7602, B.M.A. House, Tavistock Square, W.C.1.

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MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Part-time Work in London by experienced man (32), reading for higher degrees, who has recently sold large general practice. Experienced in all branches of practice, including Eyesight Testing. Would do morning and evening surgeries and week-end work. Very keen, loyal, abstainer. Own car.—Address, No. 7608, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Lady Dispenser-Bookkeeper, fully qualified. For private and panel Practice in Midlands.—Address, No. 7625, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Chartered Masseuses and MASSEURS recently showed their loyalty to the Medical Profession by passing a By-law pledging themselves to work only under medical direction. In return, please employ only Chartered Masseuses or Masseurs. (Membership 8,200.)

Names and addresses can be obtained from the Secretary, C.S.M.M.G., Tavistock House (North), Tavistock Square, W.C.1.
Telephone: Museum 9223-4-5.

Dispenser - Bookkeeper (male) seeks POST. Highest references. Mod. salary. Free go any district.—"DISPENSER," c/o 120, Allerville Road, Frizinghall, Yorks.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary-Dispensers or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Ex R.A.M.C., Sergt., seeks POST in Bacteriological Laboratory; good all-round knowledge of Bacteriology, Pathology, Post-mortem, Culture Media preparation.—Address, No. 7637, B.M.A. House, Tavistock Square, W.C.1.

Lady, well-educated, seeks SECRETARIAL POST, Doctor, London or neighbourhood; part time or whole-time (indoor or outdoor). Shorthand, typewriting (own portable typewriter), knowlge med. terms, chauffeuse.—No. 7613, B.M.A. House, Tavistock Sq., W.C.1.

Lady of good education desires post as SECRETARY-RECEPTIONIST to Medical Man.—Mrs. TOWLE, Red Lodge, Parsonage Road, Bournemouth.

Miss S. Muncaster offers Services to Professional Woman in return for board and lodging. Secretarial and light household duties.—41, South St., Epsom, Surrey.

Qualified Nurse (King's), with Secretarial experience, desires suitable POST with Medical Man. — Address, No. 7633, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION, 85, Eccleston Square, S.W.1 (Telephone Victoria 2722), supplies qualified Dispensers, Bookkeepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

Typewriting and Duplicating undertaken by Expert. Testimonials, Theses, Legal Documents. Numerous letters of appreciation from Doctors.—BEATRICE RADFORD (B), 341, Finchley Road, N.W.3. 'Phone Hampstead 6430 (any hour).

PARTNERSHIPS.

Wanted.—Partnership or PRACTICE by Cambridge Graduate, 4 years' experience house posts and general practice. Income £1,200. South or South West preferred.—Address, No. 7626, B.M.A. House, Tavistock Square, W.C.1.

Manchester.—Partnership in old-established Practice. Receipts £16,000 yearly. Good house, garden, garage, £40 per annum. Excellent scope. Panel 1,500. Price £1,200 half share, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, Bro[illegible].

Partner wanted by Cambridge M.D. in old established general Practice of £4,000 per annum, in country town in the Midlands, with Cottage Hospital, and a good surgery. Applicant should be well qualified and have held resident appointments at a London General Hospital or Edinburgh Infirmary. One-quarter share offered at 2 years' purchase after preliminary Assistantship.—Address, No. 7534, B.M.A. House, Tavistock Square, W.C.1.

Partnership for Sale.—One-third share in old established, good class general PRACTICE, with small panel. Income about £3,800. In present hands over 20 years. Favourable terms to suitable man. Plenty of scope; an exceptional chance.—Address, No. 7617, B.M.A. House, Tavistock Square, W.C.1.

Partnership required in City or large town by L.R.C.P. & S. (Edinburgh), British, two years' general experience. Has capital and excellent references.—Address, No. 7620, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in mixed PRACTICE, near London. Average gross receipts £6,200. Quarter share for sale. Further share later. Good house available on long lease. Capital essential.—Address, No. 7014, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted by M.R.C.P., good-class General PRACTICE. Income £2,000—£1,000. Town in East Anglia, preferably on coast. Small or no panel. Capital available. Details in confidence. — Address, No. 7015, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Practice, net cash receipts £1,000, large panel essential, in suburb of large town or city. Capital available. House, with garage, on lease, with option to purchase.—Address, No. 7521, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — General Practice, fair sized panel, income £800—£1,000, accounts audited, scope, by experienced London University Graduate (R.C.), age 31. Capital available.—Address, No. 7511, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — General Practice or PARTNERSHIP in London, with about £1,500 upwards. Good panel essential. Moderate capital available.—Address, No. 7605, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Glasgow, Practice or PARTNERSHIP, by well qualified young man; 5½ years' exper. Hosp. and G.P. Good refs. Moderate capital.—Address, No. 7618, B.M.A. House, Tavistock Square, W.C.1.

Wanted by experienced Practitioner, PRACTICE or PARTNERSHIP, about £1,000, in or near Birmingham.—Address, No. 7624, B.M.A. House, Tavistock Square, W.C.1.

Beds. — Country Practice in very pretty district. Nice house, garage. Receipts about £500. Excellent Panel 75. Price for Practice and house £1[illegible], part deferred. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Bro[illegible].

Birmingham or district. Wanted, PRACTICE, mixed or private, early in New Year, £1,500. Good house. Cash available.—Address, No. B.M.A. House, Tavistock Square, W.C.1.

Bournemouth. — Panel and private PRACTICE wanted. Would purchase from genl. man or partial retirement. Panel only considered. Strictly confidential.—No. 7628, B.M.A. House, Tavistock Square, W.C.1.

General Medical Practice. Sale, residential suburb of [illegible]. Receipts £2,100. Good premises with detached surgery.—Details from SON, Ipswich.

Kent and Canterbury Hospital, CANTERBURY

(Recognised by the University of London for the purpose of M S Examination)

HOUSE SURGEON required, to commence duties on January 8th, 1932. Six months' appointment Salary payable at the rate of £125 per annum, plus board, residence, and laundry. Applications, stating age and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned

W. T SOUTHWOOD,
Supt & Secretary.

Royal Eye Hospital, St George's Circus, S E 1.

There are three L C C REFRACTION appointments (£80 p a) now vacant for qualified persons at this Hospital One Session per week. Appointments made preferably from those who either are at present, or are prepared to become, Clinical Assistants in the Out patient Department

Applications, with copies of testimonials, must be received by the Secretary not later than January 4th, 1932

(Signed) F E D'ALTON, Secretary

South-Eastern Hospital for CHILDREN, Sydenham, S E 26

Applications are invited for the position of RESIDENT MEDICAL OFFICER (lady). The appointment will be for six months, commencing as soon as possible Honorarium £100 per annum, with board, residence, and laundry. Ample time for reading. Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent at once to the Hon Secretary, WALTER MASON, M B E, "Woodfield," 88, Dacres Road, Forest Hill, S E 23

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, E C 1.

Applications are invited for the posts of CLINICAL ASSISTANT in the Out patients Department on Thursdays at 5 p m., and Saturdays at 1 30 p m Appointments will be for six months, commencing February, 1932; a fee of three guineas being payable on appointment Applications should be addressed to the undersigned, on or before January 16th, 1932.

RAYMOND BULL, Secretary.

Swansea General & Eye Hospital. (316 Beds)

CASUALTY OFFICER required Gentleman, single, must have had previous hospital experience Appointed candidate also required to act as Deputy Senior R M O Duties to commence January 11th next Salary £200 per annum, with board, residence and laundry. Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned

O C HOWELLS,
Secretary Superintendent

Manchester Ear Hospital, Glosvenor Square, All Saints'

The Board invite applications for the post of HOUSE SURGEON 24 beds Salary £120 per annum Candidates must be duly qualified and registered

Applications, with copies of four recent testimonials, to be forwarded to Mr REGINALD S MILLARD (Hon Secretary, Manchester Ear Hospital), c/o Mr W J ELLAM, 33, Brazennose Street, Manchester, not later than January 2nd, 1932

South London Hospital for WOMEN, Clapham Common, S W 4

The Board of Management invite applications from qualified Medical Women as CLINICAL ASSISTANTS for—

(a) Medical Out patients—Tues mornings,
(b) Ophthalmic In patients and Out patients—Thurs mornings

Each appointment for one year from Jan. 1st, 1932

Further particulars may be obtained from the Secretary, to whom applications, with testimonials should be forwarded

King Edward Memorial Hospital, EALING (109 Beds)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER, vacant on January 1st, 1932 Applicants must have had good experience (at least two years) in House appointments Salary £250 per annum, with usual residential allowances Applications, stating age, experience, and qualifications, together with copies of two testimonials, to be sent to the undersigned immediately.

R. A MICKELWRIGHT,
Secretary Superintendent.

County Borough of Middlesbrough.

ST. LUKE'S HOSPITAL, GROVE HILL, MIDDLESBROUGH.

The Committee of Visitors invite applications for the appointment of ASSISTANT MEDICAL OFFICER and DEPUTY MEDICAL SUPERINTENDENT (male) for the above-mentioned Hospital.

Candidates must be fully qualified and duly registered, and preference will be given to one who has held a resident appointment in a General Hospital.

The age of applicants should not exceed 33 years

Salary £500 per annum (no emoluments) rising by four annual increments of £25 to a maximum of £600. This will be subject to a temporary deduction at the present time.

The successful candidate will be required to live in the Hospital Part furnished married quarters are provided, for which a sum of £40 per annum will be deducted from the salary to cover rent, rates, and water The appointment is whole time and subject to the provisions of the Asylums Officers Superannuation Act, 1909

The appointment will be terminable by two months' notice on either side.

Canvassing will disqualify.

Applications, accompanied by copies of three recent testimonials, should be sent to the undersigned not later than December 31st, endorsed "Assistant Medical Officer and Deputy Medical Superintendent."

PRESTON KITCHEN,
Town Clerk and Clerk to the Committee of Visitors.

Town Clerk's Office, Middlesbrough.
December 14th, 1931.

Breconshire County Council.

APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly registered Medical Practitioners (male), holding a Degree or Diploma in Public Health, for the whole time appointment of Medical Officer of Health for the County, School Medical Officer, and Medical Officer for Mental Deficiency, Maternity and Child Welfare, and Venereal Diseases work, including such other duties as may from time to time be assigned to the officer by the County Council.

Basic salary £800 per year, subject to a temporary deduction of £60 per year during the present financial emergency, with travelling and subsistence allowances according to the County Scale.

Candidates must be prepared to provide and drive a motor car to carry out the duties of the appointment.

Preference will be given to candidates having a knowledge of Welsh, and with previous experience of the duties of the office and some experience in Refraction and Orthopaedic work

Applications, stating age and qualifications, accompanied by copies of not more than three recent testimonials, must be sent to reach me not later than January 2nd, 1932

ALBERT JOLLY,
Clerk of the Breconshire County Council
County Hall, Brecon
December 14th, 1931.

City of Sheffield.

ASSISTANT TUBERCULOSIS OFFICER

Wanted, a male (unmarried) Assistant Tuberculosis Officer to reside at WINTER STREET HOSPITAL, and to devote his whole time to the Municipal Tuberculosis Scheme.

Salary £350 per annum, rising to £550 per annum by annual increments of £25, with board, residence, and laundry. (If the successful candidate has not been fully qualified for three years the salary will be at the rate of £250 per annum).

The office has been designated as an established post under the Local Government and Other Officers Superannuation Act, 1922

The appointment is subject to a temporary salary reduction scheme approved by the City Council.

Applications, stating age, qualifications, and experience, with copies of three testimonials, to be sent on or before January 1st, 1932, to the Medical Officer of Health, Town Hall, Sheffield

The Central London Ophthalmic HOSPITAL, Judd St, St. Pancras, W.C 1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEONS. Salaries at the rate of £120 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates, must be sent to the undersigned on or before January 9th, 1932.

H. R. S. DRUCE, Secretary.

County Council of Inverness SHIRE

PARISH OF BRACADALE

LOCAL MEDICAL OFFICER

Applications are invited from registered Medical Practitioners, for the appointment of Local Medical Officer for the Parish of Bracadale, Skye

Income is derived from the following sources
(1) County Council in respect of services to that Authority, approximately £140 per annum
(2) Private Practice
(3) Highlands and Islands Medical Service Fund Free house provided by the County Council

Applications, with statement of qualifications and experience, accompanied by copies of three recent testimonials, to be lodged with the undersigned not later than Wednesday, Dec 30th

County Buildings, J W McKITTOP,
Inverness County Council
December 14th, 1931

Ancoats Hospital, Manchester

Applications are invited from fully qualified Medical Practitioners for the post of MEDICAL REGISTRAR, to assist the Honorary Physician in the Out patient Department on Monday, Wednesday, and Thursday mornings (9 30 a m to 12 30 p m), and Monday afternoon 2 p m to 4 p m This appointment may be divided if to suit the convenience of the applicants A small honorarium is allowed

Applications, stating age, experience, qualifications, etc., to be forwarded to the undersigned on or before 22nd inst, together with copies of three recent testimonials

By Order of the Board
HERBERT J DAFFORNE
Gen Supt & Secretary

St. Mary's Hospital, W.2

MEDICAL REGISTRAR

The Board of Management invite applications for the above post

Candidates for the appointment must be registered Medical Practitioners, and fellows, members or Licentiates of the Royal Colleges of Physicians, or Graduates in Medicine of a University in the British Empire

The salary is £200 per annum, with lunch and tea provided

Copies of the regulations for the Medical Registrar may be obtained on application to the Secretary's Office.

Applications, with copies of testimonials, should reach the undersigned on or before Tuesday, December 29th

W PARKES, Secretary

Royal Infirmary of Edinburgh (1,011 Beds)

There is a vacancy in the Radiological Department for a JUNIOR ASSISTANT RADIOLOGIST Candidates must hold a Diploma in Radiology and should be interested in Therapy

The salary is at the rate of £350 per annum

Applications and copies of testimonials to be sent to the undersigned, on or before December 28th The successful applicant will be expected to commence his duties as early as possible after the New Year.

HENRY MAW
Secretary & Treasurer

Golden Square Throat, Nose, EAR HOSPITAL, London W 1

HOUSE SURGEON, male, required for February 1st, 1932 Salary £100 per annum, board and lodging Applications stating qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before January 2nd

F P CAMMELL
Secretary Superintendent

PRACTICES SOLD & TRANSFERRED
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MANCHESTER.
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GREENWICH INLAID LINOLEUM
(Frederick Walton's New Patents)
COMPANY LTD.

Important New Development.

The 38th ORDINARY GENERAL MEETING of the GREENWICH INLAID LINOLEUM (Frederick Walton's New Patents) Company Ltd., was held on Monday last at 35 Newgate Street E.C.

Mr. Alexander H. Dewar (Chairman and Managing Director) presided.

The Chairman said:

In common with most industrial companies, we have had to face a difficult time in the financial year now under review. Adverse trading conditions have prevailed all over the world, and although we have more than held our own position at home our export trade has been disappointing and has suffered both in our Dominions and in Overseas countries generally.

I do not however, meet our Shareholders in any despondent mood, as I consider we are weathering the storm successfully, and when conditions improve, as improve they will, we are thoroughly well equipped to take full advantage of all opportunities to increase our trade.

In these days of considerable fluctuations in commodity prices the purchase of raw materials requires constant and expert supervision, and I am glad to assure the Shareholders that no considerable sums have had to be written off the large stocks of raw materials required in a business like our own.

During the course of the year, we found ourselves in a position to reduce our whole range of prices thus following out our policy of bringing our products within the purchasing power of the largest possible number of customers.

Our new plant and machinery came into full working order during the current year which enabled us to extend the Moderne colourings in both the Jaspe and Moire Linoleums and we have added a range of fourth Jaspe to our list. These Jaspes and Mories have commanded a ready sale both in this country and throughout the world.

New Production—"GREENOLIN."

Although Linoleum is already renowned for its wonderful wearing qualities we have been devoting our attention for some considerable time to the developments of a new production which would be an improvement under certain conditions on linoleum as it is. This special cloth we have registered under the name of Greenolin in order to associate it with the name of our own company. It is specially designed to withstand the most exacting hard wear.

We have submitted Greenolin to the most exhaustive tests and trials—it has been tested against innumerable different kinds of flooring and floor-coverings and in every case the results have been most satisfactory. We feel confident we have succeeded in producing a cloth which will meet the most trying conditions of wear.

In producing this cloth we have also been able to eliminate one of the most tedious and expensive processes of our industry—I refer to the long period of seasoning to which linoleum has to be submitted before being hard enough to send out.

The components are all thoroughly seasoned separately before being incorporated together to make Greenolin. This results in a cloth, harder and tougher than finished linoleum, within a few minutes of leaving the machine. It will therefore, be ready for delivery as soon as it is made, and it is so tough that, should customers desire it, it can be supplied without any canvas backing.

Its surface will keep cleaner and be more easily cleaned than any other floor-covering while its resistance to dampness to soaps to alkalis and to other corrosives is an important point in its favour. Having regard to its fine finish and wearing properties, we anticipate a considerable demand when the goods are placed on the market next month.

As to reviving trade at home it is certainly apparent to heads of businesses that the present crushing taxation is seriously imperilling the retail trader and until the Government of the country adjusts its finances so that the income tax can be considerably reduced, we cannot expect any great development of trade despite the efforts that are being made in all directions by business houses.

Prospects.

While it is impossible to predict what will be the result of the present monetary crisis and financial stringency that prevails the world over, we are as I mentioned in the beginning of my speech excellently equipped to take full advantage of every chance to improve our trade and your Directors are confident that with steady application and close co-operation between ourselves and our associated companies we shall win through to better results.

The report was unanimously adopted and a dividend of 6 per cent. on the Ordinary shares was declared.

ESTABLISHED 1862

PEACOCK & HADLEY, Ltd.

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19, Craven Street, Strand, W.C.2.

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Telephone Central 2630

LOCUM TENENS and ASSISTANTS supplied free of charge to principals.

FOR SALE.

1 CORNWALL — Old-established unopposed PRACTICE. Present average £920 p.a., including panel 500. Good house, can be had on rental. Premium £1,150.
2 CO. DURHAM—Death Vacancy—Old-established PRACTICE. Held 7 years by late Vendor. Receipts average £900 a year, panel 600. Ten roomed house, rent £40. Premium £1,400.
3 LONDON, S.E.—Small but steadily increasing PRACTICE. Doing at present £4 per week, with a panel of 90. Surgery rent 22/6 weekly. Premium required £175 or near offer.
4 HANTS.—Coast Town.—Well-established PRACTICE. Receipts average £500 p.a., panel 450. Nice house, £75 p.a. Premium £750.
5 Near BRIXTON, S.W.—Well-established cash and panel PRACTICE. Receipts average about £424 p.a., panel 270. Rent of surgery £1 p.w. Premium £550. Good scope.
6 Nice SEASIDE TOWN (40 miles from London)—Well-class PRACTICE. Receipts last year £1,050, panel 100. Good house, nice garden, etc. Premium £1,150. Scope for increase.
7 LONDON, W.—Small, but well-established PRACTICE. Capable of being greatly increased. Receipts (cash) £9 per week, all panel 100. Nice surgery. Premium £220, or near offer.
8 An exceptional opportunity to obtain a cash and panel PRACTICE in S.E. London. Receipts £1,340 a year, panel 630. Premium £1,600 payable only £350 down.
9 LONDON, E. (10 mins. Cambridge Heath)—Old-established cash and panel PRACTICE. Receipts £1,530 a year, panel 750. Nice prominent house for sale. Premium for Practice £3,000.

No charge to purchasers for enquiries.

Telephone: WELBECK 2728
Telegrams: ASSISTAMO, LONDON"

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES

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THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION).
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

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Manchester, 3152 Ardwick.
Dub. 531 Ballsbridge. Glasg., 477 Douglas.
TELEGRAPHS
Tactear, London. Surgical Glasgow.
Tactear, Manchester. Tactear, Dublin.

Messrs. R. SUMNER & Co., Ltd.,
Manufacturing Chemists.
40, HANOVER ST., LIVERPOOL.

PRACTICE for Sale in North Wales.—Receipts about £1,000 per annum, mostly on panel 433. House can be had on rental. Welsh speaking man preferred. Reason for disposal ill health.
PRACTICE for Sale in town near Preston.—Receipts £1,160 per annum, panel 1,200. House can be either purchased or had on rental.
PRACTICE for Disposal in seaport town in Cheshire.—Present £650 p.a., panel 600. *For further particulars apply to the above.*

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Middlesex.—Nucleus Earning £240 p.a. Panel 510. Good fees. Freehold corner house. 6 declass. residential district.—No. 8955.

Sussex Downs. — About £1,300. Non-panel. Non-dispensing. Fees 5/- to 21/- House 9 bed., etc., to rent, or smaller 4 bed.—No. 8954.

Northern Town.—Resid. sub.— About £2,600 p.a. Non-panel. Fees 5/- to 10/6. House with 5 bed. etc. For sale. Suit two men.—No. 8950.

N. Midlands. — Country, nr. 2 Towns. Third of £3,000. Part cash. 1,600. Fees 7/- to 21/- Small house to rent.—No. 8952.

Radiol. Practice in County Town with panel hours of London. £1,200 p.a. Applicants must hold D.M.R.E.—No. 8948.

North Wales.—Death Vacancy. £1,200 p.a. Panel 764. Several appts. Fees 5/- to 42/- Good house in main street to rent.—No. 8946.

South Africa.—£200 per month. Well-established specialist practice. Central well-situated consulting rooms to rent.—No. 8770.

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Essex Coast.—Within easy reach. —£1,050. Small panel, but ample. Appt. £210. Visits 5/- to 10/6. Large modern house and garden. Sell or lease.—No. 8941.

London, W. — £1,650. Panel 650. Scope to double. Scope for more. Visits 2/- to 5/- Small house to rent.—No. 8940.

Surrey Hills. — Over £600, some scope. Panel about 400. Fees 3/6—10/6. Detached house in 1 acre, 6/7 bed., etc.—No. 8939.

Scotland.—Nr. Glasgow. — Over £850 p.a. Panel 1,200. Appt. £75. Fees 3/- to 7/6. 5 bed., 3 recep., etc., rent £50. 1/2 yr. purchase.—No. 8938.

Death Vacancy.—Devon Resort. £600 p.a. incm. Panel 500. Fees 2/6—10/6. Leasehold house 7 bed. 2 recep., etc., and half acre.—No. 8916.

Eastern County — £1,900 p.a. Panel 1,200. Fees 3/6 to 21/- Ample scope. Good house, 5 bed., 3 recep., and large garden.—No. 8914.

Middx. Sub.—1/3 of £2,700 and [illegible] Panel 1,470. Appt. £40. Fees 3/6 to 10/6. House and [illegible] £1,000.—No. 8913.

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Late 31, Bedford St., Strand, W.C.2

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LONDON, E.—Suburban middle class G.P. Medium sized house to rent on lease at the low rental of £30 p.a. Fees 2/-. Average rec'pts £516. Panel 350. Excellent scope for young man. Premium for Practice and Lease, £1,050 cash, or near offer.

LONDON, W.—PARTNERSHIP in West End Practice. Receipts over £3,600. Panel nearly 4,000. Premium for 1/3 share £3,000. Suitable opening for man with good address and experience, preferably aged about thirty.

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YORKS.—JUNIOR PARTNERSHIP after Preliminary Assistantship in well established mixed Practice. Panel 1,700. Suitable only to one with Surgical experience. Premium 1/4 share, at 1½ years' purchase, with view to larger share. Suitable accommodation available to rent.

MIDDLESEX.—PARTNERSHIP in rapidly developing district, situated within 12 miles of London. Receipts about £1,600. Panel nearly 1,900. Suitable small house available. Cottage Hospital. Excellent scope. Premium for 2/5ths share with view to 1/2 share, 2 years' purchase.

LIVERPOOL.—Well estab. G.P. Medium-sized house (7 beds). Receipts approx. £1,100. Small select panel. Fees 3/6 up. Midwifery not undertaken. Several appointments. Premium for Practice and house £2,000, payable £1,500 down and balance by instalments.

MIDDLESEX.—PARTNERSHIP in steadily increasing mixed Practice. Receipts approx. £6,400. Panel 5,600. Fees 2/6 up. Share worth approx. £1,200 at 2½ years' purchase. Excellent opportunity for young experienced man to join progressive firm.

MIDDLESEX, NORTH.—Rapidly increasing mixed G.P. situated within 10 miles of London, in residential locality. Suitable modern house available. Receipts nearly £1,100. Panel 425. Premium 1½ years' purchase. Excellent scope.

ESSEX.—Seaside Resort.—Good mixed class G.P., with scope for increase. Excellent modern house to rent on lease or for sale. Fees 3/6 up.

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HOME COUNTIES.—PARTNERSHIP in good class Practice situated in well known country town. Receipts approx. £6,000. Select easily run panel. Medium sized house to rent. Premium for 1/4 share 2 years' purchase. This Practice has been known to the Agency for many years, and is highly recommended. It is essential that the incoming Partner shall hold the F.R.C.S., and have about 30 Appointment to Hospital Staff.

YORKSHIRE.—Well-established mixed rural PRACTICE. Suitable house available (4 beds.). Receipts approx. £1,000. Panel 620. Fees 3/6 up. One appointment. Premium 1½ years' purchase.

YORKS.—PARTNERSHIP in busy rapidly increasing town. Practice has receipts £2,300. Panel 1,500. Small house available. 1/3 share, with view to succession, 2 years' purchase.

CHESHIRE.—Well established PRACTICE with excellent scope for panel if desired. Modern semi detached house (4 beds), garage. Small panel. Rec'pts approx. £500. Fees 3/6 up. One appointment worth £150 May 5 gns. Premium open to reasonable offer.

EAST MIDLANDS.—PARTNERSHIP in better middle class Practice. 10 roomed house available. Receipts nearly £2,000. Fees 3/- up. Up to date Hospital. Scope for surgery. Premium 1/3 share, with view to larger share £1,500.

LONDON, N.W.—Well established mixed PRACTICE, mainly better class, with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 3/6 up. No midwifery. One appointment. Part of house sublet if desired. Vendor has developed latter class of Practice at good fees. Premium £1,500 cash.

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3. LANCASHIRE TOWN.—Well established middle and upper class PRACTICE. Receipts £1,354. Panel 950. Good house, 5 bedrooms, to rent or for sale. Garden and garage.
4. NORTH OF ENGLAND.—Panel, Colliery, and Club PRACTICE. Receipts average £800 p.a. Panel 550. Appointments £350. Good house to rent. Considerable scope for energetic man.
5. MIDLANDS.—Panel and Private PRACTICE [illegible] considerably over £700. Panel [illegible] 600 and both increasing rapidly. Up [illegible] worth about £70. House to [illegible] etc.
6. LANCASHIRE.—(Large Town).—Non-dispensing panel, largely surgical PRACTICE estab. over 4 years. Receipts averg. £1,179 p.a., and unlimited scope. Good house, etc.
7. BERKS (County Town).—PARTNERSHIP. 2/5 share with short prelim. Assistantship and ultimate Succession. Receipts over £1,200 last 550, and good scope. Appts worth about £250. Good fees and house.

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1. OXFORDSHIRE.—Old established, unopposed Country PRACTICE, aver. £1,150 p.a. Price 1½ years' purchase. Good house.
2. INDUSTRIAL PRACTICE.—Half share of over £3,000 p.a. Panel 2,500 and steadily increasing. Good house, with garden, to rent £60 p.a. Prem. 1 year's purchase or offer. Situated in South Wales.
3. DEVONSHIRE.—Seaport Town.—In growing district. £480 in last 16 months. Panel 500. Good house to rent. Premium £500. Great scope. Selling owing to ill health.
4. COUNTRY TOWN.—PRACTICE £900 p.a. Panel 145 and increasing, with good scope, in Carmarthen. 1 year's purchase. House in good repair £550.
5. WESTERN CITY.—Half share of £1,600, growing rapidly. Panel 710. Appts £400. Retiring Practitioner's house for sale.
6. GLOUCESTERSHIRE.—Old established unopposed Country PRACTICE, averaging many years over £1,900 p.a. Panel 1,100. Appts £211. Prem. £3,000. Good house for sale.
7. CORNWALL.—Unop. Country PRACTICE, in North Coast Health Resort. Over £900 p.a. Gd. scope. Prem £1,400 or near offer.
8. NEAR GLOUCESTER.—Third Share in rapidly growing country town. Up to half share later. Receipts last three years £1,393, £1,507, £1,777. Panel 1,250. Choice of hse. Prem. £1,200, inc. drugs, etc.
9. MONMOUTHSHIRE.—Old estab. Country PRACTICE, aver. over £1,600 p.a. Third share at 2 years' purchase, with total succession. Good house to rent. Scope for surgery. No collieries. References required.
10. LANCASHIRE.—Good class PRACTICE in pleasant seaside resort. Panel 250. Receipts £870 p.a. Prem. £1,000. Good house.

SEVERAL other Seaside, Town, and Country PRACTICES and PARTNERSHIPS.

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THE DOCTOR IN PRACTICE OR ABOUT TO ENTER THEREIN SHOULD BE ADEQUATELY PROTECTED BY INSURANCE IN RESPECT OF

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YORKSHIRE (W R.)—PARTNERSHIP in sound Practice Average cash receipts £4,017 p.a. Panel 4,600 Modern house available, 2 reception, 5 bedrooms Premium—One third share—1½ years' purchase, part by arrangement—No 311.

NORTH WEST COAST — SEASIDE RESORT. — Old-established middle-class PRACTICE Average cash receipts £1,052 p.a. Panel and appointments £360 p.a. Excellent large and detached house in best part of town Long partnership introduction given Premium—Practice—2 years' purchase—No 312.

LARGE LANCS TOWN—Sound Industrial PRACTICE Cash receipts last year, £1,003, increasing. Panel 1,440 Good house, 2 reception, 4 bedrooms, 3 professional rooms Garage. To rent on lease. Premium £1,450 (including debts)—No 310.

CHESHIRE TOWN—Old-established PRACTICE Average cash receipts £1,420 p.a. Panel 2,000. Good scope. Nice house, 3 reception, 5 bedrooms Garage and garden. Premium—Practice—£2,200—No. 293.

NEAR MANCHESTER—PLEASANT TOWN, largely residential. — Old-established PRACTICE. Average cash receipts £995 p.a. Panel 902. Appointments not included £100 p.a. Great scope Excellent detached house (freehold), 3 reception, 5 bedrooms Garage and garden and tennis court Premium—Practice—1½ years' purchase—No 234.

LANCS TOWN, near Country—Old-established PRACTICE Cash receipts last year £1,125 Panel 1,035 Excellent house, 3 reception, 6 bedrooms Garage and large garden. Premium—Practice and house—any reasonable offer—No 291.

MANCHESTER—Old-established PRACTICE. Cash receipts 1930, £688 Panel 578 House on main road, 2 reception, 5 bedrooms and garage Premium—Practice—1½ years' purchase—No 284

BIRKENHEAD—PRACTICE with great scope. Cash receipts about £700 p.a. Panel 900 Good house, 3 bedrooms, garden. Premium—Practice—£800, or near offer.—No 285.

MANCHESTER—Sound old-established PRACTICE Cash receipts approx. £3 000 p.a., increasing Panel nearly 2,000 Good scope. Excellent house (freehold), 3 reception rooms, 5 bedrooms Garage and garden Premium 1½ years' purchase, part by arrangement. —No 307

NEAR LIVERPOOL—PARTNERSHIP in good-class Practice Cash receipts approx. £3 600 Good house available Premium—one third share—2 years' purchase.—No 309

MANCHESTER—PARTNERSHIP in Practice of about £1,600 p.a. Panel 1,550 House available to rent Premium—half share—1½ years' purchase—No 303.

MEDICAL WOMAN'S PRACTICE—SEASIDE TOWN—Cash receipts last year £632. Panel 465 Excellent rooms at £36 p.a. Premium £850 or near offer—No 274.

NORTH WEST COAST — SEASIDE RESORT — Old-established PRACTICE. Cash receipts 1930, £874 Small select panel Excellent freehold house, 5 bedrooms Garage and garden.—No 266

SPECIAL NOTICE.

For the convenience of Practitioners, Branch Offices have been opened as under:—

LIVERPOOL & DISTRICT.
28, Exchange Street East, Liverpool.
(Tel.: Central 1970 'Grams.: "Legal, Liverpool.")

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Phoenix Chambers, South Parade, Leeds.
(Tel. 26771)

NORTHERN IRELAND.
72, High Street, Belfast.
(Tel: 7636/7. 'Grams: "Vouch, Belfast.")

LIVERPOOL—Small PRACTICE of £621 p.a., consisting mainly of transferable appointments (£520 p.a.) Excellent house, 4 reception, 7 bedrooms Garage Rent £75 p.a. Premium 1½ years' purchase—No. 302.

MANCHESTER—PLEASANT RESIDENTIAL SUBURB—Old-established PRACTICE. Average cash receipts £685 p.a. Panel over 600 Much scope Excellent house, 2 reception, 4 bedrooms, garage and good garden, to be sold, or may be rented for a period on lease. Premium 1 year's purchase. Vendor retiring—No 246.

NORTH WEST COAST—POPULAR SEASIDE RESORT—PRACTICE Cash receipts last year, £863 Panel 434. Excellent house to rent on long lease, 6 bedrooms, 2 reception rooms. Garage and garden Premium £1,150—No 308.

MANCHESTER—RESIDENTIAL SUBURB—Middle class PRACTICE. Suitable for two in Partnership (one a good surgeon) Cash receipts 1931, £4,578 Panel 1,400. Two excellent houses, with ample accommodation Premium 1½ years' purchase, part by arrangement—No 277

LIVERPOOL—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900 Excellent house, 2 reception, 7 bedrooms, garage, and garden, to rent—No 276.

MANCHESTER INDUSTRIAL PRACTICE. Cash receipts last year £889. Panel 721. Plenty of scope. Good house 2 reception 5 bedrooms. Rent £50 p.a. Suit R C Premium—best offer—No 190.

LANCS TOWN—Old-established PRACTICE. Average cash receipts £995 p.a. Panel 710 Excellent house in pleasant district 2 reception, 4 bedrooms. Garage and garden.—Premium 1½ years' purchase—No. 298

NEAR PRESTON—PRACTICE offering scope. Cash receipts 1930 £526 Panel 300 Good house, 2 reception, 4 bedrooms Rent £70 p.a. Premium £800—No 254

LANCS TOWN—Old-established PRACTICE. Receipts £2,000 Panel 1,850 Scope. Appointment £120 Good house 2 reception, 4 bedrooms Premium 1½ years' purchase.—No 168

WANTED IMMEDIATELY—INDOOR AND OUTDOOR ASSISTANTS FOR TOWN AND COUNTRY PRACTICES, WITH OR WITHOUT VIEW Good salaries offered. State full particulars

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All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place, Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair 1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION have every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.

Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.

Telephones: CENTRAL 5925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal.

Full particulars sent free.

1 SURREY. — Partnership in increasing middle-class Town Practice of £2,300. Panel over 1,200. Modern detached corner house (5 bedrooms), garage and garden, for sale. Partner should be 26-30 and have held Hospital appointments. Share of £1,000 p.a. at 2 years' purchase.

2 CORNWALL. — Partnership in sound Country PRACTICE of over £2,400 p.a., including £800 from panel. Very nice house (4 bed and dressing rooms), garden and garage, to rent. Premium one-half share £2,000 cash.

3 DEVON. — Partnership in Practice averaging £3,000 p.a. in small beautifully situated town. Panel 800. House, with 4 bedrooms and attics, garage and garden, to rent. Cottage Hospital. Premium one third share 2 years' purchase.

4 GLAMORGANSHIRE. — Partnership in Practice over £3,000 p.a. in small town. Panel 2,500. Good house, with nice garden, to rent. Premium one half share 1 year's purchase, or even less for very quick sale.

5 N. OF ENGLAND. — Partner required in increasing Practice in beautiful city. Receipts last year £5,000. Panel 4,000. Applicants should be proficient in minor surgery, anaesthetics, and obstetrics Share of four fifteenths at 2 years' purchase

6 S.W. OF ENGLAND.—Partnership (after preliminary Assistantship) in Practice about £3,500 p.a., in small industrial town. Panel nearly 900 Considerable scope for increase. One third share to suitable man at 1½ years' purchase.

7 LONDON, N.W.—Non-dispensing Practice over £950 p.a. in good residential district. No panel. Ten-roomed house, with garage and large garden. Rent £200 p.a. Premium 1½ years' purchase.

8 N. MIDLANDS.—Partnership in Practice, about £3,000 p.a. in country district, near two important towns Panel over 1,600. Small house (3 bedrooms, etc.) available to rent Great scope, as district is growing rapidly. Premium one-third share 2 years' purchase.

9 DEATH VACANCY.—ESSEX.—Nucleus of Practice, bringing in about £260 p.a. in small coast town. Panel over 50. Well-situated house (3 bedrooms, etc.) for sale or rent Ample scope for increase.

10 S. DEVON. — Partnership (after Preliminary Assistantship) in Practice over £2,000 p.a. in small seaside resort Small panel. Very little midwifery. Nice house (4—5 bedrooms) for sale. Cottage Hospital, scope for surgery. Premium for one-half share at 2 years' purchase.

11 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up to date Hospital. Share of £1,000 p.a., 2 years' purchase.

12 MIDDLESEX. — Steadily increasing PRACTICE in rapidly growing residential district. Earnings past 13 months £600. Panel 500. Excellently situated house (4 bed rooms, etc.), for sale. Very good scope for increase. Cottage Hospital. Premium £700.

13 BRITISH WEST INDIES. — Well-established non-dispensing PRACTICE about £2,400 p.a. in a Town Scope for surgery.

14 MIDLANDS. — Partnership in Practice of £7,000 p.a. in important County Town. Panel 3,500. House to rent. One-fifth or one-fourth share at 2 years' purchase, and further share later.

15 SUSSEX. — Country Practice averaging £900 p.a. in beautiful part, easy distance of coast. Panel 640 Large detached house, with three quarters of an acre of garden, for sale. Premium 1½ years' purchase.

16 W. OF ENGLAND.—Practice about £800 p.a. in first-rate City. Panel 1,324. Well built house (4 bed and dressing rooms) to let. Excellent scope. Premium £1,450.

17 S.E. COAST. — Easily worked Practice in exclusive part of seaside town. Receipts last year £1,050, including appointments over £200, fees from resident patients, and small panel. Large modern house, with beautiful garden, to rent Ample scope. Premium £1,150.

18 CARMARTHENSHIRE.—Increasing PRACTICE of £900 p.a. in pleasant Market Town. Panel 150 Well situated house (non basement), with 3 bedrooms, for sale. Cottage Hospital. Premium one year's purchase.

19 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district. Suitable house to rent or purchase Cottage Hospital. Share worth about £1,500 p.a. at 2½ years' purchase on net cash receipts

20 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £280 p.a. in main there [illegible] Panel 125. Shop-fronted house to rent on lease. Good [illegible] increase. Premium £300.

21 S. OF ENGLAND. — Partnership in good middle-class Town Practice, over £5,300 p.a. No panel [illegible] house to purchase. Premium, one-fourth share, £2,000 [illegible] inary Assistantship.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
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Tele. Address: Triform, Wesdo—London.
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Practices and Partnerships for Disposal (continued).

22 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from Lock up Surgery Panel about 500. Well situated corner residence (3 bedrooms) to rent Premium £900

23 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End Select panel about 417, with scope Corner House, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

24 STAFFS. — Practice averaging £2,300 p.a. in manufacturing town Panel 1,100 Very nice well-built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

25 S. COAST.—Favourite Resort.—Practice of £600 p.a. Panel 50 House contains 5 bedrooms Garage and garden Rent £150 p.a. Scope for increase Premium to effect quick sale only £300

26 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns. Panel 360. Substantially built 9 roomed house for sale. Scope for increase. Premium £725

27 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district. No panel House, with 4 bedrooms and fair-sized garden, to rent. Good scope Premium £700 cash

28 NEW ZEALAND.—NORTH ISLAND.—Non-dispensing PRACTICE, about £1,800 p.a., in first rate Town Modern detached house (4 bedrooms, etc.), garage and garden, for sale Equable climate. Good educational facilities Premium only £1,250.

29 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs Small panel and very little midwifery Well situated house (6 bedrooms) good garden and garage, for sale Good scope Premium 1½ years purchase.

30 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round Receipts about £150 No panel or midwifery House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

31 YORKSHIRE (W.R.).—Partnership (after Preliminary Assistantship) in Practice about £2,650 p.a. in manufacturing town Panel 1,640 House available Applicant with surgical experience preferred. Premium one third or one-fourth share 1½ years' purchase

32 EAST ANGLIA.—Partnership in Practice over £4,500 p.a. in beautiful country district, easy access of important town Panel 3,000 Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale Sport of most kinds Considerable scope Premium two thirds or four ninths share 2 years' purchase.

33 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district Seven roomed house, with electric light garage, etc., for sale or rent. Ideal climate. Sport Hospital. Premium £600.

34 MIDDLESEX.—Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London Panel 1,460 House (5 bedrooms), garage and nice garden for sale One third share for disposal.

35 BIRMINGHAM.—Practice about £700 p.a. in residential suburb Small panel. Well situated house (7 bed and dressing rooms) garage and charming garden for sale Good scope. Premium £750

36 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000 Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

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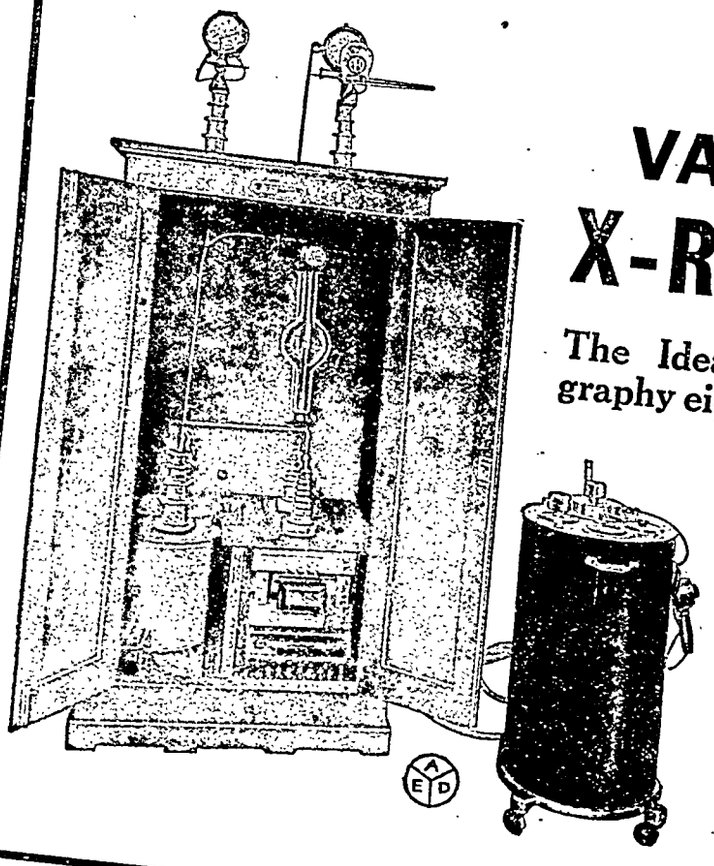
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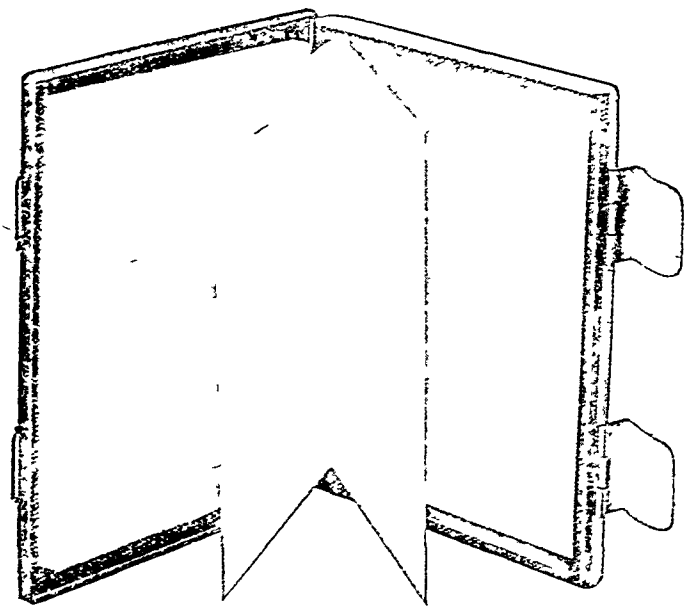
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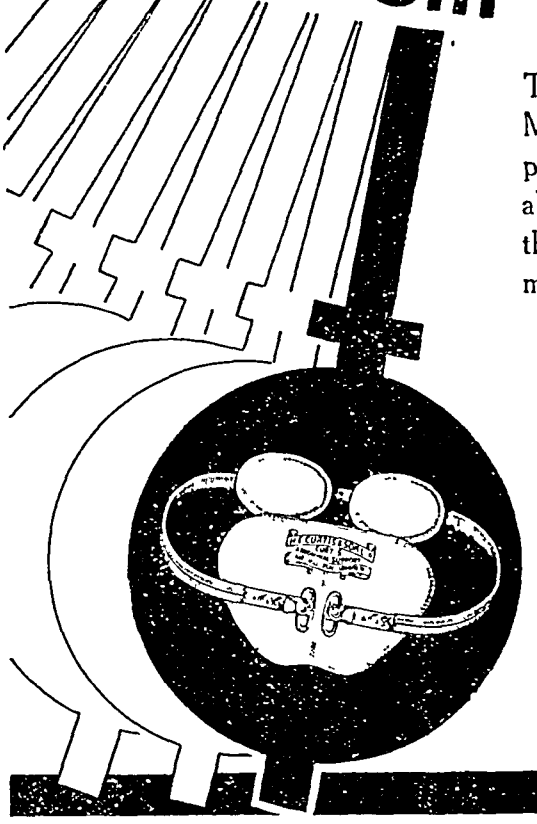
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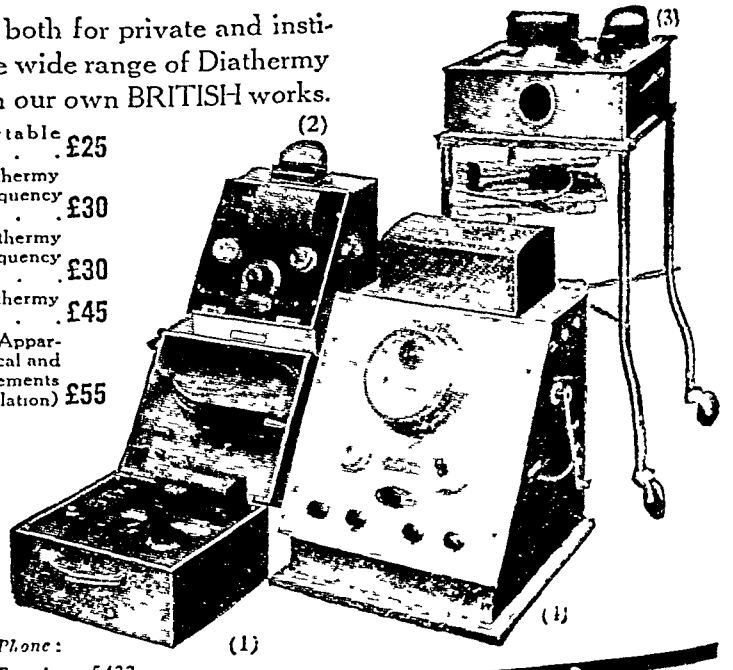
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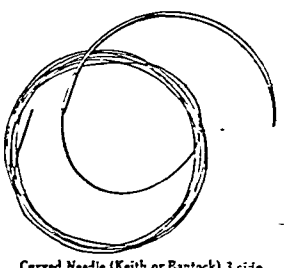
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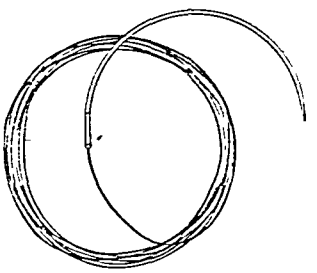
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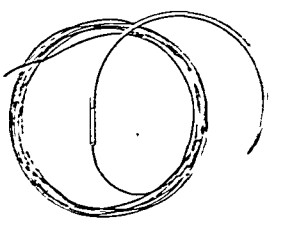
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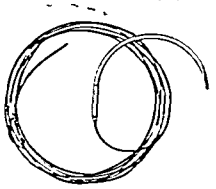
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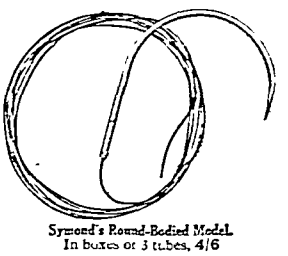
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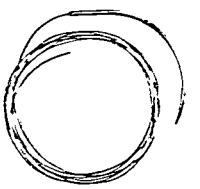
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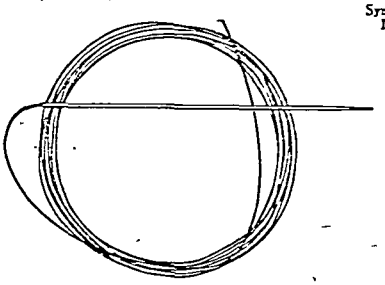
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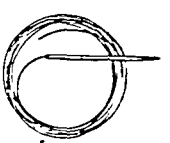
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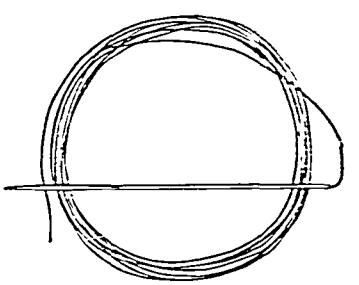
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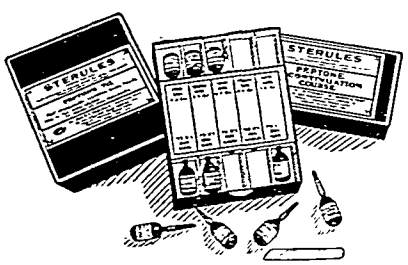
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Lancet, April 11th, 1931, p. 805. *Leaflet on application.*

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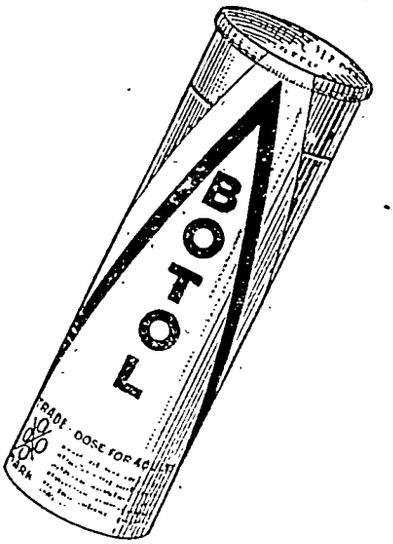
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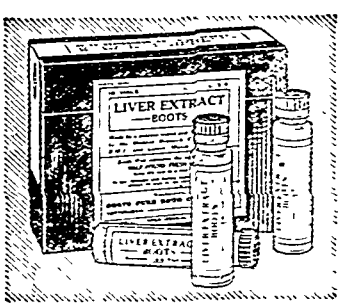
Extract from "The Lancet," June 27th, 1931, pp. 1423 and 1424.

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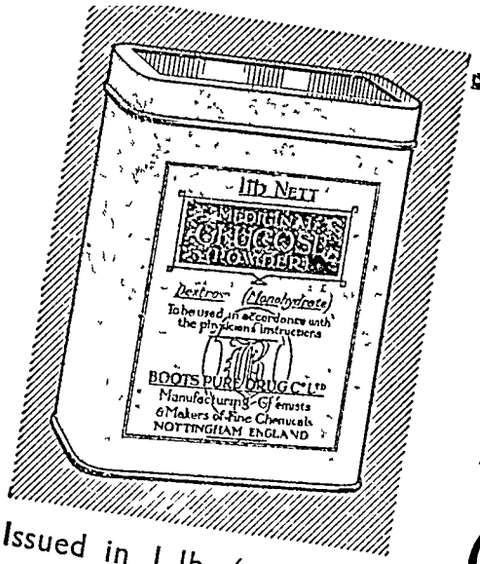
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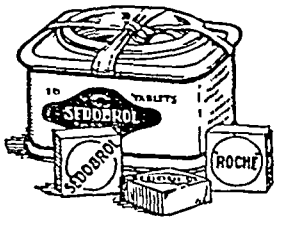
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CO_2 IN RESUSCITATION.

"I B R," in the "British Medical Journal," Nov. 7, 1931, page 878, writes —

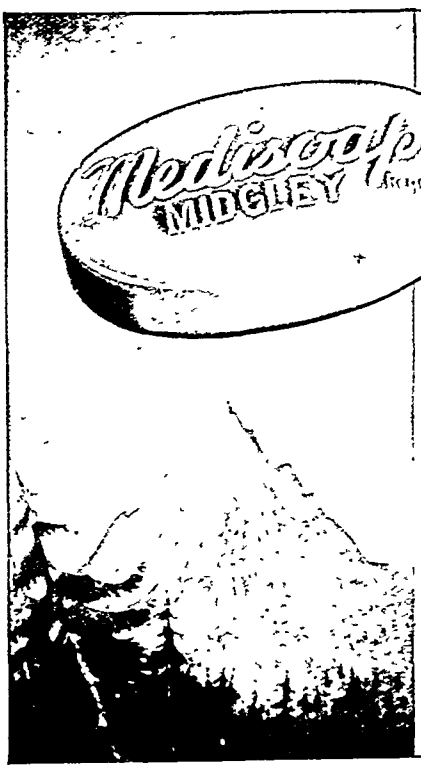
"Apropos CO_2 as a respiratory stimulant, at a recent confinement, as the result of premedication of the mother, of instrumental delivery, or of some cause unknown, the child was born in a condition of partial asphyxia. Half an hour's effort to restore respiration proved ineffective, beyond producing a spasmodic inspiratory gasp at intervals. The baby appeared to have definitely decided not to remain. It then occurred to me to try the "Sparklet" apparatus, or, I should rather say, contrivance, which one carries in the anaesthetic bag. The result of discharging a little CO_2 in front of the baby's mouth at the moment of its making a rare inspiratory effort was instant and amazingly effective. The rhythm was started, and in a few minutes all anxiety had vanished. Admittedly there is nothing startlingly new in this phenomenon. I feel, however, that I am justified in relating the experience from the conviction that the average practitioner is unaware that he has to his hand a simple inexpensive little CO_2 container, suggested by a Manchester anaesthetist and manufactured by the "Sparklet" people. I now feel it should have a place in every midwifery bag, and that it will save many an infant life."

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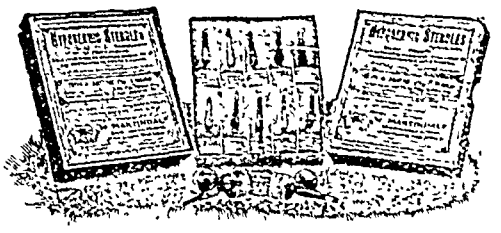
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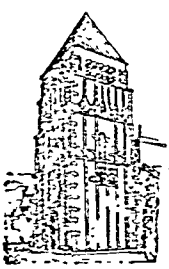
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Church-building in England of Teutonic times began about A.D. 600 and continued down to the Norman Conquest. In the earliest period there was little that was Teutonic in the architecture of combined Roman and Keltic elements; to it are usually assigned the churches of St. Martin and St. Pancras at Canterbury, with others at Rochester, Lyminge, Reculver, Brixworth, Ripon and Hexham (the crypts), Escomb, Monkwearmouth, Jarrow and Bradford-on-Avon. Later, at the beginning of the eighth century, native work was evolved and introduced by architects who thus contributed to the formation of the mediæval styles: among them Wilfrid of Hexham stands out. The tower of Earl's Barton church, coming still later, well exhibits some of these new features. In it is illustrated the characteristic Saxon treatment of the corners by long and short quoins. The pilaster strips between the string courses form another Saxon peculiarity, as does also the belfry opening cut through the whole thickness of the wall. Other Saxon features are double-splayed lights and strip work round openings.

Date: A.D. c. 900–1000

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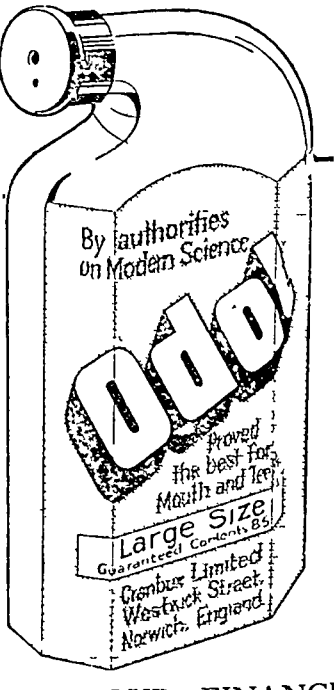
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Observations
ON
OCULAR PALSIES*
BY
GORDON HOLMES, M.D., F.R.C.P.
PHYSICIAN, CHARING CROSS HOSPITAL AND NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC

We are accustomed in dealing with loss of the power of movement of any part of the body to distinguish those varieties due to structural lesions of, or functional disturbances in, the upper motor neurones which carry impulses from higher centres to the motor nuclei and their nerves, and those the result of lesions of the nuclei and nerves which innervate the muscles directly. The latter are the lower motor neurones or the final common paths, for by them only can nervous impulses reach the muscles.

This distinction of two types of paralysis can be profitably applied to the ocular movements, too, though here, owing to the inaccessibility of the muscles to direct examination, some of the characteristic features of each type of paralysis are not readily recognizable; we cannot, for instance, by the ordinary means of examination detect wasting of the ocular muscles, or test easily their electrical excitability, but the essential differences are obvious, for in lesions of the upper motor neurones movements as such are lost, and sometimes those that normally are excited by certain impulses only, while in disease of the lower motor neurones the muscles themselves are paralysed and react to no nervous message. This can readily be seen by contrasting a left internal rectus paralysis with a palsy of conjugate movement of the eyes to the right, for in the former the left eye is not adducted whether the patient attempts to look to the right or to converge, while in the latter case the left eye comes into the inner canthus as readily and fully as the right when the patient tries to converge; the internal rectus muscle is therefore not paralysed, but fails to contract in a certain movement only, that is, looking to the right. This corresponds to the condition we so frequently meet in an upper neurone paralysis of the limbs, in which no movements may occur in response to voluntary effort, but they can be excited reflexly or synkinetically.

Owing partly to the necessity of an extremely accurate adjustment of the movements of the two eyes in response to numerous stimuli, and partly, perhaps, to the considerable distance apart of the nuclei from which the ocular nerves arise, the nervous mechanisms which control the ocular movements are more complicated, and according to the part of it which is involved two types of supranuclear palsy can be distinguished—the so-called conjugate or associated paralysis in which no movement of the eyes in one or more directions can be obtained by any means, and the true supranuclear palsies in which movement of the eyes in certain directions is lost to certain stimuli only, but can be affected by others.

Whether the regulation and co-ordination of the ocular movements depend on special centres in the brain stem which receive and distribute to the motor cells all impulses that bring about contraction and relaxation of all the muscles concerned in the movement, or whether the distribution of the impulses is determined merely by the anatomical arrangement of the fibres that conduct them, need not be discussed here. There are certainly arguments in favour of each hypothesis. We can, however, divide ocular palsies into three main and distinct classes:

1. *Paralysis of the ocular muscles*, due to disease of their motor nerves or nuclei.

2. *Conjugate palsies*, in which the movements of both eyes in one or more directions are lost to all adequate stimuli.

3. *Supranuclear palsies*, in which movements of the eyes can be excited by certain stimuli only, but not by other impulses which elicit them under normal conditions.

Paralysis of the Ocular Muscles

These, owing to their frequency and their importance in general medicine as well as in ophthalmology, deserve first consideration. The muscles which are affected depend on which nuclei or nerves are involved by the lesion. The essential feature is that the muscle is weak or paralysed in all movements in which it may be concerned. As its palsy leads to loss of parallelism in the visual axes, strabismus results, and if the faculty of projection of the image formed on the retina of the squinting eye is preserved, diplopia occurs.

The wide distribution of the ocular nuclei in the brain-stem, and the long and exposed courses of the ocular nerves on the base of the skull, are the chief reasons why they are so frequently damaged by intracranial disease. The nerves are particularly liable to suffer when the membranes on the base of the brain are involved. According to the anatomical site of the lesion these ocular palsies may be divided into: (a) nuclear palsies, in which the nucleus is involved, (b) stem palsies, due to interruption of the motor fibres as they pass through the brain stem, and (c) root palsies, in which the extra-medullary portions of the nerves are affected. It is not, however, always possible to distinguish clinically to which of these three types any case belongs.

Nuclear Palsies

These are most commonly due to local lesions of an inflammatory, vascular, or neoplastic nature involving one or more of the ocular nuclei. It may be a haemorrhage or a softening due to vascular occlusion, or to a tumour growing in or compressing the brain stem. The mode of onset and development of the palsy, and more particularly the other signs of injury of the nervous system which are almost invariably associated with these lesions, usually make it possible to distinguish them. Isolated ocular palsies following on an injury to the head are, however, often not accompanied by other symptoms; in many of these the nerve is torn or bruised in the vicinity of a fracture through the base of the skull, or compressed by a meningeal haemorrhage, but small haemorrhages into the central grey matter of the brain stem not infrequently involve the ocular nuclei, especially that of the third nerve. The explanation of this is probably that the momentum of the blow sets up a wave in the cerebro-spinal fluid of the third ventricle, which breaks with its greatest force against the grey matter around the anterior end of the aqueduct of Sylvius, where the nucleus of the third nerve lies. In such cases the ocular palsy may be the only symptom.

Inflammatory lesions are often more difficult to recognize with certainty. Paralysis of one or more ocular muscles is sometimes due to acute poliomyelitis, and unless it occurs during an epidemic may be difficult to diagnose. Encephalitis lethargica has been, since the recent outbreak of this disease, such a common and well-recognized cause that further reference to it is scarcely necessary, but as during the last few years few, if any, acute cases of this form of encephalitis have occurred in England, at least, a warning may be entered against using this diagnosis as

* Read in opening a discussion in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

a convenient explanation of acute ocular palsies. We still, however, meet occasionally paralysis of the ocular muscles recurring or appearing for the first time in chronic cases of this disease. Acute bilateral ophthalmoplegia due to inflammatory nuclear lesions is an important, though not a common, type. Wernicke originally described it in cases of chronic alcoholism as acute superior haemorrhagic polioencephalitis, since haemorrhages into the grey matter are the most striking anatomical change, but in two cases which I examined there was a considerable inflammatory reaction as well as small extravasations in the ocular nuclei. It has been described in other intoxications, as in poisoning by lead, sulphurous acid, ergot, phosphorus, and particularly in botulism. In most of these the intrinsic as well as the external ocular muscles are affected, but in food poisoning there may be an ophthalmoplegia interna only.

In contrast to these acute nuclear affections, there is a group of cases of chronic nuclear ophthalmoplegia in which a progressive degeneration of the nerve cells is assumed to be the essential lesion, but few of these cases have been examined anatomically. It generally develops in middle life, and in some of the recorded cases, and in two of my own, there was a definite familial or hereditary tendency. The course is slowly progressive: at first a few muscles only, and frequently the levatores palpebrarum, are paretic, but all the external muscles are gradually involved, but in many cases the intrinsic muscles escape.

Stem Palsies

Stem palsies, due to lesions of the fibres of the roots as they pass through the brain stem, can be usually recognized by the accompanying symptoms produced by involvement of other nervous structures by the causal lesion. In these cases one often meets the various types of crossed hemiplegia, in which there are ocular palsies on the one side, and a hemiplegia, a hemianaesthesia, or disturbances of co-ordination on the other, as in the syndromes described by Benedikt, Weber, Gubler, Millard and others. The chief clinical interest of this type is that it includes the ocular palsies of disseminated sclerosis, for in this disease the root fibres are involved before they leave the brain stem, though possibly in some cases the palsies may be the result of nuclear lesions.

Root Palsies

There can be no doubt, however, that in the great majority of ocular palsies the lesion involves the extramedullary portions of the roots in their intracranial course. It is here the fibres are damaged in acute and chronic meningitis, in superficial or subarachnoid haemorrhage, in fractures of the base of the skull, by tumours, and by a toxic or infective neuritis.

Lesions of the roots are also responsible for most of the ocular palsies met with so frequently in cerebral syphilis, and probably for the majority of those occurring in tabes dorsalis, though in this disease a primary degeneration of the motor cells, especially of those of the third nerve, has been described. It is well known that while in some cases the tabetic palsies recover under specific treatment, in others they are permanent; the first group may be due to compression or gummatous infiltration of the roots as they pass through the membranes, the second to atrophy of the nuclear cells.

The other more important groups of root palsies are those due to infections or intoxications producing a degenerative or parenchymatous neuritis of the nerves; those the result of raised intracranial pressure; and those associated with cerebral arterio-sclerosis.

Ocular palsies are not infrequent in generalized peripheral neuritis, as in that due to alcohol and diphtheria in these there is no doubt the ocular nerves, like those of the limbs, suffer directly from the action of a circulating poison or toxin that produces disintegration of the myelin sheaths and other characteristic changes. Similar palsies, usually isolated and transient, have been described in many other infectious diseases, including influenza. They are not uncommon in diabetes, but their pathology in this disease has not been yet definitely established. Whether a true rheumatic paralysis of the ocular nerves exists is open to doubt; not infrequently signs of palsy of one or more of the ocular nerves, or even a complete ophthalmoplegia, follows exposure to cold without other cause being apparent, but the sheltered course of the nerves, far from the surface of the body, makes it improbable that cold can affect them directly. The more likely explanation is that cold merely lowers resistance to some infection or other pre-existing pathological condition. Finally, the palsy of the external rectus muscle, which occasionally follows the use of stovaine and similar drugs for spinal anaesthesia, deserves mention; it seems that the fibres of the sixth nerve are particularly vulnerable to the small amounts of these drugs which diffuse into the intracranial cavity.

An infective or interstitial neuritis of the nerves, apart from meningitis and syphilis, is rarer, but it is occasionally found in association with suppurative disease of the cranial sinuses. The most common form is the abducent palsy in otitis media, due probably, as Gradenigo suggests, to the infection spreading along the air cells and involving the nerve where it passes the apex of the petrous bone in its extradural course. In cases of ethmoiditis in which one of the ocular nerves, in my experience most frequently the third, is paralysed, the lesion is probably a similar infective neuritis. The ocular palsies which have been repeatedly observed in herpes, involving the trigeminal and upper cervical root areas, are probably due to direct infection and infiltration of the nerves.

Various ocular palsies are common in intracranial tumours and aneurysms; they may be due to direct compression of the nerve, as is likely to happen when the tumour lies near the base of the brain, or they may be caused indirectly by compression or by displacement of the brain. The external rectus palsy, which so frequently occurs in cerebral tumours, no matter what their locality may be, is due to displacement backwards of the brain stem and the consequent stretching of the nerve, which is held in position at its exit from the pons by the middle cerebellar artery around which it bends

Another [illegible] ocular palsies which is usually [illegible] opinion it is relatively common,

[illegible] nerves by an arterio-sclerotic

[illegible] motor nerves lie in close [illegible]

[illegible] base of the brain; the [illegible]

so close to [illegible] the middle cerebellar, and it is

may be compressed when this vessel is thick and tortuous.

the fourth nerve crosses the posterior cerebral, and the

third lies in the narrow space between the superior cerebellar and the posterior cerebral arteries as the latter

leave the basilar. Further, all three nerves run relatively

close to the internal carotid artery in the cavernous sinus.

It might be therefore expected that when any of these

arteries are dilated or tortuous they might press on one

of the nerves sufficiently to interfere with the conduction

of impulses through it. This occurs chiefly in elderly subjects with signs of cerebral arterio-sclerosis and raised intracranial

pressure. The palsy usually develops rapidly, is rarely

complete, and generally disappears within a few

if the patient is kept at complete rest and iodides or drugs that lower blood pressure are administered.

Ocular palsies associated with pain and sensory disturbances in the area of the ophthalmic division of the trigeminal nerve constitute the characteristic clinical picture produced by disease in the region of the sphenoidal fissure. A squint with diplopia may be the earliest symptom, but frequently the patient first complains of pain in the forehead and behind the eye. The order and the relative severity in which the nerves are involved naturally depend on the exact site of the lesion in the fissure, but usually a complete ophthalmoplegia results, and cutaneous sensation in the area of the ophthalmic nerve is lost or greatly diminished. A syphilitic periostitis is one of the most common causes of this syndrome, but it occurs also with tumours and inflammatory lesions in the region of the sphenoidal fissure. In many cases, however, the nature of the lesion cannot be determined. Except when the lesion is syphilitic and the patient can be treated early, the prognosis as regards recovery of the ocular movements is usually bad.

CONJUGATE OCULAR PALSIES

This is the term usually applied to loss of the power of movement of the two eyes in any direction, provided this is not due to the chance association of paralysis of the prime movers of each eye. It is characterized by the facts that the loss of movement develops equally and simultaneously in the two eyes and squint and diplopia consequently do not occur or are subsidiary features, and that though in attempting the movement the palsied muscles do not contract they may act normally in some other movement; the left internal rectus, for instance, may fail to move the eye inwards on attempting to look to the right, but functions normally on convergence. It is therefore a palsy of movement rather than of muscle.

The most common form is perhaps paralysis of the lateral movements of the eyes to the one side. This frequently results from disease in the lower and dorsal portion of the pons varolii in the region of the nucleus of the sixth nerve. When unilateral the patient is unable to look towards the side of the lesion. In such a case the internal rectus of the one eye and the external rectus of the other fail to contract, and as these muscles are innervated from two separate nuclei about 3 cm. apart, it is necessary to assume that they receive branches from the same fibres, or are connected by association fibres which distribute the same impulses to the cells of both. As in conjugate palsies the muscles fail to respond to all impulses, to those from the vestibular and other mechanisms in the brain stem and from subcortical centres, as well as to cortical messages, the first hypothesis necessitates the assumption of a very complicated arrangement of fibres. On other grounds, too, it seems more probable that conjugate lateral deviation depends on association fibres between the sixth and third nerve nuclei, and we know such exist in the dorsal longitudinal bundles. These tracts have undoubtedly an important part in the co-ordinated movements of the eyes. It is beyond doubt that the impulses which can effect conjugate lateral movements converge towards the region of the sixth nucleus, those from the forebrain passing by the nucleus of the third nerve in their downward course. From here part of them are shunted back to the nucleus of the opposite internal rectus along another path in the dorsal longitudinal bundles.

The exact position which a lesion must occupy to cause a conjugate palsy of lateral movement of the eyes to the same side has not been definitely determined; according to some it must involve the sixth nucleus, but it is more probable that the controlling mechanism lies, not in the abducens nucleus, but oral, and slightly ventral to it. It is here that all the paths conveying impulses for lateral movement to the same side converge, and a lesion in this position, therefore, abolishes reflex as well as voluntary deviation of the eyes in this direction. As this mechanism lies near the middle line of the brain stem, a single focus of disease often affects lateral movements to the two sides, but the patient can still deviate his eyes upwards and downwards, and converge normally.

Occasionally, a lesion involves the associational fibres connecting the sixth with the third nerve nucleus; then, on attempting to look to the same side, the ipsilateral eye deviates outwards, but the contralateral eye does not pass the middle line, though it rotates inwards in convergence.

The conjugate vertical movements may be similarly abolished, either together or separately, or convergence may at the same time be impossible. The exact positions lesions must occupy to produce these conjugate palsies of vertical movement have not been definitely ascertained; according to some authors upward and downward movements are lost when the anterior quadrigeminal bodies are injured, but others attribute these palsies to lesions in the tegmentum of the anterior part of the midbrain. There is, however, considerable evidence that the mechanism for elevation of the eyes lies more anteriorly than that for depression. As the power of convergence is frequently lost in association with palsy of downward deviation, we may assume that the nervous apparatus that control these two acts lie close together.

SUPRANUCLEAR OCULAR PALSIES

While in conjugate palsies no movement of the eyes in one or more directions can be obtained by any means, in the so-called supranuclear palsies the eyes fail to move in response to certain stimuli only. It is often assumed that the movements of our eyes are largely volitional or under control of our will, but these represent a small part only of the ocular motor activities; impulses which determine ocular postures and movements are constantly flowing in from the vestibular nuclei in the brain stem, from the lower visual and auditory centres in the midbrain, from the occipital cortex and from other sources. It happens not infrequently that movements in response to one or more sets of these impulses only are lost, while those excited by other impulses are preserved. In the most common type the patient is unable to deviate his eyes in one or more directions when he is ordered to do so or asked to look towards an object held in these directions, but these movements can be elicited by labyrinthine stimulation and other means. As a rule, when the power of voluntary movement is abolished the eyes can follow a slowly moving object which the patient has fixed, and if while he fixes his eyes on an object his head is moved actively or passively towards one side, his eyes still remain on the object—that is, they rotate in the direction opposite to the movement of his head. Following objects with the eyes, and the compensatory deviations that occur on movement of the head, are largely reflex acts, and dependent on other paths than those which effect voluntary movement. We must therefore assume that in the supranuclear palsies the lesions interrupt some of the afferent paths to the conjugate mechanisms, but leave the latter unaffected, and the available pathological evidence points to this conclusion.

Other forms of dissociation are occasionally met with, but, owing to rarity and their small clinical importance, further reference to them here is unnecessary.

THE IMPORTANCE OF HORMONES IN MENORRHAGIA *

BY

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Speaking from my experiences in my own special work I wish to indicate quite shortly the possible significance of hormones in menorrhagia.

Apart from such other hormones as, for example, those of the thyroid and the suprarenal cortex—perhaps, also, the so-called circulatory hormone to which I shall refer later—there are two endocrine glands, the ovary and the pituitary, which have a particular action on the female genital apparatus.

THE OVARIAN HORMONE

Since Allen and Doisy employed their well-known test on castrated rats and mice to prove the action of this hormone on oestrus production it has become possible to prepare it in crystalline form. The best source of the hormone is the urine of pregnant women or pregnant animals, in which Zondek and Aschheim first demonstrated it, and in which it is present in large quantities. For therapeutic purposes it is not absolutely necessary to use a crystalline preparation, the manufacture of which entails a great deal of waste. I myself have had a good deal of experience with the ovarian preparation unden, which contains 100 mouse units in every tablet. The work of the biochemist in his laboratory is limited to the preparation, free from poisonous impurities, of any desired hormone and its standardization as well as possible by animal tests.

Only the practising doctor can form an opinion of the therapeutic value of such preparations. It is for him to diagnose the occurrence of cases in which the symptoms point to the presence of too little ovarian hormone, and in which the administration of a standardized preparation would be of value. According to experiences up to the present a certain number of cases can be benefited by the administration of ovarian hormone. There also occur cases in which by no means all the symptoms, and not even all cases of menorrhagia, can be thus improved.

CORPUS LUTEUM

Apart from the oestrual hormone there is at least one other hormone present in the ovary which is formed in the corpus luteum. The researches of Allen and Corner, in particular, have shown that this hormone is necessary to promote the fixation of the ovum in the mucous membrane of the uterus. Some authors believe that it also has an inhibitory effect opposite to that of the oestrual hormone, possibly also to that of the pituitary, to which we shall return later. A few authors hold that there is a co-operation between oestrous hormone and corpus luteum. Corresponding to the uncertainty surrounding the theoretical basis of the corpus luteum hormone, its therapeutic value is as yet little known. Since the corpora lutea are primarily very difficult to procure, the isolation of this hormone in sufficient quantities is for the most part almost impossible. However, according to my opinion, the hormonal function of the corpus luteum can, to a very large extent, be taken over by the anterior pituitary lobe, the function of which I now intend to discuss

ANTERIOR PITUITARY LOBE

Theory.—As is well known, Evans proved that a hormone affecting growth is secreted by the anterior lobe of the pituitary. Aschheim and Zondek, almost simultaneously with Smith, also found in this gland a hormone governing the genital function. B. Zondek, with whom I have worked in the most pleasant relationship for many years, has therefore designated the anterior pituitary lobe as the seat of the motor of the sexual function. Moreover, he also proved the presence of this hormone, which he called prolan, in the urine during pregnancy. Together with Aschheim he evolved a method of diagnosing early pregnancy by this fact. You see, during pregnancy in human beings there are two hormones present in the urine. But the diagnosis of pregnancy is only based on the early appearance of the pituitary hormone. There are important biological differences between these two hormones. For example, prolan, in contradistinction to the ovarian hormone, has no action in castrated animals. In infantile female animals it causes early maturity. According to our experiences the best experimental animal on which to prove the action of prolan is the rat. A rat unit is the smallest amount which in 66 per cent. of the animals tested under special conditions brings about complete oestrus with the formation of large follicles in the ovary. If larger doses are injected there is actually an inhibition of oestrus, and the formation of corpora lutea takes place. Zondek believes that there are two different hormones in prolan—factor A, which induces ripening of the follicles, and factor B, which stimulates lutein formation. However, it is possible that it is only a question of quantity. My experience is that any preparation which in small doses produced follicle ripening, in large doses, particularly if given for some length of time, always caused luteinization. Prolan, as it is at present recovered from the urine of pregnant women, always contains these two factors. It contains, however, no growth hormone, since this is only found in the gland itself, and is not excreted in the urine of pregnant women. Even preparations subjected to repeated purification still contain factors A and B. We succeeded in making preparations containing 20,000 to 30,000 rat units in 1 gram. They can be dissolved in water and injected subcutaneously. In contradistinction to the ovarian hormone prolan is easily dissolved in water, but insoluble in lipoid solvents. However, the watery solution of prolan is not very stable, being very sensitive to high temperatures and the least change in the H-ion concentration. Oral administration in animals has also proved effective, but here larger doses must be given. Even in the purest products it has so far been impossible, in spite of many endeavours, to isolate the two fractions A and B by chemical means. This points to the possibility of there not being two separate substances A and B in prolan, but only a quantitative difference in one uniform hormone.

Therapeutic Uses.—The following rules apply to the therapeutic use of prolan. When one wishes to stimulate the ovary to renewed activity small doses should be given, so that the so-called factor A action is obtained. If one desires to inhibit the activity of the ovaries large doses of prolan should be given, thus producing a luteinizing action. By this method, therefore, it is possible, in a roundabout manner, to obtain the specific effect of the corpus luteum hormone, which in itself is difficult to achieve. Thus every case of menorrhagia resulting from over-activity of the ovary should with advantage be treated with large doses of prolan. Already clinical experiences have proved the truth of this observation. It is therefore now possible to achieve that hormone sterilization which has for some time been sought. By combining treatment with unden and prolan together it is at least theoretically possible to regulate disturbed ovarian function.

A VASOMOTOR HORMONE

I would like to refer also, very briefly, to the substance which Frey and Kraut isolated some years ago from the urine of healthy individuals, and which proved to be

* A communication to the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Eastbourne, July, 1931.

a product of the pancreas which lowers blood pressure They called it kallikrein—a vasomotor hormone Since this hormone dilates the peripheral blood vessels, thus lowering the blood pressure, its therapeutic use in disturbances of the climacteric may possibly be of value Whether this applies also to menorrhagia has so far not been investigated thoroughly

Conclusion

In the short time at my disposal it has been impossible to give more than a short survey of a mere part of the whole hormone question I have only touched upon those factors which I consider to be of special importance in gynaecology How great is the interest in hormones, particularly anterior pituitary, was demonstrated at the German Gynaecological Congress which I attended two months ago in Frankfort on-Main Twelve papers were read, and a further thirty speakers took part in the discussion on this subject alone Most of the papers dealt with animal experiments and were more theoretical than practical, showing that we are still at the beginning of our knowledge The new tests which the physiologist plans and works out facilitate the preparation by the biochemist of standardized hormonal preparations which can be used by the doctor Vice versa, the observations and suggestions of the doctor amplify the theoretical laboratory investigations I see in this very collaboration of several sciences the most practical way of arriving at a correct understanding of the whole hormone question. Not only is this a matter of several branches of science working together in perhaps each separate land, but collaboration between the different countries too It has therefore given me especial pleasure to appear at the Annual Meeting of the British Medical Association as a German physiologist speaking to English gynaecologists, and I am grateful for the invitation which brought this about

SOME POINTS IN CONNEXION WITH THE TREATMENT OF GLAUCOMA

BY

R H ELLIOT, M D , F R C S

LIEUTENANT-COLONEL (LATE OF I M S)

From the earliest days of the operative treatment of glaucoma, dating back over seventy years, there has always been a tendency towards the establishment of two schools of thought that which favours operative measures and that which relies on medical treatment alone Formerly there was the strongest antagonism between the two The more generally adopted view of to-day is a compromise in which both methods are made use of, each case being judged on its own merits It may be said, without fear of challenge, that no case should be submitted to operation if the use of miotics the employment of massage, and attention to the patient's general health suffice to arrest the course of the disease and to keep the case *in statu quo*

Miotics

Of the two miotic drugs pilocarpine is to be preferred to eserine in the great majority of cases for several reasons (1) It causes less conjunctival irritation (2) It does not give rise to the same measure of spasm and headache, for it acts more quietly and evenly (3) Suitably employed, it maintains the necessary contraction of the pupil quite as well as its more powerful rival

When it is a question of producing miosis as rapidly as possible in a patient with congestive glaucoma, the case is quite different, and eserine is the drug to employ Pilocarpine should be used in the weakest doses that will maintain efficient miosis, and should be given last thing at night, first thing in the morning, and about 3 o'clock in the afternoon This timing is important, for, (*a*) rises in pressure occur frequently during sleeping hours, owing to the withdrawal of the pumping action on the canal of Schlemm exerted by the ciliary and iris muscles ; and (*b*) the afternoon is, for many patients, a time of fatigue in which the vasomotor tone falls, and the pressure in the eye is consequently in danger of rising If medical treatment is to be fairly tried, miosis must be sustained Sometimes trouble is experienced owing to conjunctival irritation set up by the drug This can best be combated by the use of silver collosol, alternated with hazeline eye-drops (40 minims to the ounce of rose-water) It sometimes, however, though fortunately rarely, becomes a very serious factor in the case, making the maintenance of miosis difficult, if not impossible Operative intervention may then become a necessity

Massage

The importance and value of ocular massage in glaucoma does not seem, even now, to be sufficiently appreciated. There are certainly quite a number of cases under treatment for raised tension of the eye in which massage is either not being used at all or else not to the fullest advantage The technique is simple, and any patient can be taught to use it for himself Both hands should be used, and the index or middle fingers should be placed on the upper lid as far apart as possible and with the eyes looking downward Alternate pressure with each finger in turn will rapidly lower the tension of most eyes, but the pressure must be made toward the centre of the eye, whereas the great majority of patients employ a stroking movement which is of little value Strong pressure should not be used , light, quick, almost butterfly movements will do more good and will not hurt the patient at all In fact, he often offers the comment that he "hardly felt the massage, and does it much stronger himself" It is, however, the light, quick pressure, with the fingers far apart and with every stroke toward the centre of the eye, that is by far the most effective

the drug habit can be made too much of in such cases, a view now more widely held than formerly.

3. *Take Regular Meals and Avoid Alcoholic Excess.*—It is unwise to cut a patient off all alcohol or to limit his diet too strictly. Interference with the habits of a lifetime is often mischievous, and, to many patients, means a real deprivation. While most elderly patients are better the less alcohol they take, there are a few who are benefited by moderate indulgence in this drug.

4. *Avoid Stooping and all Sources of Strain.*—Running for trains or buses, stooping down with the head low, whether for tying a boot-lace or for weeding in the garden, lifting heavy weights, pulling on straps and cording, the straining of constipation, and any other form of strain should be avoided. This does not mean that the patient is to be an invalid. He can put his foot on a chair to tie his boot-lace; he can weed with a long-handled hoe; and he can get the younger members of his family to strap the holiday trunks. If he cannot catch the train standing in the station he can wait for the next one. He must learn his limitations and live his life as fully as possible within those limitations.

5. *Avoid all Causes of Anxiety.*—This is easier advice to give than to follow, but it is important to give it for all that. Once the importance of avoiding mental strain is realized, there is a great deal the patient can do in determinedly relegating to his subconscious mind many of the troubles of his daily life. Moreover, this is a detail in which friends and relations can do much to help. Few things have impressed me more in a long experience of this disease than the frequency with which sorrow or the crushing burden of business or family trouble proves the final factor in determining a congestive attack.

GENERAL MEDICAL TREATMENT

It is the task of the general practitioner to examine his glaucoma cases very thoroughly, with a view to improving in every possible way the general standard of health. Much that has been said and written on various bodily conditions in connexion with the etiology of glaucoma is open to question, but it is certainly important to keep the patient as healthy as possible, and so to help him ward off attacks. The subject is too wide to be dealt with further, and can be left to the practitioner's discretion and management. The mistake of using atropine instead of eserine in congested high-tension eyes is fortunately becoming much rarer with the advance of the standard of medical knowledge; but a warning may be permissible against the use of preparations of belladonna, either internally or externally, in all doubtful cases, especially when there is a family history of glaucoma.

Assuming that regular treatment has been carried out by the practitioner, it becomes the duty of the ophthalmic surgeon to test the patient from time to time with a view to ascertaining whether the condition is really stationary or otherwise. In many cases a first examination does not qualify a surgeon to give a definite opinion. It is only by making careful measurements and by comparing the records from time to time that he attains certainty in the majority of his cases. The following factors serve to guide him. The order in which they are dealt with is intentional.

1. *Tension of the Eye.*—It ought to be unnecessary to-day to emphasize the importance of tonometer readings. These should always be made under a local anaesthetic. If the drug chosen is also a mydriatic, the patient should not be lost sight of until miosis is re-established, even if it is necessary to admit him into a nursing home for the purpose. Reliance on the digital estimation of tension, though apparently not obsolete, is an anachronism. A difference in the tension of the two eyes is a sign of grave significance, especially if it does not yield quickly to medical treatment.

2. *Central Visual Acuity.*—It is often hard to get a patient to realize that this may be quite unimpaired, though the glaucoma may be steadily advancing. Indeed, in the great majority of non-congestive cases, this is the rule. A fall in central visual acuity is a distinct sign that intermittent congestive attacks have been taking place, even though such a possibility may not have been recognized either by the patient or by his medical attendant. The explanation of the oversight may be that the increases of ocular pressure occur only at night in the early history of the case.

3. *Curtailment of the visual fields* associated with a difficulty in orientation is a sign of grave significance. Constriction of the nasal side of the field and the appearance of a Roenne's step have in no way lost their importance in the past twenty years.

4. *Enlargement of the blind spot, or paracentral scotomata* are of very great importance, especially if the defects are increasing in size. They point to dangerous interference with the nerve fibres as they emerge from the optic disk. Complaints by the patient that his vision is not so good as it used to be are sometimes disregarded by the surgeon because there is full central vision in the eye. An examination with a scotometer will often provide complete justification for these complaints, which are usually founded on very real grounds.

5. *Failing light-sense* is a symptom which should never be disregarded. It is never absent in progressive glaucoma, and it is certainly one of the most distressing sequels that remain, in a large percentage of cases, long after the pressure has been relieved by successful operation. It makes things very difficult for the patient in a poor illumination, or when he goes from darkness into a bright light, or vice versa.

6.—*Cupping of the Optic Disk.*—This is perhaps the sign that most people would expect to see placed first, and it may be thought wrong to put it so late. It is the one most easy for the general practitioner to recognize, and in its typical condition, in which the whole disk is pushed backward, it is highly significant. At the same time, it is to be remembered (1) that it may be imitated by other conditions, and so there arises a common source of error in diagnosis, and (2) that a very marked glaucomatous cup may persist after all signs of the progress of the disease have been brought to a stop by medical or other means. It is not necessary to enter here into the differential diagnosis between glaucomatous and other forms of cupping. Those who are interested will find the subject fully dealt with in various textbooks. There are two points, however, to which special attention should be drawn, for they are both pregnant with meaning: (1) Considerable atrophy of the optic nerve accompanies all cases of advanced glaucoma. The pallor of the disk is of grave significance when associated with complete cupping. *The more pronounced the atrophy, the graver the prognosis of the case.* (2) An arterial pulse, on light pressure with the finger on the eyeball or after the use of cocaine or any other mydriatic, has long been recognized as a grave danger signal. It is a custom with some surgeons to use a mydriatic deliberately in order to elicit this sign. I feel mostly strongly that it is not worth the risk involved. In the past eighteen years of practice in London I have seen a number of cases in which glaucoma has been induced by the instillation of various mydriatic drugs, including cocaine, homatropine, and atropine, and in one by the injection of cocaine for the removal of a tooth. In the majority of cases when atropine was responsible, the drug had been used to produce mydriasis in order to improve vision in patients suffering from nuclear cataract. This is a most dangerous procedure. The performance of an iridectomy is vastly preferable, as it brings all the advantages of the drug with none of its risks. An arterial pulse is a sign that should always fill the surgeon with anxiety, for it shows that the eye is on the edge of a glaucoma crisis. However it may have originated, the patient should not be let out of sight until this sign has disappeared. He should be kept in bed under the influence of sedatives, eserine should be used freely, a brisk purge be given, and leeches applied to the forehead.

The surgeon will weigh all these points before deciding in favour of an operation It is very important that he should not be in a hurry, but it is essential that he should not delay a day longer than necesary, once he has satisfied himself that non operative treatment is failing to hold the disease in check. I have stressed this point for very many years Operation at the earliest moment was one of the tenets of von Graefe some seventy years ago, and de Wecker earnestly supported his master in this detail. On the other hand, no case of glaucoma is at too late a stage for trephining, always provided some sight is left. Indeed, in acute cases, even when all sight has gone, recovery to some extent may occur after relief of pressure. Needless to say that, in dealing with late material, a certain number of failures are inevitable, but there are some things that can be said without the least fear of contradiction. (1) Given an early diagnosis, one should rarely, if ever, have a failure in sclero corneal trephining. (2) The later the case the greater the risk of failure, and the greater the probability that even a technically perfect trephining, resulting in an ideal scar, may not suffice to stop the progress of blindness Few cases are more disappointing than these (3) The earlier operation is done, the better the prognosis (4) No case, however late, is hopeless if some vision still remains

THE PROGNOSIS AFTER OPERATION

As already indicated, the later the operation the worse is the prospect, though the latter is not hopeless even in very late cases in which the field is reduced to a small central area The higher the tension is before operation the greater the prospect of a material improvement after intra-ocular pressure is relieved. This is only what might have been expected, for the interference with vision under conditions of high ocular pressure is partly due to anaemia of the retina and partly to atrophy. The longer the condition has persisted the greater the atrophic element in the damage, and vice versa. Hence, in chronic cases the surgeon may be satisfied if he can keep the vision as he finds it, whilst in acute ones he can hope for a considerable restoration of function as soon as pressure is relieved.

In any operation for so serious a condition as glaucoma it is unwise to make light of the risks involved To do so may lead to very unfortunate results On the other hand, there is no need to exaggerate the risks in ordinary early and straightforward cases The surgeon's task is to put all the facts before the patient, or before his relatives, and to leave the burden of a decision on his or their shoulders In dealing with cases of advanced glaucoma it should be pointed out that it is a relentless disease, and, when progressive, leads to certain blindness In these circumstances, it is well worth while to take any means, however hazardous, that offer a possibility of escape It is always an open question whether, in desperate cases, one should put this so bluntly to the patient himself His relatives should be told the naked truth, and should be left to decide what is to be said to him, it first being pointed out to them that, both during the operation and in the succeeding convalescence, the patient's mind is supernormally active, and that, consequently, morale is a very important factor in success. The conditions are very different from those that prevail immediately before and in the days that follow many general surgical operations in which the patient is too ill or too drowsy to be able to take any interest, either in his condition or his prospects Once an operation has been decided on, everything should be said and done to keep the patient's hopes and courage as high as possible. He will then be better operation material for the surgeon. On the other hand, if he knows that his chance is a small one, and if his courage sinks, his prospect is decidedly poor. The task of encouraging him is made more easy by the excellent results that so often attend very late operations

EXPECTATION OF LIFE

This is a very important factor in a disease most of whose subjects are advanced in years The surgeon makes periodical examinations and convinces himself, in certain cases, that the disease is progressive This alone does not suffice. He must measure the rate of the downward drift, and must weigh this against the prospect of life in each individual, not forgetting that very old patients often stand the operation of sclero-corneal trephining very well indeed The family history of longevity and the vigour of the subject have to be weighed in the balance against the rate of progress of the disease Then again, there are the patient's personal predilections. One man would rather be dead than blind, and many of us will sympathize with him in this. Another dreads an operation, and will do anything possible to avoid it The general practitioner will often prove most helpful in these cases, especially when every side of the case is put plainly before him There is the further advantage that he is the patient's friend, with no suspicion of an axe to grind, and with the power of bringing a trained intelligence to bear on the difficult position which confronts his patient.

DISPLACEMENTS OF THE UTERUS AND PELVIC FLOOR*

BY

S GORDON LUKER, M D , F R C S , F C O G.

General ill-health in women (headaches, fatigue, and aches and pains) often has its origin in one of three situations—the eyes, the feet, or the pelvis If the eyes are at fault, headaches which result can be cured by suitable glasses If the feet, weakness of arches and flat foot are followed by fatigue in the feet, legs, and back This can be relieved by attention to the feet and shoes

There remains the pelvis, in which displacements of the uterus and pelvic floor are common in women who have borne children As a result, there is a constant feeling of discomfort and pain, which takes it out of the patient If there are, in addition, symptoms of menstrual dysfunction or disturbances of micturition, and these prey upon the mind, carrying fear and apprehension of evils worse than those which really exist, then the joy of life is lost and chronic ill-health results.

Displacements of the uterus and pelvic floor therefore play an important part in the health of women, and should always receive the most careful attention Until thirty years ago, the majority of those suffering from these displacements were treated with rings and pessaries, and were compelled to use a douche every day and receive medical attention every three months. Pessaries are not satisfactory, because they do not cure, require frequent attention, and, if neglected, set up discharge and sepsis. They may even be forgotten, and give rise to foul and blood-stained discharge suggesting carcinoma of the cervix These instruments have now been superseded by carefully planned plastic operations, which give perfect results Without doubt this is a great advance in gynaecology, comparable with the treatment of hernia by operation instead of by truss

The displacements may be grouped under three headings (1) retroversion or backward displacements of

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the uterus; (2) weakness of the pelvic floor alone; (3) descent of the uterus and pelvic floor. The two latter groups include all degrees of the condition generally called prolapse.

RETROVERSION

Retroversion of the uterus is either congenital or acquired. If congenital, it is unusual for it to give rise to symptoms in unmarried women. In married women it may lead to dyspareunia or sterility, or both. In single women, therefore, it is rarely the cause of symptoms, and seldom requires treatment. In childless married women it is best treated by dilatation of the cervix uteri and correction of the malposition.

The acquired variety of retroversion occurs nearly always after miscarriage or child-bearing, but may also result from inflammation or from tumours in the pelvis. It should always be treated, for if left alone it will cause symptoms, and will give rise sooner or later to prolapse. The treatment consists in correction of the position of the uterus and in maintaining this position by a Hodge pessary for three months. If this does not cure the condition the best treatment is operative—by ventral suspension of the uterus.

Retroversion as a Cause of Backache.—Retroversion rarely causes backache in single or in childless women. When the condition is discovered in the course of a routine examination too much importance should not be attached to it. In women who have borne children it may have something to do with backache and general ill-health, and is likely to be followed by prolapse. In single women, therefore, it should, as a rule, be left alone; in parous women it should always be corrected.

PROLAPSE

The anatomical supports of the uterus and the vagina are as follows: (1) the ligaments of the uterus—the round ligaments, the broad ligaments, and the utero-sacral ligaments; (2) the pelvic diaphragm, consisting of the levator ani muscle and the pelvic fascia covering it; (3) the pelvic floor muscles, of which the perineal muscles and the sphincters of the rectum and vagina are most important. These three groups all take their part in supporting the uterus and vagina; if they are congenitally weak, unduly stretched, or torn, prolapse will follow.

It can thus be seen why prolapse of the uterus and pelvic floor, though it may be congenital, generally results from child-bearing (especially when multiple), when the foetus is large, and when laceration of the pelvic floor occurs from difficult labour and instrumental delivery. Prolapse also occurs from sudden strains or overwork, but this is very unusual, even in women of the working classes. Other factors in causation are general ill-health and lack of efficient treatment during pregnancy, labour, and the puerperium.

There are five degrees of prolapse: (1) weakness or descent of the anterior vaginal wall and base of the bladder, called cystocele; (2) descent and prolapse of the posterior vaginal wall, called rectocele; (3) descent of the uterus as well as of the vagina; (4) second-stage prolapse, (5) complete prolapse.

The symptoms of prolapse are pelvic pain and discomfort, bearing-down sensations, bladder symptoms—increased frequency or incontinence are much commoner than retention—backache, and pain in the lower abdomen. The latter is not very common in patients with prolapse.

The condition of prolapse is easily recognized by inspection and examination with a speculum. Sometimes it can only be detected when the patient is standing. Its degree can be more accurately estimated when the patient is in the erect position.

PREVENTIVE TREATMENT OF PROLAPSE

It is very interesting to estimate how much prolapse can be prevented during pregnancy, labour, and the puerperium. Seeing that congenital cases are so very rare, I am of the opinion that prolapse can be prevented except in women of inferior physique who do manual labour.

During the puerperium.—Since I realized, some years ago, that retroversion of the uterus nearly always starts immediately after child-bearing, and is always the precursor of prolapse, I have invariably treated puerperal patients by great attention to anything that may prevent the onset of retroversion. These preventive methods include: (1) postural treatment—getting the patient to lie on her face for half an hour three times a day; (2) regular attention to the bladder by getting the patient to empty it regularly every six hours; (3) the promotion of involution of the uterus by suckling and by drugs such as pituitary extract and ergot; (4) examination of the patient one month after delivery. After such treatment retroversion of the uterus is nearly unknown, and very few patients have retroversion at their return visit; if found, it can be corrected at once, and a Hodge pessary given for two months.

During Pregnancy.—Preventive treatment during pregnancy aims at sufficient ante-natal supervision to keep the patient in good health and to prevent difficult labour by finding out any existing abnormality. It is particularly important to see that the foetus does not get too large for the mother and the pelvis, resulting in a prolonged and difficult labour. It is my opinion that the average woman of the present day is not able to deliver herself at her first labour of a foetus heavier than seven pounds without risk of injury. True, it is difficult to decide when the foetus arrives at that weight, but it is not difficult to judge when it is getting distinctly bigger. Such growth can be prevented, to a certain extent, by attention to the diet and by exercise during pregnancy. If the foetus is becoming too large, induction of labour should be performed.

During Labour.—Preventive treatment during labour consists in avoiding too rapid delivery by instrumental or by other means. It is important to foster the right mental attitude towards labour in the upper classes by explaining why it is necessary for them to do their "bit."

CURATIVE TREATMENT

The treatment of prolapse is by pessaries or by operation. As I stated previously, pessaries have gradually given way to operations, and should now only be used for treating prolapse in old people or in those who have other diseases or complications. The exception to this is when a woman is quite young and gets prolapse after her first confinement. If operation be carried out for the cure of such a case it is possible, though not at all certain, that the prolapse may recur after another confinement. At any rate, no guarantee can be given, so it is not advisable to recommend operation too strongly. Such a patient may prefer to temporize with a pessary and defer operation till she has finished child-bearing.

Operation is indicated in all cases except where, for other reasons, it is contraindicated. In every case a plastic operation on the pelvic floor must be done before any method of slinging the uterus from above. Ventral suspension, if performed without a plastic operation on the pelvic floor will not effect a cure in any way permanent. This was shown by the late Dr. Herman more than thirty years ago. Even if the fundus of the uterus is stitched to the posterior rectus sheath the pelvic

floor and cervix descends after a short interval, and the condition of prolapse is not improved.

For *cystocele* the operation consists in: (1) removing an adequate portion of the anterior vaginal wall; (2) pleating the base of the bladder or the platysma layer covering it; (3) approximating the two edges of the vaginal mucous membrane by mattress and continuous sutures.

For *rectocele*, posterior colpoperineorrhaphy is performed as follows: (1) remove a large triangular area of posterior vaginal mucous membrane; (2) bring levatores ani and perineal muscles together by interrupted sutures of strong chromic catgut; (3) approximate edges of vaginal mucous membrane; (4) approximate edges of skin of perineum. The cervix uteri is sometimes amputated at the time of performing anterior colporrhaphy.

The pelvic floor having now been restored to its *status quo ante*, suspension of the uterus by laparotomy may be done if necessary. This is often unnecessary in old people, in whom it is permissible very nearly to close up the vagina by the plastic operation. In younger people, who must be left nubile, the vagina must not be closed up too much, and ventral suspension is often required as a safeguard against recurrence. The best operation is suspension by attaching the round ligaments in a special manner to the midline of the anterior rectus sheath—generally called the Gilliam type of operation. I have yet to see a recurrence after this operation when performed for retroversion alone or for retroversion with prolapse, when it is preceded by a plastic operation on the pelvic floor. Its anatomical soundness is shown by the subsequent occurrence of pregnancy and labour without risk.

These operations—anterior and posterior colporrhaphy and ventral suspension—are somewhat intricate and difficult to learn, but when proficiency is acquired they give a 99 per cent. cure. Further, the worse the prolapse the less difficult the operation.

Hysterectomy is no cure for prolapse, and should never be performed unless the uterus is diseased, for it is difficult to suspend the upper vagina or cervix adequately when the uterus has been removed.

Ventral Fixation—in which the body of the uterus is stitched to the back of the abdominal wall—is not so anatomically correct as suspension by the round ligaments, and is now but rarely performed.

For severe congenital prolapse only extensive and complete operations are successful.

The Bladder and Urine in Prolapse.—It is unusual to find residual urine in prolapse, but occasionally *B. coli* is present, causing irritability of the bladder or dysuria. In such cases it is advisable to get rid of the *B. coli* before operating.

Prolapse associated with pregnancy and labour is a troublesome complication, as it is difficult to keep the uterus up during the first four months. A modified cup-and-stem pessary will help, but a good deal of rest will be essential. In labour, great care is required against sepsis, since the cervix is low down and may even come outside the vulva during delivery.

Malignant Diseases and Prolapse.—Carcinoma of the cervix or body of the uterus is but rarely associated with prolapse. When bleeding from the cervix occurs with prolapse it is generally due to traumatic ulceration.

CHILD-BEARING AFTER OPERATIONS FOR PROLAPSE

It is not advisable for a woman to have another child after colporrhaphy for prolapse has been done, as the vagina will be lacerated and prolapse recur. It is therefore quite reasonable to consider sterilization at the time of operation, which can easily be carried out by ligature of the Fallopian tubes. My own opinion is that it is definitely indicated when two living children have been born and prolapse of the second degree is present. The patient and her husband should hear the facts and make the decision.

SUMMARY

In conclusion, I will summarize the points I have tried to emphasize in this short paper.

1. Simple retroversion of the uterus in single women or in women who have not borne a child should be left alone, as it rarely causes symptoms.

2. Prolapse of the uterus and pelvic floor is preventable to some extent by care and treatment during pregnancy, labour, and the puerperium.

3. The treatment of prolapse is by operation and not by pessaries.

4. Sterilization at the time of operation is indicated in certain cases.

A CASE OF CHRONIC MENINGOCOCCIC SEPTICAEMIA WITH BACTERIAL ENDOCARDITIS

BY

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LATE PATHOLOGIST TO THE GLASGOW MUNICIPAL HOSPITALS

Cases of chronic meningococcic septicaemia are sufficiently few in the British literature to warrant this report. G. Lovell Gulland and W. R. Logan[1] described in 1925 a case of prolonged fever in which, towards its termination, Gram-negative cocci were obtained by a blood culture. A meningitis developed, and a meningococcus was isolated from the cerebro-spinal fluid, which showed a large white cell count. At the post-mortem examination the only pathological condition of note was found in the leptomeninges. J. C. Kennedy[2] in 1926 described four cases in soldiers, in two of which meningitis supervened, and states that from 1919 to 1926 he could only find two cases in the British literature. The American literature[3 4] gives fourteen cases, with three deaths. In Dock's[5] case the post-mortem appearances were those of meningitis, which developed after seven months of fever; Gram-negative diplococci were obtained in blood culture, and, after death, from the spleen and spinal fluid. According to Marlow[3] the literature, other than American, contains approximately 110 cases.

For the clinical notes in this case I am indebted to Dr. J. C. Middleton, consulting physician to the Western District Hospital, Glasgow. During his absence on vacation the case was under the care of Dr. Andrew Allison, who sent in the blood for culture and the other material for examination.

HISTORY OF CASE

A married woman, aged 41 years, a rubber worker, was admitted to the hospital on March 8th, 1929, complaining of headache and sickness of two days' duration. The condition came on suddenly; she felt shivery; pain developed in the back; she was sick, and severe headache followed. On admission nothing abnormal was found in the heart or lungs or nervous system; the urine was seen to contain a little albumin; nothing abnormal was found in the abdomen. She became very drowsy, headache continued to be severe, and she was persistently feverish. Pus appeared in the urine, and in the absence of definite head signs the case was regarded as one of pyelitis. She was put on alkalis, and the temperature gradually came

down, but she remained drowsy and apathetic, and complained of headache. She refused to be transferred to the parish, and left hospital on May 7th. On June 20th she was readmitted.

During the time she was out of hospital she suffered from weakness and loss of energy; on June 13th she developed a troublesome cough, and applied for readmission on this account.

On readmission she was dull and listless; the temperature was 102° F. She was flushed and looked ill. There was some bronchitis present, and a systolic murmur was audible over the mitral area. The spleen was palpable. The urine contained no albumin. The pupils reacted to light, the right being larger than the left. She did not complain of headache, and there was no head retraction or rigidity of the neck. Kernig's sign was not present. Leucocyte count, 16,000 per c.mm. In a few days the cough had practically disappeared and the bronchitis had cleared up, but fever persisted. The patient complained only of lack of energy, and took no interest in her surroundings. She was perfectly clear mentally. Vomiting commenced on June 26th, and persisted. She became drowsy during the day, and this drowsiness was marked by June 28th. On July 11th she was incontinent, gradually became emaciated, and got weaker, but remained mentally clear until a few days before death, though the drowsiness increased. Fever was present throughout the illness, but there was no hyperpyrexia before death. From June 20th to 30th the temperature was irregular and remittent in type; on June 22nd and 23rd it was almost normal. From July 1st to 10th it was intermittent in type, the temperature falling below normal on every day except one, and rising to 101° up to 104° in the course of the day. From that date, while being irregularly intermittent in type, it never rose above 100.5°. During the last few days of life there was practically no pyrexia. She died on July 27th.

PATHOLOGICAL INVESTIGATIONS

The Wassermann reaction was negative. From the blood received on July 6th a Gram-negative coccus was obtained in pure culture after seventy-two hours' incubation. This coccus varied in size and intensity of staining, did not grow in subcultures between 18° and 23° C., and, while growing on agar media in first transplant, did not grow on that medium in subsequent subcultures. Growth was continued on blood-agar. It produced acid readily on maltose media—solid and fluid—and also, but later and more faintly, in glucose media. It did not acidify saccharose. Through the kindness of the public health laboratory of Glasgow, typing serums for the meningococci, obtained by them from inoculations with type cultures from the national collection, were received. On three occasions, shortly after the isolation of the organism, agglutination tests were carried out by Dryer's method. The result, I think, places the organism in the closely allied classes of Types I and III, but I was unable to classify it further.

The third test was as follows. A growth of the organism after forty-eight hours' incubation on trypagar was emulsified and diluted down by the aid of Brown's opacity tubes to 150 millions per c.cm. This was heated for one hour between 56° and 58° C. With Dryer's method, and incubation at 52° C. for twenty-four hours, the readings gave a good agglutination as follows:

Type I.—1 in 250 dilution (the titre of the serum said to be 1 in 800).*

Type II—1 in 83 dilution (the titre of the serum said to be 1 in 800).

Type III—1 in 250 dilution (the titre of the serum said to be 1 in 400).

Type IV—Only a partial agglutination, 1 in 25 dilution.

This organism was agglutinated by the patient's own serum in 1 in 125 dilution, a control serum showing no trace of agglutination. The cultural and serological tests identify the organism as the meningococcus, and as such it was reported. The fermentation of maltose and the high agglutination titre with anti-meningococcal serum distinguish it from the gonococcus, which is a commoner cause of endocarditis.

The Widal reactions against *B. typhosus*, *B. paratyphosus* A and B, and the Salmonella group, Mutton and Newport, and *B. enteritidis* (Gaertner) were negative, as also against *B. abortus* and *M. melitensis*. The patient's serum agglutinated *B. paratyphosus* C in 1 in 125 dilution, being 25 agglutination units (M.R.C.). A repeated examination of the serum taken several days later showed no change in titre. I have had on a previous occasion a high agglutination titre of the paratyphoid C emulsion in a case of a man who died from cancer, and I concluded that *B. paratyphosus* C was not the active agent in this infection. No pathogenic germs were isolated from the stool or urine. The urine contained pus, a *coli* group organism, and a Gram-positive coccus. The cerebro-spinal fluid received on July 16th showed a normal cell count—3 leucocytes per c.mm. (an average of three counts); it should be observed that the fluid had stood overnight. There was no increase of globulin. Fehling's solution was normally reduced. Cultures were made. I regret I have no note as to what developed, but that fact and my memory point to them as having been sterile.

TREATMENT

Specific serum treatment was commenced on July 13th, 25 c.cm. of anti-meningococcic serum being given daily (intramuscularly) till the 19th, when 50 c.cm. were given; this produced ecchymosis. The serum treatment was discontinued on July 22nd. The total quantity injected was 275 c.cm. No benefit accrued.

POST-MORTEM FINDINGS

The necropsy was performed thirty-three hours after death. The findings, naked-eye and microscopical, will be given in some detail, as the lesions were numerous and interesting. Over the surface of the neck and chest there was a profuse rash consisting of minute petechiae, and these were also present in the buccal mucosa.

Heart.—There was some clear fluid in the pericardium. Under the visceral layer overlying the right ventricle petechiae were present. Petechiae were also plentiful under the endocardium of the right ventricle. A soft white friable vegetation of considerable size was attached to the left cusp of the mitral valve. This consisted, on microscopical examination, of a pale thrombus, with leucocytes and masses of Gram-negative cocci attached to its free surface. The diplococcal arrangement was plainly visible in parts, and many leucocytes were packed with cocci. No other organisms were seen. At the necropsy no other peculiarities were noted in the heart, but microscopical examination of the musculature showed, especially in the wall of the right ventricle, minute abscesses in which intracellular Gram-negative diplococci could be demonstrated in the pus cells—multiple infections of each cell. Commencing necrosis of muscle fibres was present, and the condition would have been regarded as toxic had not the cocci been seen.

Lungs.—Approximately 3 oz. of clear fluid were present in both pleural sacs. There were no adhesions of pleural surfaces. The bases of both lungs showed congestion and marked oedema. Under the visceral pleura of the left lung there was some haemorrhagic mottling, with two small areas of consolidation. Microscopically the picture was one of a patchy embolic pneumonia, some alveoli being packed with pus cells, and others with red blood corpuscles, while surrounding alveoli showed an exudation of lymph. Solid clumps of Gram-negative cocci were present in the centre of some patches, but in addition clumps of Gram-positive cocci, some streptococci, and Gram-positive bacilli were also present.

Liver.—To the naked eye there was a little yellowish mottling visible. Microscopically the lobular arrangement was largely lost; liver cells were separated from each other and were of various sizes, some cells showing fatty infiltration—though this was not at all pronounced—some cells being multinucleated, and some having lost their nuclei. Many liver cells contained a yellowish granular pigment,

* The strength of the emulsions used to determine titre is not known by me.

which did not respond to tests for iron, either ferrous or ferric. Capillaries were not compressed. There was nothing of note in the portal tracts. I consider the condition to be an early toxic change, but it may possibly be a post-mortem condition.

Spleen.—This was enlarged, weighing 18 oz. No perisplenitis was present. Smears showed typical intracellular diplococci, with multiple invasion of the large endothelial cells. Sections showed some congestion of the splenic pulp, and much blood pigment throughout it. Some of the vessels were filled with aggregations of polymorphonuclear leucocytes. A few endothelial cells contained ingested red blood corpuscles.

Kidneys.—These were both pale, especially the cortex. Microscopical examination showed: (1) a somewhat thickened and adherent capsule, and (2) acute infection of several, but not all, glomeruli, accumulation of pus cells filling the tufts and cavities, and extending occasionally into surrounding tubules. In a few places the minute abscesses had started near but not in the glomeruli—probably from the afferent arterioles. Intracellular Gram-negative diplococci were seen in many pus cells; no other organisms. Other glomeruli were intensely congested. There was, however, a chronic condition present also, many glomeruli showing a multiplication of nuclei of the capillary tufts with no alterations of glomerular capsule. In others, attachment of the tuft had occurred to the outer capsule layer, and in a few fibrosis was commencing. Aggregation of lymphocytes surrounded a few glomeruli. Secretory tubules showed desquamative and degenerative changes in cells. Endarteritis was present in some small arteries. The appearance suggested there was a subacute glomerular nephritis on which an acute embolic condition had supervened.

Suprarenals.—The left showed massive necrosis with no inflammatory reaction; this may have been a post-mortem condition. The right showed minute abscesses in the cortex in which multiple Gram-negative diplococci could be observed in the pus cells; no other organisms.

Brain and Meninges.—On reflection of the dura mater a thin, diffuse, yellow, fibrinous-like deposit was seen on its under surface. The pia-arachnoid was congested, and at two sites considerable thin haemorrhagic effusion had occurred, both in the vertex—one anterior to the left parieto-occipital fissure and the other over a considerable area of the right frontal lobe. The membrane was thickened over the vertex at the inner end of the right Rolandic fissure. There was no flattening of the convolutions, no collections of pus in the sulci, the cerebrospinal fluid was clear, and the choroid plexuses were not congested. On the under surface there was some gelatinous thickening round the stalk of the pituitary body. To the naked eye no other abnormality was revealed. Microscopical examination of the cortex (including a haemorrhagic area) and of the choroid plexus gave no evidence of an acute leptomeningitis. For the most part the pia-arachnoid was oedematous, in parts showing haemorrhagic effusions. Cells were endothelial-like, and the fibrous tissue was thin.

There were, however, some noticeable features. A few veins in the pia-arachnoid were filled with a soft clot composed mainly of polymorphonuclear leucocytes with red blood corpuscles and a little fibrin. The leucocytes had separated into a dense clump. This might have been an agonal condition. A few penetrating vessels at the surface of the cortex were found to be completely blocked with the same cells. No organisms were seen. The thickened gelatinous membrane round the stalk of the hypophysis was found to consist of a cellular connective tissue, with accumulations here and there of small mononuclears and a few plasma cells. A definite minute abscess was found here, surrounded by connective tissue; it was considered to be part of the general pyaemia. Numerous diplococci were found in the pus cells; no other organisms were seen. The pia-arachnoid over the right Rolandic area and over the central lobe on the upper surface of the cerebellum was found to be definitely thickened, the newly formed tissue being a hyaline connective tissue. The subdural exudate was seen to be organized and loosely attached to the normal dura overlying. It consisted of a fine vascular connective tissue rich in large endothelial cells, some fibroblasts, and small mononuclear cells. No haemorrhages and little pigment were seen, and no polymorphonuclear leucocytes lying outside vessel walls. There was thus no evidence of an acute leptomeningitis, but there was evidence of a patchy chronic meningitis at vertex and base and over cerebellum. Nevertheless, a culture made at the necropsy from the surface of the pia-arachnoid over the vertex gave a pure growth of a Gram-negative coccus, and a smear made at the necropsy from the overlying subdural exudation showed a few polymorphonuclear leucocytes containing many typical bean-shaped diplococci and no other organisms. It may be, and I am inclined to this opinion, that the pus cells had exuded during the necessary manipulations from thin-walled vessels in which an agonal clot had occurred. It is possible, of course, to take the view that a terminal infection of the meninges had occurred so near to death that no cellular reaction had taken place.

COMMENTARY

1. The case was characterized by prolonged fever, mainly of a daily intermittent type with occasional rigors, with pronounced weakness and loss of energy, and with symptoms which may be grouped as a meningismus. The malaria-like temperature is emphasized in the literature as somewhat characteristic of subacute and chronic cerebro-spinal fever, but the clinical picture was not typical of any recognized condition, and in its terminal phase did not suggest a meningitis. A leucocytosis was present.

2. No benefit accrued from specific serum treatment; in fact, the impression of the clinician was that it exacerbated the symptoms, perhaps by liberation of endotoxins. For example, it was noted that the ecchymosis developed after the specific treatment was commenced. According to Marlow[1] certain French writers have reported adversely on the use of therapeutic serum, although he himself believes it remains the logical procedure.

3. The infection was due to the meningococcus, as shown by the cultural and serological tests. It was isolated by blood culture, and the organisms were found as a rule in smears or sections of minute abscesses in various organs. The septicaemia was associated with a recent endocarditis, producing toxic changes in the liver and kidney (in the latter probably of some standing), petechiae in the skin, buccal mucosa, pericardium, endocardium, and leptomeninges, with minute abscesses in kidneys, right suprarenal gland, lung, heart muscle, and in the thickened pia-arachnoid at the base of the brain. The pyaemic condition must have developed shortly before death, as evidenced by the size of the abscesses.

4. An acute leptomeningitis was not present, but some of the veins in the pia-arachnoid and of some of the penetrating vessels in the surface of the cortex were packed with polymorphonuclear leucocytes. It is believed that the positive culture from the pia-arachnoid over the vertex and the positive smear from the subdural exudate were due to infected cells escaped from ruptured vessels.

5. A patchy chronic meningitis was present, which may have been the residue of an early attack of acute meningitis occurring at the commencement of the illness but recovered from, and the same may be surmised of the subdural exudate.

THE AFTER-CARE OF CONGENITAL PYLORIC STENOSIS *

BY

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As a preface to the discussion of this problem, based on the statistics of 653 cases, I may quote two interesting and unusual cases.

1. A premature male child, which weighed 2 lb. at birth and 3 lb. at the age of 7 weeks, had vomited from the time he was born. He was at least one month premature, and died ten days after admission to hospital, with well-marked pyloric stenosis.

2. A female child, seven weeks premature, vomited from the age of 2 weeks. Periods of remission occurred up to the age of 5 months, when the symptoms became marked. Constipation was always present, but the weight slowly increased. The child was admitted to hospital at the age of 7 months, but no operation was performed in view of her poor general condition. She died at the eighth month, when marked hypertrophy of the pylorus was found at the post-mortem examination.

The first case demonstrates, I think, that hypertrophy of the pylorus is present before birth, and shows itself by the eighth month of intrauterine life. This suggests that the name "congenital pyloric stenosis" is appropriate. The second case illustrates the prolonged duration of symptoms which may occur in medically treated cases. It is a common experience that at about the sixteenth week the symptoms of pyloric stenosis pass off automatically if the case is medically treated.

MORTALITY STATISTICS

In the following table is shown the mortality in 581 cases of congenital pyloric stenosis which were admitted to the Hospital for Sick Children, Great Ormond Street,

SERIES I.—*Cases Admitted to the Hospital for Sick Children*

Year	Number of Cases	Average Age on Admission (weeks)	Place in Family: First Child	Place in Family: First Child (male)	Sex: M.	Sex: F.	Average Age of Onset of Vomiting (weeks)	Result: Cured	Result: Died	Mortality per cent.
1917	10	9·5	8	6	7	3	3·7	2	8	80
1918	10	7·2	4	4	10	0	3.7	5	5	50
1919	16	6·8	7	7	14	2	2.5	1	15	93
1920	29	7·8	18	13	22	7	3·5	11	18	62
1921	35	7·4	26	17	25	10	3.0	16	19	54
1922	31	7·3	15	12	27	4	3·1	20	11	35
1923	47	7·5	26	22	40	7	3·2	33	14	30
1924	38	7·0	20	17	32	6	3·1	29	9	23
1925	55	6·6	31	22	40	15	3·3	42	13	23
1926	62	6·3	34	28	51	11	3·0	42	20	32
1927	47	6·4	23	21	45	2	3.2	37	10	21
1928	71	6·5	32	28	61	10	2·7	51	20	26
1929	57	6·9	33	29	45	12	3·4	43	14	24
1930	73	6·6	34	26	57	16	3·5	54	19	26
Total	581	7·1	311	252	476	105	3·2	386	195	30

during the period 1917 to 1930 inclusive. It may be noted that from 1923 onwards the mortality has remained almost stationary. The average age of the children on admission is also stationary, and it cannot be said that

* The substance of a communication to the Section of Diseases of Children at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

cases are being operated upon earlier on the whole. The fact remains that in this large series of hospital patients one patient in four of pyloric stenosis dies, either from the operation or, more generally, from various causes during the convalescent stage.

During the last five years 36 patients were seen by me privately. Of these, one-third—namely, twelve—were treated

SERIES II.—*Private Cases*

	Number of Cases	Average Age on Admission (in weeks)	Sex: M.	Sex: F.	Result: Cured	Result: Died	Mortality per cent.
Sent to hospital	12	8·5	10	2	9	3	25
Treated privately	24	7.0	14	10	24	0	0

children of parents whose means would not allow them to have the operation performed privately, and were therefore sent to hospital; there was a resultant 25 per cent. mortality.

Of the other 24 patients whom I saw privately, all whose parents were able to afford the operation and nursing in private, all recovered. The same surgeons were responsible for the operation in both series, and the same methods were used; the difference must be attributed entirely to the environment in which the child was nursed, and to the nursing itself.

In a third series of 36 cases of pyloric stenosis admitted to a Bentinck Street Children's Nursing Home, not one

SERIES III.—*Cases Treated at a Children's Nursing Home*

Number of Cases	Average Age on Admission (in weeks)	Sex: M.	Sex: F.	Result: Cured	Result: Died	Mortality per cent.
36	6.5	29	7	36	0	0

of these 36 infants has died. A variety of surgeons, some less expert than others, performed the operation, but with concentrated nursing attention these most excellent results have been obtained. Dr. G. F. Still informs me that he has not had a single death in private practice from pyloric stenosis where Rammstedt's operation has been employed.

AGE OF THE INFANT AT OPERATION

It has been argued that the crucial point in lowering the mortality was the duration of the condition before diagnosis and operation. I do not combat the fact for a moment that the earlier the operation is done the better is the prognosis; but in the series of private cases as contrasted with the hospital cases, the average age at which the operation took place was identical.

THE OPERATION

Again, it has been contended that the type of surgical treatment seriously influenced the mortality. Dr. S. published a series of 47 consecutive private cases with only one death, the operation being that of Loretta in all cases. This has been given up, and with the new procedure of Rammstedt the operative risks have been considerably lowered. Undoubtedly the introduction of anaesthesia was a great step forward. Lately, local anaesthesia has been given an extensive trial in a series of 50 hospital cases, and the mortality has been less than a further 5 per cent. The advantages of a local anaesthetic are, briefly, that the baby can be fed directly it returns to the ward, and is not flabby and unwilling to take food; shock is reduced to a minimum, and the cough reflex is still present, thus avoiding aspiration of the lungs from regurgitation of the gastric contents during operation. The anaesthetic used is 0.5 per cent.

ithout adrenaline, the baby is bandaged to Denis rowne's cross, and a dummy dipped in glycerin is sed to soothe it There is greater responsibility for the urgeon, since, with straining, sewing may be difficult

Alkalosis in Pyloric Stenosis

The work of Maizels, McArthur, and Payne[2] is of the reatest importance, and has passed almost unnoticed by nany They point out that, with repeated vomiting and oss of hydrochloric acid over a prolonged period, there s a marked tendency for the chloride content of the plasma to be lowered The almost universal habit of washing out the stomach with a solution of sodium icarbonate, usually directly before the operation, tends o induce a state of alkalosis The very familiar picture after operation of slow, gasping respirations, pallor, and collapse, was the direct result of this procedure With this knowledge, the avoidance of bicarbonate lavage, and the extensive use of saline solution and glucose subcutaneously, such a clinical picture has disappeared

Post operative Feeding

Improvements in post-operative feeding in the past few years have probably assisted to lower the mortality, to prevent diarrhoea, and to hasten convalescence of pyloric cases Breast milk should be used unquestionably in preference to any other food when it is available, but in other cases some artificial food must be employed My usual feeding regime is as follows

Four hours after the operation there is given, at hourly intervals 1 drachm of one of the following breast milk, or half-cream Cow and Gate dried milk mixture (or Dryco or Klim skimmed) made up one measure to each ounce of water, or unsweetened condensed evaporated milk mixture, or lactic acid milk and water mixture Twelve hours after the operation there is given, at hourly intervals, 1½ drachms of the food selected Eighteen hours after operation, at intervals of one and a half hours, 2 drachms of the food chosen are administered gradually increasing until twenty four hours after the operation 1/2 ounce of the food is being given at two hourly intervals If the infant is breast fed it should be suckled at three hourly intervals from this time onwards If it is not breast fed 2 ounces of the food chosen are given thirty six hours after the operation, at three hourly intervals while at forty eight hours after the operation almost the full amount for the infant's weight can be administered

The unsweetened condensed evaporated milk mixture is made by adding one part of this to four parts of water, one heaped teaspoonful of Demerara sugar being introduced into each 4 ounces of the mixture For the preparation of the lactic acid milk and water mixture thirty five drops of lactic acid (*B P*) are added drop by drop to one pint of skimmed cow's milk which has been boiled and allowed to cool during the addition of the lactic acid the milk is well stirred and sugar is added The mixture should be given diluted at first with an equal quantity of water

As regards the feeding in medically treated cases, breast milk should be continued if plenty is available, failing this, the milk mixture thickened with one of the starchy patent foods (for example Savory and Moore's or Benger's food added to a mixture of cow's milk and water in equal parts, the whole having the consistency of cream), will be found the most successful Small, concentrated feeds are desirable, since they are of high caloric value, even if only a small quantity is retained the infant tends to thrive Lactic acid can be added to the cow's milk if thought advisable

Conclusion

The obvious conclusion to be drawn from this very large and unique series of cases is the value of nursing and good environment to the child after operation What are the advantages to the child who is treated privately?

First, it cannot be too strongly pointed out that the risk an infant runs in an ordinary hospital ward of contracting infections from other children is very great Respiratory and gastro-intestinal infections in other inmates of the ward are readily contracted by the debilitated congenital pyloric stenosis case With private treatment the infant is in a room by itself, and the possibility of such an infection is carefully guarded against

Secondly, and of even greater importance, is the nursing care which a very ill infant requires No hospital ward in this country can provide more than one nurse to four or six infants and children during the twenty four hours This means that the infant is sharing the attentions of a nurse with several others, which must necessitate the work being done imperfectly In addition, those nurses are young, and in process of learning their profession During the night period, in a ward of from 12 to 26 beds, there are, as a rule, two nurses, and for twelve hours the infant can only have a fraction of their attention

In private practice, for twenty four or forty-eight hours at least, the infant receives the entire attention of a skilled day nurse, and also a night nurse, such nurses, with a repetition of cases, becoming most experienced, and, in fact, being able to cope almost unaided with any situation which may arise It would appear to me that the lowering of the mortality must be attained by the separation of pyloric stenosis cases from all others, the nursing of these cases by themselves, and the realization by the public and the profession that the intensive nursing required in such a case for a short period must be provided

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THE USE OF AN ANTISEPTIC (QUINANIL) WITH PREPARATIONS OF GONADOTROPIC SUBSTANCES

BY

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In the course of work done on the pregnancy changes in the uterus, a number of experiments were performed in which the effects of various pituitary preparations were investigated in rabbits, when bovine pituitaries, in a finely divided form, were used for injection it was found that the site of injection almost invariably became septic, whatever the precautions taken As it was impossible to sterilize the pituitaries by the ordinary methods available without destroying the activity of the gonadotropic factors, it became necessary to use some type of antiseptic, and an attempt was made to obtain a suitable substance It was realized that the substance used should have a high antiseptic power, its toxicity should be low, and, most important qualification, it should not destroy, or interfere with the action of the gonadotropic factors of the pituitary Putnam, Teel, and Benedict (1925) have investigated the action of a number of antiseptics on gonadotropic factors obtained from anterior pituitary lobes (alkaline extracts) They found that alcohol, phenol, acriflavine, mercurochrome, and benzyl resorcinol either destroyed or precipitated the active principles, and had ultimately to resort to filtration through a Seitz filter in order to obtain a sterile preparation

It was of course impossible to use this method when the actual pituitary was being injected, and it was decided to try other antiseptics Quinanil appeared to be suitable in view of its properties This antiseptic is a derivative of a substance 2 4-dimethyl-amino-ar-ll 6-methyl-quinoline metho-chloride, originally described

by Browning, Cohen, Ellingworth, and Gulbransen (1926). It has been bacteriologically and clinically investigated by Gordon and Armitage (1929); its antiseptic power is two to three times as great as that of acriflavine, and is little affected by the presence of serum; its toxicity is low; the mean dose tolerated by a rabbit (4½ lb.) is of the order of 9 c.cm. of a 0.5 per cent. solution when the drug is injected intravenously, and comparatively large doses (up to 50 c.cm. of a 0.1 per cent. solution) have been injected in human subjects without any apparent ill effects.

The antiseptic was mixed with the finely divided pituitary tissue (1 to 2 c.cm. of a 0.5 per cent. solution in Ringer-Locke solution to 1 gram anterior pituitary lobe) and injected into rabbits intramuscularly. It has been shown (Robson, 1931) that the injection of anterior pituitary lobe into female rabbits is followed by the formation of corpora lutea in the ovaries and the concomitant changes in the uterus—that is, proliferation of the endometrium and inhibition of the *in vitro* reaction of the muscle to pituitrin. These results were still obtained in all experiments when quinanil was added to the injected material, and there seemed thus to be no interference with the gonadotropic action of the pituitary active factors. The antiseptic was entirely successful in preventing sepsis at the site of injection; in previous experiments (without antiseptic) many animals had died within a few days, and no animal had remained alive for more than fourteen days after the first injection. With quinanil, on the other hand, no abscesses developed; the animals remained alive and in good health (no loss of weight or diarrhoea) as long as the experiments were continued (more than twenty days in several cases).

In view of these results it was decided to investigate more extensively the suitability of the antiseptic for administration with preparations of gonadotropic factors. Quinanil was added to a water-soluble protein-free alkaline extract of the pituitary (for which I am greatly indebted to Dr. B. P. Wiesner), and injected intravenously into rabbits. The usual corpus luteum formation in the ovary and changes in the uterus were obtained, showing that the potency of the preparation had not been materially affected. The effect on active factors obtained from the urine of pregnant women was then investigated; preparations made by alcohol or phosphotungstic acid precipitation (Wiesner and Marshall, 1931) were mixed with quinanil and injected intravenously into rabbits. Follicular maturation, ovulation, corpus luteum formation, and the usual effects on the uterus were obtained, showing that quinanil again did not interfere with the action of the gonadotropic principles.

Lastly, a number of experiments were performed on mice by Mr. P. G. Marshall (to whom I am indebted for permission to quote the results). A preparation made from the urine of pregnant women by the alcohol precipitation method was dissolved in 0.85 per cent. saline and sufficient quinanil added to make a 1 in 1,000 solution. Various quantities of the solution were then injected into mice; the effects obtained (blood spots, corpora lutea, distension of the uterus) were similar to those given by control experiments in which no quinanil had been added to a fraction of the same pregnancy urine preparation. From these experiments it can also be concluded that quinanil does not destroy or materially impair the activity of gonadotropic factors.

The effect of more prolonged action of quinanil on gonadotropic factors has not been investigated. In all experiments, the active material was used within a few days of its preparation (unless it was kept in the form of a dry powder), and the solutions made up with quinanil were also used within a similar period.

In addition to the use in experiments, quinanil has also, in a number of cases, been added to samples of gonadotropic factors (prepared from pregnancy urine) which are sent out from this laboratory for clinical use. Sufficient data have not yet been obtained, however, to pass any opinion on this use of the antiseptic.

SUMMARY

Experiments have been made to determine whether the antiseptic quinanil destroys or interferes with the action of gonadotropic substances. Used in conjunction with finely divided anterior pituitary lobe, and with extracts made from anterior pituitary lobe or pregnancy urine, injected subcutaneously and intravenously into rabbits and subcutaneously into mice, no appreciable decrease in the gonadotropic effects on the ovaries (and the resultant changes in the uterus) was detected. It is suggested that the antiseptic may be suitable for use in the clinical administration of these hormones.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

FOREIGN BODY IN A CHILD'S BRONCHUS WITH ATYPICAL SIGNS AND SYMPTOMS

The occurrence of a ball of paper as a foreign body in the air passages of a child is in itself unusual. In the following case the history and physical signs were atypical, and the presence of the foreign body was not suspected until it was expectorated.

A boy aged 6, who had previously been quite well except for an attack of bronchitis in 1925 and measles in 1926, was admitted to Highgate Hospital on May 6th, 1931, with the history that two days earlier he had seemed feverish, and complained of headache and pain in the back, and had developed a spasmodic cough which sometimes induced vomiting.

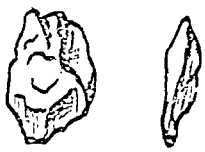
On admission his temperature was 99° F., pulse rate 96, and respiration 34. His tongue was furred, the tonsils enlarged and injected without exudate, and his breath smelt of acetone. Movement of the chest, percussion note, air entry, and breath sounds were normal, but there were a few crepitations to be heard along the vertebral border of the right scapula. Physical examination revealed no other abnormality.

On May 7th he was lethargic, with flushed face, lost his appetite, and a troublesome cough. The percussion note was now impaired, and the air entry diminished at the right apex over the area of the right upper lobe. There were no adventitious sounds. By the morning of May 9th the percussion note was markedly impaired, and the breath sounds were loudly bronchial over the whole of the right upper lobe. During that night the patient had a paroxysm of coughing and expectorated a flat plaque three-quarters of an inch in diameter and half an inch thick, which weighed 12 grains. It had a hard, brownish-yellow external crust over a soft interior, and was soaked in offensive sputum. On May 11th the child was delirious, with dry, thickly furred tongue; physical signs in the chest were unaltered. During the night, however, the temperature fell by crisis.

On May 11th the patient began to take an interest in his surroundings, and his appetite returned; the tongue became moist and was less furred. The consolidation of the right upper lobe was unchanged, but scattered fine rhonchi were heard in all other areas. On May 12th the percussion note was slightly less impaired, and a few redux crepitations were present over the area of the right upper lobe. Fewer rhonchi were heard in the other pulmonary areas. From this time he made rapid progress until May 25th, when physical examination of his chest revealed no abnormality, and on discharge on June 16th he was perfectly well.

After convalescence an *x*-ray photograph of the chest was taken with the foreign body so placed that, with the whole thickness of the chest between it and the plate, its shadow fell as nearly as possible in the region of the right bronchus. The foreign body cast a definite and well-recognizable shadow.

On September 9th the patient was brought up to the hospital by request for examination. His father stated he had been perfectly well since discharge, and no cough had been noticed. On physical examination his chest was found to be normal, and this was confirmed by screening and radiography,



Sketch of foreign body (actual size).

which showed the movements of the chest and diaphragm to be normal and the lung fields clear.

Dr. F. H. Shaw reported as follows on the foreign body:

A flattened body, three-quarters of an inch in diameter, having a gritty, friable shell containing soft layers of paper. Microscopically, fibres of paper were seen, having the same appearance as other samples of paper examined for comparison. Evidently, a small ball of paper covered with organic matter infiltrated with phosphates.

The points of interest in this case are:

1. The nature of the foreign body and the fact that, had its presence been suspected, it could have been revealed by radiography.

2. The phosphatic incrustation, which had formed very rapidly if the foreign body had been present in the air passages since just before the onset of the acute illness. The alternative, that the ball of paper had been lying in the bronchus for some time without producing symptoms, does not seem possible, on account of the size of the ball.

3. The absence of a characteristic history. Neither the boy nor his parents could remember a choking fit or any symptoms suggestive of the inhalation of a foreign body.

4. The course of the acute illness and the character of the physical signs, which were both those of an ordinary lobar pneumonia.

My thanks are due to Dr. F. H. Shaw for examining and reporting upon the nature of the foreign body, and to Dr. C. Thackeray, the medical superintendent, for permission to publish this case.

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SKIN INFECTION IN CANINE VISCERAL LEISHMANIASIS

Blanc and Caminopetros observed ulceration of the skin in canine visceral leishmaniasis in Greece. The ulcers, like those produced by *Leishmania tropica*, contained Leishman-Donovan bodies. Parrot, Donatien, and Lestocquard (1930) found that sandflies (*Phlebotomus perniciosus*) which fed on dogs with cutaneous ulcers became infected with leishmania. Working in Malta, we found that wandering cells infected with Leishman-Donovan bodies are distributed almost uniformly throughout the intact dermis in all parts of the body. Infection of the dermis is present even in animals with a very slight visceral infection. Sandflies (*P. perniciosus*) were fed on the unbroken skin of a dog with a slight visceral infection, and 32 per cent. of the insects became infected. Feeding experiments with *P. perniciosus* on the unbroken skin of two other naturally infected dogs gave infection rates of 62 and 65 per cent. respectively. None of the animals had cutaneous ulcers during the time the experiments were carried out. Spleen smears of all the three dogs showed Leishman-Donovan bodies, but in much smaller numbers than spleen smears of average human cases of infantile kala-azar, which give a relatively low infection rate with *P. perniciosus*. Examination of blood smears of the experimental animals showed no Leishman-Donovan bodies.

The above findings show that *P. perniciosus* infects itself with leishmania by ingesting skin juices of infected dogs during the act of biting. The behaviour of the canine strains in *P. perniciosus* was very similar to that previously recorded for human strains of *L. infantum*—that is, the flagellates tend to an anterior position.

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GENERALIZED GAS GANGRENE DEVELOPING DURING PARTURITION

It has been shown by Wrigley[1] that uterine puerperal infections by Welch's bacillus are more common than is generally believed. Wrigley has demonstrated that such infections are usually met with in cases in which a dead foetus has remained for some time in the uterus, and that severe and fatal cases usually follow intrauterine manipulations. Severe cases of puerperal gas gangrene are nevertheless uncommon. The case that is now recorded is exceptional, because a generalized infection, which resulted in gas formation in the subcutaneous tissues before death, arose during the first stage of labour, and caused a fatal termination before the third stage was completed.

HISTORY OF THE CASE

A married woman, aged 25, was admitted to the London County Council Special V.D. Hospital for pregnant women, Thavies Inn, on May 24th, 1930, during the sixth month of her pregnancy.

The patient was a syphilitic, and had had four previous confinements, dating from 1920. The first baby died thirty-six hours after birth. During the second pregnancy the patient was treated at Thavies Inn with anti-syphilitic measures, and was delivered of a child which, treated anti-syphilitically, ultimately survived and appeared quite well. Anti-syphilitic treatment was carried out during the third pregnancy at Thavies Inn. The child was born alive and survived under anti-syphilitic treatment. During the fourth pregnancy no anti-syphilitic treatment was given on account of the patient's living in the country. The labour was difficult and instrumental, and the child was born stillborn.

During her fifth pregnancy the patient was again admitted to Thavies Inn clinic, in May, 1930, when it was found that the Wassermann blood reaction was strongly positive. Anti-syphilitic treatment was immediately commenced. Parturition was expected during the first week in August. At 9.15 a.m. on August 6th, 1930, the patient felt ill; she had a temperature of 101° F., and pulse 104. There were no labour pains, but there was an offensive vaginal discharge. On examination the os was found to be closed. At 10 a.m. slight labour pains commenced; temperature 103°, pulse 104. At 1 p.m. the os was found to admit one finger; at 2 p.m. it was noted that the patient was passing gas from the vagina, and at this time she began to vomit. At 3 p.m. the os was found fully dilated. The temperature and pulse were now normal. At 5.15 p.m. labour pains were strong, but there was no advancement of the head; it was noted at this stage that the patient's face and neck had become puffy. At 7.15 p.m. she was delivered of a macerated male foetus. The head was born naturally as a left occipito-anterior, but there was difficulty in extracting the body of the child owing to its tissues being puffy and decomposed. The placenta was retained, and an unsuccessful attempt to remove it was made manually.

At 8.30 p.m. the patient was seen by Dr. Wilfrid Shaw, who confirmed the diagnosis of gas gangrene. At this stage palpation of the uterus from the abdomen elicited the typical crackling of subcutaneous emphysema. It was also found that crackling could be obtained in the subcutaneous tissues of the abdominal wall, and the swelling of the face and neck was demonstrated to be due to gas emphysema. When the uterus

[1] Wrigley, A. J. *Proc. R. Soc. Med.*, June, 1930.

was pressed down, large bubbles of gas were passed per vaginam. The patient's extremities were cold, and the pulse was hardly perceptible; she was quite sensible, and answered questions intelligently. The condition was clearly a septicaemia due to infection with gas-gangrene organisms.

An examination of the foetus showed gas emphysema, which had been responsible for the difficulty in extraction. The foetus was in an advanced stage of maceration, and had probably been dead for some time.

The prognosis seemed hopeless: 30 c.cm. anti-gas gangrene serum was injected intramuscularly, and a copious intrauterine douche of peroxide solution was given. The patient's general condition rapidly became worse, the emphysema extending rapidly over more of the subcutaneous tissues of the trunk and scalp. The patient died at 1.30 a.m., six hours after the birth of the child.

A post-mortem examination of the mother could not be obtained. An exact diagnosis of the condition was not possible without bacteriological evidence, but the condition of emphysema and the passage of large quantities of gas per vaginam, together with the condition of the foetus, demonstrated almost conclusively that general infection with gas-gangrene organisms was the cause of death.

The case is recorded because of the rarity of this complication of pregnancy; the most remarkable feature was the presence of a widely distributed emphysema in a living patient, for such a widespread emphysema is usually a post-mortem phenomenon. This case illustrates the accuracy of Wrigley's contention that gas-gangrene infections of the puerperal uterus arise in connexion with intrauterine death of the foetus. In the case now recorded the intrauterine death of the foetus was almost certainly to be attributed to syphilis in the mother, but the mode of infection of the uterus is obscure. A point of importance is the fact that the temperature rose before any vaginal examination was made. The evidence available, therefore, disfavours the conception that the infection was exogenous.

Emphasis should also be placed upon the rapidity with which the patient died, death occurring within seventeen hours of the onset of symptoms.

London, E.C.1 JOHN ADAMS, F.R.C.S.
PHILIP ADAMS, M.R.C.S., L.R.C.P.

British Medical Association

CLINICAL AND SCIENTIFIC PROCEEDINGS

WEST DORSET DIVISION

Modern Treatment of Deafness

At a meeting of the West Dorset Division, held at Sherborne on November 26th, Dr. GEORGE C. CATHCART (London) read a paper entitled "The modern treatment of deafness".

It had to be remembered, Dr. Cathcart said, that otology was one of the youngest branches of science, and only of late years had any treatment of the deaf begun; the knowledge gained by specialism had still to filter through until it became part of the ordinary curriculum of the medical student. Yet prevention was beginning to play its part, and already there was a great change in the type of case seen in adult life. A few years previously the mastoid operations that had to be performed for chronic ear discharge in order to save life were infinitely more numerous than at the present day. This was undoubtedly due to the greater care taken of the ears during the course of measles and scarlet fever, and also to the more frequent removal of adenoids and the more thorough extraction of septic tonsils by enucleation instead of by the guillotine. Chronic catarrhal otitis media was undoubtedly the commonest form of deafness. It was, however, the only form which was not hereditary, and might be prevented by the removal of adenoids and enlarged tonsils in childhood, and, more especially, by timely paracentesis and removal of the fluid in the ear before it had time to organize. Catarrhal otitis media ought to be curable, if treated in the early stages. A few years previously the presence of an intact drum and ossicles was considered an absolute essential to hearing, and a large number of the laity, even the well educated, still raised strong objections when the question of paracentesis was mooted. It was now known, however, that the sounds reached the inner ear by means of the round window, and so long as that was healthy the drum was of minor importance. For nerve deafness hitherto there had been no treatment. The sufferers were told to try various drugs, to stop smoking, not to worry, to lead a sober life in the future if they had not done so in the past, and, above all, not to waste any more money on doctors, since no one could do them any good. Nor was the prospect any more pleasing as regards the treatment of chronic otitis media. Sir William Milligan had given it as his opinion that there had been no substantial progress in the treatment of adhesive catarrh of the middle ear during the past twenty years.

Dr. Cathcart said that for many years he had been of the same opinion, and had tired of having to tell so many patients, after the classical remedies had failed, that nothing more could be done for them. A few years ago, however, he heard, through an old patient who had been successfully treated by it, of a new method of treating chronic progressive deafness—namely, the electrophoniode method originated by Zünd-Berguet of Paris. The electrophoniode was an instrument which reproduced the sound vibrations of the whole gamut of the human voice, and thus gave a physiological stimulus to the ear. The sounds produced were of varying quality, and were variable at will; they were transmitted to the ear by telephonic receivers, which could be adjusted to the sensitiveness of each ear. Finally, a secondary current, producing a gentle, short-wave vibratory massage of the ear, was superimposed on the primary one which made the sounds; it was to this double action that the successful results were attributed. This method of treatment laboured under the disadvantage that it was not possible to tell from any tests made beforehand whether it would be successful or not. There was a factor in deafness as yet unrecognized, the presence of which—or it might be the absence of which—determined the result. The usual course of treatment consisted of fifty sittings, but on account of this unknown factor it was necessary to give a preliminary course of twelve sittings to find out whether it was worth while to continue or not. Up to the present Dr. Cathcart had treated 665 cases of chronic deafness by the Zünd-Berguet electrophoniode method comprising 187 cases of nerve deafness, 261 cases of chronic otitis media, and 217 cases of otosclerosis. Of the 187 cases of nerve deafness 138 (73.8 per cent.) improved, while 49 did not benefit to any appreciable extent. Of the 261 cases of chronic otitis media 174 (66.6 per cent.) improved, while 87 did not do so. Of the 217 cases of otosclerosis 117 (53.9 per cent.) improved, while 100 were unaffected. This amounted to a total of 665 cases of chronic progressive deafness, of which 429 cases (64.5 per cent.) improved after treatment by the Zünd-Berguet electrophoniode method, while 236 cases failed. Records showed that this treatment not only alleviated tinnitus, or noises in the head, but often caused it to disappear completely; 36 out of the first series of 100 patients suffered from tinnitus, which ceased after treatment in 26 (72 per cent.), while in the remainder 10 cases the noises were much lessened, although they did not cease. In the total of 665 cases there were 230 cases of tinnitus, of which 158 (68.7 per cent.) improved after treatment.

Reports of Societies

X RAYS IN THORACIC DISEASE

At a meeting of the Medical Society of London, held on December 14th, with the president, Mr. HERBERT TILLEY, in the chair, a discussion took place on the value of *x* rays in the diagnosis of thoracic disease.

Dr. P. J. KERLEY, in opening the discussion, chose the subject of congenital diseases of the lungs as illustrating recent advances in chest radiology. These congenital lesions found no place in the ordinary textbooks because they could not be diagnosed by ordinary methods. One of them, revealed by *x* rays, was an abnormal azygos vein, found to be present about once in every two hundred individuals. In many cases this vein actually split the right upper lobe into two distinct parts, each with a separate vascular and bronchial supply. The *x*-ray appearances were characteristic, the pleura, as it ran through the lung fissure made by the vein being seen as a curved white line. If the vein made a deep indentation, the piece of upper lobe thus cut off was always very congested, and this gave rise to physical signs indicating pulmonary tuberculosis. If pneumonia occurred in such a lobe, delayed resolution or even abscess formation might result. Carcinoma and bronchiectasis might occur in this azygos-vein-lobe and an interlobar empyema might develop in the abnormal fissure. Turning next to more common and more dangerous anomalies of the lungs, the speaker mentioned certain deformities of lung architecture. He said that there was a persistent tendency in man towards the formation of a fourth lobe in the right lung and a third lobe in the left lung. In about 15 per cent. of individuals such an accessory lobe could be found, and it was bilateral in about 1 per cent. The fissure dividing the accessory lobe from the rest of the lung was quite clearly visible in a radiograph. Dr. Kerley dealt with some points on the comparative anatomy of this accessory lobe, and pointed out that when it was supplied by a bronchus of the third degree with no cartilage in the walls, it was almost a certainty that collapse and bronchiectasis would occur. He described the *x*-ray appearances of a collapsing accessory lobe, showing how they were usually described as collapsed lower lobes due to bronchiectasis. Actually, bronchiectasis followed the collapse, partly owing to deflation of the lobe, but also as a result of congenital malformation of the alveolar structure. In two cases pulmonary tuberculosis had occurred in an accessory lobe and in three cases carcinoma had been observed. The association of carcinoma with foetal atelectasis had been commented on by other workers. In conclusion, the speaker dealt with the question of treatment in these congenital lesions. Early diagnosis by radiography was essential. Good results had been reported by inducing artificial collapse. The only rational method of treatment, however, in Dr. Kerley's opinion was removal of the abnormal lobe.

Dr. F. G. CHANDLER said that the application of *x* rays to the investigation of intrathoracic disease had proved to be one of the greatest diagnostic advances ever made. *X* rays, however, should never supplant or render obsolete such diagnostic aids as clinical observation, physical signs, the exploring needle, bacteriological investigation, and even bronchoscopy or exploratory thoracotomy. The speaker then enumerated the many lung lesions where *x* rays gave very valuable help in diagnosis, and continued with a discussion of some of the limitations and difficulties of radiography of the chest. In the first place, he emphasized that the skiagram was only a shadowgraph, possessing no morbid anatomy, with pattern but not structure. Without a full clinical knowledge of the case, interpretation of such shadows might be impossible. This also applied to the estimation of the activity of a lesion by *x* rays alone. An increase in the areas of diseased lung seen in successive skiagrams was the only certain evidence to be obtained radiologically. As an example of the error in making a diagnosis solely from radiological appearances, Dr. Chandler showed pictures from a case where a large shadow, apparently encysted fluid, existed for ten years in the chest of a perfectly healthy woman. Technical faults such as bad skiagrams led to mistakes from time to time, while certain traditional errors, as in the differentiation between peribronchial tuberculosis and normal or harmless root shadows, were still perpetrated. There was often considerable difficulty in the early diagnosis of malignant disease of the lung, a subject of vital importance. The growth might be too small to give a shadow or there might be various secondary changes obscuring the true condition. The speaker next mentioned the importance of a lateral view, especially where an opacity was obscured by the heart shadow. There must always be limitations in radiography because of the size of the lesion; hence the futility of attempting to exclude early pulmonary tuberculosis by an *x*-ray examination. Other limitations resulted from the lesion being transparent: a foreign body, for example, might be quite impossible to see in this way. Bronchi were, as a rule, transparent, hence the value of lipiodol in the diagnosis of bronchiectasis. Dr. Chandler mentioned that he was now using the oral method exclusively for the injection of lipiodol. In conclusion, he said that, while radiology of the lung must always be supported by symptoms, history, physical signs, and special methods, he would, if limited to one method of diagnosis only, choose the former.

Dr. STANLEY MELVILLE, discussing some aspects of neoplastic disease of the lungs, said that only in a strictly pathological sense could any distinction be drawn between benign and malignant neoplasms, since a simple fibroma grew in size, and in the course of time might kill by pressure. In the early diagnosis of such new growths by means of radiography it was easy to distinguish between simple and malignant tumours, as benign neoplasms were extrapulmonary, rounded, and well defined. The diagnosis was aided in many instances by inducing collapse of the lung. He quoted certain statistics concerning the incidence of malignant disease of the lung, and asked for definite views as to whether the increase was a true one or only apparent.

Dr. R. A. YOUNG pointed out how two almost accidental discoveries had revolutionized medical diagnosis of lung disease—namely, the discovery of *x* rays by Roentgen and of lipiodol by Sicard. He thought that *x* rays were useful from three points of view. First, they opened up a field of interesting anatomical and pathological research; secondly, they were of increasing value in diagnosis; and, thirdly, they were of increasing value in the study of the progress of disease in the lungs, and were therefore helpful in prognosis. He thought that surgery of the lungs had been greatly aided by *x* rays, and owed a great deal to the modern advances in radiology. Dr. Young went on to say that dermoids of the lung were commoner than he used to think, and it was important that they should be recognized early, and dealt with. Fibromata were not harmless tumours, and might cause serious pressure symptoms or lead to abscess formation. Care should always be taken to correlate *x*-ray findings with clinical conditions.

Dr. L. S. T. BURRELL agreed that he would choose radiography if limited to one method of diagnosis, but it was very difficult for the physician to decide what should be done with a patient by an *x*-ray examination only. He had seen one patient with a shadow almost identical with that in another case of fatal carcinoma, yet

the patient had lived for four years after operation had been refused. If there was this uncertainty in the early stages of carcinoma, it was difficult to urge serious operations. Dr. A. J. SCOTT PINCHIN held that it was important to place x rays in their right position. Early diagnosis of carcinoma by their aid would, in most cases, still be too late to allow of satisfactory treatment, and it was important to get even earlier evidence by the bronchoscope. He believed malignant disease was really on the increase, though he mentioned that, whereas before the war mediastinal sarcoma was the commonest thoracic tumour, of recent years carcinoma of the bronchus had replaced it in frequency. In the last year, however, mediastinal growths had turned up again in greater numbers. Dr. B. E. SCHLESINGER mentioned the so-called epituberculosis, common at the left apex, where a non-specific reaction occurred around a tuberculous focus, and also referred to the fact that when phthisis arose in children it was commoner at the base than at the apex. Dr. W. BURTON WOOD said that x rays had shown there was a benign form of acute tuberculosis of lung. This was probably akin, pathologically, to epituberculosis. Large, soft shadows appeared, which all cleared up eventually. Mr. C. DICKSON WRIGHT expressed his gratitude that an explanation of various difficult shadows seen in x rays of the lungs had now been offered. He thought that injection of lipiodol was often eschewed because of discomfort to the patient, but with the nasal route recently described the process was really very simple. He asked for the latest views as to the nature of pleural rings seen in skiagrams. Dr. M. DAVIDSON pleaded for greater co-ordination in the x-ray diagnosis of diseases of the chest. The idea of team work was more honoured in the breach than in the observance. He also mentioned the importance in diagnosis of the clinical history, especially of early malignant tumours of the lung. In connexion with the term "infiltration of the lung" he pointed out that radiologically there was no difference between infiltration due to tuberculosis and that due to other causes—for example, actinomycosis.

The PRESIDENT spoke of certain patients in whom radiology had greatly helped to clear up a diagnosis, but a bad skiagram, he said, might well be worse than no skiagram at all. In replying to the discussion, Dr. KERLEY said that there was no such thing as a pleural ring, and the modern view held that these shadows always represented cavities.

RIFT VALLEY FEVER OR ENZOOTIC HEPATITIS

At a meeting of the Royal Society of Tropical Medicine and Hygiene, held at the School of Hygiene and Tropical Medicine on December 10th, with the president, Dr. G. CARMICHAEL LOW, in the chair, Dr. G. M. FINDLAY read a paper on Rift Valley fever, or enzootic hepatitis.

In his introductory remarks Dr. Findlay pointed out that enzootic hepatitis was first described by Daubney, Hudson, and Garnham (1931) in Kenya Colony, British East Africa. In the previous year, on a farm in the Rift Valley, a heavy mortality had occurred among ewes and newly born lambs, the death rate in the latter being 95 per cent. At necropsy a focal necrosis of the liver was found. Transmission experiments showed that the etiological agent was a filterable virus. During the course of the investigations the four Europeans engaged in the work all developed a dengue-like syndrome, characterized by rigors, backache, and fever persisting for from twelve to thirty-six hours; native attendants were similarly affected. Goats and cattle were also found susceptible; but though the disease was not contagious there was evidence to suggest that it might be transmitted by a mosquito, probably *Taeniorhynchus brevipalpis*. The virus, preserved in oxalate-carbol-glycerin, was brought to this country by Mr. R. Daubney, and in May of his year was successfully inoculated into two lambs by Major Dalling, M.R.C.V.S., who conducted a necropsy; five and a half days later he became acutely ill with rigors, fever, headache, and backache. His laboratory assistant developed similar symptoms, and later another person presented the same syndrome after a necropsy on an infected lamb.

Dr. Findlay's investigations showed that there was a primary polymorphonuclear leucocytosis followed by a leucopenia during the course of the disease, and that protective antibodies appeared in the serum of those definitely infected as well as in those exposed to sub-infective doses of the virus. Inoculation of filtrate into monkeys had produced similar features, with, as in man, no fatality; the immunity lasted for at least six months. The virus proved highly pathogenic for mice, field voles, wood mice, dormice, and the golden hamster, the death rate varying from 98 to 100 per cent. Rabbits, grey squirrels, guinea-pigs, and several other species of animals proved insusceptible. Infection was successfully transmitted by subcutaneous, intraperitoneal, intratesticular, or intracerebral inoculation, by application to the scarified skin, and by instillation into the nares or conjunctival sac. The pathological changes were found to consist of focal necrosis of the liver or generalized hepatitis, and haemorrhages in various internal organs. Acidophile bodies were found in the liver in certain species of animals, and kariorrhexis of the polymorphonuclear leucocytes was characteristic. Monkeys immune to yellow fever were found to be susceptible to Rift Valley fever, and neither immune yellow fever serum nor dengue immune serum protected mice.

Dr. E. HINDLE, in opening the discussion, stressed the resemblance of this disease to yellow fever and dengue, but pointed out that in yellow fever necrotic lesions involved the mid-zonal cells, whereas in Rift Valley fever the necrosis did not appear to be restricted to any part of the lobule. He was rather sceptical about the significance of the intranuclear inclusion bodies found by Dr. Findlay in mice, as he had found similar bodies in toads and in the livers of London sewer rats; he was disappointed to hear that yellow fever did not confer immunity. Dr. J. T. EDWARDS called attention to the clinical and pathological similarities of Rift Valley fever to the disease known as "three days' sickness," which affected cattle in India, and suggested it would be worth Dr. Findlay's getting the virus from India for purposes of comparison. Mr. R. E. MONTGOMERY said he would like to make a reference which might have some historical significance in the study of this disease. In 1912, when he was at Mombasa, there had been a mortality rate of 90 per cent. among lambs. Two infected lambs were sent down for investigation, and inoculation experiments with other lambs produced fatal results; at necropsy histological lesions similar to those described by Dr. Findlay had been found. Though there was no evidence of infection of human beings then, he thought it was probably the same disease in 1912 as in 1930. Dr. HAMILTON FAIRLEY asked for information on the duration and range of complement-fixation met with in the disease, and also whether Dr. Findlay had made any observations on the blood chemistry of enzootic hepatitis. Experimentally it was known that four-fifths of the liver had to be removed before biochemical changes occurred, but in many of Dr. Findlay's animals the hepatic necrosis was so generalized that it appeared possible that hyperglycaemia and other significant alterations in the plasma might occur. Dr. MANSON-BAHR asked whether cytoplasmic inclusions like Councilmann bodies were indicative of ultra-microscopic virus disease. He was particularly

interested, as many years ago he had described similar bodies in sprue

In reply, Dr. FINDLAY stated that Rift Valley fever fell into the same category as yellow fever and sandfly fever. To date he had not had an opportunity of studying the biochemistry of this disease, but proposed to do so later. Complement-fixing antibodies were found for at least six months after recovery; the amount of complement fixed in their experiments had been 3 M.H.D.'s. He expressed the view that Councilmann bodies had not the same significance as intranuclear inclusion bodies in indicating an ultra-microscopic virus.

PHYSICAL FINDINGS IN PSYCHONEUROSIS

At a meeting of the Medical Society of Individual Psychology, held on December 10th, with Dr. W. LANGDON BROWN in the chair, Dr. F. G. CROOKSHANK read a paper which he described as, though nominally concerned with the physical findings in psychoneurosis, yet really one giving an account of observations made by him during the last two years as a diagnostic physician at the Institute of Medical Psychology (Tavistock Square Clinic). In this capacity he had now had the opportunity of examining several hundreds of new cases.

The routine procedure was for each patient to be accorded a full hour's interview, during which time a pretty complete physical investigation was carried through, while occasion was taken to arrive at a preliminary psychological appreciation of the situation. In carrying out these examinations Dr. Crookshank said he had had, for more than a year past, the advantage of the assistance of a woman colleague (either Dr. Hutton or Dr. Weber, as a rule), and the plan of examining both male and female adult patients, from the physical as well as from the psychological angles, in this conjoint way had proved extremely successful, so far as could be judged. After discussion of many points of anthropological, physiological, morphological, and psychological interest, Dr. Crookshank said he desired to emphasize the great importance, in dealing with "psychological cases," of paying attention to the fine adjustment of the organs of sense—the means of reception by the patient of impressions from the outside world. He (the speaker) was convinced that the complete correction of ophthalmic defect was often of far greater consequence to the "nervous" patient than ophthalmic surgeons were prepared to admit. The frequent advice to migrainous persons that "the defect was too small to call for glasses," or that the "glasses need only be worn when the headaches occurred," was really deplorable. Another point of some interest was the great frequency with which plugging of the ears with wax was found in "nervous" patients, and those complaining of noises in the head, "odd feelings," and so on. Actually, at least one in four seeking help at the clinic had both ears so plugged, either with or without complaint of deafness. A matter of some seriousness was the frequency with which hyperthyroidal states, referable to emotional strain, were found present, without recognition, in patients, male or female, who had been passed by their own or special medical advisers as "without organic disease." The same phrase was constantly applied to patients with severe refraction defect, heavily infected tonsils, carious or defective teeth, gross constipation, and those suffering from the abuse of tea and tobacco. The sooner this wretched and now almost meaningless cliché disappeared the better. A large proportion—perhaps 25 per cent.—of the new cases at the clinic were found to be the subjects of oxaluria. The association of oxaluria with anxiety states and neurasthenias was a matter once better recognized than now; the explanation was not dietetic, but metabolic.

In conclusion, Dr. Crookshank declared that the opportunities he had enjoyed at Tavistock Square had more than strengthened his conviction of the rightness of the individual psychologist's approach to the subject of the psycho-somatic unity. So far as the neurotic patient was concerned, the really important thing, as Adler would say, was not the actual physical defect, organ-inferiority, or stigmata of "degeneration," etc., present in the beginning, but "what the patient did about it." At the same time, the *nature* of the physical defect or inferiority would determine or colour the life-style of the patient who decided upon a neurotic life-line. But physical defect was neither necessary to neurosis nor did it render neurosis inevitable. The case of the psychotic was, however, somewhat different. Whilst he (the speaker) held, with Adler and Wexberg, that the life-style of the psychotic was to be explained in the same way as that of the neurotic, nevertheless the psychotic might be looked upon often, if not always, as one who started with a special biological pattern or outfit. This again by no means implied the necessity for mental breakdown, or excused the adoption of a neurotic life, ending in psychosis. But it did mean that the adoption of certain methods of living was, for those so imperfectly equipped, much more dangerous than for others. An analogy might be attempted. An aviator of experience and skill would say that "crazy flying" might be perfectly safe, given a good machine in good order, but that to attempt "stunts" with certain types of machine, or with one in bad order, would be courting a crash. So with the human being. No imperfection of original equipment compelled or need compel anyone to live wrongly; but it might render the neurotic style of life highly dangerous.

In the discussion which followed, the PRESIDENT pointed out certain ways in which the out-patient department system had undergone improvement. He alluded to a distinction made by Dr. T. A. Ross, in a recent meeting of the Royal Society of Medicine, between the attitude of the psychoneurotic and of the psychotic towards his dyspeptic symptoms. The psychoneurotic would listen to the possibility of a more remote origin, whereas the psychotic would never admit in any way this approach to the subject. Dr. LAURA HUTTON, dealing with the subject of hyperthyroidism, said that in three cases which she had treated psychotherapeutically, the exciting cause had been violent love-making, which had been carried too far, and yet not far enough—namely, to completion. In two of the cases the flushing associated with the hyperthyroidism had resulted in the establishment of a vicious circle.

Dr. HILDA WEBER indicated certain ways in which the examination of the hands was of importance. It was of interest that it was less the movements of which the hands were capable than the use man made of them which was of importance. The extent of the hand area in the cerebral cortex was an example of interaction between function and structure. Dr. O. H. WOODCOCK gave a clinical example of dyspepsia of psychological origin occurring in a psychotic. This case had exemplified the "fixity" referred to by the president. Dr. ERNEST GRIFFEN had noticed that ridges on the nails were associated with ill-health. He pointed out that certain specialists were apt to mete out the same kind of treatment to the patients sent to them.

Dr. J. R. REES, in answer to a question, said that at the Institute of Medical Psychology it was the practice to see relatives, but not as a routine measure. He had been intrigued by the differentiation made by previous speakers between psychoneurotics and psychotics. Dr. E. A. BENNETT doubted whether coitus interruptus was such an important factor in the causation of anxiety neurosis as some authorities supposed. Dr. BEVAN BROWN

agreed with Dr. Crookshank that in many cases the use of liquid paraffin as a laxative was harmful. In his experience many hysterics refused to discuss the possibility of a mental cause of their dyspepsia. He thought that frustrated sex desire was a potent cause of hyperthyroidism.

Dr. CROOKSHANK, in replying, pointed out that tight collars in men, and badly fitting boots and shoes in women, were a potent cause of ill-health, which reacted unfavourably upon the mental condition. He agreed with Dr. Hutton's conclusions as to the effect of emotion as a factor in the causation of hyperthyroidism. He had found that there was a greater tendency for psychosis to be accompanied by physical imperfections than was the case with psychoneurosis. Loss of sex desire following a gynaecological operation not involving the ovaries was often psychologically determined and amenable to psychotherapy. With regard to coitus interruptus and its effects, it was well to refrain from generalizations; in some instances it might be the expression of a neurosis. He considered that the beliefs of the hysterics were not held with the same tenacity as was the case with the psychotics.

ANAEMIA AND POLYCYTHAEMIA

At a meeting of the Pathological Society of Manchester, on December 9th, Professor A. E. BOYCOTT delivered an address on anaemia and polycythaemia.

Professor Boycott said that polycythaemias fell into two classes—the apparent and the real. Apparent polycythaemias were due to a lack of plasma and a concentration of the blood. They occurred in newborn children (when it was necessary for the child to be as small as possible, and when the viscosity of the blood was of little or no importance), in cholera, and in secondary shock. Since the maintenance of an adequate circulation depended on the proper filling of the right heart, any substantial diminution of blood volume was incompatible with life for more than a few hours. Locally, a polycythaemia might be produced by cutting down the oxygen supply of the capillary endothelium (for example, by constricting the finger); plasma at once leaked out and erroneous blood counts were obtained. Real polycythaemias were found (*a*) in deficient oxygen supply, or (*b*) in splenomegalic polycythaemia. The best known was that which occurred at high altitudes. Various fantastic explanations of the phenomenon were given in early days, but it was certain now that it was due to a compensating action by the bone marrow, which increased the concentration of haemoglobin in the circulating blood without enlarging the blood volume. This was first shown clearly in animal experiments; afterwards, by Haldane and Douglas in man. Anything which interfered with the due supply of oxygen could lead to the same result—chronic tracheal or bronchial obstruction, pneumothorax, chronic carbon monoxide poisoning, and many examples of congenital cardiac defect. The ordinary case of heart failure seldom showed any degree of polycythaemia, and the patient was often slightly anaemic; he was short enough of oxygen, but had enough difficulties to face in maintaining arterial pressure and control over the distribution of blood without adding to the work of the heart by a raised viscosity of the blood. Peculiar interest attached to the demonstration by Doyon and Morel, and later by Campbell, that excess of oxygen led to anaemia. The facts showed pretty clearly that what was known as the "normal" level of haemoglobin was determined by the pressure of oxygen in the atmosphere in which one happened to live. What was "normal" in Manchester was mild anaemia in Johannesburg, and the nations of the Andes had a "normal" haemoglobin percentage of 145. With any given oxygen supply the body evidently struck the balance between oxygen-carrying power and viscosity, and the polycythaemia of high altitudes soon disappeared on returning to sea-level. Professor Boycott said that in splenomegalic polycythaemia there was no demonstrable difficulty about the oxygen supply, and the production of red cells by the marrow was causeless—that is, the disease was a tumour of red corpuscles. The body protected itself so far as it could by increasing the volume of the blood, so that at any rate the blood was not solid and there was some plasma: in the end the heart generally failed from having to pump round such viscous fluid. The precise level of haemoglobin appropriate to life at about sea-level in this country had lately been investigated carefully by Dr. Price-Jones. He found an average normal figure for men of 105 per cent. on the Haldane scale and for women of 98 per cent.; these figures were higher than the standards fixed thirty years ago, but lower than the 112 or 114 per cent. which had been determined by several observers in America. He had shown that this difference was not due to technique, but was inclined to attribute it to slight chronic carbon monoxide poisoning due to habitual and persistent use of closed motor cars. The variability of the percentage of haemoglobin was not large, some 4 per cent., which was about the same as the variability of stature in a homogeneous population. Its relationship to marrow activity was very precise: a rise in haemoglobin immediately lowered the proportion of reticulocytes in the circulating blood and a fall stimulated their production.

TREATMENT OF EMPYEMA

At the December meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland Dr. GEOFFREY BEWLEY reported the case of a woman, aged 58, who was admitted to hospital in October, 1929, with a right-sided empyema following what appeared to be an attack of pneumonia.

Pus was obtained on exploratory puncture, but operation was postponed owing to the large quantity of purulent sputum brought up. Pneumococcal pus and gas were obtained in a later puncture, and *x* rays revealed a gas-containing empyema. Operation was again postponed in the hopes of the sputum diminishing. Exploration was negative on two subsequent occasions. Clinically and radiologically the empyema showed signs of complete healing, and in January, 1930, the woman left hospital apparently well. In June she returned with signs of an abscess in the left lung, and a radiogram showed an abscess full of fluid in the left lower lobe, and another abscess cavity at the base of the right lung. The empyema had disappeared completely. Treatment by postural drainage was tried with success, and she was able to leave hospital in eight weeks. From that time onwards her condition had been very good, and she had had no cough. An *x* ray taken a year later showed that the cavity in the left lung had disappeared, and that the one in the right lung was smaller.

The chairman (Dr. A. R. PARSONS) thought that in many cases abscess of the lung following operation was due to the introduction of tubes into the mouth and throat during anaesthesia. He realized that some cases were haematogenous in origin. Many patients recovered under medical treatment, and operation should be deferred as long as possible. Dr. T. M. CORBET said that he had recently seen two cases of pneumococcal empyema in brothers. The parents refused to allow operation in each case, but the pus gradually seemed to disappear. Much thickening and pulmonary fibrosis were left, and he felt that both patients would be physically defective throughout life. All such cases should be operated on. Dr. E. T. FREEMAN thought that the empyema in Dr. Bewley's case must have followed the rupture of an abscess into the pleural cavity, as only in that way could the presence of air be accounted for. He felt that pneumococcal

empyemata should be operated on, but streptococcal ones should be left until there was no possibility of the lung collapsing when the opening was made. Dr. H. QUINLAN referred to seven cases of abscess of the lung which had been under his care during the last two years. Many cases of empyema resulted from the rupture of pulmonary abscesses into the pleural cavity. Dr. V. M. SYNGE said he did not regard postural drainage as an efficacious method of treatment. It was very uncomfortable for the patient, and he had never seen any good result follow it. He thought it was wrong to be too expectant in the treatment of these cases. During the last four years he had had seven cases of abscess of the lung, one following tonsillectomy, two following pneumonia, two following septic emboli, and two following the aspiration of a foreign body. In one case the patient had had treatment with an autogenous vaccine, but had subsequently died from an empyema. In other cases he had tried artificial pneumothorax, but complete pneumothorax was difficult to obtain as a rule owing to the presence of adhesions. He felt that in chronic cases which did not respond to expectant treatment operative treatment should be carried out.

Dr. J. MOWBRAY said that he was strongly in favour of early operative treatment, as against postural treatment. Dr. R. H. MICKS referred to a case in which a surgeon opened the thorax, broke down pleural adhesions, and squeezed with his hand the lower lobe of the lung, in which there was an abscess. The patient did well, but he (Dr. Micks) could not recommend such drastic treatment. Dr. J. O'CONNOR mentioned two cases of pneumococcal empyema in children which had cleared up by repeated aspirations. He thought this method was well worth trying in children.

Dr. BEWLEY, in reply, described his method of carrying out postural drainage, and said he had no doubt that in some cases, as in the one he had described that evening, it was very efficacious. It was sometimes most difficult to decide on the source of gas in an empyema. He thought that if improvement did not take place after postural drainage all cases should be operated on or repeatedly aspirated, as much pus as possible being taken away. He agreed with Dr. Freeman that a streptococcal empyema should not be operated on too early. If operation was done before the adhesions were firm there was the possibility that a localized empyema would become generalized, with the probability of a fatal result.

At the December meeting of the Manchester Medical Society, with Professor J. S. B. STOPFORD in the chair, Dr. F. M. R. WALSHE read a paper on the treatment of some common nervous diseases. Dr. Walshe began by referring to the somewhat unhealthy luxuriance of the therapeutic tree, and to the need in which it stood of pruning. He dealt with some of the difficulties that arose in long-standing chronic nervous diseases in preventing the patient and his family from having recourse to futile and even dangerous modes of treatment. Of the common modes of treatment in favour for the relief and cure of nervous diseases, he referred to electrotherapy and to massage and to the benefits that might be expected from their employment, emphasizing the extremely narrow sphere of usefulness of the former. In discussing the treatment of disseminated sclerosis, he emphasized the value of rest, and pointed out that the characteristically fluctuating course of the malady made the assessment of any particular form of treatment extremely difficult. He had seen no good results from protein shock therapy, from liver diet, or from the recently described "vaccine" treatment. Some points in the care and treatment of other common nervous diseases were then discussed.

Reviews

MODERN MEDICAL TREATMENT

The appearance in two goodly volumes of a book on *Modern Medical Treatment*,[1] by Dr. E. BELLINGHAM-SMITH and Dr. ANTHONY FEILING, forcibly reminds one of the rapid development of this subject. Modern scientific medicine has often been accused of paying but indifferent attention to treatment, and there has been some justification for that charge. Too often in the recent past one found in a textbook a full and elaborate discussion of the etiology, pathology, signs and symptoms, and diagnosis of a disease, followed by a perfunctory paragraph on treatment, such as this: "Arsenic and iron should be given, bromide is often useful, and ergot has been recommended. A nourishing diet is essential, and careful attention should be paid to the bowels." It is no exaggeration to say that this was often the only help that was offered to the student in an essential part of his work. It is not surprising that in consequence he paid little attention to the treatment sheet of patients in hospital, and often did not know the ingredients of the mixtures in his hospital pharmacopoeia. To such a student initiation into practice brought a rude awakening; he found that the stone that the builders had rejected had become the head stone of the corner. In his brief but charming and erudite introduction to the book before us Sir Humphry Rolleston quotes with approval the dictum that the three most important things in medicine are diagnosis, diagnosis, and again diagnosis. Undoubtedly this is the rock on which scientific medicine must be built, but the saying has often been taken too literally. Successful treatment can only be based on correct diagnosis, but it is such treatment which is the goal of the art of medicine.

Rather more than thirty years ago Burney Yeo's book on treatment was the standby of the student and house-physician, and the present work reminds us of it in many ways. Comparing the two books, we are immediately struck with the enormously increased range of our methods in treatment since the publication of the earlier one. It is not merely that many new drugs have been introduced and a considerable number of old ones discarded; the whole basis of treatment has been widened. We once heard a physician assert that the treatment of a medical case in hospital could be summed up as "good food and nursing, with something three times a day out of a bottle." Such a physician would find himself somewhat at a loss in the wards of a modern hospital. Physical methods, such as massage, systematized exercises, heliotherapy, actinotherapy, and treatment by open air, were almost completely neglected last century. In this respect we have, as Sir Humphry Rolleston reminds us, returned to the practice of the ancient Greeks in resorting to Nature's own methods. Hydrology, which for centuries was composed largely of magic and faith, is being put on a more scientific basis. Electrotherapy, until the last quarter of the nineteenth century, was regarded as dangerously akin to quackery. Entirely new laboratory discoveries, such as endocrines, vitamins, antigens, and antitoxins, have found practical applications. And last, but by no means least, there is a much livelier appreciation of the necessity for regarding the patient as an individual who is reacting in a particular way to some disturbance in his external or internal environment; a realization that his symptoms are produced by altered reflexes which cause his "disease."

[1] *Modern Medical Treatment*. By E. Bellingham-Smith, M.D., F.R.C.P., and Anthony Feiling, M.D., F.R.C.P. With an introduction by Sir Humphry Rolleston, Bart., G.C.V.O., K.C.B. Vols. i and ii. London: Cassell and Co., Ltd. 1931. (Vol. i, pp. xvii + 701; vol. ii, pp. viii + 758. 30s. net the two volumes.)

These alterations in his reflexes may be produced at the highest level of the nervous system—that is, the psychical level—and can only be dealt with by psychotherapy.

This does not mean that we have come to place less reliance on drugs. It is a curious fact that scepticism as to the value of drugs corresponded more or less to the most materialistic phase of natural science. We may attribute some of the return of belief in drugs to the discovery of hormones and vitamins, since these showed how largely the body was normally influenced by small quantities of active chemical substances. The history of treatment by drugs affords an interesting example of the interweaving of art and science in medicine. The use of many drugs was discovered empirically, and the scientific explanation of their action was not arrived at till long after, while in some cases it is still to seek. Others have been discovered by deliberate pharmacological research based on animal experiment.

The book before us well illustrates all these general considerations. It is interestingly written from a modern point of view, while conserving methods which long experience has proved of value. Newer methods have not been recommended without personal trial by the authors. If a method has been tried and found wanting they do not hesitate to say so. The feeling that the work throughout is the expression of personal experience adds greatly to its value. We are only inclined to disagree with two statements. We do not prefer bromide to luminal in the treatment of epilepsy, and we should attach more importance to the withdrawal of alcohol as a factor in producing delirium tremens. As a corollary to this we should not attempt to "taper" a chronic alcoholic nearly so rapidly as the authors suggest. With the rest we are in cordial agreement, and we can emphatically recommend a work characterized throughout by sanity and breadth of vision.

URTICARIA AND ITS CONGENERS

Since the fundamental observations of Widal on the phenomena of anaphylactic shock, much attention has been paid by French workers to the problem of the etiology and treatment of urticaria and allied conditions, most of which may be described as manifestations of allergy. Among the most prominent of these observers is Dr. P. VALLERY-RADOT, who has published within a short period two monographs, one on Specific Hypersensibility in Skin Diseases[2] (with Mademoiselle V. HEIMANN), and a second on the Phenomena of Shock in Urticaria[3] (with Dr. L. ROUQUÈS). He maintains that the essential basis of specific hypersensibility (of which urticaria is the classical example) is the possession of the colloidoclasic diathesis—another way of saying that the colloids of the plasma are unstable. Consequently, in certain circumstances such as the meeting of antigen with antibody, the sudden introduction of some particular protein or crystalloid body into the stream of circulation, or the exposure to physical fatigue, cold, or the influence of emotion, the haemoclasic crisis is precipitated.

The *provenance* of the colloidoclasic diathesis still remains entirely obscure: it may be congenital, and therefore possibly hereditary in origin, or it may arise gradually or quite suddenly at any epoch in life; and whether the liver, the thyroid, or some other endocrine gland is the seat of the crime not even the author can say. The most prominent clinical manifestations of the haemoclasic crises are threefold—fall in blood pressure, leucopenia, and increase in the blood coagulation time. Of all the cutaneous phenomena associated with this state urticaria is the most striking and typical. There are other dermatoses such as drug eruptions, and certain types of eczema, erythema, or even erythrodermia, which, although extremely diverse morphologically, may be cited as colloidoclasic accompaniments; but all are agreed that urticaria is the classical cutaneous manifestation of allergy, and doubtless that is why M. Pasteur Vallery-Radot has devoted a whole volume to its discussion.

All the well-known types of urticaria are dealt with, not only the banal alimentary form, but also those resulting from the effects of drugs, fatigue, cold, emotion, etc. Nor does he shirk the thorny problem of treatment. The various modern methods of "skeptophylaxis," the production of a temporary immunity to anaphylaxis—as by the administration of small doses of the peccant antigens at appropriate moments and by appropriate paths—are all reviewed and criticized, and, in some instances, brilliant therapeutic results are recorded. The author discusses also the methods of producing a permanent change in the body fluids (*modification humorale durable*), which is much the same as protein shock medication. Among these methods are included auto-haemotherapy, auto-serotherapy, peptone injections, and injection of various chemical compounds, such as magnesium hyposulphite, calcium chloride, sodium bicarbonate, and caesium eosinate. They all have their advocates, but it cannot yet be said that the problem of allergy in general, or of urticaria in particular, approaches solution. The present position of the subject, however, and the lines upon which the problem is being tackled, are well recapitulated in these two volumes, while they will be found well worthy of study by dermatologists and others interested in that important department of medicine which deals with the manifold phenomena of allergy.

OPERATIVE SURGERY

The American editor (Dr. I. S. RADVIN of Philadelphia) of Professor MARTIN KIRSCHNER'S *Operative Surgery: General and Special Considerations*,[4] tells us that it is a translation based upon the first German edition, with a number of new illustrations and additions generously provided by the author. As he justly remarks, the illustrations, for the most part in colour, are so excellent that very little is left to the reader's imagination. This volume is more concerned with general considerations and the general principles of surgical treatment, than with specific maladies or injuries in special parts of the body. The subject-matter is divided into eleven chapters, from the titles of which some idea may be obtained of what is included and excluded. Chapter I deals with the operator and his assistants, the general examination and management of the patient, a very full discussion of his general care and preparation for operation, and many minutiae, some of which are usually included under the heading of minor surgery. As regards the early rousing of patients, a subject which has recently been much discussed in the press of this country, Professor Kirschner's dictum is of interest. He says:

"The custom of early cleaning of the wards should be abolished, since it disturbs the patients. Nor should it be necessary to disturb the entire ward early in the morning to say this even though I begin to operate before 7 o'clock in the morning."

Abdominal operations are considered only in very general terms, but nerve, bone, joint, and muscle surgery

[2] *Hypersensibilités Spécifiques dans les Affections Cutanées.* Par Pasteur Vallery-Radot et Mlle V. Heimann. Paris: Masson et Cie. (Pp. 146. 25 fr.)

[3] *Les Phénomènes de Choc dans l'Urticaire.* Par Pasteur Vallery-Radot et Lucien Rouques. Paris: Masson et Cie. (Pp. 232; 13 figures. 35 fr.)

[4] *Operative Surgery: General and Special Considerations.* By Dr. Martin Kirschner. Authorized translation by I. S. Ravdin, B.S., M.D. London: J. B. Lippincott Company. 1931. (Pp. xii + 961; 746 figures. 50s. net.)

and vascular surgery are treated separately, as is plastic surgery. There is a special well-illustrated chapter on amputations, in which the author, to our mind, gives too great importance to "fancy" procedures, such as kinematization, which the post-war experience in this country has considerably discredited as practical measures. Nor do we think it was worth while to devote a whole-page coloured illustration to an operation for varicose veins which the author labels "very rarely done."

We cannot overpraise what is included in this book, much of which will not be found in other works on the subject. At the same time, much is omitted which one expects to find under so comprehensive a title. Great care has been taken to describe all the details of the procedures recommended, whether they are major or minor proceedings. Surgery conducted on the author's principles and as directed by him will obviously demand a very fully equipped hospital and a well-trained staff of nurses and assistants. This is not the operative surgery for a cottage hospital; but, all the same, perfection may be aspired to even if it be unattainable.

A GUIDE TO INCOME TAX

Correspondents on income tax matters not infrequently ask to be referred to some simple but helpful textbook, and their need bids fair to be met by a recent publication, *Income Tax and the Professional Man (including Sur-Tax)*,[5] by Mr. K. A. COLES. This little book has been written by a man who evidently has the advantage of a practical acquaintance with the subject, and it is well arranged and clearly printed. It has been published since the passing of the second Finance Act of 1931, and is therefore completely up to date. Any adverse criticism we have to make is limited to a few minor points. Mr. Coles's remark, on page xii, that the assessor of taxes "can be neglected for all practical purposes" may be true in some localities, but recent press correspondence suggests that the assessor's functions are often by no means negligible. The paragraphs dealing with the non-allowance of capital expenditure are clearly written, but some prominence might with advantage have been given to the fact that improvements to existing professional equipment rank as capital, though this aspect of the matter is given more attention in the section dealing with renewals and replacements. We endorse Mr. Coles's opinion (p. 22) that the wear-and-tear plus obsolescence allowances are preferable to the replacement allowance; our Queries and Answers column has often contained advice to the same effect. The wear-and-tear rates given in Table II are perhaps somewhat misleading as regards motor cars, for which the rate is stated as being 20 per cent. for 1931–32, and 20 per cent. plus 10 per cent. for 1932–33. In some areas the district commissioners allow 15 per cent. only, unless there is exceptionally heavy use of the car, and the 10 per cent. addition for 1932–33 is —as indeed the author implies in another part of the book—10 per cent. of the existing rates, so that the rates for 1931–32 and 1932–33 are really 15 per cent. or 20 per cent. and 16½ per cent. or 22 per cent. respectively. The book covers a fairly wide field, including the special points arising in connexion with partnerships, employments, etc., Schedule A assessments, and sur-tax, and Mr. Coles has made a successful attempt to present his explanations without using technical language where simple phraseology will serve the purpose. The section dealing with medical profits and expenses is well written, and the example setting out a specimen account and computation will be found very helpful. It is a handbook which we can confidently recommend to medical practitioners.

[5] *Income Tax and the Professional Man (including Sur-Tax).* By K. Adlard Coles, M.A., A.C.A. London: Crosby Lockwood and Son. 1931. (Pp. xiii + 100. 4s. 6d. net.)

EDWARD JENNER

Those discerning readers who have succumbed to the charm of Dr. DAWTREY DREWITT'S *Romance of the Apothecaries' Garden*, and his more recent *Jenner's Note Book*, will turn with pleasurable anticipation to his *Life of Edward Jenner*.[6] Sharing with Jenner a love of the country and natural history, Dr. Drewitt writes with just that suggestion of classical lore that is attractive rather than awe-inspiring. As a result his account of a country practitioner who was "destined to save more lives than the wars which raged during his lifetime had destroyed" compels attention from start to finish. Jenner, when working at medicine at St. George's Hospital, was offered the appointment of naturalist on Captain Cook's expedition, and also a partnership with John Hunter, but being devoid of the ordinary forms of ambition he preferred to return, in 1773, to the meadows and hills of the Vale of Berkeley and the practice of medicine, lightened by the observation of natural history and the composition of occasional verse. Sixteen years later he wrote the attractive chapter on his observations as a naturalist, especially those on the predatory habits of the cuckoo. When a medical student Jenner heard and never forgot the remark of a young woman at Sodbury: "I cannot take small-pox, for I have had cow-pox"; how in after years this bore fruit Dr. Drewitt describes, and in vigorously indignant terms he writes of Charles Creighton's campaign against Jenner and vaccination.

VERTEBRATE ZOOLOGY AND LITERATURE

The Blacker Library of Zoology has just issued an important *Introduction to the Literature of Vertebrate Zoology*,[7] in a volume of some 650 pages. It is divided into three parts. The first gives a general account of the history of vertebrate zoology from the earliest times. Particular attention is paid to literature, of course, but brief descriptions are also given of natural history societies, museums, and zoological stations, travelogues of naturalists, illustrations and animal drawings, and so on. This is the section which will have the most general appeal —especially to medical men, from whose ranks so many natural historians have been drawn. The second part deals with the literature of McGill libraries, in both a chronological and a geographical order to facilitate reference to subjects. The third and largest part is a partially annotated catalogue of the vertebrate items in the various libraries in the University. The volume is excellently produced, and will have a value in all libraries as a source of references to vertebrate zoology, and McGill University is to be congratulated on its appearance.

NOTES ON BOOKS

Since so many of the difficulties in adult life which have a psychological basis are traceable to faulty upbringing in childhood, Dr. ALICE HUTCHISON'S book *Motives of Conduct in Children*[8] will be very welcome to parents, and also to medical practitioners, who are so often confronted by such mental or moral abnormalities as stammering, habit spasms, bed-wetting, nail-biting, fits, and night terrors. Her treatment of these and other topics, though brief, is practical, indications being given of the various causes, with illustrations of the most hopeful lines of treatment. It is often the case that children are left alone to struggle

[6] *The Life of Edward Jenner, M.D., F.R.S., Naturalist and Discoverer of Vaccination.* By F. Dawtrey Drewitt, M.D., F.R.C.P. London: Longmans, Green and Co. 1931. (Pp. viii + 127; 1 plate. 6s. net.)

[7] *An Introduction to the Literature of Vertebrate Zoology.* Compiled and edited by Casey A. Wood, M.D., LL.D. London: Milford, Oxford University Press. 1931. (Pp. xix + 643; 1 plate. £3 3s. net.)

[8] *Motives of Conduct in Children.* By Dr. Alice Hutchison. With foreword by Dr. Cyril Burt. London: Jarrolds, Ltd. 1931. (Pp. 185. 6s. net.)

out of such difficulties for themselves, but, as Professor CYRIL BURT points out in a foreword, such struggles, apart from the unhappiness they induce at the time, may often leave in their train a distorted and warped mind. Considerable attention is paid by the author to sex evolution and instruction, and the serious problem of the backward child is dealt with in a way that indicates long experience. The book meets a real need, and the simplicity of the language employed reveals clearly the psychological problems which are involved in many of these cases.

Specific Changes in the Blood Serum[9] by Dr. S. G. T. BENDIEN of Zeist, translated by Dr. A. Piney, has just been published by Messrs. Heinemann. Its subtitle is "A contribution to the serological diagnosis of cancer and tuberculosis."

Economic Biology[10] (Part II), by PHILIPPA C. ESDAILE, supplies some definite information about the origin, properties, and uses of a number of products likely to come under the notice of students of social science, such as leather, fur, hair, dyes, gums, fibres, and beverages. The material is enlivened by references to ancient history, by plentiful illustration, and by the provision of a useful glossary and index. A brief account of the first part of the work was given in the *Journal* of June 2nd, 1928.

Englishmen at Rest and Play[11] is written by some members of Wadham College, Oxford, and is edited by Mr. REGINALD LENNARD. It deals with English watering places; the observance of Sunday; country inns and alehouses; meals and meal-times—subjects connected more or less directly with medicine, but treated from a non-medical point of view. So non-medical, indeed, that it sometimes appears as if the writers were not fully acquainted with the renown of the doctors of their own university. Mr. Lennard, for instance, speaks more than once of Dr. Walter Bailey as one of the Queen's physicians. His real title to fame was that he was regius professor of physic, was in orders, and was a Fellow of New College, where, as his tombstone still shows, he lies buried in the ante-chapel. In like manner it is hardly fair to say "Richard Lower of Christ Church, Oxford, who was assistant to a physician named Thomas Willis." Both were so eminent in their own spheres that their names are known to every anatomist throughout the world. For some reason barbers have always been at loggerheads with the community. At first with the Church because they persisted in shaving on Sundays, and with their town councils because they kept disorderly houses or left their bowls of blood in their shop windows to the scandal and offence of passers-by. Even in our own days, regulations under D.O.R.A. have been enacted to control their business. It has long been known that in Edinburgh the masters of the craft of barber surgeons had the sole right of making and selling aqua vitae, but Dr. Brethorton is able to show that in England, at least in one instance, surgeons were engaged in the trade. The record runs: "James Careless petitioned my Lord Bishop [of Worcester] for a licence to sell ale because he was a surgeon and had many patients come to him for help and found it a great inconvenience for them to go to remote places for their diet and drink, and in that respect obtained a licence with a limitation to sell ale to none but his patients. But now he far exceeds his bounds and entertains all comers as well by night as by day, high and low, rich and poor, beggars and all, none excepted." It might also have been mentioned that the matron of St. Bartholomew's Hospital in London had permission to have a cellar under her lodgings, and to sell beer to the patients of a better quality than that provided by the governors.

[9] *Specific Changes in the Blood Serum.* By S. G. T. Bendien. Translated by A. Piney, M.D. London. W. Heinemann (Medical Books) Ltd. 1931. (Pp. xii + 95; 64 figures. 10s. 6d. net.)

[10] *Economic Biology.* By Philippa C. Esdaile, D.Sc. Part II: Animal and Vegetable Products. London: University of London Press, Ltd. 1931. (Pp. xv + 231; 96 figures. 10s. 6d. net.)

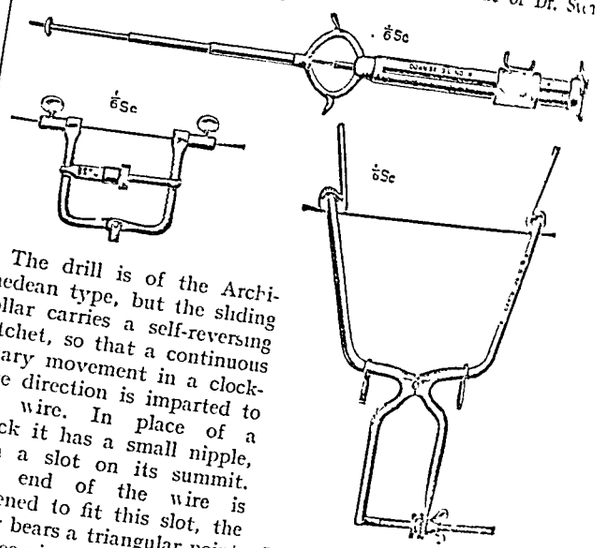
[11] *Englishmen at Rest and Play: Some Phases of English Leisure, 1558–1714.* By members of Wadham College. Edited by Reginald Lennard. Oxford: The Clarendon Press. 1931. (Pp. ix + 248; illustrated. 12s. 6d. net.)

PREPARATIONS AND APPLIANCES

SVEN JOHANSSON'S INSTRUMENTS FOR KIRSCHNER WIRE

Mr. W. G. OGILVIE, F.R.C.S., writes:

The use of fine piano wire in the treatment of fractures by skeletal traction was originated by Kirschner of Tübingen. The advantage of wire over metal pins lies in its fineness. It can be introduced under local anaesthesia without causing discomfort, while the small punctures in the skin minimize the risks of sepsis during treatment, and are healed within a few days of withdrawal. The fineness of the wire, however, demands more elaborate apparatus for introduction and traction than is required with pins. The drill must grip the wire firmly, give it a high rotary speed, and support its whole length against "whip" while it is being driven through the limb. The traction apparatus must include some device for rendering the wire taut, so that it remains straight and rigid during traction. Since the advent of the Kirschner wire many forms of drill and calliper have been designed. The drills are for the most part expensive, elaborate, and require constant attention. The traction callipers depend upon some accessory tool, jack, spanner, or tommy bar for stretching the wire. The most simple, and at the same time satisfactory, apparatus which I have seen is that of Dr. Sven Johansson of Gothenburg.



The drill is of the Archimedean type, but the sliding collar carries a self-reversing ratchet, so that a continuous rotary movement in a clockwise direction is imparted to the wire. In place of a chuck it has a small nipple, with a slot on its summit. One end of the wire is flattened to fit this slot, the other bears a triangular point. Support is given to the wire by a three-piece telescopic extension ending in a convex shell. In use the flattened end of the wire is pushed into the slot in the nipple, the telescope is drawn out till the shield is flush with the pointed end of the wire, the shield is pressed gently against the skin at a point previously rendered anaesthetic, and the wire is quickly driven through the soft tissues and bone by a few rapid strokes on the travelling collar.

The traction calliper consists of two stout bracket-shaped bars, hinged at their middle. Each bar is slotted at one end, and in the slot rotates a small eccentric with serrated edges actuated by a thumb lever. The ends of the wire are passed through these slots and jammed between the serrations on the eccentric and the base of the slot. The levers working the eccentrics are locked by loops of wire sliding along the bars. The opposite ends of the side bars are joined by a threaded bolt; by turning a wing nut on one end of this bolt the ends are approximated and the further ends separated, putting the wire taut. A ring, travelling on the bolt between the two bars and bearing a hook for the traction cord, can be adjusted to lie at the mid-point of the calliper.

A smaller calliper, in the form of a V hinged at its centre, is made for traction in the upper limb. The wire is passed through holes in the ends of the side bars and fixed by small thumb screws. The limbs of the V are held apart by a telescopic crutch, resting at each end in notches on the inner edges of the side bars. By turning a nut on one member of the crutch its length is increased and the bars separated, thus tightening the wire.

These instruments have been designed by Dr. Sven Johansson of the Allmanna Sjukhuset at Gothenburg, are manufactured in Sweden by Axel Ericsson. They are supplied in England by Down Bros. of St. Thomas's Street, London, S.E.1

British Medical Journal

SATURDAY, DECEMBER 26th, 1931

WINTER BY THE SEA

t is known that there have been dwellers on the sea-hore from the earliest times The signs of their occupa-ion are still visible on the south coast of England, from he cliff ledges of Hastings to Kent's Cavern on Tor Bay Whether the men of those days roamed at large in the ummer and retired to their caves only in winter it is ard to say. But there are still in many places andering families, like the "tinkers" in Scotland, ho always go into winter quarters in caves by the sea n open-air life has inured them to the wind and eather of the northern climate , but, when the days norten, the stress of the season obliges even these hardy eople to seek out warm corners of the coast, which, wing to the peculiarity of the British climate in winter, ave nearly the same temperature in the far north as on ie south coast There is evidence that men, like birds id animals, have always availed themselves of the sea-iores for shelter against the severities of winter. ivilization has not diminished but rather enhanced ie value of the coast in winter as well as in summer , a means of health and well-being to crowded city opulations The seaside is the place of choice for con-alescent homes and hospitals, and science, a little late the day, is now substantiating the medical values of ght and airs

Recent discussions on the influence of marine climates[1] ve done something to define the indications of the a coast for purposes of health For many years it is been recognized that sea air and sunlight improve e resistance and restore the health of tuberculous ildren, and equally good results are now reported om systematic treatment of the same kind of large mbers of non-tuberculous children showing a variety symptoms, such as recurrent catarrhs and defects of itrition There is general agreement that a change to e coast is contraindicated in all severe and acute ases of disease, but it is claimed, and substantiated precise evidence, that a variety of subacute and ronic disturbances of health, particularly in children, e favourably influenced by a combination of stimulant ipressions at the seaside The reactions of children der marine treatment have now been further analysed d graphically exhibited, and the combined result of e complex of physical impressions is described as a neral *alterant* modification of the entire organism

This conception of the value of the sea has been rried further at the discussion at Amsterdam It is ognized that, apart from these reactions in children, other series of reactions is often observed on the coast in middle-aged and elderly people It is believed that these are characteristic especially of oceanic climates like that of the west and south coasts of Britain. In short, the sea has one action for the young and a different action for the old. The former is a stimulant influence, bringing about an all-round increase of functional activity This is, within bounds, a rational objective for many feeble children who are free from organic disease, as well as for older persons convalescent from illness or operation, or making headway against a slow and chronic infective process On the other hand, in the second category of patients—those who fail in health in later life—the recourse to a marine climate is appropriate mainly in winter, and the climatic influence should be, on the balance, sedative The equable warmth and shelter of the coast conserves and economizes the natural powers of the body instead of calling them forth, maintains the body heat, and reduces the demands on metabolism, excretion, and circulation. It is held that the physical influences in climate appropriate for children—that is to say, for the evolutionary period of life—are external cold, dryness of atmosphere, and wind, all predisposing to exercise , and that the proper influences for mature age and the dissolutionary period of life are external warmth, humidity and a calm air, predisposing to rest and sleep Hence the ideal period for tonic treatment and for children is the summer, when external warmth may be tempered and alternated with cold, and the best period for sedative treatment, and for those in failing health, is the winter, when external cold can be tempered and alternated with heat

Making all allowance for the pitfalls of facile generalization, it is hard to deny a serious significance in this line of reasoning Age and the seasons profoundly modify the characters of disease There must be differences of objective in the treatment employed in the chronic ailments and diseases of the young and of the old The physiological pace may be accelerated or slackened, and often in later life the chief medical endeavour must be to allay functional disturbance, so as to retard organic changes In the statement printed in full in our last issue at page 1151, dealing with the British winter sea-coast resorts, attention has been called to the powerful influence of the Atlantic which gives to these islands a warmth much greater than is proper to their latitude The winters on the south and west coasts are for this reason far more equable than in Southern countries Such an uncommon equability of temperature as that of the western winter would be impossible but for the clouds which give warmth to the nights We are told that the records of bright sunshine on the south coast of England average a little more than two and a half hours a day from November to March, and that this figure does not express the large measure of the daylight and luminosity on the coast "A dry atmosphere is sometimes of medical value but it is also true that the more humid British winter resorts are very favourable to the preservation and restoration of health."

[1] The Treatment of Delicate Non-tuberculous Children at the Seaside, *British Medical Journal*, August 8th 1931 p 268 August 22nd, p 331 The Reactions to Marine Treatment. International Society of Medical Hydrology Amsterdam To be reported in *Int Med Hydrol*, January, 1932.

Many of the advantages of wintering abroad can undoubtedly be obtained in our own country. Sheltered winter resorts exist in great variety on the British coast, and it is too true that their natural advantages and medical value are little recognized by medical men and even by the localities themselves. The present seems the unique opportunity for their wise development and use. The medical case for climatic treatment has often been made before, but never perhaps has a statement appeared showing more clearly the physiological foundation upon which it rests, and the precise evidence of its value in a wide range of incipient and chronic disease. But it is necessary to point out that no medical pronouncement can provide a health resort with the equipment necessary for the recuperation of jaded minds and bodies. If these medical and national advantages are to be realized the localities on the coast must, severally and jointly, assume the responsibility. Co-operation of all the interests involved, organization and co-ordination of effort, a wide circulation of authorized information, scientific propaganda, are all necessary if the age-long instinct is to be gratified, and young and old are to find health and happiness at the seaside.

THE BRITISH POST-GRADUATE MEDICAL SCHOOL

On another page we publish the "statement of progress" issued a few days ago by the newly appointed Governing Body of the British Post-Graduate Medical School. This recapitulates the course of events from April, 1930, to December, 1931, and carries the story beyond the point at which we left it last week, when we announced that applications were invited for the post of dean of the school.

Readers will learn with satisfaction that both the Government and the London County Council are convinced of the necessity for proceeding at once with the scheme for a central post-graduate hospital and school to which they had pledged their support in happier times. The Government, it is true, has felt obliged to reduce to £100,000 the sum of £250,000 originally promised out of public money for building and equipping the school; but the London County Council, despite the economic troubles of to-day, has undertaken to help in bringing the scheme into practical operation by expending a capital sum of £100,000 on the development and adaptation of the Hammersmith Hospital in readiness for its forthcoming association with the school. We welcome this enlightened decision not to defer the establishment, under the auspices of the London County Council and the University of London and with financial aid from the Government, of a real post-graduate hospital and medical college which will be worthy of the metropolis of the British Empire. Stringent economy is the order of the day; but this (to quote a phrase from the official statement of progress) is "an indispensable health service," and as such its organization must be pressed forward.

The general aim of the British Post-Graduate Medical School is to provide, and arrange the provision of, new and extended facilities for the further education of medical practitioners, and to promote the advancement of knowledge of the best methods of treatment of the sick, and the improved application of such methods. Subject to compliance with the statutes of the university, it will be a recognized school of the University of London. In addition to his other duties, the dean of the school will be required to hold a part-time post on the teaching staff, and will be a member of the School Council to be appointed by the Governing Body to advise it on academic matters and questions of educational policy. His inclusive salary will be £1,800 a year. The dean will be the principal executive officer and secretary of the Governing Body, responsible under its direction for arranging courses of instruction for students at the hospital and school, and their attendance at courses elsewhere; for the administrative and financial management of the school; for organizing the supply of information about the school and its work both in this country and abroad; and generally for advancing the aims and purposes of the school. He will attend the meetings of the Governing Body and its committees, and act as the medium of communication between it and other persons in all matters relating to the school.

When in April, 1930, Mr. Arthur Greenwood, as Minister of Health, promised Government support for the establishment of a post-graduate centre at Hammersmith, we said that an appointment vital to the success of the whole scheme was that of the dean of the school. That the Governing Body shares our view may be inferred from the terms in which it has prescribed the powers, duties, and status of the holder of this key position. It is an office calling for unusual qualities of mind and temper, and a wide experience in diverse fields of practice, teaching, and administration. The opportunity is here if the right man can be found.

EPSOM COLLEGE

It is customary at this season to commend to the notice of our profession the work of the Royal Medical Foundation of Epsom College, and this year in particular the appeal is deserving of sympathetic attention. As mentioned in the *British Medical Journal* of July 4th (p. 29), the governors of the College resolved at a special meeting last June to take, as soon as possible, the necessary parliamentary action to allow pensions to be provided by the Foundation for medical women and to render their sons eligible for election as Foundation scholars on the same conditions as those applicable to medical men and their sons. This extension of the benefits of the Foundation will remove a real grievance, for there is no justification for excluding medical women and their sons from the benefits of medical charities now that women have been admitted to the profession on equal terms with men. At the same meeting it was decided to abolish the present method of electing pensioners, annuitants, and Foundation scholars, and to substitute a system of electing these beneficiaries by a committee composed of ten members of the court

the College and ten other governors. This will prove less costly in administration, and remove any undue emphasis which a system of voting by ballot gives to the benevolent element of the school. It should be a boon to candidates seeking election, since they will no longer have to canvass for votes, which involves an expenditure they can ill afford. The new method of election will also assure preferential treatment for those whose need is greatest. One result of the present economic crisis must, we fear, be an increase in the number and the urgency of applications for the benefits provided by the Royal Medical Foundation of Epsom College. It will be impossible to meet this demand in any degree unless more and larger contributions are forthcoming. In view of the great help which has been given by the Foundation to less fortunate members of the medical profession for many years past, it is earnestly to be hoped that new subscribers will come forward at this special time of need, and that those who have hitherto supported the charity will endeavour to increase their subscriptions. The council of Epsom College has recently reviewed the expenditure on the management of the school, and is effecting economies in administration. In the advertisement which appears in our present issue details will be found of the new school sanatorium opened by Lord Dawson last October, together with particulars of the benefits provided by the Foundation.

TREATMENT OF SCHISTOSOMIASIS

Endemic haematuria had been known since prehistoric times in Egypt when in 1851 Bilharz discovered the causal parasite and showed that the pathological changes were due to the worm and its ova. Leiper in 1914 elucidated the complicated life-cycle, and pointed the way to rational prophylactic measures ; but it was not until about the same time that a rational specific treatment was employed against this parasite and the other closely related species which Leiper proved caused the bilharzian dysentery. Until then various drugs—malefern, salvarsan, quinine, and so on—had been employed with varying degrees of failure. In 1913 Tsamis, in Japan, employed emetine successfully against the Far Eastern parasite, and it was quickly employed in Egypt with encouraging results. It proved quite effective, but not entirely free from danger. In 1918 Christopherson and McDonagh advocated the use of potassium antimony tartrate, and, while this gave good results, it also was not entirely free from danger, even in experienced hands. Both drugs had the practical disadvantage that a considerable amount of time was necessary for complete cure. In no country is the treatment of bilharzia disease more important than in Egypt, where about ten of its fifteen million inhabitants suffer from the infection. In an attempt at amelioration, travelling and stationary hospitals dealing only with schistosomiasis and ankylostomiasis have been established, and up to 1928 over a million cases had passed through them. Dr. Khalil has recently published a comprehensive review of their work,[1] and analysed the effects of the now established therapeutic measures as well as the attempts to find a safer substitute for emetine and tartar emetic which would secure a cure in a reasonably short space of time. Various complex antimony compounds have been tried from time to time. Antimosan —a complex antimony salt of pyrochatechin—was, for example, tried with some success, but a certain proportion of patients could not tolerate it ; and in an attempt to overcome this disadvantage Schmidt was led to produce a sodium instead of a potassium salt, under the name of " fouadin." This drug has been tried out on a considerable number of patients, and proved to have several well-marked advantages over tartar emetic. The duration of the treatment is about ten days less (twenty instead of thirty) ; the therapeutic capacity of the unit is increased, and the same staff can therefore treat more cases ; and there is an absence of local complications after injections. Its disadvantages lie in the greater expense (tartar emetic is very cheap, and its preparation for injection is simple) ; it causes bradycardia in certain cases ; and its preparation is the monopoly of a single firm. These disadvantages do not seem to be insurmountable, and although more extensive use of the new drug is necessary before any definite opinion can be expressed, it would seem that in fouadin we may possess a drug which will be of great assistance in anti-bilharzial campaigns.

[1] *Beihefte z. Arch f. Schiffs- u. Tropen-Hygiene*, xxxv.

PNEUMONIA IN SOUTH AFRICA

The annual report for the year 1930 of the South African Institute for Medical Research contains an interesting review of certain ideas on the epidemiology of pneumonia, as it occurs among the native workers on the Witwatersrand gold-fields, derived from data which have been accumulating over a considerable period. There are indications that a change has occurred in the variety of pneumonia affecting the native population, the change taking the form of an influenzal modification, the pneumococcus being no longer the principal infecting agent. From the immunological aspect, too, the disease has obviously changed its character. During the years following the introduction of prophylactic inoculation of native mine labourers with a polyvalent pneumococcal vaccine there had resulted a marked diminution in the incidence of pneumonia. From about the year 1926, however, the vaccine has apparently been exerting a somewhat lessened influence in preventing the disease. In a native mining population of nearly a quarter of a million the mortality rate from lobar pneumonia, though it fell from 2.64 per 1,000 in 1923 to 2.52 in 1926, rose sharply to 3.48 in 1927, this figure being sustained in subsequent years, and reaching 3.60 in 1930. In a consideration of these figures it must be borne in mind that the vaccine used for the preventive inoculation against pneumonia was designed to protect against a pure pneumococcal infection. The recovery of organisms other than the pneumococcus, in the cases now occurring, suggested the use of a mixed vaccine. The procedure adopted is to investigate bacteriologically the flora in the individual mine concerned, and to prepare a " community autogenous vaccine " from the various micro-organisms common to the particular mining population. Another interesting point emerging from recent investigations is that there are two peaks of high pneumonia incidence during the year. Further, cases occurring in the winter tend to be associated more with the streptococcus-influenza group of organisms, while those of the summer more frequently have the pneumococcus alone as their infecting agent. The suggestion

has been made that pneumonia might be due to a primary infection by a filterable virus followed by a secondary pneumococcal invasion. A number of experiments to investigate this hypothesis have been carried out as opportunity occurred, but a whole series of inoculations have yielded entirely negative results. In order to determine whether malarial infection is in any way associated as a factor in the causation of pneumonia in native mine workers, a series of lung and splenic smears were made at post-mortem examinations. The results have, however, been negative. Another small experiment was carried out to test the infectiousness of the present variety of pneumonia for white mice. A number of these animals were kept for many months in different parts of a pneumonia ward in one of the native mine hospitals on the Rand, during a period when the beds were continuously occupied by persons with acute respiratory diseases. The mice were entirely unaffected, and were returned fat and obviously healthy.

DELAYED TERTIAN MALARIAL INFECTIONS

The annual curve showing the prevalence of simple tertian fevers in the temperate regions has two maxima: one in May and early June, the other in July and autumn. Dr. E. Martini[1] says that the earlier is due to infection from the previous year, delayed or latent primary cases, or to relapses, as was proved, he thinks, by German war observations in 1916; the second to acute infections, immediately following mosquito attacks. Why do the latent cases develop so early in the year? That he explains on the theory that there is for simple tertian a "flowering time" about May, due, according to the observations of Lenz and Reinhard, to the advance of summer weather and the stimulation of the malaria parasites by the strengthening of the sun's rays as it gets further north. The alternative explanation, by Colonel S. P. James and the Dutch school, that the malaria parasites themselves again become active seven to nine months after infection, inspires him with less confidence. The question whether a particular bout is a primary attack or a relapse is of little clinical importance, but has interest, and can be less uncertainly answered in non-malarial districts, as at Hamburg; that is why Dr. Martini calls attention to two cases that occurred there. In 1927 mosquitos infected with benign tertian malaria were received at Hamburg for treating general paralysis, but only a few cases were then coming forward, and the mosquitos were gradually dying off. In his absence, Dr. Martini's assistant, Fraulein Vollmer, let the last of them bite her on June 1st, 1927; she had no symptoms or signs at that time, though frequently examined; but nearly a year later, on May 29th, 1928 (she had had a fall from her horse on the 28th), with no intervening opportunity for infection, she had a rigor and pyrexia, and two further attacks on May 29th and June 2nd. Many gametes were found, proving that this was an old infection. She took plasmoquine, was at once cured, and had a rapid convalescence. Dr. Martini was himself infected in 1930, in the Pontine marshes, between July 21st and 27th. On August 6th and 8th he had what seemed to be slight attacks, but no evidence was found in his blood. He took a little quinine, and there were no further symptoms at this time, but nine and a half months after infection, on May 12th, 1931, he had slight chilliness, and on the next day tertian rings and gametes were seen in his blood; a typical attack followed on the 14th, which he cured with plasmoquine. He notes that though his first attack was abortive, his second was acute, and observes, as a possible explanation of its occurrence in May, that the weather had got warmer, with bright sunlight since May 3rd. Both these attacks, it will be noted, appeared in May. Dr. Martini refers to various observations on bodies of troops who moved in autumn from a malarial to a non-malarial district, where, alone of the people in their new area, they developed malarial attacks in the spring, proving they had brought their infection with them, though it had long remained latent. Accordingly, he gives the weight of his long experience to the theory of a "flowering time" for tertian in the spring, particularly in May and the first half of June, and thus he explains why delayed primary or latent cases occur about May, later than Colonel James and the Dutch school would expect.

[1] *Arch. f. Schiffs- u. Tropen-Hygiene*, xxxv.

PHARMACOLOGICAL MEMOIRS

In connexion with the twenty-fifth anniversary of the foundation of the National Pharmacological Institute in Rome its director, Professor Serono, has published a volume containing his scientific communications and memoirs,[1] representing forty years' work in the field of research. The memoirs, sixty-two in number, deal with a variety of pharmacological problems, among which those relating to the physiological action of the lipoids, the digestive ferments, and the therapeutic action of calcium and magnesium, are of more especial interest. Serono's best-known work is that relating to the preparation and therapeutic action of lecithin, the employment of which in human therapy he was the first to introduce (in 1897). Danilewski had already shown experimentally that injections of lecithin produced an increase in body weight and in the red cell count, but the employment of the agent in therapy was impossible with the lecithin as then prepared, owing to its rapid decomposition, with the formation of poisonous substances. Serono discovered that decomposition could be prevented by combining the lecithin with lutein, and he succeeded in preparing from egg-yolk a lutein-lecithin compound, which was stable and innocuous on injection into the human subject. He found that the drug produced a general improvement in all cases exhibiting lowered metabolism. The somewhat complicated method of preparing the agent apparently led to the introduction of synthetic glycero-phosphate, but this, according to Serono, differs from the biological product in optical and other properties, and is relatively inactive. Serono's researches formed but a small part of his activities; he was more interested in educational problems. He early recognized the existing defects in pharmacological education. It was usual for men possessed of a mere smattering of chemical and medical knowledge to undertake specialized laboratory work, and he conceived the ambition of founding a scientific laboratory in which co-workers should have a thorough knowledge of biology, chemistry, and physics, as well as of both physiology and clinical work—the former being [illegible]

[1] *Memorie e Comunicazioni Scientifiche (1897–1931) di Cesare Serono.* Roma: Istituto Nazionale Medico Serono. 1931.

for the preparation of remedies, the latter for their proper application. From small beginnings in two rooms he gradually built up the National Institute of Pharmacological Medicine in Rome, with its numerous staff; there his principles are embodied, and thence pharmacological preparations have been diffused into all parts of the world.

THE PROBLEM OF THE OUT-PATIENT

The Prince of Wales, at the last meeting of the General Council of King Edward's Hospital Fund, announced his intention, as president of the fund, of appointing a committee to inquire into the methods in use in the out-patient and casualty departments of London voluntary hospitals.[1] His Royal Highness has now constituted the committee, which is to be called the "Out-Patient Committee, 1932," with the following membership: The Earl of Onslow (Chairman), Sir John Rose Bradford, Bt., M.D., Lieut.-General Sir George Macdonogh, Dame Helen Gwynne-Vaughan, Mr. E. W. Morris, Mr. Isidore Salmon, M.P., Dr. F. E. Fremantle, M.P., and Mr. R. H. P. Orde. The terms of reference and powers of the committee, as defined by the General Council, are: "To inquire into and report upon the methods in use in the London voluntary hospitals regarding the attendance of patients in the out-patient and casualty departments, and the effect of those methods upon the suitability of the patients treated, and on the length of time during which patients wait before or after treatment; and to make such recommendations thereon as may seem to them desirable." The committee has discretion to present a single report on the whole question, or interim reports on separate parts of the question, and, in particular, on that part which is concerned with the internal arrangements or administration of the departments, as affecting the time of waiting. A report has been prepared by the Committee of Management explaining the origin of the inquiry. Communications should be addressed to Mr. H. R. Maynard, King Edward's Hospital Fund for London, G.P.O. Box 465A, 7, Walbrook, E.C.4.

RICHARD LOWER

Richard Lower, the tercentenary of whose birth falls this year, was a native of St. Tudy in Cornwall. He was educated at Westminster School and at Christ Church, Oxford. In February, 1665, he performed the first blood transfusion from one animal to another, and suggested its possible application to human beings. This was successfully realized by Denys of Paris in June, 1667. Lower's greatest work is the *Tractatus de Corde*, published in London in 1669. Here he fully describes the anatomy of the heart. He observes that it continues to beat long after its removal from the body; he measures the output of the ventricles, and compares the colour of the blood on entering and leaving the lungs, attributing the change to absorption of air in the latter. Later he practised in London, and he attended Charles II in his last illness. He died in comparatively poor circumstances in 1691. Lower possessed the true scientific spirit, an enduring love of truth, and a genius for experimentation. His style was terse and vivid. We understand that a forthcoming number of the *Proceedings* of the Royal Society of Medicine will contain a paper by Dr. K. J. Franklin, on "The work of Richard Lower: a tercentenary survey," read in title at a meeting of the History of Medicine Section on December 2nd.

[1] *British Medical Journal*, December 19th, 1931, p. 1149.

The King, on the recommendation of the Minister of Health, has approved the appointment of Dr. William Rees Thomas as a Medical Senior Commissioner of the Board of Control, in succession to Dr. Arthur Rotherham. Dr. Rees Thomas has been medical superintendent of the Rampton State Institution for Mental Defectives since 1920.

MEDICAL CONGRESSES, 1932

The following congresses and conferences on medical and allied subjects have been announced for 1932. Particulars are given below in the following order: date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

February.—German Association for Occupational Hygiene. Nuremburg. Secretary of Association, Platz der Republik 49, Frankfort-on-Main.

March 15–16.—International Society of Surgery. Madrid. Dr. L. Mayer, 72, Rue de la Loi, Brussels.

April 11–14.—German Society for Internal Medicine. Wiesbaden.

April.—German Society for Urology. Vienna.

May 9–13.—American Medical Association. New Orleans. Secretary of Association, 535, North Dearborn Street, Chicago.

May 10–15.—Royal Institute of Public Health. Belfast. Secretary of Institute, 37, Russell Square, W.C.1.

May.—International Union of Local Authorities. England. Mr. G. M. Harris, Ministry of Health, Whitehall, S.W.1.

June.—British Hospitals Association. Liverpool. Secretary of Association, 12, Grosvenor Crescent, S.W.1.

July 9–16.—Royal Sanitary Institute. Brighton. Secretary of Institute, 90, Buckingham Palace Road, S.W.1.

July 26–30.—British Medical Association Centenary Meeting. London. Medical Secretary, B.M.A. House, Tavistock Square, W.C.1.

July.—Congress on Paediatrics. Geneva. Secretary of Save the Children International Union, Geneva.

August 15–18.—International Congress on Light. Copenhagen. Dr. Kissmeyer, Finsens Lysinstitut, Strandboulevarden, Copenhagen.

September 6–9.—International Union against Tuberculosis. The Hague. Secretary of Union, 2, Avenue Velasquez, Paris VIII.

September 12–17.—International Congress of Tropical Medicine. Amsterdam. Professor E. P. Snijders, Institute of Tropical Medicine, Mauritskade 57, Amsterdam.

September 20–25.—International Congress of Maritime and Hygiene. Marseilles. Dr. Violle, 40, Allées Leon Gambetta, Marseilles, or Dr. Broquet, 195, Boulevard St. Germain, Paris VII.

October.—French Congress of Stomatology. Paris.

1932.—International Congress of Oto-rhino-laryngology. Madrid.

1932.—Italian Congress of Urology. Bari.

1932.—Pedagogic Medical Congress. Rome.

1932.—German Dermatological Society. Vienna.

1932.—Society for the Study of Diseases of Digestion and Metabolism. Vienna. Professor von den Velden, Bambergerstrasse 49, Berlin, W.30.

1932.—International Conference on Tuberculosis. Davos. Secretary, Medical Society, Davos-Platz, Switzerland.

BRITISH POST-GRADUATE HOSPITAL AND MEDICAL SCHOOL

STATEMENT OF PROGRESS

As recorded in our last issue at page 1149 the Governing Body of the British Post-Graduate Medical School is now prepared to receive applications for the important post of dean of the school. This announcement makes it opportune to review the progress of the scheme for the establishment of a British Post-Graduate Hospital and Medical School as a whole, and we print below the substance of a statement issued for publication on December 19th.

It will be remembered that the lines on which it was proposed to proceed were first explained in the House of Commons on April 9th, 1930, by Mr. Arthur Greenwood, the Minister of Health, in reply to a question by his predecessor in office, Mr. Neville Chamberlain.[1] The position then was that the Government had accepted the recommendations affecting the organization of a hospital and school devoted solely to post-graduate medical education made by a committee widely representative of the medical profession, of which Mr. Chamberlain and Mr. Greenwood had successively been chairman. This organization consisted of an existing public hospital—the Hammersmith Hospital, with 400 beds in modern wards, which, on its transfer from the local guardians in the spring of 1930, became part of the hospital service of the London County Council under the Local Government Act, 1929—and a new medical school to be built in conjunction with the hospital.

HOSPITAL, SCHOOL, AND HOSTEL

On the information then available the committee had contemplated that, apart from any expenditure on the hospital preparatory to its association with a post-graduate school, and from the cost of maintaining the hospital, both of which would be defrayed by the London County Council, the capital cost of building and equipping the school might reach £250,000; and that as no endowment for the school was in sight it must be contemplated that a further sum would be needed for its proper maintenance as a recognized school of the University of London.

Mr. Greenwood was able to announce that the Government was so much impressed with the importance of securing without avoidable delay the advantages of a proper system of post-graduate medical education in London, not only from the domestic, but also from the imperial and from the international point of view, that it would be prepared to contribute from public funds a maximum sum of £250,000 for building and equipping the medical school as an integral part of the scheme recommended by the committee, and to make provision for grants through the University of London towards the maintenance of the school on the lines already applied to comparable institutions of university rank.

A third element in the complete scheme outlined by the committee, in addition to the hospital and school, had been a residential hostel for students of the school, to be provided on a site in central London. For the accomplishment of this part of the scheme the Government relied upon private benevolence. An appeal was about to be made to the public for assistance in the establishment in London of a residential institution, to be called "London House," for use by students from the Dominions, not only in medicine, but in other arts and sciences. It was also proposed that London House should offer accommodation to a limited number of British students domiciled in Great Britain and Northern Ireland, in order to furnish collegiate association between them and students from the Dominions. Since then the voluntary efforts of those interested have already brought London House into being. Four houses in Bloomsbury were converted and furnished to accommodate thirty men students, and became ready for occupation in October.[2]

As regards the hospital and medical school, the position at the moment when a financial crisis developed last summer was that a provisional organization committee, under the chairmanship of Lord Chelmsford, had been appointed in the previous year to consider and report, in pursuance of the statement made by the Minister on April 9th, upon (1) the action requisite to lead up to the planning and construction of the medical school, and (2) the form of government appropriate to the hospital and medical school, and that on the basis of recommendations made by that committee a Royal Charter had been granted to the school in July.

GOVERNING BODY OF THE SCHOOL

The Charter entrusts the supervision of the building and equipment of the school, and its future management, to a Governing Body, at present consisting of the following members, nominated by the authorities shown below:

Lord Chelmsford (Chairman) ...	Minister of Health
Sir George Newman	
Dr. Barrie Lambert	
Mr. Silkin	London County Council
Mr. H. L. Eason	
Professor G. E. Gask	University of London
Mr. F. C. Goodenough... ...	
Lieut.-Colonel H. R. Dutton, I.M.S. (ret.)	Dominions Office India Office
Dr. A. T. Stanton	Colonial Office
Lord Dawson of Penn	Royal College of Physicians
Lord Moynihan	Royal College of Surgeons
Dr. Cecil Wall	Society of Apothecaries
Dr. T. Watts Eden	Royal Society of Medicine
Sir Robert Bolam	British Medical Association

Dr. Louisa Martindale and Dr. F. N. Kay Menzies have also been appointed members of the Governing Body under a power of co-option vested in the Governors by the Charter.

SUPPORT FROM PUBLIC FUNDS

It was inevitable that in the new financial situation not only the amount of money to be devoted to the scheme, but the question whether the country could afford the scheme at all, should be reviewed with great care; and it is gratifying to learn that the Government has been so anxious to avoid the indefinite postponement of the scheme that it has felt justified in deciding, notwithstanding the alteration in the state of public affairs since the financial basis of the scheme was first considered, to continue the policy of contributing from public funds for the building and equipment of the school. The maximum of the grant which Parliament will be invited to vote for this purpose will, however, in view of the exigencies of the time, be £100,000 instead of the maximum of £250,000 previously contemplated.

Since the scheme is founded upon the association of the medical school with a public hospital administered by the London County Council, the co-operation of the Council was essential to its continuance. It is therefore equally gratifying to learn that the Council's interest in the scheme is so great that, at a moment when it is called upon in the national interest to curtail expenditure out of the rates on many other projects in themselves desirable, it proposes to assist in bringing the scheme into practical operation by expending a capital sum equivalent to the Exchequer grant for the building and equipment of the school—that is, not exceeding £100,000—on developments and adaptations of the Hammersmith Hospital as are found to be most desirable at the

[1] *British Medical Journal*, April 19th, 1930, p. 745.

[2] Particulars of the terms for residence can be obtained on application to the Controller, Commander P. D. Crofts, R.N., London House, Caroline Place, Guilford Street, W.C.1

present time in view of its forthcoming association with the school.

It is not yet possible to say when the doors of the British Post-Graduate Hospital and Medical School will be opened to students, but the decisions of the Government and of the London County Council to treat the establishment of a post-graduate institution as an indispensable health service, and of the Governing Body of the school to appoint a dean forthwith, are welcome indications that a project which has for so many years been under discussion is now about to be realized.

THE ELECTROCARDIOGRAPH AND ALTERNATING CURRENT INTERFERENCE

BY

N. G. LETHLEAN

TEST ROOM SUPERINTENDENT, ELECTRICITY SUPPLY DEPARTMENT, DUNDEE

AND

W. S. MALCOLM, M.D.

ELECTROCARDIOGRAPHER, DUNDEE ROYAL INFIRMARY

After the corporation supply at the Dundee Royal Infirmary had been changed to alternating current, the cardiograms showed a definite superimposed ripple, with a frequency of 50 cycles per second; but the source of the interference was not readily determinable. The wards from which the patients were connected through to the cardiograph room had been wired many years ago for a direct current system of supply, and it was found impossible to trace the run of the wires and their conduits; or to discover whether the conduits were earthed and electrically continuous throughout the building. It was therefore decided that to remove the effect, rather than the cause, would be the most practicable method, particularly as the use of electrical appliances in the wards might set up a fresh source for the extremely small extraneous currents that had been disturbing the cardiograph circuit.

The interference could not have been caused by electromagnetic induction, as it persisted when all lights were

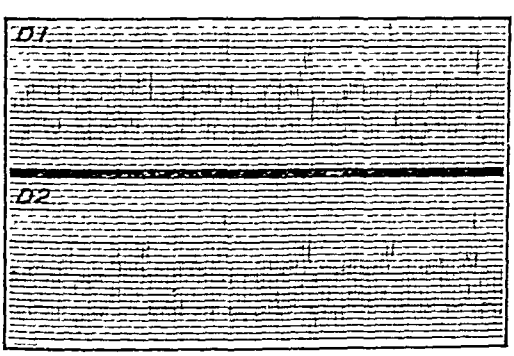


FIG. 1.

switched off. Electrical leakage was likely to have been negligible, as the resistance of the cardiograph circuit, including the rubber-covered flexible "patient leads" and the bed, was not under 10 megohms. The remaining source of interference was electrostatic induction, and currents due to this cause could flow if there was a difference of potential between the cardiograph circuit and the alternating current supply in near conductors. This condition was aggravated by the different capacities of the patient's body to the conductors inducing the currents. The point of lower potential was formed by the earthed metal conduit containing the wires running from the wards to the cardiograph room.

All traces of interference were successfully removed by using insulated flexible "patient leads" having a shrouding of braided wire, which was connected at the plug end to the earthed conduit, and at the "patient end" to the wire mattress of the bed. This placed the bed and the shrouding at earth potential, and formed a path of

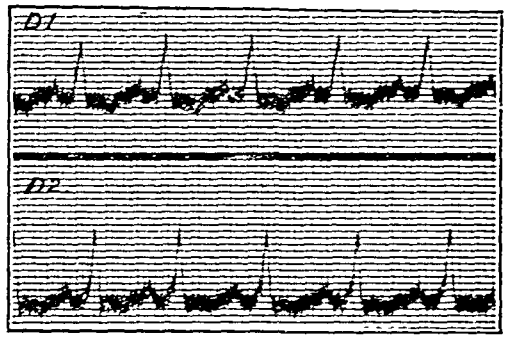


FIG. 2

low impedance for the capacity currents, which were consequently eliminated from the cardiograph circuit.

The ill-defined electrocardiogram (Fig. 1) shows the blurring effect of alternating current interference on the work of an electrocardiograph run on constant current. While the electrocardiogram was being taken the shadow of the moving fibre could be seen to lack definition and to have the appearance of being split into two, and in the finished electrocardiogram the two cycles can be made out in each twenty-fifth of a second in the time record.

Fig. 2 shows how complete has been the elimination of the interference, the two tracings being from the same patient, with a short interval, in order to emphasize the change which the cure had effected. Since the new leads have been in use there has not been the slightest recurrence of the trouble, and no other alterations have been made.

Ireland

Northern Ireland: Vital Statistics

The Registrar-General for Northern Ireland has now published his annual report for 1930. The number of marriages registered was 7,547, which gives a rate of 6.07 per 1,000 of the population. This rate is a slight increase on that for the previous year, and maintains the upward tendency in the marriage rate which began in 1927. There were 25,879 births registered during the year. The birth rate was 20.8 per 1,000, which is a slight increase on the rate for 1929, but 1.8 below the average for the ten preceding years. The death rate fell to 13.8 per 1,000, which is the lowest yet recorded for Northern Ireland. This rate is 2.1 below that for the previous year, and is 1.6 below the average for the ten preceding years. The death rate from tuberculosis continues to decrease, the rate for the year under review being 1.28 per 1,000, the lowest yet recorded. The deaths from this cause, however, still account for more than 50 per cent. of the deaths between the ages of 15 and 25, and 40 per cent. of those between the ages of 25 and 35. There was a further increase in the cancer death rate; 1,477 deaths from this disease were registered, giving a rate of 1.19 per 1,000, which is the highest yet recorded for Northern Ireland. The deaths of infants under 1 year of age numbered 1,754, or 68 per 1,000 births registered,

as compared with 86 in 1929. The corresponding infant mortality rates for England and Wales, Scotland, and the Irish Free State were 60, 83, and 68 respectively. Deaths registered as uncertified, owing to the fact that no medical attendant was present during the last illness, numbered 1,487 in 1930. This number is considerably smaller than that for the previous year, but it still represents 8.7 per cent. of the total deaths. The report (price 2s. 6d.) may be obtained from H.M. Stationery Office, 15, Donegall Square West, Belfast, or through any bookseller.

Cork Mental Hospital

An application was made recently to Mr. Justice Hanna, on behalf of the Minister for Local Government and Public Health, for a conditional order of mandamus to compel the Joint Committee of Management of the Cork District Mental Hospital to appoint as resident medical superintendent Dr. Bernard Francis Honan, Ennis, the person who had been recommended to them, pursuant to Section 6 of the Local Authorities (Officers and Authorities) Act, 1926. Counsel said that on November 6th, 1930, Dr. McCarthy, the resident medical superintendent of the Cork Mental Hospital, died, and notice of motion was given for a meeting of the Joint Committee to appoint Dr. Cashman, the senior assistant medical officer in the institution. On December 22nd the Local Government Department wrote refusing to sanction the appointment of Dr. Cashman. Resolutions and requests passed between the Joint Committee and the Minister, and on April 2nd of this year the Department requested the Local Appointments Commissioners to recommend a suitable person to fill the position. A recommendation to appoint Dr. Honan was accordingly made, on August 13th, to the Joint Committee, and after correspondence with the Local Government Department the Joint Committee, on October 20th, adjourned consideration of the whole question, and stated that it was about to seek legal advice regarding its position. Mr. Justice Hanna granted the application.

Insurance Fund Valuation

A report read at a recent meeting of the approved societies stated that the proportion of insured persons entitled to additional cash and medical treatment benefits had been reduced from 77 to 34 per cent. following the third valuation of approved societies, and that women, while paying a lower weekly contribution, drew more heavily on the funds than men. The third valuation of assets and liabilities of societies taken as at December 31st, 1928, showed that national health insurance in the Irish Free State had entered upon a new phase as a result of the issue of the Government actuary's report. The additional benefit schemes consequent upon the second valuation had automatically expired on July 5th, since then the new schemes approved by the National Health Insurance Commission had been brought into operation by societies which had a certified "disposable surplus." While the actuary had disclosed the financial position of each society individually, he had not yet made his report on the operations of the societies as a whole during the period of five years comprehended in the valuation, and, until it came to hand, no clear view of the trend of national health insurance finance could be obtained. It was possible, however, from a summary of the results supplied by the Insurance Commission, to submit some figures which, when contrasted with those of the second valuation, indicated—as the societies feared when discussing the question last year—that a distinct falling-off had taken place in regard to the surplus available for extra benefits. The third valuation covered sixty-five approved societies, one being a society of nineteen branches separately valued. This number showed a reduction of fifteen societies within a period of five years—a matter of some concern to those engaged in the administration of national health insurance. The total number of insured persons was 408,812 (284,299 men and 124,513 women)—virtually the same as in 1923. In respect of fifty-five societies, assets exceeded liabilities by £513,626, and of this sum the valuers certified £237,376 as disposable by one or more of the scheduled additional benefits, and the balance of £276,250 to be carried forward to the next valuation. It was found that ten societies had deficiencies totalling £51,268, which would be made good, so far as possible, out of their respective contingency funds. Another feature of the situation was that the reduction in the standard of extra benefits, which necessarily followed the unfavourable valuation, did not affect insured persons equally. Certain localized societies, mainly the smaller ones, had substantially improved their financial position as the result of a high contribution income, low sickness and disablement experience, or other causes, with the result that surpluses were concentrated on a smaller number of persons than before. It would appear that the larger societies, operating over wide areas, and particularly in the rural districts, had suffered heavily, both from the small number of contributions and from high benefit costs. The disproportionate strain on insurance funds arising from payments to women members continued to be a very disturbing feature of the valuation, and is one for which a remedy must be sought.

England and Wales

Tuberculosis in Lancashire

The annual reports of the central tuberculosis officer of the Lancashire County Council are always interesting, for each year Dr. Lissant Cox chooses special topics for consideration, thereby indicating the progress that is being made, first in one direction and then in another. In the report for 1930 he gives details of the investigation conducted at the Ashton-under-Lyne chief dispensary by Dr. G. Fletcher on the effects of dust in the cardrooms of cotton mills upon the respiratory organs of the workers in them. Dr. Fletcher states that the result of this investigation seemed to show: (1) that employment in the cardroom is attended by an excessive degree of respiratory disability, the main symptoms being cough, sputum, and dyspnoea; (2) that these symptoms are only established after years of exposure, and that the final condition of the chest is one of bronchitis and emphysema, with asthma as a complication in a few cases; (3) that the chest condition does not differ essentially from that accompanying chronic bronchial catarrh in an industrial area, but that in the case of the cardroom worker the symptoms have a weekly cycle, being usually most pronounced on Monday, and diminishing on subsequent days; and (4) that the *x*-ray findings vary only in degree from those of chronic bronchial catarrh, the lung markings and root shadows being in many cases, but not in all, more definitely and constantly enhanced than would be expected in cases of pure chronic bronchial catarrh. Elsewhere in the report there is a summary of the after-histories of children who came on the county dispensary registers during the six years 1922–24 and 1925–27, for the treatment of pulmonary tuberculosis. Of 273 children under the age of 15, with negative or absent sputum, who first received treatment in 1922–24, 75 per cent. were fit and well at the end of 1930. Similarly, of 311 children first receiving treatment in 1925–27, 73 per cent. had progressed to recovery, arrest of the disease, or quiescence. Examination of the records of children with positive sputums brought to light similar unfavourable after-results in these cases, however, and emphasized the urgent need for treating the disease before tubercle bacilli appear in the sputum. Before the ad-

of 12 it is comparatively rare for bacilli to be found, and most of the positive sputum cases in children occurred between the ages of 12 and 15, and then particularly among girls. Tubercle bacilli are discoverable in children either at the beginning of treatment or within twelve months in 82 per cent. of cases, and treatment of older children and young adults with positive sputum has so far produced much less satisfactory results than is the case in corresponding groups of patients at other ages. Greater attention is now being paid to dealing with these patients by surgical methods, such as artificial pneumothorax and phrenic evulsion. This last procedure is most successful in the sanatorium type of patient; many of the pulmonary hospital type eventually require thoracoplasty.

The death rate in the county from pulmonary tuberculosis in 1930 was the lowest on record; since 1923 there has been a continuous decline, with the exception of one year. The death rate from non-pulmonary tuberculosis is also the lowest on record, the most remarkable diminution occurring in the first five years of life; in 1914 there were 286 deaths, and in 1930 only 70. The county death rate for tuberculosis is, and has always been, less than that for England and Wales as a whole. Commencing with two experimental light centres in 1925 the county scheme has been extended, and there are now twelve such centres at the county dispensaries. The results of treatment of cases of non-pulmonary tuberculosis in 1930 were again particularly satisfactory among the skin and adenitis groups of cases with abscess formation. Of the total patients attending the light centres, 79 per cent. were able to continue their normal occupation during the course of treatment. As the result of the conservative diagnosis of pulmonary tuberculosis in children, it has only been necessary to provide a few sanatorium beds for them in Lancashire, with consequent saving of public money. The rejection of 59 per cent. of children in the first fifteen years of life who had been referred for treatment as possibly tuberculous appears to have been fully justified; very few subsequently returned to the dispensary as definite cases. Of 1,414 young adults coming on the dispensary registers as new pulmonary cases, only 0.91 per cent. had been previously rejected in childhood by the tuberculosis officers; the corresponding figure for non-pulmonary cases was 0.78 per cent.

Red Cross Blood Transfusion Service

The Duke of York, as chairman of the Council of the British Red Cross Society, attended the society's headquarters, on December 16th, to present honorary life membership certificates and badges to Mr. and Mrs. P. L. Oliver for their work in organizing and supervising the Red Cross Blood Transfusion Service. Sir Arthur Stanley, chairman of the Executive Committee, said that it was on His Royal Highness's own motion that life membership was conferred on Mr. and Mrs. Oliver. The Red Cross Blood Transfusion Service, he recalled, began in 1921 as a result of a request for a blood donor from a local hospital, received by the Camberwell Division, of which Mr. Oliver was then honorary secretary. Mr. Oliver formed a circle of Red Cross members to meet the real need for a service of this kind. In 1924 the demand had increased so much that he had to appeal for outside volunteers. The London Blood Transfusion Service was then formed, with Mr. Oliver as honorary secretary, and in 1925 428 calls for donors were received and supplied. Until 1925 Mr. Oliver ran his work as divisional secretary as well as the Blood Transfusion Service, but by then the increase in calls for blood donors had become so great that he had to resign his divisional secretaryship and devote his whole time to the service, which now had over 1,300 donors on its books. In 1930 1,627 transfusions were carried out, as against 1,333 in 1929, and up to the beginning of this month 1,980 donors had been supplied. The rise in the figure last year and this, said Sir Arthur Stanley, was all the more significant when it was remembered that the success of liver treatment in pernicious anaemia had in many cases made successive blood transfusions unnecessary. Mr. Oliver's office was open day and night, and his telephone had only once been left unattended during the eleven years the service had been in existence; that was during five days in 1926, when a change of administration was taking place. On an average six calls a day were dealt with, but frequently ten or more were received. The record number was eighteen. "It is no small task," said Sir Arthur Stanley in conclusion, "to maintain a twenty-four-hour service year in and year out for so long a time, when holidays, illnesses, and accidents are taken into account." The Duke of York then handed the certificates and badges to Mr. and Mrs. Oliver.

Correspondence

CHLOROFORM IN LABOUR

SIR,—On page 1089, in the *Journal* of December 12th, Dr. Bethel Solomons is reported as having said: "As chloroform was killing women in most maternity hospitals, he had adopted ether at the Rotunda." If it is doing this in maternity hospitals, one would surely expect like results in ordinary midwifery practice outside. But is it so? I have always believed, and heard it preached by my teachers over forty years ago, that this anaesthetic was so safe in labour that a death was unknown, and that there was some unknown condition present during labour which made chloroform safe. Anyway, I can speak from my own experience. I have practised midwifery in a rural area for forty years, and I have given this anaesthetic, and no other, in hundreds of cases under all kinds of conditions, and for such operations as one can do single-handed (turning, forceps, etc.); I have never had an occasion that even gave me a moment's anxiety, and I have never seen a death nor anything near it; and, besides, I have not heard of any of my neighbours having had one.

I wonder if Dr. Solomons's case is that, whenever a woman dies during childbirth, and chloroform has been used, it was this anaesthetic that caused death, directly or indirectly. As I have never heard of a death from chloroform during labour, I hope someone else with a knowledge and experience of this important matter will take up the whole question, so that we general practitioners may know where we stand with regard to this amazing statement of Dr. Solomons, which requires some qualification.—I am, etc.,

Felton, Northumberland, Dec. 15th. ROBERT A. WELSH.

DEATHS ASSOCIATED WITH ANAESTHETICS

SIR,—The accuracy of the statistics quoted by Dr. Hoffman may be open to question, as indicated by your correspondents, but this possible inaccuracy should not divert our attention from the fact that deaths under anaesthetics are increasing in number in this country at an astonishing rate. Within the years 1922-29 this number has become more than doubled, while the American figures remain about constant for the same period. Errors of registration can hardly enter into such a consideration as this.

There is one outstanding difference between the methods adopted in America and in this country, which, in my opinion, largely accounts for the disparity. In America the use of chloroform has been almost entirely abandoned,

but in England its use is unrestricted, chiefly in the form of a mixture with ether.

In 1922[1] I pointed out how the records of deaths were tending to shift from those under pure chloroform to those under chloroform mixtures, owing to the increasing use of the latter, and in 1929 we find the mortality under the mixtures double of that under chloroform alone. This is not the whole story. In 1911 the number of deaths recorded under ether was 19, and in 1929 it was 263—that is, 36 per cent. of the total deaths. I have already, elsewhere,[2] expressed the opinion that the enormous apparent rise in the mortality of ether is illusory and due to faulty certification; that the ether has in fact, in most cases, been preceded by chloroform, or a mixture of chloroform, given as a convenience in the induction of anaesthesia. This is the only explanation I can offer of this otherwise inexplicable and apparent change in the toxic character of ether vapour.

Deaths under the three categories of "chloroform," "chloroform mixtures," and "ether" contributed 80 per cent. of the total in 1929, and it is therefore admissible to correlate the difference between the mortality incidence in America and in this country with the definite divergence in the methods adopted, at least, this should be the first line of inquiry—I am, etc.,

London, W 1, Dec 15th A. Goodman Levy.

SECONDARY HAEMORRHAGE AFTER SUPRAPUBIC PROSTATECTOMY

Sir,—When secondary haemorrhage occurs after this operation it is due to the separation of a slough opening a vessel, it is unavoidable, therefore, and liable to occur after the "open" (Thomson-Walker) as after the "closed" (Freyer) operation. If genito-urinary surgeons had their cases "grouped" before operation, and transfused before haemorrhage caused anxiety, "secondary haemorrhage after prostatectomy" (*British Medical Journal*, December 12th, p 1078) would cease to have any terrors, and painful local treatment, with packing or various modifications of de Ribes's bag, would be unnecessary—I am, etc,

London, W 1, Dec 15th Sydney G. MacDonald, F.R.C.S.

EPIDEMIOLOGICAL REPORTS OF THE LEAGUE OF NATIONS

Sir,—Referring to Dr Y. Biraud's letter in the *Journal* of December 12th, I am well aware that there must inevitably be some difference between the figures published monthly and those published yearly in official reports, owing to errors due to causes of which every person who has had to deal with statistical returns is aware; but I submit that the discrepancies in the typhus figures for the Federated Malay States, to which I drew attention, are too marked to be thus explained.

Dr Biraud writes that "typhus was not compulsorily notifiable at the date in question"—that is, 1927 to 1930. How, then, does he account for the statement made by the writer of the article on typhus in No. 133 (p. 493) of the Monthly Reports, which reads as follows: "The first cases of this disease were notified in the Federated Malay States in 1924, 11 cases . . ." and for the figures published in the reports for the first time in No. 119 (October, 1928), and continued ever since?

Dr Biraud writes further that "'tropical' typhus was only made compulsorily notifiable in the Federated Malay States in 1930". This statement is quite irrelevant to my argument, which was concerned with typhus as a whole, and not with any variety, or supposed variety of it. Curiously enough, however, typhus, according to the Monthly Reports, began to be "tropical" just about the time it began to be severe.

When I find serious discrepancies in respect of the notifications of one important disease in an official publication I become suspicious of those relating to other diseases.—I am, etc.,

West Hampstead, N.W., Dec. 15th. E. W. Goodall.

[1] *Chloroform Anaesthesia*, 1922
[2] *Lancet*, January 22nd 1927.

NERVOUS DYSPEPSIA

Sir,—The diagnosis of nervous dyspepsia, the subject that was discussed at the Royal Society of Medicine on November 24th, rests primarily on the failure to detect any organic cause for the symptoms. In the course of examining a number of these cases, using the opaque meal, I have found a large percentage have a definite degree of chronic duodenal ileus, and have been forced to the conclusion that this condition plays a very important part in the production of the group of symptoms which are clinically diagnosed as "nervous dyspepsia." In many of them the entire contents of a distended duodenum may be seen to regurgitate *en masse* into the stomach. This must surely cause considerable gastric disturbance.

This type of dyspepsia, which is very prevalent, not only distorts the patient's outlook on life, but the outlook of those with whom he comes in contact. A definite mental upset often accompanies this condition. In one case, where the patient showed a suicidal tendency, the presence of the characteristic atonic stomach, with an elongated and dilated second part of the duodenum, clearly indicated the end-results of a chronic duodenal ileus. A duodeno-jejunostomy led to complete recovery. The degree of severity varies, but it is the early stage of a chronic duodenal ileus that often escapes recognition by radiologists, and it is at this stage that much can be done to prevent the patient from becoming a "chronic abdomen."

Briefly, the earliest manifestations of a chronic duodenal ileus are the elongation of the second part of the duodenum, regurgitation of the entire contents into the stomach, and, finally, the dilatation of the duodenum itself. The causes may be congenital or acquired—I am, etc.,

London, W 1, Dec. 17th. S. Gilbert Scott.

THE CREOSOTE ENEMA IN PNEUMONIA

Sir,—I am interested in Dr. Ian Macdonald's letter in the *Journal* of December 12th on the creosote enema in pneumonia, because some years ago at the St. Marylebone Hospital I gave creosote to twenty-five cases of advanced pulmonary tuberculosis. In such cases systemic intoxication is often due to secondary pneumococcal or streptococcal infection. The dose, from 1 to 60 minims, three times a day, was given in capsules by the mouth. The wards and patients reeked of creosote, but the drug had no apparent influence on the disease. What did impress me was that 3 drachms of pure creosote a day did not corrode the viscera.

Yet on the published results the creosote enema merits an extended trial, and to prove the value of any treatment in pneumonia a large number of observations are needed. No disease is more fickle. I have seen crisis on the third day followed by recovery in a case where no special treatment was given—the laboratory attendant had misplaced an autogenous vaccine which I had intended giving on the second night. Had that injection been given I might have been writing now about vaccines in pneumonia.

If 20 minims of emulsified creosote per rectum were absorbed, the concentration of creosote in the blood would be approximately 1 in 6,000. On the Lister Walker scale cresol is three times stronger than [illegible]

It is also over ten times less soluble in water Nevertheless, it may be possible to determine *in vitro* whether serum with 1 in 2,000 phenol, or 1 in 6,000 cresol, is or is not lethal to the pneumococcus Having tried many disinfectants, *from iodoform to monsol*, by the intravenous route in advanced pulmonary tuberculosis, I doubt if any of them are likely to prove specifics for bacterial infections, because with all antiseptics the lowest concentration which kills bacteria *in vitro* would, if present in the blood, probably kill the patient The disadvantage of the intravenous method is the bulk of the injection, as the disinfectant must be diluted in normal saline to a point below the concentration at which it coagulates serum More over, the germicidal power of all disinfectants is greatly reduced *in the presence of serum*

It may be that the benefit of the enema and of the creosote in treatment and prophylaxis is indirect In so far as the large intestine is cleared and sterilized, the production and absorption of intestinal toxins would be prevented in pneumonia, and in any other disease — I am, etc ,

London, W S, Dec 14th HALLIDAY SUTHERLAND, M D

ASTHMA STATISTICS

SIR,—The Danish asthma statistics quoted by you in the *Journal* of December 5th are interesting in several particulars, but especially in connexion with the cutaneous tests for proteins Referring to these statistics, Mr Frank Coke, *in his letter to the Journal of December 12th, says*, 'Thus the skin reactions, which were at one time so much belittled, again receive confirmation" The confirmation they receive from the Danish statistics is that a positive reaction was obtained in 91 out of 188 cases, and *that in only 16 cases out of 150 could the patients* correlate the results of the cutaneous tests with their experiences and beliefs as to the causes of their attacks I suggest that almost as high a percentage could be made to show a positive cutaneous reaction among patients who are not asthmatics

It is a pity that H C Gram, in his Danish report, does not give the number of cases cured (by desensitization) among the 91 which gave a positive reaction This might have done something to answer Mr J E R McDonagh's statement in the *Practitioner* of July, 1929, that "hypersensitiveness means no more than augmented hydration, and removing the agent causing the same does not get rid of the factor which set the original hydration in motion It is for this reason that skin tests are valueless, based as they are on entirely wrong premisses"

After many years' experience of skin tests I have come to the conclusion that protein hypersensitiveness is merely a side issue in the study of asthma The value of skin tests is limited to their power of disclosing certain irritants which are capable of disturbing the stability of the vasomotor system and upon which depends the asthmatic condition —I am, etc ,

London, W 1, Dec 17th ALEXANDER FRANCIS

CHILD GUIDANCE CLINICS

SIR,—It is unfortunate that Dr H Crichton-Miller, before he wrote the letter published in your issue of December 12th, did not more carefully read mine appearing in the previous issue, on which he comments If he had done so he would have seen that nowhere therein had I made the proposal that "the work of child guidance should be relegated to the general practitioner" the last sentence in my letter states exactly the contrary

The method of conduct of these clinics criticized by me is that outlined in a letter in the *Journal* of November 28th, and it is not necessary to know anything about the intricacies of treatment, either physical or mental, in order to be in a position to form an opinion whether that method is good or bad Therefore Dr Crichton-Miller's conclusions in his last sentence become irrelevant We read in the letter of November 28th that the child is subjected, *unknown to the general practitioner who may be the lone doctor*, to "a psychiatrist, an educational psychologist, and a social worker," who alone, or with further assistance, provide "general and psychological medicine, educational psychology and teaching method, sociology, and economics" Dr Crichton Miller considers that to be "the essence of team work" When I venture to call it "mass treatment" he becomes annoyed What if at long last it were to be found that the key of all trouble was in someone else, and not in the child

Dr Crichton-Miller seemingly has no use for the general practitioner in his team, for he considers that, whilst receiving his patients direct from magistrates and teachers, it constitutes "the function of the social worker to visit the homes and to collect the family histories", and at the same time he advances as the excuse for this preference what one so often hears—that the "overworked" general practitioner is glad to be rid of this part of his practice, as he himself "is driven to mass treatment in coping with a large panel practice" The satisfaction expressed with the fact that magistrates, teachers—and shall we add clergy and social workers?—refer children direct to these clinics is a further instance of failure to realize what Sir George Newman constantly says in his reports—namely, *that the general medical practitioner is the foundation on* which any satisfactory medical service must be built. If this practitioner were consulted and given an opportunity to advise, warn, and guide the specialist with information which he (the only scientist entering the house of the child) has gathered from internal knowledge of the environment of circumstances and characters in that home, and if, at the same time, he were encouraged to keep active and further develop his knowledge of the simpler maladjustments of childhood, then there would be found in time to be few cases overlooked that required the intervention of magistrates, teachers, clergy, and other well-wishers of the child in order that something be done, whilst much misery and crime would be avoided The team required to deal with any form of mental or physical illness should be selected by the general practitioner, who alone is conversant with what is necessary and desirable, and to subject a child to the bombardment of mass treatment arranged for by the several specialist members of a self appointed and therefore imperfect team is not likely to produce the high percentages of satisfactory preventions and cures we are all out for

What does Dr Crichton-Miller consider to be the function of the general practitioner in medicine? There are at the present moment some 20,000 of them in the British Isles on whom during education over £30,000,000 has been spent. Naturally magistrates, teachers, clergy, and social workers prefer to have a report on the mental state of a juvenile delinquent from a specialist Are they to be considered to be competent to judge the position in medicine; and then, what now happens in places where no such specialists reside? This preference has been brought about primarily by the belittling of the general practitioner, and this not alone by members of the lay public Dr Crichton Miller may agree that if sufficient [illegible] drummed into the mind of a person that he is incompetent, foolish, and ignorant, *the result is that he becomes* more so Specialists fail to appreciate the latent force for good in the honest general practitioner I trust I did not lose sight of this then the whole of medicine and public health would gradually be lifted on to a far higher plane through cordial co-operation brought about between all grades in the medical profession

by the *Lancet* on a special commission to investigate the hygienic condition of Sicily. He was a member of the Aristotelian Society, and the author of valuable medical treatises, and of many contributions to the professional and philosophic journals. He also published a history of *The Lindsay Family in Ireland*.

For many years Professor Lindsay was a member of the British Medical Association, served on the Central Council in 1896-99, and held the office of president of the Ulster Branch in 1905. He was a joint secretary of the Section of Medicine when the Association held its Annual Meeting in Newcastle-upon-Tyne in 1893, and president of the same Section at the Annual Meeting in Belfast in 1909. For some years he acted as the Belfast correspondent of the *British Medical Journal*. On the occasion of his leaving Northern Ireland in 1928, to take up residence in London, he was entertained at a complimentary dinner by his colleagues on the visiting staffs of the Royal Victoria and the Belfast Maternity Hospitals.

Professor Lindsay was a bachelor ; his nephew, Captain D. C. Lindsay, is high sheriff of Belfast.

[The photograph reproduced is by Elliott and Fry, London.]

The medical life of East Durham has sustained a great loss by the death, on December 11th, of Dr. HUGH RUSSELL of Trimdon in his eighty-sixth year. He was a native of Airdrie, and passed his final examinations in medicine at Glasgow University with honours at the age of 20, but could not qualify until a year later in 1867. Six years later he proceeded to the M.D. degree. As a student he was a personal friend of Lister, and often assisted him in his experiments. In 1869 he settled at Trimdon, co. Durham, where for sixty years he held the appointment of medical officer to Sedgefield Rural District Council. Dr. Russell, who had come to be regarded as the father of the community as well as of the medical fraternity in the area, was a type of man now seldom seen, full of spontaneous courtesy and tenderness towards his patients and friends. To the younger generation of medical practitioners in particular his skill as a physician and his apt and generous counsel were an inspiration.

Dr. THOMAS CARTER, who died at Sutton Coldfield on November 21st, aged 90, was a native of Richmondshire. He was educated at Richmond Grammar School, and received his medical training at Guy's Hospital and in Paris. On qualifying M.R.C.S.Eng. and L.R.C.P.Lond. in 1863, he joined his uncle, Dr. Bowe, in practice at Richmond (Yorks). He practised there for forty-five years, and is still remembered with affection and esteem. In 1864 he contributed "Notes on some of the Paris hospitals" to the *Medical Times and Gazette*. He was a justice of the peace, and was for many years also on the militia medical staff (retiring with the rank of surgeon lieutenant-colonel) and medical officer to the Nineteenth Regimental District. Dr. Carter was a member of the British Medical Association until his retirement from practice twenty-three years ago, owing to increasing deafness. Within a few weeks of his death he was otherwise in full possession of all his faculties. He leaves four children, one of whom is a member of the medical profession.

The following well-known foreign medical men have recently died: Professor ALFRED MAYOR, formerly rector of Geneva University and president of the Geneva Medical Society, aged 78 ; Dr. HEINRICH ALBRECHT, a prominent Berlin hygienist and author of works on the hygiene of dwelling houses and occupations ; Dr. MAX ROTH, a Basle oto-rhino-laryngologist, aged 43 ; and Dr. PAULESCO, professor of medicine at Bucarest, and formerly the collaborator of the late Professor Lancereaux of Paris.

The Services

COMMISSIONS IN THE R.A.M.C.

Twenty-five permanent commissions in the Royal Army Medical Corps are being offered to qualified medical practitioners, under 28 years of age, registered under the Medical Acts. There will be no entrance examination, but candidates will be required to present themselves in London for interview and medical examination. At the same time, a certain number of temporary commissions under similar conditions as regards age and qualification will also be offered. Applications should reach the War Office not later than January 18th, 1932. All information as to conditions of service and emoluments may be obtained from the Under-Secretary of State, the War Office (A.M.D.1), Whitehall, S.W.1.

No. 14 STATIONARY HOSPITAL

The twelfth anniversary dinner of No. 14 Stationary Hospital was held in the Trocadero Restaurant on December 11th, with Colonel C. R. Evans, D.S.O., in the chair ; there was a good attendance. Proposing the toast of "The Hospital," Colonel Evans commented on the loyalty and comradeship which had been such a characteristic feature of the staff of this hospital during the war, and which was now still manifest in the regular attendance at the annual dinner. Colonel Perry, who responded to the toast, gave an account of the doings of members of the medical staff who had been unable to attend on that occasion. The remainder of the evening was spent in recalling old memories of the hospital's activities.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

National Health Insurance

Sir ARCHIBALD SINCLAIR, replying on December 10th to Mr. Rhys Davies, stated that certain minor amendments in the English Medical Benefit Regulations were proposed. The proposed Scottish Regulations would differ from the English Regulations in certain respects.

Replying to Mr. Rhys Davies on December 9th, Sir E. HILTON YOUNG said the Dental Benefit Regulations provided that a dentist should apply the same degree of skill and attention when giving treatment to an insured person as he would apply in giving treatment to a private patient. A dentist was not required, however, to enter into any general undertaking to provide treatment on the terms and conditions laid down in the Regulations to all insured persons who were entitled to dental benefit and who applied to him for treatment. Every such person was the subject of a separate contract, and the dentist was free either to accept or to decline the insured person as a patient under the conditions laid down in the Regulations. In the former event, he was expressly debarred from suggesting, demanding, or accepting any payment from the insured person beyond that provided by the prescribed scale, and the insured person was entitled to receive from his approved society the proper proportion of the cost of his treatment. In the latter event, it was not possible to prohibit the insured person from agreeing with the dentist to be treated as a private patient at such fees as might be mutually agreed between them, but in that case the insured person would not be entitled to claim any part of the cost of his treatment from his approved society.

In the year 1930 approved societies received State grants totalling £6,160,000. At the rate in force before 1928 it is calculated they would have received £8,470,000 in that year. For the year 1931 to September 30th the corresponding figures are £4,300,000 and £5,900,000.

Imported Milk and Butter

In reply to Mr. Glossop, on December 10th, Sir E. HILTON YOUNG said the Public Health (Imported Milk) Regulations did not impose any conditions as to *Bacillus coli* in imported milk, but the Regulations required that imported milk should conform to a strict bacteriological standard of purity which was not required in the case of milk produced in this country other than graded milks.

Replying to Sir Alfred Knox, on December 10th, he stated he was unaware that an outbreak of illness at Yeovil had been attributed to the consumption of butter but had received information of several cases of illness in a neighbouring district, in connexion with which samples of butter were examined, but found to be free from microbic contamination Russian butter, with other foods, was subject to examination at the ports, and there was no evidence to justify steps being taken to prevent its importation

Sir E. Hilton Young stated, in reply to the Duchess of Atholl on December 10th, that he did not think it necessary to lay down a standard of hygienic quality to which condensed and dried milk imported into this country must conform. Answering a suggestion by Dr Fremantle that consuls should be given power to report on the conditions under which such articles were prepared, he said that the law provided the Minister of Health with power to investigate the condition of such foodstuffs on arrival into this country That power was exercised.

Further answering the Duchess of Atholl Sir E Hilton Young said there was no prescribed standard of butter fat for skimmed milk, whether home produced or imported This article purported to be as nearly as possible free from butter-fat, and it would accordingly be impracticable to impose such a standard.

Notes in Brief

Answering Dr. Salter, on December 8th Sir Herbert Samuel stated that 601 pedestrians had been fatally injured by motor vehicles in England and Wales during the first nine months of 1931, as compared with 547 in the corresponding period of 1930.

Sir E. Hilton Young states that there are no regulations regarding the publication of annual reports by medical officers of health. Publication is a question for the decision of the local authority concerned

Medical News

The Royal College of Physicians of London will be closed from Thursday, December 24th, till Tuesday, December 29th, both days inclusive

The second half of session 1931–32 of the Medical Society of London opens on Monday, January 11th, with a pathological meeting On January 25th, at 8.30 p.m., a discussion on the causation and treatment of essential hypertension will be opened by Dr Geoffrey Evans and Dr G. Arbour Stephens A discussion on the syndrome of chronic toxic cholecystitis will be introduced on February 8th by Mr W. Harold Dodd and Dr Arthur Davies On February 22nd, Dr George H Oriel and Dr George W Gray will open a discussion on asthma and allied conditions On March 14th there will be a discussion on non-effective nephritis, introduced by Dr Arthur A Osman and Dr. Owen de Wesselow, and on March 21st Dr J F Brailsford will open a discussion on the diagnosis of diseases of the hip-joint The Lettsomian Lectures by Mr. F. A Williamson-Noble, on the reactions of the eye to general disease, will be delivered on February 29th and March 7th and 16th At the conversazione on May 9th Sir James Berry will deliver the annual oration, entitled "Fallen Idols" In view of economic conditions the annual dinner of the society will not be held in 1932.

A course of lectures on rheumatism and arthritis as a public health problem will be delivered at the Royal Institute of Public Health, 37, Russell Square, W.C The first of the series will be by Sir William Willcox, on the biology of rheumatism, with special reference to infective causes, on Wednesday, January 20th, 1932, at 4 p.m The lectures will be continued on subsequent Wednesdays at the same hour. The course will conclude on March 2nd at 11 a.m., when there will be a demonstration at the British Red Cross Society Centre for Rheumatic Diseases, 1 Eto Place, Regent's Park.

The next meeting of the Illuminating Engineering Society will be held at the house of the Royal Society of Arts (John Street, Adelphi, W.C.), on Friday, January 8th, when a discussion on "Motor car headlights" will be opened by Mr. E. S. Calvert at 7 p.m Copies of the introductory paper may be obtained from Mr J S Dow, 32, Victoria Street, S.W.

The ninth International Congress of the History of Medicine will be held at Bucarest, under the presidency of Dr. V. Gomoiu, in September, 1932 The exact date will be announced later. The principal subjects for discussion will be: (1) the evolution of medicine in the Balkan States; (2) the protection of Europe against bubonic plague. Excursions will be paid to Trieste, Athens, Constantza, and the neighbourhood of Bucarest.

Volume 2 of *The Veterinary Bulletin* will be issued monthly from January 1st, 1932, and will run to about 864 pages, including the index for each monthly issue and the final classified volume index It will cover the same ground as volume 1, but will be much more complete and will include references to all important British and foreign scientific work relating to veterinary research, administration, public health, and education Although it was originally intended that the issues for 1932 and onwards should cover only 600 pages annually, expansion has been necessary in order to deal with the amount of material available The subscription will be £2 for the volume, or 5s per copy, payable in advance, post free to any part of the world Communications should be addressed to the Imperial Bureau of Animal Health Veterinary Laboratory, Ministry of Agriculture and Fisheries, Weybridge, Surrey

The autumn issue of the Research Defence Society's quarterly journal, *The Fight Against Disease*, contains a warm acknowledgement of the services rendered by the late Lord Knutsford, who had been an energetic supporter of the society since its foundation in 1908, and was latterly its chairman An article on artificial respiration in the same issue discusses the progress that has been made in improving this procedure as the result of experimental work There is also a detailed discussion of the lawsuit arising out of the Grove-Grady will, under which the testator proposed to found an "animals' benevolent society out of her residuary estate It was finally decided by an order of the House of Lords, that no part of the sum of £25,000 to be retained by the trustees could be used for anti-vivisection propaganda Extracts from the judgement of the Court of Appeal are republished as being of particular interest to the Research Defence Society

On December 19th, Mrs Henry N Sporborg, acting on behalf of the Rugby Works Hospital Fund of the British Thomson-Houston Co., Ltd., laid the foundation stone of the Sun Pavilion Extension of the Hospital of St Cross, Rugby

Dr S Wigoder has been elected a member of the Morley Town Council and appointed to serve on the Maternity, Child Welfare, Health, and Waterworks Committees

The executive committee of the Food Education Society has placed on record its sorrow at the death of Sir Henry Baldwin, its vice-chairman for the last seven years

An oto-rhino-laryngological institute has been founded at Charkov in the Ukraine for the study, among other subjects, of the pathogenesis of diseases of the respiratory tract and deaf-mutism The institute contains a clinic, laboratory, library, museum, and out-patients' department

A society of surgery has recently been founded at Madrid, under the presidency of Dr Goyanes

Professor E Tanzi, director of the clinic of nervous and mental diseases at Florence, has retired on reaching the age limit, and has been succeeded by his former pupil, Professor M Zalla of Messina

The Rumanian journal *Spitalul* (The Hospital) has recently celebrated the fiftieth year of its foundation

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM* 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediseora Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS

Still's Disease

Dr. WILLIAM BELL (Bradford) writes: May I ask, through your correspondence columns, for information as to the measure of success which is obtained, or which fairly may be expected, in the treatment of Still's disease. One is aware of the gloomy prognosis held at the time Dr. Still published his account of the condition. Such progress may have been made since that success may be commonplace and not worth recording. Even to-day, however, the variety of treatment suggested, some of it drastic—for instance, malaria therapy—points to doubt about the issue. The doubt is perhaps justifiable, considering the nature of the condition. I have recently observed a typical case, in which there was restoration of apparently perfect health. From my very limited experience of the condition I wonder if this is usual.

Income Tax

Year Overlooked—Free Quarters

"J. S. R." received a hospital appointment in April, 1929, at £300, and later at £350, per annum. Quarters are provided, but he has to pay for meals, laundry, etc. He paid tax for 1930–31, and has since received a notice of assessment for 1929–30, and wishes to know whether it is correct that he should be assessed for the quarters which he was compelled to occupy.

*** Assessments can be made within six years of the end of the year to which they relate, so the assessment for 1929–30 is well within the time limit. As regards the quarters—if the terms of appointment provide for a monetary salary, subject to deduction for quarters, food, etc., then the amount of the salary is assessable even though the whole of it is not received in cash. On the other hand, if the "quarters" represent an additional benefit (or obligation) over and above the monetary remuneration fixed by the terms of employment, he cannot be assessed on the salary plus the value of the quarters, as he has presumably no right of letting, and cannot, therefore, convert the right of occupancy into money or money's worth.

LETTERS, NOTES, ETC.

Ventilation of Cinemas

Dr. T. GRAHAM-SCOTT (London, W.) writes: May I draw the attention of the medical profession, especially medical officers of health, to the insanitary condition of some cinema theatres. On entering them from the fresh air, the atmosphere is so foul that one can hardly breathe. Managers should be compelled to have better ventilation and not crowd the people so closely as they do, and at the end of a performance all doors and windows ought to be thrown open. The hygienic conditions of the older and smaller places are dreadful. They are a hotbed for germs of every kind, a source of infection from influenza and catarrh, and a general danger, because people are heated up for hours and then go out into the cold with nausea and headache from the unclean atmosphere. I do not say these conditions apply to the large and modern buildings, but certainly some of the others should be put down or modified.

Smoke Abatement and Income Tax

While no outstanding event is recorded in the second annual report of the National Smoke Abatement Society ended June 30th, it is evident that a great deal of constructive and pioneer work is being done by the society, not only in exposing the consequences of uncontrolled emission of smoke, but in directing attention to the most effective measures for its elimination. Thus, in the autumn issue of the journal of the society there are authoritative articles on smokeless fuel and on the progress of the electrical grid, in addition to notes on the public health aspects of smoke abatement as observed in various parts of the country. During the year under review several questions were asked in the House of Commons concerning legislation on the subject, and in the House of Lords a debate took place in which the suggestion was made that there might be a slight remission of rent in State-aided houses where there are no open fires, or a remission of income tax under Schedule A. The society estimates that if smoke could be abolished from this country in a single year, the benefit to the nation would be equivalent to a reduction of one-third of income tax.

Diet and Dental Caries

Dr. J. GORDON CAMERON (Kuala Lumpur) writes: The *Journal* takes three weeks to reach Malaya, and therefore, no doubt the correspondence on diet and dental caries will have come to an end some weeks before this letter reaches you. I write with the *Journal* of October 17th, containing Mr. F. W. Broderick's letter, in front of me. I have been most interested in Mrs. Mellanby's findings on diet in relation to dental caries, and have put them into practice whole-heartedly in my maternity work. Maternity patients here consult me early in pregnancy, and I invariably explain to them the importance of ample vitamins in their diet in relation to their own well-being and the well-being of the child to be. I ask them to take daily doses of a vitamin food prepared by a famous British firm, in which food are present vitamins A, B, and D, the last-named being in the form of irradiated ergosterol. I further ask them to take a small dose of calcium daily, plenty of fresh fruit, and give a few hints about exercise, bowel regulation, and the like. This routine I ask them to carry out from the time at which they first consult me up to the birth of the baby and for several months afterwards. As a result I find that dental caries almost invariably, does not occur during or after pregnancy; that at the end of pregnancy they are often healthier than before they became pregnant; that they are, as a rule, able to feed their babies themselves, and that the babies do exceedingly well, both in bone and tooth formation and in general health. As a mere general practitioner, the above practical findings are proof enough for me that Mrs. Mellanby has struck the nail on the head.

Treatment of Cataract

Dr. F. W. CORY (Leeds) writes to record that he has obtained good results in treating cataract with inunction of equal parts of ung. hydrarg. ox. flav. and white vaseline. A small quantity of the ointment is placed inside the lower lids; the lids are closed, and the eyes gently massaged for two or three minutes nightly. The following morning, after rising, the face is bathed with warm water, then directly afterwards sponged with cold water, and dried. Every focal sepsis should be carefully attended to. Diet and general measures for establishing a healthy state of mind and body must be taken into consideration. As an ophthalmic surgeon of over twenty-five years' experience in ophthalmology (he says), I affirm that cataract can be often cured, especially if treated sufficiently early.

Tetra Forceps

With reference to Dr. E. W. Lewis's improved tetra forceps (or towel clip), an account of which was given by him in last week's issue (p. 1142), the instrument in question is the uppermost of the four illustrated.

Vacancies

Notifications of offices vacant in universities, medical schools, and of vacant resident and other appointments at hospitals will be found at pages 38, 39, 40, 41, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 34

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

584 Encephalitis and Meningitis following Acute Infectious Diseases

Schiödt (*Ugeskrift for Laeger* October 8th, 1931, 995) reports from the Blegdams Hospital in Copenhagen 2 cases of encephalitis or meningitis, as a sequel to infectious diseases or vaccination. Measles terminated fatally in one case owing to encephalitis, and in another owing to meningitis. One case of rubeola was followed by meningitis, ending in recovery, and one case of chicken pox by fatal encephalitis. Parotitis was followed in two cases by meningitis ending in recovery, and by one fatal case of encephalitis. Three fatal cases of encephalitis and one case of meningitis ending in recovery occurred after vaccination. The author comes to the conclusion from a study of the literature and of his own cases that the clinical and pathological picture was so uniform that the use of the term "nosological unit" is justifiable. This observation, and the striking uniformity of the epidemiological behaviour of these cases, suggest that they were all due to a hitherto unknown virus activated by infectious diseases or vaccination. It is not, however probable that the virus is introduced into the body with the vaccine, while these forms of meningitis and encephalitis are presumably caused by one and the same virus it is distinguished in several respects from epidemic encephalitis, both the nature and the localization of the lesions in the two diseases being different. In encephalitis following infections the muscles of the eyes are hardly ever involved, whereas they frequently suffer in cases of epidemic encephalitis.

585 Evolution and Treatment of Pulmonary Tuberculosis

Morin (*Arch Med Chir de l'Appar Respirat*, No 3, 1931, p 229) agrees with Ranke that the development of tuberculosis in the infant passes through three stages, the first being the primary local lesion, with a systemic disturbance indicated by a general sensitiveness and a positive Pirquet reaction. There follows a spread to the serous membranes and the appearance of infiltration in the parenchyma of the lung as the result of direct extension from the tracheo bronchial glands. In this second stage there is a general hypersensitiveness and a markedly positive Pirquet reaction. The third stage is characterized by localization of the lesion, with relative immunity, this corresponds with the adult form of tuberculosis. In children the second stage is the characteristic one, and such forms of local treatment as pulmonary collapse are quite unsuitable. The author believes that tuberculosis in the adult is most often due to the lighting up of an old infection, and not the result of direct fresh infection by the tubercle bacillus. Comparing the merits of phrenicectomy and pneumothorax he states that during the last five years the figures at Leysin were as follows. In 321 cases of artificial pneumothorax 54 per cent improved, 27 per cent remained stationary, and in 19 per cent the disease was aggravated by the operation. Of these cases 55 per cent were bacteriologically negative and 45 per cent positive. Phrenicectomy was employed in 114 cases, of these 58 per cent were improved, 32 per cent remained stationary, and in 10 per cent the condition became worse. Of these cases 30 per cent were bacteriologically negative, and 70 per cent positive. The bacteriological figures were higher in the second group, but the author points out that phrenicectomy was only performed when a pneumothorax could be undertaken, or had failed to produce a negative bacteriological finding. He concludes that just as good results can be obtained with phrenicectomy as with collapse, that the first of these procedures may induce a negative bacteriological finding even when the second has failed, and that complications after phrenicectomy are less than in the case of collapse, the method being more in accordance with physiological principles. In cases where these two methods have failed, or have not been applicable, partial thoracoplasty has produced remarkable results. Morin does not advocate extensive resection of the ribs, he has found that when apical cavities are present on one side or the other only, resection of the first four ribs results in complete cure, and conserves the maximum of healthy lung tissue.

586 The Incubation Period of Measles

P Lereboullet and P Blize (*Arch de Mal des Enf*, August, 1931, p 475) maintain that the incubation period of measles is not always so latent as is stated in the textbooks. Of the numerous symptoms described as occurring in this period some are rare, while others, such as the rise of temperature and increase of the polymorphonuclear leucocytes, are of more value, it is doubtful, however, if they can be of any help in the early diagnosis of measles (as asserted by Combe, Meunier Sebileau, Lucas, Mensi, and others), since they are either too inconstant or ill marked. On the other hand, though the symptoms of the incubation period have only a slight prophylactic value, their pathological interest is undisputable, they indicate that there is a systemic invasion by the measles organism from the very first.

587 Transient Diphtheritic Paralysis

J M Rogaly (*Journ Med Assoc of South Africa*, September 26th 1931, p 691) reports the case of a European boy aged 10 who as a sequel to unrecognized diphtheria developed in course of time palatal paralysis, cardiac arrhythmia suggestive of partial heart block, and flaccid paralysis of both legs. Moreover five weeks after his attack he complained of indistinctness of vision, his pupils were dilated regular reacting to light but not to accommodation and his retinae were marked, complete. Full recovery of vision followed five weeks rest in bed, only a little weakness of his legs then persisting.

Surgery

from the symptoms. In the second case the tumour was only found after an incision had been made through the fascia above the inferior thyroid artery; in the third case the growth was located in the thorax behind the sternum and to the left of the trachea. Both patients showed great improvement after the operation. In the fourth case a small parathyroid tumour was found behind the oesophagus and removed, but a further tumour was located in front of the second and third dorsal vertebrae; it was displaced upwards, the pedicle was ligatured, and the tumour was removed. The patient made a good recovery.

589 Angioma of the Muscles of the Forearm

H. L. ROCHER and UZAC (*Bordeaux Chirurgical*, October, 1931, p. 388) describe angiomata of the voluntary muscles as being of two types: circumscribed or diffuse; as regards their structure they are divided into the capillary and cavernous forms. These tumours may be present for many years, and in exceptional cases they may undergo sarcomatous degeneration. Diagnosis in these cases is extremely difficult, and is rarely made before operation. The symptoms are similar to those found in cases of lipoma or cold abscess, and when near a joint they have been diagnosed as cysts of the joint. When the angioma is circumscribed, its removal is simple, but, in cases where it is diffuse, extensive resection of the whole muscle is sometimes necessary to remove the tumour completely. A case is reported in which a woman, aged 46, had had a tumour of the forearm since childhood. This had gradually increased until it was in shape and size like a half lemon. There was no pain, pulsation, or murmur, but the tumour was rapidly increasing in size. On contraction of the muscles the swelling was found to be fixed and a diagnosis of tumour of the muscle was made. Operation was undertaken under local anaesthesia, and disclosed a large dark-coloured tumour which was closely incorporated with the muscle fibres. The muscle was completely dissected out and removed with the tumour, and the wound closed, drainage being left. The patient made a good recovery, and the after-results were very satisfactory. Microscopical examination showed that the tumour was a diffuse capillary angioma, containing numerous bony nodules which had developed in the connective tissue. In cases where the angioma is large, general anaesthesia in conjunction with a tourniquet is recommended, but for small circumscribed angiomata, local anaesthesia has been found to be satisfactory.

590 Pneumococcal Peritonitis

L. AUROUSSEAU (*Rev. Med. Française*, October 31st, 1931, p. 641) considers pneumococcal infection of the peritoneum is sufficiently frequent to be ranked among other causes of acute peritonitis. He has had 13 cases, bacteriologically controlled, in the last two years, although it is undoubtedly more common in girls than in boys, it is an exaggeration to say it is a disease of girls only. It is often secondary to some pneumococcal focus elsewhere, and infection may pass from the diaphragm, the genital tract, the digestive system, or the blood. Two types have been described the diffuse and the encysted, but the latter is really a further stage of the first. Nearly all cases begin diffusely with an acute onset, general symptoms of grave toxaemia predominating over the local signs. The great difficulty in these cases is the differential diagnosis from other forms of peritonitis. The author suggests that the following symptoms may be helpful in deciding in favour of pneumococcal infection: sudden onset with prodromal sore throat, bronchitis, or other respiratory affection, high temperature, signs of general infection, diffuse abdominal pain without definite localization, disproportion between the general and the local signs, diarrhoea, and the presence of pneumococci in the blood. Treatment turns on the accuracy of the diagnosis; if one can be sure that the peritonitis is pneumococcal, surgical intervention should be postponed, since the mortality in early operation is very high. If there is a probability, but no certainty, that the condition is pneumococcal, it is advisable to wait for a few hours, paying especial attention to the presence of diarrhoea. When no conclusion can be drawn, an operation is essential since the condition may be appendicular peritonitis. In the later stages, when encystment has occurred, there is no question about the desirability of immediate operation.

Therapeutics

591 Liver Extract in Pernicious Anaemia

J. E. CONNERY (*Journ. Amer. Med. Assoc.*, August 29th, 1931, p. 605) comments on the advantages of massive doses of liver extract in cases of pernicious anaemia, especially for those patients who are severely ill and take liver with difficulty and where the necessary dose must be administered by tube. He refers also to the possibility that in certain cases the total amount of extract required to raise the red cell count to a given level may be less when a single massive dose is given than when daily doses are employed, and reports on the treatment of six cases by massive single doses ranging from 30 to 50 phials (Lederle). Reticulocyte rises began on the 2nd to the 4th day; the peak was reached on the 4th day in one case, on the 6th day in four cases, and in one case on the 7th day. The magnitude of the rise was satisfactory in all except one instance where a dose of 50 phials was followed by a peak of only 12 per cent. From the initial level of the red cells the maximum increase of the erythrocytes could not be predicted. The administration of single massive doses of liver extract was without significant effect on the systolic or diastolic blood pressure, or on the blood sugar content. All the patients thus treated were given adequate daily doses of liver extract when the peak of the curve of the red cell count following the single dose had been reached.

592 Ephedrine in Bronchial Asthma

K. TIEFENSEE (*Munch. med. Woch.*, October 23rd, 1931, p. 1824) finds that adrenaline and its allied products (ephedrine, ephetonine, and sympatol) are, next to atropine, the best therapeutic agents in bronchial asthma. The superiority of ephedrine and sympatol over adrenaline lies in their more lasting action, the facility of administration by the mouth, and their slighter toxicity. The action of ephedrine is weaker than that of adrenaline, and it is therefore not advisable in severe cases of bronchial asthma, but it may be useful at the onset or in the prevention of an attack. Administered by the mouth the therapeutic result commences after 20 to 30 minutes given intramuscularly or subcutaneously, after 10 to 15 minutes. The action of the drug is followed by symptoms of languor, sleeplessness, tremors, restlessness, alimentary symptoms, and symptoms referred to the heart and blood vessels suggesting hyperthyroidism. Sympatol is given intravenously, intramuscularly, and subcutaneously in acute cases, or by the mouth at the onset of an attack and in milder cases, but its action is inferior to that of ephedrine or ephetonine. The intravenous injection of sympatol acts similarly to adrenaline. The author discusses the reasons why adrenaline and its allied products generally act more regularly and more strongly than atropine.

593 Protein Therapy of Thrombo-angiitis Obliterans

N. W. BARKER (*Journ. Amer. Med. Assoc.*, September 19th, 1931, p. 841) asserts that the medical treatment of thrombo-angiitis obliterans aims at the relief of pain, rapid healing of open lesions; if these are attained amputation may be avoided. Foreign protein therapy is rational for this disease, since it tends to relieve pain by producing vaso-dilatation, with consequent increase blood supply to the extremities, it accelerates the healing of lesions. Approximately 300 patients have been treated at the Mayo Clinic; the results in 150, in all of whom at least three injections were given, are tabulated. The best preparations were found to be a T.A.B. and typhoid H antigen (a fraction of the

bacteria, emulsified in sodium chloride solution and subsequently killed with 0.5 per cent. phenol). The initial dose is from 15 to 30 million organisms. The number of injections depends on the response, the dose being usually increased by 25 millions at a time, as may be found necessary to keep up the reaction. If prolonged treatment is needed, it is advisable to give a month's rest period after twelve injections. This treatment is but slightly effective in cases with claudication only, and in those with extensive gangrene; the best results are obtained in cases where there is rest pain (pain not induced by exercise), with or without ulcers or limited gangrene.

Dermatology

594 Etiology and Treatment of Eczema

S. W. BECKER (*Journ. Amer. Med. Assoc.*, October 3rd, 1931, p. 983) maintains that there are no clinical or microscopical differences between eczema (with its factor of hypersensitiveness to certain irritative agents) and dermatitis, but that this fact has caused much contention owing to the employment of such terms as allergy, idiosyncrasy, and anaphylaxis. In his opinion, most cases are due to external irritants, usually chemical, but sometimes physical—for example, the rays of the sun. The first step in treatment is, therefore, the identification of the cause, and its removal. In the case of eczema of the hand in housewives, for instance, protection can often be obtained by the use of thin cotton gloves, over which rubber gloves are worn. The cotton gloves absorb the perspiration, and prevent maceration; they should be washed each time before being put on. They should be worn not only when the hands are put in water, but also when the patient is working in dust and dirt. Becker considers that desensitization therapy has been disappointing, although Bloch has shown that eczematous patients are seven times more sensitive to the common irritants than are healthy persons. In the vesicular stage the wet dressing is preferable, 1 grain of potassium permanganate in a pint of water, prepared twice daily, being the best application. It does not become excessively irritating, if inadvertently allowed to dry, and guards against any secondary infection. The dressing should not be surrounded by an impervious substance, such as oiled silk or paper, since free evaporation is desirable. It should be kept wet, but not dripping. After the more acute signs and symptoms have subsided, a sulphonated bitumen zinc paste may be applied; it is renewed each morning and night after gentle removal from the skin with olive oil. Water and soap must be avoided. The paste should be continued even after the skin appears normal, since many recurrences have been caused by too early cessation of treatment. The skin remains hypersensitive for some time after apparent recovery. Becker adds that the term "eczema" is applicable to a definite class of inflammatory dermatoses, and may well be retained in dermatological nomenclature.

595 Dermatitis Venenata due to Shoe Leather

G. M. LEWIS (*Arch. Derm. and Syph.*, October, 1931, p. 597) reports two cases of dermatitis venenata due to shoe leather. Cases arising from this cause are extremely rare; since the condition is not mentioned in textbooks, these two cases call attention to the fallacy of regarding all dermatoses of the feet as fungous in origin. In the first a follicular dermatitis, distributed in bands, and accompanied by severe itching, commenced with the wearing of a particular pair of tan shoes, which were not lined with canvas over the parts affected; recovery promptly occurred as soon as they were discarded. A sample of leather taken from the inner band of the shoes, known in the trade as "bleached kip," applied for twenty-four hours to the inner side of the forearm produced a similar result. The patient's skin was apparently hypersensitive to such leather; since application to the skin of three other subjects produced no such result. In the second case a similar condition occurred after wearing a pair of black shoes in which there was no canvas lining. Samples of leather from the inside of these shoes applied to the forearm produced a pruritic eczematous eruption under each patch. Recovery ensued in both cases when the suspected shoes were discarded. Itching was a marked feature, and in the first patient it began two and a half months before the eruption appeared. Since several methods are employed in tanning it is almost impossible to trace the process used for any given pair of shoes; the patient can only learn by experience his own hypersensitiveness. The possibility of such a cause of dermatosis of the feet should be borne in mind.

596 Treatment of Psoriasis

A. TOMA (*Ann. de Derm. et de Syph.*, October, 1931, p. 1110) has made use of formolized emulsions of the squames of psoriasis, in preparing an autogenous vaccine. The scales, scraped off the lesions with a bistoury or a slip of glass, are triturated in a mortar, and the resultant powder is emulsified in normal serum, in test tubes; formol in 0.25 per cent. dilution is added, and the emulsion is kept at 37°, being frequently shaken. Tests for bacteriological sterility are made after 48 hours, but the emulsion is kept in the incubator for a week before use, to ensure the volatilization of the formol. The concentration of solid in the vaccine is such as to provide a sediment 1 to 2 c.cm. in volume, after 24 hours' standing in an ordinary test tube. The dosage begins with 2 to 3 c.cm. on alternate days, and is increased up to 10 c.cm. doses at intervals of 3 to 4 days; no general reaction of importance has been noted, though the larger doses have sometimes been followed by localized nodular infiltrations which persist for a long time, but eventually disappear spontaneously. Three patients have been treated with good results; one case in a boy of 17, of a year's duration, showing clinical cure after two months' treatment, involving the use of 80 c.cm. of vaccine. The other two cases, both of many years' duration, improved very considerably. In one of these other cases, that of a woman aged 38, the eruptions were subject to seasonal exacerbations in autumn and spring; after this vaccine treatment was begun at the beginning of the autumn of 1930 there was no further exacerbation, and the lesions cleared up steadily. Toma admits that time must show whether these cures may be regarded as permanent, and whether the vaccine is able to check recurrences.

Obstetrics and Gynaecology

597 Diagnosis and Treatment of Puerperal Sepsis

E. R. WHITE (*Med. Journ. of Australia*, September 19th, 1931, p. 352) states that in Australia the death rate from puerperal sepsis is increasing, particularly in Melbourne. Since this condition is an infected wound disease, of which the bacteriology and pathology are similar to those of surgical infections occurring elsewhere in the body, local and general considerations are involved. Sepsis depends on tissue damage and haemorrhage, and prophylaxis is most important. Vaginal examination can almost entirely be replaced by abdominal examination. Efforts should be concentrated on asepsis and a physiological conduct of labour. By preventing exhaustion and loss of blood much can be accomplished in obviating infection; face masks should be worn by all attendants at confinements. Cyllin and brilliant green are advocated as antiseptics. Early diagnosis of sepsis is stressed; suitable nursing must be provided early, but the avoidance of interference is recommended as the safest method of dealing with the uterus in puerperal sapraemia and sepsis; foods rich in vitamins A and D should be given. As a prophylactic measure in all suspected cases, and as a therapeutic measure in early pyrexia, anti-streptococcal serum should be used. In cases where such conservative measures do not prove satisfactory, intrauterine glycerin therapy may be usefully instituted. Vaccines appear to be beneficial only in protracted chronic cases. In acute cases blood

transfusion is of value. Since arsenical compounds seem to have some specific effect upon haemolytic streptococci, their use is indicated in acute sepsis. Surgical treatment is not advocated, apart from suitable drainage of any abscess formation in pelvic cellulitis or peritonitis. Every effort should be made to raise local tissue resistance, and to increase the bactericidal power of the blood.

598 Disappearance of the Placental Site in the Puerperium

J. W. WILLIAMS (*Journ. Amer. Med. Assoc.*, August 22nd, 1931, p. 523) records investigations which indicate that the mucosa of the uterine cervix is restored by the end of the first week after delivery, that the extra-placental endometrium is regenerated during the third week of the puerperium, and that the placental site persists for six or seven weeks, its ultimate disappearance being effected by a process of exfoliation which in great part results from undermining by endometrial tissue. These conclusions are based upon examinations of the uterus removed by operation, or obtainable from necropsies. The disappearance of the placental site does not seem to be the result of an inflammatory process or of extensive necrosis; all the specimens showed an unusual proliferation of the endometrial tissue, which not only covered the placental site, but invaded it in all directions, extending particularly between it and the underlying muscularis layer, and leading eventually to extrusion or exfoliation. Williams adds, however, that further evidence is necessary before this hypothesis of exfoliation can be accepted, and he gives illustrations of histological preparations which appear to clinch his argument. Absorption *in situ* was not observed in his cases.

599 Gingivitis of Pregnancy

S. MONASH (*Arch. Derm. and Syph.*, October, 1931, p. 580) records five illustrative cases in women, aged from 18 to 38, in whom growths were observed on the gums during pregnancy. They began to form at a variable time during pregnancy, usually during the earlier months; they increased in size unless treated, and spontaneously diminished or disappeared after delivery of the child. Since the growth is inflammatory in origin, and is not a true tumour, Monash proposes the term "proliferative gingivitis" of pregnancy. The rapid evolution of the inflammatory process during gestation appears to be due to an exaggerated inflammatory response in some women at that time to irritants that normally provoke only a moderate reaction. Prophylaxis and treatment consist in thorough cleaning and scaling of the teeth, the removal of all greatly decayed teeth and poorly fitting dentures, the correction of the abnormalities of the gums, and instruction in the proper use of the tooth-brush.

600 Abortifacient Apiol Poisoning

TRILLAT, MICHON, and THIERS (*Bull. Soc. d'Obstét. et de Gynécol de Paris*, October, 1931, p. 615) state that apiol, formerly regarded as non-toxic, is very commonly used in France as an abortifacient. They record the case of a woman who admitted having swallowed in three days thirty capsules, each containing 20 cg. of the active product. Abortion ensued, and a week later she was admitted to hospital in a state of collapse, with a temperature of 104°. The general condition improved, but an almost complete anuria followed with great increase of the blood urea (3·29 grams). Bilateral decapsulation of the kidneys was followed by re-establishment of diuresis, complete in a fortnight. This urine, however, contained only 1 per cent. of urea, and at the time of death, thirty days after the operation, the blood urea had risen to 8 grams. Other symptoms were diarrhoea, bleeding from the gums, buccal gangrene, and coma. At the necropsy the uterus, peritoneum, liver, spleen, and lungs appeared normal. Haematuria has previously been described as following apiol ingestion, but the present authors have been able to trace only one other fatal case; in this the death occurred on the thirteenth day from diarrhoea, uterus, epistaxis, bleeding from the gums, and uraemic coma with anuria.

Pathology

601 The Influence of Fatigue on Antibody Formation and Infection

E. FRIEDBERGER, O. ANDERSEN, C. CALLERIO, and I. RUTCHKO (*Zeit. f. Immunitätsf.*, October 16th, 1931, p. 225) report a number of experiments on the effect of acute and chronic fatigue on the antibody content of the blood of laboratory animals, and on their resistance to experimental infection. In the first series guinea-pigs were used, and the normal titre of complement and of natural haemolytic immune body to sheep red cells was determined. Altogether 53 animals were tested, some being acutely fatigued by being made to run round the interior of a revolving drum for short periods, others being made to run at frequent intervals with rest pauses in between. In no case was any difference in the titre of the antibodies found between the normal and the control animals. In the second series rabbits were chosen. The animals were actively immunized by injections of sheep red cells of killed El Tor vibrios. After some days, during which the rabbits were daily fatigued, the antibody titre was determined; again no difference was found between the fatigued and the control animals. After determining the titre, some rabbits were again fatigued, but this did not lead to any greater fall in titre than occurred in the control animals. Moreover, fatiguing the animals before immunization had no apparent effect on the subsequent antibody response. In the third series rats and guinea-pigs were injected intraperitoneally with living El Tor vibrios in such a dose as to cause about a 50 per cent. mortality. Some animals were fatigued after the injection, others both before and after. No difference, however, was noticed, since approximately the same proportion of the fatigued animals died as the controls. The authors conclude that the antibody content of the blood, the formation of antibodies, and resistance to infection, are independent of bodily fatigue.

602 Nuclear Changes in Leucocytes in Vitro

M. CAPPO (*Lo Sperimentale*, October 3rd, 1931, p. 365) has studied the action of filtrates of old typhoid broth cultures on human leucocytes *in vitro*, and has extended the observations of Messini on 70 confirmed cases of typhoid that there is a shift to the left of the Arneth nuclear formula, probably due to a paralysing action of the toxin on the amoeboid movement of the leucocytes. He has endeavoured, also, to gain information about the value and significance of the varying segmentation of the leucocyte nuclei; recent researches have shown that this is not exclusively a function of the age of the mature granulocyte. After preliminary tests indicating that the unfavourable conditions inherent in *in vitro* life of leucocytes caused no alteration in the nuclei or shift of the nuclear index within 6 to 8 hours, a series of observations of stained films and of hanging drops on warm stage was made, in which to the saline solution used for diluting and preserving the blood was added filtrate of old broth cultures of *B. typhosus*; controls of sterile broth cultures were employed. From concentrations of broth filtrate as low as 0.2 to 0.6 per cent., samples were taken at intervals of 30 minutes to 4 hours. The results show a marked lowering of the nuclear index, and a prevalence of two lobed nuclei and diminution of those with four or more lobes, the total number of the leucocytes remaining constant. It was thus possible to demonstrate a marked shift to the left of the nuclear index in leucocytes *in vitro* by the action of filtrates of broth cultures of *B. typhosus*. This is in accord with the shift to the left observed by Messini and others in the course of different toxic infections, and also by the action of certain drugs. Cappo concludes that the morphology of nuclei can vary in the absence of hæmopoietic tissue, and that the presence of little segmented nuclei does not necessarily indicate the passage of young cells into the circulation.

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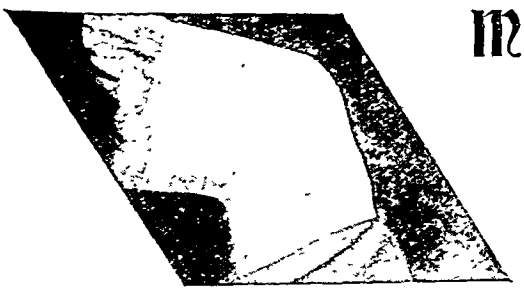
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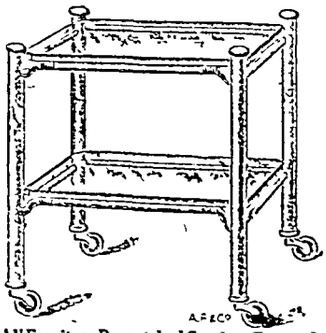
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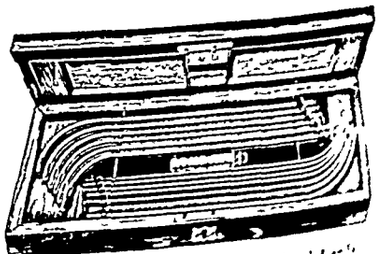
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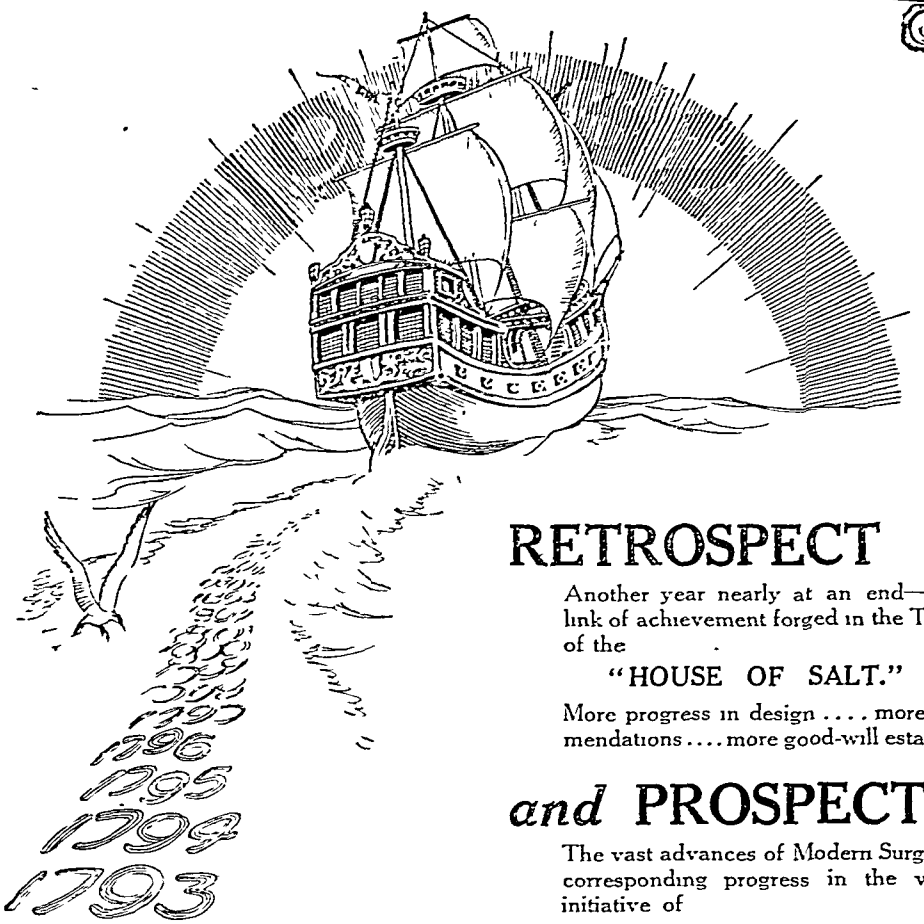
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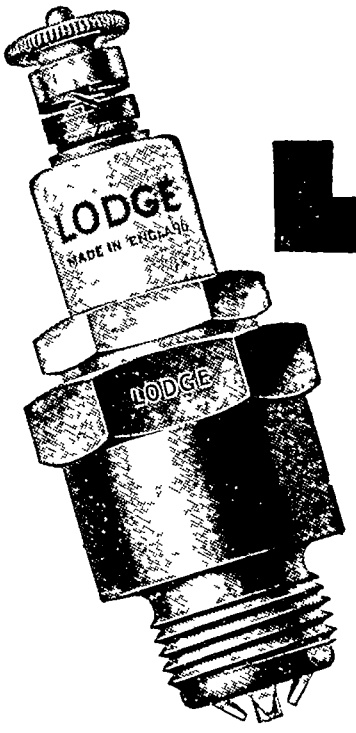
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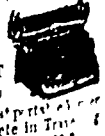
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Telephone: No. 7 Barnwood.

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This Registered Hospital situated in its own grounds near the Cathedral receives VOLUNTARY and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions in adults. Special facilities for Psychological co-operative cases.

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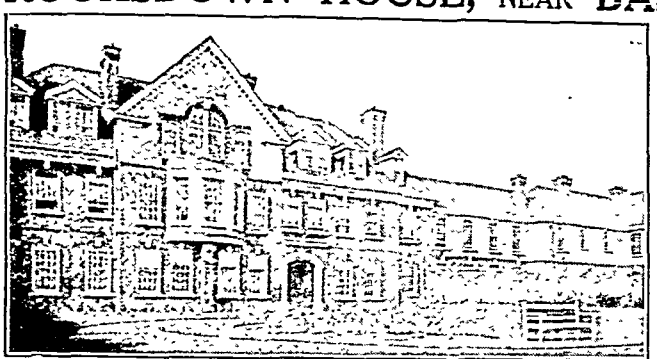
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Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 66.

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No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

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Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton

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Fees 5—10 guineas. Ample amusements. 7 bedrooms. Annexe for mild cases. Quiet and pleasant situation.

Ladies and gentlemen admitted for treatment.

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'Phone: Chislehurst 451. *Telegrams*: "Masters" Chislehurst.

CHEADLE ROYAL,

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This Registered Hospital for MENTAL DISEASES, with the seaside branch Glenorme, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary, Temporary and Certified Patients received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may be seen in Manchester by appointment. Telephone: 2231 GATLEY.

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CONVALESCENT HOME at BOURNEMOUTH, standing in 12 acres of ornamental grounds, with tennis courts etc., which Voluntary, Temporary, or Certified Patients may visit, by arrangement, for long or short periods.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741-4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders Both certified patients and voluntary boarders are received Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday Motor and carriage exercise is provided as required Patients can avail themselves of a course of physical drill Tennis courts Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Telegrams: "SUBSIDIARY, LONDON" *Telephone:* NORTH 0288

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses
Conveniently situated four miles from Charing Cross Easy access from all parts.
Six acres of ground, highly situated, facing Finsbury Park
Private Suites Voluntary Patients and Temporary Patients received without certification
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All modern forms of treatment are available There are X-ray and ultra-violet ray installations Full nursing staff The Sanatorium stands in gardens and private grounds of 65 acres, at an altitude of 802 feet above sea-level, surrounded by woods and moorland All rooms are heated by hot-water pipes and electrically lighted

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For full particulars apply to *The Secretary*, Nordrach upon Mendip, Blagdon, Bristol *Telegrams:* Nordrach, Blagdon *Telephone* Blagdon 23

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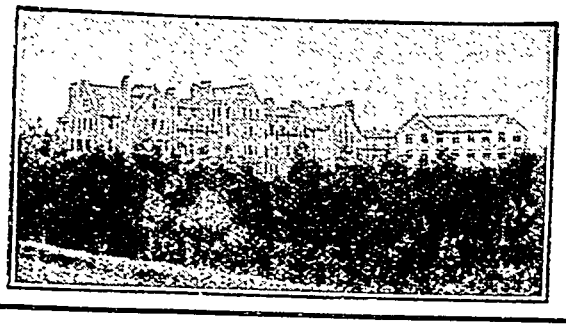
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M.D.(Cantab.), M.R.C.P.(Lond.).
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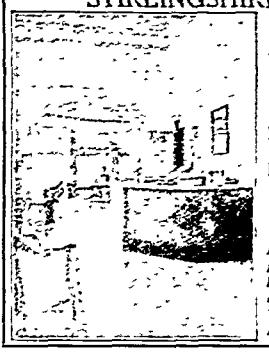
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Qualified Medical Women are admitted to
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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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A PUBLIC SCHOOL FOR BOYS
Boys are regularly prepared for the First M.B. Examinations, University Scholarships in Chemistry, Biology, etc.
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Examinations will be held [illegible] May 17th, and Monday, November 21st.
For regulations, apply to the [illegible] Water Lane, E.C.4.

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CLASSES, with Museum and Ward Demonstrations, for next Exam. will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

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The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical Students in London and at Provincial Centres in March, June, September and December. Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

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EPSOM COLLEGE has an exceptionally fine position, with a dry, bracing climate, on the slope of Epsom Downs. The buildings include the War Memorial Chapel, large science buildings, with *lecture theatre and several laboratories for physics*, chemistry, and biology, the Holman art room and the Propert library; a covered swimming bath, heated throughout the year; a gymnasium, a rifle range and drill hall, an armoury, a magnificent new sanatorium (50 beds), with X-ray department, and operating theatre. There are also a museum, a carpenter's workshop, music rooms, tennis and fives courts, a pavilion, and a laundry. Large central heating and hot-water systems have recently been installed. There are over 30 acres of playing fields and 7 acres of vegetables.

The College is "recognised" by the General Council of Medical Education and Registration of the United Kingdom and by the Royal Colleges of Physicians and of Surgeons, and the First Medical Examination of London University may be taken at the College itself.

Boys are also prepared for the Royal Navy, the Army, Air Force, Civil Service, the Universities, and for *Professional or Mercantile Careers*.

There is a large list of valuable Leaving Scholarships. Ten Medical Scholarships, differing in value, and one Dental Scholarship, are awarded annually by London Hospitals, and 33 Leaving Scholarships, ranging in value from £15 to £105 are awarded under varying conditions. Besides these there are one "Dr. Robert Thomson and Phyllis Broughton" Open Entrance Scholarship of £120 a year, one "Domett Stone" *Open Entrance Scholarship of £110 a year*, and four "Salomons" Entrance Scholarships of £50 a year each. "Hugh Vardon" Scholarships of £24 and Junior Open Scholarships of £60 are awarded annually.

ANNUAL FEES.—Sons of Medical Men, £135. Those who are not the sons of Medical Men, £155. Day Scholars, £57. These fees are inclusive, covering all such items as books and stationery, medical attendance for boarders, bed linen, laundry, boxing, fencing, shooting, swimming, physical training, O.T.C., Scouts. In short, a parent when considering the cost of education at various Public Schools has something most definite to go on at Epsom College.

NEW SANATORIUM.

The new Sanatorium completed in September, was opened on the 3rd October, 1931, by Lord Dawson of Penn in the presence of a large and distinguished gathering. It is generally conceded to be the finest Public School Sanatorium in England. Practically all the recommendations of the Ministry of Health contained in their pamphlet on "Public School Sanatoria" have been embodied in its construction.

The building, which is of three stories, has a fine position, nearly half a mile away from any public road, with its long axis east and west, so that all wards face south. *An illustrated booklet on the* Sanatorium will gladly be sent on application.

Important factors in the design are (1) Opening by sections; (2) Facility for dealing, at one and the same time, with ordinary ailments and accidents, and four distinct simultaneous infections common to school boys; (3) Administration in normal times by a small staff; (4) Effective segregation of infectious cases from non-infectious; (5) Prompt X-ray examination in cases of injury; (6) Performance of minor operations under surgically suitable conditions; (7) Indoor recreation for convalescents; (8) Open-air balconies and sun-lit cheerful solaria for patients that require them; (9) Accommodation for unmarried masters when sick.

A number of beds and one of the wards already carry distinctive names, which is in accordance with the resolution that a gift of £10,000 should confer on the donor the right to name the main Sanatorium, one of £5,000 the Isolation Wing, one of £3,000 the right to name a large ward, and one of £1,000 a small ward, *and gifts of £100 a single bed.*

The building has cost £28,000, towards which nearly £9,000 has kindly been given to date, and the Council will welcome further donations towards paying off the balance of the cost.

ROYAL MEDICAL FOUNDATION.

FIFTY FOUNDATION SCHOLARS receive an education of the highest class in Epsom College, and are boarded, clothed, and maintained at the expense of the Foundation. They must be elected, after approval by the Council from among the sons of necessitous Medical Men who have been Registered Medical Practitioners for five years.

FIFTY ORDINARY PENSIONERS, who must be legally qualified Medical Men registered for five years, or the Widows of such, receive an annual pension. They must be not less than 60 years of age at the time of their application for admission as candidates.

ABOLITION OF VOTING and EXTENSION OF BENEFITS TO MEDICAL WOMEN AND THEIR SONS.

In the past the above Pensioners and Foundation Scholars have been elected by the Governors voting *by ballot, but at an Extraordinary General Meeting* held on the 26th June, 1931, the Governors unanimously decided to abolish this system, and to empower a Special Committee (composed of ten members of Council and ten Governors who are not members of the Council) to elect the Pensioners and Foundation Scholars concerned.

They further decided to extend the benefits to Medical Women and the sons of Medical Women, hitherto excluded under the College Acts of Parliament.

To accomplish this a new Act of Parliament is essential, but this is unlikely to receive Royal Assent in time to abolish voting for the year 1932.

A sum of close upon £9,000 is required annually to maintain fifty Foundation Scholars and fifty Pensioners, yet this leaves much destitution in the profession untouched. The Council earnestly plead for more and larger subscriptions, so that they may extend the work to the relief of this distress.

The profession and the public are therefore asked to make the Royal Medical Foundation attached to the College a refuge in time of trouble for all these members of a great profession and their children who fall on evil days.

Donors of 10 guineas, and collectors of 20 guineas, are Life Governors of the College, subscribers of one guinea annually are Governors during the continuance of their subscriptions.

W. L. GIFFARD (Major), Secretary.
Office, 49, Bedford Square, W.C.1.

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MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.
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Royal College of Physicians of EDINBURGH.

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In accordance with the Bequest of Mrs. Isabella Kirk Duncanson to commemorate the late Dr. J. J. Kirk Duncanson, the Council of the Royal College of Physicians will make an award of a Kirk Duncanson Fellowship in January, 1932. The Fellowship will be awarded annually for a period of one year. It may be renewed to the same beneficiary for two additional periods of one year each. The emoluments will be upwards of £150 for the first year, about £250 for the second year, and about £350 for the third year. In recognition of Dr. Kirk Duncanson's interest in the Diseases of the Ear, Nose, and Throat, some preference will be given to the claims of candidates who propose to devote themselves to research in that branch of Medicine.

Applications and recommendations, with particulars of the special line of research contemplated and of the place where the investigations are to be conducted, should be in the hands of the Secretary of the College, 9, Queen Street, Edinburgh, by January 15th, 1932.

Breconshire County Council.

APPOINTMENT OF COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly registered Medical Practitioners (male), holding a Degree or Diploma in Public Health, for the whole-time appointment of Medical Officer of Health for the County, School Medical Officer, and Medical Officer for Mental Deficiency, Maternity and Child Welfare, and Venereal Diseases work, including such other duties as may from time to time be assigned to the officer by the County Council.

Basic salary £800 per year, subject to a temporary deduction of £60 per year during the present financial emergency, with travelling and subsistence allowances according to the County Scale.

Candidates must be prepared to provide and drive a motor car to carry out the duties of the appointment.

Preference will be given to candidates having a knowledge of Welsh, and with previous experience in Refraction and Orthopaedic work.

Applications, stating age and qualifications, accompanied by copies of not more than three recent testimonials, must be sent to reach me not later than January 2nd, 1932.

ALBERT JOLLY,
Clerk of the Breconshire County Council.
County Hall, Brecon.
December 14th, 1931.

Royal East Sussex Hospital, HASTINGS. (Beds 120.)

Applications are invited for the post of HONORARY ANAESTHETIST to the Hospital.
Applicants must be Fellows or Members by Examination of the Royal College of Physicians of London, Edinburgh, or Ireland, or be a Graduate in Medicine of one of the Universities of the United Kingdom or Ireland, and also be duly registered under the Medical Acts.
Information as to duties may be obtained from the Secretary.
Applications, with three copies of recent testimonials, should reach the Secretary not later than January 4th, 1932.

WILFRID G. KEMSLEY,
Secretary.

Rotherham Hospital.

Wanted, CASUALTY HOUSE SURGEON (male), qualified. Salary £150, with board, residence, and laundry. 130 Beds.
Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

University of the Witwatersrand, JOHANNESBURG.

SENIOR LECTURER IN ANATOMY.

Applications are invited for the above post from medically qualified candidates. The teaching embraces Histology in addition to Gross Anatomy.

The salary at present offered is £516 per annum, rising by annual increments of approximately £26 to £726 per annum, but these rates may be affected by the financial position of the country, and candidates who have applied will be informed of any reduction which may take place.

Participation in the University Teachers' Provident Scheme is compulsory. This scheme provides for a contribution by the members of 6 per cent. of their basic salary (£450—£25—£650), the fund contributing the same amount. A higher commencing rate of salary may be approved in the case of a candidate possessing special qualifications or experience.

An amount of £60 will be allowed for travelling expenses, and half salary paid from the date of embarkation to the date of arrival in Johannesburg.

The appointment, which is a full-time one, is subject to all the conditions and rules now in force, and duty is to be assumed as soon as possible after appointment, which will be communicated by cable.

Further particulars as to the conditions of service may be obtained from the Secretary, Office of the High Commissioner for the Union of South Africa, South Africa House, 73, Strand, London, W.C.2, from whom forms stating the particulars required may be obtained.

Applications, in duplicate, accompanied by testimonials, should reach the High Commissioner's Office not later than Jan. 15th, 1932.

Sudan Government.

WELLCOME TROPICAL RESEARCH LABORATORIES, KHARTOUM.

Applications are invited for the post of BACTERIOLOGIST at an initial rate of pay £E.660 or £E.720 per annum (according to age and qualifications), with five or six biennial increases to £E.1,080, and thence after three years to £E.1,200. These rates of pay as well as the conditions of service are subject to Government rules and regulations from time to time in force. (£E.1 = £1 0s. 6d.)

Applicants must be unmarried, and will be expected to take up their duties immediately.

Applications, stating age, degrees, experience (with special reference to Pathology), and copies of testimonials, should be sent to the Director, Wellcome Tropical Research Laboratories, Khartoum, Sudan.

Further particulars regarding this post may be obtained on application to the Controller, Sudan Government, London Office, Wellington House, Buckingham Gate, London, S.W.1.

Rowley Regis Urban District COUNCIL.

DEPUTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications for the above appointment are invited from single or widowed women. Applicants must be registered Medical Practitioners and possess the Diploma in Public Health. The salary offered is at the rate of £500 per annum, rising by annual increments of £25 to £700, subject to a temporary deduction of 10 per cent.

A form of application can be obtained on receipt here of a stamped addressed foolscap envelope.

Completed forms, accompanied by copies of not more than three recent testimonials, should be addressed to the Clerk, Rowley Regis Urban District Council, Council Offices, Old Hill, Staffordshire, so as to arrive not later than January 4th, 1932

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE.

The Committee of Management have declared a vacancy for an HONORARY SURGEON.

Applications, stating date of birth and qualifications, are invited for this appointment, and should be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, accompanied with copies of three recent testimonials, on or before January 9th, 1932.

Canvassing a disqualification.

St. Thomas's Hospital.

VACANCIES.

The appointment of TWO ASSISTANT SURGEONS to the Ear, Nose and Throat Department.
Candidates must be Fellows of the Royal College of Surgeons (England). Applications, with testimonials and full details of academic career, to be sent to the Clerk to the Governors, on or before December 31st, 1931.

London County Council.

Applications are invited for appointment for one year only to the position of ASSISTANT MEDICAL OFFICER, Grade II, at the undermentioned Hospitals.

The persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendent and, should occasion arise, to assist at any of the other establishments under the control of the Council.

Where residential accommodation is available the successful candidate will be required to live in the Hospital.

The salary in each case is £250 a year, together with board, lodging, and washing, or a non-residential allowance of £150 a year in lieu (subject to review). Candidates must be duly qualified Medical Practitioners of at least one year's standing and have held a resident appointment in a General Hospital for at least six months.

Archway Hospital, Archway Road, Highgate, N.19.
Fulham Hospital, St. Dunstan's Road, Hammersmith, W.6.
*Hackney Hospital, High St., Homerton, E.9.
Highgate Hospital, Dartmouth Park Hill, N.19.
*Mile End Hospital, Bancroft Road, Mile End, E.1.
†New End Hospital, Hampstead, N.W.3.
†Norwood Children's Hospital, Norwood, S.E.27.
*Paddington Hospital, Harrow Road, W.9.
*St. George-in-the-East Hospital, Raine Street, Wapping, E.1.
St. Luke's Hospital, Sydney Street, S.W.3.
*St. Mary Abbots Hospital, Marloes Road, Kensington, W.8.
St. Mary Islington, Highgate Hill, N.19.
*St. Nicholas, Plumstead, S.E.18.

* No accommodation for a woman.
† Non-residential appointment.

Only one form of application is required for these vacancies, and successful candidates will be allocated in accordance with the requirements of the service. Consideration will, however, be given to any preference which candidates may express.

Forms of application obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 4a), County Hall, Westminster Bridge, S.E.1, returnable by January 1st, 1932. Canvassing disqualifies. Further inquiries should be addressed to Medical Superintendents at the Hospitals.

Lancashire County Council.

APPOINTMENT OF DENTAL SURGEON.

The Lancashire County Council propose to appoint a full-time Dental Surgeon, and invite applications from fully qualified and registered Dental Surgeons, who must not be over 40 years of age.

The duties of the post are:
1. The dental inspection and treatment of children under the Education Act.
2. The dental inspection and treatment of Expectant and Nursing Mothers and of young children, under the Maternity and Child Welfare Acts.
3. Such other duties as may, from time to time, be imposed by the Education and Public Health Committees.

The salary will be at the rate of £600 per annum (less temporary emergency abatement of £31 per annum), together with the usual allowances for travelling, etc. The person appointed will be required to pass a medical examination and to contribute towards the Council's Superannuation Scheme.

Applications must be made upon a form which can be obtained, together with further particulars, from County Medical Officer of Health, School Medical and Child Welfare Department, County Offices, Preston, to whom the completed form should be returned not later than January 9th, 1932.

All communications must be endorsed "Dental Surgeon." Canvassing is strictly forbidden, and will disqualify.

GEORGE ETHERTON,
Clerk of the County Council.
County Offices, Preston.

Hôpital Français,

172, Shaftesbury Avenue, W.C.2.

JUNIOR RESIDENT MEDICAL OFFICER (male) required for a period of three months from now. Registered, unmarried, speaking French fluently. Salary £100 per annum, with full board and laundry. Candidate should state in their applications, with three copies of recent testimonials, as soon as possible to—

J. KNECHT, Secretary.

St. Paul's Eye Hospital, OLDHALL STREET, LIVERPOOL.

HOUSE SURGEON required immediately for six months appointment. Salary £145, board, residence, etc. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital, on or before January 2nd, 1932.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts, and to professorships at the Medical Schools.

NOTE.—It is not possible to state at present what, if any, prospects of employment on the civil side will be open to Indian Medical Service Officers under the proposed new constitution for India.

PAY.

Owing to the state of financial emergency at present prevailing in India the existing monthly rates of pay, which are as follows, are being subjected, under the authority of the Secretary of State in Council, to a temporary reduction not exceeding 10 per cent.

Rank.	Service in Rank.	Basic Pay	Overseas Pay	Years of Total Service
1	2	3	4	5
		Rs	Rs	
Lieut.	—	500	140	1st
			140	2nd
			140	3rd
Capt.	(i) During first 3 years' service as Captain	670	140	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years service as Captain	870	£25	10th
			£25	11th
			£25	12th
Major	(i) During first 3 years service as Major	900		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years total service	1500	£30	13th and over
	(ii) During 24th and 25th years service	1600		
	(iii) After completion of 25 years total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £50 towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a post-graduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America, is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pension are as follows	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. With effect from October 1st, 1931, a reduction of 8½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £250 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in January next, and the selected candidates will be required to join a course of instruction commencing early in February, 1932, prior to sailing for India in the Autumn of 1932. Applications should be submitted as soon as possible.

County Borough of Halifax.

HEALTH COMMITTEE.

ST. LUKE'S HOSPITAL.

APPOINTMENT OF MEDICAL SUPERINTENDENT.

Applications are invited from fully qualified registered Medical Practitioners for the appointment of Medical Superintendent at St. Luke's Hospital.

The Hospital has accommodation for 448 patients, mainly medical, surgical, and maternity cases.

The salary will be £800 per annum, rising by biennial increments of £50 to a maximum of £950, with residence and emoluments valued at £150 per annum.

Experience in administrative hospital work is essential.

The person appointed will be required to devote the whole of his time to the duties of his office, and will not be allowed to engage in private practice.

Forms of application and further particulars of the duties and conditions of the appointment may be obtained from the undersigned.

Applications on the prescribed form, accompanied by copies of three recent testimonials, must be sent to me endorsed "Medical Superintendent," not later than January 12th, 1932.

Canvassing, either directly or indirectly, will disqualify.

Town Hall, Halifax. PERCY SAUNDERS, Town Clerk.

December 17th, 1931.

The Radium Institute,

Riding House Street, London, W.1.

Applications are invited for the post of HOUSE SURGEON. Candidates must be fully qualified, unmarried, and of British nationality. The appointment is for a term of six months, and the successful candidate will be required to take up the duties on January 15th, 1932.

The salary will be at the rate of £150 per annum, with board, lodging, and laundry.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, must be received at the Institute not later than the first post on December 31st.

THOS. A. GARNER, Secretary.

Finsbury Treatment Centre.

Applications are invited from registered Medical Practitioners for the following posts, commencing April 1st, 1932:

TWO MINOR AILMENT SURGEONS at salary of £66 per annum;

ONE ANAESTHETIST at salary of £75 per annum;

ONE SECRETARY.

Local Practitioners only need apply.

Applications, with copies of testimonials, to be forwarded not later than January 8th, 1932. The Secretary, 31, Spencer Street, E.C.1.

City of Salford.

ASSISTANT RESIDENT MEDICAL OFFICER, HOPE HOSPITAL (1,000 Beds).

Applications are invited for the post of Assistant Resident Medical Officer (male) at Hope Hospital, Pendleton, to commence January 1st, 1932. The appointment will be for six months. Salary £250 per annum, plus board, residence, and laundry. Further information regarding the Hospital may be obtained from the Medical Superintendent. Form of application may be obtained from the Medical Officer of Health, 143, Regent Road, Salford, to whom it should be returned immediately.

H. H. TOMSON, Town Clerk.

Manchester Ear Hospital,

GROSVENOR SQUARE, ALL SAINTS'.

The Board invite applications for the post of NON-RESIDENT HOUSE SURGEON. 24 beds. Appointment six months. Salary at the rate of £150 per annum, with partial board. Candidates must be duly qualified and registered. Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Secretary, Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester, not later than January 9th, 1932.

Midland Hospital,

Easy Row, BIRMINGHAM.

A vacancy will occur for the post of HOUSE SURGEON (lady or gentleman) at the above Hospital on February 7th, 1932. Salary £150 per annum, with board, residence, and laundry. The work included Surgery, Gynaecology; Dermatology, etc.

Applications, stating age and qualifications, accompanied by recent testimonials, should be forwarded at once to—

JAMES O. AYRES, Secretary.

Easy Row, Birmingham.

The Children's Hospital,

SHEFFIELD. (107 Beds.)

Applications are invited for the following posts, vacant on February 1st, 1932:

HOUSE PHYSICIAN. Salary £100 per annum, with board, residence, and laundry. The appointment is for six months, afterwards the holder is eligible for the senior post of Resident Medical Officer (salary at the rate of £130 per annum).

HOUSE SURGEON AND CASUALTY OFFICER (THIRD RESIDENT). Salary £80 per annum, with board, residence, and laundry. The appointment is for six months, and afterwards the holder is eligible for the post of House Physician (salary at the rate of £100 per annum).

Candidates (female and unmarried) must be fully qualified and registered.

Applications, stating age, etc., together with copies of three recent testimonials, to be forwarded to the undersigned as soon as possible.

T. H. G. GARTLAND, Secretary.

The Royal Earlswood Institution,

REDHILL, SURREY

(Under Mental Deficiency Acts, 1913-27.)

JUNIOR ASSISTANT MEDICAL OFFICER REQUIRED.

Applicants must be registered Practitioners, males (British birth), unmarried, and willing to assist in the games and amusements.

The appointment is temporary for six months. Inclusive salary at the rate of £250 per annum, with board, residence, and washing. Good facilities for Post-graduate studies, classes, and examinations.

Applications, stating age, religion, and qualifications, with copies of three testimonials of recent date and two references, to be sent at once to the Medical Superintendent at the Institution. The envelope to be endorsed "Assistant Medical Officer."

H. STEPHENS, Secretary.

December 16th, 1931.

Hospital of St. Cross, Rugby.

(114 Beds.)

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER, qualified.

Salary at the rate of £100 per annum, with full board, etc.

Six months' appointment, and eligible on completion of service for extension or other resident posts.

Candidates must be prepared to commence duties on January 18th.

The practice of the Hospital offers excellent opportunities for wide experience.

Certificates and other fees shared by R.M.O.'s.

Applications, stating age, nationality, and full details, with copies of three testimonials, to be sent to the undersigned.

(Signed) W. COCKBURN, Supt. & Secretary.

Dec. 18th, 1931.

Royal Hampshire County

HOSPITAL, WINCHESTER.

(158 Beds.)

HOUSE SURGEON (SECOND).

Applications are invited from fully qualified men for the above post to take up duties on January 1st next. Six months' appointment. Salary £100 per annum, with board, residence, and laundry. Candidates, who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials.

HERBERT MASLEN, Secretary.

Royal Sussex County Hospital,

BRIGHTON. (246 Beds.)

CASUALTY HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Superintendent.

(AMENDED ADVERTISEMENT.)

Royal Eye Hospital,

St. George's Circus, S.E.1.

There are three L.C.C. REFRACTION appointments (£80 p.a.) now vacant for qualified persons at this Hospital. One Session per week. Appointments made preferably from those who either are at present, or are prepared to become, Clinical Assistants in the Out-patient Department.

Applications, with copies of testimonials, must be received by the Secretary not later than Wednesday, December 30th.

(Signed) F. E. D'ALTON, Secretary.

Royal Westminster Ophthalmic

HOSPITAL, Broad Street, Holborn, W.C.2.

The Committee of Management is prepared to receive applications for the appointment of REFRACTION OFFICERS, to commence on February 1st, 1932, for duty twice a week, except that in one appointment duty will be for once a week (Wednesday) only.

The appointments are tenable for six months, and salary is at the rate of £100 per annum and £50 per annum respectively.

Intending candidates must be duly qualified Medical Practitioners and have had experience in Refraction work, and are requested to call upon the Staff of the Hospital, a list of whose names and addresses can be obtained from the general offices.

Applications, with copies of testimonials, are to be sent at once to the Secretary, from whom further particulars can be obtained.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

OPHTHALMIC HOUSE SURGEON;

ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON;

ASSISTANT CASUALTY OFFICER.

The appointments are tenable for six months from January 1st, 1932, with salary at the rate of £80 per annum, with board and residence.

The Resident Staff numbers 14, and after six months' service salary is at the rate of £100 per annum. Applications, with copies of testimonials, to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Gen. Supt. & Secretary.

Board Room.

November 25th, 1931.

The Royal Victoria Hospital,

FOLKESTONE, KENT.

The Committee of Management invite applications for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (male or female) to commence duties on February 1st, 1932.

The salaries attached to the posts are £125 and £100 respectively per annum, with board and residence.

The appointments will be for six months to July 31st, 1932.

Applications, with copies of recent testimonials, should be sent to the Secretary-Superintendent, Royal Victoria Hospital, Folkestone, Kent, not later than 9 a.m. on January 9th, 1932.

Swansea General & Eye Hospital.

(316 Beds.)

CASUALTY OFFICER required. Gentleman, single; must have had previous hospital experience. Appointed candidate also required to act as Deputy Senior R.M.O. Duties to commence January 11th next. Salary £200 per annum, with board, residence and laundry.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary-Superintendent.

Victoria Hospital, Accrington.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON. Candidates must be duly qualified and registered. Number of beds 50. Salary £150 per annum, with board and lodging.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom applications, with copies only of testimonials, should be sent on or before January 2nd next.

Town Hall, Accrington, December, 1931.

W. H. WARHURST, Hon. Secretary.

Bedford County Hospital.

(124 Beds.)

FIRST HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £165, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, House Staff Committee, as soon as possible.

Ilkeston General Hospital.

(60 Beds.)

Wanted, a fully qualified RESIDENT HOUSE SURGEON (lady). Salary £140 per annum, with board, residence, and laundry. Applications, stating age and qualifications, and copies of recent testimonials, to be sent to the Chairman, General Hospital, Ilkeston, on or before January 7th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens Edinburgh)

(a) British Islands.

Town or District
GENERAL POST OFFICE. *(Assistant Medical Officer—Bermuda)*
CONTRACT PRACTICE.
PETERBOROUGH TRADES AND FRIENDLY SOCIETY INSTITUTE *(Medical Officer)*
EBBW VALE, MON *(Workmen's Medical Society)*
GILFACH GOCH GLAMORGAN *(Workmen's Medical Scheme)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer)*

Town or District
CONTRACT PRACTICE *(cont'd)*
LLWYNYPIA CLYDACH VALE, PENYCRAIG GLAMORGAN *(Workmen's Medical Scheme)*
MARDY, GLAMORGAN *(Workmen's Medical Scheme)*
MELTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*
NEATH AND DISTRICT *(Medical Aid Association)*
OAKDALE MON *(Medical Officer for Medical Aid Association)*

Town or District
CONTRACT PRACTICE *(cont'd)*
OGMORE VALLEY GLAMORGAN *(Wyndham Colliery Medical Aid Society)* *(Workmen's Medical Scheme)*
PUBLIC HEALTH.
BUCKS COUNTY COUNCIL *(Medical Officer, Assistant Inspector)*
DEVON COUNTY COUNCIL *(School Medical Inspector—Women)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B M A House, Tavistock Square, W C 1

Town or District	Hon Sec of Division or Branch
NEW SOUTH WALES *(All Friendly Society Appointments)*	Dr J G HUNTER (Medical Secretary New South Wales Branch) 135 Macquarie St, Sydney N S W
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute)* *(Toowoomba Associated Friendly Societies, Medical Institute Toowoomba)*	The Hon Sec Queensland Branch British Medical Association B M A Building Adelaide St, Brisbane.

Town or District	Hon Sec of Division or Branch
SOUTH AUSTRALIA. *(Lodge Appointments)*	Secretary South Australian Branch, B M A House 200 North Terrace, Adelaide.
VICTORIA. *(All Institute or Medical Dispensaries)*	Dr J P MAJOR (Hon Sec, Victorian Branch) British Medical Association, Medical Society Hall East Melbourne, Victoria.

Town or District	Hon Sec of Division or Branch
WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments)*	Dr G F V ANSON (Hon Sec New Zealand Branch British Medical Association P O Box 1236 Wellington New Zealand)
WESTERN AUSTRALIA. *(Contract and Lodge Practices)*	Hon Sec, Western Australian Branch, British Medical Association No 6 Bank of N S W Chambers, St Georges Terr, Perth, Western Australia.

December 23rd, 1931. By Order of the Council ALFRED COX, Medical Secretary

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The Hospital for Sick Children,
Great Ormond Street, London, W C 1

A PART TIME JUNIOR CASUALTY OFFICER is required on January 9th, 1932, to assist in the Casualty Department from 10 a m to 1 p m (Saturdays 10 a m to 1 p m), under the Direction of the Casualty Officer

The work of this Officer includes a large number of Tonsillectomies and other minor operations.

Candidates must be registered Medical Practitioners, and have held a resposible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, January 4th, 1932, accompanied by copies of not more than three testimonials written specially for the purpose

The appointment is made for six months and non resident

Salary at the rate of £150 per annum, with luncheon

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, January 6th, 1932, at 5 p m precisely

Forms of application and copies of the Rules may be obtained from the Secretary, at the Hospital

By Order of the Board of Management,
JAMES MCKAY,
December 1931 Secretary

Victoria Hospital, Burnley.
(125 Beds)

TWO HOUSE SURGEONS (Male).

Applications are invited for the above two posts The appointments are for six months from January 1st next, and each carries a salary of £150 per annum together with board and residence etc This Hospital is approved by London University for the purpose of the Second M S examinations

Applications, giving full particulars of qualifications, age, nationality, etc, together with three of recent testimonials should be addressed to the undersigned forthwith

GEO W COOLING
Superintendent & Secretary

Queen's Hospital for Children,
Hackney Road London, E.2

HOUSE SURGEON required February 15th 1932

CASUALTY OFFICER required February 15th 1932 Some Ear Nose and Throat work additional Six months appointments Salary at the rate of £100 per year, with board lodging, and washing

Applications must be made on forms to be obtained from the undersigned and must be sent in with copies of not more than four testimonials on or before January 12th 1932

CHARLES H BESSELL
December 11th 1931 Secretary

The London Lock Hospital,
91, Dean Street, Oxford Street, W

The Board of Management invite applications for the post of HOUSE SURGEON at the Male Lock Hospital Candidates must be doubly qualified and duly registered The appointment is at the rate of £200 per annum, with furnished rooms full board and laundry The appointment is for six months. Duties to commence January 9th 1932 Applications, enclosing copies (only) of three recent testimonials to be sent to the undersigned at the Male Lock Hospital 91 Dean Street, W, on or before January 1st 1932

By Order of the Board,
Nov, 1931 H J EASON, Secretary

Harrogate Royal Bath Hospital.
(Special Hospital for Rheumatic Diseases etc)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties beginning of February The appointment will be for a period of six months Salary at the rate of £156 per annum, with board residence and laundry

Applications stating qualifications, age etc, with copies of recent testimonials to be forwarded to the undersigned on or before January 12th, 1932

E P L DIXON M A,
Secretary

St. Mary's Hospital, W.2.

MEDICAL REGISTRAR

The Board of Management invite applications for the above post

Candidates for the appointment must be registered Medical Practitioners and Fellows Members or Licentiates of the Royal College of Physicians or Graduates in Medicine of a University in the British Empire

The salary is £200 per annum with luncheon and tea provided

Copies of the regulations for the Medical Registrar may be obtained on application at the Secretary's Office

Applications, with copies of testimonials, should reach the undersigned on or before Tuesday, December 29th

W PAPPS Secretary

King Edward Memorial Hospital,
EALING (109 Beds)

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER, vacant on January 1st, 1932 Candidates must have had good experience (not less than two years) in Hospital appointments Salary £100 per annum with board residence and laundry

Applications, stating age, experience and qualifications together with copies of recent testimonials to be sent to the undersigned immediately

P A MICKLEWRIGHT
Secretary

The Salvation Army,

THE MOTHERS' HOSPITAL
Lower Clapton Road Clapton E.5

Applications are invited for the appointment of the following posts:—(1) RESIDENT ANAESTHETIST OFFICER, vacant February 1st 1932. Salary £60 per annum with board residence and laundry. The appointment will be for six months. Applications, with copies of testimonials, to the Secretary as soon as possible after January 2nd, 1932.

EDGAR J POWELL, Secretary

(Appointments continued on p 43)

British Medical Journal,
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Wanted.—Assistant (male), indoor, with or without view. Southern Coast Town. Salary £300. Must be experienced in panel work and have knowledge of Skin diseases. Principal is experienced Surgeon who wishes to develop that line. Send fullest particulars. — Address, No. 7708, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, with view to Partnership later on, in large mixed Practice in S.E. Coast Resort. H.S., single, keen, energetic. Scot and abstainer preferred. Further particulars on application. Interview. Usual bond.—Address, No 7694, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, small house provided, with or without view, North West Coast, good salary offered. Own car preferable —Address, stating experience, age, photograph, No. 7632, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship by M.B., Ch.B (Indian) keen, energetic, well received. Experience panel and private. Aged 28. — Address, No 7705, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUM by Indian Doctor, M.B., B.S., L.M., D.T.M., 2 years' Hospital and G.P. experience. Smart, aet 28, fair colour —Address, No. 7706, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Town and Country Practices, with and without view. Good salaries. State full particulars — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, indoor Assistant for private and panel Practice in Liverpool, male, single, £25 monthly —Address, giving full particulars, No 7711, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, British, indoor or outdoor, London, E. No midwifery, little night work.—Address, No. 7651, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, single, in Country Town Practice, North Wales. Work light Able to drive car.—Address, No 7702, B.M.A. House, Tavistock Sq., W.C.1.

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Brighton. — Consulting Rooms, well furnished, in industrial district. Premises in excellent condition, suitable for Branch Services of maid. Low rental. Half professionally by Dentist for 30 years.—181 Lewes Road, Brighton.

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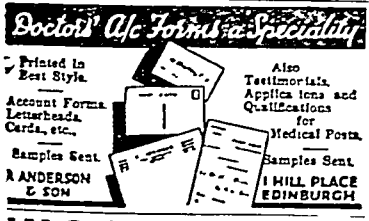
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APPOINTMENTS—Contd.

Surrey County Council.

COUNTY SANATORIUM MILFORD, SURREY (300 Beds)

Applications are invited from qualified and registered Medical Practitioners for the post of HIRD ASSISTANT RESIDENT MEDICAL FFICER at this Sanatorium

Candidates should be under 35 years of age nd have held resident hospital appointments anatorium experience is not essential

The appointment is subject to the provisions th Local Government and Other Officers peranuation Act, 1922 and the successful ndidate will be required to pass a medical amination Termination of engagement will at one month's notice on either side

The salar is £350 per annum, together with ard lodging and laundry These emoluments e valued at £100 per annum for purposes of perannuation

The salary will be subject to an emergency ttement of £15 per annum

The appointment will be made in the first tance for a period of six months renewable the end of that period for a further six nths

The successful candidate will be required to ve his whole time to the services of the unty Council

Forms of application may be obtained from County Medical Officer of Health, County l, Kingston upon Thames, to whom completed lication forms must be returned, together h copies of three recent testimonials, not r than Saturday, January 9th 1932

DUDLEY AUKLAND,
Clerk to the Surrey County Council.
ecember 19th, 1931.

The proprietors of Letters Patent

No 292301, relating to Wound Clasp desire to DISPOSE of the PATENT or to GRANT LICENCE to interested parties at reasonable terms, with a view to the adequate working of the Patent in Great Britain Enquiries to be addressed to Kirurgiska Instrument Fabriks Aktiebolaget, Regeringsgatan 31, Stockholm, Sweden

Cumberland County Council.

APPOINTMENT OF COUNTY MEDICAL OFFICER.

Applications are invited for the appointment of Medical Officer of Health for Cumberland from duly qualified and registered Medical Practitioners Preference will be given to those applicants who have already had experience in the duties of a Medical Officer of Health

The salary will be £1,100 per annum, rising subject to satisfactory service, by annual increments of £50 to a maximum of £1,250 per annum The first increment will take effect as and from April 1st 1933 The salary will be subject to a temporary abatement agreed upon by the Council In view of the National emergency Office, staff, stationery, and travelling expenses will also be provided

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to the successful applicant satisfactorily passing a medical examination

A form of application together with a copy of the conditions and duties appertaining to the appointment will be forwarded on the receipt of a request accompanied by a stamped, addressed foolscap envelope.

Applications marked County Medical Officer of Health and accompanied by copies of not more than three recent testimonials, must be received by me not later than January 6th, 1932.

Canvassing directly or indirectly, by or on behalf of any applicant will be a disqualification

C. W. ALLAN HODGSON,
The Courts, Clerk of the County
Carlisle. Council
December 16th, 1931

The Board of Control (Lunacy and Mental Deficiency)

invite applications for the post of MEDICAL SUPERINTENDENT (male) of RAMPTON STATE INSTITUTION FOR MENTAL DEFECTIVES, near PETFORD, NOTTS Salary £1,000, rising by annual increments of £50 to £1,200, together with cost of living bonus which at present is £146 Second salary of £1,000 The emolument of a house, rent free, is also allowed

Candidates must be registered Medical Practitioners must have had experience of the Institutional care and treatment of patients suffering from mental defect or mental disorder and must conform to the Civil Service nationality rule Post is pensionable under Civil Service Superannuation Acts

Forms of application, with further particulars can be obtained from the Secretary Board of Control Canton House West To hill Street London S W 1 and must be completed and returned to him not later than Jan 30th 1932

London County Council.

Applications are invited for appointment to position of RESIDENT MEDICAL SUPERINTENDENT for duty at PRINCESS MARY'S HOSPITAL FOR CHILDREN MARGATE (272 beds for surgical tuberculosis in children) Person appointed will be under direction of Medical Officer of Health and must assist at other establishments under control of Council If required Salary £600 by £50 to £1,200 a year Officer appointed may be required to act also as Medical Officer of Wanstead House Residential Open Air School Margate £25 a year extra is paid for these duties Unfurnished house, free of local rates etc, will be provided, valued provisionally at £100 a year

Candidates must be duly qualified Medical Practitioners of at least five years standing, and have held appointment of House Physician or House Surgeon in a public General Hospital, and have experience of hospital administration

Application forms (stamped and addressed foolscap envelope necessary) from Clerk of the Council County Hall S E 1 must be returned by January 16th 1932

Canvassing disqualifies

Wrexham and East Denbighshire War Memorial Hospital

(109 Beds)

ONE RESIDENT HOUSE SURGEON (male) required by the above Hospital to commence January 2nd 1932 Appointment for a period of not less than six months Salary £150 per annum with board and lodging

Applications stating age, full particulars of experience and qualifications accompanied by copies of three recent testimonials, to be sent to the undersigned immediately

LESLIE SPENCER,
December 19th, 1931 Secretary

East Suffolk & Ipswich Hospital,

IPSWICH (Over Eighty Beds)

Applications are invited for the post of CASUALTY OFFICER vacant January 1st, 1932. Salary at the rate of £120 per annum. Board, residence and laundry

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned

ARTHUR GRIFFITHS
The Hospital, Secretary
Ipswich

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and the
Most Prosperous of New Years

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LONDON, W.10.—NUCLEUS Lock-up, situated in working class locality. Living accommodation for bachelor if desired. Receipts between £5 and £6 per week. Panel 100. Prem. 1 year's purchase or near offer.

BERKS.—Well-established Town PRACTICE, situated within 60 miles London. Medium-sized house to rent. Receipts nearly £900 p.a. nearly 600. Scope for increase. Premium 1½ years' purchase.

HOME COUNTIES.—PARTNERSHIP in good class Practice situated in well-known country town. Receipts approx. £6,000. Select easily managed panel. Medium-sized house to rent. Premium for 1/4 share 2 years' purchase. This Practice has been in the Agency for many years, and is highly recommended. It is essential that the incoming Partner shall hold the F.R.C.S., and be aged about 30. Appointment to Hospital Staff.

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YORKS. — PARTNERSHIP in busy rapidly increasing town Practice Receipts £2,500. Panel 1,500. Suitable house available. 1/3 share, with view to succession, 2 years' purchase

SURREY.—14 miles London.—Excellent corner detached house (6 beds). Receipts nearly £400. Panel nearly 250. Appointments. Premium for Practice £500. House £2,100.

EAST MIDLANDS.—PARTNERSHIP in better middle class Practice 17 roomed house available. Receipts nearly £2,000. Fees 3/- up. Up to date Hospital. Scope for surgery. Premium 1/3 share, with view to larger share £1,500.

LONDON, N.W.—Well-established mixed PRACTICE, mainly better-class, with excellent house, situated on main thoroughfare. Receipts approx. £900. Panel over 420. Fees 3/6 up. No midwifery. One appointment. Part of house sublet if desired. Vendor has developed better class of Practice at good fees. Premium £1,300 cash.

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5. MIDLANDS.—Panel and Private PRACTICE. Receipts considerably over £700. Panel over 600 and both increasing rapidly. Appointments worth about £70. House to rent. Garage, etc.
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YORKSHIRE (W.R.).—PARTNERSHIP in sound Practice. Average cash receipts £4,017 p.a. Panel 4,600. Modern house available. 2 reception, 5 bedrooms. Premium—one-third share—1½ years purchase, part by arrangement.—No. 311

MANCHESTER.—PLEASANT RESIDENTIAL SUBURB.—Old-established PRACTICE. Average cash receipts £685 p.a. Panel over 600. Much scope. Excellent house—2 reception, 4 bedrooms, garage and good garden, to be sold or may be rented for a period on lease. Premium 1 years purchase. Vendor retiring.—No. 246

LARGE LANCS TOWN.—Sound Industrial PRACTICE. Cash receipts last year £1,043 increasing. Panel 1,440. Good house, 2 reception, 4 bedrooms, 3 professional rooms. Garage. To rent on lease. Premium £1,450 (including debts).—No. 310

NORTH WEST COAST.—SEASIDE RESORT.—Old-established middle-class PRACTICE. Average cash receipts £1,062 p.a. Panel and appointments £360 p.a. Excellent large and detached house in best part of town. Long Partnership introduction given. Premium—Practice—2 years purchase.—No. 312

CHESHIRE TOWN.—Old-established PRACTICE. Average cash receipts £1,420 p.a. Panel 2,000. Good scope. Nice house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice—£2,200.—No. 243

MANCHESTER INDUSTRIAL PRACTICE. Cash receipts last year £889. Panel 721. Plenty of scope. Good house, 2 reception, 3 bedrooms. Rent £50 p.a. Suit P.C. Premium—best offer.—No. 190

LIVERPOOL.—Old-established middle-class PRACTICE. Cash receipts over £2,000 p.a. Panel 900. Excellent house, 2 reception, 7 bedrooms, garage, and garden, to rent.—No. 276

MANCHESTER.—Sound old-established PRACTICE. Cash receipts approx. £3,000 p.a. increasing. Panel nearly 2,000. Good scope. Excellent house (freehold). 3 reception rooms, 5 bedrooms. Garage and garden. Premium 1½ years purchase, part by arrangement.—No. 307

NEAR PRESTON.—PRACTICE offering scope. Cash receipts 1930 £625. Panel 300. Good house, 2 reception, 4 bedrooms. Rent £70 p.a. Premium £800.—No. 254

MANCHESTER.—RESIDENTIAL SUBURB.—Middle-class PRACTICE. Suitable for two in Partnership (one a good surgeon). Cash receipts 1931, £4,578. Panel 1,400. Two excellent houses with ample accommodation. Premium 1½ years purchase, part by arrangement.—No. 277

NORTH WEST COAST.—POPULAR SEASIDE RESORT.—PRACTICE. Cash receipts last year, £865. Panel 454. Excellent house, rent on long lease, 6 bedrooms, 2 reception rooms. Garage and garden. Premium £1,150.—No. 236

MANCHESTER.—PARTNERSHIP in Practice of about £1,000 p.a. Panel 1,050. House available to new Partner.—Premium—best offer—3 years purchase.—No. 230

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £950 p.a. Panel 710. Excellent house, 2 reception, 5 bedrooms. Garage and garden.—Premium 2 years purchase.—No. 298

MANCHESTER.—Old-established PRACTICE. Cash receipts 1930, £698. Panel 578. House on main road, 2 reception, 5 bedrooms and garage. Premium—Practice—1½ years purchase.—No. 248

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BIRKENHEAD.—PRACTICE with good scope. Cash receipts £800 p.a. Panel 600. Good house, 3 bedrooms, garage. Premium—£50.—No. 265

NEAR MANCHESTER.—PLEASANT TOWN. Large [illegible]. Old-established PRACTICE. Average cash receipts £900 p.a. Panel [illegible]. Appointments £[illegible] p.a. Good house. Excellent detached house (freehold), 3 reception, 5 bedrooms. Garage and good garden. Premium—2½ years purchase.—No. 234

NEAR LIVERPOOL.—PARTNERSHIP in profitable Practice. Cash receipts £2,000. Good house and garden. Premium—[illegible] years purchase.—No. 3

MEDICAL WOMAN'S PRACTICE.—SEASIDE TOWN.—Cash receipts last year £632. Panel 445. Excellent rooms at £50 p.a. Premium £[illegible]—best offer.—No. 274

NORTH WEST COAST.—SEASIDE RESORT.—Old-established PRACTICE. Cash receipts 1930 £[illegible]. Small panel. Excellent detached house, 5 bedrooms. Garage and garden.—No. 269

LANCS TOWN.—Old-established PRACTICE. Average cash receipts £[illegible]. Panel 1,200. Scope. Appointments £120. Good house, 2 reception, 4 bedrooms. Premium 2½ years purchase.—No. 268

LIVERPOOL.—Small PRACTICE of £[illegible] p.a. Only one lady of transferable appointments (£[illegible] p.a.). Excellent house, 2 reception, 7 bedrooms. Garage. Rent £75 p.a. Premium 2½ years purchase.—No. 262.

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(FOUNDED 1880.)

Tele Address: Triform, Wesdo—London.

12, Stratford Place, Oxford Street, W.1.

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Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUM TENENS.

Assistants and Locum Tenens can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

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The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

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1 NORFOLK. — Partnership in Practice in agricultural district. Receipts last year nearly £3,000 (average about £2,300 p.a.). Panel 1,500. Very nice house available. Sport of most kinds. Premium one-third share 2 years' purchase. Preliminary Assistantship.

2 LONDON, S.W.—Partnership (after Preliminary Assistantship) in rapidly increasing Practice in growing outlying suburban district. Receipts 1931, about £2,700 (average £2,450 p.a.). Panel 1,700. House (4 bedrooms) to rent. Premium two-fifths share 2 years' purchase.

3 SURREY. — Partnership in increasing middle-class Town Practice of £2,300. Panel over 1,200. Modern detached corner house (5 bedrooms), garage and garden, for sale. Partner should be 26-30 and have held Hospital appointments. Share of £1,000 p.a. at 2 years' purchase.

4 CORNWALL. — Partnership in sound Country PRACTICE of over £2,400 p.a., including £800 from panel. Very nice house (4 bed and dressing rooms), garden and garage, to rent. Premium one-half share £2,000 cash.

5 DEVON. — Partnership in Practice averaging £3,000 p.a. in small beautifully situated town. Panel 800. House, with 4 bedrooms and attics, garage and garden, to rent. Cottage Hospital. Premium one-third share 2 years' purchase.

6 GLAMORGANSHIRE. — Partnership in Practice over £3,000 p.a. in small town. Panel 2,500. Good house, with nice garden, to rent. Premium one-half share 1 year's purchase, or even less for very quick sale.

7 N. OF ENGLAND. — Partner required in increasing Practice in beautiful city. Receipts last year £5,000. Panel 4,000. Applicants should be proficient in minor surgery, anaesthetics, and obstetrics. Share of four-fifteenths at 2 years' purchase.

8 S.W. OF ENGLAND.—Partnership (after preliminary Assistantship) in Practice about £3,500 p.a., in small industrial town. Panel nearly 900. Considerable scope for increase. One-third share to suitable man at 1½ years' purchase.

9 LONDON, N.W.—Non-dispensing Practice over £950 p.a. in good residential district. No panel. Ten-roomed house, with garage and large garden. Rent £200 p.a. Premium 1½ years' purchase.

10 N. MIDLANDS.—Partnership in Practice, about £3,000 p.a. in country district, near two important towns. Panel over 1,600. Small house (3 bedrooms, etc.) available to rent. Great scope, as district is growing rapidly. Premium one-third share 2 years' purchase.

11 DEATH VACANCY.—ESSEX.—Nucleus of Practice, bringing in about £260 p.a. in small coast town. Panel over 50. Well-situated house (3 bedrooms, etc.) for sale or rent. Ample scope for increase.

12 EAST ANGLIA.—Partnership in good-class non-dispensing Practice in favourite Seaside Resort. Partner must be a 'Varsity man, about 30 years of age, experienced in Medicine and Anaesthetics. Good up-to-date Hospital. Share of £1,000 p.a., 2 years' purchase.

13 MIDDLESEX. — Steadily increasing PRACTICE in rapidly growing residential district. Earnings past 15 months £600. Panel 500. Excellently situated house (4 bed rooms, etc.), for sale. Very good scope for increase. Cottage Hospital. Premium £700.

14 SUSSEX. — Country Practice averaging £900 p.a. in beautiful part, easy distance of coast. Panel 650. Large detached house, with three-quarters of an acre of garden, for sale. Premium 1½ years' purchase.

15 W. OF ENGLAND.—Practice about £[illegible] p.a. in first-rate City. Panel 1,324. Well-built house (4 bed and dressing rooms) to let. Excellent scope. Premium £1,450.

16 S.E. COAST. — Easily worked Practice in exclusive part of seaside town. Receipts last year £1,[illegible], including appointments over £200, fees from resident patients and small panel. Large modern house, with beautiful garden, to rent. Ample scope. Premium £1,150.

17 CARMARTHENSHIRE.—Increasing PRACTICE of £900 p.a. in pleasant Market Town. Panel 1,[illegible] situated house (non-basement), with 3 bedrooms, for sale. Cottage Hospital. Premium one year's purchase.

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Practices and Partnerships for Disposal (continued).

18 S. MIDLANDS. — Partnership in Practice about £8,000 p.a. in residential country district Suitable house to rent or purchase. Cottage Hospital Share worth about £1,500 net p.a. at 2½ years' purchase on net cash receipts.

19 LONDON, N.W.—Practice (carried on by Medical Woman) doing about £220 p.a. in main thoroughfare. Panel 125. Shop fronted house to rent on lease. Good scope for increase. Premium £300.

20 S. OF ENGLAND. — Partnership in good middle-class Town Practice, over £5,300 p.a. No panel Suitable house to purchase. Premium, one fourth share, £2,000. Preliminary Assistantship.

21 LONDON, W.—Steadily increasing PRACTICE, doing about £750 p.a., mostly from Lock up Surgery. Panel about 500. Well situated corner residence (3 bedrooms) to rent. Premium £900.

22 LONDON, S.W. — Small, non-dispensing PRACTICE of nearly £400 p.a., close to the West End. Select panel about 417, with scope Corner house, with ample accommodation, to rent on lease. Premium 1½ years' purchase, or near offer.

23 STAFFS. — Practice averaging £2,300 p.a. in manufacturing town Panel 1,100 Very nice well built house (6 bed and dressing rooms) for sale. Scope for increase. Premium 1½ years' purchase.

24 S. COAST.—Favourite Resort.—Practice of £600 p.a. Panel 50 House contains 5 bedrooms Garage and garden. Rent £150 p.a. Scope for increase Premium to effect quick sale only £300

25 DURHAM.—Practice of over £500 p.a. in residential and colliery district near large towns Panel 360 Substantially built 9 roomed house for sale. Scope for increase. Premium £725

26 LONDON, W.—Middle-class Practice averaging over £700 p.a. in outlying residential suburban district No panel House, with 4 bedrooms and fair sized garden, to rent. Good scope. Premium £700 cash

27 NEW ZEALAND.—NORTH ISLAND.—Non dispensing PRACTICE, about £1,200 p.a., in first rate Town Modern detached house (4 bedrooms, etc.), garage and garden for sale Equable climate. Good educational facilities Premium only £1,250

28 BIRMINGHAM.—Practice of about £1,000 p.a. in one of the best residential suburbs Small panel and very little midwifery Well situated house (6 bedrooms) good garden and garage, for sale. Good scope Premium 1½ years' purchase.

29 NORTH OF ENGLAND. — Small Season PRACTICE in Inland Health Resort, capable of increase by one practising all the year round Receipts about £150 No panel or midwifery. House, in own grounds, with 6 bedrooms, etc. Price—house and Practice—£1,250.

30 YORKSHIRE (W.R.).—Partnership (after Preliminary Assistantship) in Practice about £2,650 p.a. in manufacturing town Panel 1,640 House available Applicant with surgical experience preferred. Premium one third or one fourth share 1½ years' purchase.

31 EAST ANGLIA.—Partnership in Practice over £4,600 p.a. in beautiful country district easy access of important town Panel 3,000 Nice detached house (7 bedrooms), garage, etc., garden and grounds of 10 acres, for sale Sport of most kinds Considerable scope Premium two-thirds or four-ninths share 2 years' purchase

32 WESTERN AUSTRALIA.—Practice over £1,100 p.a. in Wheat and Sheep district Seven roomed house, with electric light, garage, etc., for sale or rent. Ideal climate Sport Hospital. Premium £600.

33 MIDDLESEX.—Partnership in increasing Practice of nearly £2,700 in Town about 10 miles from London Panel 1,460. House (5 bedrooms), garage and nice garden for sale. One third share for disposal.

34 BIRMINGHAM.—Practice about £700 p.a. in residential suburb Small panel. Well-situated house (7 bed and dressing rooms), garage and charming garden for sale. Good scope. Premium £750.

35 SOUTH AFRICA.—Easily worked Country PRACTICE in healthy district (elevation 2,000 ft.) in Cape Colony. Cash receipts year ended June, 1931, over £1,000 Sport of all kinds. Well built house. Premium—house and Practice—£1,225.

36 S. OF ENGLAND. — Practice averaging nearly £1,000 p.a. in small seaside resort. Eight roomed house for sale or rent Excellent educational facilities. Sea fishing, etc. Premium £1,500.

37 KENT.—Country Practice of over £800 p.a. in beautiful part Panel nearly 400 Very attractive residence (5 bedrooms), central heating, grounds of 2½ acres, orchard, etc., for sale Sport Premium 1½ years' purchase.

38 S. OF ENGLAND.—Partnership in Ophthalmic Practice about £1,500 p.a. in small but delightful resort. Considerable scope to one able to operate Premium one half share 1½ years' purchase.

39 LONDON, W.—Panel of 400 for transfer in suburban district. Rent of Lock up Surgery £65 p.a. Premium, to include furniture and drugs, £500

40 HOME COUNTIES —Partnership in exceptionally good and rapidly increasing Practice about £2,000 p.a. in delightfully situated Country Town, easy distance of coast. Attractive house (4 bedrooms) to rent Partner must hold the F.R.C.S. and be aged about 30 Appointment on Hospital Staff. Premium for one sixth to one fourth share 2 years' purchase. Preliminary Assistantship

41 SHROPSHIRE. — Practice £800 p.a. in market town Panel 170 House (5 bedrooms), garage and garden, to be sold or let. Premium 1½ years' purchase.

42 KENT. — Country Practice of about £850 p.a. Panel 550 Good house and garden for sale. From £1,100.

43 MIDLANDS.—Country Practice of nearly £900 p.a. in beautiful district. Panel over 700 House containing 6 bedrooms and dressing rooms etc., electric light, fine tithe garden, with greenhouse, for sale. All kinds of sport. Premium £1,200

44 SOMERSET. — Practice averaging £870 p.a. in country town Panel under 200 House, with 6 bedrooms, garage, and small garden, to rent or purchase. Scope for increase. Premium £1,200.

45 LONDON, S.W.—Practice about £500 p.a. in suburban district Panel 650 No midwifery Semi-detached corner house (6 bedrooms) for sale. Scope. Premium 2½ years' purchase

46 WITHIN 12 MILES OF LONDON — PARTNERSHIP in rapidly increasing practice Present takings £1,600 p.a. in developing industrial district Panel nearly 1,950 (mixed), house available Large cottage hospital Two fifths or one third share 2 years' purchase

47 LONDON, S.W. — Increasing Practice in outlying suburb Receipts last year £800 Panel 1,400 Modern house (3 bedrooms) Premium £1,000

48 WEST OF ENGLAND. — Partnership in Country Practice of £1,000 p.a. Panel 870 Premium one-third share 1½ years' purchase.

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1. WITHIN 60 MILES OF LONDON, near County Town.—Very old-established middle and better class PRACTICE, in delightful country district, averaging approximately £800 p.a. and offering good scope. Selected panel of about 170, and appts. worth £160 p.a. Fees 2/6 to 10/6. Very little mid. Exceptionally nice house, with beautiful garden, containing 3 reception, 4 bedrooms, etc. Separate entrance to professional rooms. Electric light. Garage for 2 cars. Price for freehold £1,800. Premium £800.
2. NORTH WALES.—FAVOURITE COAST TOWN.—A share will be offered (after a preliminary Assistantship in a good mixed class non dispensing Practice, producing nearly £2,000 per annum, including panel. Fees from 2/6 to 15/. Suitable accommodation can be arranged. Commencing salary £400 p.a., with subsequent increase.
3. OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP. — A third Partner is required in an old established good mixed class Practice, averaging just over £10,000 p.a., gross. A small share (to commence with) with ultimate increase, by instalments, to one third share would be offered to a suitable partner (preferably a young married man with experience of general practice). Good house, with ample accommodation, can be purchased or rented. Premium 2 years' purchase.
4. YORKS.—LARGE TOWN.—PARTNERSHIP.—A one fourth share is offered, after Preliminary Assistantship, in an old established mixed-class Practice, averaging for the last three years £2,500 p.a. Panel of 1,700. Lowest fee 5/6. Suitable accommodation available. Premium 1½ years' purchase. Good scope for surgery.
5. NORTH MIDLAND CITY. — PARTNERSHIP. — Two Partners are required to take over a four fifteenths share each (with increase later) in a very sound old established and increasing Practice in desirable town, producing for the last 12 months at the rate of over £5,500. Panel of about 4,000. No clubs, and very little night work. Fees from 5/-. Suitable accommodation can be obtained. Premium 2 years' purchase. *Excellent sport and schools.*
6. LIVERPOOL.—Old established middle class PRACTICE, producing for the last 12 months over £1,100. Good appointments. Selected panel of 50. Fees 5/- to 21/-. No midwifery. Suitable house, with 4 reception, 7 bedrooms, bathroom, etc. Price for freehold, £1,200. Premium £800.
7. LONDON, NORTH WEST.—Well established middle class non dispensing PRACTICE, averaging for the past three years £840, including appts. worth about £300 p.a., and panel of 120. Fees 5/6 to 21/-. Large house with thirteen rooms, in addition to professional accommodation, etc. Price for freehold £3,200, £2,000 on mortgage. Prem. £1,250.
8. MIDDLESEX.—Rapidly increasing PRACTICE, in developing neighbourhood, estimated to produce about £600 in the last 12 months. Panel 500. Fees 5/6 to 12/6. Midwifery 5 to 25 gns. Good house, with 2 reception, 4 bedrooms, etc., and separate entrance to professional rooms. Good garden. Garage. Price for freehold £2,000, part on mortgage. Premium £700.
9. SOUTH WEST OF ENGLAND.—PARTNERSHIP.—A two thirds or three fifths share is offered in a well estab. PRACTICE, in particularly attractive district near two good towns. Gross cash receipts for last 12 months over £2,500. Panel of 1,500. Fees from 2/6 to 10/6. Not much midwifery. Exceptionally nice house, specially built, with all modern conveniences, 3 reception, 6 bedrooms, beautiful garden. Price for freehold £3,000, half on mortgage. Premium 2 years' purchase. Hunting, fishing, etc., and good schools within reach. Up to date Hospital, and excellent surgical scope.
10. SUSSEX.—PARTNERSHIP.—A one third to two fifths share is offered in an old established Practice in desirable residential district, near sea. Gross cash receipts for last 12 months approximately £3,700. Panel of 1,700, and appts. worth about £200 p.a. Fees 5/6 to 21/-. A preliminary Assistantship is offered at a salary of £500 p.a., plus unfurnished house.
11. LONDON.—OUTLYING RESIDENTIAL SUBURB.—PARTNERSHIP.—A one third share, to commence, is offered in a good middle class Practice, having large scope. Cash receipts for last 12 months about £2,700, including panel of 1,500. Suitable house can be purchased for £1,750, part on mortgage. Premium 2 years' purchase.
12. NORTH WALES.—Very old established good mixed class PRACTICE, averaging £880 p.a., including panel of 433. Fees 2/6 to 10/6, medicine extra. Suitable house, with 2 reception, 6 bedrooms, etc. Can be rented on lease at £50 p.a. Good sport. Premium £1,200, part down and balance by instalments. Ill health reason for sale.
13. WEST OF ENGLAND.—LARGE TOWN.—Well established PRACTICE, producing nearly £900 p.a., including panel of over 1,300. Suitable house in excellent position. Price £700, or can be rented at £60 p.a. Premium £1,450. Good scope for increase.
14. SOUTH WEST OF ENGLAND.—FAVOURITE COAST TOWN.—Old-established good middle class non dispensing PRACTICE, averaging £2,100 p.a. Selected panel of 700. Very good appointments worth about £400 p.a. Fees 5/- to 21/-. Midwifery from 5 gns. About 10 cases yearly. House contains 2 reception, 4 bedrooms, etc., waiting, and consulting rooms. Freehold can be bought, or other suitable houses available. Good hospital in the town, and excellent scope for surgery. Premium 2 years' purchase.
15. ESSEX.—COAST TOWN.—Increasing PRACTICE, situated in good residential district, and producing over £1,000 p.a., including selected panel of 100, and good appts. worth about £210 p.a. Large modern house, with beautiful garden, can be rented or bought. Premium £1,150.
16. DEATH VACANCY.—ESSEX.—COAST TOWN.—Small PRACTICE, offering large scope for energetic worker. Receipts for the past 12 months £220, including panel of 54. Visits 5/6 to 5/-, medicine extra. Suitable house, with 2 reception, 3 bedrooms, etc., and professional rooms. Garden. Garage. Price freehold £1,100, or can be rented on lease at £75 p.a. Very good sport and schools. Offers invited.
17. LONDON, S.W.—Good middle class PRACTICE offering considerable scope, and producing for the past 12 months over £670, including panel of nearly 400. Fees from 2/6. Midwifery 5 gns. (about 50 cases yearly). Suitable house, with dining room, consulting room and dispensary, 3 bedrooms, sitting room, etc. Price for lease (94 years to run) £1,200, part on mortgage. Premium £1,050.
18. MIDLANDS.—PARTNERSHIP.—A one third share is offered in a very sound middle and working-class Practice, held by the senior partner for 35 years. Average gross cash receipts for the past three years nearly £3,000. Panel of over 1,600. Fees 5/6 to 21/. Midwifery from 3 gns. (about 60 cases). Suitable house available on rental with 2 reception, 3 bedrooms, etc. Small garden. Garage. Sport of all kinds, and very good schools within reach. Prem. 2 years' pur.
19. MID-WALES.—Agricultural District.—Mixed class PRACTICE producing about £880 p.a., including small panel of 150. Fees 5/6 to 21/-. Small house, with 2 reception, 3 bedrooms, etc. Price £. Fishing, shooting, and other sport. Premium 1 years purch.
20. WOMAN DOCTOR'S PRACTICE.—YORKS.—LARGE TOWN.—Established eight years, easily worked, and producing nearly £700 p.a. Panel of 500. Fees 5/- to 7/6. Midwifery 3 to 5 gns. Co. house, with 2 sitting, 2 bedrooms, 4 attics, etc. Garden. Garage. Rent on lease £42 10s. p.a. Prem. 1½ years' purchase, *or rent*.
21. CHESHIRE.—NEAR COAST.—Old established middle and working class PRACTICE, averaging for the past three years over £1,300. Panel of 550. Fees from 3/6. Good house, with 3 reception, 7 bedrooms, etc. Price for freehold £1,200, part on mortgage. Premium 2 years' purchase.
22. WITHIN FOUR MILES OF THE BANK.—Old established working class PRACTICE, producing for the last 12 months £2,300, and panel of over 2,800. Appts. worth about £160. Visits from 2/6. Low expenses. Suitable house can be rented or bought. Surgery premises on rental. Premium £4,000 cash.
23. SOUTH AFRICA.—Within 100 miles of East London.—In pretty PRACTICE, in very pretty Township near sea coast, producing for financial year £1,066. Practically all fees cash. Climate excellent. No night work and little or no visiting. Living cheap. Private residence in 3/4 acre of productive garden. Premium for [illegible] and house £1,155. Sport of all kinds.
24. BORDERS OF BERKS AND HANTS.—In a delightful sporting agricultural district, within reach of market town, an old established mixed class PRACTICE averaging about £850 p.a., including panel over 400. Visits 5/- to 10/6, medicine extra. House contains 2 sitting, 7 bedrooms, bathroom, etc. Large garden. Garage. £50 p.a. on lease. Premium £1,100.
25. MANCHESTER.—Semi-residential Suburb.—Very old-established dispensing mainly middle class PRACTICE, averaging £2,500 p.a., including small selected panel of 440, which latter is capable of extension. Visits 5/- upwards. Only about 20 cases of [illegible] from 5 gns. Well situated house, with good accommodation. Price (freehold) £1,600. Premium £3,750.
26. NORTH DEVON & CORNWALL BORDERS.—Very old-established opposed Country PRACTICE, in beautiful district near coast. Gross receipts average just over £1,100 p.a., including appt. at £50 p.a. 330. Suitable house available. Premium £1,600, to include [illegible] etc. Hunting, golf, fishing, etc.
27. NORTH MIDLANDS.—WITHIN 3 MILES OF FAVORITE TOWN. Old established and good middle class PRACTICE, offering large [illegible] Cash receipts for last 12 months £1,332, including panel of 1,000. Fees from 5/6. Mid. from 2 gns. For [illegible] in about 4 acres of ground, with tennis lawn, fruit trees, gardens, etc., containing 3 reception, 6 bedrooms, etc. For sale. Premium 1½ years' purchase.
28. SOUTH OF ENGLAND.—Pleasant Town near Coast.—Well established middle and upper class PRACTICE. Cash receipts nearly £1,750 p.a., including panel of 500. Visits 5/6 to [illegible] little midwifery. House, including consulting rooms and dispensary, in well situated part of town. Premium [illegible].—PARTNERSHIP.—
29. LINCS. — PLEASANT MARKET TOWN. — Assistant share, with possible succession in two years' time, and [illegible] for past three years £1,900, including appointments [illegible] ducing £500. Advice and medicine 3/- upwards. Large [illegible] Very few midwiferies from 2 to 5 guineas. Sport of all kinds and garage. Price freehold only £1,200. Premium 2 years' excellent schools for boys and girls. Premium [illegible] payable £1,000 down, remainder by arrangement.

Full Schedule of Terms and Conditions will be forwarded on application.

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St Pancras, in the County of [illegible]

"ITS WEIGHT AT BIRTH WAS ONLY 4 lbs."







July 9th, 1931

Dear Sirs,

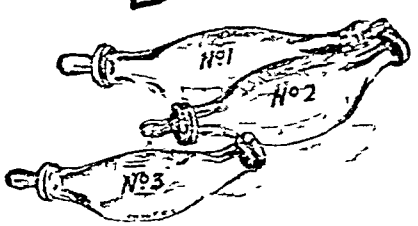
The following case will, I am sure, interest you. Baby Lowe was born on November 4th, 1929, at the 28th week Its weight at birth was 4 lbs. It was put in an incubator and fed with a fountain-pen filler. First it was fed from the breast, then on a spray-process dried milk, and finally on a peptonised food.

It was brought to the Motherhood Bureau on June 10th, 1930—aged 7 months. Its weight was 8¾ lbs It was still fed on peptonised feeds and could take only 4 feeds a day, and vomited after these, and was therefore losing weight.

Baby Lowe was put on a Lacidac Half Cream—4 measures to 6 ozs of water—with Mead's Dextri Maltose No. 1, 4-hourly feeds Within a week the sickness had improved, the baby had begun to gain a little weight, and by July 10th its weight was 9 lbs It was then put on Full Cream Lacidac and the appropriate additions of Brestol. In August Cow & Gate Rusks were added to the diet, and mixed feeding was commenced as the teeth were beginning to erupt.

In the 5 months from July 11th, 1930, to January 7th, 1931, the child gained 8 lbs., and at the last report on May 28th, 1931, was very bonny and well and was walking and climbing everywhere

C M B



COW & GATE FEEDERS

No1 9oz. Patent Glass Stoppered Feeder
No 2. 8 oz. Rubber Valved Feeder
No. 3 4 oz. Rubber Valved Feeder.

Cow & Gate Milk Food

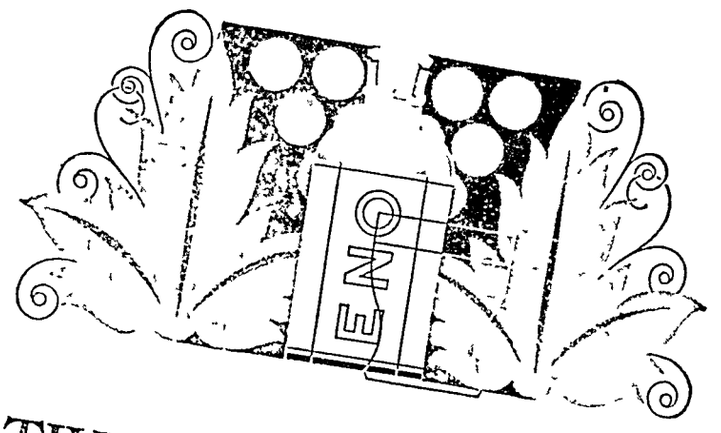
"Cow's milk made safe and suitable for Baby"

The makers will be pleased to send a trial sample of Cow & Gate Milk Food which is made in three strengths—full cream and separated—and Brestol to any members of the profession who may be interested

"The Best Milk for Babies when Natural Feeding Fails"

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INSIST ON COW & GATE FEEDERS 8oz & 4oz.



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The dangers attending the administration of irritant purgatives to delicate and debilitated patients have long been recognised.

Whilst a certain amount of immediate relief may be thus obtained, the disturbing effect on the autonomic nervous system and the malnutrition resulting from irritation of the absorptive mechanism frequently outweigh the temporary alleviation. There appears, also, to be considerable risk of malnutrition in the constant use of laxatives of the so-called lubricating type. The covering of the mucous membrane of the intestines with a thin coating of oil can hardly fail to lessen the absorption of aliment. Moreover, it was found by Channon and Collinson that a portion of the mineral oil is liable to be absorbed and to accumulate in the liver. The pathologic possibilities of such accumulation need no stressing.

For the relief of moderate degrees of constipation, in cases in which the fullest nutrition is important, no safer or more reliable laxative can be found than an effervescent preparation of the standard of Eno's "Fruit Salt."

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